Basic Survey (Radiation Dose Estimates) Reported on 19 May 2014

1. Simplified questionnaire

From the end of November through mid-December in 2013, we sent simplified questionnaires to those eligible for Thyroid Ultrasound Examination (around 250,000 excluding residents of nationally designated zones) who had not yet responded to the original questionnaire.
In addition, surveys were distributed at municipal offices and by mail on request.
As of 31 March 2014, 44,191 have responded to the simplified questionnaire, which increased the response rates to 25.9%, 2.1% up from the previous one.

Table 1

Response rates to the Basic Survey

As of 31 March 2014

Target population		2,055,585	
Response	Original questionnaire	487,855	23.7%
	Simplified questionnaire*	44,191	2.1%
	Total	532,046	25.9%

*Preliminary figures
Fractions have been rounded.

The following tables show the results of the original and simplified questionnaires combined.

2. Response Rates and Radiation Dose Estimates

2.1 Response Rates of Residents

The overall effective response rate to the Basic Survey (radiation dose estimates), intended for the entire population of Fukushima Prefecture, was 25.9% (532,046/2,055,585*) as of 31 March 2014.
Providing the simplified questionnaires increased the response rates in the Kennan area to the 20% level, and to 19.5% in Aizu and 18.2% in Minami-aizu, where the response rates had been low. The response rate for the Soso area was 45%, with response rates ranging from 50% to 60% by local municipality. (Table 2, Appendix 1)

*The number of people eligible for the Basic Survey was 2,055,585 instead of 2,056,994 in previous surveys after considering overlap and additional participants who were left out. We checked the number of responses, dose estimates, and returned results for duplication in light of this change.

2.2 Radiation Dose Estimates

Recorded movements of respondents are converted to digital data, and effective external cumulative doses are calculated using the dose calculation system developed by the National Institute of Radiological Sciences. Doses have been estimated for 481,420 of 532,046 respondents (90.5%) as of 31 March 2014, and the results have been returned to 471,713 respondents. (Table 2)

Table 2 Response rates to the Basic Survey

As of 31 March 2014

Area(preceding and full-scale surveys)	Target population a	Response b	Response rates c=b/a	Completed dose estimation d	Proportion e=d/b	Returned results f	Proportion g=f/b
Kempoku	504,089	144,116	28.6%	134,363	93.2%	131,473	91.2%
Kenchu	557,364	128,071	23.0%	116,709	91.1%	113,876	88.9%
Kennan	152,236	31,144	20.5%	27,214	87.4%	26,206	84.1%
Aizu	267,219	52,163	19.5%	39,698	76.1%	38,094	73.0%
Minami-aizu	30,787	5,599	18.2%	4,148	74.1%	3,848	68.7%
Soso	195,641	88,321	45.1%	84,614	95.8%	84,372	95.5%
Iwaki	348,249	82,632	23.7%	74,674	90.4%	73,844	89.4%
Total	2,055,585	532,046	25.9%	481,420	90.5%	471,713	88.7%

Including Yamakiya of Kawamata, Namie and Iitate.

2.3 Response Rates (Visitors)

The survey questionnaire was distributed upon request to non-residents who were visiting or staying in Fukushima Prefecture at the time of the accident. Of 2,077 responses, doses have been estimated for 1,856 respondents (89.4%), and the results shall be returned accordingly. (Table 3)

Table 3 Response rates to the Basic Survey (Visitors)

As of 31 March 2014

Number of request a	Response b	Response rates c=b/a	Completed dose estimation d	Proportion e=d/b	Returned results f	Proportion g=f/b
3,809	2,077	54.5%	1,856	89.4%	1,855	89.3%

3. Results of Radiation Dose Estimates

Radiation doses for a total of 481,420 residents have been estimated to date. The results for 471,565 respondents (excluding radiation workers) suggested that the doses for more than about 90% of the respondents were <2 mSv in Kempoku and Kenchu areas. The doses for approximately 91% of the respondents in Kennan area and more than 99% of those in Aizu and Minami-aizu areas were <1 mSv. Doses for about 78% of respondents in the Soso area and more than 99% of respondents in Iwaki were also <1 mSv. (Table 4)

Table 4

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

As of 31 March 2014

Effective Dose (mSv)	Total	Excluding radiation workers				By area (excluding radiation workers)											
						Kempoku *		Kenchu		Kennan		Aizu		Minami-aizu		Soso **		Iwaki	
<1	317,752	311,454	66.0%	94.8%	99.8%	41,336	31.1%	67,743	58.7%	24,383	90.5%	39,032	99.4%	4,087	99.4%	62,231	78.0%	72,642	99.2%
1-2	137,773	135,373	28.7%			77,841	58.6%	40,848	35.4%	2,538	9.4%	241	0.6%	26	0.6%	13,298	16.7%	581	0.8%
2-3	21,988	21,595	4.6%	4.9%		13,057	9.8%	6,526	5.7%	13	0.0%	11	0.0%	0	–	1,967	2.5%	21	0.0%
3-4	1,564	1,480	0.3%			447	0.3%	315	0.3%	0	–	1	0.0%	0	–	714	0.9%	3	0.0%
4-5	628	583	0.1%	0.2%		48	0.0%	7	0.0%	0	–	0	–	0	–	526	0.7%	2	0.0%
5-6	497	438	0.1%		0.2%	26	0.0%	2	0.0%	0	–	0	–	0	–	409	0.5%	1	0.0%
6-7	297	258	0.1%	0.1%		10	0.0%	0	–	0	–	0	–	0	–	248	0.3%	0	–
7-8	166	128	0.0%			1	0.0%	0	–	0	–	0	–	0	–	127	0.2%	0	–
8-9	124	82	0.0%	0.0%		0	–	0	–	0	–	0	–	0	–	82	0.1%	0	–
9-10	79	46	0.0%			0	–	0	–	0	–	0	–	0	–	46	0.1%	0	–
10-11	78	44	0.0%	0.0%		0	–	0	–	0	–	0	–	0	–	44	0.1%	0	–
11-12	56	34	0.0%			1	0.0%	0	–	0	–	0	–	0	–	33	0.0%	0	–
12-13	40	14	0.0%	0.0%	0.0%	0	–	0	–	0	–	0	–	0	–	14	0.0%	0	–
13-14	35	13	0.0%			0	–	0	–	0	–	0	–	0	–	13	0.0%	0	–
14-15	33	11	0.0%	0.0%		0	–	0	–	0	–	0	–	0	–	11	0.0%	0	–
15≤	310	12	0.0%		0.0%	0	–	0	–	0	–	0	–	0	–	12	0.0%	0	–
Total	481,420	471,565	100.0%	100.0%	100.0%	132,767	100%	115,441	100%	26,934	100%	39,285	100%	4,113	100%	79,775	100%	73,250	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.

** Including Namie and Iitate.

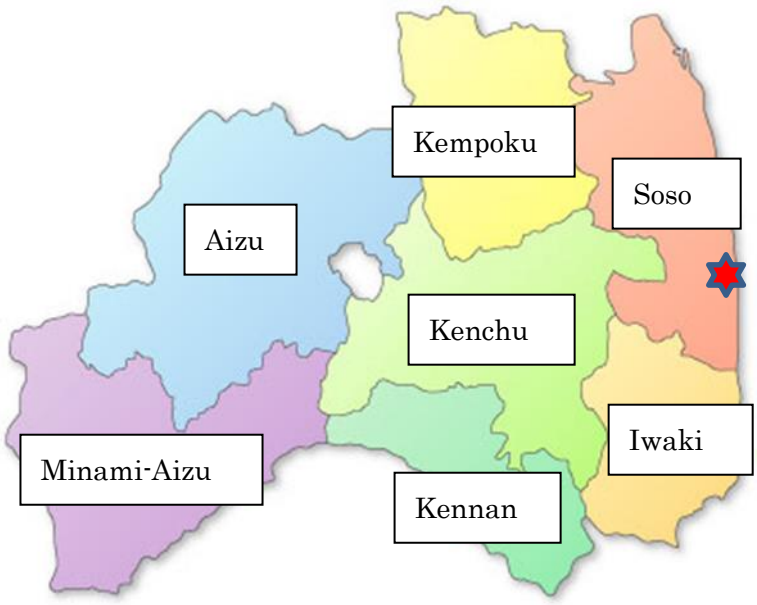
Percentages have been rounded and may not total to 100%.

4. Evaluation of the results

The latest effective radiation dose estimates showed similar trends to those observed so far.
Since previous epidemiological studies[1] indicate no significant health effects at doses ≤100 mSv, we concluded that radiation doses estimated so far are unlikely to cause adverse effects on health, although this conclusion is based on external radiation doses estimated only for the first four months following the accident.

References

1) Sources and effects of ionizing radiation, United Nations Scientific Committee on the Effects of Atomic Radiation, UNSCEAR 2008 Report to the General Assembly, with scientific annexes.


Kempoku
Soso
Aizu
Kenchu
Iwaki
Minami-Aizu
Kennan

Appendix 1

Response rates to the Basic Survey by district

Preceding and full-scale surveys

As of 31 March 2014

Area	District	Target population a	Response b	Response rates c=b/a	Completed dose d	Proportion e=d/b	Returned results f	Proportion g=f/b
Kempoku	Fukushima	295,660	89,099	30.1%	83,768	94.0%	82,029	92.1%
	Nihonmatsu	60,859	15,709	25.8%	14,575	92.8%	14,245	90.7%
	Date	67,589	17,562	26.0%	16,048	91.4%	15,482	88.2%
	Motomiya	31,769	8,221	25.9%	7,439	90.5%	7,320	89.0%
	Kori	13,207	3,776	28.6%	3,488	92.4%	3,440	91.1%
	Kunimi	10,316	2,924	28.3%	2,650	90.6%	2,605	89.1%
	Kawamata	15,888	5,006	31.5%	4,807	96.0%	4,801	95.9%
	Otama	8,801	1,819	20.7%	1,588	87.3%	1,551	85.3%
	Subtotal	504,089	144,116	28.6%	134,363	93.2%	131,473	91.2%
Kenchu	Koriyama	339,802	81,404	24.0%	74,384	91.4%	72,625	89.2%
	Sukagawa	80,173	16,185	20.2%	14,354	88.7%	13,827	85.4%
	Tamura	41,726	9,773	23.4%	9,360	95.8%	9,355	95.7%
	Kagamiishi	13,112	2,794	21.3%	2,464	88.2%	2,407	86.1%
	Tenei	6,469	1,048	16.2%	930	88.7%	902	86.1%
	Ishikawa	17,494	4,053	23.2%	3,680	90.8%	3,570	88.1%
	Tamakawa	7,341	1,445	19.7%	1,295	89.6%	1,246	86.2%
	Hirata	7,054	1,600	22.7%	1,407	87.9%	1,358	84.9%
	Asakawa	7,163	1,435	20.0%	1,277	89.0%	1,213	84.5%
	Furudono	6,319	1,259	19.9%	1,121	89.0%	1,071	85.1%
	Miharu	19,007	4,637	24.4%	4,256	91.8%	4,178	90.1%
	Ono	11,704	2,438	20.8%	2,181	89.5%	2,124	87.1%
	Subtotal	557,364	128,071	23.0%	116,709	91.1%	113,876	88.9%
Kennan	Shirakawa	65,433	13,297	20.3%	11,738	88.3%	11,397	85.7%
	Nishigo	20,090	4,640	23.1%	4,130	89.0%	3,999	86.2%
	Izumizaki	6,931	1,270	18.3%	1,130	89.0%	1,098	86.5%
	Nakajima	5,306	919	17.3%	772	84.0%	716	77.9%
	Yabuki	18,345	3,907	21.3%	3,381	86.5%	3,249	83.2%
	Tanagura	15,384	2,845	18.5%	2,399	84.3%	2,266	79.6%
	Yamatsuri	6,489	1,420	21.9%	1,209	85.1%	1,140	80.3%
	Hanawa	10,061	2,062	20.5%	1,773	86.0%	1,690	82.0%
	Samegawa	4,197	784	18.7%	682	87.0%	651	83.0%
	Subtotal	152,236	31,144	20.5%	27,214	87.4%	26,206	84.1%
Aizu	Aizuwakamatsu	127,819	26,818	21.0%	20,757	77.4%	20,046	74.7%
	Kitakata	53,203	8,882	16.7%	6,547	73.7%	6,228	70.1%
	Kitashiobara	3,275	576	17.6%	419	72.7%	392	68.1%
	Nishiaizu	7,725	1,410	18.3%	1,090	77.3%	1,065	75.5%
	Bandai	3,888	733	18.9%	567	77.4%	532	72.6%
	Inawashiro	16,278	3,510	21.6%	2,832	80.7%	2,653	75.6%
	Aizubange	17,881	3,105	17.4%	2,214	71.3%	2,117	68.2%
	Yugawa	3,514	689	19.6%	414	60.1%	394	57.2%
	Yanaizu	4,077	701	17.2%	529	75.5%	498	71.0%
	Mishima	2,031	367	18.1%	289	78.7%	282	76.8%
	Kaneyama	2,544	615	24.2%	496	80.7%	472	76.7%
	Showa	1,569	342	21.8%	294	86.0%	290	84.8%
	Aizumisato	23,415	4,415	18.9%	3,250	73.6%	3,125	70.8%
	Subtotal	267,219	52,163	19.5%	39,698	76.1%	38,094	73.0%
Minami-aizu	Shimogo	6,650	1,164	17.5%	885	76.0%	832	71.5%
	Hinoemata	614	142	23.1%	102	71.8%	94	66.2%
	Tadami	5,030	1,066	21.2%	800	75.0%	730	68.5%
	Minami-aizu	18,493	3,227	17.4%	2,361	73.2%	2,192	67.9%
	Subtotal	30,787	5,599	18.2%	4,148	74.1%	3,848	68.7%
Soso	Soma	37,383	12,915	34.5%	11,857	91.8%	11,785	91.3%
	Minami-soma	70,019	29,607	42.3%	28,601	96.6%	28,549	96.4%
	Hirono	5,165	2,188	42.4%	2,074	94.8%	2,069	94.6%
	Naraha	7,964	4,108	51.6%	3,911	95.2%	3,906	95.1%
	Tomioka	15,755	8,516	54.1%	8,290	97.3%	8,276	97.2%
	Kawauchi	2,996	1,512	50.5%	1,456	96.3%	1,456	96.3%
	Okuma	11,476	5,926	51.6%	5,668	95.6%	5,645	95.3%
	Futaba	7,051	3,910	55.5%	3,791	97.0%	3,785	96.8%
	Namie	21,339	12,795	60.0%	12,544	98.0%	12,522	97.9%
	Katsurao	1,541	810	52.6%	747	92.2%	747	92.2%
	Shinchi	8,360	2,626	31.4%	2,371	90.3%	2,348	89.4%
	Iitate	6,592	3,408	51.7%	3,304	96.9%	3,284	96.4%
	Subtotal	195,641	88,321	45.1%	84,614	95.8%	84,372	95.5%
Iwaki	Iwaki	348,249	82,632	23.7%	74,674	90.4%	73,844	89.4%
Total		2,055,585	532,046	25.9%	481,420	90.5%	471,713	88.7%

*Including Yamakiya of Kawamata, Namie and Iitate.

Basic Survey, Fukushima Health Management Survey

Appendix 2

Estimated external radiation doses

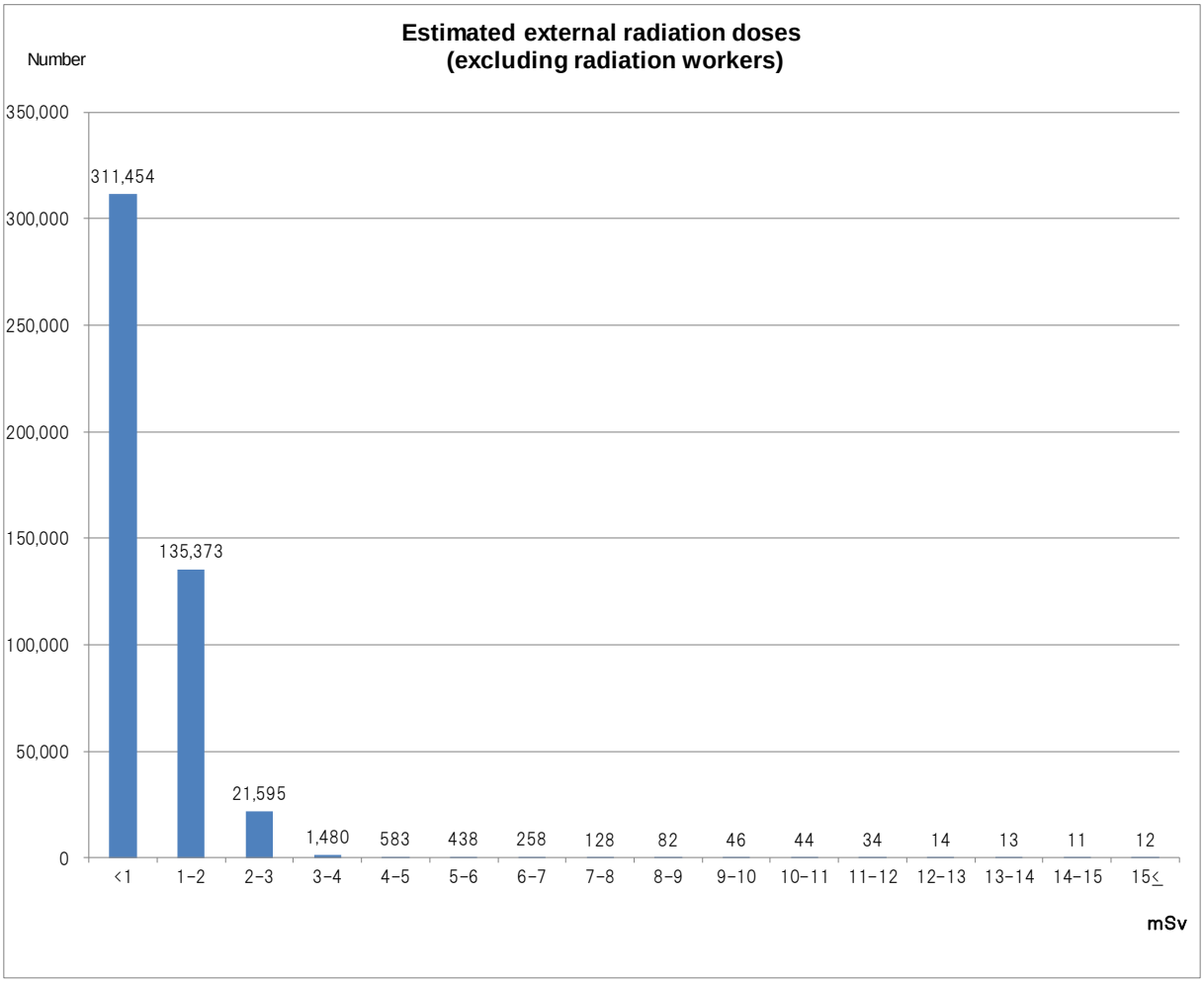
Preceding Survey and full-scale survey

As of 31 March 2014

Estimated external radiation doses by region

Effective Dose (mSv)	Total	Excluding radiation workers	By region							Proportion (%) excluding radiation workers		
			Kempoku	Kenchu	Kennan	Aizu	Minami-aizu	Soso	Iwaki			
<1	317,752	311,454	41,336	67,743	24,383	39,032	4,087	62,231	72,642	66.0	94.8	99.8
1-2	137,773	135,373	77,841	40,848	2,538	241	26	13,298	581	28.7		
2-3	21,988	21,595	13,057	6,526	13	11	0	1,967	21	4.6	4.9	
3-4	1,564	1,480	447	315	0	1	0	714	3	0.3		
4-5	628	583	48	7	0	0	0	526	2	0.1	0.2	
5-6	497	438	26	2	0	0	0	409	1	0.1		0.2
6-7	297	258	10	0	0	0	0	248	0	0.1	0.1	
7-8	166	128	1	0	0	0	0	127	0	0.0		
8-9	124	82	0	0	0	0	0	82	0	0.0	0.0	
9-10	79	46	0	0	0	0	0	46	0	0.0		
10-11	78	44	0	0	0	0	0	44	0	0.0	0.0	0.0
11-12	56	34	1	0	0	0	0	33	0	0.0		
12-13	40	14	0	0	0	0	0	14	0	0.0	0.0	
13-14	35	13	0	0	0	0	0	13	0	0.0		
14-15	33	11	0	0	0	0	0	11	0	0.0	0.0	
15≤	310	12	0	0	0	0	0	12	0	0.0	0.0	0.0
Total	481,420	471,565	132,767	115,441	26,934	39,285	4,113	79,775	73,250	100.0	100.0	100.0
Max	66	25	11	5.9	2.6	3.6	1.6	25	5.9			
Mean value	0.8	0.8	1.2	0.9	0.5	0.2	0.1	0.7	0.3			

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



Appendix 3

As of 31 March 2014

Estimated external radiation dose by age group (excluding radiation workers)

Effective Dose (mSv)	Age at the time of the disaster									Total
	0 - 9	10 - 19	20 - 29	30 - 39	40 - 49	50 - 59	60 - 69	70 - 79	80 -	
<1	37,153	31,529	22,628	35,359	29,984	37,757	50,040	40,114	26,890	311,454
1-2	17,109	15,185	9,592	17,314	16,126	18,573	20,516	13,414	7,544	135,373
2-3	4,401	2,594	1,054	2,193	2,125	2,899	3,392	2,038	899	21,595
3-4	180	128	86	152	154	260	254	182	84	1,480
4-5	22	54	41	48	83	110	93	83	49	583
5-6	17	20	27	39	48	101	84	71	31	438
6-7	4	7	14	22	30	49	59	49	24	258
7-8	2	7	8	7	15	37	23	19	10	128
8-9	1	6	3	8	8	18	16	10	12	82
9-10	0	1	1	2	4	13	13	8	4	46
10-11	1	1	1	2	8	14	6	8	3	44
11-12	0	0	1	3	0	7	10	11	2	34
12-13	0	0	0	0	1	6	4	2	1	14
13-14	0	0	1	1	1	5	3	2	0	13
14-15	0	0	0	0	0	6	4	1	0	11
15≤	0	1	0	0	2	2	4	1	2	12
Total	58,890	49,533	33,457	55,150	48,589	59,857	74,521	56,013	35,555	471,565

Estimated external radiation doses by sex (excluding radiation workers)

Effective Dose (mSv)	By sex				Total	Proportion (%)
	Male	Proportion (%)	Female	Proportion (%)		
<1	137,015	64.3	174,439	67.4	311,454	66.0
1-2	62,293	29.3	73,080	28.3	135,373	28.7
2-3	11,781	5.5	9,814	3.8	21,595	4.6
3-4	929	0.4	551	0.2	1,480	0.3
4-5	324	0.2	259	0.1	583	0.1
5-6	228	0.1	210	0.1	438	0.1
6-7	147	0.1	111	0.0	258	0.1
7-8	73	0.0	55	0.0	128	0.0
8-9	46	0.0	36	0.0	82	0.0
9-10	28	0.0	18	0.0	46	0.0
10-11	30	0.0	14	0.0	44	0.0
11-12	19	0.0	15	0.0	34	0.0
12-13	6	0.0	8	0.0	14	0.0
13-14	9	0.0	4	0.0	13	0.0
14-15	7	0.0	4	0.0	11	0.0
15≤	9	0.0	3	0.0	12	0.0
Total	212,944	100.0	258,621	100.0	471,565	100.0

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

Basic Survey, Fukushima Health Management Survey
Estimated external radiation doses (preceding and full-scale surveys)

Appendix 4

As of 31 March 2014

Estimated external radiation doses by region (excluding radiation workers)

Area/region		Effective Doses (mSv)																Total
		<1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15≤	
Kempoku	Fukushima	25,470	49,196	7,836	127	12	8	4	0	0	0	0	0	0	0	0	0	82,653
	Nihonmatsu	3,374	8,124	2,847	79	1	0	0	0	0	0	0	0	0	0	0	0	14,425
	Date	6,445	8,250	1,057	142	8	2	1	0	0	0	0	0	0	0	0	0	15,905
	Motomiya	1,728	4,722	896	20	1	0	0	0	0	0	0	0	0	0	0	0	7,367
	Kori	811	2,593	62	1	0	1	0	0	0	0	0	0	0	0	0	0	3,468
	Kunimi	1,354	1,268	12	0	0	0	0	0	0	0	0	0	0	0	0	0	2,634
	Kawamata	1,586	2,796	239	76	26	15	5	1	0	0	0	1	0	0	0	0	4,745
	Otama	568	892	108	2	0	0	0	0	0	0	0	0	0	0	0	0	1,570
Kempoku Subtotal		41,336	77,841	13,057	447	48	26	10	1	0	0	0	1	0	0	0	0	132,767
Kenchu	Koriyama	30,974	36,070	6,182	305	7	2	0	0	0	0	0	0	0	0	0	0	73,540
	Sukagawa	11,213	2,757	257	4	0	0	0	0	0	0	0	0	0	0	0	0	14,231
	Tamura	8,526	648	22	3	0	0	0	0	0	0	0	0	0	0	0	0	9,199
	Kagamiishi	2,386	56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,442
	Tenei	441	444	40	1	0	0	0	0	0	0	0	0	0	0	0	0	926
	Ishikawa	3,621	32	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3,654
	Tamakawa	1,267	16	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1,284
	Hirata	1,365	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,397
	Asakawa	1,258	13	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1,272
	Furudono	1,094	15	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1,110
	Miharu	3,505	695	20	2	0	0	0	0	0	0	0	0	0	0	0	0	4,222
	Ono	2,093	70	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2,164
Kenchu Subtotal		67,743	40,848	6,526	315	7	2	0	0	0	0	0	0	0	0	0	0	115,441
Kennan	Shirakawa	10,716	864	5	0	0	0	0	0	0	0	0	0	0	0	0	0	11,585
	Nishigo	2,569	1,524	3	0	0	0	0	0	0	0	0	0	0	0	0	0	4,096
	Izumizaki	1,104	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,123
	Nakajima	758	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	766
	Yabuki	3,284	64	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3,349
	Tanagura	2,348	26	3	0	0	0	0	0	0	0	0	0	0	0	0	0	2,377
	Yamatsuri	1,195	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,203
	Hanawa	1,741	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,760
	Samegawa	668	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	675
Kennan Subtotal		24,383	2,538	13	0	0	0	0	0	0	0	0	0	0	0	0	0	26,934
Aizu	Aizuwakamatsu	20,387	130	3	0	0	0	0	0	0	0	0	0	0	0	0	0	20,520
	Kitakata	6,425	43	1	1	0	0	0	0	0	0	0	0	0	0	0	0	6,470
	Kitashiobara	414	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	416
	Nishiaizu	1,082	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,084
	Bandai	553	9	1	0	0	0	0	0	0	0	0	0	0	0	0	0	563
	Inawashiro	2,784	23	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2,808
	Aizubange	2,183	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,193
	Yugawa	409	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	412
	Yanaizu	523	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	528
	Mishima	287	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	287
	Kaneyama	490	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	491
	Showa	292	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	293
	Aizumisato	3,203	14	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3,220
Aizu Subtotal		39,032	241	11	1	0	0	0	0	0	0	0	0	0	0	0	0	39,285
Minami-aizu	Shimogo	878	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	881
	Hinoemata	101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	101
	Tadami	793	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	796
	Minami-aizu	2,315	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,335
Minami-aizu Subtotal		4,087	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4,113
Soso	Soma	11,154	421	88	19	5	0	0	0	0	2	0	0	0	0	0	0	11,689
	Minami-soma	20,873	6,211	503	95	35	3	7	4	1	0	0	1	0	0	0	0	27,733
	Hirono	1,894	50	1	0	0	0	1	0	1	0	0	0	0	0	0	0	1,947
	Naraha	3,460	131	13	2	0	1	1	0	0	0	0	0	0	0	0	0	3,608
	Tomioka	6,108	1,115	97	18	3	2	0	3	2	0	0	1	0	0	0	0	7,349
	Kawauchi	1,009	349	17	1	0	1	1	1	0	0	0	0	0	0	0	0	1,379
	Okuma	3,507	1,292	106	16	9	4	4	3	0	2	2	1	0	4	0	1	4,951
	Futaba	2,781	474	74	20	7	4	3	6	2	1	0	2	0	0	0	1	3,375
	Namie	8,211	2,450	485	102	49	29	27	17	12	7	16	9	5	4	4	7	11,434
	Katsurao	541	160	24	6	0	1	0	0	0	0	0	0	0	0	0	0	732
	Shinchi	2,321	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,341
	Iitate	372	625	559	435	418	364	204	93	64	34	26	19	9	5	7	3	3,237
Soso Subtotal		62,231	13,298	1,967	714	526	409	248	127	82	46	44	33	14	13	11	12	79,775
Iwaki	Iwaki	72,642	581	21	3	2	1	0	0	0	0	0	0	0	0	0	0	73,250
Total		311,454	135,373	21,595	1,480	583	438	258	128	82	46	44	34	14	13	11	12	471,565
Proportion (%)		66.0	28.7	4.6	0.3	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
		94.8		4.9		0.2		0.1		0.0		0.0		0.0		0.0		100.0
		99.8					0.2					0.0					0.0	100.0
Visitors		1,521	294	19	2	1	0	0	1	0	0	0	0	0	0	0	0	1,838
Total+Visitors		312,975	135,667	21,614	1,482	584	438	258	129	82	46	44	34	14	13	11	12	473,403

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

Thyroid Ultrasound Examination, Fukushima Health Management Survey

Reported on 19 May 2014

1. Summary

1.1 Thyroid Ultrasound Examination (TUE) Program

The TUE Program for the fiscal year 2013 started on 22 April 2013, and roughly 158,000 children from 34 municipalities have participated in the program so far. The participation rate from October 2011 through March 2014 is 80.2% (Appendix 1).

Starting on 1 November 2012, the TUE Program has been carried out at 86 institutions outside Fukushima Prefecture as of 18 April 2014 (Appendix 2). The results have been returned to 97.1% of the 295,511 participants (Appendices 3 and 4).

Screening test coverage as of 31 March 2014 (last screening on 21 February 2014)

	Target Population	Participants		Test results				
		Proportion (%)	Screened outside Fukushima	Proportion (%)	Class			
					A		Requiring confirmatory test	
	a	b (b/a)		c (c/b)	A1 d (d/c)	A2 e (e/c)	B f (f/c)	C g (g/c)
FY 2011	47,766	41,981 (87.9)	2,025	41,612 (99.1)	26,321 (63.3)	15,073 (36.2)	218 (0.5)	0 (0.0)
FY 2012	163,264	140,946 (86.3)	4,149	139,469 (99.0)	76,293 (54.7)	62,185 (44.6)	990 (0.7)	1 (0.0)
FY 2013	157,621	112,584 (71.4)	2,671	105,975 (94.1)	45,568 (43.0)	59,546 (56.2)	861 (0.8)	0 (0.0)
Total	368,651	295,511 (80.2)	8,845	287,056 (97.1)	148,182 (51.6)	136,804 (47.7)	2,069 (0.7)	1 (0.0)

Number and proportion of children with nodules/cysts as of 31 March 2014 (last screening on 21 February 2014)

	Number of confirmed screening results	Number and proportions of children with nodules/cysts			
		Nodules		Cysts	
	a	≥5.1mm b (b/a)	≤5.0mm c (c/a)	≥20.1mm d (d/a)	≤20.0mm e (e/a)
FY 2011	41,612	216 (0.5)	228 (0.5)	1 (0.0)	14,996 (36.0)
FY 2012	139,469	976 (0.7)	729 (0.5)	9 (0.0)	62,298 (44.7)
FY 2013	105,975	859 (0.8)	621 (0.6)	2 (0.0)	59,783 (56.4)
Total	287,056	2,051 (0.7)	1,578 (0.5)	12 (0.0)	137,077 (47.8)

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

1.2 Confirmatory Examination

The number of children who required further testing is 2,070, of whom 84.7% underwent the confirmatory testing. Among them, 91.1% have completed the tests (Appendix 5). In addition to Fukushima Medical University Hospital, two institutes, in Koriyama and Iwaki respectively, have provided confirmatory testing since late July 2013. Confirmatory testing outside Fukushima Prefecture has started in November 2013.

Confirmatory testing coverage and results as of 31 March 2014

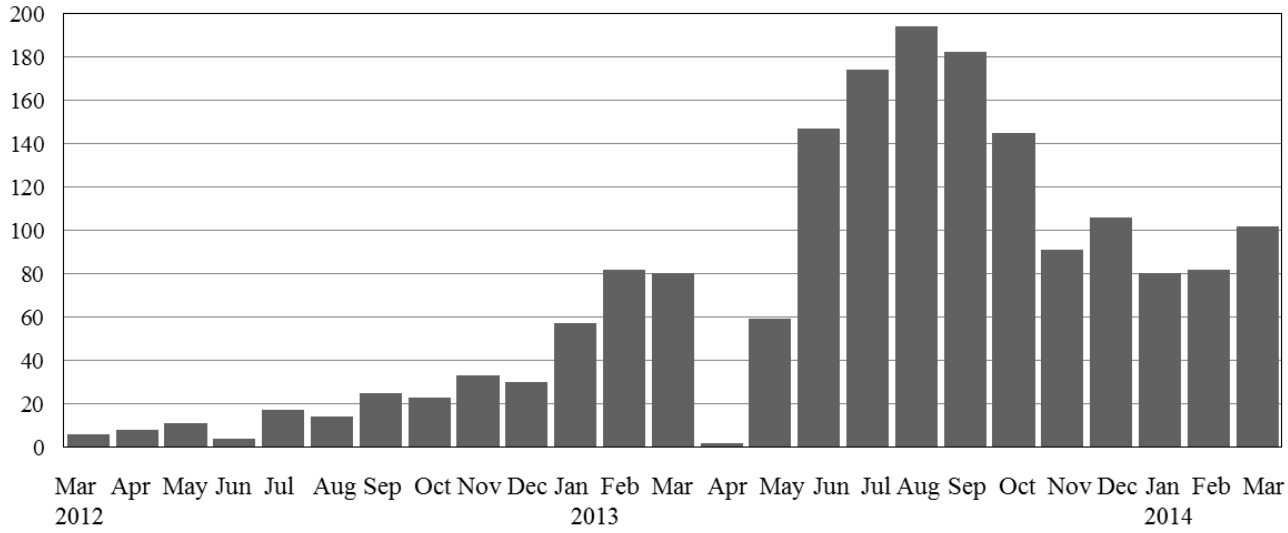
	Number of children requiring confirmatory test	Participants	Confirmed test results				
		Proportion (%)	Confirmatory test coverage (%)	Next screening advised		Follow-up advised	
				A1	A2		Cytology
	a	b (b/a)	c (c/b)	d (d/c)	e (e/c)	f (f/c)	g (g/f)
FY 2011	218	193 (88.5)	189 (97.9)	12 (6.3)	41 (21.7)	136 (72.0)	90 (66.2)
FY 2012	991	889 (89.7)	858 (96.5)	52 (6.1)	223 (26.0)	583 (67.9)	256 (43.9)
FY 2013	861	672 (78.0)	551 (82.0)	33 (6.0)	174 (31.6)	344 (62.4)	91 (26.5)
Total	2,070	1,754 (84.7)	1,598 (91.1)	97 (6.1)	438 (27.4)	1,063 (66.5)	437 (41.1)

Priority was given to those in urgent clinical need.

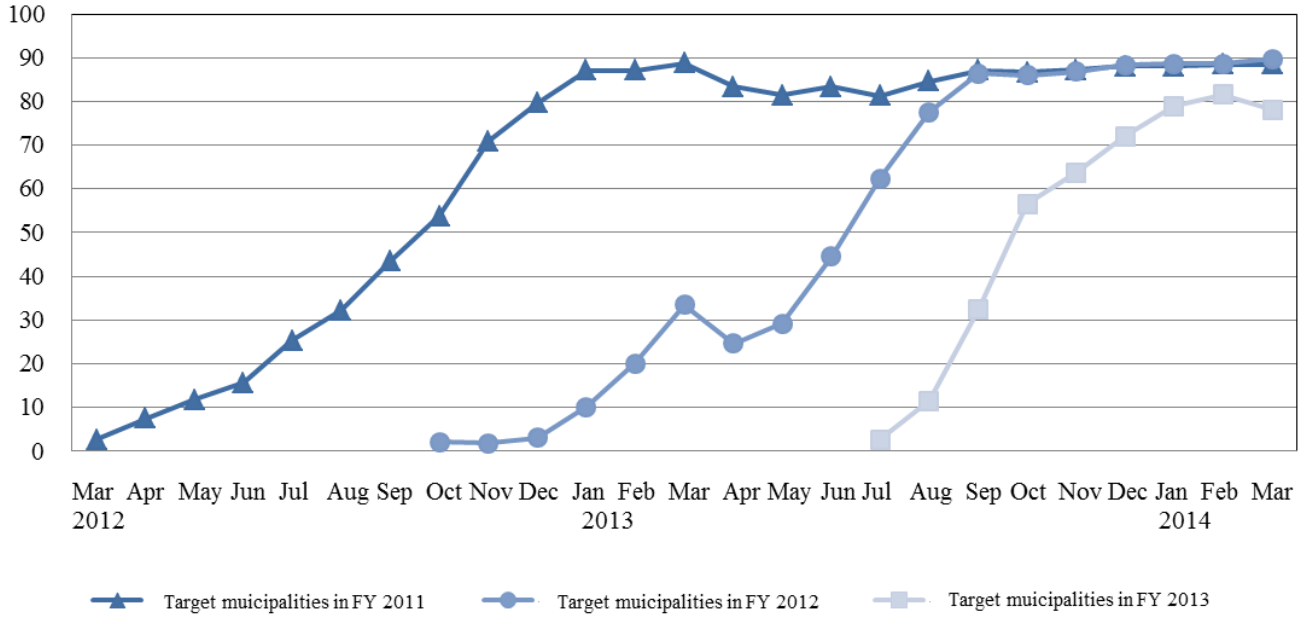
Those confirmed within the range of A1 and A2 (including those with other thyroid conditions) were advised to take the next examination.

Those who require 6- or 12-month follow-up provided by health insurance and those beyond the specified level of A2 were categorized as “Follow-up advised”.

Number of first visits for confirmatory testing



Proportion of first visits for confirmatory testing



2. Fine Needle Aspiration Biopsy and Cytology (FNAC)

2.1 Aspiration biopsy cytology results as of 31 March 2014

2.1.1 Target municipalities in FY 2011

Suspicious or malignant	15 (13 surgical cases: 1 of benign thyroid nodules; 11 of papillary thyroid carcinoma; 1 suspicious for poorly differentiated thyroid carcinoma)
Male to female ratio	5:10
Mean age (SD, min-max)	17.3 (2.0, 13-20) 15.7 (1.9, 11-18) at the time of the disaster
Mean tumor size	14.1 mm (6.6 mm, 6.0-33.0 mm)

2.1.2 Target municipalities in FY 2012

Suspicious or malignant	54 (36 surgical cases: 36 of papillary thyroid carcinoma)
Male to female ratio	21:33
Mean age (SD, min-max)	17.2 (2.7, 8-21) 14.9 (2.6, 6-18) at the time of the disaster
Mean tumor size	14.5 mm (7.9 mm, 5.2-40.5 mm)

2.1.3 Target municipalities in FY 2013

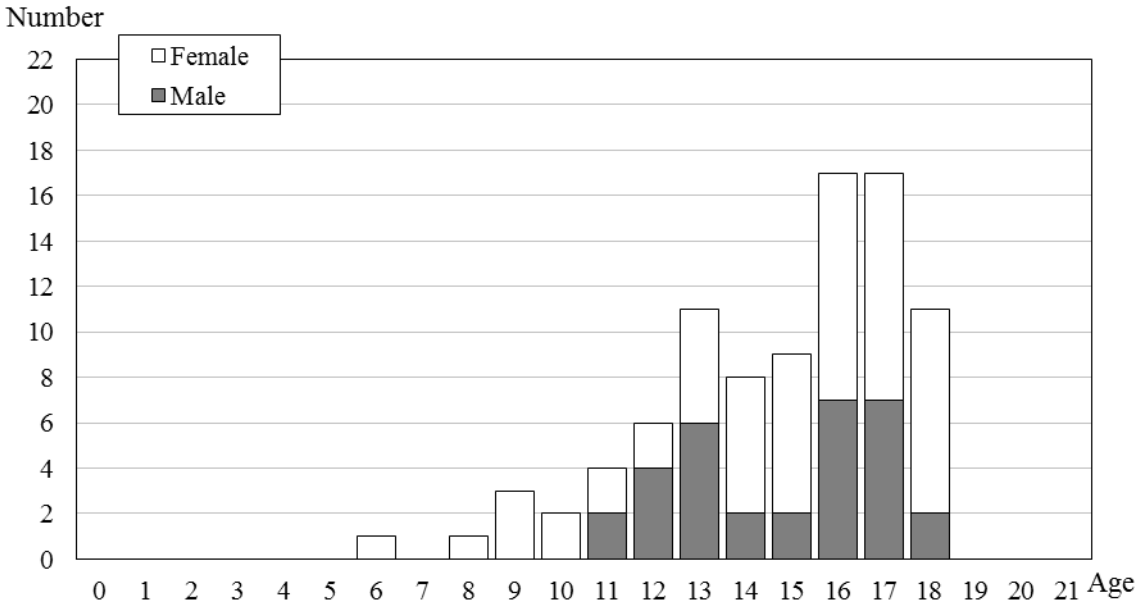
Suspicious or malignant	21 (2 surgical case: 2 of papillary thyroid carcinoma)
Male to female ratio	6:15
Mean age (SD, min-max)	16.0 (3.1, 11-20) 13.5 (3.0, 8-18 at the time of the disaster)
Mean tumor size	13.4 mm (6.8 mm, 5.1-30.3 mm)

Total for cases FY 2011 – FY 2013

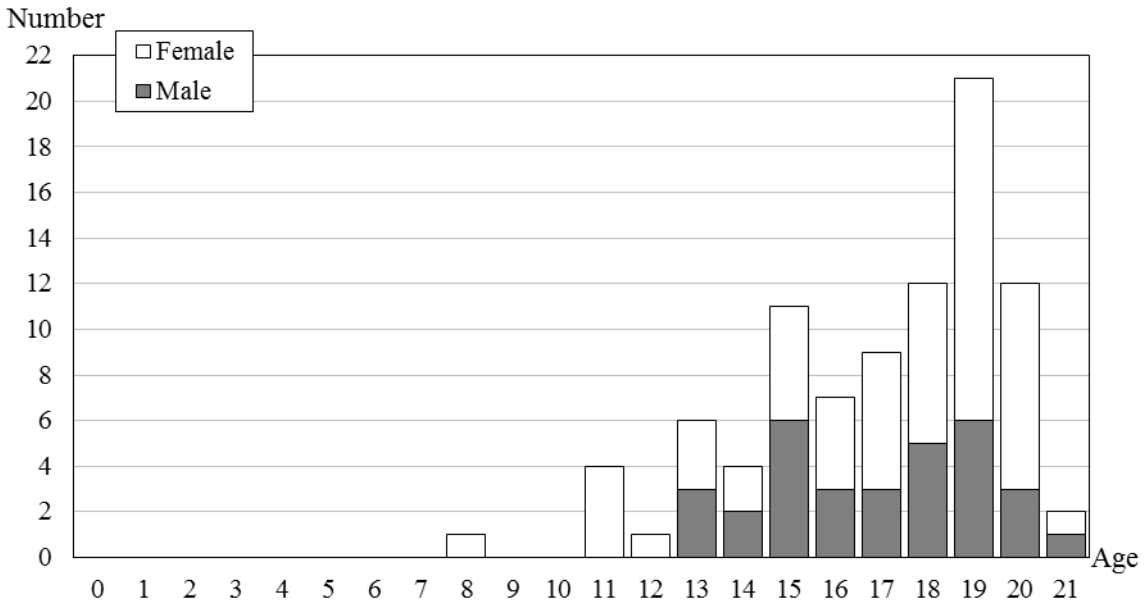
Suspicious or malignant	90 (51 surgical cases: 1 of benign thyroid nodules; 49 of papillary thyroid carcinoma; 1 suspicious for poorly differentiated thyroid carcinoma)
Male to female ratio	32:58
Mean age(SD, min-max)	16.9 (2.7, 8-21) 14.7 (2.7, 6-18) at the time of the disaster
Mean tumor size	14.2 mm (7.4 mm, 5.1-40.5 mm)

2.2 Suspicious or malignant cases on FNAC by age and sex

2.2.1 Suspicious or malignant cases by age as of 11 March 2011



2.2.2 Suspicious or malignant cases by age as of the date of confirmatory examination



2.3 Suspicious or malignant cases on FNAC by estimated radiation dose

Forty-five of the 90 cases (50%) participated in the Basic Survey (radiation dose estimates) and 34 of them have received the results. Among those, 21 (61.8%) had estimated radiation exposure dose below 1 mSv.

Number of suspicious or malignant cases by age and dose

Effective dose (mSv)	Sex	Age at the time of disaster				
		0-5	6-10	11-15	16-18	Total
<0.5	Male	0	0	0	2	2
	Female	0	2	3	5	10
0.5-1.0	Male	0	0	3	1	4
	Female	0	1	0	4	5
1.0-1.5	Male	0	0	2	1	3
	Female	0	0	4	1	5
1.5-2.0	Male	0	0	1	0	1
	Female	0	0	2	1	3
2.0-2.5	Male	0	0	1	0	1
	Female	0	0	0	0	0
Total	Male	0	0	7	4	11
	Female	0	3	9	11	23

2.4 Blood and urinary iodine test results as of 31 March 2014

2.4.1 Blood test results Mean±SD (Abnormality ratio)

	FT4 1) (ng/dL)	FT3 2) (pg/mL)	TSH 3) (μIU/mL)	Tg 4) (ng/mL)	TgAb 5) (IU/mL)	TPOAb 6) (IU/mL)
Reference Range	0.8-1.9	7)	0.4-4.0	≦32.7	<28.0	<16.0
90 suspicious or malignant	1.2 ± 0.2 (0.0%)	3.4 ± 0.4 (0.0%)	1.3 ± 0.7 (3.3%)	40.6 ± 85.2 (35.6%)	－ (25.6%)	－ (13.3%)
Other 1,662	1.3 ± 0.3 (1.4%)	3.7 ± 1.0 (1.6%)	1.9 ± 13.1 (6.2%)	34.3 ± 194.3 (16.9%)	－ (13.7%)	－ (10.0%)

2.4.2 Urinary iodine (μg/day)

	Minimum	25th percentile	Median	75th percentile	Maximum
90 suspicious or malignant	42	140	239	381	6,020
Other 1,660	24	121	197	361	35,700

1) FT4: Free Thyroxine; higher among patients with Graves' disease and lower with Hashimoto's disease.

2) FT3: Free Triiodothyronine; higher among patients with Graves' disease and lower with Hashimoto's disease.

3) TSH: Thyroid Stimulating Hormone; higher among patients with Hashimoto's disease and lower with Graves' disease.

4) Tg: Thyroglobulin; higher when thyroid tissue is destroyed or when thyroid cancer produces thyroglobulin.

5) TgAb: Anti-Thyroglobulin Antibody; higher among patients with Hashimoto's disease and Graves' disease.

6) TPOAb: Anti-Thyroid Peroxidase Antibody; higher among patients with Hashimoto's disease or Graves' disease.

7) Reference range differs according to age.

2.5 Confirmatory test results by municipality as of 31March 2014

Confirmatory test results in FY 2011 (13 municipalities in the nationally designated evacuation zones)

	Number of children screened	Number who required confirmatory test	Proportion who required confirmatory test (%)	Number who underwent confirmatory test	Suspicious or malignant cases 1)	Proportion of suspicious or malignant cases (%)
Kawamata	2,240	8	0.4	8	2	0.09
Namie	3,249	25	0.8	23	2	0.06
Iitate	943	6	0.6	6	0	0.00
Minami-soma	10,799	52	0.5	48	2	0.02
Date	10,671	50	0.5	45	2	0.02
Tamura	6,402	33	0.5	26	3	0.05
Hirono	837	4	0.5	3	0	0.00
Naraha	1,152	6	0.5	5	0	0.00
Tomioka	2,278	12	0.5	11	1	0.04
Kawauchi	280	4	1.4	4	1	0.36
Okuma	1,972	14	0.7	11	1	0.05
Futaba	942	3	0.3	2	0	0.00
Katsurao	182	1	0.5	1	0	0.00
Other areas 2)	34	0	0.0	0	0	0.00
Subtotal	41,981	218	0.5	193	14	0.03

1) Excluding one suspected case found benign by aspiration biopsy cytology.

2) Number of children who underwent tests at institutes outside the 13 nationally designated zones.

Confirmatory test results by municipality in FY 2012 (Iwaki not fully covered)

	Number of children screened	Number who required confirmatory test	Proportion who required confirmatory test (%)	Number who underwent confirmatory test	Suspicious or malignant cases	Proportion of suspicious or malignant cases (%)
Fukushima	47,556	276	0.6	262	12	0.03
Nihonmatsu	8,814	53	0.6	50	5	0.06
Motomiya	5,252	28	0.5	27	3	0.06
Otama	1,372	7	0.5	7	2	0.15
Koriyama	54,951	475	0.9	407	23	0.04
Kori	1,831	12	0.7	10	0	0.00
Kunimi	1,386	15	1.1	13	0	0.00
Tenei	884	6	0.7	5	0	0.00
Shirakawa	11,203	64	0.6	60	6	0.05
Nishigo	3,662	30	0.8	26	1	0.03
Izumizaki	1,163	5	0.4	5	1	0.09
Miharu	2,531	17	0.7	15	1	0.04
Iwaki	341	3	0.9	2	0	0.00
Subtotal	140,946	991	0.7	889	54	0.04

Confirmatory test results by municipality in FY 2013

	Number of children screened	Number who required confirmatory test	Proportion who required confirmatory test (%)	Number who underwent confirmatory test	Suspicious or malignant cases	Proportion of suspicious or malignant cases (%)
Iwaki	47,178	404	0.9	342	14	0.03
Sukagawa	11,045	82	0.7	80	3	0.03
Soma	4,991	45	0.9	40	0	0.00
Kagamiishi	1,875	7	0.4	6	0	0.00
Shinchi	1,097	7	0.6	7	0	0.00
Nakajima	724	2	0.3	2	0	0.00
Yabuki	2,294	13	0.6	10	0	0.00
Ishikawa	2,016	10	0.5	10	1	0.05
Yamatsuri	743	3	0.4	2	0	0.00
Asakawa	1,020	12	1.2	10	0	0.00
Hirata	773	7	0.9	7	1	0.13
Tanagura	2,141	22	1.0	21	1	0.05
Hanawa	1,131	7	0.6	6	0	0.00
Samegawa	491	3	0.6	1	0	0.00
Ono	1,167	12	1.0	11	0	0.00
Tamakawa	938	10	1.1	8	0	0.00
Furudono	752	6	0.8	6	0	0.00
Hinoemata	61	0	0.0	0	0	0.00
Minami-aizu	1,780	15	0.8	13	0	0.00
Kaneyama	134	0	0.0	0	0	0.00
Showa	101	0	0.0	0	0	0.00
Mishima	129	1	0.8	1	0	0.00
Shimogo	683	8	1.2	6	1	0.15
Kitakata	5,658	26	0.5	19	0	0.00
Nishiaizu	636	5	0.8	4	0	0.00
Tadami	488	7	1.4	6	0	0.00
Inawashiro	1,814	11	0.6	8	0	0.00
Bandai	413	4	1.0	2	0	0.00
Kitashiobara	381	1	0.3	1	0	0.00
Aizumisato	2,534	20	0.8	5	0	0.00
Aizubange	2,047	14	0.7	6	0	0.00
Yanaizu	374	0	0.0	0	0	0.00
Aizuwakamatsu	14,472	92	0.6	31	0	0.00
Yugawa	503	5	1.0	1	0	0.00
Subtotal	112,584	861	0.8	672	21	0.02
Total	295,511	2,070	0.7	1,754	89	0.03

FY 2011 is from 1 April 2011 through 31 March 2012.

FY 2012 is from 1 April 2012 through 31 March 2013.

FY 2013 is from 1 April 2013 through 31 March 2014.

Appendix 1

Thyroid Ultrasound Examination (TUE) coverage by municipality

Screening coverage by municipality in FY 2011 (13 municipalities in the nationally designated zones) 31 March 2014

	Target Population 6)	Participants		Proportion (%)	Number and proportion of participants by age group 7)					Participants living outside Fukushima	Proportion (%)
			Screened outside Fukushima		0-5	6-10	11-15	16-18			
	a	b		b/a						c 4)	c/b
Kawamata	2,403	2,240	34	93.2	564	623	691	362	1)	62	2.8
					96.2	98.6	96.0	77.8	2)		
					25.2	27.8	30.8	16.2	3)		
Namie	3,645	3,249	192	89.1	919	857	919	554		1,212	37.3
					90.9	93.1	89.1	81.4			
					28.3	26.4	28.3	17.1			
Iitate	1,090	943	16	86.5	249	270	264	160		73	7.7
					89.6	89.7	87.1	76.9			
					26.4	28.6	28.0	17.0			
Minami-soma	12,530	10,799	875	86.2	3,203	3,057	2,936	1,603		3,483	32.3
					87.2	89.5	89.1	74.8			
					29.7	28.3	27.2	14.8			
Date	11,357	10,671	155	94.0	2,576	3,005	3,303	1,787		275	2.6
					93.9	99.3	97.8	80.8			
					24.1	28.2	31.0	16.7			
Tamura	7,081	6,402	61	90.4	1,558	1,802	2,005	1,037		72	1.1
					90.6	99.5	96.6	70.3			
					24.3	28.1	31.3	16.2			
Hirono	1,077	837	57	77.7	204	215	294	124		166	19.8
					80.0	86.0	84.5	55.4			
					24.4	25.7	35.1	14.8			
Naraha	1,429	1,152	77	80.6	285	319	352	196		220	19.1
					82.4	88.1	85.0	63.8			
					24.7	27.7	30.6	17.0			
Tomioka	2,940	2,278	237	77.5	596	630	708	344		660	29.0
					77.6	85.8	79.8	62.4			
					26.2	27.7	31.1	15.1			
Kawauchi	357	280	22	78.4	72	92	70	46		63	22.5
					80.0	92.9	78.7	58.2			
					25.7	32.9	25.0	16.4			
Okuma	2,386	1,972	183	82.6	656	579	528	209		454	23.0
					84.3	91.2	85.3	59.0			
					33.3	29.4	26.8	10.6			
Futaba	1,204	942	113	78.2	289	241	275	137		482	51.2
					78.7	81.4	82.1	66.5			
					30.7	25.6	29.2	14.5			
Katsurao	233	182	3	78.1	43	54	57	28		15	8.2
					76.8	87.1	85.1	58.3			
					23.6	29.7	31.3	15.4			
Other areas 5)	34	34	0	100.0	0	6	10	18		2	5.9
					0.0	100.0	100.0	100.0			
					0.0	17.6	29.4	52.9			
Subtotal	47,766	41,981	2,025	87.9	11,214	11,750	12,412	6,605		7,239	17.2
					88.5	93.6	91.5	73.6			
					26.7	28.0	29.6	15.7			

1) Number of participants. 2) Number of participants/Number in the target population age group.

3) Number of participants in the age group/Number of participants.

4) Number of participants currently living outside Fukushima who underwent the test either in or outside Fukushima.

5) Number of participants who underwent the test outside nationally designated evacuation zones.

6) Duplication of participants has been reviewed.

7) Age at the time of the disaster.

Screening coverage by municipality in FY 2012 (Iwaki not fully covered) 31 March 2014

	Target Population 6)	Participants		Proportion (%)	Number and proportion of participants by age group 7)				Participants living outside Fukushima	Proportion (%)
			Screened outside Fukushima		0-5	6-10	11-15	16-18		
	a	b		b/a					c 4)	c/b
Fukushima	53,852	47,556	1,238	88.3	13,420	13,662	13,751	6,723	2,737	5.8
					87.6	96.4	91.9	71.5		
					28.2	28.7	28.9	14.1		
Nihonmatsu	10,243	8,814	171	86.0	2,524	2,592	2,637	1,061	236	2.7
					90.6	97.7	90.0	56.6		
					28.6	29.4	29.9	12.0		
Motomiya	6,147	5,252	109	85.4	1,546	1,566	1,503	637	142	2.7
					87.0	98.0	88.8	59.1		
					29.4	29.8	28.6	12.1		
Otama	1,620	1,372	18	84.7	448	396	384	144	26	1.9
					91.8	99.5	89.3	47.4		
					32.7	28.9	28.0	10.5		
Koriyama	65,586	54,951	2,119	83.8	16,264	16,204	16,142	6,341	3,208	5.8
					84.4	95.2	88.5	57.2		
					29.6	29.5	29.4	11.5		
Kori	2,058	1,831	33	89.0	488	529	547	267	36	2.0
					92.6	97.6	92.4	67.3		
					26.7	28.9	29.9	14.6		
Kunimi	1,557	1,386	29	89.0	346	388	441	211	22	1.6
					91.3	97.7	93.4	68.3		
					25.0	28.0	31.8	15.2		
Tenei	1,070	884	13	82.6	289	284	228	83	21	2.4
					94.4	99.0	81.4	42.1		
					32.7	32.1	25.8	9.4		
Shirakawa	12,590	11,203	284	89.0	3,086	3,215	3,501	1,401	286	2.6
					91.5	97.9	93.3	64.2		
					27.5	28.7	31.3	12.5		
Nishigo	4,021	3,662	83	91.1	1,099	1,070	1,036	457	87	2.4
					95.4	98.3	94.2	67.2		
					30.0	29.2	28.3	12.5		
Izumizaki	1,299	1,163	14	89.5	348	344	310	161	16	1.4
					95.9	97.5	92.0	65.4		
					29.9	29.6	26.7	13.8		
Miharu	2,879	2,531	38	87.9	692	722	737	380	56	2.2
					92.3	97.4	90.1	66.7		
					27.3	28.5	29.1	15.0		
Iwaki	342	341	0	99.7	32	179	130	0	0	0.0
					100.0	99.4	100.0	0.0		
					9.4	52.5	38.1	0.0		
Subtotal	163,264	140,946	4,149	86.3	40,582	41,151	41,347	17,866	6,873	4.9
					87.3	96.4	90.4	63.1		
					28.8	29.2	29.3	12.7		

Screening coverage by municipality in FY 2013 (Excluding the Aizu area) 31 March 2014

	Target Population 6)	Participants		Proportion (%)	Number and proportion of participants by age group 7)				Participants living outside Fukushima	Proportion (%)
			Screened outside Fukushima		0-5	6-10	11-15	16-18		
	a	b		b/a					c 4)	c/b
Iwaki	61,834	47,178	1,472	76.3	13,699 79.7 29.0	15,180 95.3 32.2	13,621 77.4 28.9	4,678 42.1 9.9	1,992	4.2
Sukagawa	14,828	11,045	216	74.5	3,563 82.4 32.3	3,910 96.8 35.4	2,737 69.2 24.8	835 33.3 7.6	273	2.5
Soma	6,798	4,991	205	73.4	1,642 83.0 32.9	1,635 92.3 32.8	1,278 69.3 25.6	436 36.2 8.7	310	6.2
Kagamiishi	2,508	1,875	32	74.8	612 83.0 32.6	677 97.6 36.1	457 67.9 24.4	129 31.9 6.9	43	2.3
Shinchi	1,429	1,097	59	76.8	339 86.9 30.9	376 95.7 34.3	294 71.7 26.8	88 37.3 8.0	50	4.6
Nakajima	1,076	724	6	67.3	222 82.2 30.7	268 95.7 37.0	201 63.6 27.8	33 15.7 4.6	9	1.2
Yabuki	3,273	2,294	42	70.1	846 86.2 36.9	809 5.1 35.3	535 3.0 23.3	104 0.9 4.5	49	2.1
Ishikawa	2,901	2,016	46	69.5	664 88.4 32.9	685 92.7 34.0	535 64.6 26.5	132 22.6 6.5	43	2.1
Yamatsuri	1,012	743	8	73.4	264 92.0 35.5	231 97.1 31.1	208 65.8 28.0	40 23.4 5.4	13	1.7
Asakawa	1,340	1,020	25	76.1	315 91.8 30.9	366 97.3 35.9	273 73.4 26.8	66 26.5 6.5	27	2.6
Hirata	1,212	773	12	63.8	262 79.2 33.9	276 92.6 35.7	191 55.7 24.7	44 18.3 5.7	7	0.9
Tanagura	3,035	2,141	31	70.5	743 83.9 34.7	727 96.4 34.0	553 62.3 25.8	118 23.3 5.5	41	1.9
Hanawa	1,662	1,131	23	68.1	362 86.8 32.0	376 96.7 33.2	320 60.3 28.3	73 22.5 6.5	22	1.9
Samegawa	690	491	10	71.2	169 96.0 34.4	164 96.5 33.4	122 65.6 24.8	36 22.8 7.3	12	2.4
Ono	1,928	1,167	24	60.5	376 75.7 32.2	456 93.4 39.1	270 47.8 23.1	65 17.2 5.6	22	1.9
Tamakawa	1,325	938	12	70.8	336 87.7 35.8	336 97.1 35.8	216 59.2 23.0	50 21.6 5.3	13	1.4
Furudono	1,041	752	17	72.2	251 87.2 33.4	233 96.7 31.0	218 69.2 29.0	50 25.4 6.6	18	2.4

Screening coverage by municipality in FY 2013 (Aizu area) 31 March 2014

	Target Population 6)	Participants		Proportion (%)	Number and proportion of participants by age group 7)				Participants living outside Fukushima	Proportion (%)
			Screened outside Fukushima		0-5	6-10	11-15	16-18		
	a	b		b/a					c 4)	c/b
Hinoemata	107	61	3	57.0	15	27	19	0	3	4.9
					65.2	90.0	55.9	0.0		
					24.6	44.3	31.1	0.0		
Minami-aizu	2,804	1,780	20	63.5	601	635	443	101	28	1.6
					84.5	93.8	53.2	17.3		
					33.8	35.7	24.9	5.7		
Kaneyama	203	134	4	66.0	34	49	46	5	4	3.0
					85.0	94.2	63.9	12.8		
					25.4	36.6	34.3	3.7		
Showa	129	101	0	78.3	37	38	25	1	4	4.0
					84.1	97.4	75.8	7.7		
					36.6	37.6	24.8	1.0		
Mishima	192	129	1	67.2	29	54	37	9	0	0.0
					67.4	98.2	69.8	22.0		
					22.5	41.9	28.7	7.0		
Shimogo	1,005	683	11	68.0	245	232	174	32	13	1.9
					91.8	92.4	59.6	16.4		
					35.9	34.0	25.5	4.7		
Kitakata	8,881	5,658	50	63.7	1,615	2,216	1,470	357	68	1.2
					70.6	95.5	57.2	20.9		
					28.5	39.2	26.0	6.3		
Nishiaizu	1,017	636	4	62.5	199	238	172	27	7	1.1
					93.0	97.1	51.5	12.1		
					31.3	37.4	27.0	4.2		
Tadami	707	488	3	69.0	159	169	146	14	2	0.4
					81.5	95.5	73.0	10.4		
					32.6	34.6	29.9	2.9		
Inawashiro	2,614	1,814	29	69.4	607	635	442	130	49	2.7
					85.7	96.5	60.3	25.2		
					33.5	35.0	24.4	7.2		
Bandai	618	413	6	66.8	131	160	95	27	7	1.7
					73.2	97.6	56.9	25.0		
					31.7	38.7	23.0	6.5		
Kitashiobara	557	381	5	68.4	142	137	92	10	4	1.0
					89.3	97.9	59.0	9.8		
					37.3	36.0	24.1	2.6		
Aizumisato	3,657	2,534	19	69.3	823	871	682	158	33	1.3
					89.7	95.8	62.2	21.5		
					32.5	34.4	26.9	6.2		
Aizubange	3,068	2,047	18	66.7	602	743	571	131	20	1.0
					79.0	93.6	59.7	23.6		
					29.4	36.3	27.9	6.4		
Yanaizu	589	374	3	63.5	127	129	102	16	3	0.8
					80.4	90.8	58.6	13.9		
					34.0	34.5	27.3	4.3		
Aizuwakamatsu	22,906	14,472	251	63.2	4,092	5,591	3,978	811	328	2.3
					65.5	94.1	60.8	19.4		
					28.3	38.6	27.5	5.6		
Yugawa	675	503	4	74.5	164	177	127	35	5	1.0
					91.6	100.0	66.5	27.3		
					32.6	35.2	25.2	7.0		
Subtotal	157,621	112,584	2,671	71.4	34,287	38,806	30,650	8,841	3,522	3.1
					79.1	95.2	68.4	30.9		
					30.5	34.5	27.2	7.9		
Total	368,651	295,511	8,845	80.2	86,083	91,707	84,409	33,312	17,634	6.0
					83.9	95.5	81.0	50.5		
					29.1	31.0	28.6	11.3		

Appendix 2

Thyroid Ultrasound Examination (TUE) coverage by prefecture

As of 31 March 2014

Prefecture	Number of test venues	Participants
Hokkaido	2	**324**
Aomori	1	**158**
Iwate	2	**184**
Miyagi	2	**1,482**
Akita	1	**204**
Yamagata	2	**430**
Ibaraki	2	**399**
Tochigi	5	**440**
Gunma	1	**182**
Saitama	1	**235**
Chiba	3	**269**
Tōkyō	10	**1,667**
Kanagawa	4	**611**
Niigata	1	**560**
Toyama	1	**24**
Ishikawa	1	**41**

Prefecture	Number of test venues	Participants
Fukui	1	**22**
Yamanashi	1	**82**
Nagano	2	**131**
Gifu	1	**43**
Shizuoka	2	**103**
Aichi	3	**160**
Mie	1	**38**
Shiga	1	**16**
Kyōto	2	**96**
Ōsaka	6	**202**
Hyōgo	2	**132**
Nara	1	**25**
Wakayama	1	**12**
Tottori	1	**15**
Shimane	1	**13**
Okayama	3	**76**

Prefecture	Number of test venues	Participants
Hiroshima	1	**36**
Yamaguchi	1	**24**
Tokushima	1	**10**
Kagawa	1	**29**
Ehime	1	**20**
Kōchi	1	**14**
Fukuoka	2	**73**
Saga	1	**7**
Nagasaki	2	**23**
Kumamoto	1	**25**
Ōita	1	**35**
Miyazaki	1	**35**
Kagoshima	1	**28**
Okinawa	1	**110**

Total	84	**8,845**

Participants underwent testing at venues outside Fukushima carried out either by Fukushima Medical University staff (twice in Niigata and Yamagata respectively, and once in Kanagawa) or by local specialists.

Appendix 3

Thyroid Ultrasound Examination (TUE) results by municipality

Confirmatory test results in FY 2011 (13 municipalities in the nationally designated zones) As of 31 March 2014

	Participants	Number confirmed b	Number by test results				Nodules		Cysts	
			Proportion (%)							
			A		B	C	Proportion (%)		Proportion (%)	
	a	Proportion (%) b/a (%)	A1	A2			≥5.1	≤5.0	≥20.1mm	≤20.0mm
Kawamata	2,240	2,237	1,532	697	8	0	8	17	0	685
		99.9	68.5	31.2	0.4	0.0	0.4	0.8	0.0	30.6
Namie	3,249	3,227	2,109	1,093	25	0	25	41	0	1,078
		99.3	65.4	33.9	0.8	0.0	0.8	1.3	0.0	33.4
Iitate	943	941	693	242	6	0	6	15	0	231
		99.8	73.6	25.7	0.6	0.0	0.6	1.6	0.0	24.5
Minami-soma	10,799	10,679	6,748	3,879	52	0	52	86	0	3,837
		98.9	63.2	36.3	0.5	0.0	0.5	0.8	0.0	35.9
Date	10,671	10,639	6,775	3,814	50	0	48	31	1	3,814
		99.7	63.7	35.8	0.5	0.0	0.5	0.3	0.0	35.8
Tamura	6,402	6,375	4,033	2,309	33	0	33	11	0	2,315
		99.6	63.3	36.2	0.5	0.0	0.5	0.2	0.0	36.3
Hirono	837	813	509	300	4	0	4	3	0	300
		97.1	62.6	36.9	0.5	0.0	0.5	0.4	0.0	36.9
Naraha	1,152	1,121	639	476	6	0	6	4	0	478
		97.3	57.0	42.5	0.5	0.0	0.5	0.4	0.0	42.6
Tomioka	2,278	2,227	1,314	901	12	0	12	6	0	901
		97.8	59.0	40.5	0.5	0.0	0.5	0.3	0.0	40.5
Kawauchi	280	277	154	119	4	0	4	1	0	119
		98.9	55.6	43.0	1.4	0.0	1.4	0.4	0.0	43.0
Okuma	1,972	1,936	1,124	798	14	0	14	7	0	795
		98.2	58.1	41.2	0.7	0.0	0.7	0.4	0.0	41.1
Futaba	942	925	559	363	3	0	3	3	0	362
		98.2	60.4	39.2	0.3	0.0	0.3	0.3	0.0	39.1
Katsurao	182	181	115	65	1	0	1	3	0	64
		99.5	63.5	35.9	0.6	0.0	0.6	1.7	0.0	35.4
Other areas	34	34	17	17	0	0	0	0	0	17
		100.0	50.0	50.0	0.0	0.0	0.0	0.0	0.0	50.0
Subtotal	41,981	41,612	26,321	15,073	218	0	216	228	1	14,996
		99.1	63.3	36.2	0.5	0.0	0.5	0.5	0.0	36.0

Fractions are rounded and may not total to 100%.

Confirmatory test results in FY 2012 (Iwaki not fully covered) As of 31 March 2014

	Participants	Number confirmed	Number by test results				Nodules		Cysts	
			Proportion (%)							
			A		B	C	Proportion (%)		Proportion (%)	
	a	Proportion (%) b/a (%)	A1	A2			≥5.1	≤5.0	≥20.1mm	≤20.0mm
Fukushima	47,556	47,114	26,890	19,948	276	0	269	192	3	19,964
		99.1	57.1	42.3	0.6	0.0	0.6	0.4	0.0	42.4
Nihonmatsu	8,814	8,717	5,126	3,538	52	1	52	43	1	3,539
		98.9	58.8	40.6	0.6	0.0	0.6	0.5	0.0	40.6
Motomiya	5,252	5,200	2,947	2,225	28	0	26	25	1	2,229
		99.0	56.7	42.8	0.5	0.0	0.5	0.5	0.0	42.9
Otama	1,372	1,360	811	542	7	0	7	8	0	542
		99.1	59.6	39.9	0.5	0.0	0.5	0.6	0.0	39.9
Koriyama	54,951	54,283	28,011	25,797	475	0	471	338	3	25,887
		98.8	51.6	47.5	0.9	0.0	0.9	0.6	0.0	47.7
Kori	1,831	1,809	997	800	12	0	12	9	0	801
		98.8	55.1	44.2	0.7	0.0	0.7	0.5	0.0	44.3
Kunimi	1,386	1,372	728	629	15	0	14	8	1	633
		99.0	53.1	45.8	1.1	0.0	1.0	0.6	0.1	46.1
Tenei	884	867	530	331	6	0	6	3	0	335
		98.1	61.1	38.2	0.7	0.0	0.7	0.3	0.0	38.6
Shirakawa	11,203	11,112	6,293	4,755	64	0	64	58	0	4,749
		99.2	56.6	42.8	0.6	0.0	0.6	0.5	0.0	42.7
Nishigo	3,662	3,632	2,107	1,495	30	0	30	20	0	1,496
		99.2	58.0	41.2	0.8	0.0	0.8	0.6	0.0	41.2
Izumizaki	1,163	1,154	523	626	5	0	5	10	0	623
		99.2	45.3	54.2	0.4	0.0	0.4	0.9	0.0	54.0
Miharu	2,531	2,508	1,190	1,301	17	0	17	14	0	1,302
		99.1	47.4	51.9	0.7	0.0	0.7	0.6	0.0	51.9
Iwaki	341	341	140	198	3	0	3	1	0	198
		100.0	41.1	58.1	0.9	0.0	0.9	0.3	0.0	58.1
Subtotal	140,946	139,469	76,293	62,185	990	1	976	729	9	62,298
		99.0	54.7	44.6	0.7	0.0	0.7	0.5	0.0	44.7

Confirmatory test results in FY 2013 As of 31 March 2014

	Participants a	Number confirmed b	Number by test results				Nodules		Cysts	
			Proportion (%)							
			A		B	C	Proportion (%)		Proportion (%)	
		Proportion (%) b/a (%)	A1	A2			≥5.1	≤5.0	≥20.1mm	≤20.0mm
Iwaki	47,178	46,713	20,560	25,749	404	0	403	266	1	25,852
		99.0	44.0	55.1	0.9	0.0	0.9	0.6	0.0	55.3
Sukagawa	11,045	10,921	4,956	5,883	82	0	82	48	0	5,908
		98.9	45.4	53.9	0.8	0.0	0.8	0.4	0.0	54.1
Soma	4,991	4,962	2,364	2,553	45	0	45	45	0	2,563
		99.4	47.6	51.5	0.9	0.0	0.9	0.9	0.0	51.7
Kagamiishi	1,875	1,866	878	981	7	0	7	6	0	982
		99.5	47.1	52.6	0.4	0.0	0.4	0.3	0.0	52.6
Shinchi	1,097	1,088	491	590	7	0	7	5	0	594
		99.2	45.1	54.2	0.6	0.0	0.6	0.5	0.0	54.6
Nakajima	724	719	326	391	2	0	2	7	0	389
		99.3	45.3	54.4	0.3	0.0	0.3	1.0	0.0	54.1
Yabuki	2,294	2,240	941	1,286	13	0	13	6	0	1,291
		97.6	42.0	57.4	0.6	0.0	0.6	0.3	0.0	57.6
Ishikawa	2,016	1,977	905	1,062	10	0	10	13	0	1,064
		98.1	45.8	53.7	0.5	0.0	0.5	0.7	0.0	53.8
Yamatsuri	743	734	286	445	3	0	3	3	0	443
		98.8	39.0	60.6	0.4	0.0	0.4	0.4	0.0	60.4
Asakawa	1,020	997	416	569	12	0	12	8	0	576
		97.7	41.7	57.1	1.2	0.0	1.2	0.8	0.0	57.8
Hirata	773	765	350	408	7	0	7	2	0	413
		99.0	45.8	53.3	0.9	0.0	0.9	0.3	0.0	54.0
Tanagura	2,141	2,106	910	1,174	22	0	22	10	0	1,183
		98.4	43.2	55.7	1.0	0.0	1.0	0.5	0.0	56.2
Hanawa	1,131	1,108	426	675	7	0	7	9	0	678
		98.0	38.4	60.9	0.6	0.0	0.6	0.8	0.0	61.2
Samegawa	491	482	223	256	3	0	3	4	0	256
		98.2	46.3	53.1	0.6	0.0	0.6	0.8	0.0	53.1
Ono	1,167	1,133	424	697	12	0	12	9	0	699
		97.1	37.4	61.5	1.1	0.0	1.1	0.8	0.0	61.7
Tamakawa	938	925	407	508	10	0	10	6	0	512
		98.6	44.0	54.9	1.1	0.0	1.1	0.6	0.0	55.4
Furudono	752	735	362	367	6	0	6	5	0	371
		97.7	49.3	49.9	0.8	0.0	0.8	0.7	0.0	50.5

Confirmatory test results in FY 2013 As of 31 March 2014

	Participants	Number confirmed	Number by test results				Nodules		Cysts	
			Proportion (%)				Proportion (%)		Proportion (%)	
			A		B	C				
	a	Proportion (%) b/a (%)	A1	A2			≥5.1	≤5.0	≥20.1mm	≤20.0mm
Hinoemata	61	56	23	33	0	0	0	3	0	31
		91.8	41.1	58.9	0.0	0.0	0.0	5.4	0.0	55.4
Minami-aizu	1,780	1,729	707	1,007	15	0	15	13	0	1,009
		97.1	40.9	58.2	0.9	0.0	0.9	0.8	0.0	58.4
Kaneyama	134	127	60	67	0	0	0	1	0	67
		94.8	47.2	52.8	0.0	0.0	0.0	0.8	0.0	52.8
Showa	101	101	56	45	0	0	0	0	0	45
		100.0	55.4	44.6	0.0	0.0	0.0	0.0	0.0	44.6
Mishima	129	122	35	86	1	0	1	0	0	87
		94.6	28.7	70.5	0.8	0.0	0.8	0.0	0.0	71.3
Shimogo	683	649	299	342	8	0	8	3	0	345
		95.0	46.1	52.7	1.2	0.0	1.2	0.5	0.0	53.2
Kitakata	5,658	4,431	1,595	2,810	26	0	26	29	0	2,810
		78.3	36.0	63.4	0.6	0.0	0.6	0.7	0.0	63.4
Nishiaizu	636	619	233	381	5	0	5	4	0	384
		97.3	37.6	61.6	0.8	0.0	0.8	0.6	0.0	62.0
Tadami	488	473	192	274	7	0	7	3	0	276
		96.9	40.6	57.9	1.5	0.0	1.5	0.6	0.0	58.4
Inawashiro	1,814	1,729	725	993	11	0	11	11	0	996
		95.3	41.9	57.4	0.6	0.0	0.6	0.6	0.0	57.6
Bandai	413	393	159	230	4	0	4	2	0	232
		95.2	40.5	58.5	1.0	0.0	1.0	0.5	0.0	59.0
Kitashiobara	381	365	149	215	1	0	1	3	0	215
		95.8	40.8	58.9	0.3	0.0	0.3	0.8	0.0	58.9
Aizumisato	2,534	2,370	981	1,369	20	0	20	15	0	1,377
		93.5	41.4	57.8	0.8	0.0	0.8	0.6	0.0	58.1
Aizubange	2,047	1,677	643	1,020	14	0	14	7	0	1,024
		81.9	38.3	60.8	0.8	0.0	0.8	0.4	0.0	61.1
Yanaizu	374	360	171	189	0	0	0	0	0	189
		96.3	47.5	52.5	0.0	0.0	0.0	0.0	0.0	52.5
Aizuwakamatsu	14,472	10,834	4,138	6,604	92	0	91	73	1	6,633
		74.9	38.2	61.0	0.8	0.0	0.8	0.7	0.0	61.2
Yugawa	503	469	177	287	5	0	5	2	0	289
		93.2	37.7	61.2	1.1	0.0	1.1	0.4	0.0	61.6
Subtotal	112,584	105,975	45,568	59,546	861	0	859	621	2	59,783
		94.1	43.0	56.2	0.8	0.0	0.8	0.6	0.0	56.4
Total	295,511	287,056	148,182	136,804	2,069	1	2,051	1,578	12	137,077
		97.1	51.6	47.7	0.7	0.0	0.7	0.5	0.0	47.8

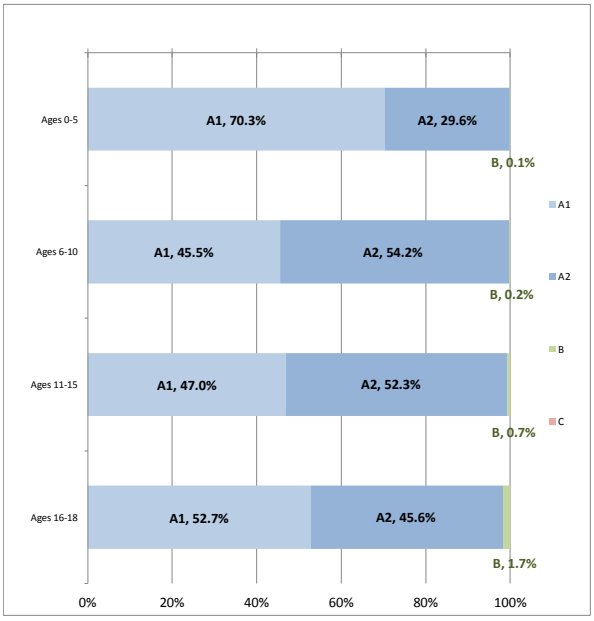
Appendix 4

4.1 Thyroid Ultrasound Examination (TUE) results by age and sex

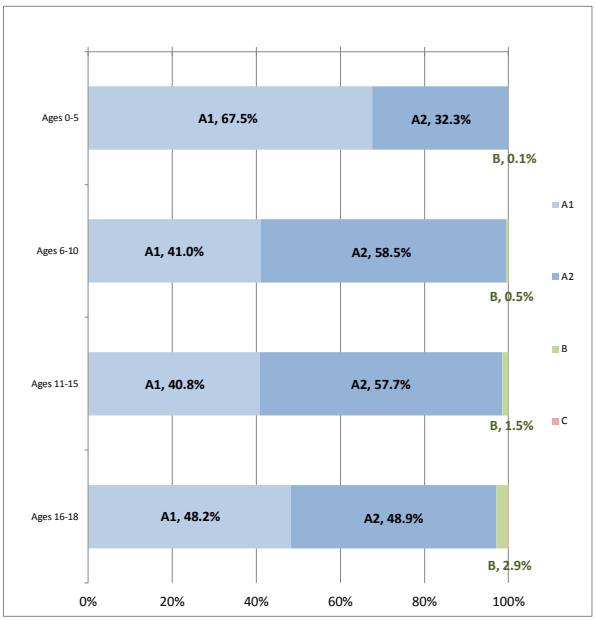
As of 31 March 2014 (last test on 21 February 2014)

Ages	A						B			C			Total		
	A1			A2											
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
0-5	29,774	27,190	56,964	12,560	13,015	25,575	39	53	92	0	0	0	42,373	40,258	82,631
6-10	21,318	18,208	39,526	25,407	25,971	51,378	114	232	346	0	0	0	46,839	44,411	91,250
11-15	19,384	16,576	35,960	21,590	23,469	45,059	299	604	903	0	0	0	41,273	40,649	81,922
16-18	7,720	8,012	15,732	6,669	8,123	14,792	249	479	728	0	1	1	14,638	16,615	31,253
Total	78,196	69,986	148,182	66,226	70,578	136,804	701	1,368	2,069	0	1	1	145,123	141,933	287,056

Test results by age group (Male)



Test results by age group (Female)



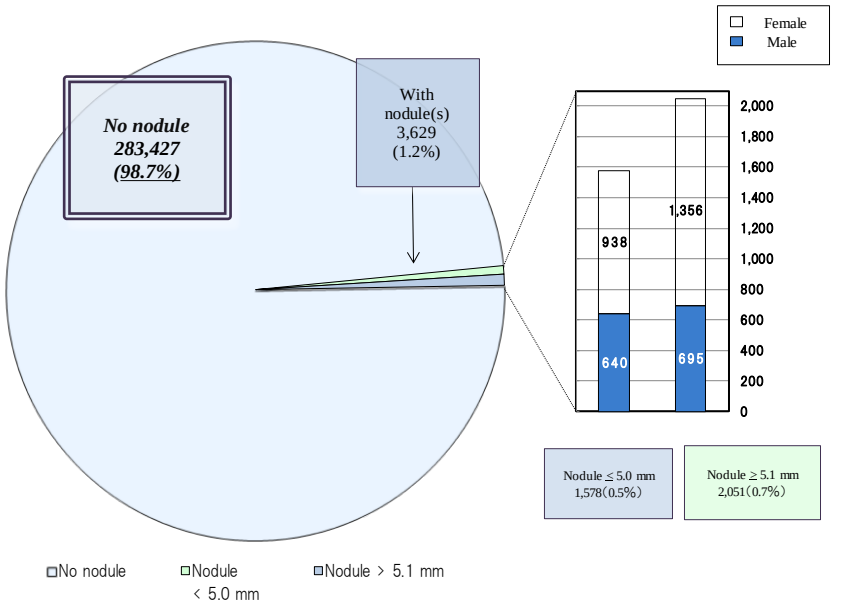
Percentages have been rounded and may not total to 100%.

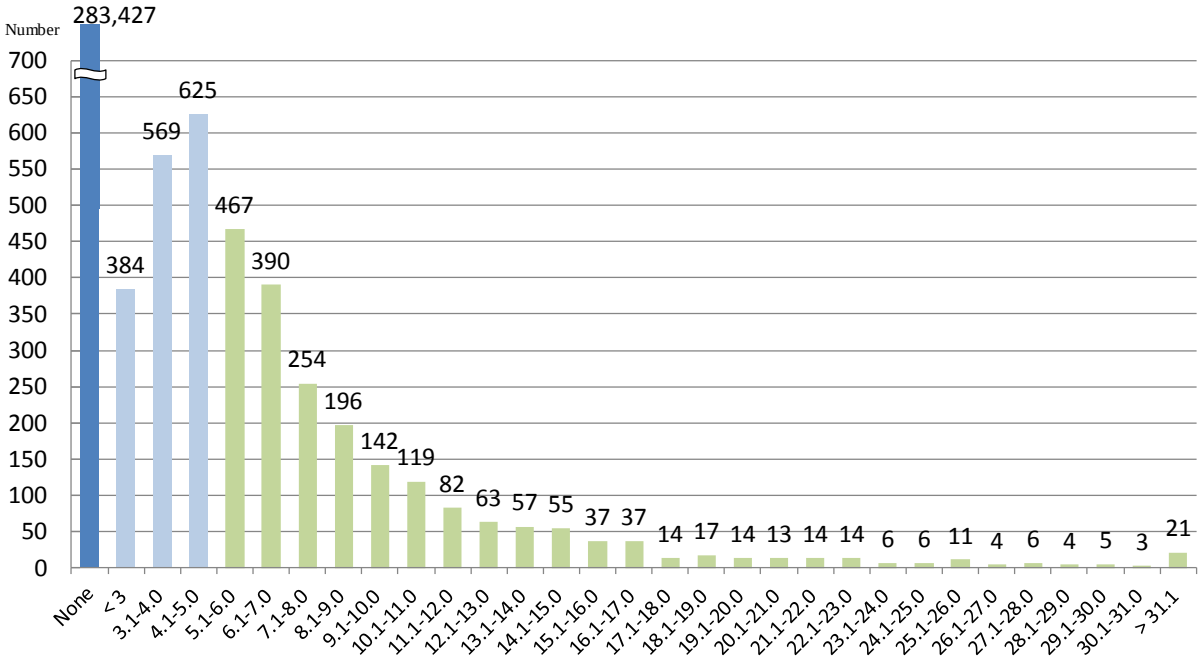
Ages are at the time of the disaster.

4.2 Nodule size

As of 31 March 2014 (last test on 21 February 2014)

Nodule size	Total	Male	Female	Test result	Proportion
None	283,427	143,788	139,639	A1	98.7%
< 3.0 mm	384	174	210	A2	0.5%
3.1-5.0 mm	1,194	466	728		
5.1-10.0 mm	1,449	521	928	B	0.7%
10.1-15.0 mm	376	107	269		
15.1-20.0 mm	119	35	84		
20.1-25.0 mm	53	16	37		
> 25.1 mm	54	16	38		
Total	287,056	145,123	141,933		

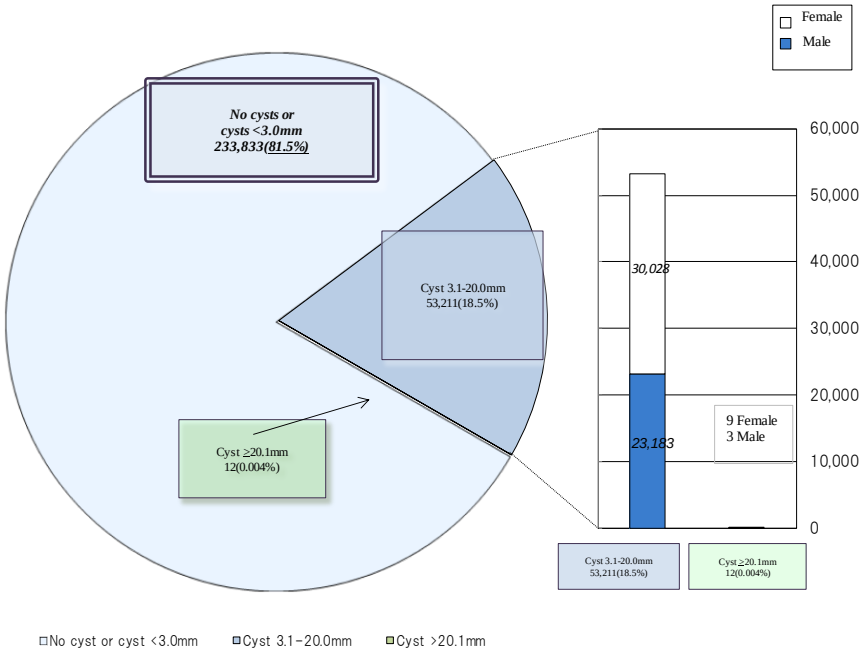


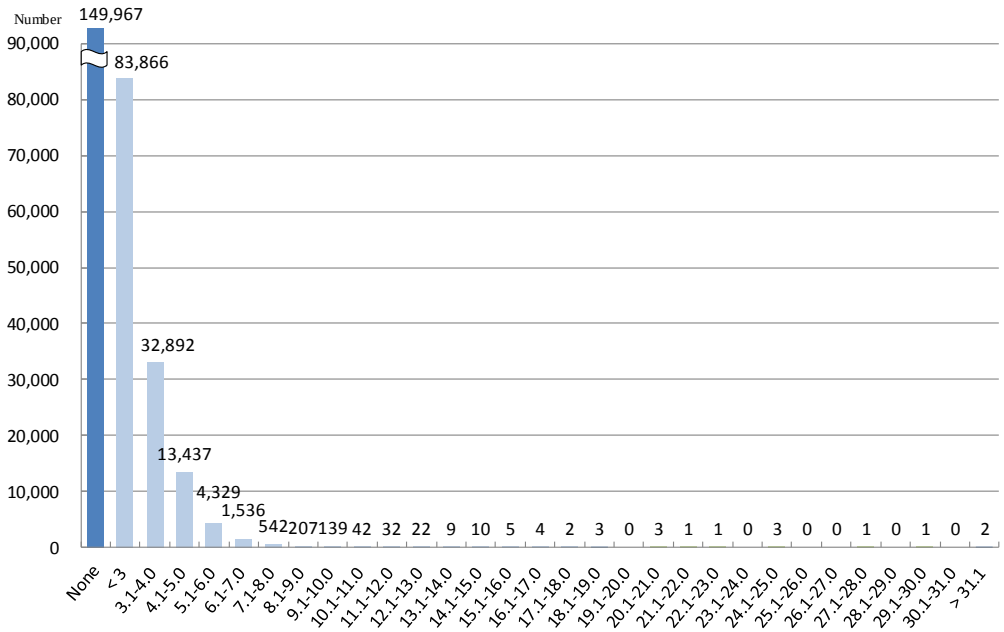


4.3 Cyst size

As of 31 March 2014 (last test on 21 February 2014)

Cyst size	Total	Male	Female	Class	%
None	149,967	78,886	71,081	A1(52.2%)	81.5%
< 3.0 mm	83,866	43,051	40,815	A2(47.8%)	18.5%
3.1-5.0 mm	46,329	20,737	25,592		
5.1-10.0 mm	6,753	2,406	4,347		
10.1-15.0 mm	115	39	76		
15.1-20.0 mm	14	1	13		
20.1-25.0 mm	8	1	7	B(0.004%)	0.004%
> 25.1 mm	4	2	2		
Total	287,056	145,123	141,933		





Appendix 5

Confirmatory test results by municipality

As of 31 March 2014

	Number of childern screened	Number who required confirmatory test	Number of children who underwent confirmatory test by age					Number of confirmed results					Cumulative number of confirmed results
			Total	Ages 0-5	Ages 6-10	Ages 11-15	Ages 16-18	Total	Next screening advised		Follow-up advised		
												Aspiration biopsy cytology	
	a	b	c	d	e	f	g	h	A1 i	A2 j	k	l	
		Proportion (%)	Proportion (%)	Proportion (%)	Proportion (%)	Proportion (%)	Proportion (%)	Proportion (%)	Proportion (%)	Proportion (%)	Proportion (%)	Proportion (%)	
Target municipalities for Confirmatory test in FY 2011													
Kawamata	2,240	8	8	0	1	3	4	7	1	0	6	5	24
		0.4	100.0	0.0	12.5	37.5	50.0	87.5	14.3	0.0	85.7	83.3	
Namie	3,249	25	23	1	3	7	12	23	1	4	18	12	57
		0.8	92.0	4.3	13.0	30.4	52.2	100.0	4.3	17.4	78.3	66.7	
Iitate	943	6	6	0	2	1	3	6	0	3	3	3	16
		0.6	100.0	0.0	33.3	16.7	50.0	100.0	0.0	50.0	50.0	100.0	
Minami-soma	10,799	52	48	6	5	16	21	48	4	11	33	19	112
		0.5	92.3	12.5	10.4	33.3	43.8	100.0	8.3	22.9	68.8	57.6	
Date	10,671	50	45	0	3	16	26	45	4	8	33	24	119
		0.5	90.0	0.0	6.7	35.6	57.8	100.0	8.9	17.8	73.3	72.7	
Tamura	6,402	33	26	1	3	14	8	24	0	3	21	13	64
		0.5	78.8	3.8	11.5	53.8	30.8	92.3	0.0	12.5	87.5	61.9	
Hirono	837	4	3	0	1	0	2	3	1	2	0	0	6
		0.5	75.0	0.0	33.3	0.0	66.7	100.0	33.3	66.7	0.0	0.0	
Naraha	1,152	6	5	1	0	1	3	5	0	2	3	1	11
		0.5	83.3	20.0	0.0	20.0	60.0	100.0	0.0	40.0	60.0	33.3	
Tomioka	2,278	12	11	0	1	5	5	11	0	2	9	7	27
		0.5	91.7	0.0	9.1	45.5	45.5	100.0	0.0	18.2	81.8	77.8	
Kawauchi	280	4	4	0	1	0	3	4	0	1	3	2	11
		1.4	100.0	0.0	25.0	0.0	75.0	100.0	0.0	25.0	75.0	66.7	
Okuma	1,972	14	11	0	1	5	5	10	1	4	5	2	24
		0.7	78.6	0.0	9.1	45.5	45.5	90.9	10.0	40.0	50.0	40.0	
Futaba	942	3	2	0	0	1	1	2	0	0	2	2	4
		0.3	66.7	0.0	0.0	50.0	50.0	100.0	0.0	0.0	100.0	100.0	
Katsurao	182	1	1	0	1	0	0	1	0	1	0	0	2
		0.5	100.0	0.0	100.0	0.0	0.0	100.0	0.0	100.0	0.0	0.0	
Other areas	34	0	0	0	0	0	0	0	0	0	0	0	0
		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0.	0.0	0.0	0.0	
Subtotal	41,981	218	193	9	22	69	93	189	12	41	136	90	477
		0.5	88.5	4.7	11.4	35.8	48.2	97.9	6.3	21.7	72.0	66.2	
Target municipalities for Confirmatory test in FY 2012													
Fukushima	47,556	276	262	5	28	105	124	253	12	62	179	91	638
		0.6	94.9	1.9	10.7	40.1	47.3	96.6	4.7	24.5	70.8	50.8	
Nihonmatsu	8,814	53	50	0	5	25	20	48	2	6	40	24	127
		0.6	94.3	0.0	10.0	50.0	40.0	96.0	4.2	12.5	83.3	60.0	
Motomiya	5,252	28	27	1	3	14	9	26	0	8	18	7	63
		0.5	96.4	3.7	11.1	51.9	33.3	96.3	0.0	30.8	69.2	38.9	
Otama	1,372	7	7	0	0	4	3	7	0	1	6	4	18
		0.5	100.0	0.0	0.0	57.1	42.9	100.0	0.0	14.3	85.7	66.7	
Koriyama	54,951	475	407	15	63	177	152	391	22	115	254	100	910
		0.9	85.7	3.7	15.5	43.5	37.3	96.1	5.6	29.4	65.0	39.4	
Kori	1,831	12	10	1	2	3	4	10	0	2	8	2	22
		0.7	83.3	10.0	20.0	30.0	40.0	100.0	0.0	20.0	80.0	25.0	
Kunimi	1,386	15	13	2	2	2	7	13	1	2	10	4	36
		1.1	86.7	15.4	15.4	15.4	53.8	100.0	7.7	15.4	76.9	40.0	
Tenei	884	6	5	1	2	1	1	5	1	2	2	0	13
		0.7	83.3	20.0	40.0	20.0	20.0	100.0	20.0	40.0	40.0	0.0	
Shirakawa	11,203	64	60	2	10	28	20	58	6	13	39	15	165
		0.6	93.8	3.3	16.7	46.7	33.3	96.7	10.3	22.4	67.2	38.5	
Nishigo	3,662	30	26	2	6	9	9	25	2	8	15	4	60
		0.8	86.7	7.7	23.1	34.6	34.6	96.2	8.0	32.0	60.0	26.7	
Izumizaki	1,163	5	5	0	2	0	3	5	1	2	2	1	14
		0.4	100.0	0.0	40.0	0.0	60.0	100.0	20.0	40.0	40.0	50.0	
Miharu	2,531	17	15	0	0	8	7	15	4	2	9	4	33
		0.7	88.2	0.0	0.0	53.3	46.7	100.0	26.7	13.3	60.0	44.4	
Iwaki (FY 2012)	341	3	2	0	0	2	0	2	1	0	1	0	4
		0.9	66.7	0.0	0.0	100.0	0.0	100.0	50.0	0.0	50.0	0.0	
Subtotal	140,946	991	889	29	123	378	359	858	52	223	583	256	2,103
		0.7	89.7	3.3	13.8	42.5	40.4	96.5	6.1	26.0	67.9	43.9	

h) Excluding participants who have not receive the test results.

As of 31 March 2014

	Number of childern screened	Number who required confirmatory test	Number of children who underwent confirmatory test by age					Number of confirmed results					Cumulative number of confirmed results
			Total	Ages 0-5	Ages 6-10	Ages 11-15	Ages 16-18	Total	Next screening advised		Follow-up advised		
												Aspiration biopsy cytology	
	a	b	c	d	e	f	g	h	A1 i	A2 j	k	l	
		Proportion (%)	Proportion (%)	Proportion (%)	Proportion (%)	Proportion (%)	Proportion (%)	Proportion (%)	Proportion (%)	Proportion (%)	Proportion (%)	Proportion (%)	
Target municipalities for Confirmatory test in FY 2013													
Iwaki (FY 2013)	47,178	404	342	19	55	176	92	313	17	106	190	57	721
		0.9	84.7	5.6	16.1	51.5	26.9	91.5	5.4	33.9	60.7	30.0	
Sukagawa	11,045	82	80	6	16	39	19	76	7	29	40	8	165
		0.7	97.6	7.5	20.0	48.8	23.8	95.0	9.2	38.2	52.6	20.0	
Soma	4,991	45	40	2	9	19	10	38	3	15	20	6	85
		0.9	88.9	5.0	22.5	47.5	25.0	95.0	7.9	39.5	52.6	30.0	
Kagamiishi	1,875	7	6	0	4	2	0	6	0	0	6	1	13
		0.4	85.7	0.0	66.7	33.3	0.0	100.0	0.0	0.0	100.0	16.7	
Shinchi	1,097	7	7	0	3	3	1	6	0	0	6	3	16
		0.6	100.0	0.0	42.9	42.9	14.3	85.7	0.0	0.0	100.0	50.0	
Nakajima	724	2	2	0	0	1	1	2	0	0	2	1	4
		0.3	100.0	0.0	0.0	50.0	50.0	100.0	0.0	0.0	100.0	50.0	
Yabuki	2,294	13	10	0	2	6	2	9	0	3	6	1	20
		0.6	76.9	0.0	20.0	60.0	20.0	90.0	0.0	33.3	66.7	16.7	
Ishikawa	2,016	10	10	0	4	4	2	7	0	0	7	3	22
		0.5	100.0	0.0	40.0	40.0	20.0	70.0	0.0	0.0	100.0	42.9	
Yamatsuri	743	3	2	0	0	1	1	2	0	0	2	0	4
		0.4	66.7	0.0	0.0	50.0	50.0	100.0	0.0	0.0	100.0	0.0	
Asakawa	1,020	12	10	1	1	5	3	9	0	2	7	1	21
		1.2	83.3	10.0	10.0	50.0	30.0	90.0	0.0	22.2	77.8	14.3	
Hirata	773	7	7	0	4	2	1	6	1	1	4	1	16
		0.9	100.0	0.0	57.1	28.6	14.3	85.7	16.7	16.7	66.7	25.0	
Tanagura	2,141	22	21	2	5	8	6	18	2	2	14	5	47
		1.0	95.5	9.5	23.8	38.1	28.6	85.7	11.1	11.1	77.8	35.7	
Hanawa	1,131	7	6	0	1	3	2	2	0	0	2	0	10
		0.6	85.7	0.0	16.7	50.0	33.3	33.3	0.0	0.0	100.0	0.0	
Samegawa	491	3	1	0	0	0	1	1	0	0	1	0	2
		0.6	33.3	0.0	0.0	0.0	100.0	100.0	0.0	0.0	100.0	0.0	
Ono	1,167	12	11	1	1	5	4	10	0	3	7	0	21
		1.0	91.7	9.1	9.1	45.5	36.4	90.9	0.0	30.0	70.0	0.0	
Tamakawa	938	10	8	1	2	2	3	5	0	1	4	0	15
		1.1	80.0	12.5	25.0	25.0	37.5	62.5	0.0	20.0	80.0	0.0	
Furudono	752	6	6	0	1	4	1	5	0	1	4	1	12
		0.8	100.0	0.0	16.7	66.7	16.7	83.3	0.0	20.0	80.0	25.0	
Hinoemata	61	0	0	0	0	0	0	0	0	0	0	0	0
		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Minami-aizu	1,780	15	13	0	6	6	1	9	1	1	7	2	24
		0.8	86.7	0.0	46.2	46.2	7.7	69.2	11.1	11.1	77.8	28.6	
Kaneyama	134	0	0	0	0	0	0	0	0	0	0	0	0
		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Showa	101	0	0	0	0	0	0	0	0	0	0	0	0
		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Mishima	129	1	1	0	1	0	0	0	0	0	0	0	1
		0.8	100.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Shimogo	683	8	6	0	1	5	0	4	0	2	2	1	11
		1.2	75.0	0.0	16.7	83.3	0.0	66.7	0.0	50.0	50.0	50.0	
Kitakata	5,658	26	19	0	9	8	2	9	1	3	5	0	32
		0.5	73.1	0.0	47.4	42.1	10.5	47.4	11.1	33.3	55.6	0.0	
Nishiaizu	636	5	4	0	2	1	1	2	0	0	2	0	6
		0.8	80.0	0.0	50.0	25.0	25.0	50.0	0.0	0.0	100.0	0.0	
Tadami	488	7	6	0	3	3	0	2	0	1	1	0	8
		1.4	85.7	0.0	50.0	50.0	0.0	33.3	0.0	50.0	50.0	0.0	
Inawashiro	1,814	11	8	1	1	5	1	4	0	2	2	0	12
		0.6	72.7	12.5	12.5	62.5	12.5	50.0	0.0	50.0	50.0	0.0	
Bandai	413	4	2	1	0	1	0	0	0	0	0	0	2
		1.0	50.0	50.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	
Kitashiobara	381	1	1	1	0	0	0	0	0	0	0	0	1
		0.3	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Aizumisato	2,534	20	5	0	2	3	0	0	0	0	0	0	5
		0.8	25.0	0.0	40.0	60.0	0.0	0.0	0.0	0.0	0.0	0.0	
Aizubange	2,047	14	6	2	2	2	0	0	0	0	0	0	7
		0.7	42.9	33.3	33.3	33.3	0.0	0.0	0.0	0.0	0.0	0.0	
Yanaizu	374	0	0	0	0	0	0	0	0	0	0	0	0
		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Aizuwakamatsu	14,472	92	31	0	8	23	0	6	1	2	3	0	38
		0.6	33.7	0.0	25.8	74.2	0.0	19.4	16.7	33.3	50.0	0.0	
Yugawa	503	5	1	0	1	0	0	0	0	0	0	0	1
		1.0	20.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Subtotal	112,584	861	672	37	144	337	154	551	33	174	344	91	1,342
		0.8	78.0	5.5	21.4	50.1	22.9	82.0	6.0	31.6	62.4	26.5	
Total	295,511	2,070	1,754	75	289	784	606	1,598	97	438	1,063	437	3,922
		0.7	84.7	4.3	16.5	44.7	34.5	91.1	6.1	27.4	66.5	41.1	

Implementation status of the Fukushima health survey:

'Comprehensive Health Check'

1. Purpose

The Fukushima Daiichi Nuclear Power Plant accident caused by the Great East Japan Earthquake in March 2011 led to a large-scale evacuation of residents in surrounding areas, especially the government-designated Evacuation Zones and Evacuation Warning Zones. Many of the Fukushima evacuees have since been concerned about their own health due primarily to the sudden and notable changes in their lifestyle, diet and exercise habits, in addition to the loss of opportunity to undergo the Comprehensive Health Check.

In order to ensure its residents' health affected by the nuclear incident, the residents need to know current health status of their own. This is essential for not only prevention of lifestyle diseases, but also early detection and early treatment of various illnesses. To this end, the Comprehensive Health Check is available for all residents of the Evacuation Zones.

2. Target population

Residents of the Evacuation Zones at the time of designation in 2011, as well as those determined to require the service based on the Basic Survey.

【Evacuation Zones】
All parts of Tamura, Minami-soma, Kawamata, Hirono, Naraha, Tomioka, Kawauchi, Okuma, Futaba, Namie, Katsurao and Iitate.
A part of Date (areas containing specific spots recommended for evacuation).

3. Implementation status

(1) Items of the Comprehensive Health Check

Examination items have been selected for each age group in order to allow residents of the Evacuation Zones to know their own health status, which is essential for not only prevention of lifestyle diseases but also early detection and early treatment of various illnesses.

For those aged 16 years and older, the examination items based on Article 20, the 'Specific Comprehensive Health Check,' in accordance with those of "the Act on Assurance of Medical Care for Elderly People (Act No. 80, 1982)," will be implemented, including other additional items (hereafter referred to as the 'additional items') such as complete blood count.

【Examination items by age group】

Age group	Examination items
0 – 6 years (preschool children and infants)	Height, body weight, complete blood count (red blood cell count (RBC), hematocrit, hemoglobin, platelet count, white blood cell count (WBC), differential WBC count)
7 – 15 years (1st year primary school – 3rd year junior high school)	Height, body weight, blood pressure, complete blood count (RBC count, hematocrit, Hemoglobin, platelet count, WBC count, differential WBC count) [Additional items tested on request] Blood biochemistry (AST, ALT, γ-GT, TG, HDL-C, LDL-C, HbA_1c, fasting blood glucose, serum creatinine, uric acid)
≥16 years	Height, body weight, abdominal circumference (BMI), blood pressure, complete blood count (RBC count, hematocrit, hemoglobin, platelet count, WBC count, differential WBC count), urine test (uric blood, urine protein, urine sugar), blood biochemistry (AST, ALT, γ-GT, TG, HDL-C, LDL-C, HbA_1c, fasting blood glucose, <u>serum creatinine, eGFR, uric acid)</u> * Underlined items are additional check items which are generally not included in the Specific Comprehensive Health.Check

(2) Implementation status

Procedures for implementing the Comprehensive Health Check have been established to make the most of the existing medical checkup system, in consideration with the convenience for examinees that are forced to evacuate their homes, often ending up outside Fukushima.

【Residents staying in Fukushima】

For eligible residents aged 16 years and older, the Specific Comprehensive Health Check organized by municipal governments with the additional checkup items was conducted so that they can have the existing health checkups, "the Comprehensive Health Check," and the health survey for the prefectural residents all at once. For those who missed the chance, the Comprehensive Health Check was offered in the form of a mass health checkup at 24 sites in Fukushima, 69 times in total. Additionally, a total of 510 collaborating medical institutions in Fukushima agreed to provide the Comprehensive Health Check and made it available to eligible residents around the time of mass medical examinations.

For those aged 15 years and younger, pediatric expertise was needed to treat diseases specific to pediatric patients, and thus the Comprehensive Health Check was conducted with the aid of pediatricians at 104 institutions in Fukushima.

【Residents staying outside Fukushima】

For eligible residents staying outside Fukushima, the Comprehensive Health Check was made available at a total of 951 collaborating medical institutions outside Fukushima. Of these, 453 institutions offered the service to those aged 16 years and older, 133 institutions with pediatric capabilities did so to those aged 15 years and younger, while 365 institutions did so to both age groups.

【Implementation between FY 2011 and FY 2013】

Implementation Status of the Fukushima health survey: 'Comprehensive Health Check' FY 2011–2013

(Units: persons, %)

Classification			FY2011 (confirmed results Sep 11, 2012)			FY2012 (confirmed results Jul 5, 2013)			FY2013 (preliminary results Mar 31, 2014)		
			Age group		Total	Age group		Total	Age group		Total
			≤15 years	≥16 years	All ages	≤15 years	≥16 years	All ages	≤15 years	≥16 years	All ages
Number of eligible residents			27,819	182,370	210,189	27,077	184,910	211,987	26,474	186,970	213,444
Number of residents examined	≤15 years	Pediatric-inside†	15,002	-	15,002	9,534	-	9,534	8,430	-	8,430
		Pediatric-outside†	2,949	-	2,949	2,283	-	2,283	1,822	-	1,822
		Redundant cases ††	17	-	17	37	-	37	※3	-	※3
		Subtotal excl. redundant cases	17,934	-	17,934	11,780	-	11,780	10,252	-	10,252
	≥16 years	Municipal multiphasic	-	8,798	8,798	-	23,907	23,907	-	25,608	25,608
		Individual-inside	-	-	-	-	6,692	6,692	-	5,782	5,782
		Mass-inside	-	41,949	41,949	-	10,603	10,603	-	6,767	6,767
		Individual-outside	-	3,815	3,815	-	3,055	3,055	-	3,205	3,205
		Other ※1, ※2	-	2,045	2,045	-	3,206	3,206	-	2,018	2,018
		Redundant cases ††	-	208	208	-	454	454	-	※3	※3
		Subtotal excl. redundant cases	-	56,399	56,399	-	47,009	47,009	-	43,380	43,380
	Total excluding redundant cases		17,934	56,399	74,333	11,780	47,009	58,789	10,252	43,380	53,632
Examination rate (%)			64.5	30.9	35.4	43.5	25.4	27.7	38.7	23.2	25.1

† Inside/outside: Inside or outside Fukushima Prefecture.

†† Inside/outside: Both inside and outside Fukushima Prefecture

*1: Others (inside Fukushima; cases contracted by municipal government to a local association or institution).

*2: Others (outside Fukushima; cases contracted by municipal government to a medical examination agency).

*3: Not finalized (still being assessed due to redundancy etc.).

4. Evaluation of status

In the ≥16-year age group, 23.2% of the eligible residents underwent the health checkup in FY 2013, down from 30.9% in FY 2011 by 7.7 points and from 25.4% in FY 2012 by 2.2 points. Likewise in the ≤15-year age group, the examination rate was 38.7% in FY 2013, down from 64.5% in FY 2011 by 25.8 points and from 43.5% in FY 2012 by 4.8 points.

One possible reason behind such marked declines is that the annual Comprehensive Health Check has become widely accepted since its initiation in 2011, creating a sense of security and a resultant lack of urgency among the eligible residents. Concerning the mass checkup conducted by Fukushima Medical University, residents had to apply for an examination date of their choice in advance, but the application deadline was too early for some residents to be in time.

Considering the above situations, in order to achieve a higher examination rate, it is of our intention to extend our application deadline and continue to provide quality services from FY 2014 and also take the following measures:

◆ Sending of reminders

We will effectively enhance our publicity activities in collaboration with municipal Public Health Departments, while continuing on from last year to send out reminders

even after the start of the examination period.

◆ Holding community meetings

Continuing on from FY 2012 and 2013, we will host community-level, general health consultation meetings at more venues to raise awareness for health.

◆ Preparation of a pamphlet about how to interpret examination results

We will produce a pamphlet outlining approaches to healthy lifestyle to be enclosed with the examination results.

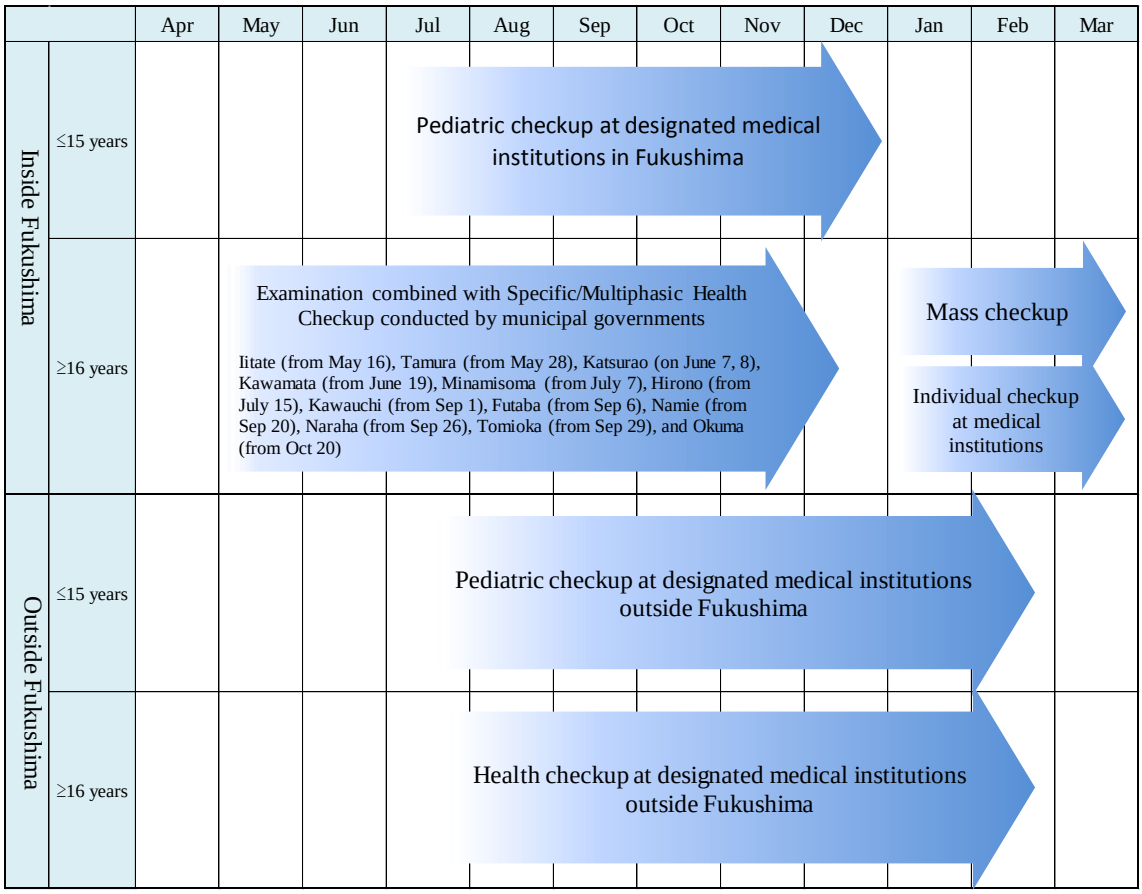
5. Implementation plan for FY 2014

【Residents staying in Fukushima】

Continuing on from FY 2013, the additional examination items will be made available for eligible residents at the Specific Health Check or the Multiphasic Health Checkup provided by municipal governments. At the same time, we will conduct mass as well as individual health checkups at medical institutions, while striving to start pediatric checkups at an earlier date (expected to start in July).

【Residents staying outside Fukushima】

Continuing on from FY 2013, we will aim to expand the number of institutions providing the services outside Fukushima, as well as to start the examination period at an earlier date (expected to start in the summer).



6. Analysis of interannual data

Continuing on from FY 2013, we will analyze the results of health checkups, continueing to reflect analysis-related requests from municipal governments.

Outline of Mental Health and Lifestyle Survey for FY 2012
Reported on 19 May 2014

1. Purpose

Based on the results of Mental Health and Lifestyle Survey for FY 2011[1], we have conducted Mental Health and Lifestyle Survey for FY 2012 to convey a strong message of ongoing care and support to the participants, and to provide further support by understanding the changes in their situation that have occurred as well as the causes of these changes.

2. Method

2.1 Group

The group of the FY 2012 survey were residents of nationally designated evacuation zones as of 11 March 2011 and born before 1 April 2012. Specifically, there were 211,615 who were registered residents of the following municipalities: Hirono, Naraha, Tomioka, Kawauchi, Okuma, Futaba, Namie, Katsurao, Iitate, Minamisoma, Tamura, Kawamata, and part of Date (the area with a specific spot recommended for evacuation).

Age 0-3 Survey:	4,625 participants born between April 2, 2009 and April 1, 2012.
Age 4-6 Survey:	5,047 participants born between April 2, 2006 and April 1, 2009.
Primary School Survey:	11,413 participants born between April 2, 2000 and April 1, 2006.
Middle School Survey:	6,023 participants born between April 2, 1997 and April 1, 2000.
General Survey:	184,507 participants born on or before April 1, 1997.

2.2 Survey Methods

Survey sheets (self-report or guardian response) were mailed to the aforementioned participants, according to the aforementioned classifications.

2.3 Data Tabulation Period

Data tabulation period lasted from February 7, 2013 to October 31, 2013.

2.4 Number of Respondent and Number of Valid Responses

The number of respondents (response rate) was 2,143 (46.3%) for the Age 0-3 Survey, 2,231 (44.2%) for the Age 4-6 Survey, 4,703 (41.2%) for the Primary School Survey, 2,126 (35.3%) for the Middle School Survey, and 55,076 (29.9%) for the General Survey.

The number of valid responses (valid response rate) was 2,143 (46.3%) for the Age 0-3 Survey, 2,230 (44.2%) for the Age 4-6 Survey, 4,683 (41.0%) for the Primary School Survey, 2,118 (35.3%) for the Middle School Survey, and 55,064 (29.8%) for the General Survey. There were cases among the aforementioned number of the respondents where the surveys were submitted blank, and these were excluded from the data tabulation. There were also cases among the responses where one respondent submitted multiple surveys. In these cases, only one survey per person was included in the data tabulation.

The results for each item were totaled by each survey sheet. Due to missing values in certain items, the totals may not be consistent with the aforementioned number of valid responses.

3. Results

3.1 Age 0-3

- While non-school age children were classified as Group 1 in the FY 2011 survey, they were classified and totalled as Age 0-3 or Age 4-6 in the FY 2012 survey.
- Of 4,625 respondents, there were 2,143 (46.3%) valid responses.
- Regarding the children's health conditions, there was a generally favorable result, with 98.5% of responses indicating no particular issues ('Extremely good', 'Good', 'Normal'). However, 1.5% responded indicating that there were issues ('Bad', 'Extremely bad').
- Average sleeping time was 9:09 p.m. and average waking time was 7:08 a.m. Length of sleep was 10 hours and 0 minutes on average. 87.2% responded that they took naps, with average napping time of 1 hour and 54 minutes. The length of sleep is almost the same as that of their coevals (3-year-old children) in the national survey.[2]

3.2 Age 4-6

- Of 5,047 respondents, there were 2,230 (44.2%) valid responses.
- Regarding the children's health conditions, there was a generally favorable result, with 98.2% of responses indicating no particular issues ('Extremely good', 'Good', 'Normal'), which was almost the same as the FY 2011 survey (97.8%). 1.8% responded 'Bad', and there were no responses of 'Extremely bad'.
- In the survey on children's affect and behavior (SDQ Japanese Edition), 16.5% of the 2,221 valid respondents scored 16 or higher, the screening score from the preceding study, and 5.9% scored 20 or higher, the initial support standard. Compared to the FY 2011 Survey (24.4% scoring 16 or higher, 11.3% scoring 20 or higher), there was an improving tendency in score distribution, with the number scoring 16 or higher decreasing to about 2/3, and the number scoring 20 or higher decreasing to about half.

  For boys, of the 1,119 valid respondents, 18.4% scored 16 or higher, and 7.0% scored 20 or higher, while for girls, of the 1,102 valid respondents, 14.5% scored 16 or higher, and 4.8% scored 20 or higher. This tendency for girls to score lower was similar to the FY 2011 survey.
- Average length of sleep was 9 hours and 45 minutes, and average length of naps was 1 hour and 33 minutes. Length of sleep was almost the same as the FY 2011 survey. While length of naps appeared to have decreased, we cannot make a simple comparison since the FY 2011 survey totalized children from age 0 to 6. The length of sleep is almost the same as that of their coevals (5-year-old children) in the national survey.[2]

3.3 Primary School

- Of 11,413 respondents, there were 4,683 (41.0%) valid responses.
- Regarding health conditions, there was a generally favorable result following the FY 2011 survey (97.1%), with 98.0% of responses indicating no particular issues ('Extremely good', 'Good', 'Normal'). On the other hand, 2.0% indicated issues, and responded either 'Bad' (1.9%) or 'Extremely Bad' (0.1%).
- Regarding SDQ scores, of the 4,673 valid respondents, 16.3% scored 16 or higher and 6.4% scored 20 or higher. These ratios are almost the same as the Age 4-6 group, and the ratio of high scores has decreased compared to the FY 2011 survey (22.0% scoring 16 or higher, 10.9% scoring 20 or higher), demonstrating an improving tendency.
- Considering boys and girls separately, 19.1% of boys scored 16 or higher, and 7.8% scored 20 or higher, while 13.2% of girls scored 16 or higher, and 4.9% scored 20 or higher, showing that girls tended to score lower. This tendency is identical to the FY 2011 survey.
- Length of sleep averaged 8 hours and 53 minutes. This is about 20 minutes longer compared to the FY 2011 survey (8 hours and 36 minutes), and was almost identical to the national survey.[3]

- Regarding fitness habits, fewer than half of respondents (45.1%) responded that they rarely exercise outside of physical education, which is an improvement since the FY 2011 survey (53.0%). However, compared to the report from the national survey,[4] where the group that responded that they occasionally or never exercise outside of physical education classes in school consisted of 10.9% of boys and 21.6% of girls, fitness habits are still insufficient.

3.4 Middle School

- Of 6,023 participants, there were 2,118 (35.2%) valid responses.
- Regarding health conditions, there was a generally favorable result, with 96.6% of responses indicating no particular issues ('Extremely good', 'Good', 'Normal'). On the other hand, 3.4% indicated issues, and responded either 'Bad' (2.8%) or 'Extremely bad' (0.6%).
- Regarding SDQ scores, of the 2,094 valid respondents, 12.3% scored 16 or higher and 6.2% scored 20 or higher. The percentage scoring 16 or higher was lower than the Age 4-6 and Primary School groups. Furthermore, the ratio has decreased compared to the FY 2011 survey (16.2% scoring 16 or higher, 7.7% scoring 20 or higher), demonstrating an improving tendency.
  Considering boys and girls separately, for boys, of the 1,035 valid respondents, 12.6% scored 16 or higher, and 6.6% scored 20 or higher, while 12.1% of girls scored 16 or higher, and 5.9% scored 20 or higher, and no gender differences were found.
- Length of sleep averaged 7 hours and 9 minutes. This is about 15 minutes longer compared to the FY 2011 survey (6 hours and 53 minutes), and was almost the same as the national survey[3] (7 hours and 14 minutes).
- Regarding fitness habits, 34.3% responded that they rarely exercise outside of physical education, which is an improvement from the FY 2011 survey (47.0%). However, compared to the results from the national survey,[5] where the group that responded that they occasionally or never exercise consisted of 9.3% of boys and 29.1% of girls, fitness habits are still insufficient.

General Summary of Children

The SDQ was used as an indicator to evaluate children's mental health. Similar to the FY 2011 survey, the percentage of people scoring 16 or higher on the SDQ was high for all groups compared to the percentage (9.5%) in preceding research[6] that used the general population in unaffected areas of Japan. Regardless, the ratio of SDQ high scores declined in all age groups compared to the FY 2011 survey, indicating a recovering trend for mental health. Length of sleep was also extended in all age groups compared to the FY 2011 survey, ascertaining that they are approaching the length of sleep in the preceding research. In regards to fitness habits, the ratio of the group that rarely exercises is in a declining tendency, but it was indicated that fitness habits are still insufficient compared to the national survey, though a direct comparison is difficult due to differing survey contents.

3.5 General (people born on or before April 1, 1997)

3.5-1 Mental Health

- General mental health conditions (K6) apply to 3.0% of Japanese regional residents in normal times if a score of 13 is used as the cut-off value.[7] If trauma responses (PCL) scores of $\geq$44 or $\geq$50 are used as the cut-off value, rescue workers after the New York terrorist attacks in the USA apply to 20.1% or 11.1% respectively.[8] Using these preceding studies as reference, physicians and other professionals of Fukushima Medical University defined the standards for requiring support to be a score of 17 or higher on the K6, and 61 or higher on the PCL.
- 11.7% scored 13 or higher on the K6, showing that scores had decreased compared to the FY 2011 survey, but are still high compared to the ratio of people scoring higher than the cutoff value during normal times. In contrast to 9.8% of males scoring 13 or higher, 13.2% of females scored 13 or higher. Considering the age groups differently, 13.8% of respondents of 70 years or older scored 13

or higher, while 7.6% of respondents aged 10-19 years scored 13 or higher. These tendencies were similar to the FY 2011 survey.
- On the PCL, 17.4% scored 44 or higher, which was relatively low compared to the FY 2011 survey, but still very high. The gender and age tendencies were similar to those of the K6.

3.5-2 Lifestyle

- 17.9% of respondents evaluated their own health (subjective sense of well-being) as being 'Bad' or 'Extremely bad', and this ratio has decreased compared to the FY 2011 survey.
- 23.9% 'gained 3 kg or more' of body weight after the earthquake, while 14.8% 'lost 3 kg or more'. The percentage of people who gained weight was higher.
- 62.4% of respondents were dissatisfied with their sleep, but this percentage has decreased since the FY 2011 survey.
- 47.3% of respondents rarely exercised, showing that compared to the FY 2011 survey (50.9%), the percentage of people with fitness habits have increased.
- The percentage of current smokers was 20.4%, nearly identical to the FY 2011 survey (20.7%). The percentage of current drinkers was 43.6%, nearly identical to the 2011 survey (44.1%), and the percentage of heavy drinkers (drinking at least 360 ml per day) was also nearly identical to the FY 2011 survey (9.6%), at 9.9%.

References

1) Yabe H, et al. Psychological distress after the Great East Japan Earthquake and Fukushima Daiichi Nuclear Power Plant Accident: Results of a mental health and lifestyle survey through the Fukushima Health Management Survey in FY2011 and FY2012. Fukushima Journal of Medical Science (in press).
2) Muto Takashi, et al. Report on Home Education from Preschool to Grade 1 (2012) Benesse Education Research and Development Institute.
http://berd.benesse.jp/jisedai/research/detail1.php?id=3200
3) 2010 Children's Health Status Surveillance Business Report (2010) Japanese Society of School Health.
http://www.gakkohoken.jp/modules/books/index.php?fct=photo&p=135
4) Results and Characteristics of the 2012 National Survey on Physical and Athletic Ability, and Fitness Habits (Primary School) (2012) Ministry of Education, Culture, Sports, Science and Techology,
http://www.mext.go.jp/component/a_menu/sports/detail/__icsFiles/afieldfile/2013/04/15/1333075_6.pdf
5) Results and Characteristics of the 2012 National Survey on Physical and Athletic Ability, and Fitness Habits (Middle School) (2012) Ministry of Education, Culture, Sports, Science and Techology,
http://www.mext.go.jp/component/a_menu/sports/detail/__icsFiles/afieldfile/2013/04/15/1333079_6.pdf
6) Matsuishi T, et al. (2008) Scale properties of the Japanese version of the Strengths and Difficulties Questionnaire (SDQ): a study of infant and school children in community samples. Brain Dev. 30: 410-415.
7) Kawakami Norito. Distribution and Related Factors of Mental Health Conditions Based on K6 Survey in a National Survey. 2010 Health and Labour Sciences Research Grant (Statistical Information Intensive General Research Project) Study on Examining a System to Comprehend and Analyze Statistical Information on Citizens' Health Conditions from the Household. Shared Study
8) Stellman JM, et al. (2008) Enduring mental health morbidity and social function impairment in World Trade Center rescue, recovery, and cleanup workers: the psychological dimension of an environmental health disaster. Environ Health Perspect. 116(9): 1248–1253.

Outline of Support Results

1. Purpose

Following the Mental Health and Lifestyle Survey for FY 2012, the response contents were evaluated and analyzed by physicians of the Fukushima Medical University, and the Mental Health Support Team, composed of clinical psychologists, health nurses, and nurses, administered telephone counselling and other services with the purpose of ensuring the improvement of conditions of people assessed to be in need of counselling or support, or connecting them to health/medical institutions.

2. Method

2.1 Support Group

Respondents of the Mental Health and Lifestyle Survey for FY 2012, who are residents of state-designated evacuation areas born on or before 1 April 2012, and apply to the following selection criteria.

2.2 Selection Criteria

A) Support via Telephone (henceforth 'Telephone Support')

a) Support Standards Due to Scale Scores (henceforth 'Support due to Scales')

Children: People who score 20 or higher on the SDQ (on children's affect and behavior).

General: People who score 17 or higher on the K6 (general mental health conditions) or 61 or higher on the PCL (trauma response).

b) Support Standards Due to Items Other than Scales

Children: People assessed to require support based on the contents of free description or descriptions in margins.

General: People with a previous history of high blood pressure or diabetes who reported that they have not been seeing a doctor, with a Body Mass Index (BMI: Calculated from height and weight given in the survey) of 30.0 kg/m^2 or more, and who have gained 3 kg or more in body weight since the earthquake (high risk for high blood pressure/diabetes).

People with a previous history of psychiatric illness, and who reported that they have not been seeing a doctor.

People assessed to require support based on the contents of free description or descriptions in margins.

B) Support via Writing (henceforth 'Written Support')

a) Support Standards Due to Scale Scores

Children: People who score 16 or higher on the SDQ (on children's affect and behavior), and do not meet the support criteria for telephone support.

General: People who score 13 or higher on the K6 (general mental health conditions) or 44 or higher on the PCL (trauma response), and who do not meet the support criteria for telephone support.

b) Support Standards Due to Items Other than Scales

Children: No selection criteria.

General: People who are not participating in recommended care , or people who are dissatisfied with their quality of sleep or feel depressed throughout the day and whose activity has declined, who have not made a medical visit, and do not meet any of the above support criteria.

People with a score of 2 or more out of 4 on CAGE (alcohol dependency scale)

2.3 Support Methods

Telephone support survey contents were screened by the Mental Health Support Team, and telephone support was administered.

Written support survey contents were screened by the Mental Health Support Team, and a letter in an envelope with a return postcard was mailed to them. The subject's desire for telephone support was screened based on the reply on the postcard, and telephone support was provided for those who indicated their desire for support, or those who were assessed to require support based on the reply content.

3. Results

Of the respondents in the Mental Health and Lifestyle Survey for FY 2012, there were 1,474 children and 16,242 adult who required support. 2,657 respondents who required support met the CAGE (alcohol dependency scale) criteria alone.

The breakdown of the children who required support is as follows. There were 674 telephone support group and 800 written support group. Of the latter, 41 people were assessed to require telephone support based on the reply content, so there was a total of 715 (406 boys (56.8%), and 309 girls (43.2%)). Among these, telephone support was successfully administered to 623 (87.1%). 408 (65.5%) of these support group resided within the prefecture, and 215 (34.5%) resided outside the prefecture.

The breakdown of the general support groups is as follows. Among the telephone support group, there were 4,130 group of support due to scales (1,595 male (38.6%), 2,535 female (61.4%), and 1,944 group of items other than scales (688 male (35.4%), 1,256 female (64.6%)), for a total of 6,074 group. Among these, telephone support was successfully administered to 5,324 (87.7%). 4,277 (80.3%) of these support group resided within the prefecture, and 1,047 (19.7%) resided outside the prefecture. There were 10,168 group of written support. Among these, there was a total of 701 respondents who were assessed to require support via telephone based on their reply contents, with 535 group of support due to scales (242 male (45.2%), 293 female (54.8%)), and 166 group of support due to items other than scales (92 male (55.4%), 74 female (44.6%)). Among these, telephone support was successfully administered to 667 (95.1%). 533 (79.9%) of these support group resided within the prefecture, and 134 (20.1%) resided outside the prefecture.

Information was provided to support group for whom telephone support was not administered due to absence or other reasons, apart from death, by sending a pamphlet related to mental health, lifestyles, and care prevention. Also, information was provided for support group who met only the CAGE criteria by sending them a pamphlet related to drinking and mental health.

In the telephone support for children, 528 (84.7%) were classified as Follow-up Group 1, and 82 [1] (13.2%) were classified as Follow-up Group 2. Also, when [2] classifying the contents discussed within the support according to the Categories of Problems that Surround Group, the category of Children's Reactions included reaction to earthquake/radiation and effects on school life, and the category of Problems with Guardian/Household included guardians themselves and family relationships.

In the general telephone support, 4,277 respondents (80.3%) were classified in Follow-up Group 1, and 866 respondents (16.3%) were classified in Follow-up Group 2. Of the written support group, 559 (83.9%) were classified in Follow-up Group 1, and 89 respondents (13.3%) were classified in Follow-up Group 2. Also, when classifying the contents discussed within the support according to the Categories of Problems that Surround Group, the category of One's Own Reactions included physical problems and sleep disturbance, the category of Problems within Family included changes in daily lifestyle, and the category of Problems in Social Life included dissatisfaction with government policies/issues of compensation.

From this point forward, it will be necessary to cooperate with municipalities, the Fukushima Mental Care Center, and other organizations, to provide continued support.

1) Follow-Up Group 1: Group assessed to be able to cope on their own, including cases where situational improvement has been screened in the aspects of physical condition or environment, and cases where the use of support resources has been screened.
2) Follow-Up Group 2: Group assessed to have some concerns left, including those with feelings of un-wellness or strong aftereffects of the disaster, and those with social/school maladjustment or isolation.

References

1) Mental Health and Lifestyle Survey of the 14th Prefectural Oversight Committee Meeting for Fukushima Health Management Survey for FY 2012

Implementation status of the Fukushima health survey: 'Pregnancy and Birth Survey'

I. Purpose

Our goal is to comprehend physical and mental health status of expectant and nursing mothers so that we can alleviate their anxiety and provide them with necessary care, and also accurately recognize their status quo, opinions and requests. Based on this survey, these data will be used to provide quality Perinatal care services offered in Fukushima in the future.

II. Survey implementation status in FY 2013

1. Target population

○Women who received a maternal and child handbook from municipal government in Fukushima Prefecture between August 1, 2012 and July 31, 2013.

○Women who received a maternal and child handbook from a location outside Fukushima during the above time period, and then returned to give birth in Fukushima.

2. Implementation status

(1) Response rates

Survey year	Number of surveys sent	Number responded (response rate %)
FY 2013※	15,187	5,056 (33.3)
FY 2012	14,516	7,181 (49.5)
FY 2011	16,001	9,316 (58.2)

※As of March 31, 2014.

NB: Respondents were asked to submit the survey form after filling out the information on the baby's one-month old checkup results.

(2) Status of support provision

Survey responses were used to identify mothers in need of support, and to provide them with an opportunity to consult specialists such as midwives and public health nurses through telephone counseling, pertaining to concerns about their health- or childcare-related matters. We have also established a support system through e-mail to give advice to those in need.

① Telephone counseling

Survey year	Number responded	Number (%) in need of support	Type of response that prompted support	
			Depression-related items	Free comments
FY 2013※	5,056	820 (16.2)	517 (63.0)	303 (37.0)
FY 2012	7,181	1,104 (15.4)	751 (68.0)	353 (32.0)
FY 2011	9,316	1,401 (15.0)	1,224 (87.4)	177 (12.6)

② E-mail counseling

Survey year	Number of consultations
FY 2013※	1
FY 2012	6
FY 2011	13

※As of March 31, 2014.

③ Other matters

A booklet containing easy-to-understand information about maintaining mental health and also about radiation, entitled 'Mental and Physical Health Support Book for Children and Parents' (issued by the Fukushima Prefectural Children and Families Section), has been sent to all eligible residents.

3. Major survey items (concerning next pregnancy)

Analysis population:

(FY 2013 survey) Of the respondents who submitted the form between December 24, 2013 and January 15, 2014, data entry of 3,415 cases was completed. Of those, 11 were excluded (6 cases beyond the scope of the survey, 4 cases of no answer or refusal and 1 redundant case), and thus data from 3,404 respondents were analyzed.
(FY 2012 survey) 7,139 valid respondents who submitted the form between December 14, 2012 and November 30, 2013 were analyzed.

Are you planning your next pregnancy and delivery?

Response	FY 2013	FY 2012
Yes	1,844 (54.2)	3,775 (52.9)
No	1,510 (44.4)	3,239 (45.4)
No/invalid answer	50 (1.5)	125 (1.8)

If you answered 'Yes' above (= planning next pregnancy), what services would you wish to have (multiple answers allowed)?

Response	FY 2013	FY 2012
Improved childcare facilities, extended-hours childcare, sick child care	1,225 (69.4)	2,435 (66.2)
Childcare-/pediatric medicine-related services	1,177 (66.7)	2,613 (71.0)
Improved maternity and parental leave systems	988 (56.0)	1,893 (51.4)
Information on radiation and its health risks	733 (41.5)	2,220 (60.3)
Other	171 (9.7)	247 (6.7)

※Denominator is the number of valid respondents (1,765 in FY 2013; 3,681 in FY 2012).

If you answered 'No' above (= no plan for next pregnancy), please provide the reason (multiple answers allowed).

Response	FY 2013	FY 2012
Not wanted	736 (49.2)	1,690 (52.6)
Still busy with ongoing childcare	527 (35.2)	1,153 (35.9)
Age- or health-related issue	486 (32.5)	1,012 (31.5)
Lack of financial stability	331 (22.1)	828 (25.8)
Lack of support with housework or childcare	147 (9.8)	310 (9.7)
Lack of childcare facilities/services	95 (6.4)	222 (6.9)
Still worried about radiation effect	92 (6.1)	475 (14.8)
Still living away from family members	25 (1.7)	78 (2.4)
Still living as an evacuee	21 (1.4)	78 (2.4)
Other	228 (15.2)	81 (2.5)

※Denominator is the number of valid respondents (1,496 in FY 2013; 3,212 in FY 2012).

4. Evaluation of survey results

・ Although the response rate was initially 58.2% in FY 2011, it decreased by approximately 10% to 49.5% in FY 2012. Likewise in FY 2013, the response rate obtained so far is approximately 10% lower than the levels recorded around the same time in previous years; therefore, we plan to send out a reminder in May to those who are yet to respond.

・ The rate of respondents who received telephone counseling increased slightly in FY 2013 compared to FY 2012. This is because of our greater focus on such free comments as seeking advice on childcare issues or indicating physical/mental distress of the respondent, enabling more precise support services.

・ At present, the number of respondents who are planning next pregnancy and delivery is on the rise in

FY 2013 compared to FY 2012. Desired services are now ‘improved childcare facilities, extended-hours childcare, sick child care’ rather than ‘childcare-/pediatric medicine-related services,’ and differ from the FY 2012 data. Furhtermore, in those who have no plan for next pregnancy, the most prevailing reason is ‘not wanted’ in both FY 2013 as with 2012.

III. Survey implementation plan for FY 2014 (draft)

1. Survey in FY 2014

(1) Target population

○Women who received a maternal and child health handbook from municipal government in Fukushima Prefecture between August 1, 2013 and July 31, 2014.

○Women who received a maternal and child health handbook from a location outside Fukushima during the above time period, and then returned to give birth in Fukushima.

(2) Procedure and time of survey

A questionnaire survey will be conducted in late November 2014.

2. Closer collaboration with affiliated organizations to improve the support system for expectant and nursing mothers

We will seek closer collaboration with affiliated organizations, while taking in various opinions from different communities, in order to achieve a higher response rate and ultimately to improve the support system for expectant and nursing mothers based on the survey results.

(1) Questionnaire survey in municipal government officers

We will carry out a questionnaire survey in persons in charge of maternal and child health in municipal governments and gather their views on the surveys and support systems.

(2) Survey outcome report meeting

In order to seek closer collaboration with municipal governments, we will host FY 2012 survey outcome report meetings for public health nurses and other concerned staff members in municipal governments as scheduled below.

Area	Date	Venue
Kempoku	Fri, May 23, 2014	Fukushima Youth Hall
Kenchu and Kennan	Mon, June 9, 2014	Fukushima Agricultural Technology Center
Aizu and Minamiaizu	Tue, June 24, 2014	Aizuwakamatsu Lifelong Learning Center
Soso	Mon, June 2, 2014	Minamisoma Hara Welfare Hall
Iwaki	Fri, June 13, 2014	Iwaki Labor Welfare Hall

(3) Preparation and distribution of survey leaflets

In order to call for cooperation to raise awareness of survey respondents, survey leaflets will be distributed to obstetrics clinics and municipal government offices in Fukushima.