Epidemiology Note

Cancer Incidence and Incidence Rates in Japan in 2008: A Study of 25 Population-based Cancer Registries for the Monitoring of Cancer Incidence in Japan (MCIJ) Project

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The Japan Cancer Surveillance Research Group aimed to estimate the cancer incidence in Japan in 2008 based on data collected from 25 of 34 population-based cancer registries, as part of the Monitoring of Cancer Incidence in Japan project. The incidence in Japan for 2008 was estimated to be 749 767 (C00−C96). Stomach cancer and breast cancer were the leading types of cancer in males and females, respectively.

Key words: cancer incidence − incidence estimates − extent of disease − cancer registry − Japan

The Japan Cancer Surveillance Research Group has been involved in cancer monitoring in Japan since the year 2000 (1–8). This group aimed to estimate the cancer incidence in Japan in 2008 based on data collected from 25 of 34 population-based cancer registries, as part of the Monitoring of Cancer Incidence in Japan (MCIJ) project. The selected registries were as follows: Iwate, Akita, Yamagata, Ibaraki, Tochigi, Gunma, Chiba, Kanagawa, Niigata, Toyama, Ishikawa, Fukui, Yamanashi, Aichi, Shiga, Kyoto, Tottori, Shimane, Okayama, Hiroshima, Yamaguchi, Ehime, Saga, Nagasaki and Kumamoto. Miyagi, for which the high-quality data were available in 2007, did not provide information in 2008 because of replacement of the database system.

If data from all the 34 registries had been used, then this would have led to a large underestimation of the true national cancer incidence due to incompleteness of registration in the non-selected registries. The methods for registry selection and estimation of incidence, and the limitations of those methods, were previously described (9–11). Briefly, we maintained the same methodology used in the MCIJ project since 2003; all the 34 population-based cancer registries in Japan were invited to participate in this study. Registries that met the following standards were considered to be of 'high quality': (i) DCO% (death certificate only: proportion of patients reported by DCO) of <25%, or DCN% (death certificate notification: proportion of patients first notified via death certificate) of <30% and (ii) M/I (mortality to incidence ratio) of <0.67. From the total of 34 registries, 25 of 'high quality' were selected, encompassing data for 44.2% of the total population of Japan, to estimate the national cancer incidence in 2008. The number of selected registries for the MCIJ project has been increasing since 2005, as follows: 12 in 2005, 15 in 2006, 21 in 2007 and 25 in 2008. In 2008, the new areas having high-quality data registries that were added since the previous estimation in 2007 were Ishikawa, Yamanashi, Shimane, Yamaguchi and Ehime.

In estimating the cancer incidence to remove the effects caused by the size of the registry population, an arithmetic mean of incidence rates of all eligible registries was used instead of dividing the total incidence by the total population. Cancer mortality in Japan was estimated by using the same methodology employed for the estimation of incidence, by extracting mortality data from the vital statistics of the same eligible registries (1–8). Extent of disease was evaluated by using staging criteria (i.e. cancer *in situ*, localized, regional lymph

Table 1. Incidence (only invasive), completeness of reporting and accuracy of diagnosis in Japan, according to sex and primary site, 2008

Primary sites	ICD-10th	Estimated incidence	Crude rate[a]	Age-standardized rate[a]		Quality and completeness of reporting		Accuracy of diagnosis
				World population	Japanese 1985 model population	DCO/I[b] (%)	M/I	MV/I[b] (%)
Male								
All sites	C00–C96	437 787	703.3	296.8	421.5	13.2	0.47	76.0
Lip, oral cavity and pharynx	C00–C14	11 024	17.7	8.5	11.5	8.6	0.43	86.8
Esophagus	C15	17 308	27.8	12.1	16.8	11.5	0.58	82.6
Stomach	C16	84 082	135.1	56.3	80.5	11.2	0.39	85.1
Colon and rectum	C18–C20	65 669	105.5	45.5	64.3	10.8	0.36	83.6
Colon	C18	40 149	64.5	26.9	38.6	11.3	0.36	82.5
Rectum	C19–C20	25 520	41.0	18.6	25.7	10.0	0.35	85.2
Liver	C22	32 148	51.6	21.6	30.9	20.2	0.69	29.3
Gallbladder, etc.	C23–C24	10 956	17.6	6.5	9.7	20.9	0.76	53.0
Pancreas	C25	15 912	25.6	10.5	15.1	20.5	0.86	40.7
Larynx	C32	4896	7.9	3.3	4.7	5.2	0.18	89.7
Trachea, bronchus and lung	C33–C34	67 614	108.6	41.8	61.9	17.6	0.72	72.7
Skin, including melanoma	C43–C44	7127	11.4	4.6	6.7	3.9	0.09	95.1
Prostate	C61	51 534	82.8	31.2	46.1	8.0	0.19	85.7
Bladder	C67	13 975	22.4	8.7	12.8	9.7	0.32	83.9
Kidney, renal pelvis, ureter, etc.	C64–C66, C68	12 772	20.5	9.5	13.1	9.9	0.35	78.6
Brain and nervous system	C70–C72	2780	4.5	2.9	3.4	15.3	0.36	72.6
Thyroid	C73	3043	4.9	2.8	3.7	5.2	0.16	92.5
Malignant lymphoma	C81–85, C96	12 520	20.1	9.8	13.3	9.9	0.43	88.1
Multiple myeloma	C88, C90	3103	5.0	1.9	2.9	18.3	0.67	73.3
All leukemias	C91–C95	6518	10.5	6.5	7.6	16.2	0.70	92.3
Female								
All sites	C00–C96	311 980	476.7	205.6	275.9	14.1	0.44	74.9
Lip, oral cavity and pharynx	C00–C14	4498	6.9	2.7	3.7	11.8	0.41	82.6
Esophagus	C15	3248	5.0	1.8	2.5	14.8	0.54	79.4
Stomach	C16	38 828	59.3	20.7	29.1	14.9	0.44	80.8
Colon and rectum	C18–C20	47 103	72.0	25.7	36.0	12.9	0.42	79.4
Colon	C18	34 136	52.2	17.8	25.2	13.6	0.42	78.2
Rectum	C19–C20	12 967	19.8	7.9	10.8	11.1	0.41	82.4
Liver	C22	16 364	25.0	7.5	11.1	24.6	0.69	24.7
Gallbladder, etc.	C23–C24	10 783	16.5	4.2	6.3	26.3	0.83	42.2
Pancreas	C25	13 672	20.9	6.2	9.1	24.0	0.90	34.7
Larynx	C32	399	0.6	0.2	0.3	14.5	0.20	77.5
Trachea, bronchus and lung	C33–C34	29 661	45.3	15.3	21.6	19.4	0.61	69.9
Skin, including melanoma	C43–C44	7000	10.7	3.4	4.8	4.8	0.10	93.6
Breast	C50	59 389	90.8	53.9	69.6	5.1	0.20	91.3
Uterus	C53–C55	21 508	32.9	20.3	26.1	6.3	0.27	89.9
Cervix uteri	C53	9794	15.0	10.2	13.0	4.3	0.25	92.6

Continued

Table 1. *Continued*

Primary sites	ICD-10th	Estimated incidence	Crude rate[a]	Age-standardized rate[a]		Quality and completeness of reporting		Accuracy of diagnosis
				World population	Japanese 1985 model population	DCO/I[b] (%)	M/I	MV/I[b] (%)
Corpus uteri	C54	10 815	16.5	9.7	12.5	2.8	0.16	94.0
Ovary	C56	9012	13.8	8.0	10.2	13.0	0.51	78.6
Bladder	C67	4379	6.7	1.9	2.8	16.5	0.46	74.9
Kidney, renal pelvis, ureter, etc.	C64–C66, C68	5990	9.2	3.5	4.8	13.6	0.41	72.3
Brain and nervous system	C70–C72	2495	3.8	2.6	2.9	16.3	0.30	67.6
Thyroid	C73	8615	13.2	8.2	10.3	4.9	0.12	91.7
Malignant lymphoma	C81–85, C96	9555	14.6	6.3	8.4	12.0	0.43	85.2
Multiple myeloma	C88, C90	2759	4.2	1.3	1.9	21.6	0.75	67.3
All leukemias	C91–C95	4638	7.1	4.3	4.8	19.4	0.67	91.4

ICD-10th, International Classification of Disease, 10th Revision; DCO/I, proportion of cases with the death certificate only to incident cases; M/I, number of mortality /number of incidence; MV/I, proportion of microscopically verified cases to incident cases.
[a]Per 100 000 population.
[b]Arithmetic mean of proportions in the 25 cancer registries with high-quality data.

Table 2. Incidence (including CIS), completeness of reporting and accuracy of diagnosis in Japan, according to sex and primary site, 2008

Primary sites	ICD-10th	Estimated incidence	Crude rate[a]	Age-standardized rate[a]		Quality and completeness of reporting		Accuracy of diagnosis
				World population	Japanese 1985 model population	DCO/I[b] (%)	M/I	MV/I[b] (%)
Male								
All sites	C00–C96, D00–D09	460 783	740.2	313.7	444.8	12.6	0.45	77.0
Esophagus	C15, D001	18 165	29.2	12.7	17.7	11.1	0.55	83.3
Colon and rectum	C18–C20, D010–D012	78 839	126.6	55.7	78.1	9.3	0.30	85.9
Trachea, bronchus and lung	C33–C34 D021–D022	67 652	108.7	41.8	62.0	17.6	0.72	72.7
Skin, including melanoma	C43–C44, D030–D049	8522	13.7	5.4	8.0	3.3	0.08	95.7
Bladder	C67, D090	19 125	30.7	12.1	17.7	7.4	0.23	87.8
Female								
All sites	C00–C96 D00–D09	339 231	518.4	234.1	311.2	13.1	0.40	76.6
Esophagus	C15, D001	3418	5.2	1.9	2.7	14.2	0.51	80.3
Colon and rectum	C18–C20, D010–D012	53 553	81.8	30.0	41.8	11.6	0.37	81.5
Trachea, bronchus and lung	C33–C34, D021–D022	29 691	45.4	15.3	21.7	19.4	0.61	69.9
Skin, including melanoma	C43–C44, D030–D049	8782	13.4	4.3	6.0	3.9	0.08	94.7
Breast	C50, D05	65 085	99.5	59.8	77.1	4.7	0.18	91.9
Uterus	C53–C55, D06	32 449	49.6	36.3	44.8	4.2	0.18	93.0
Cervix uteri	C53, D06	20 735	31.7	26.2	31.7	2.1	0.12	96.1
Bladder	C67, D090	5494	8.4	2.5	3.6	13.8	0.37	79.1

CIS, carcinoma *in situ*.
[a]Per 100 000 population.
[b]Arithmetic mean of proportions in the 25 cancer registries with high-quality data.

Table 3. Distribution of extent of disease at diagnosis for the 25 selected cancer registries, 2008

Primary sites	ICD-10th	Incidence in the 25 registries (except DCO)	Carcinoma in situ		Localized		Regional lymph node metastases, direct extension to adjacent organs/tissues		Distant metastasis		Other, Unknown	
			n	%	n	%	n	%	n	%	n	%
Male												
All sites	C00–C96, D00–D09	165 725	9102	5.5	63 051	38.0	35 130	21.2	29 126	17.6	29 316	17.7
Lip, oral cavity and pharynx	C00–C14	3933	—	—	1233	31.4	1991	50.6	222	5.6	487	12.4
Esophagus	C15, D001	6527	306	4.7	1815	27.8	2232	34.2	1222	18.7	952	14.6
Stomach	C16	30 899	—	—	15 503	50.2	6295	20.4	5183	16.8	3918	12.7
Colon and rectum	C18–C20, D010–D012	29 202	5221	17.9	10 295	35.3	6128	21.0	4243	14.5	3315	11.4
Colon	C18	14 809	—	—	6468	43.7	3579	24.2	2650	17.9	2112	14.3
Rectum	C19–C20	9310	—	—	3818	41.0	2548	27.4	1593	17.1	1351	14.5
Liver	C22	10 147	—	—	5231	51.6	1747	17.2	881	8.7	2288	22.5
Gallbladder, etc.	C23–C24	3668	—	—	669	18.2	1458	39.7	769	21.0	772	21.0
Pancreas	C25	5376	—	—	331	6.2	1669	31.0	2470	45.9	906	16.9
Larynx	C32	1835	—	—	1210	65.9	386	21.0	45	2.5	194	10.6
Trachea, bronchus and lung	C33–C34, D021–D022	23 443	20	0.1	5242	22.4	6440	27.5	8173	34.9	3568	15.2
Skin, including melanoma	C43–C44, D030–D049	3216	544	16.9	1992	61.9	216	6.7	45	1.4	419	13.0
Prostate	C61	19 239	—	—	10 550	54.8	2893	15.0	2194	11.4	3602	18.7
Bladder	C67, D090	7690	2139	27.8	3465	45.1	648	8.4	207	2.7	1231	16.0
Kidney, renal pelvis, ureter, etc.	C64–C66, C68	4794	—	—	2524	52.6	871	18.2	706	14.7	693	14.5
Thyroid	C73	1121	—	—	379	33.8	540	48.2	77	6.9	125	11.2
Female												
All sites	C00–C96, D00–D09	121 745	10 677	8.8	45 978	37.8	27 660	22.7	17 123	14.1	20 307	16.7
Lip, oral cavity and pharynx	C00–C14	1675	—	—	730	43.6	632	37.7	48	2.9	265	15.8
Esophagus	C15, D001	1091	64	5.9	311	28.5	384	35.2	173	15.9	159	14.6
Stomach	C16	13 924	—	—	6605	47.4	2931	21.0	2426	17.4	1962	14.1
Colon and rectum	C18–C20, D010–D012	20 415	2737	13.4	6955	34.1	4909	24.0	3312	16.2	2502	12.3
Colon	C18	12 514	—	—	4816	38.5	3478	27.8	2434	19.5	1786	14.3
Rectum	C19–C20	5236	—	—	2136	40.8	1430	27.3	878	16.8	792	15.1
Liver	C22	4783	—	—	2505	52.4	675	14.1	436	9.1	1167	24.4
Gallbladder, etc.	C23–C24	3551	—	—	568	16.0	1301	36.6	902	25.4	780	22.0
Pancreas	C25	4382	—	—	265	6.0	1431	32.7	1889	43.1	797	18.2
Larynx	C32	134	—	—	91	67.9	22	16.4	3	2.2	18	13.4

Continued

Table 3. *Continued*

Primary sites	ICD-10th	Incidence in the 25 registries (except DCO)	Carcinoma in situ		Localized		Regional lymph node metastases, direct extension to adjacent organs/tissues		Distant metastasis		Other, Unknown	
			n	%	n	%	n	%	n	%	n	%
Trachea, bronchus and lung	C33–C34, D021–D022	9644	13	0.1	3375	35.0	1984	20.6	2888	29.9	1384	14.4
Skin including melanoma	C43–C44, D030–D049	3352	722	21.5	2048	61.1	168	5.0	41	1.2	373	11.1
Breast	C50, D05	25 033	2326	9.3	12 336	49.3	6331	25.3	1153	4.6	2887	11.5
Uterus	C53–C55, D06	11 783	3901	33.1	3983	33.8	2273	19.3	683	5.8	943	8.0
Cervix uteri	C53, D06	7627	3897	51.1	1643	21.5	1330	17.4	314	4.1	443	5.8
Corpus uteri	C54	4019	—	—	2327	57.9	924	23.0	344	8.6	424	10.5
Ovary	C56	3366	—	—	859	25.5	1357	40.3	592	17.6	558	16.6
Bladder	C67, D090	2182	502	23.0	944	43.3	256	11.7	94	4.3	386	17.7
Kidney, renal pelvis, ureter, etc.	C64–C66, C68	2234	—	—	1146	51.3	418	18.7	350	15.7	320	14.3
Thyroid	C73	3381	—	—	1455	43.0	1454	43.0	101	3.0	371	11.0

node metastasis, direct extension to adjacent organs/tissues and distant metastasis) that were developed in Japan based on the Surveillance, Epidemiology, and End Results (12). The method of first detection was classified into two groups, as follows: by health and general medical examination or by other circumstances or unknown methods.

The incidence, crude rate, age-standardized rate and completeness and accuracy of the registries in 2008 are presented in Tables 1 (invasive cancers only) and 2 [includes carcinoma *in situ* (CIS) patients]. The total incidence in Japan in 2008 was estimated to be 749 767 (C00−C96): 437 787 males and 311 980 females were affected. The age-standardized incidence rates (world population) for males and females were 296.8 and 205.6, respectively (Japanese 1985 model population, the incidence rate for males was 421.5 and for females was 275.9). Regarding quality and completeness of reporting, the overall DCO% and M/I were 13.6% and 0.47, respectively (males, 13.2%, 0.47; females, 14.1%, 0.44). For accuracy of diagnosis, the overall MV% was 75.5% (males, 76.0%; females, 74.9%). Quality, completeness and accuracy of data were all improved compared with the 2007 MCIJ project. Table 2 shows the estimated incidence of cancer including CIS. CIS was observed predominantly in females with breast and cervical cancers. In particular, the incidence rate of cervical cancer with CIS was twice that of the rate without CIS.

The distribution of cancer by the extent of disease at diagnosis is presented in Table 3. Compared with other cancers, in both males and females, pancreatic and lung cancers were generally more likely to be diagnosed after distant metastasis had occurred. For cervical cancer, CIS accounted for a large part of the extent of disease at diagnosis (51.1%). The proportion of 'stage unknown' patients varied according to the anatomical site of the primary lesion, and was comparatively high for liver, gallbladder and prostate cancers, but low for cervical cancer. It should be noted that the proportion of 'stage unknown' classifications may primarily be influenced by different methods of diagnosis, and the fact that the prevalence of accurate staging may vary considerably among sites of primary lesions; for example, one primary site may more often be diagnosed by direct tissue analysis than are other primary sites. Regarding data quality, the 'distribution of extent of disease' parameter might be affected by differing proportions among the registries of DCO cases, which are usually not accompanied by extensive additional information. Nevertheless, there was a lower proportion of 'stage unknown' cases in 2008 (17.3%) than in 2007 (18.5%).

The distribution of cancer by the method of first detection is presented in Table 4. Cervical cancer, including CIS, had a high proportion detected by cancer screening (32.8%). The proportion was comparatively higher in each of prostate (27.4%), breast (23.2%), stomach (19.7%: 21.0% males, 16.9% females), thyroid (19.5%: 19.8% males, 19.4% females) and colon and rectum cancers (19.2%: 20.3% males, 17.6% females). Stomach, colon and rectum, lung, breast and cervical cancers were screened widely by the municipalities. It should be noted that prostate and thyroid cancers had a high

Table 4. The method of first detection for the 25 selected cancer registries, 2008

Primary sites	ICD-10th	Incidence in the 25 registries (except DCO)	Cancer screening, health examination, general medical examination		Other, unknown	
			n	%	*n*	%
Male						
All sites	C00–C96, D00–D09	165 725	24 934	15.0	140 791	85.0
Lip, oral cavity and pharynx	C00–C14	3933	54	1.4	3879	98.6
Esophagus	C15, D001	6527	733	11.2	5794	88.8
Stomach	C16	30 899	6481	21.0	24 418	79.0
Colon and rectum	C18–C20, D010–D012	29 202	5921	20.3	23 281	79.7
Colon	C18	14 809	2670	18.0	12 139	82.0
Rectum	C19–C20	9310	1529	16.4	7781	83.6
Liver	C22	10 147	450	4.4	9697	95.6
Gallbladder, etc.	C23–C24	3668	166	4.5	3502	95.5
Pancreas	C25	5376	196	3.6	5180	96.4
Larynx	C32	1835	18	1.0	1817	99.0
Trachea, bronchus and lung	C33–C34, D021–D022	23 443	3616	15.4	19 827	84.6
Skin, including melanoma	C43–C44, D030–D049	3216	17	0.5	3199	99.5
Prostate	C61	19 239	5270	27.4	13 969	72.6
Bladder	C67, D090	7690	380	4.9	7310	95.1
Kidney, renal pelvis, ureter, etc.	C64–C66, C68	4794	639	13.3	4155	86.7
Thyroid	C73	1121	222	19.8	899	80.2
Female						
All sites	C00–C96 D00–D09	121 745	18 931	15.5	102 814	84.5
Lip, oral cavity and pharynx	C00–C14	1675	9	0.5	1666	99.5
Esophagus	C15, D001	1091	85	7.8	1006	92.2
Stomach	C16	13 924	2353	16.9	11 571	83.1
Colon and rectum	C18–C20, D010–D012	20 415	3588	17.6	16 827	82.4
Colon	C18	12 514	1987	15.9	10 527	84.1
Rectum	C19–C20	5236	688	13.1	4548	86.9
Liver	C22	4783	117	2.4	4666	97.6
Gallbladder, etc.	C23–C24	3551	127	3.6	3424	96.4
Pancreas	C25	4382	158	3.6	4224	96.4
Larynx	C32	134	0	0.0	134	100.0
Trachea, bronchus and lung	C33–C34, D021–D022	9644	2013	20.9	7631	79.1
Skin including melanoma	C43–C44, D030–D049	3352	36	1.1	3316	98.9
Breast	C50, D05	25 033	5797	23.2	19 236	76.8
Uterus	C53–C55, D06	11 783	2930	24.9	8853	75.1
Cervix uteri	C53, D06	7627	2505	32.8	5122	67.2
Corpus uteri	C54	4019	422	10.5	3597	89.5
Ovary	C56	3366	252	7.5	3114	92.5
Bladder	C67, D090	2182	73	3.3	2109	96.7
Kidney, renal pelvis, ureter, etc.	C64–C66, C68	2234	206	9.2	2028	90.8
Thyroid	C73	3381	655	19.4	2726	80.6

proportion of detection by screening, as did stomach, colon and rectum, lung, breast and cervical cancers. The high proportion of detection for prostate cancer by screening could be related to the cancer screening because the cancer screening influences the recent increase in prostate cancer incidence. We consider that organized screening may influence the high proportion of detection in thyroid cancer, because thyroid cancer incidence has an increasing trend in recent years according to slight increase of thyroid cancer screening.

The incidence according to the leading cancer types for each sex is presented in Fig. 1. Among males, in 2008, the leading cancer site was the stomach (19.2%), followed by lung (15.4%), and colon and rectum (15.0%). In comparison with 2007, there was not much change in this regard (8). In 2008, the leading cancer site in females was breast (19.0%), followed by colon and rectum (15.1%), and stomach (12.4%). The five leading primary sites accounted for 68.7% of the total incidence in males and 61.2% in females. These
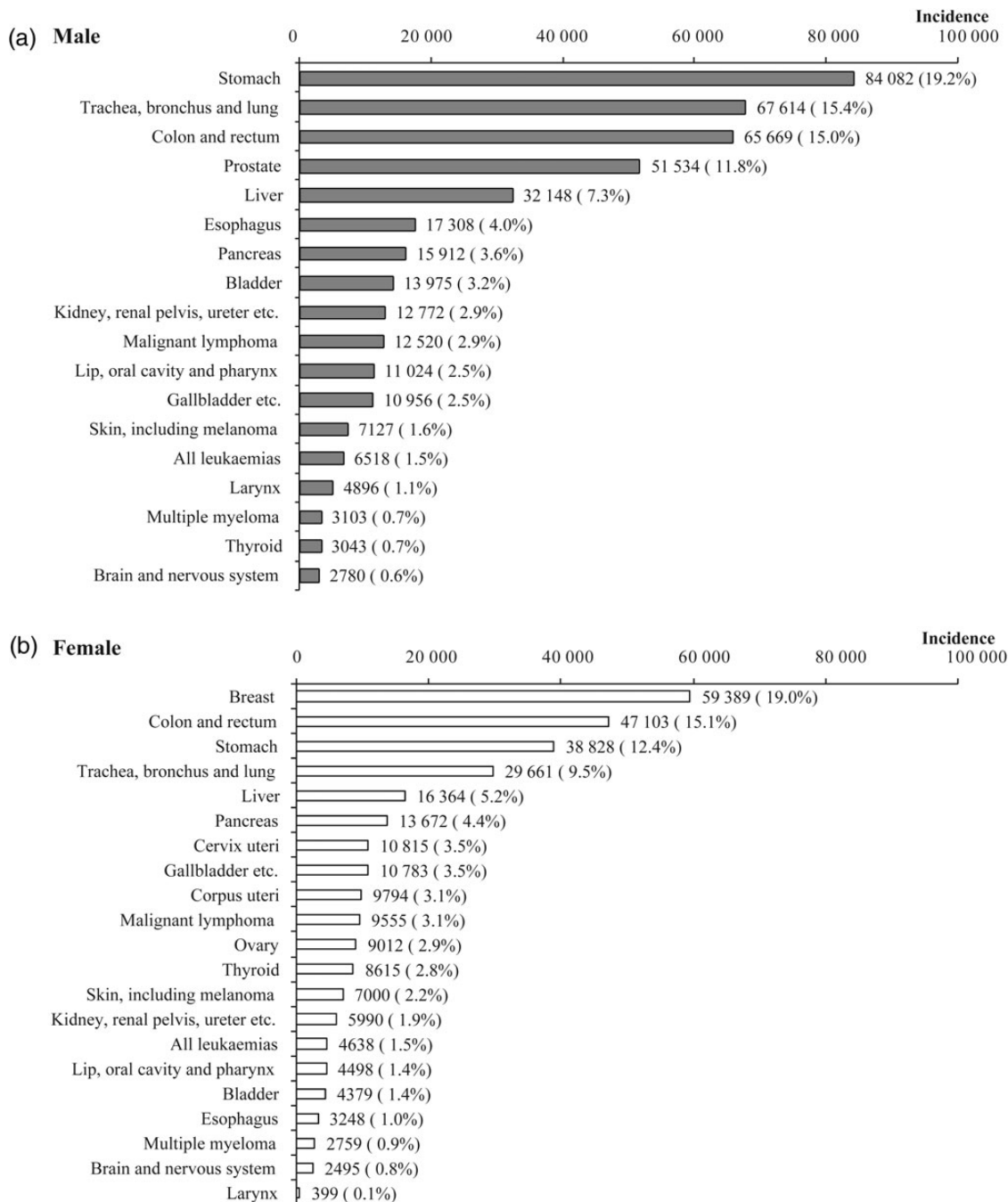
Figure 1. Incidence of cancer (invasive only) in Japan in 2008, according to primary site, in males (a) and females (b). Data are expressed as number (percentage).

proportions increase to 85.3% in males and 78.8% in females when the 10 leading primary sites are considered; these proportions were slightly lower in 2008 than that in 2007.

The age-specific incidence rates for the five major cancer sites for each sex are presented in Fig. 2. Among males, the age-specific incidence rate increased with age for stomach, colon and lung cancers. For these sites, the incidence rates increased in the 50–59-year-old group. For liver and prostate cancers, the incidence rate increased in the 70–79-year-old group, and remained almost flat until the highest age group. In females, the
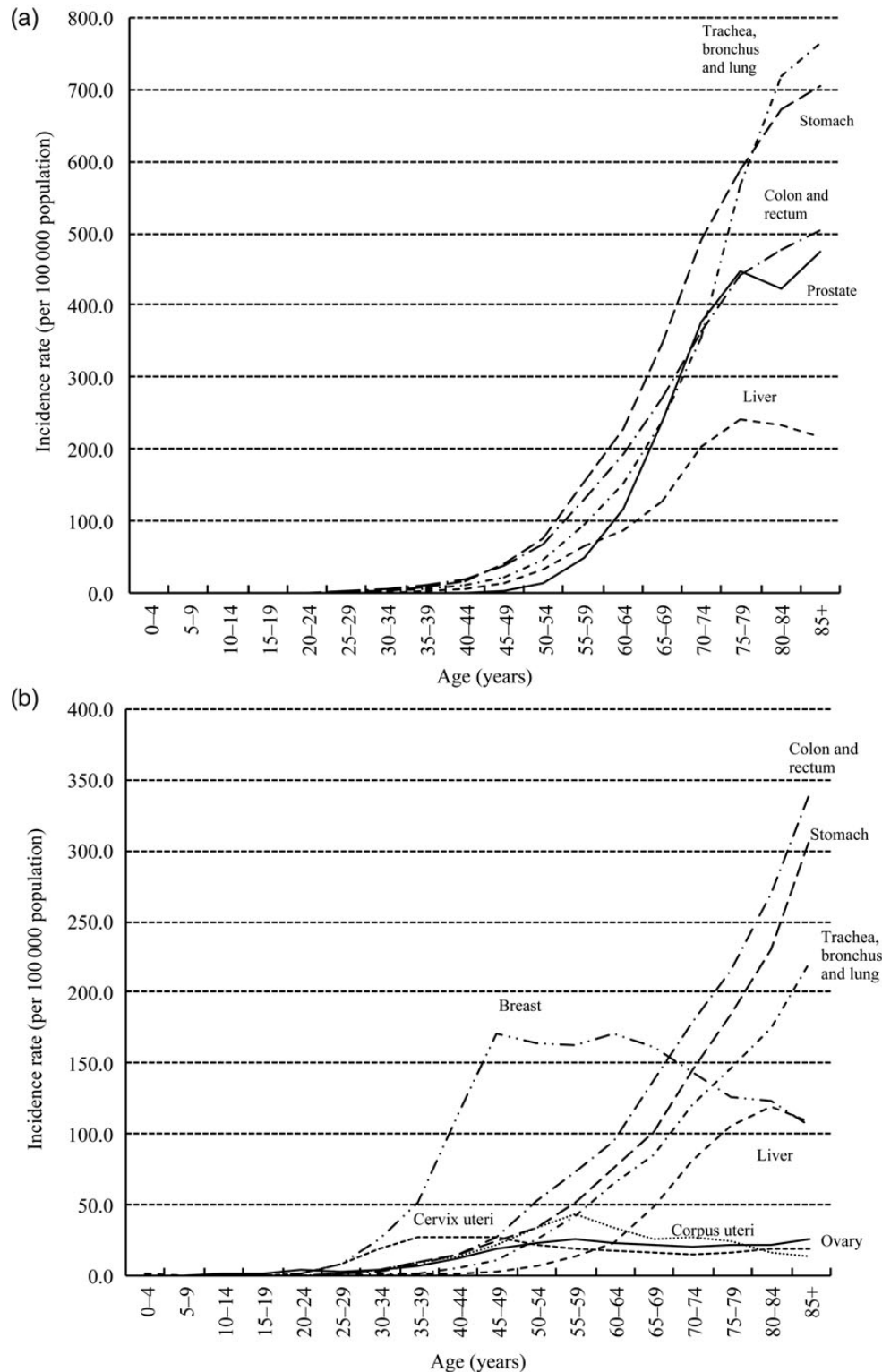
Figure 2. Age-specific incidence rate per population of 100 000 in 2008 for major cancer sites (only invasive) in males (a) and females (b).

age-specific incidence rates increased with age for stomach, colon and rectum, and lung cancers. The incidence rates peaked in approximately the fourth decade for breast, in the 30−39- and the 40−49-year-old groups for cervical cancer and in the 50−59-year-old group for corpus uteri cancer, all of which were clearly earlier compared with peaks for other primary sites.

The estimated cancer incidence data for Japan according to sex, cancer site, 5-year age groups and calendar year during the period of 1975−2008 are available in booklet format (in Japanese only), as well as via an electronic database on the following website: http://ganjoho.jp/professional/statistics/statistics.html. Additionally, an article about the trend analyses of cancer incidence and mortality in Japan from 1985 to 2007 was published in 2013 (13). The data are provided as an electronic database on the following website: http://ganjoho.jp/professional/statistics/statistics.html. An article about the trend analyses from 1985 to 2008 will be published if we can update our information with data from Miyagi that were not included in the MCIJ project in 2008.

Conflict of interest statement

None declared.

References

1. Marugame T, Kamo K, Katanoda K, Ajiki W, Sobue T. Cancer incidence and incidence rates in Japan in 2000: Estimates based on data from 11 population-based cancer registries. *Jpn J Clin Oncol* 2006;36:668−75.
2. Marugame T, Matsuda T, Kamo K, Katanoda K, Ajiki W, Sobue T. Cancer incidence and incidence rates in Japan in 2001 based on the data from 10 population-based cancer registries. *Jpn J Clin Oncol* 2007;37:884−91.
3. Matsuda T, Marugame T, Kamo K, Katanoda K, Ajiki W, Sobue T. Cancer incidence and incidence rates in Japan in 2002: based on data from 11 population-based cancer registries. *Jpn J Clin Oncol* 2008;38:641−8.
4. Matsuda T, Marugame T, Kamo K, Katanoda K, Ajiki W, Sobue T. Cancer incidence and incidence rates in Japan in 2003: based on data from 13 population-based cancer registries in the Monitoring of Cancer Incidence in Japan (MCIJ) Project. *Jpn J Clin Oncol* 2009;39:850−8.
5. Matsuda T, Marugame T, Kamo K, Katanoda K, Ajiki W, Sobue T. Cancer incidence and incidence rates in Japan in 2004: based on data from 14 population-based cancer registries in the Monitoring of Cancer Incidence in Japan (MCIJ) Project. *Jpn J Clin Oncol* 2010;40:1192−200.
6. Matsuda T, Marugame T, Kamo K, Katanoda K, Ajiki W, Sobue T. Cancer incidence and incidence rates in Japan in 2005: based on data from 12 population-based cancer registries in the Monitoring of Cancer Incidence in Japan (MCIJ) project. *Jpn J Clin Oncol* 2011;41:139−47.
7. Matsuda T, Marugame T, Kamo K, Katanoda K, Ajiki W, Sobue T. Cancer incidence and incidence rates in Japan in 2006: based on data from 15 population-based cancer registries in the Monitoring of Cancer Incidence in Japan (MCIJ) project. *Jpn J Clin Oncol* 2012;42:139−47.
8. Matsuda A, Matsuda T, Shibata A, Katanoda K, Sobue T, Nishimoto H. Cancer incidence and incidence rates in Japan in 2007: a study of 21 population-based cancer registries for the Monitoring of Cancer Incidence in Japan (MCIJ) project. *Jpn J Clin Oncol* 2013;43:328−36.
9. The Research Group for Population-based Cancer Registration in Japan. Cancer incidence and incidence rates in Japan in 1988: estimates based on data from ten population-based Cancer Registries. *Jpn J Clin Oncol* 1994;24:299−304.
10. The Research Group for Population-based Cancer Registration in Japan. Cancer incidence in Japan, 1985−89: re-estimation based on data from eight population-based cancer registries. *Jpn J Clin Oncol* 1998;28:54−67.
11. The Research Group for Population-based Cancer Registration in Japan. Cancer incidence in Japan. In: Tajima K, Kuroishi T, Oshima A, editors. *Cancer Mortality and Morbidity Statistics—Japan and the World*. Tokyo: Japanese Scientific Societies Press 2004;95−130.
12. U.S National Institutes of Health. SEER Summary Staging Manual 2000. http://seer.cancer.gov/tools/ssm/ (30 November 2012, date last accessed).
13. Katanoda K, Matsuda T, Matsuda A, et al. An updated report of the trends in cancer incidence and mortality in Japan. *Jpn J Clin Oncol* 2013;43:492−507.