Trends in Cancer Mortality, 1955–1989: Asia, Africa and Oceania

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INTRODUCTION

DATA AND statistics on cancer mortality over the last four decades have been reported in a standard format, for 26 European and 16 American countries [1-6].

The World Health Organization (WHO) mortality database contains some data on mortality and population for a few other countries in Africa, Asia, Australia and New Zealand. Although for Asia and Africa data are scanty, not homogeneous and for some countries open to serious criticisms, we have decided to structure available material in a similar format, and produce a publication comparable to those for Europe and America.

Although some data presented should be considered with due critical attention, we hope that this publication will provide useful documentation for epidemiology, health statistics and public health. Since several of the data and statistics presented were not easily available, this may also offer useful indications for epidemiological inference and analytic epidemiology.

MATERIALS AND METHODS

Although the WHO database contains some data on population and mortality for several African and Asian countries, it was possible to obtain a meaningful and structured format for only a limited number of them, including a total of 10 countries, plus Australia and New Zeland. Thus, 12 countries were considered in the present report.

Africa. Data were available only for Mauritius and reporting areas of Egypt.

Asia. Eight countries provided mortality data from Asia: Hong Kong (not an independent country but a self-governing Commonwealth), Israel, Japan, Kuwait, Philippines, Singapore, Sri Lanka and Thailand.

Oceania. Data were available for Australia and New Zealand. During the calendar period considered (1955–1989), four different revisions of the International Classification of Diseases [7–10] (ICD) were used. Classification of cancer deaths was thus recoded, for all calendar periods and countries, according to the Ninth Revision of the International Classification of Diseases (ICD-9 [10]).

Two different details of classification of cancer deaths were available. Six countries (Hong Kong, Israel, Japan, Singapore, Australia and New Zealand) provided full details of the threedigit ICD codes, for a total of 27 cancer sites, plus total cancer mortality. For six other countries (Egypt, Mauritius, Kuwait, Philippines, Sri Lanka and Thailand), details were available only for 15 sites, plus total cancer mortality.

Table 1 gives the cancers or groups of cancers considered, together with the corresponding ICD codes under subsequent revisions. To improve comparability of data throughout different countries and calendar periods, we pooled together all intestinal sites including rectum [11], all uterine cancers (cervix and endometrium) [12, 13], all skin neoplasms (melanomas and non-melanomatous), all neoplasms of the brain or nerves (benign and malignant), and some relatively uncommon cancers (all connective and soft-tissue sarcomas, all non-Hodgkin's lymphomas). For six countries, no meaningful analyses were possible for rarer cancers (e.g. gallbladder, sarcomas, thyroid or lymphomas), and for those sites (e.g. liver, pancreas, ovary or brain) which implicate major difficulties and uncertainties in diagnosis and certification, and also for bladder and kidney cancer.

Estimates of the resident population, generally based on official censuses, were obtained from the same WHO databank. From the matrices of certified deaths and resident populations, age-specific rates for each 5-year age group and calendar period were computed. Age-standardised rates, at all ages and truncated 35-64 years, were based on the world standard population [14].

In a few countries, data were missing for part of one or more calendar periods, including six countries (Egypt, Kuwait, Mauritius, Philippines, Sri Lanka and Thailand) for which data were totally missing for the following cancers: liver, gallbladder and bile ducts, pleura, connective and soft tissue sarcomas, ovary, testis, kidney, brain, thyroid, all other lymphomas and multiple myeloma (Table 2). When a single year was missing within a quinquennium, numerators and denominators were interpolated linearly from the previous and subsequent calendar year. No extrapolation was made for missing data at the beginning or the end of the calendar period considered, or when data on one or more quinquennia were not available.

PRESENTATION OF RESULTS

For each cancer site and country, one table and three figures are presented.

The table includes, for each calendar year and sex, the absolute number of deaths and the overall age-standardised and truncated 35–64 years mortality rates.

The first figure includes world-standardised rates (all ages and truncated) for each 5-year calendar period in both sexes.

Age-specific rates from 30-34 to 65-69 years (for Egypt, Mauritius, Kuwait, Philippines, Sri Lanka and Thailand) or 80-84 years (for Hong Kong, Israel, Japan, Singapore, Australia and New Zealand) were plotted against the central year of birth cohort in the second figure for males and in the third for females. The points corresponding to the same age group were joined to

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8 ICD 9 ICD Type of cancer 6 ICD 7 ICD 140-148 140-148 140-149 140-149 Mouth or pharynx Oesophagus 150 150 150 150 151 151 151 151 Stomach 152-154 + 159.0 Intestines, chiefly colon and rectum 152-154 152-154 152-154 155.0 + 155.8155.0 155 Liver Gallbladder and bile ducts 155.1 156 156 Pancreas 157 157 157 157 161 161 161 161 Larvnx 162 (162 + 163) - 162.2162 Trachea, bronchus and lung 162 Plenra 162.2 163.0 163 196 170 Bone 196 170 171 Connective and soft tissue sarcomas 197 171 171 Skin including melanoma 190 + 191190 + 191172 + 173172 + 173Breast 170 170 174 174(M)/175(F) 179-182 Uterus (cervix and corpus) 171-174 171-174 180-182 175 175 183 183 Ovary Prostate 177 177 185 185 **Testis** 178 178 186 186 Bladder 1211 181* 188 188 Kidnev 180 180 1891 189* Brain and nerves 193 193 191 + 192191 + 192Thyroid 194 194 193 193 Hodgkin's disease 201 201 201 201 All other lymphomas 200 + 202 + 205 200 + 202 + 205200 + 202 + 208 + 209 200 + 202Multiple myeloma 203 203 203 203 Leukaemias 204 204 204-207 204-208 Total, all sites, all histologies 140-239 140-239 140-239 140-239

Table 1. Cancers or groups of cancers considered

provide more clearly spaced graphs. Thus, in this graph the cohort effect can be read in the ordinate.

GENERAL COMMENT

As for previous sections of this report [1-6], it is useful to remember that this work has essentially a descriptive interest, and comments and interpretations are consequently limited. A few general methodological comments are nonetheless included, to assist in critical reading and interpretation of the main patterns of rates and trends.

First, although age-standardised rates are a useful summary statistic, accurate inspection of subsequent age-specific rates is important before formulating any inference on trends in cancer mortality. Trends at younger ages are of major importance, not only because death certification and population estimates are more reliable, but also because they may contain useful indications as to the most likely future trends [15].

Due caution, moreover, should be paid to upward trends affecting older age groups only, while rates in younger and middle age remain stable (as frequently observed for cancer of the prostate, brain or leukaemias, where large diagnostic improvements have been achieved over the last two or three decades). Most of these apparent trends should in general be considered largely or totally artefactual [15].

Further, problems related to random variability should always be considered, and are clearly greater in relation to smaller populations and rarer cancers.

Finally, and more complex, there are problems of death certification accuracy and reliability in various countries and calendar periods. In general, for several common cancer sites including lung, stomach, colorectum and breast, death certification data should be acceptably reliable for most countries, particularly in relation to trends within countries and under the age of 65. Greater caution is required for a few countries and cancer sites, whose diagnosis and certification may be largely influenced by the availability and utilisation of diagnostic techniques and accuracy of registration [15–17]. These cancers include, among others, liver, bone, prostate, brain, myeloma and other lympho-haemopoietic neoplasms.

On the basis of these considerations, besides a non-uniform availability of data in various countries, trends in mortality of several countries are not given for a few rare (or particularly difficult to diagnose and certify) cancers, including liver, gallbladder, pancreas, ovary, bladder, kidney, brain, thyroid, lymphomas and myeloma.

For some countries, and specifically for Sri Lanka and Thailand, death certification rates are so low to appear largely unreliable even for most common cancers. With all the possible cautions in mind, these data are nonetheless presented for the sake of information, since no easy access was possible to cancer rates in these countries.

ORAL CAVITY AND PHARYNX

All cancers of the oral cavity and pharynx—including nasopharynx—were grouped together, in order to improve comparability and on account of difficulties in any distinction of various subsites on death certificates alone. This can explain the exceedingly high rates, particularly in males and in middle age, in Hong Kong (and Singapore [18, 19]), where nasopharyngeal cancer rates are specifically elevated.

Among the countries of Asia, oral and pharyngeal cancer rates

^{*}And other urinary sites. M, male; F, female.

Table 2. Calendar years for which data were missing for each country and cancer site

				Cancer sites			
Country	Mouth or pharynx	Oesophagus	Stomach	Intestines	Liver	Gallbladder and bile ducts	Pancreas
Africa							
Egypt	68–69, 81–86, 88–89	68–69, 81–86, 88–89	68–69, 81–86, 88–89	68–69, 81–86, 88–89	55–89	55–89	55–79, 81–86, 88–89
Mauritius	55–60	55–60	55-60	55–60	55–89	55-89	55–80
Asia							
Hong Kong	55–59	55–59	55–59	55–59	55–68	55–68, 82, 88–89	55–65
Israel	55–74	55–74	55–74	55-74	55-74, 79-86	55–74	55–74
Japan	_	-	_		55–79	55–57	_
Kuwait	55-74, 88-89	55-74, 88-89	55–74, 88–89	55-74, 88-89	55–89	55–89	55-78, 88-89
Philippines	55–62, 79–80, 82–89	55–62, 79–80, 82–89	55–62, 79–80, 82–89	55–62, 79–80, 82–89	55–89	55–89	55–89
Singapore	55–62	55-62	5562	5562	55-68, 88-89	55-68, 80	55–65
Sri Lanka	69–76, 78–79, 84, 87–89	69–76, 78–79, 84, 87–89	69–76, 78–79, 84, 87–89	69–76, 78–79, 84, 87–89	55–89	55–89	55–79, 84, 87–89
Thailand	55–56, 79, 88–89	55–56, 79, 88–89	55–56, 79, 88–89	55–56, 79, 88–89	55–89	55–89	55–79, 88–89
Oceania							
Australia	89	89	89	89	55–67, 79–84 87–89	55–67, 89	89
New Zealand		_		_	55–57 , 60–6 5	55-57, 60-6 5	_

Table 2. Continued

			Can	cer sites		
Country	Larynx	Trachea, bronchus and lung	Pleura	Bone	Connective and soft tissue sarcomas	Skin, incl. melanoma
Africa						
Egypt	68–69, 81–86, 88–89	68–69, 81–86, 88–89	55–89	55–69, 81–86, 88–89	55–89	55–57, 68–69, 81–86, 88–89
Mauritius	5560	55–60	55–89	55–68	55–89	55–60
Asia Hong Kong	55–59	55–59	55–78, 82 88–89	55–65	55–65, 82, 88–89	55–59
Israel	55–74	55–74	55-89	55–74	55–74	55-74
Japan	_	-	55-68		55–89	55–57
Kuwait	55-74, 88-89	55-74, 88-89	55-89	55-74, 88-89	_	55-74, 88-89
Philippines	55-62, 79-80, 82-89	55-62, 79-80, 82-89	55–89	55–72, 79–80, 82–89	55–89	55–62, 79–80, 82–89
Singapore	55–62	5562	55-89	55–65	55-65, 80	55-62
Sri Lanka	69–76, 78–79, 82, 84, 87–89	69–76, 78–79, 82, 84, 87–89	55–89	55–76, 78–79, 82, 84, 87–89	55–89	55-57, 69-76, 78-79, 82, 84, 87-89
Thailand	55-56, 79, 88-89	55–56, 79, 88–89	55–89	55-68, 79, 88-89	55–89	55–57, 79, 88–89
Oceania Australia	89	89	55–69	89	89	55–57, 89
New Zealand		-	55-68	_	_	5557

Table 2. Continued

			Cancer sites		
Country	Breast	Uterus (cervix and corpus)	Ovary	Prostate	Testis
Africa					
Egypt	68-69, 81-86, 88-89	68-69, 81-86, 88-89	55–89	68-69, 81-86, 88-89	55-89
Mauritius	55–60	55–60	55–89	55–60	55~89
Asia					
Hong Kong	55–59	55–59	55-65, 79-89	55–59	5565
Israel	55–74	55–74	55–74, 81–86	55–74	55–74
Japan			_		
Kuwait	55-74, 88-89	55-74, 88-89	55–89	55-74, 88-89	55-89
Philippines	55-62, 79-80, 82-89	55-62, 79-80, 82-89	55–89	55-62, 79-80, 82-89	55~89
Singapore	5562	55–62	55-65, 80, 88-89	55–62	5565
Sri Lanka	69–76, 78–79, 82, 84, 87–89	69–76, 78–79, 82, 84, 87–89	55–89	69–76, 78–79, 82, 84, 87–89	5589
Thailand	55-56, 79, 88-89	55–56, 79, 88–89	55–89	55-56, 79, 88-89	55–89
Oceania					
Australia	89	89	81–84, 87–89	89	89
New Zealand			_	_	

Table 2. Continued

		Cancer	sites	
Country	Bladder	Kidney	Brain or nerves	Thyroid
Africa				
Egypt	55-79, 81-86, 88-89	55-89	55-89	55~89
Mauritius	55–80	55–89	55–89	55-89
Asia				
Hong Kong	55–65	55-65, 82, 88-89	55-65, 78-89	55-65, 82, 88-89
Israel	55–74	55-74	55-74, 78-89	55-74
Japan	_		55-57, 78-89	55-57
Kuwait	55-78, 88-89	55-89	55–89	55-89
Philippines	55–89	55-89	55–89	5589
Singapore	55–65	55-65, 80	55-65, 78-89	55-65, 80
Sri Lanka	55-79, 82, 84, 87-89	55–89	55–89	55–89
Thailand	55–79, 88–89	55–89	55–89	5589
Oceania				
Australia	89	89	55-57, 78-89	55-57, 89
New Zealand	_	-	55-57, 78-89	55–57

were low (i.e. below 1/100 000 in both sexes)—and declining—in Egypt, and they were also low in Israel and Thailand. In Japan, they started at low values (1.3/100 000), but, at least in males, increased appreciably to reach 2.1/100 000 in the late 1980s. Some increase in males, starting from higher values, was observed in Mauritius and the Philippines, and also in Australia and New Zealand to reach values above 4/100 000 males.

The high rates of nasopharyngeal cancer in Hong Kong (and Singapore) have been related to Epstein-Barr virus infections in childhood, and to consumption of selected foods—such as seasalted fish—which are potentially rich in nitrosamines [18, 19]. In this area, trends have been favourable over the most recent calendar period. Sea-salted fish may also play a role in nasopharyngeal cancer in Thailand [20].

Table 2. Continued

			Cancer sites		
Country	Hodgkin's disease	All other lymphomas	Multiple myeloma	Leukaemias	Total, all neoplasms
Africa					_
Egypt	55–79, 81–86, 88–89	55–89	55–89	55–57, 68–69, 81–86, 88–89	68–69, 81–86, 88–89
Mauritius	55–80	55–89	55–89	55–60	55–60
Asia					
Hong Kong	55–63	55-68, 82, 88-89	55-68, 82, 88-89	55–59	55–59
Israel	55-74	55-74	55–74	55-74	55-74
Japan	55–57	55-67	55-67	55–57	_
Kuwait	55-78, 88-89	55-89	55–89	55-74, 88-89	55-74, 88-89
Philippines	55–89	55–89	55–89	55–62, 79–80, 82–89	55–62, 79–80, 82–89
Singapore	55–63	55-68, 80	55-68, 80	55–62	55–62
Sri Lanka	55–79, 82, 84, 87–89	55–89	55–89	55–57, 69–76, 78–79, 82, 84, 87–89	69–76, 78–79, 84, 87–89
Thailand	55–89	55–89	55–89	55–57, 79, 88–89	55–56, 79, 88–89
Oceania					
Australia	55–57, 89	55-67, 89	55–67, 89	55–57, 89	89
New Zealand	55–57	55–67	5567	55–57	_

Tobacco chewing may contribute to oral cancer in Sri Lanka [21]. In contrast, the upward trends in several other countries, including Japan, Australia and New Zealand, are probably related to recent increases in alcohol and tobacco consumption, which are the major causes of oral and pharyngeal cancer in developed countries [19]. Likewise, the exceedingly low rates of oral and pharyngeal cancer in Egypt and Israel are attributable to the low alcohol consumption in these populations.

OESOPHAGUS

This is another neoplasm related to alcohol and tobacco consumption and, probably, to a diet poor in fresh fruit and vegetables and hence selected (micro)nutrients [22, 23].

Thus, the low alcohol consumption may explain the extremely low rates in Egypt and Israel (below 2/100000), and possibly the low rates in Kuwait, the Philippines and Thailand. Oesophageal cancer mortality was high (i.e. between 7 and 11/100000 males over the most recent calendar period) in Hong Kong, Singapore and Japan. It is possible that dietary factors, besides alcohol and tobacco, had an important role on oesophageal carcinogenesis in these countries. Trends over time were favourable, particularly in Singapore. Still, the recent upward trends in young Japanese males are extremely worrying, and should be carefully monitored.

Rates were intermediate, in the order of 4.5-5/100 000 males and 1.5-2.0/100 000 females in Australia and New Zealand, but trends over time were unfavourable, particularly for males, probably reflecting recent patterns of alcohol, besides tobacco, consumption [24]. It is thus regrettable that mortality for a neoplasm whose main causes have long been known is still rising in several developed areas of the world [19].

STOMACH

Stomach cancer rates were, and still are, high in Japan, although during the three decades considered overall agetandardised mortality declined from 71 to 38/100 000 males, and from 37 to 17/100 000 females. The falls were even greater, approaching 60% in the truncated rates from 35 to 64 years.

Other countries showing substantial declines in gastric cancer mortality, although starting from apparently lower values, are Singapore, Hong Kong, Israel, Australia and New Zealand. For the latter two countries, gastric cancer rates in the late 1980s were below 10/100 000 males and 5/100 000 females, and trends were still downwards. There is, however, some evidence of levelling of rates in the younger age groups. Gastric cancer rates were extremely low, but did not show systematic trends as in other countries considered, including Egypt, Kuwait, the Philippines and Thailand. Such low values are possibly, at least in part, attributable to problems in case ascertainment and certification, although gastric cancer is relatively easy to diagnose.

The declines in Japan, Hong Kong, Singapore and Oceania, though starting from different levels, reflect the generalised downwards trends of gastric cancer rates in developed (and also several developing [1, 6, 25]) areas of the world. The exact causes are not known, but improved diet and availability of modern techniques of food storage and conservation (including refrigeration [26]), together with the reduced prevalence of *Helicobacter pylori* infection in the gastric mucosa have probably played an important role [25, 27].

INTESTINES (CHIEFLY COLON AND RECTUM)

Diagnosis and certification of all intestinal sites, including colon and rectum, should not cause major difficulties, although the distinction between colon and rectal cancer may pose some problems, since most cancers arise from the recto-sigmoid junction [11, 28].

Still, the extremely low rates in Egypt, Mauritius, Kuwait, the Philippines, Sri Lanka and Thailand are difficult to interpret, and probably include a substantial proportion of underascertainment.

Rates were around 15/100000 males and 12-13/100000 females, and were moderately downwards in Israel. In Hong Kong, Japan and Singapore intestinal cancer mortality rates started from low values (7-12/100000 males; 6-9/100000 females), but increased steadily to reach values of 15 and 10/100000 among males and females, respectively, in Japan and Hong Kong, and of 20 and 15/100000, respectively, in Singapore. However, in the younger age groups, and hence in most recent generations of Japanese, a clear reversal of trends was evident, with recent declines in rates. This is difficult to explain, since there is no indication of improvements in risk factor exposure which may have caused such a favourable reversal of trends among recent generations of Japanese. This indicates, in any case, that the Japanese will probably never reach the high colorectal cancer rates registered in most western countries.

Australia and New Zealand started with high intestinal cancer rates, which, however, tended to increase further, particularly among males, to reach values of 22/100 000 in Australia and 26/100 000 in New Zealand, i.e. among the highest in the world. Also in these countries, however, there was a reversal of trends, substantial declines being observed in the younger age groups over more recent years. This may suggest a general decline in intestinal cancer in the future [29].

A western diet, rich in animal fat and possibly red meat, has been associated with elevated risk of intestinal cancer [30, 31], and may be responsible both for the unfavourable trends in Japan and other countries in the Far East, and for the high rates in Australia and, particularly, New Zealand.

LIVER

There are major problems in the definition and classification of primary liver cancer even in middle and younger age, since this is a common site of secondaries [15]. Although the interpretation of trends is, therefore, extremely difficult, the exceedingly high rates in Hong Kong (29/100 000 males, 7/100 000 females) and also the high rates in Japan are probably, at least in part, real. It is known that hepatitis B virus is the major cause of liver cancer in these areas of the world, although alcohol consumption may also play a role [32–34].

Liver cancer rates in Australia and New Zealand were low (around 2/100 000 males and 0.5/100 000 females), as in most developed western countries [1, 6].

GALLBLADDER AND BILE DUCTS

The two main features in the descriptive epidemiology of gallbladder cancer are its higher rates in females than in males, and its elevated frequency in selected populations such as native Americans or several southern American populations [35, 36]. Another relatively high mortality area is central Europe [37].

In comparison with those areas, gallbladder cancer rates were low—and showed no tendency to increase—in Israel, Singapore, Australia and New Zealand (below 2/100 000). Rates were intermediate, with steady and appreciable rises, in Hong Kong, and

elevated—after three decades of steady rises—in Japan (around 5/100 000 females in the last calendar period). Only in the younger age groups was there some tendency towards levelling off in Japan.

A peculiar feature of gallbladder cancer rates in the Far East (Japan, Hong Kong and Singapore) is the absence of female excess; in most recent years, indeed, mortality was somewhat higher in males than in females.

Some of the substantial increase registered in Japan may be attributable to improved certification. Since this neoplasm is related to gallstones, obesity, and, possibly, some aspect of diet [35–37] it is, however, possible that the rise is at least in part real, and due to increased prevalence of these risk factors.

The very low rates and the favourable trends in Australia and New Zealand are similar to those recently observed in the U.K., in the absence, however, of any simple interpretation [38].

PANCREAS

Pancreatic cancer rates in Hong Kong were low—on a world-wide scale—and stable at around 4/100000 for males, while increasing from about 2 to 3/100000 in females. In Israel, rates were relatively high (around 8/100000 males and 5–6/100000 females, all ages, world standard) but slightly declining. In Singapore and, mostly, in Japan they started at low values in both sexes, but increased substantially to reach values of 8.4/100000 males and 4.7/100000 females in Japan and of 5.2 and 3.2/100000 in Singapore. The values of most recent years in Japan are among the highest registered in the world. Data are not very informative for other countries.

Some of these unfavourable trends are attributable to tobacco smoking [39], which is the single established risk factor for pancreatic cancer. Dietary factors, as well as improved diagnosis and certification, may also have had some role which is, however, difficult to assess and quantify [40].

LARYNX

Laryngeal cancer rates were generally low in the 10 African and Asian countries considered, and in several of them, including Kuwait, Sri Lanka, Hong Kong and, mostly, Japan, showed substantial declines over recent periods. These downward trends were observed in all subsequent age groups, and are surprising, since tobacco is the major recognised risk factor of laryngeal cancer, at least in developed countries [41]. Alcohol, however, also has an important effect [41], and a poor diet (deficient in fresh fruit, vegetables and possibly several micronutrients) has a contributing role in laryngeal carcinogenesis [42, 43].

In Australia and New Zealand, in contrast, appreciable upward trends were observed in earlier calendar periods, particularly in young and middle-aged males. These are now levelling off, and rates are declining in the young.

Laryngeal cancer is very rare in females, and no consistent or noticeable trends were evident in any of the countries considered.

TRACHEA, BRONCHUS AND LUNG

This is the main tobacco-related cancer [39, 44, 45] and its mortality has been rising in most countries of Asia and Africa for which data were available, although starting values were very low. Thus, in the late 1980s, certified mortality from lung cancer in males was still below or around 10/100 000 males in Egypt, Sri Lanka, the Philippines and Thailand, and around 20/100 000 in Mauritius, Israel and Kuwait. Substantial upward trends, at least in proportional terms, were observed at younger ages for both sexes, thus indicating that the epidemic of (tobacco-related)

lung cancer will continue to spread in these areas of the world, in the absence of efficacious intervention.

This is true for Japan, too, where overall lung cancer mortality increased 4-fold in males and 3-fold in females over the last few decades, reaching rates of 29/100 000 males and 8/100 000 females and corresponding to a total of over 30 000 deaths per year. Contrary to what was observed in most western countries, the upward trends were still persistent and substantial even in young middle age for both sexes.

Hong Kong and Singapore started with higher lung cancer rates in the 1960s (25–30/100000 males and over 10/100000 females), and showed appreciable increases to reach values greater than 50/100000 males and approach 20–25/100000 females in the late 1980s. These rates for females are among the highest in the world. From the late 1970s onwards, however, mortality tended to level off in males and even to decline at younger and middle ages.

A similar pattern of trends was observed in Australia and New Zealand, although the levelling of rates started earlier in males; therefore, the overall age-standardised rates in the late 1980s were around 45/100 000 males, and 12 (in Australia) and 16 (in New Zealand) /100 000 females. This indicates that efficacious measures to control the tobacco-related lung cancer epidemic have been implemented in these countries, and are now producing their first impact.

PLEURA

Pleural mesothelioma is essentially linked to occupational exposure to asbestos [46]. This would implicate an increasing amount of exposure to this carcinogen in subsequent generations of Australian and New Zealand males, who showed major increases in rates. It is, however, difficult to understand and interpret the substantial declines registered in Hong Kong and Japan, if not in terms of changed criteria of diagnostics and classification. This is particularly important, in consideration of the changes introduced for cancer of the pleura by subsequent revisions of the ICD [7–10].

BONE

This is a common site of secondaries, and hence most of the favourable trends registered in developed countries are probably due to improved diagnosis and classification of secondaries, although therapeutic advancements may also have played a role. Thus, rates in Japan, Singapore, Australia and New Zealand (around 0.5/100000) are now among the lowest in the world.

The upward trends in some developing countries, like Egypt, Mauritius, Thailand and the Philippines may again reflect the persisting low accuracy and reliability of cancer death certification in these countries, together with an increased attention to the cancer issue over the last few years.

CONNECTIVE AND SOFT TISSUE SARCOMAS

This is a rare group of neoplasms, which may be subject to substantial problems regarding diagnosis and certification. Still, the pattern of trends observed in most countries over the last few decades is consistent with evidence of steady and generalised rises.

In proportional terms, the largest increases were observed in Japan (from 0.06 to 0.46/100 000 males, and from 0.05 to 0.32/100 000 females), but upward trends were observed—at least until the mid 1980s—in all other countries providing data and, within countries, in each separate age group. In the late 1980s, overall age-standardised rates ranged from 0.46/100 000 in Hong

Kong and Japan, to 0.92/100000 in Australia for males, and from 0.32/100000 in Japan, to 0.74/100000 in New Zealand for females.

Little is known about the aetiology of these neoplasms, except there may be a potential link with occupational exposure to chlorophenols, phenoxy acids and other herbicides [47]. It is, therefore, difficult to separate the impact of the real increase of the disease from that of artefactual trends attributable to improved diagnosis and certification.

SKIN, INCLUDING MELANOMA

Major differences in certified mortality were evident between countries reporting data on skin cancer, including melanoma. Australia and New Zealand showed substantial increases, mostly for males (from 3.9 to 6.4/100 000 males and from 2.4 to 2.9/100 000 females in Australia; from 2.7 to 6.5/100 000 males and from 2.1 to 3.5/100 000 females in New Zealand), and these rises were still evident in the younger generations, particularly for males. These are now the highest rates from skin neoplasms registered on a worldwide scale. Israel had intermediate rates, stable around 2.4/100 000 males, and increasing from 1.5 to 1.9/100 000 females.

In contrast, skin cancer rates were extremely low, and declining in Japan (0.45/100000 males and 0.28/100000 females in 1985–1989), Hong Kong (0.46/100000 males and 0.29/100000 females), Singapore (0.81/100000 males, 0.65/100000 females), and other countries from Africa and Asia. This reflects different racial susceptibility to melanoma, which is extremely low in orientals, as well as—most likely—a decline in non-melanomatous skin cancers. This is probably due to reduced continuous and long-term exposure to sunshine, which was common in the past in farming, fishing and outdoor occupations [48].

In contrast, increased intense intermittent sunlight exposure—which is particularly harmful in individuals of light complexion [49]—is the most likely cause of the increased rates of skin melanoma in Australia and New Zealand.

BREAST

In comparison with breast cancer mortality in western countries (generally ranging between 20 and 30/100 000 females) [50], breast cancer rates were very low (i.e. between 3 and 13/100 000) in all African and Asian countries providing data, except Israel, whose rate in 1985–1989 was 22.7/100 000. Some of the certified trends, and probably those of Sri Lanka and Thailand, are nonetheless so low to include almost certainly a substantial degree of underestimation.

Considerable upward trends were observed in Mauritius, Singapore and, mostly, Japan, whose overall age-standardised rates increased from 3.8 to 6.1/100 000. In Japan, substanttial increases were also observed in the truncated rates (from 8.4 to 14.4/100 000), as well as in all subsequent age groups, including the youngest ones.

Australia and New Zealand had breast cancer rates comparable to most western countries: stable, around 20/100 000 in Australia, and moderate but steadily rising from 22 to 27/100 000 in New Zealand.

The reasons for the substantial differences in breast cancer rates between Japan (and other Asian and African countries) and western countries are at least in part understood, and include menstrual and reproductive factors (delayed menarche, earlier age at first birth), lower body weight, and possibly also dietary factors [30, 50–54]. The recent trends in Japan, however, indicate that its past advantage in breast cancer mortality has been and will probably further be, at least in part, lost in the future.

UTERUS (CERVIX AND CORPUS)

Uterine carcinomas include neoplasms arising both from the cervix and the corpus uteri, since on the basis of death certification alone it was not possible to distinguish between cancers of the corpus and of the cervix uteri, although the epidemiology and aetiology of the two sites is largely different [55, 56]. Inspection of age-specific rates, nonetheless, suggests that in Asian and African countries most cancers arise from the cervix. In fact, there is a relatively moderate variation in rates (as compared for instance with Australia and New Zealand) across subsequent age groups, and it is known that endometrial cancer is a disease typical of elderly women and extremely rare at younger and middle age [56]. In any case, trends in the truncated rates from 35 to 64 years are essentially attributable to cervical cancer.

These trends were favourable in Egypt and Sri Lanka, which already started with low rates (4–5/100000), and approached 2/100000 in the late 1980s, and also in Israel (from 5 to 4/100000), Hong Kong (from 14 to 6/100000) and Mauritius, which however, started with high rates (18/100000), and declined to 12/100000. Rates were relatively low (between 2 and 7/100000) in Sri Lanka, Thailand and the Philippines, with an absence, however, of clear downward trends.

Major declines were also observed in Japan (from 18 to 5/100000), Singapore (from 17 to 9/100000), Australia (from 10.5 to 5/100000) and, to a lesser extent, New Zealand (from 11 to 7/100000). These rates were among the lowest on a worldwide scale. In all these countries the declines were larger at younger and middle age, indicating that they should be essentially attributable to reduced mortality from cervical cancer. In Japan, Australia and New Zealand there is, however, evidence of a levelling—or even a reversal—of trends in the youngest age groups over the most recent calendar periods.

Since cervical cancer is essentially a venereal disease, the reasons for these declines should be searched for in the changed sexual habits of women and their partners, increased genital hygiene and also increased utilisation of cervical screening (Pap smear) [12, 55, 57–59].

OVARY

In the most recent calendar period, overall mortality from ovarian cancer was around 6/100 000 in Israel, between 3 and 4/100 000 in Hong Kong, Japan and Singapore, 5.5/100 000 in Australia and 6.5/100 000 in New Zealand. Trends over time were even more diverging, since there was no appreciable pattern in Hong Kong and Israel, the trends were downwards (at least from the 1970s onwards) in Australia and New Zealand, and there were substantial rises in Singapore (by 70%) and Japan (by about 150%). In all countries, however, trends were more favourable at younger ages, and hence in more recent generations of women.

Hormonal and reproductive factors are now the best recognised risk factors for ovarian cancer [60], and may, at least in part, explain the trends observed. Thus, the declines in Australia and New Zealand reflect the spread of oral contraceptives, which are strongly protective against ovarian cancer [61], in these populations. The unfavourable trend in Japan can be related to the low prevalence of oral contraceptives in that country [62], and probably to the changed childbearing pattern, since it is known that the risk of ovarian cancer is inversely related to parity [60]. In addition to reproductive and hormonal factors, diet is likely to be of some relevance in the aetiology of ovarian cancer, although its role—in various countries and calendar

periods—is still poorly quantified [60]. The favourable trends in younger women are attributable to a cohort effect but, at least in part, may reflect improvements in therapy, particularly for non-epithelial neoplasms, which are more common at younger ages [63, 64]. Finally, improvements in diagnostic and certification accuracy may also have biased recent trends, particularly among elderly women.

PROSTATE

Cancer of the prostate is a disease of elderly men, and its rates are largely influenced by diagnosis and certification accuracy. Neoplastic foci in the prostate, in fact, are found in a large proportion of elderly men in various populations of the world [65].

These difficulties in diagnosis and certification largely or totally explain the extremely low (and almost certainly unreliable) certified rates from most African and Asian countries. Other countries, whose prostatic cancer rates are probably more reliable, such as Kuwait, Hong Kong and Israel, showed relatively low rates on a worldwide scale, and no consistent pattern of trends, particularly in middle age. Appreciable rises, however, were registered in Singapore and Japan, which however, still had in the late 1980s very low prostatic cancer rates on a worldwide scale (3.5 to 4/100000, all ages). Further, the upward trends were larger, or restricted, to the elderly age groups, while most recent trends in young Japanese were indeed (and surprisingly) downwards. This indicates that improved diagnosis and certification (whose impact is greater in the elderly) has influenced recent trends in these countries, too.

Prostatic cancer rates were much higher (around 16–18/100000, all ages) in Australia and New Zealand, with some modest rises in the elderly (but, again, some slight declines in the younger age groups).

Problems of diagnosis and certification notwithstanding, most of the differences in prostatic cancer rates between Japan (and other Asian countries) and Australia or New Zealand appear real. It is likely that dietary (and other lifestyle) factors play some role in these differences, but the aetiology of prostatic cancer remains largely obscure [66–68]. The paucity of reliable information on prostatic cancer causes is particularly regrettable, since this is one of the most common cancers in men, at least in developed areas of the world.

TESTIS

All the six countries providing data on testicular cancer mortality showed upward or inconsistent trends until the late 1970s, but substantial declines in rates over the last decade. The decline was over 50% in Israel, Hong Kong, Australia and New Zealand, and around 30% in Japan, which, however, has one of the lowest testicular cancer rates on a worldwide scale.

These generalised and substantial declines are attributable to the availability and application of newer therapeutic approaches over the last two decades, and probably to the addition of cisplatin to chemotherapy schemes in the late 1970s, which led to cure rates of the order of 80% [69]. In Japan, this corresponds to the avoidance of over 300 deaths per year, and in Australia of over 150. Most of these deaths avoided are in young adults, and are, therefore, of particular social importance [70].

BLADDER

In the late 1950s, overall age-standardised mortality from bladder cancer ranged from 1.8/100000 males in Japan to 4.7—4.8/100000 in Australia and New Zealand and up to 10.8/

100 000 in Egypt. After some increase in earlier calendar periods, rates tended to level off and decline in all countries providing data, particularly in young and middle age, and hence in most recent cohorts.

For females, rates were appreciably lower, and trends were favourable in Japan and Hong Kong, stable in Israel, Australia and New Zealand, and moderately higher in Singapore.

The major causes of bladder cancer are tobacco smoking and occupational exposure to aromatic amines and other carcinogens [71], which can probably explain, at least in part, the observed trends as well as the cohort patterns. Schistosoma haematobium has also a major role in the exceedingly high rates in Egypt [71]. Improved case ascertainment and certification may also have played some role, particularly in the elderly [72].

KIDNEY

About two thirds of kidney cancers are renal cell carcinomas, but transitional cell carcinomas of the renal pelvis and, among children, nephroblastomas are also included as kidney cancers [73, 74]. Further, "other urinary sites" have been included in this category since the eighth revision of the ICD, and this has probably introduced some, however small, artefactual trend in rates.

In the late 1980s, overall age-standardised mortality from kidney cancer was 1.4/100000 males in Hong Kong, between 2.1 and 2.6/100000 in Israel, Japan and Singapore, and around 4/100000 in Australia and New Zealand. Rates in females were between one half and one third those of males.

Over the last few decades, rates for males increased in all countries except Israel, but the extent of these rises was extremely variable. In fact, it approached 4-fold in Japanese males, but was only of the order of 20–30% in Australia and New Zealand, whose rates levelled off at younger ages in more recent calendar periods. Trends were generally more favourable for females.

Tobacco smoking is the single best-defined risk factor for kidney cancer, although the strength of the association is considerably lower than for neoplasms of the lung or of the upper digestive and respiratory tract [39]. Changes in tobacco consumption in subsequent generations of males and females in various countries can explain some of the upward trends.

Other factors have probably played various roles in kidney cancer rates. Among these, obesity, dietary factors such as meat and fat consumption, occupational exposures and—particularly for renal pelvis—use of phenacetin and other analgesics have been implicated in the aetiology of kidney cancers [75–79]. However, the consistency and strength of the association with each of these factors is still open to debate, and it is, therefore, difficult to make any precise inference on their potential impact on national mortality rates [80].

BRAIN OR NERVES, BENIGN OR MALIGNANT

This is another group of neoplasms for which major changes in diagnostic accuracy have been introduced over the last few decades, particularly since the introduction of computerised transaxial tomography and other diagnostic techniques [15, 81]. Thus, the substantial rises in brain cancer mortality observed in most countries considered until the mid 1970s are almost certainly largely or totally artefactual. It is, however, possible that the substantially lower rates in Japan and Singapore (whose mortalities were approximately half those of Australia and New Zealand) reflect real differences in the incidence of the disease. Very little is known of the aetiology of brain cancer, and hence

any inference on these diverging patterns and trends remains speculative [82, 83].

THYROID

Together with the gallbladder, this is the other non-sexrelated site whose rates are generally higher in females than in males. This is also a rare type of cancer, with overall agestandardised rates generally below 1/100 000 in most countries.

Thyroid cancer mortality declined in all countries and in all calendar periods considered, except in Japan, whose rate declined only in young females from the mid 1970s onwards, and Singapore, whose rates were, however, extremely unstable. Japan, Australia and New Zealand had in the late 1980s some of the lowest thyroid cancer rates in the world (0.2–0.4/100000 males and 0.4–0.5/100000 females).

The reasons for these declines are not totally understood, but they almost certainly include a richer diet and, specifically, reduced iodine deficiencies or imbalances [84].

HODGKIN'S DISEASE

Overall age-standardised mortality from Hodgkin's disease in the 1950s and 1960s was around 0.5-1.0/100000 males, and 0.2-0.7/100 000 females in Hong Kong, Singapore and Japan, as compared with 1.6/100000 males and 0.8/100000 females in Australia and approximately 1.3/100 000 for both sexes in New Zealand. In 1975-1979, mortality was 1.2/100 000 males and 0.8/ 100 000 females in Israel. Substantial declines were observed in Hodgkin's disease mortality, particularly from the late 1960s onwards. These declines were approximately 50% in Australia, New Zealand and Israel, i.e. comparable to those observed in western Europe over a similar calendar period [85]. They were, however, proportionally much greater in the Far East, ranging from 70 to 80% in Hong Kong, Singapore and Japan. Thus, mortality from Hodgkin's disease in these countries is now exceedingly low. Particularly in the latter countries, the declines were observed not only at younger age, but also in middle and older age.

Although uncertainties of diagnosis and certification may influence some of the rates, the main determinant of the favourable trends in Hodgkin's disease mortality has been improved treatment of the disease, starting from advancements in radiotherapy in the 1950s, followed by effective chemotherapy regimens since the 1960s [86–88].

Still, it is difficult to explain through the impact of treatment alone the extremely low rates of Japan and other countries in the Far East; this may implicate a different epidemiology or different histopathological patterns.

ALL OTHER LYMPHOMAS

Mortality from non-Hodgkin's lymphomas was around 3.5/100 000 males and 2/100 000 females in Japan, Hong Kong and Singapore, and around 5.5/100 000 males and 3.5/100 000 females both in Australia and New Zealand and Israel. Trends over the last four decades were upwards, particularly in the elderly in Japan, but showed no consistent pattern in other countries.

It is possible that these trends in mortality reflect both increased incidence (as recently registered, for instance, in the U.S.A. [89–90]) and some improvement in survival, which is, however, very difficult to assess on the basis of national mortality statistics alone [70].

Problems of differential certification of Hodgkin's disease and, mostly, improved diagnosis and ascertainment over recent calendar periods, particularly in the elderly, may also have introduced artefactual trends in rates.

MULTIPLE MYELOMA

In all areas of the world, this is one of the neoplasms showing larger increases in certified mortality, in the absence, however, of any defined risk factor, except radiation [91]. This is also reflected in all the six countries considered, except Israel, with increases in overall age-adjusted mortality of the order of 50% in Australia and New Zealand, and of 100% in both sexes in Japan, Hong Kong and Singapore. Still, in the late 1980s, rates in the Far East (between 1.0 and 1.2/100000 males, and 0.6 and 0.8/100000 females) were only about one half those registered in Oceania (and in most western countries).

The rises were larger—or restricted—to elderly ages. Indeed, truncated rates from 35 to 64 years declined in Japan over the last few years. This indicates, by itself, that most of the apparent rises and probably artefactual, and attributable to the major diagnostic advancements which have followed the introduction of serum electrophoresis and other diagnostic instruments. This is also confirmed by the absence of appreciable trends in selected areas where surveillance has long been careful [92–94].

Still, the relatively low—and now stable in middle age—rates in Japan are interesting, as well as the absence of important trends in Israel, because they may reflect real differences in the epidemiology of multiple myeloma in various areas of the world.

LEUKAEMIAS

Recent improvements in diagnosis and certification for this group of neoplasms [15, 95] can probably explain some of the recent upward trends in several developed countries, including Egypt, Mauritius, the Philippines, Sri Lanka and Thailand. All of these countries had, in the late 1980s, still relatively low leukaemia rates (i.e. between 1 and 4/100 000).

It is possible that changes in death certification reliability also account for the steady and considerable rises in leukaemia mortality in Hong Kong, Singapore and Japan. In Japan, starting from 3.1 and 2.4/100000 in males and females, respectively, in 1955–1959, leukaemia rates reached 4.6 and 2.9/100000, respectively, in the late 1980s, and appreciable upward trends were observed in middle age, too (although some reversal of trends was evident in recent calendar years in the young). Japanese leukaemia rates, however, were still intermediate on a worldwide scale.

In Australia and New Zealand, leukaemia rates declined, although moderately, from the mid 1970s onwards, probably reflecting recent improvements in treatment [70]. A similar pattern of trends has been observed in western Europe [5] and, to an even greater extent, the U.S.A. [6].

TOTAL, ALL NEOPLASMS

For most countries considered, rates and trends in mortality from all cancer sites reflect all the uncertainties and the problems of reliability and validity of death certification, previously mentioned and discussed with reference to each specific cancer site.

Thus, the substantial rises in all cancer mortality in Thailand (from 13 to 53/100 000 males, and from 10 to 36/100 000 females) reflect improved certification and hence are almost certainly largely or totally artefactual, and also the rates registered in the late 1980s are so low as to leave open substantial scope for criticism and major doubts on cancer death certification reliability. A similar line of reasoning can be applied to overall cancer trends in the Philippines, though the extent of variation was more limited.

It is even more difficult to understand and interpret rates for Egypt, Sri Lanka and Mauritius, whose rates (40, 40 and 83/

100 000 males, 28, 39 and 64/100 000 females, respectively) were very low on a worldwide scale, in the absence, however, of clear trends over time. This does not support a major improvement in diagnosis and certification over the last few decades, which might by itself explain such low cancer rates.

Among the countries whose cancer death certification is more reliable, Israel had relatively low rates for both sexes, on a worldwide scale, declining over the calendar period considered to reach 121/100 000 males and 102/100 000 females in the late 1980s. Hong Kong and Singapore had intermediate rates, and both showed earlier rises followed by a levelling off and some recent decline, mostly in young and middle age. In the late 1980s, their overall cancer mortality rates were around 180/100 000 males and 100/100 000 females.

In Japan, overall cancer mortalities were 137/100 000 males and 101/100 000 females in 1955–1959. In males, there was a steady rise to 155/100 000 in the late 1980s, while in females overall cancer mortality declined to 81/100 000. However, truncated rates were also favourable for males starting from the late 1960s onwards, and the decline in truncated rates approached 40% in females. Trends were even more favourable in the younger age groups. This pattern of trends in Japan reflects the favourable patterns for stomach and uterine cancers, as well as the substantial increases in lung and other tobacco-related neoplasms mostly in males, and also in intestinal, breast, prostatic and several other emerging neoplasms.

In Australia and New Zealand, overall cancer mortality was relatively high on a worldwide scale, and increased at least in males up to the late 1970s. Total cancer mortality rates in the late 1980s were 165/100000 males in Australia and 174/100000 in New Zealand, and 103 and 125/100000, respectively, for females. Thus, overall cancer mortality in New Zealand women is one of the highest in the world, with the sole exception of a few northern and central European countries [5, 96]. This mainly reflects the elevated lung, breast and colorectal cancer rates in this population.

In Australia and New Zealand, recent trends in the younger age were, however, favourable, particularly in males. This suggests that overall cancer mortality will tend to decline in these populations in future decades [97, 98].

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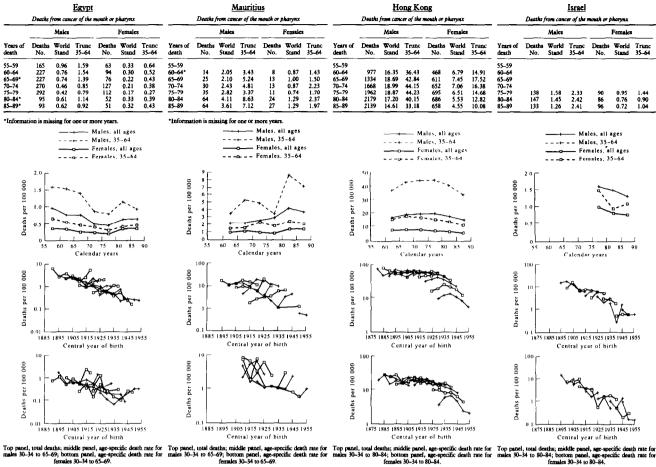
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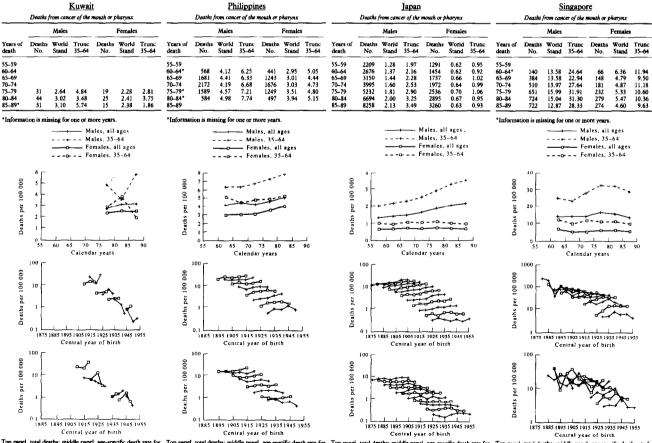
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Top panel, total deaths; middle panel, age-specific death rate for males 30-34 to 65-69; bottom panel, age-specific death rate for females 30-34 to 80-84.

Top panel, total deaths; middle panel, age-specific death rate for males 30-34 to 80-84.

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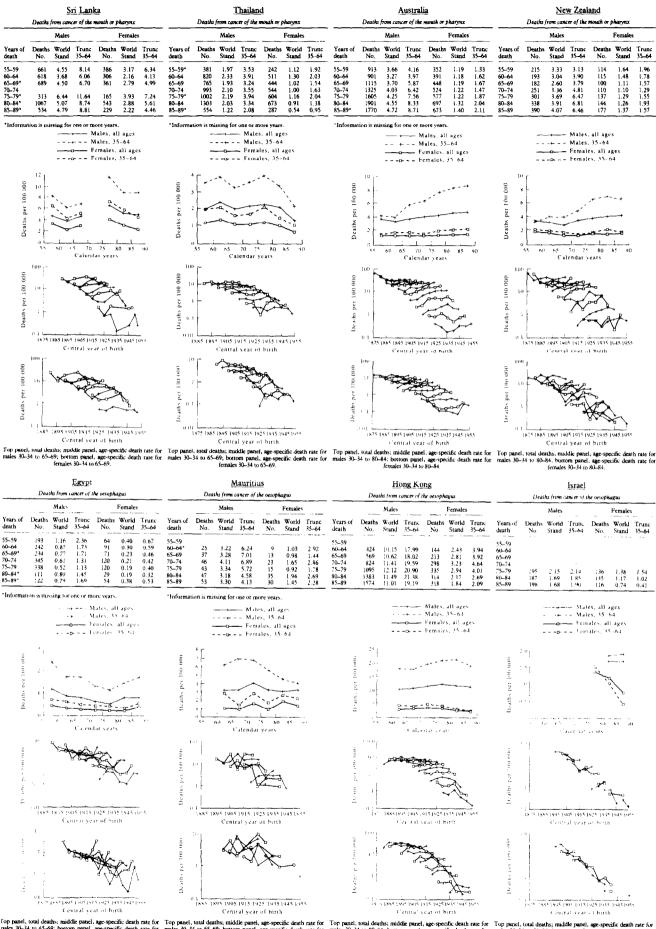
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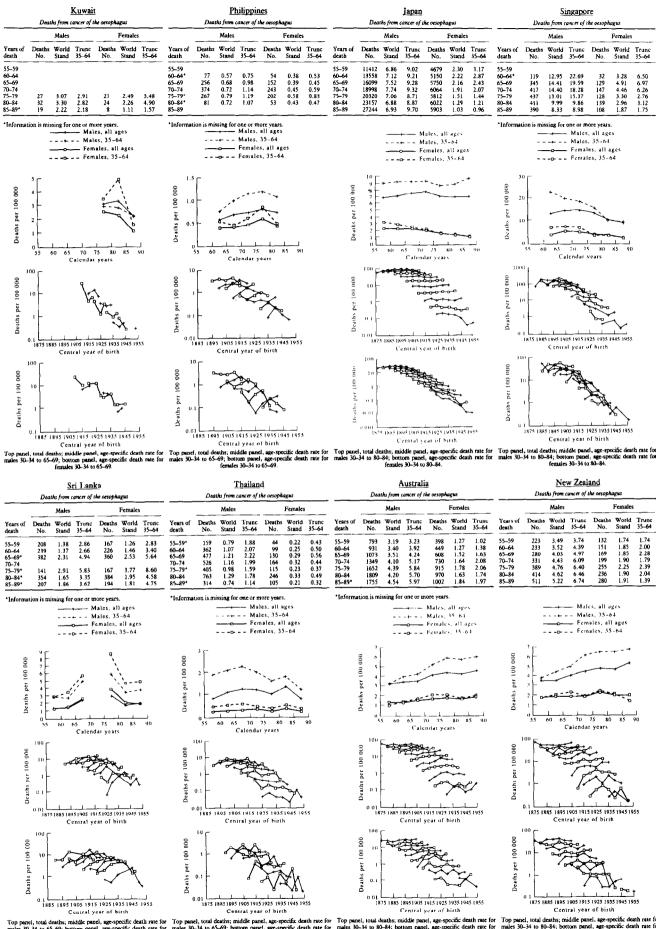
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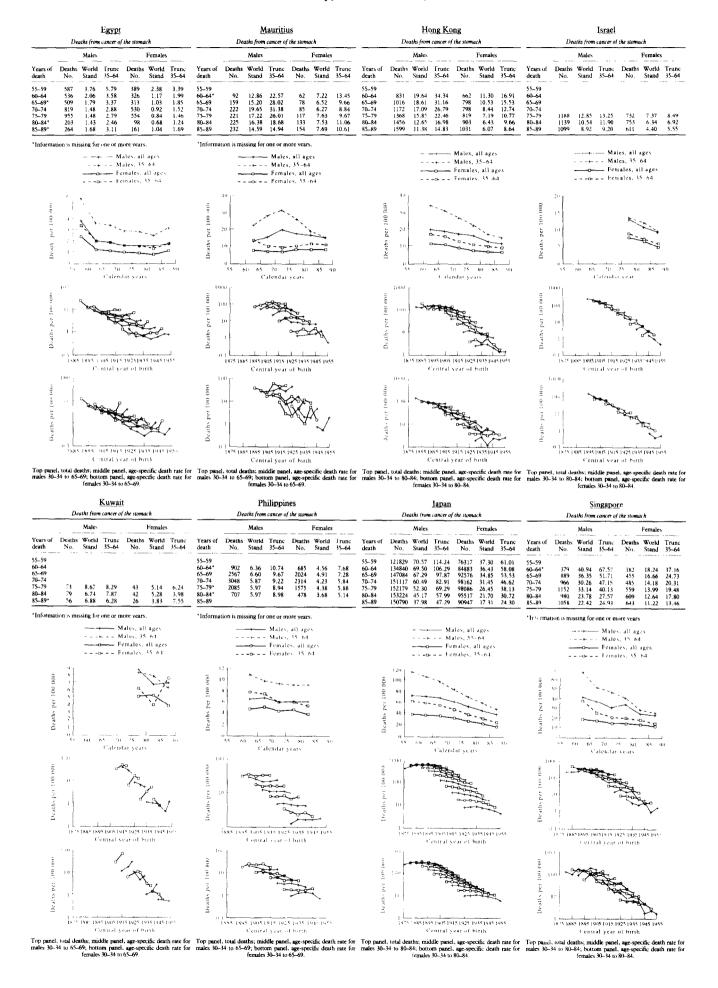
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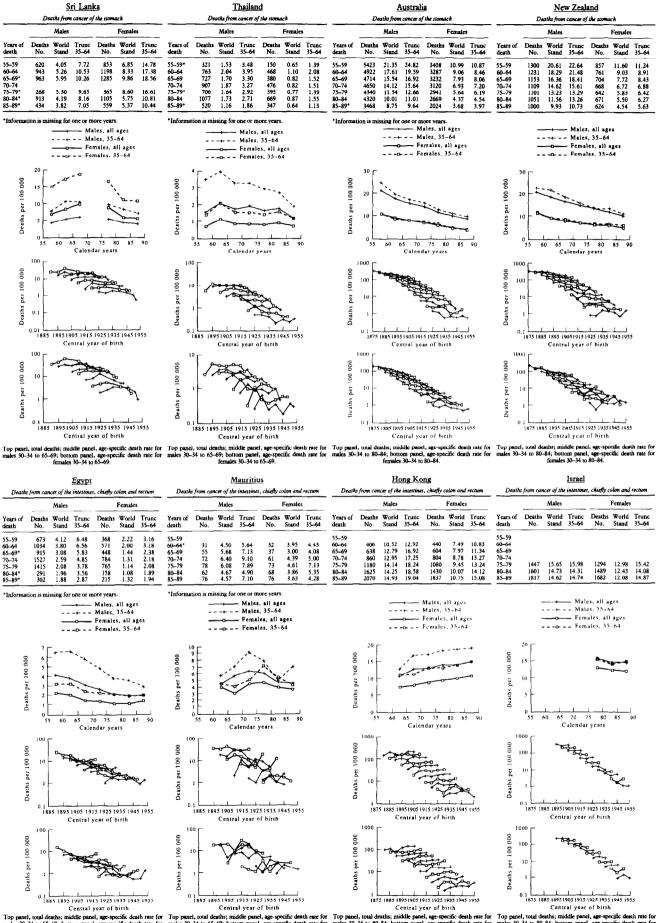


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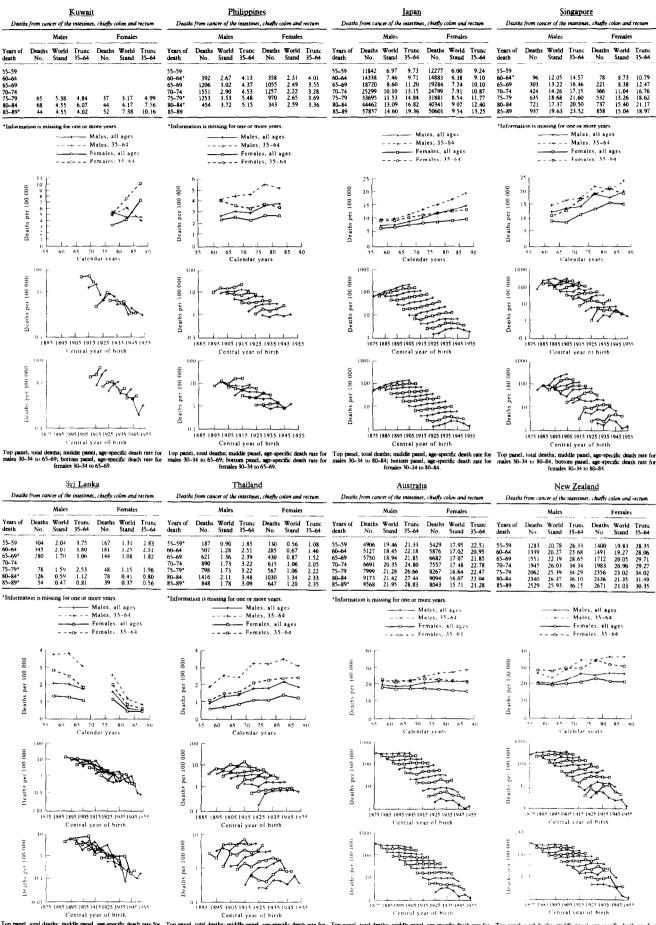


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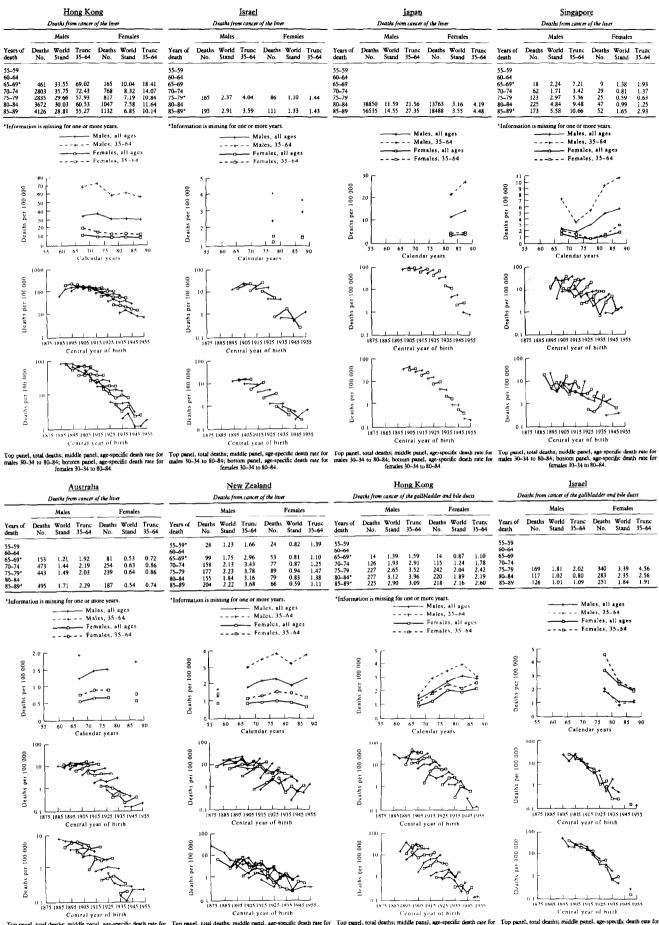




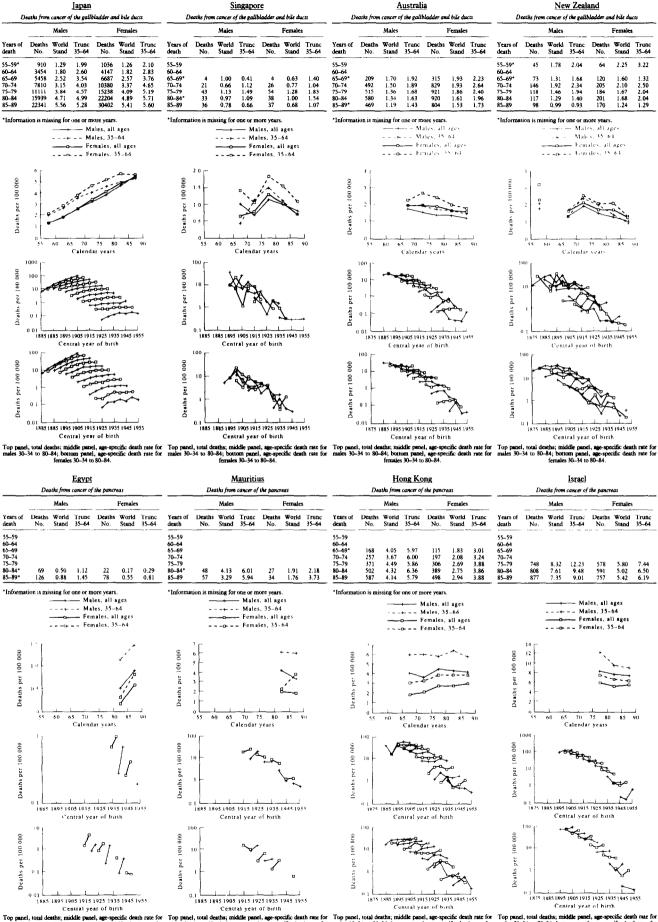
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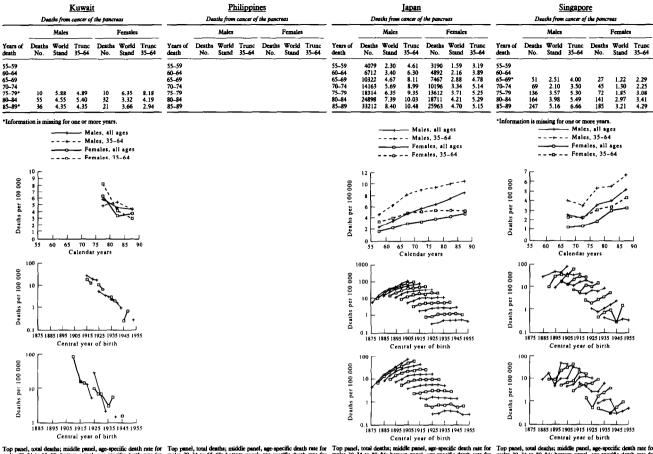
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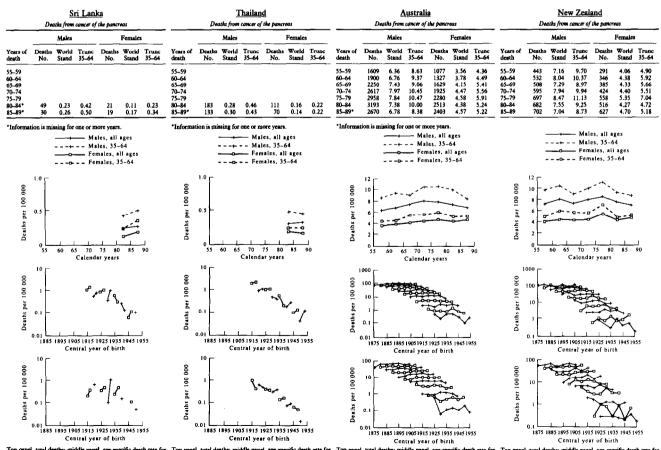
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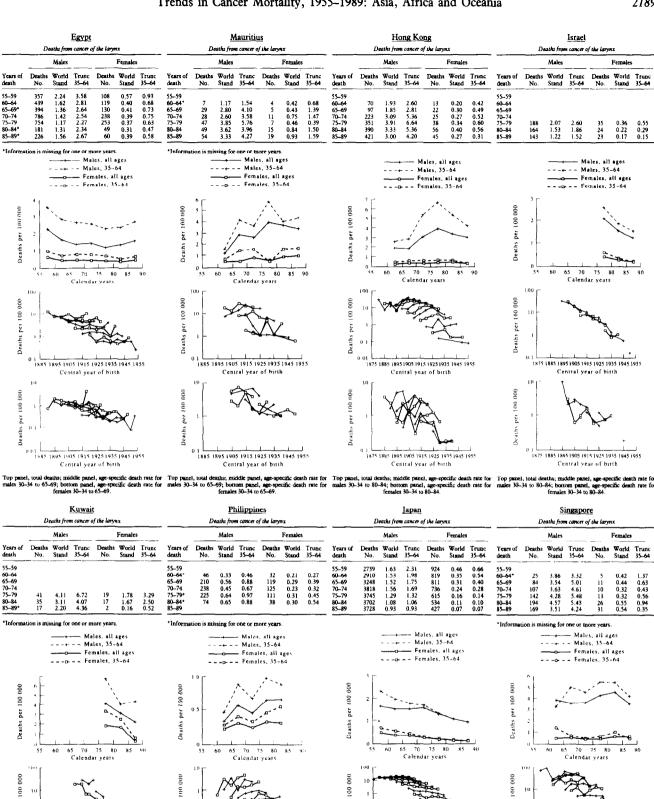
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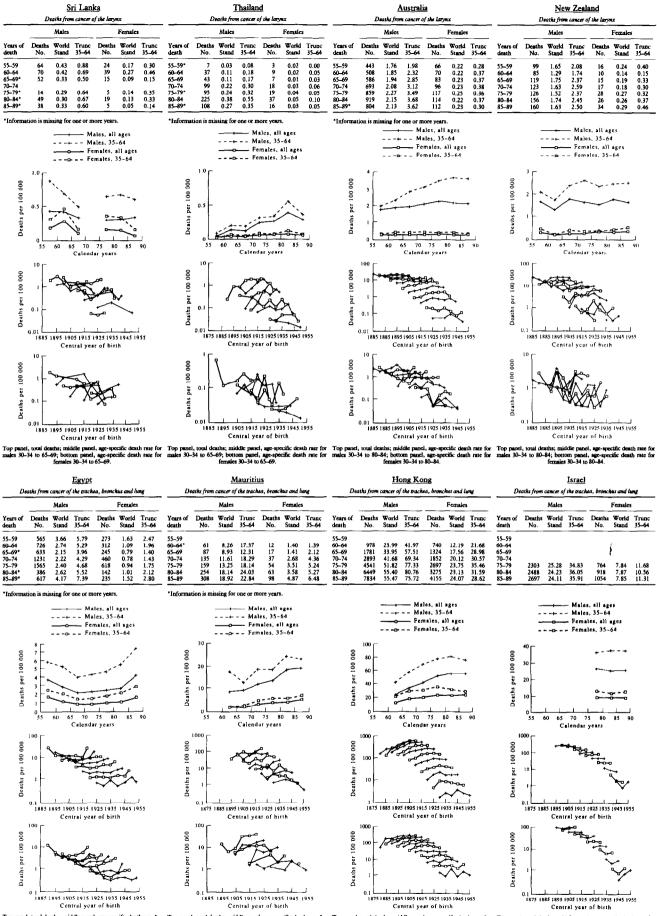
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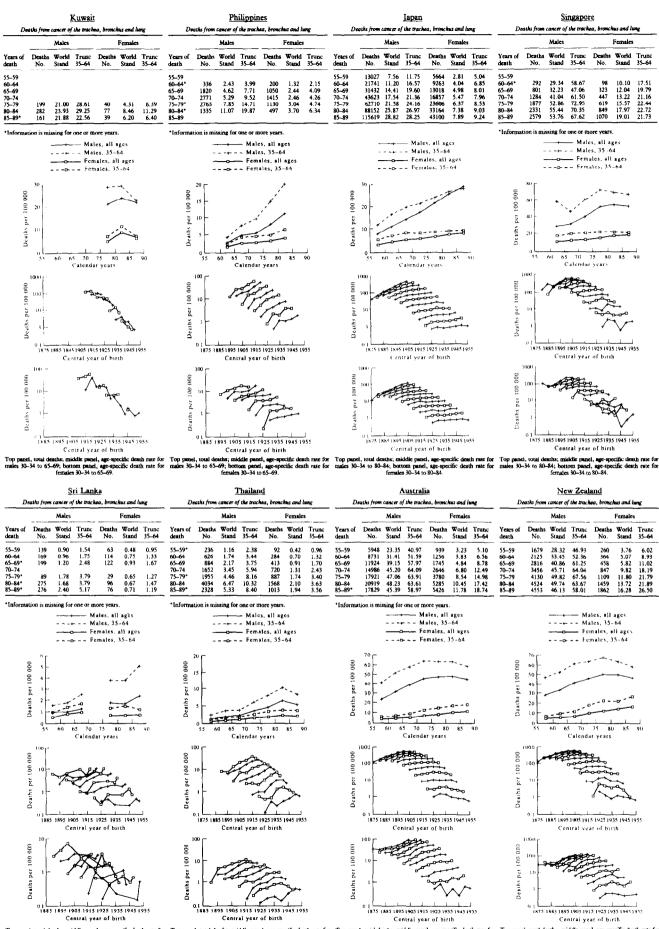
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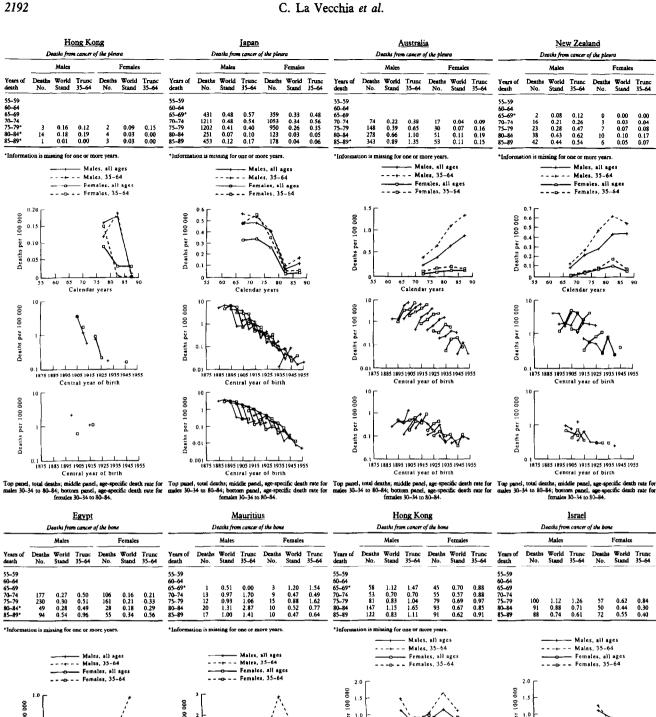
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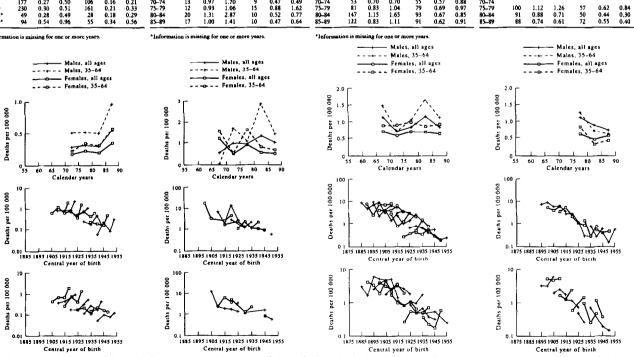
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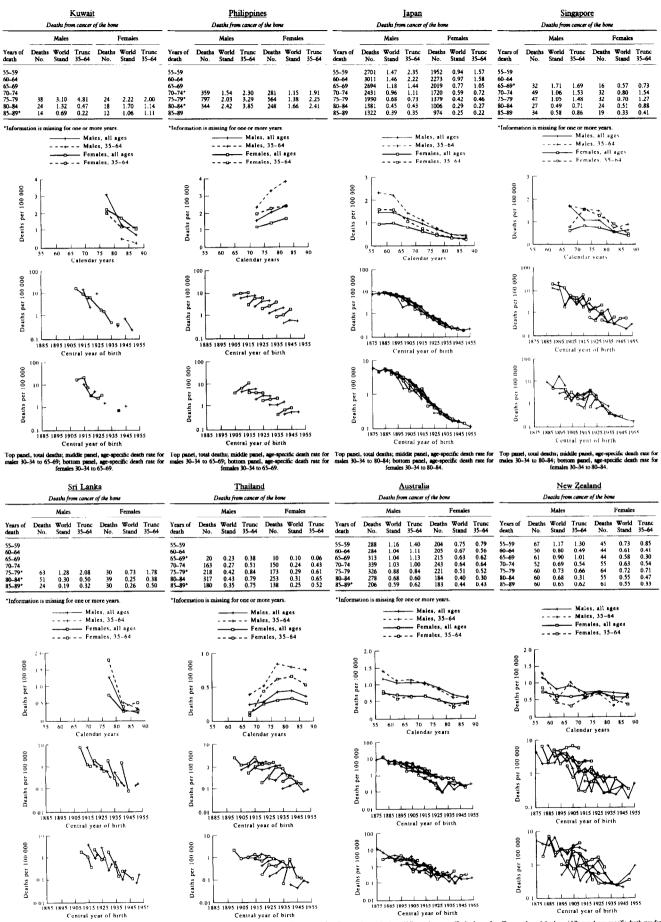


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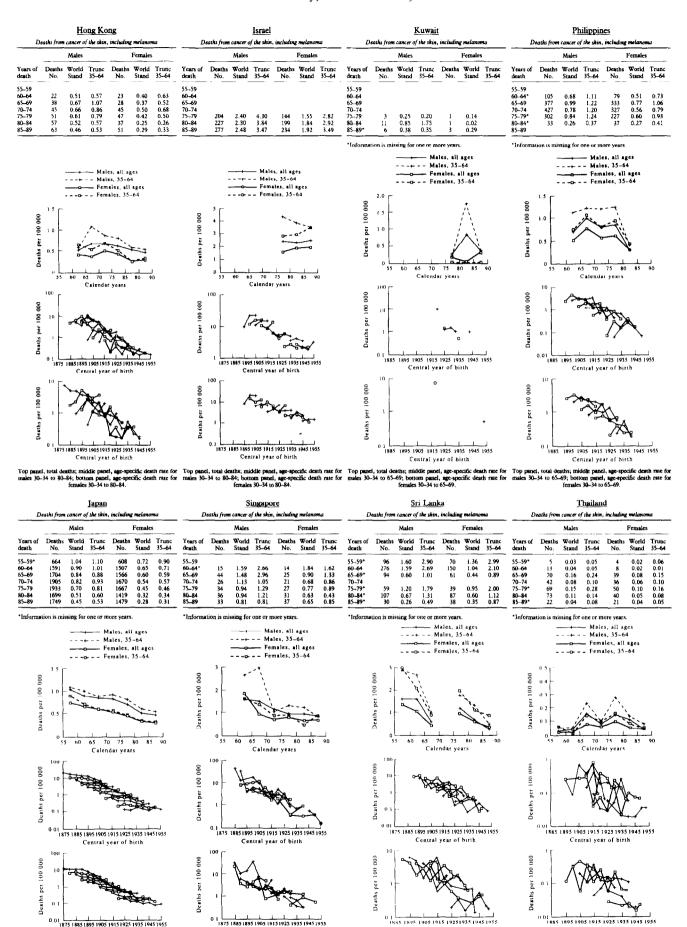


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Top panel, total deaths; middle panel, age-specific death rate for Top panel, total deaths; middle panel, age-specific death rate for Top panel, total deaths; middle panel, age-specific death rate for males 30-34 to 80-84; bottom panel, age-specific deat

1895 1905 1915 1925 1935 1945 1955 Central year of birth



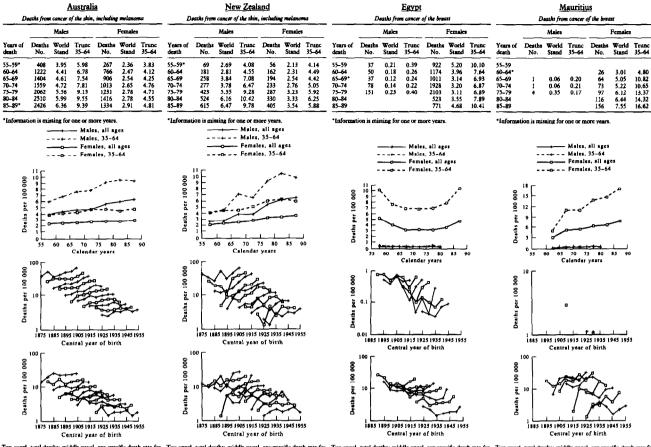
Top jund, total deaths; middle pand, age-specific death rate for Top panel, total deaths; middle panel, age-specific death rate for makes 30-34 to 80-84; bottom panel, age-specific death rate for makes 30-34 to 65-69; bottom panel, age-specific death rate for females 30-34 to 65-69. Top panel, total deaths; middle panel, age-specific death rate for males 30-34 to 65-69; bottom panel, age-specific death rate for females 30-34 to 65-69. Top panel, total deaths; middle panel, age-specific death rate for males 30-34 to 80-84; bottom panel, age-specific death rate for females 30-34 to 80-84.

Central year of birth

Central year of birth

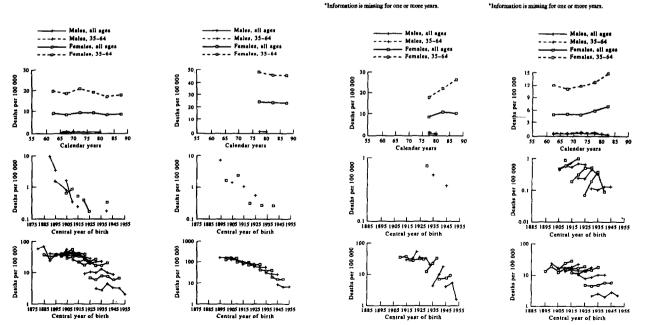
0.01 1875 1885 1895 1905 1915 1925 1935 1945 1955

Central year of birth

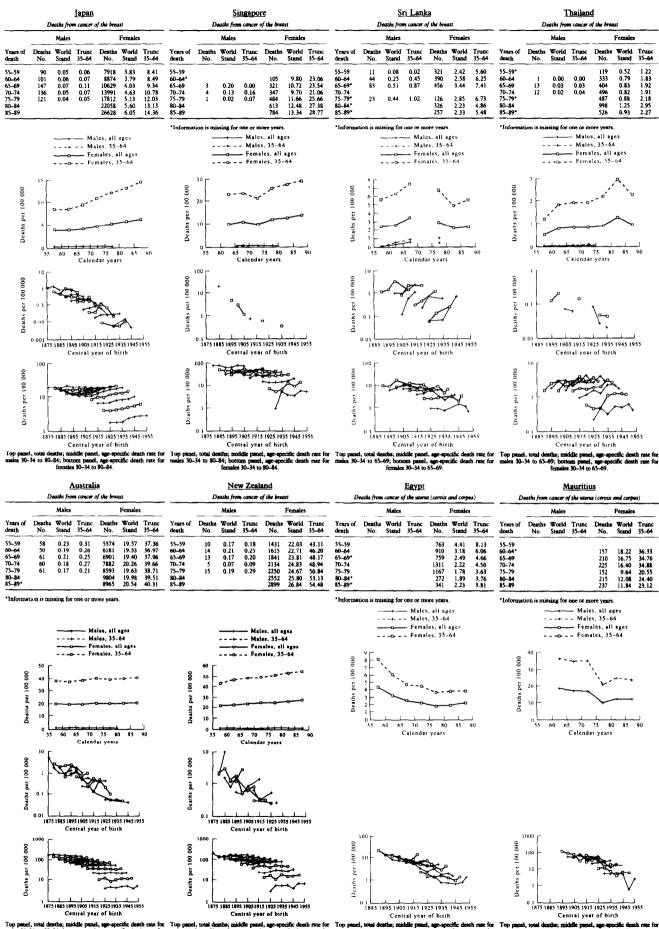


Top panel, total deaths; middle panel, age-specific death rate for Top panel, total deaths; middle panel, age-specific death rate for Top panel, total deaths; middle panel, age-specific death rate for makes 30-34 to 80-84; bottom panel, age-specific death rate for makes 30-34 to 80-84; bottom panel, age-specific death rate for makes 30-34 to 80-59; bottom panel, age-specific deat

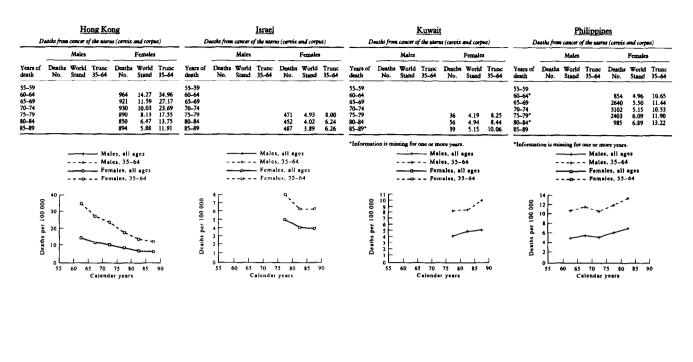
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Years of death	Deaths No.	World Stand	Trunc 35-64	Deaths No.	World Stand		Years of death	Deaths No.	World Stand		Deaths No.	World Stand	Trunc 35-64	Years of death	Deaths No.	World Stand	Trunc 35-64	Deaths No.	World Stand		Years of death	Deaths No.	World Stand		Deaths No.		Trunc 35-64
55-59 60-64 65-69 70-74 75-79 80-84 85-89	7 8 6	0.13 0.12 0.08	0.32 0.14 0.06	588 679 862 996 1088 1310	9.01 8.61 9.43 9.24 8.43 8.64	19.63 18.63 20.89 19.23 17.03 17.67	55-59 60-64 65-69 70-74 75-79 80-84 85-89	25	0.28	0.35	2177 2463 2704	23.90 23.21 22.71	47.56 45.37 45.09	55-59 60-64 65-69 70-74 75-79 80-84 85-89*	7	0.54	1.06	84 141 107	8.62 10.87 10.28	17.93 22.05 26.58	55-59 60-64* 65-69 70-74 75-79* 80-84* 85-89	43 110 202 117	0.30 0.26 0.36 0.30	0.39 0.36 0.64 0.50	832 2376 2952 2278 955	4.96 5.05 4.93 5.80 6.78	11.92 11.08 11.67 12.58 14.54

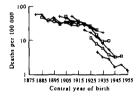


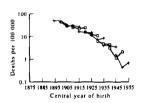
Top panel, total deaths; middle panel, age-specific death rate for makes 30-34 to 80-84; bottom panel, age-specific death rate



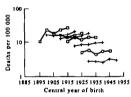
Top panel, total deaths; middle panel, age-specific death rate for Top panel, total deaths; middle panel, age-specific death rate for makes 30-34 to 80-84; bottom panel, age-specific death rate for makes 30-34 to 80-84; bottom panel, age-specific death rate for makes 30-34 to 80-84; bottom panel, age-specific death rate for makes 30-34 to 80-84; bottom panel, age-specific death rate for makes 30-34 to 80-84; bottom panel, age-specific death rate for makes 30-34 to 80-84; bottom panel, age-specific death rate for makes 30-34 to 80-84.







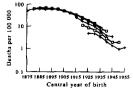


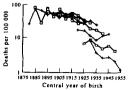


Top panel, total deaths; middle panel, age-specific death rate for makes 30-34 to 80-84; bottom panel, age-specific death rate for makes 30-34 to 80-84; bottom panel, age-specific death rate for makes 30-34 to 80-84; bottom panel, age-specific death rate for makes 30-34 to 80-84.

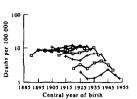
Top panel, total deaths; middle panel, age-specific death rate for Top panel, total deaths; middle panel, age-specific death rate for makes 30-34 to 65-69; bottom panel, age-specific death rate for makes 30-34 to 65-69; bottom panel, age-specific death rate for females 30-34 to 55-69.

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55-59 60-64 65-69 70-74 75-79 80-84 85-89				35890 34648 33168 31104 28930 25843 23472	17.66 15.02 12.72 10.27 8.07 6.04 4.68	40.01 32.03 26.09 19.88 14.62 10.22 7.84	55-59 60-64* 65-69 70-74 75-79 80-84 85-89				179 380 451 407 514 510	16.90 12.72 12.65 9.88 10.65 8.97	35.12 28.73 26.91 21.67 21.98 17.77	55-59 60-64 65-69* 70-74 75-79* 80-84* 85-89*				663 589 658 140 401 204	4.92 3.91 4.83 3.29 2.84 1.93	11.75 8.24 10.25 6.64 5.77 3.78	55-59* 60-64 65-69 70-74 75-79* 80-84 85-89*				653 1152 1189 1736 1900 2823 1482	2.71 2.60 2.33 2.82 3.40 3.48 2.64	6.62 6.35 5.71 6.94 8.11 8.46 6.35
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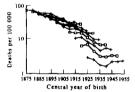


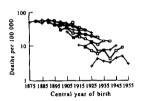


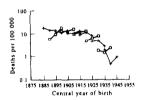


Top panel, total deaths; middle panel, age-specific death rate for Top panel, total deaths; middle panel, age-specific death rate for Top panel, total deaths; middle panel, age-specific death rate for Top panel, total deaths; middle panel, age-specific death rate for males 30-34 to 80-84; bottom panel, age-specific d

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		Males			Females	5			Males			Female:	5			Males			Female	s			Males			Female	3
Years of death		World Stand	Trunc 35-64	Deaths No.	World Stand		Years of death	Deaths No.	World Stand	Trunc 35-64	Deaths No.	World Stand	Trunc 35-64	Years of death	Deaths No.	World Stand	Trunc 35-64	Deaths No.	World Stand	Trunc 35-64	Years of death	Deaths No.	World Stand	Trunc 35-64	Deaths No.	World Stand	Trunc 35-64
55-59 60-64 65-69 70-74 75-79 80-84 85-89*				2993 2984 2949 3034 2875 2836 2409	10.55 9.33 8.30 7.73 6.36 5.58 5.29	19.44 17.63 15.80 13.88 10.94 9.49 8.70	\$5-59 60-64 65-69 70-74 75-79 80-84 85-89				713 706 727 762 783 797 808	11.19 9.91 9.42 8.84 8.33 8.01 7.36	22.58 18.99 18.46 16.33 14.41 15.02 14.33	55-59 60-64 65-69* 70-74 75-79* 80-84 85-89				201 303 305	3.08 3.23 3.52	6.29 7.23 7.24	55–59 60–64 65–69 70–74 75–79 80–84* 85–89*				688 126 433	7.52 6.13 5.96	15.60 10.71 11.23
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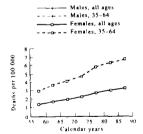
Top panel, total deaths; middle panel, age-specific death rate for Top panel, to males 30-34 to 80-84; bottom panel, age-specific death rate for males 30-34 t

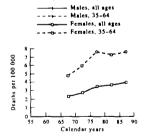
Top panel, total deaths; middle panel, age-specific death rate for males 30-34 to 80-84; bottom panel, age-specific death rate for females 30-24 to 90-94

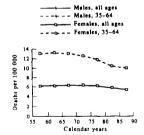
 Top panel, total deaths; middle panel, age-specific death rate for males 30-34 to 80-84; bottom panel, age-specific death rate for females 30-34 to 80-84.

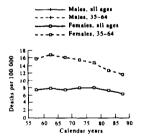
Top panel, total deaths; middle panel, age-specific death rate for males 30-34 to 80-84; bottoin panel, age-specific death rate for females 30-34 to 80-84.

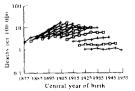
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						5			Males			Female	,			Males			Females				Males			Females	,
Years of death	Deaths No.	World Stand	Trunc 35-64	Deaths No.	World Stand	Trunc 35-64	Years of death	Deaths No.	World Stand		Deaths No.	World Stand		Years of death	Deaths No.	World Stand	Trunc 35-64	Deaths No.	World Stand	Trunc 35-64	Years of death	Deaths No.	World Stand	Trunc 35-64	Deaths No.		Trunc 35-64
55-59 60-64				2871 3974	1.33	2.91	55-59 60-64							55-59 60-64				1727 1934	6.23	13.05 13.25	55-59 60-64				477 540	7.55 7.87	15.94 16.89
65–69 70–74				5063 6656	1.91	4.08	65-69* 70-74				57 106	2.30 2.71	4.79 5.93	65 -69 70-74				2179 2411	6.37	13.07	65-69 70-74				571 682	7.48	16.21 15.63
75–79 80–84				9176 11747	2.70	5.80	75-79 80-84*				152 142	3.47 3.61	7.56 7.24	75-79 80-84*				2703 560	6.24 5.84	11.82	75-79 80-84				739 751	7.99 7.35	14.68
85-89				14782	3.25	6.72	85-89*				133	3.92	7.54	85-89*				1196	5.55	10.03	85-89				715	6.46	11.65
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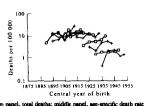


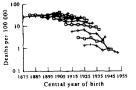


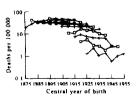












p panel, total deaths; middle panel, age-specific death rate for Top panel, total deaths; middle panel, age-specific death rate for males 30-34 to 80-84; bottom panel, age-specific death rate for males 30-34 to 80-84; bottom panel, age-specific death rate for males 30-34 to 80-84; bottom panel, age-specific death rate for males 30-34 to 80-84; bottom panel, age-specific death rate

Top panel, total deaths; middle panel, age-specific death rate for Top panel, total deaths; middle panel, age-specific death rate for males 30-34 to 80-84; bottom panel, age-specific death rate for males 30-34 to 80-84; bottom panel, age-specific death rate for females 30-34 to 80-84; bottom panel, age-specific death rate for females 30-34 to 80-84.

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Years of death	Deaths No.	World Stand	Trunc 35-64	Deaths No.	World Stand		Years of death	Deaths No.	World Stand	Trunc 35-64	Deaths No.	World Stand		Years of death	Deaths No.	World Stand	Trunc 35-64	Deaths No.	World Stand	Trunc 35-64	Years of death	Deaths No.	World Stand	Trunc 35-64	Deaths No.		Trunc 35-64
55-59 60-64 65-69* 70-74 75-79 80-84* 85-89*	317 385 329 541 518 120 143	2.45 1.70 1.34 1.17 0.91 0.97 1.19	2.14 1.84 1.53 1.35 0.89 0.97 1.10				55-59 60-64* 65-69 70-74 75-79 80-84 85-89	11 21 29 35 34 62	1.79 2.59 3.14 3.37 2.83 4.15	2.24 1.13 1.77 1.25 1.23 1.95				55-59 60-64 65-69 70-74 75-79 80-84 85-89	42 95 94 159 257 332	1.60 2.61 1.79 2.53 2.47 2.64	0.82 1.46 1.21 1.29 1.81 1.11				55-59 60-64 65-69 70-74 75-79 80-84 85-89	749 977 1199	7.83 8.23 8.58	4.06 3.30 3.63			
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					85	90		55	60 65	70 alendar	75 80 years	8.5	90		55	60 6		75 BC	85	90		55	60 65	70 Calendar	75 80 years	85	90
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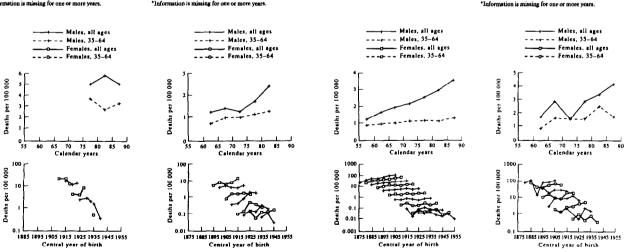
Top panel, total deaths; middle panel, age-specific death rate for Top panel, total deaths; middle panel, age-specific death rate for makes 30-34 to 65-69; bottom panel, age-specific death rate for makes 30-34 to 80-69; bottom panel, age-specific death rate for makes 30-34 to 80-69; bottom panel, age-specific death rate for makes 30-34 to 80-69; bottom panel, age-specific death rate for makes 30-34 to 80-69; bottom panel, age-specific death rate for makes 30-34 to 80-69; bottom panel, age-specific death rate for formales 30-34 to 80-69; bottom panel, age-specific death rate for formales 30-34 to 80-69; bottom panel, age-specific death rate for formales 30-34 to 80-69; bottom panel, age-specific death rate for formales 30-34 to 80-69; bottom panel, age-specific death rate for formales 30-34 to 80-69; bottom panel, age-specific death rate for formales 30-34 to 80-69; bottom panel, age-specific death rate for formales 30-34 to 80-69; bottom panel, age-specific death rate for formales 30-34 to 80-69; bottom panel, age-specific death rate for formales 30-34 to 80-69; bottom panel, age-specific death rate for formales 30-34 to 80-69; bottom panel, age-specific death rate for formales 30-34 to 80-69; formales

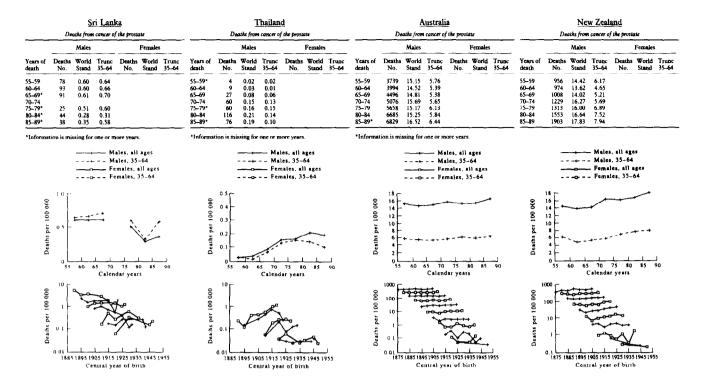
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		Males	cancer of	the prost	Female			De	Males	cancer of	<u> </u>	Females			De	Males	cancer o	f the prost	Females				Males	: cancer of	the prosta	Fernales	
Years of death	Deaths No.	World Stand	Trunc 35-64	Deaths No.	World Stand	Trunc 35-64	Years of death	Deaths No.		Trunc 35-64	Deaths No.	World Stand	Trunc 35-64	Years of death	Deaths No.	World Stand	Trunc 35-64	Deaths No.	World Stand	Trunc 35-64	Years of death	Deaths No.	World Stand	Trunc 35-64	Deaths No.		Trunc 35-64
55-59 60-64 65-69 70-74 75-79 80-84 85-89	37 49 30	5.03 5.83 5.06	3.69 2.71 3.25				55-59 60-64* 65-69 70-74 75-79* 80-84* 85-89	145 441 585 544 243	1.22 1.39 1.25 1.71 2.40	0.71 0.96 0.98 1.13 1.26				55-59 60-64 65-69 70-74 75-79 80-84 85-89	1820 2847 3892 5030 7176 10138 14820	1.18 1.62 1.92 2.14 2.51 2.94 3.57	0.81 0.90 0.96 1.07 1.11 1.08 1.26				55-59 60-64* 65-69 70-74 75-79 80-84 85-89	9 47 45 71 125 153	1.64 2.88 1.49 2.81 3.33 4.15	0.77 1.59 1.47 1.52 2.45 1.67	7.0		

*Information is missing for one or more years.

*Information is missing for one or more years.

*Information is missing for one or more years.





Top panel, total deaths; middle panel, age-specific death rate for Top panel, total deaths; middle panel, age-specific death rate for Top panel, total deaths; middle panel, age-specific death rate for makes 30-34 to 55-59; bottom panel, age-specific death rate for makes 30-34 to 56-59; bottom panel, age-specific deat

Hong Kong Deaths from cancer of the testis							<u>Israel</u> Deaths from concer of the testis							<u>Japan</u> Deaths from cancer of the tessis							Singapore Deaths from cancer of the testis						
	Males			Females				Males		Females			Males		Females			Males			Females						
Years of death	Deaths No.		Trunc 35-64	Deaths No.		Trunc 35-64	Years of death	Deaths No.		Trunc 35-64	Deaths No.	World Stand	Trunc 35-64	Years of death	Deaths No.	World Stand	Trunc 35-64	Deaths No.		Trunc 35-64	Years of death	Deaths No.	World Stand	Trunc 35-64	Deaths No.		Trunc 35-64
55-59 60-64 65-69* 70-74 75-79 80-84 85-89	11 39 46 28 21	0.18 0.46 0.48 0.24 0.13	0.35 0.74 0.43 0.28 0.20				55-59 60-64 65-69 70-74 75-79 80-84 85-89	44 24 26	0.51 0.24 0.23	0.59 0.16 0.21				\$5-59 60-64 65-69 70-74 75-79 80-84 85-89	439 613 804 875 970 819 640	0.22 0.27 0.32 0.31 0.33 0.26 0.20	0.25 0.30 0.36 0.33 0.32 0.25 0.18				55-59 60-64 65-69* 70-74 75-79 80-84 85-89	11 10 23 20 21	0.39 0.26 0.44 0.31 0.37	0.49 0.29 0.42 0.22 0.31			
*Informat	tion is mi	ssing for	one or m	ore years	i.																*Informa	tion is mi	ssing for	one or m	ore years		
	— Males, all ages ← - Males, 35-64 - ← Females, 31 ages ← - Females, 35-64					— Males, all ages ← - Males, 35-64 ← Females, all ages ← - Females, 35-64					——————————————————————————————————————					Males, all ages Males, 35-64 Females, 35-64 Females, 35-64											
OAG ON CASE SHIPS		-	1 1 65 70		80 B5	‡ 	Deaths per 100 000	0.5	60	55 70	75 8	0 R5	90	Deaths per 100 000	1.0	60 6	5 70	75 80	**************************************		Deaths per 110 000	0.5	60 6	5 70	75 80	***************************************	1
	Calendar years						Calendar years							Calendar years						Calendar years							

Deaths per 100 000

0 61 1 1875 1885 1895 1905 1915 1925 1935 1945 1955 Central year of birth Deaths per 100 000

1875 1885 1895 1905 1915 1925 1935 1945 1955

Deaths per 100 000

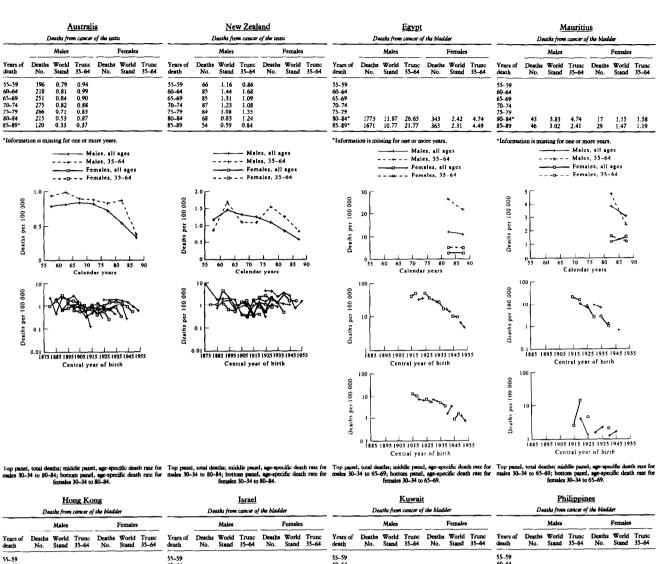
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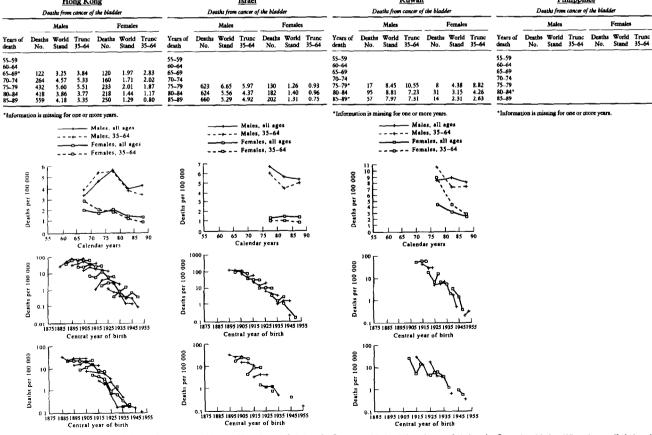
Central year of birth

Deaths per 100

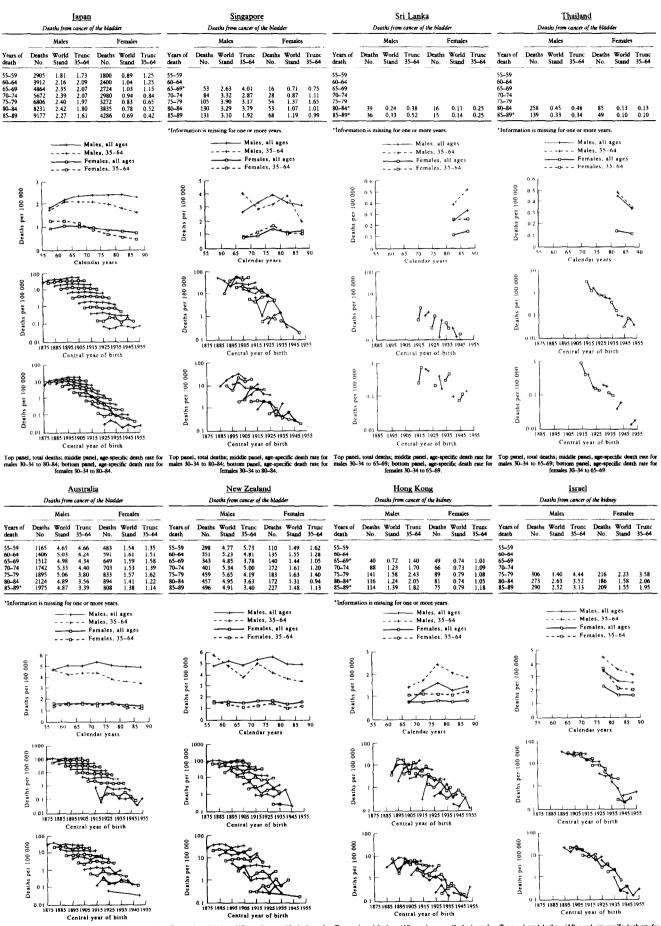
0 01 1875 1885 1895 1905 1915 1925 1935 1945 1955

Central year of birth

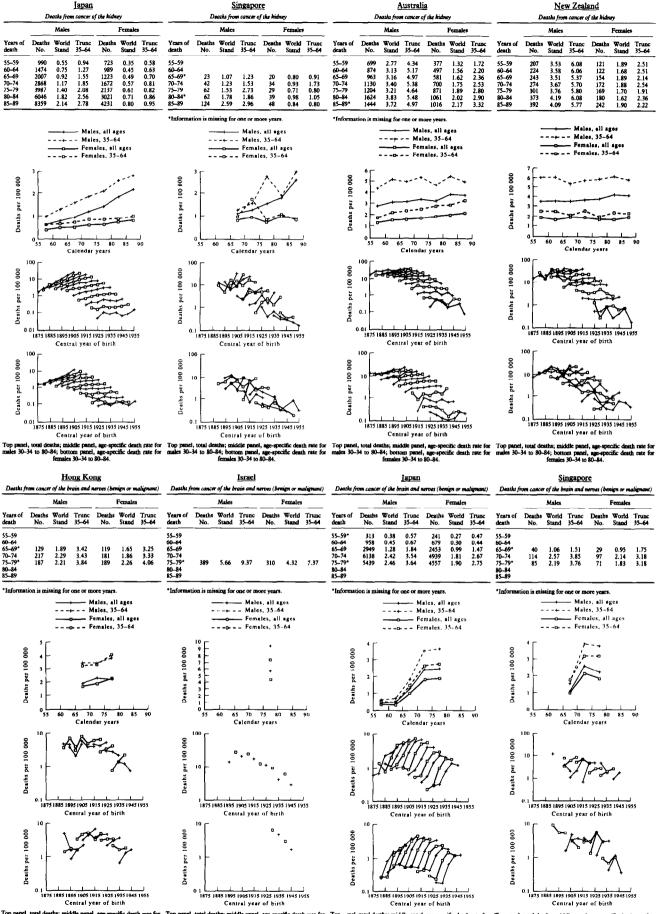




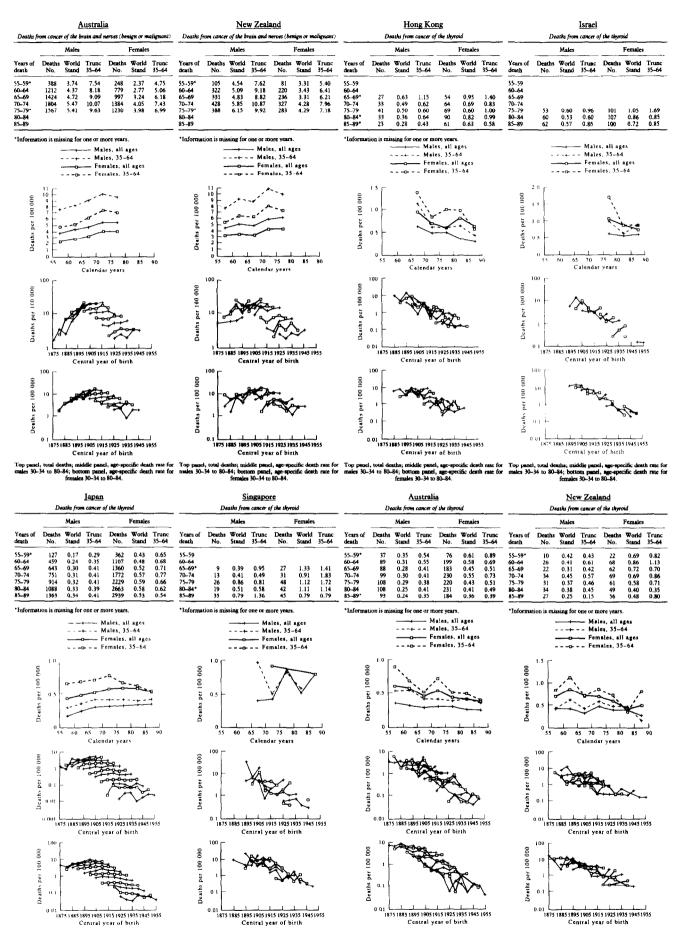
Top panel, total deaths; middle panel, age-specific death rate for Top panel, total deaths; middle panel, age-specific death rate for Top panel, total deaths; middle panel, age-specific death rate for makes 30-34 to 80-84; bottom panel, age-specific death rate for makes 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age



Top panel, total deaths; middle panel, age-specific death rate for Top panel, total deaths; middle panel, age-specific death rate for Top panel, total deaths; middle panel, age-specific death rate for males 30-34 to 80-84; bottom panel, age-specific deat



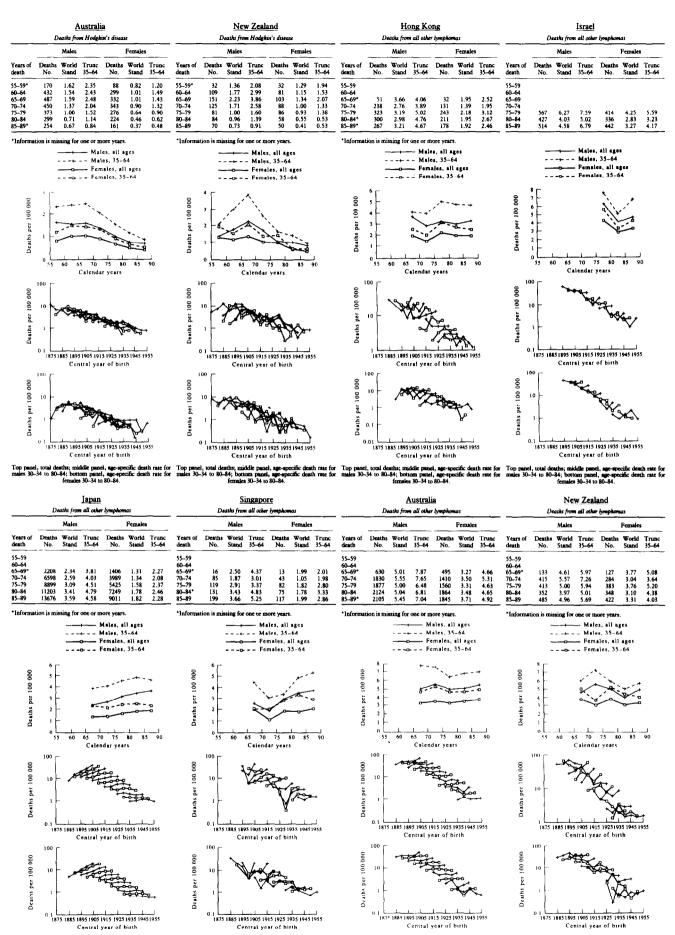
Top panel, total deaths; middle panel, age-specific death rate for makes 30-34 to 80-84; bottom panel, age-specific death rate for makes 30-34 to 80-84; bottom panel, age-specific death rate for makes 30-34 to 80-84; bottom panel, age-specific death rate for makes 30-34 to 80-84; bottom panel, age-specific death rate for makes 30-34 to 80-84; bottom panel, age-specific death rate for makes 30-34 to 80-84.



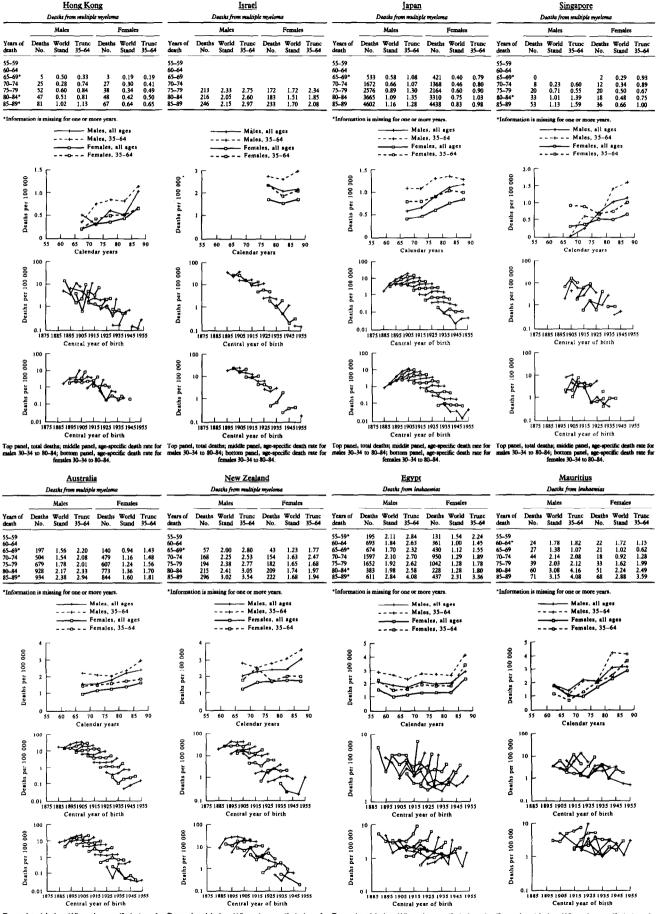
Top panel, total deuths; middle panel, age-specific deuth rate for Top panel, total deuths; middle panel, age-specific deuth rate for Top panel, total deuths; middle panel, age-specific deuth rate for makes 30-34 to 80-84; bottom panel, age-specific deuth rate for makes 30-34 to 80-84; bottom panel, age-specific deuth rate for makes 30-34 to 80-84; bottom panel, age-specific deuth rate for makes 30-34 to 80-84; bottom panel, age-specific deuth rate for makes 30-34 to 80-84; bottom panel, age-specific deuth rate for makes 30-34 to 80-84; bottom panel, age-specific deuth rate for makes 30-34 to 80-84; bottom panel, age-specific deuth rate for makes 30-34 to 80-84; bottom panel, age-specific deuth rate for makes 30-34 to 80-84.

	<u>Egypt</u> Daalks from Hodghin's disease	<u>Mauritius</u> Deaths from Hodghin's disease	<u>Hong Kong</u> Death from Hodebin's dissass	<u>Israel</u> Deaths from Hodghin's dispass						
	Males Females	Males Females	Males Females	Males Females						
Years of	Deaths World Trunc Deaths World Trunc No. Stand 35-64 No. Stand 35-64	Years of Desths World Trunc death No. Stand 35-64	Years of Deaths World Trunc Deaths World Trunc death No. Stand 35-64 No. Stand 35-64	Years of Deaths World Trunc Deaths World Trunc death No. Stand 35-64 No. Stand 35-64						
55-59 60-64 65-69 70-74 75-79 80-84* 85-89*	5 0.03 3 0.02 0.07 2 0.02 0.04 4 0.02 0.03	55-59 60-64 65-69 70-74 75-79 80-84* 13 1.07 0.50 5 0.27 0.46 85-89 7 0.39 0.84 3 0.09 0.11	55-59 60-64* 5 0.34 0.67 4 0.21 0.40 65-69 39 0.53 0.99 21 0.25 0.48 70-74 35 0.42 0.77 11 0.12 0.20 75-79 26 0.24 0.51 19 0.18 0.31 80-84 33 0.25 0.54 13 0.10 0.19 85-89 18 0.13 0.18 9 0.06 0.08	55.59 60.64 65.49 70.74 75-79 80-84 84 0.82 1.06 65 0.60 0.77 1.19 85-89 76 0.66 0.87 60 0.77 1.19 85-89 76 0.66 0.87 60 0.55 0.89						
*Informa	Males, all ages	*Information is missing for one or more years.	*Information is missing for one or more years. ———————————————————————————————————							
Deaths per 100 000		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00 00 0.5 0.5 0.0 65 70 75 80 85 90 Calendar years	00 1.5 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0						
Deaths per 100 000	1875 1885 1895 1905 1915 (925) 1945 1955 Central year of birth	0.1 ISES 1895 1905 1915 1925 1945 1945 1955 Central year of birth	0.1 1875 1885 1895 1905 1915 1925 1935 1945 1955 Central year of birth	0.1 1875 1885 1895 1905 1915 1925 1935 1945 1955 Central year of birth						
Deaths per 100 000	:	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.01 1875 1885 1895 1905 1915 1925 1935 1945 1955 Central year of birth	0.1 1875 1885 1895 1905 1915 1925 1935 1945 1955 Central year of birth						
Top penci	I, total deaths; middle panel, age-specific death rate for 34 to 65-69; bottom panel, age-specific death rate for	Top panel, total deaths; middle panel, age-specific death rate for males 30-34 to 65-69; bottom panel, age-specific death rate for	Top panel, total deaths; middle panel, age-specific death rate for males 30-34 to 80-84; bottom panel, age-specific death rate for	Top panel, total deaths; middle panel, age-specific death rate for						
	females 30-34 to 65-69. <u>Kuwait</u> Deaths from Hodghin's disease	ferm al ea 30-34 to 65-69. <u>Japan</u> Deaths from Hodghin's disease	fermics 30-34 to 80-84. Singapore Deaths from Hodghin's disease	females 30-34 to 80-84. <u>Sri Lanka</u> Deaths from Hodghin's disease						
	Males Females	Males Females	Males Females	Males Females						
Years of death	Deaths World Trunc Deaths World Trunc No. Stand 35-64 No. Stand 35-64	Years of Deaths World Trunc Deaths World Trunc death No. Stand 35-64 No. Stand 35-64	Years of Deaths World Trunc Deaths World Trunc death No. Stand 35-64 No. Stand 35-64	Years of Deaths World Trunc Deaths World Trunc death No. Stand 35-64 No. Stand 35-64						
55-59 60-64 65-69 70-74 75-79* 80-84 85-89*	0.63 0.22 1 0.19 0.69 8 0.41 5 0.42 0.63 5 0.23 2 0.09 0.18	55-59* 560 0.73 1.31 331 0.38 0.68 60-64 1420 0.69 1.12 839 0.36 0.57 65-69 1591 0.70 1.11 934 0.36 0.56 70-74 1257 0.50 0.79 639 0.21 0.33 75-79 1200 0.41 0.65 616 0.17 0.23 80-84 834 0.25 0.39 425 0.10 0.14 85-89 532 0.14 0.22 261 0.06 0.06	55-59 60-64* 7 1.08 0.88 0 63-69 23 0.62 1.16 11 0.31 0.76 70-74 18 0.38 0.67 6 0.14 0.27 75-79 15 0.32 0.47 9 0.24 0.49 80-84 22 0.43 0.81 12 0.21 0.33 85-89 12 0.18 0.10 15 0.23 0.33	55-59 60-64 65-69 70-74 75-79 83-84* 83 0.44 0.66 45 0.25 0.39 83-89* 52 0.38 0.61 26 0.20 0.45						
*Informat	tion is missing for one or more years. ———————————————————————————————————	*Information is missing for one or more years. ———————————————————————————————————	*Information is missing for one or more years. ————— Males, a3-64 ———————————————————————————————————	*Information is missing for one or more years. ———————————————————————————————————						
Deaths per 100 000	0.7 0.6 0.5 0.3 0.2	2.0	000 001 1.3 1.0 1.0 1.3 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	0.7						
Per	0.1 0 55 60 65 70 75 80 85 90 Calendar years	55 60 65 70 75 80 85 90 Calendar years	0 55 60 65 70 75 80 85 90 Calendar years	0.1 0.1 0.5 60 65 70 75 80 85 90 Calendar years						
Deaths per 100 000 Dea	0.1 0.55 60 65 70 75 80 85 90	55 60 65 70 75 80 85 90	55 60 65 70 75 80 85 90	0 55 60 65 70 75 80 85 90						

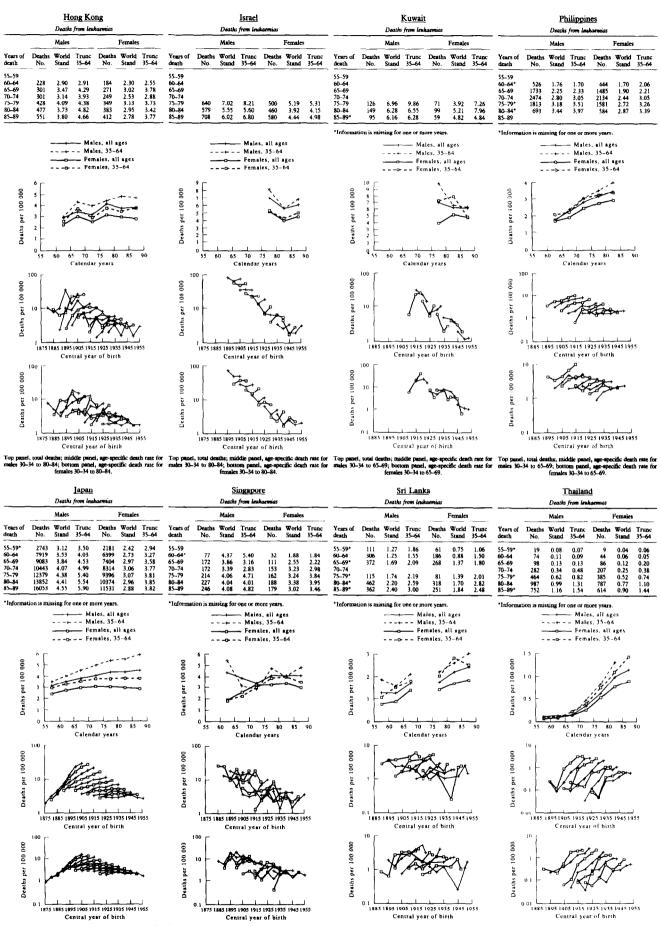
Top panel, total deaths; middle panel, age-specific death rate for Top panel, total deaths; middle panel, age-specific death rate for makes 30-34 to 65-69; bottom panel, age-specific death rate for makes 30-34 to 65-69; bottom panel, age-specific death rate for makes 30-34 to 65-69; bottom panel, age-specific death rate for makes 30-34 to 65-69; bottom panel, age-specific death rate for makes 30-34 to 65-69; bottom panel, age-specific death rate for makes 30-34 to 65-69; bottom panel, age-specific death rate for females 30-34 to 65-69.



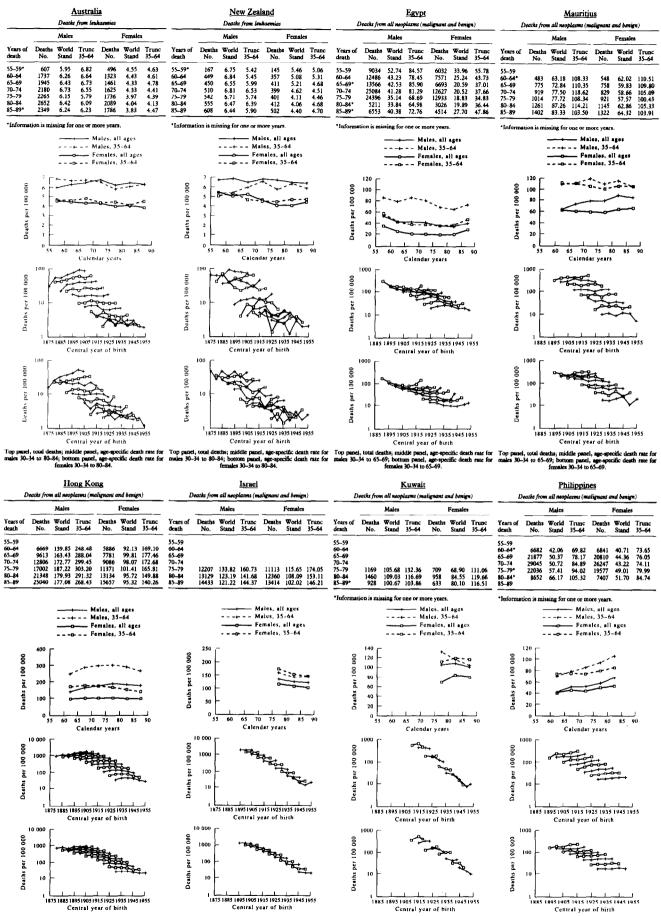
Top panel, total deaths; middle panel, age-specific death rate for makes 30-34 to 80-84; bottom panel, age-specific death rate for makes 30-34 to 80-84; bottom panel, age-specific death rate for makes 30-34 to 80-84; bottom panel, age-specific death rate for makes 30-34 to 80-84; bottom panel, age-specific death rate for makes 30-34 to 80-84; bottom panel, age-specific death rate for makes 30-34 to 80-84; bottom panel, age-specific death rate for makes 30-34 to 80-84; bottom panel, age-specific death rate for makes 30-34 to 80-84.



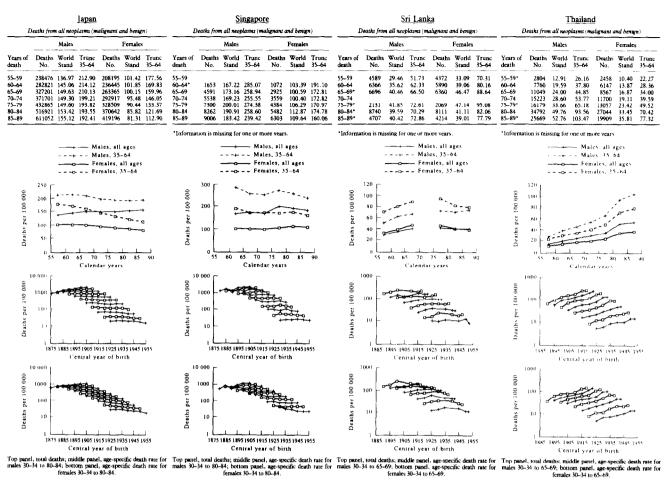
Top panel, total deaths; middle panel, age-specific death rate for males 30-34 to 80-84; bottom panel, age-specific death rate for males 30-34 to 80-84; bottom panel, age-specific death rate for males 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-specific death rate for formales 30-34 to 80-84; bottom panel, age-sp



Top panel, total deaths; middle panel, age-specific death rate for makes 30-34 to 80-84, bottom panel, age-specific death rate for makes 30-34 to 80-84, bottom panel, age-specific death rate for makes 30-34 to 80-84, bottom panel, age-specific death rate for formakes 30-34 to 80-84, bottom panel, age-specific death rate for formakes 30-34 to 80-84, bottom panel, age-specific death rate for formakes 30-34 to 80-84, bottom panel, age-specific death rate for formakes 30-34 to 80-84, bottom panel, age-specific death rate for formakes 30-34 to 80-84, bottom panel, age-specific death rate for formakes 30-34 to 80-84, bottom panel, age-specific death rate for formakes 30-34 to 80-84, bottom panel, age-specific death rate for formakes 30-34 to 80-84, bottom panel, age-specific death rate for formakes 30-34 to 80-84, bottom panel, age-specific death rate for formakes 30-34 to 80-84, bottom panel, age-specific death rate for formakes 30-34 to 80-84, bottom panel, age-specific death rate for formakes 30-34 to 80-84, bottom panel, age-specific death rate for formakes 30-34 to 80-84, bottom panel, age-specific death rate for formakes 30-34 to 80-84, bottom panel, age-specific death rate for formakes 30-34 to 80-84, bottom panel, age-specific death rate for formakes 30-34 to 80-84, bottom panel, age-specific death rate for formakes 30-34 to 80-84, bottom panel, age-specific death rate for formakes 30-34 to 80-84, bottom panel, age-specific death rate for formakes 30-34 to 80-84, bottom panel, age-specific death rate for formakes 30-34 to 80-84, bottom panel, age-specific death rate for formakes 30-34 to 80-84, bottom panel, age-specific death rate for formakes 30-34 to 80-84, bottom panel, age-specific death rate for formakes 30-34 to 80-84, bottom panel, age-specific death rate for formakes 30-34 to 80-84, bottom panel, age-specific death rate for formakes 30-34 to 80-84, bottom panel, age-specific death rate for formakes 30-34 to 80-84, bottom panel, age-specific death rate for formakes 30-34 to 80-84, bottom panel, age-sp



Top panel, total deaths; middle panel, age-specific death rate for makes 30-34 to 80-34; bottom panel, age-specific death rate for makes 30-34 to 80-34; bottom panel, age-specific death rate for makes 30-34 to 80-34; bottom panel, age-specific death rate for makes 30-34 to 80-34; bottom panel, age-specific death rate for makes 30-34 to 80-34; bottom panel, age-specific death rate for makes 30-34 to 80-34; bottom panel, age-specific death rate for makes 30-34 to 80-34; bottom panel, age-specific death rate for makes 30-34 to 80-34; bottom panel, age-specific death rate for females 30-34 to 80-34; bottom panel, age-specific death rate for makes 30-34 to 80-34; bottom panel, age-specific death rate for females 30-34 to 80-34; bottom panel, age-specific death rate for makes 30-34 to 80-34; bottom panel, age-specific death rate for females 30-34 to 80-34; bottom panel, age-specific death rate for makes 30-34 to 80-34; bottom panel, age-specific death rate for females 30-34 to 80-34; bottom panel, age-specific death rate for females 30-34 to 80-34; bottom panel, age-specific death rate for females 30-34 to 80-34; bottom panel, age-specific death rate for females 30-34 to 80-34; bottom panel, age-specific death rate for females 30-34 to 80-34; bottom panel, age-specific death rate for females 30-34 to 80-34; bottom panel, age-specific death rate for females 30-34 to 80-34; bottom panel, age-specific death rate for females 30-34 to 80-34; bottom panel, age-specific death rate for females 30-34 to 80-34; bottom panel, age-specific death rate for females 30-34 to 80-34; bottom panel, age-specific death rate for females 30-34 to 80-34; bottom panel, age-specific death rate for females 30-34 to 80-34; bottom panel, age-specific death rate for females 30-34 to 80-34; bottom panel, age-specific death rate for females 30-34 to 80-34; bottom panel, age-specific death rate for females 30-34 to 80-34; bottom panel, age-specific death rate for females 30-34 to 80-34; bottom panel, age-specific death rate for females 30-34 to 80-3



Australia New Zealand Deaths from all neoplasms (malignant and benign) Deaths from all neoplasms (malignant and benign Males Females Years of death World Trunc Stand 35-64 Deaths World Trunc No. Stand 35-64 World Trunc Stand 35-64 World Trunc Stand 35-64 Years of death Deaths No. Deaths No. 135.13 167.27 140.30 176.83 150.01 185.72 161.98 199.78 161.81 198.43 165.50 202.41 165.14 197.50 55-59 60-64 65-69 70-74 75-79 80-84* 85-89* 142.35 178.88 146.53 181.44 154.65 194.55 169.39 208.71 174.17 214.75 173.97 214.42 174.24 207.38 55-59 60-64 65-69 70-74 75-79 80-84 85-89* 103.19 100.60 100.14 104.18 100.68 101.63 103.41 154.43 152.42 155.31 161.25 156.35 155.19 156.03 8738 9600 10760 12715 14248 12347 13605 34023 38954 45597 53309 29959 33041 36894 42270 46762 7640 8447 9238 10706 12057 10573 *Information is missing for one or more years. Males, all ages — — Males, 35-64 Males, all ages -o- Females, all age--o--- Females, all ages --- Females, 35-64 --- - Females, 35-64 250 250 000 900 200 200 100 901 150 150 per per 100 100 Deaths Deaths 50 70 75 80 85 90 70 75 80 85 90 Calendar years Calendar years 10 000 10 000 900 1000 8 100 60000 100 per 100 Je f Deaths p Deaths 10 10 1875 1885 1895 1905 1915 1925 1935 1945 1955 1875 1885 1895 1905 1915 1925 1935 1945 1955 Central year of birth 10 000 8 1000 100 100 ber : 100 ě Deaths Deaths 10 10

1875 1885 1895 1905 1915 1925 1935 1945 1955

Central year of birth

Top panel, total deaths: middle panel, age-specific death rate for
males 30-34 to 80-84; bottom panel, age-specific death rate for
females 30-34 to 80-84.

1875 1885 1895 1905 1915 1925 1935 1945 1955

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