

OVERVIEW

Overview of Players and Information in the Cancer Epidemiology and Control World in Asia

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Abstract

Cancer and related lifestyle diseases are on the increase across Asia and already account for over half the disease-associated mortality in the vast majority of the included countries. An understanding of the epidemiology is therefore of paramount importance. In addition, given the immensity of the problem, cooperation among all the interested parties is of the essence. The present series of reviews were compiled with the aim of promoting better comprehension and interaction, focusing on cancer prevalence and the underlying risk and preventive factors in Asia. Data from Cancer Incidence in Five Continents and Globocan 2002, published by the International Agency for Research on Cancer, as well as various other cancer registry sources, were thus married with research information in the public domain, accessible through PubMed. It is hoped that the comprehensive approach adopted for the different regions will help bring together all of the Asian community of individuals involved in cancer epidemiology and control and contribute to establishment of Asian networks for collaborative research. The major players and the overall picture for cancer control are covered in the present overview. Further details are then provided in seven separate regional reviews: for North-Western and Central Asia; South-West Asia; South Asia; Mainland South-East Asia; Peninsular and Island South-East Asia, the Pacific; and North-East Asia. The final section covers possible organ-based strategies for cancer control and, lastly, an Appendix has been included listing research institutes and staff in Asia to facilitate contacts between interested individuals.

Key Words: Asian cancer control - cancer registration - epidemiology - international organizations - networking

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Introduction - Players in Asia

Asia has a population of over four billion and accounts for over one half of the cancer burden of the world. Commensurate with its geographical extent, there are a number of organizations involved in cancer control within its frontiers, including four regional offices of the World Health Organization (see Figure 1). Other interested parties are the International Agency for Research on Cancer (IARC) and the International Association of Cancer Registries (IACR), both based in Lyon, France, the Asian Pacific Federation of Organizations for Cancer Control (APFOCC), the International Union Against Cancer Asian Regional Office for Cancer Control (UICC-ARO) and the Asian Pacific Organization for Cancer Prevention (APOCP). The possibility of an Asian Network of Cancer Registries is also now being mooted (ANCR), which might also join the APOCP and UICC-ARO in having the APJCP as its official publication.

WHO Regional Offices

There is involvement of four of the total of six WHO

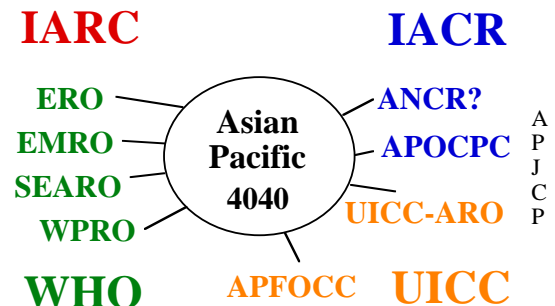


Figure 1. Parties Active in Cancer Control in Asia and the Pacific

regional offices: Europe (for Turkey, Israel, Siberia and Central Asia), the Eastern Mediterranean (for the Arab countries, Iran, Pakistan and Afghanistan), the South-East (India, Sri Lanka, Nepal, Bhutan, Bangladesh, North Korea, Myanmar, Thailand and Indonesia) and the Western Pacific (Mongolia, China, South Korea, Japan, Viet Nam, Laos and Cambodia, Malaysia, the Philippines, Papua New Guinea and the Pacific Islands).

All ostensibly have personnel responsible for promoting control of cancer within their Non-

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Table 1. WHO Collaborating Centres for Cancer Control in Asia and the Pacific (www.who.int/whocc/)

SEARO (1/92)* <u>Cancer Prevention, Screening and Detection</u> Tata Memorial Hospital, Mumbai, shastri@tmcmail.org www.tatamemorial.centre.com
WPRO (3/197) <u>Primary Prevention, Diagnosis/Treatment of Gastric Cancer</u> National Cancer Center, Tokyo, Japan No website, tksano@ncc.go.jp
<u>Research on Cancer</u> Cancer Hospital and Institute, Chinese Academy of Medical Sciences, Beijing, China No website, caodx@sun.ihep.ac.cn
<u>Research on Cancer</u> Cancer Centre, Sun Yat-sen University, Guangzhou No website, wyzz@gzsms.edu.cn
<u>Cancer Registration, Prevention and Early Detection</u> National Cancer Center, Seoul, Korea www.ncc.re.kr (but no information), yec0703@ncc.re.kr
EMRO (2/66) <u>Cancer Control and Lymphoma Research</u> Kuwait Cancer Control Center, M of H, Kuwait No website, Elbasmy@yahoo.com
<u>Cancer Prevention and Control</u> King Faisal Specialist Hospital and Research Center No website, no email address
ERO (0/344 in Asia, 4/344 in Europe itself)

* number with cancer in their title/total number of CCs

Communicable Disease sections. In addition to publication of education materials, the Regional Offices are meant to play essential roles in assisting establishment of so-called 'Collaborating Centres'. By definition, a WHO collaborating center should form part of an inter-institutional collaborative network set up by WHO in support of its programme at the country, intercountry, regional, interregional or global level, as appropriate. Each centre must also participate in the strengthening of country resources, in terms of information, services, research and training. Collaborating Centres with direct relevance to cancer control are unfortunately very few in relation to population size and the burden of cancer in Asia (see Table 1). Furthermore, none of them have accessible websites from which an assessment of functions could be made. This is an absolutely abysmal situation.

International Agency for Research on Cancer (IARC)

While the IARC (www.iarc.fr), a WHO agency with a separate funding mechanism, does not have an office in Asia, its research groups are active in collaboration with scientists in many of the included countries. A number of training courses have been held in Asia and the Pacific (see Table 2), in addition to the summer courses which are staged every year in Lyon itself. Of particular interest, the Descriptive Epidemiology Production Group in the IARC (<http://www.iarc.fr>) houses the secretariat for the International Association of Cancer Registries and is responsible for the Agencies contribution to world-wide cancer registration. It has now been joined by a Data Analysis and Interpretation group. These are involved in producing the Cancer Incidence in Five Continents (CIV) series, volumes IV-IX of which (Waterhouse et al., 1982;

Table 2. IARC Courses in Asia and the Pacific (www.iarc.fr/Education-Training/Training-Courses/International-Courses)

IARC-NCC International Course on Introduction to Cancer Registration and its Application	Sept 2008, Seoul, Korea
IARC International Course on Molecular Cancer Epidemiology	Sept 2006, Seoul, Korea
IARC International Course on Cancer Epidemiology Principles and Methods	May 2004, Tonga, Pacific
IARC-NUS Course on Molecular Epidemiology	Sept 2003, Singapore
IARC International Course on Cancer Epidemiology Principles and Methods	Sept 2003, Trivandrum, India

Muir et al., 1987; Parkin et al., 1992; 1997; 2002; Curado et al., 2007) were utilized for the present series of reviews as well as the Globocan 2002 estimates of incidence and mortality burden (Ferlay et al., 2004). The numbers of registries from different countries of the region included in CIV are summarized in Table 3. All of the countries of the world are covered in the Globocan 2002 estimates. Globocan 2007 is now on the way.

The Agency has been very active at helping set up regional registries in Asia. It has also published a number of other scientific publications covering various aspects of cancer registration, although the last was issued in 2003. Although IARC Press no longer exists, various publications like 'Cancer Registration: Principles and Methods' are now available as pdf files, freely downloadable from www.iarc.fr.

International Association for Cancer Registries (IACR)

We are dependent on our cancer registries for accurate information on incidences and mortality rates, as well as

Table 3. Numbers of Asian and Pacific Registries Included in the Series of Nine Volumes of CIV

Volume	I	II	III	IV	V	VI	VII	VIII	IX
Countries	4	4	5	6	8	10	12	15	18
Registries	4	5	7	11	17	23	26	43	48
Hawaii, USA	1	1	1	1	1	1	1	1	1
Israel*	1	1	1	1	1	1	1	1	1
Singapore*	1		1	1	1	1	1	1	1
Japan	1	2	3	4	4	6	6	6	7
India		1	1	2	5	4	6	9	7
China				2	3	4	4	10	6
Taiwan*								1	
Kuwait*						1	1	1	1
Philippines						1	2	1	2
Kyrgyzstan							1		
Thailand							2	2	3
French Polynesia								1	1
Korea*								1	4
Viet Nam								1	1
Oman									1
Pakistan									1
Bahrain									1
Cyprus									1
Egypt									1
Malaysia									2
Turkey									2

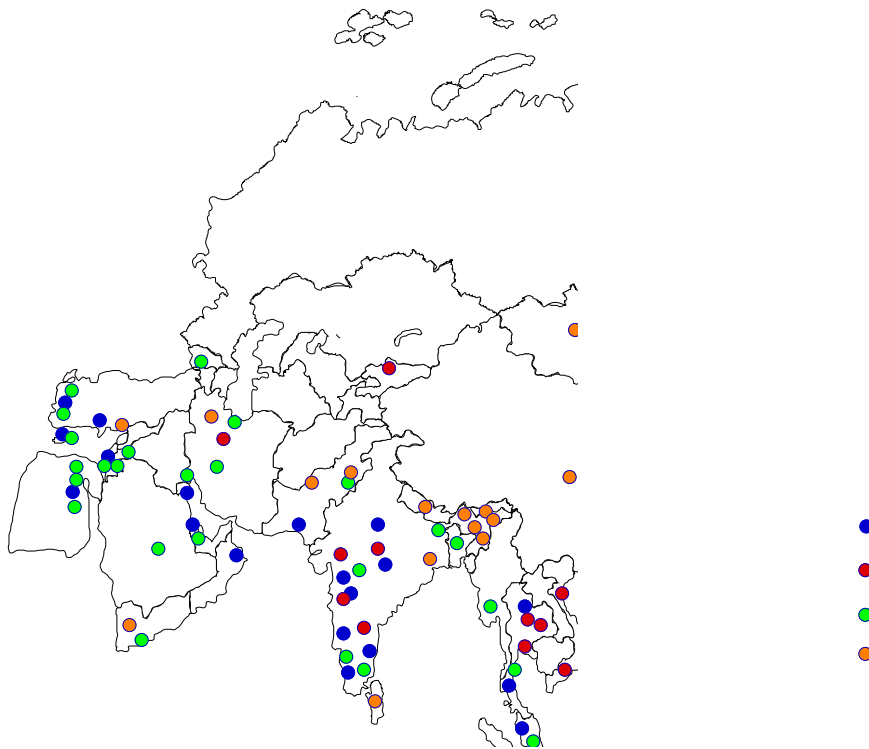


Figure 2. Cancer Registries in the Various Countries of Asia and the Pacific, Subdivided into Categories

trends over time. These are essential data for evidence-based cancer control programs. Due in large part to the efforts of the International Association for Cancer Registries (IACR) (<http://www.iacr.com.fr>), founded in 1966 as a professional society dedicated to fostering the aims and activities of cancer registries worldwide, and the support of IACR, with long-term dedication by Max Parkin, there are many cancer registries in Asia already producing data, although the indices of quality are very variable. The major division is into hospital- and population-based, but the former may also vary from simple Pathology Department surveys to coordinated efforts to registration of all cases diagnosed in an institution.

An overview of the majority of registries already active in Asia, to our knowledge, is given in Figure 1, with division into whether Voting or non-Voting members of the IACR (decided on the level of activity achieved by the registry), the former being further divided into those deemed to have or lack sufficient accuracy for inclusion in CIV. In the last issue, stricter application of criteria than was previously the case resulted in a number of cancer registries no longer being included in CIV, despite an increase overall over the numbers in previous volumes (see Table 3). The registries were in fact graded into different acceptable grades (along with a grade not included) on the basis of percentages of microscopically verified and death only certified (see Shin et al., 2009), many of the Asian registries being included in low

categories.

At the 22nd Annual Scientific Meeting of the International Association of Cancer Registries, held in Khon Kaen, Thailand, a poster session was dedicated to a review of the current situation with respect to cancer registration on the Asian continent. All of the contributors were asked to prepare an “extended abstract” which would include a rather structured account of cancer registration activities in the country, subsequently published as an APJCP Supplement (Parkin and Vatanasapt, 2001). The included countries/registries were Jordan (Qasem, 2001), Oman (al-Lawati et al., 2001), Saudi Arabia (Al Hamdan et al., 2001), Iran (Mosavi-Jarrahi et al., 2001), Pakistan (Bhurgri, 2001), India (Gajalakshmi et al., 2001), Thailand (Deerasamee et al., 2001), Viet Nam (Anh, 2001), Malaysia (Rosemawati and Sallehudin, 2001), the Philippines (Esteban et al., 2001), China (Wang, 2001), Hong Kong (Foo et al., 2001), Taiwan (You et al., 2001), Mongolia (Munkhtaivan et al., 2001), Korea (Ahn, 2001) and Japan (Oshima et al., 2001).

Asian Pacific Organization for Cancer Prevention (APOCP)

The APOCP was set up in 1999 as a professional body of scientists to promote all aspects of cancer prevention across the Asian Pacific. Its main activities have been to publish the Asian Pacific Journal of Cancer Prevention, now in its 11th year and cited on both PubMed and Science Citation Index Expanded, with papers freely downloadable

as pdf files from the APOCP website (www.apocp.org), and hold scientific meetings. At two year intervals a General Assembly Conference (GAC) has been held, the first in Nagoya in 2002, the second in Seoul in 2004, the third in Bangkok in 2006 and the fourth in Beijing in 2008. The fifth APOCP-GAC, with the theme 'Bridging Continents for Cancer Control' is scheduled in Istanbul, in April 2010, with Murat Tuncer as the President. In addition, Regional Conferences have been held in Izmir, Khon Kaen, Rasht and Nagoya, along with a number of smaller specialist meetings at irregular intervals across Asia.

International Union Against Cancer/Union Internationale Contra Cancrum (UICC) Asian Regional Office

In addition to the UICC Head Office in Geneva, with a total of 90 members in Asia (see the Appendix), and so-called 'spoke' in India, already responsible for producing a Handbook on Cancer Control in the sub-continent, and another in China, there is presently a UICC Asian Regional Office for Cancer Control (UICC-ARO), financed primarily by the Japanese National Committee of the UICC. Set up in 2006, this is now responsible for production of the APJCP as an electronic journal, in coordination with the APOCP. It also is involved in organizing symposia and a number of research projects and helping establish consortia for collaboration across Asia. Two are already in existence, for prostate cancer (Cheng et al., 2006) and for breast cancer (Yip et al., 2009). Its Head is also responsible for a program of Scientific English Training in different venues across Asia.

Asian Pacific Federation of Organizations for Cancer Control (APFOCC)

In 1973, scientists from many countries in Asia assembled with representatives of the WHO, UICC and IARC to establish the Asian Federation of Organizations for Cancer Control (AFOCC). The name was changed to the Asia-Pacific Federation (APFOCC) in 1979, because members were also accepted from Oceania. The total is now 21 (see the Appendix), the majority being National Oncology/Cancer Societies or National Cancer Centres/Institutes. Since the first meeting, the Asian Pacific Cancer Congress has been held every two years. At the last, in November 2009 in Tsukuba, Japan, with the theme 'Cancer Control - Setting the Focus on Unique Asian Pacific Contributions' (www2.convention.jp/2-th-apcc/), in collaboration with the UICC-ARO consortia were established for each of the major organ sites to allow more comprehensive coordinated activities in the future.

Asian & Pacific Islander American Health Forum (APIAHF)/Secretariat of the Pacific Community (SPC)

The mission of the APIAHF (www.apiahf.org) is to enable Asian Americans and Pacific Islanders, in the USA and elsewhere, to attain the best possible level of health and well-being, primarily through community-based efforts. The base is in San Francisco and the majority of projects have been set up to target populations on the mainland.

The SPC (www.spc.int) has a health lifestyle section

Table 5. National/Supranational Organizations in Asia

Asian Pacific Organisation for Cancer Prevention <i>Asian Pacific Journal of Cancer Prevention</i>
Middle East Cancer Consortium (http://mecc.cancer.gov/)
Gulf Center for Cancer Registration (http://www.gccr.org)
Iranian Group for Cancer Registration
Indian Group for Cancer Registration
Thai Association for Cancer Epidemiology
Chinese Association for Cancer Research
Korean Society for Cancer Prevention <i>Korean Journal of Cancer Prevention</i>
Japanese Association of Cancer Research <i>Cancer Science</i>
Japanese Association for Cancer Detection and Diagnosis
Japanese Association for Cancer Prevention <i>Newsletter</i>
Japanese Society of Cancer Epidemiology <i>Newsletter</i>
Japanese Society of Cancer Molecular Epidemiology
Japanese Society of Cancer Registries

which is focusing attention on non-communicable disease control.

Regional and National Players within Asia































In many of the countries within Asia there are national scientific organizations responsible for holding meetings and in some cases publishing journals or newsletters within various cancer fields (see Table 5). There are also a number of research collaborative groups like the Japan Collaborative Cohort Study for Evaluation of Cancer (Tamakoshi, 2007), the Research Group for the Development, Evaluation of Cancer Prevention Strategies in Japan and the Japan Public Health Center-based prospective study group, and the Korean Multi-center Cancer Cohort Study including a Biological Materials Bank (KMCC-I) and other genomic cohorts in Korea (Yoo et al., 2002; 2005). The Hospital-based Epidemiologic Research Program at Aichi Cancer Center (HERPACC), Japan (Tajima et al., 2000) also deserves mention in this context. Furthermore, there are two collaborative studies funded by Japan within North-East and South East Asia, entitled KOJACH (Korea, Japan and China) and the International Collaborative Epidemiologic Study of Host and Environmental Factors for Gastrointestinal Tract Cancers in Southeast Asian Countries.

The present supplement was conceived with the idea of bringing together interested parties within Asia in line with recent moves to form an Asian Cancer Registry Network (Moore et al., 2008). Taking advantage of the facilities which are already available in the form of cancer registries (see Figure 2), it is to be hoped that collaboration can be achieved with all the necessary players involved (Moore et al., 2009).

Cancer Control Programs in Asia

Data available from WHO and other websites on country flags and population sizes in 1995 and predicted for 2025, as well as burden of chronic disease in Asia and the Pacific are summarized in Table 5. The cancer

Table 6. Population and Disease Profiles for Countries in the Asian Pacific Region






















Country	Flag	Population (x10 ⁶) 1995 2025		Cancer*						Diabetes ⁺ (% Inc)		Circulatory [#]			
				Male			Female			1995	2025	Ischem		Cerebro	
				Inc	Mort	% [#]	Inc	Mort	(%) [#]			M	F	M	F
North West and Central															
Turkey		61.9	90.9	137.3	107.8	N	91.2	58.6	N	4.2	7.8	N	N	N	N
Armenia		3.6	4.7	212.9	155.3	18	171.2	94.5	16	3.6	4.7	33	34	14	21
Georgia		5.5	6.1	171.4	115.9	11	161.4	86.7	10	4.3	5.2	38	41	22	26
Azerbaijan		7.6	10.1	178.1	132.7	13	139.4	80.2	12	4.2	7.8	37	39	9	13
Iran		68.0	83.2	116.8	89.6	N	93.1	64.3	N	3.3	7.7	N	N	N	N
Turkmenistan		4.1	6.7	152.0	110.6	7	128.0	76.6	7	1.7	3.7	23	26	3	5
Uzbekistan		22.8	37.7	114.7	79.4	7	106.6	58.8	7	1.6	3.4	27	34	10	15
Kazakhstan		17.1	21.7	295.3	221.2	12	205.1	120.1	13	3.0	4.5	24	29	10	18
Kyrgyzstan		4.7	7.1	167.2	122.3	8	145.0	81.3	9	1.9	3.5	22	27	15	19
Tadjikistan		6.1	11.8	98.6	71.0	N	97.1	56.8	N	1.4	2.8	N	N	N	N
Afghanistan		20.8	50.3	115.0	86.6	N	114.9	73.3	N	2.2	2.9	N	N	N	N
South-West Asia															
Syria		14.6	33.5	179.7	132.4	N	167.4	104.1	N	3.4	8.7	N	N	N	N
Lebanon		3.0	4.4	179.7	135.1	N	167.4	104.1	N	3.8	8.0	N	N	N	N
Israel		5.6	7.8	295.6	132.6	23	303.3	142.6	23	4.1	6.6	16	15	5	7
Jordan		5.4	9.0	117.9	84.3	N	112.1	67.8	N	3.4	7.8	N	N	N	N
Egypt		62.9	97.3	101.0	87.0	5	84.0	64.9	4	3.4	6.5	3	2	6	6
Saudi Arabia		17.9	42.7	123.4	92.5	N	118.1	74.2	N	3.4	7.1	N	N	N	N
Yemen		14.5	33.7	123.4	92.5	N	118.1	73.2	N	1.6	3.2	N	N	N	N
Oman		2.2	6.1	94.2	71.2	N	77.9	50.2	N	3.8	6.5	N	N	N	N
UAE		1.9	3.0	123.4	91.9	N	118.1	73.9	N	13.7	20.9	N	N	N	N
Qatar		0.8	1.2	149.8	111.4	9	151.9	98.1	15	4.4	6.9	20	12	7	11
Bahrain		0.6	0.9	147.8	113.8	12	141.1	89.3	12	5.4	11.4	9	6	2	3
Kuwait		1.6	2.8	101.8	79.5	10	115.0	72.0	16	4.5	7.6	20	9	5	4
Iraq		20.4	42.7	123.4	90.2	N	118.1	74.7	N	2.6	5.0	N	N	N	N
South Asia															
Pakistan		140.5	284.8	129.6	94.4	N	154.5	91.9	N	3.2	6.1	N	N	N	N
India		935.8	1,392	99.0	73.4	N	104.4	67.6	N	2.9	5.8	N	N	N	N
Sri Lanka		18.3	25.0	99.0	69.6	5	104.4	63.2	7	3.2	6.8	5	4	3	3
Bangladesh		120.4	196.1	99.0	73.3	N	104.4	63.0	N	2.2	5.4	N	N	N	N
Nepal		21.9	40.7	105.3	78.3	N	110	67.3	N	1.6	3.3	N	N	N	N
Bhutan		1.6	3.1	105.3	78.3	N	110	67.3	N	1.6	3.3	N	N	N	N

* Incidence and mortality data from Globocan 2002, Ferlay et al., 2004; ⁺www.who.int/diabetes/facts/; [#]Percentage of total deaths due to the disease, www.who.int/whosis/database/mort/WHO Mortality, Armenia/Azerbaijan/Kazakhstan/Kuwait/Kyrgyzstan, 2005, Bahrain/Georgia/Turkmenistan, 2001, Egypt/Uzbekistan, 2000, Israel, 1999, Qatar/Sri Lanka, 1995

incidence and mortality data are overall estimates from Globocan 2002, and the percentage values are for mortality from all neoplasms as a proportion of the total deaths. These latter are very incomplete, only being available for

20 of the 50 countries listed, 64% for the North-West, 38% for the South-West, 17% for the South, 30% for the South-East, 17% for the Pacific and 75% for the North-East. In addition, in only a very small proportion of cases

Table 6 continued. Population and Disease Profiles for Countries in the Asian Pacific Region

Country	National Flag	Population		Cancer						Diabetes		Circulatory Disease (%)			
		(10 ⁶)		Male			Female			(%)		Disease (%)			
		1995	2025	Inc	Mort	(%)	Inc	Mort	(%)	1995	2025	Cerebro	Cardio		
Mainland South-east Asia															
Myanmar		41.7	53.0	139.0	109.0	N	117.8	77.3	N	1.3	2.5	N	N	N	N
Thailand		58.8	73.6	148.2	119.7	12	123.7	79.3	12	2.6	3.7	2	2	4	4
Laos		4.8	9.7	108.9	87.6	N	96.9	63.0	N	1.0	1.3	N	N	N	N
Cambodia		10.3	19.7	144.3	110.5	N	115.5	71.1	N	1.1	1.6	N	N	N	N
Viet Nam		74.5	118.1	143.5	116.2	N	103.6	67.1	N	1.1	2.0	N	N	N	N
Peninsular and Island South-East Asia															
Malaysia		20.1	31.6	152.1	118.2	N	140.4	88.7	N	4.7	7.8	N	N	N	N
Singapore		3.5	5.1	225.0	161.3	29	196.4	108.7	28	9.4	13.6	21	16	7	11
Brunei		0.3	0.5	145.7	112.7	N	128.6	83.0	N	6.0	9.8	N	N	N	N
Indonesia		197.6	275.6	97.2	55.3	N	106.8	63.3	N	4.3	7.7	N	N	N	N
Philippines		67.6	104.5	190.8	150.9	8	181.7	123.7	10	4.1	7.5	9	8	5	6
Pacific Islands															
Papua NG		4.3	8.0	147.9	104.6	N	165.4	103.1	N	3.6	4.9	N	N	N	N
Solomons		0.4	0.8	181.2	132	N	201.6	125.6	N	3.3	5.1	N	N	N	N
Vanuatu		0.2	0.3	181.2	132	N	201.6	125.6	N	3.0	5.6	N	N	N	N
Fiji		0.8	1.2	87	65.3	3	135.7	83.9	11	4.6	6.0	18	5	13	14
Guam		0.2	0.2	151.3	114.5	N	143.8	88.6	N	N	N	N	N	N	N
Samoa		0.2	0.3	169.3	126.3	N	159.3	97.6	N	2.0	2.3	N	N	N	N
North-east Asia															
Mongolia		2.4	3.8	238.6	203.7	17	174.0	86.2	17	1.3	2.5	8	8	6	7
China		1,221	1,526	204.9	159.8	N	129.5	86.7	N	1.6	2.9	N	N	N	N
N Korea		23.9	33.4	285.7	179.6	31	155.3	73.9	22	3.8	6.7	7	7	11	16
S Korea		45.0	54.4	285.7	179.6	31	155.3	73.9	22	3.8	6.7	7	7	11	16
Japan		125.1	121.6	261.5	154.3	34	167.4	82.2	26	5.3	7.4	7	7	11	13

Diabetes www.who.int/diabetes/facts/; Population www.census.gov/www/idb/summaries.html; WHO Mortality www.who.int/whosis/database/mort/, Japan/Singapore, 2006; Fiji, 1999; Philippines, 1998; Mongolia, 1994

are the data actually recent, and the vast majority are estimates for the 1990s, rather than the 21st century. There is major variation in the rates for cancer incidence and mortality, and also to some extent in the ratio between the two, reflecting differences in screening and early detection, as well as capacity for treatment and cure.

For comparison, WHO estimates for the burden of diabetes mellitus and percentage mortality from circulatory diseases, divided into cerebrovascular and cardiovascular, are also included in Table 6. Again there is considerable variation, but the picture is of increase in diabetes across the Asian Pacific.

A necessarily incomplete summary of elements of cancer control programs in place is similarly provided in Table 7, focusing on cancer registration, screening and tobacco policy. Cancer control programs have been

described in the literature for India (Desai, 2002), Malaysia (Lim (2002), Singapore (Hock et al., 2002), Indonesia (Tjindarbumi and Mangunkusumo, 2002), Thailand (Vatanasapt et al., 2002); Viet Nam (Anh and Duc, 2002), Taiwan (Chen et al., 2002), Korea (Anh, 2002; Yoo, 2008) and Japan (Yamaguchi, 2002).

Of the total of 51 countries listed, only 19 have some form of national center for cancer treatment, with research capacity only in a minority of these. Regarding cancer registration, only 20% of countries in Asia have population-based registries, and only 4 (8%) covering their entire populations. While hospital-based registration is being conducted in nearly all of the countries, we can conclude that the present registry coverage is minimal in 19 (36%) of the total of 51 countries here included in Asia and the Pacific (17% have only rudimentary registration

Table 7. Cancer Control Programs in Asian Countries

Region/Country	Natl Cancer Institution	Cancer Registration			Cancer Screening			Tobacco STEPS			
		National	Population	Hospital	Cervical	Mammary	Other	M	F	??	
NW	Turkey	No*	No	2	?	?	?	04/04			
	Armenia	No	No	?	?	?	?	?/04			
	Georgia	Yes	No	?	?	?	?	04/06			
	Azerbaijan	No	No	?	?	?	?	?/05?	?		
	Iran	Yes	No	3	?	?	?	03/05		Y	
	Turkmenistan	No	No	?	?	?	?	? ?		?	
	Uzbekistan	No	No	?	?	?	?	? ?			
	Kazakhstan	Yes	No	?	?	Pap	Mam	?	04/04		
	Kyrgyzstan	Yes	No	1?	?	?	?	?	04/06		
	Tadjikistan	No	No	?	?	?	?	?	? ?		
	Afghanistan	No	No	?	?	?	?	?	04/? ?	?	
	SW	Syria	No	No	?	?	?	?	03/04		Y
		Lebanon	No	No	1?	?	?	?	04/05		?
Israel		No	Yes	?	?	?	?	03/05		?	
Jordan		No	Yes	1	?	?	?	04/04		Y	
Egypt		Yes	No	1	?	?	?	03/05		Y	
Saudi Arabia		Yes	No	?	?	?	?	04/05		Y	
Yemen		Yes	No	1	?	?	?	03/07		?	
Oman		No	Yes	1	?	?	?	?/05		Y	
UAE		No	No	?	?	?	?	04/05		?	
Qatar		No	No	?	1	?	?	03/04		?	
Bahrain		No	No	?	?	?	?	?/07			
Kuwait		No	No	?	?	?	?	03/06		Y	
Iraq		No	No	?	?	?	?	04/08		Y	
South		Pakistan	No	No	?	?	?	?	04/04		Y
	India	Yes**	No	?	?	?	?	03/04?		Y	
	Sri Lanka	Yes	No	?	?	?	?	03/03		Y	
	Bangladesh	Yes	No	?	?	?	?	03/04		Y	
	Nepal	Yes	No	?	7	?	?	03/06		Y	
	Bhutan	No*	No	?	?	?	?	03/04		Y	
SE	Myanmar	No	No	?	?	?	?	03/04		Y	
	Thailand	Yes	No	?	?	Pap	P/O	?	03/04	?	
	Laos	No	No	?	?	?	?	?	04/06	?	
	Cambodia	No	No	?	?	?	?	?	04/05	?	
	Viet Nam	Yes	No	?	?	?	?	?	03/04	Y	
	Malaysia	No	No	?	?	?	?	?	03/05	Y	
	Singapore	Yes	No	?	?	?	?	?	03/04	?	
	Brunei	No*	No	?	?	?	?	?	04/04		
	Indonesia	Yes	No	?	?	?	?	?	? ?	Y	
	Philippines	No	No	?	?	?	?	?	03/05	?	
Pacific	Papua NG	No*	No	?	?	?	?	?	04/06	?	
	Solomons	No	No	?	?	?	?	?	04/04	?	
	Vanuatu	No	No	?	?	?	?	?	04/05	?	
	Fiji	No	No	?	?	?	?	?	03/03	Y	
	Guam	Yes	No	?	?	?	?	?	? ?	?	
	Samoa	No	No	?	?	?	?	?	03/05	Y	
	NE	Mongolia	Yes	No	?	?	?	?	?	03/04	Y
China		Yes	No	?	?	?	?	?	03/05	?	
N Korea		No	No	?	?	?	?	?	03/05	Y	
S Korea		Yes	No	?	?	Pap	Mam Co/St/Li	?	03/05	?	
Japan		Yes	No	35	350	Pap	Mam Co/St/Lu	?	04/04	?	

Pap; Papanicalaou smear; Mam, mammography; Co, colorectal; St, stomach; Li, liver; Lu, lung *Reportedly in the process of establishment

and over 65% have no CIV involvement). As stressed by Yang et al (2005), there are also great difficulties in guaranteeing comparability even within individual

countries, like China. There are a number of regional organizations which have been established to co-ordinate and assist with promoting uniform data standards and

Table 8. Cervical and Breast Cancer Opportunistic Screening Rates for Selected Countries (from WHO*)

Country	Cervical			Breast		
	Urban	Rural	Total	Urban	Rural	Total
Israel	33.6	46.9	34.7	56.8	54.5	56.6
UAE	19.4	5.0	16.9	21.3	10.4	19.1
Georgia	15.4	6.1	11.2	3.5	1.3	2.5
Kazakhstan	77.1	69.4	73.4	40.7	33.3	37.6
Pakistan	3.4	1.0	1.9	0.3	0.1	0.8
India	4.9	2.3	2.6	6.5	1.2	1.8
Sri Lanka	1.7	1.2	1.3	1.9	1.1	1.3
Bangladesh	1.0	0.2	0.4	1.6	0.4	0.6
Nepal	4.7	2.0	2.4	6.3	1.5	2.0
Myanmar	4.7	2.0	2.4	6.3	1.5	2.0
Malaysia	23.6	21.9	23.0	13.7	6.9	11.1
Laos	5.3	1.4	2.2	4.1	0.5	1.3
Viet Nam	4.5	5.0	4.9	4.2	1.5	2.2
Philippines	9.3	5.0	7.7	5.4	3.4	4.6
China	21.5	14.8	16.8	16.4	20.6	19.2

training courses for cancer registration. In Asia we have the Japanese Association of Cancer Registries (<http://home.att.ne.jp/grape/jacr/>), the Chinese National Center for Cancer Registries listed as Regional Cancer Registry Organizations in the IARC website, as well as other country-wide bodies.

The second arm of cancer control, along with health promotion in general, is increased awareness for early detection, and where feasible and of proven benefit, population-based screening for preneoplastic or premalignant lesions. While such screening is solely opportunistic in most of the countries of the region, Singapore, Korea and Japan are exceptional in having population-based screening programs for a number of cases (see Table 7). Thailand has also started a population-based program for cervical cancer and many countries have conducted assessment projects. However, even where they are in place, compliance may be poor.

WHO data for opportunistic screening rates for cervical and breast cancer are also available for a selected number of countries in Asia, as listed in Table 8. Of the total of 15, for the cervix only 6 have rates above single digits, this falling to 4 for rural populations. For the mammary gland, the respective figures are 5 and 4.

A third pillar of cancer control programs is the strategy for tobacco control. While all countries but Indonesia, Turkmenistan, Uzbekistan and Tadjikistan have signed the WHO Framework Convention on Tobacco control, there are very few that have actually introduced most of the included measures. Even basic data on smoking prevalence are not up to date (see Table 7). STEPS surveys have been carried out of non-communicable disease risk factors in over half of the countries.

The present supplement was conceived with the idea of bringing together interested parties within Asia in line with recent moves to form an Asian Cancer Registry Network (Moore et al., 2008). Taking advantage of the facilities which are already available in the form of cancer registries (see Figure 2), it is very feasible to build the capacity to generate research data with practical applications to assist governments in decisions as to implementation of cancer control programs.

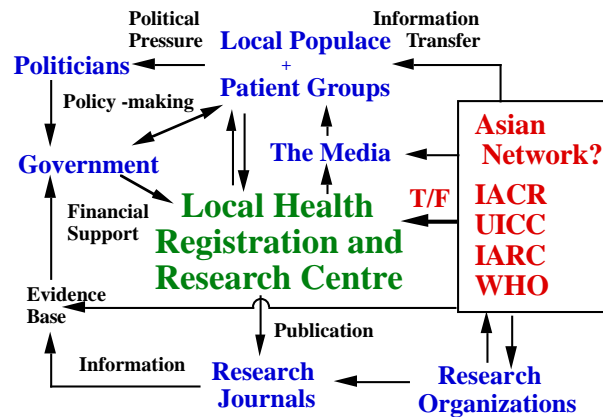


Figure 3. Concept of a Local Registration Center as a Major Research and Cancer Control Resource

As argued by Coleman et al (2003), surveys of public opinion, initiation of public debate, and legislation to protect both citizens' rights and medical research that is demonstrably in the public interest, are high priorities. It is natural that the registry could play a role in conducting such surveys. A start has in fact been made in Khon Kaen registry in Thailand (Wiangnon et al., 2007). An Asian Network, together with international players, could provide coordination and leadership in the areas of T/F (training/seed-financing) and how to reach out to the media and interact with patient groups (see Figure 3). Assistance could be given in research methodology and most important, the publication or research findings.

To provide ammunition in support of more funding for cancer registries and any Asian Network, research needs to be conducted to actually explain differences observed in incidence rates between and within countries in a convincing way so that they offer practical application. The question of financial support clearly will depend on the ability to generate better understanding, and this should be a stimulus to specific collaborative research, as argued in the present volume (Moore and Sobue, 2010). More stress might be given to cancer registries providing survival data (Tanaka et al., 2010), perhaps in active collaboration with cancer treatment centres (Evans et al., 2002). Research into clinical epidemiology is a very high priority and such activity by cancer registries might stimulate more involvement and support from pharmaceutical and information industries (Kawahara, 2007a; 2007b). International collaboration should facilitate making contacts with international industries active in pharma and information technology, working

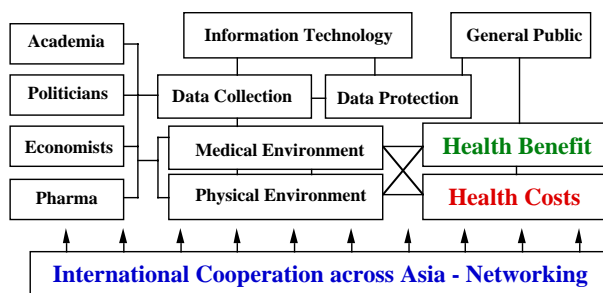


Figure 4. Interacting Parties in Determination of Health Benefit and Costs (after Kawahara, 2007b)

together with academia, politicians and economists to improve the health environment while holding down costs (see Figure 4). The Asian Pacific Organization for Cancer Prevention (and Control) and the UICC Asian Regional Office for Cancer Control are co-sponsoring this booklet with the aim of progressing towards this aim.

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