

Cancer on Guam, especially among Micronesians

Abstract: The Guam Cancer Registry (GCR) collects data on cases of cancer in Guam residents whether their initial diagnosis is made on Guam or as a result of a referral to an off-island medical facility. It also collects data on cancer of non-residents diagnosed on Guam. Although including non-Guam resident cancer cases in statistical tables will have the effect of raising local cancer rates, this probably only partially compensates for the number of Guam-resident cancer cases that are diagnosed off-island and not reported to the registry. Cases are also collected by a periodic review of death certificates filed with the Guam Office of Vital Statistics. To test this hypothesis GCR records were reviewed to determine the number of reported cancer cases for each ethnic group that claimed to be Guam residents. Since a high proportion of cancers seen among Micronesians on Guam represent cases referred from their home islands, it may also be that these cases only represent those cancers most likely to be referred to Guam rather than being representative of the cancers most commonly occurring within these ethnic groups in their home islands.

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Thus annual statistics for Guam cancer deaths reported by the Guam Office of Vital Statistics are likely to be slightly lower than those reported by the GCR.

Introduction

The Guam Cancer Registry (GCR) collects data on cases of cancer in Guam residents whether their initial diagnosis is made on Guam or as a result of a referral to an off-island medical facility. It also collects data on cancer of non-residents diagnosed on Guam. Although including non-Guam resident cancer cases in statistical tables will have the effect of raising local cancer rates, this probably only partially compensates for the number of Guam-resident cancer cases that are diagnosed off-island and not reported to the registry.

Reports to the GCR are generated from a variety of sources including the Guam Memorial Hospital Laboratory, private medical clinics and the Guam Chapter of the American Cancer Society. Cases are also collected by a periodic review of death certificates filed with the Guam Office of Vital Statistics. Although the official Guam death certificate form allows for the coding of only 1 official cause of death, cancer cases are included in the GCR if cancer is noted under the "Other significant conditions" section of the death certificate but are not judged to be the underlying cause of death.

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In the first annual report of the GCR¹ Publication No. 1, Agana (2000), Table 16, it was reported that cancer death rates for Micronesians (citizens of the Commonwealth of the Northern Mariana Islands, the Republic of the Marshall Islands, the Federated States of Micronesia and the Republic of Belau) for the period 1970-1979 were approximately 2.5 times that of the rate for the same group for the period 1980-1999. A similar trend was not noted for other ethnic groups although rates for some of the groups least represented on Guam (Blacks, Asians and Others) in some cases varied greatly over the same period.

It was suspected that the unusual variation in cancer death rates observed for Micronesians might be due to cancer cases which were not residents of Guam but who came to Guam for diagnosis and/or treatment of their illness either by medical referral or by self-referral. To test this hypothesis GCR records were reviewed to determine the number of reported cancer cases for each ethnic group that claimed to be Guam residents (Table 1). On the basis of comparison of these statistics it was concluded that over the period studied an average of more than 40% of the deaths of Micronesians recorded in the GCR represented non-residents.

A table was created comparing the incidence rates previously reported (bold type) as well as recalculated rates using only cases which reported their residence to be Guam (non-bold) (Table 2). The particularly low incidence rates observed for Guam-resident Micronesians during the period 1970-1974 could be due to the lack of accurate population data for this ethnic group during the 1970 and 1980 U.S. census (the population of Micronesians residing on Guam may have been over estimated giving much lower than average rates for the period 1970-1974 than later years).

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Table 3. Micronesian registrants in the Guam Cancer Registry by cancer site, ethnicity and reported residence for the period 1970-2000

Cancer site	Chamorro	Marshall's	Chuuk	Pohnpei	Yap	Palau
ALL CANCERS	1996 (36)	2 (1)	35 (10)	12 (5)	14 (5)	42 (9)
MOUTH & PHARYNX	158 (4)	-	2 (0)	1 (0)	1 (0)	-
Lip	5 (1)	-	-	-	-	-
Tongue	25 (0)	-	1 (0)	1 (0)	-	-
Salivary gland	2 (0)	-	-	-	-	-
Other mouth	29 (0)	-	-	-	1 (0)	-
Gum	1 (0)	-	-	-	-	-
Oropharynx	9 (0)	-	-	-	-	-
Nasopharynx	78 (3)	-	1 (0)	-	-	-
Hypopharynx	4 (0)	-	-	-	-	-
DIGESTIVE SYSTEM	418 (9)	-	8 (4)	4 (3)	4 (1)	11 (5)
Esophagus	32 (1)	-	-	1 (0)	-	2 (0)
Stomach	66 (1)	-	3 (1)	2 (2)	1 (0)	1 (0)
Small intestine	4 (0)	-	-	-	-	-
Colon	105 (4)	-	-	-	-	1 (1)
Rectum, anus	44 (0)	-	2 (2)	-	-	-
Liver	89 (1)	-	3 (1)	1 (1)	2 (0)	7 (4)
Gallbladder	6 (0)	-	-	-	-	-
Pancreas	54 (2)	-	-	-	1 (1)	-
Other digestive	18 (0)	-	-	-	-	-
RESPIRATORY SYSTEM	487 (11)	1 (0)	5 (2)	3 (1)	6 (3)	8 (1)
Larynx	30 (0)	-	-	-	1 (0)	-
Lung & bronchus	449 (11)	1 (0)	5 (2)	3 (1)	5 (3)	8 (1)
Other respiratory	8 (0)	-	-	-	-	-
HEART & ADJACENT	10 (0)	-	-	-	-	-
BONES & JOINTS	13 (0)	-	-	1 (1)	-	-
SKIN	23 (0)	-	-	-	1 (0)	-
NERVES	4 (0)	-	-	-	-	-
SOFT TISSUES	19 (0)	-	2 (0)	-	-	-
BREAST	255 (3)	-	3 (1)	-	-	6 (0)
FEMALE GENITAL	176 (3)	1 (1)	6 (0)	1 (0)	-	6 (1)
Cervix	57 (3)	-	2 (0)	-	-	3 (0)
Uterus	75 (0)	-	2 (0)	1 (0)	-	1 (1)
Ovary	41 (0)	1 (1)	2 (0)	-	-	1 (0)
Other fem genital	3 (0)	-	-	-	-	1 (0)
MALE GENITAL	114 (1)	-	1 (0)	-	-	-
Prostate	102 (0)	-	1 (0)	-	-	-
Testis	9 (1)	-	-	-	-	-
Other male genital	3 (0)	-	-	-	-	-
URINARY SYSTEM	48 (1)	-	-	-	-	1 (0)
Bladder	30 (0)	-	-	-	-	-
Kidney & ureter	18 (1)	-	-	-	-	1 (0)
NERVOUSSYSTEM	32 (2)	-	4 (1)	-	-	2 (0)
Brain	29 (2)	-	3 (1)	-	-	2 (0)
Other CNS	3 (0)	-	1 (0)	-	-	-
ENDOCRINE SYSTEM	18 (0)	-	1 (1)	-	1 (0)	1 (0)
Thyroid	17 (0)	-	-	-	1 (0)	-
Other endocrine	1 (0)	-	1 (1)	-	-	1 (0)
LYMPHNODES	4 (0)	-	-	-	-	-
LYMPHOMA	49 (1)	-	1 (0)	1 (0)	-	2 (1)
Hodgkin's disease	10 (1)	-	-	-	-	-
Non Hodgkin's	39 (0)	-	1 (0)	1 (0)	-	2 (1)
MULTIPLE MYELOMA	16 (0)	-	-	-	-	-
LEUKEMIA	70 (1)	-	1 (1)	1 (0)	-	1 (1)
Ill-defined site	84 (0)	-	1 (0)	-	1 (1)	4 (0)
PERCENT NON-RESIDENT	1.80	50.00	28.57	41.67	35.71	21.43

Numbers in parentheses indicates those cases who reported their residence as other than Guam and are included in the totals (cases with unknown residence have been excluded from this table). There are currently no Kosreans in the Guam Cancer Registry. Chamorro non-residents are generally from the Commonwealth of the Northern Mariana Islands. Note that '-' is 0 (0)

Table 1. Cancer registrant deaths by ethnicity and residence, both sexes, Guam, 1970-1999

Ethnicity	1970_4	1975_9	1980_4	1985_9	1990_4	1995_9	1999
1. Chamorro (Total)	145	156	214	239	279	314	63
Chamorro (Guam)	141	155	209	235	277	313	63
Percent "local"	91.1	99.4	97.7	98.3	99.3	99.7	100.0
2. Filipino (Total)	26	18	57	78	91	129	32
Filipino (Guam)	26	17	57	76	89	129	32
Percent "local"	100.0	94.4	100.0	97.4	97.8	100.0	100.0
3. Micronesian (Total)	10	8	7	7	16	29	7
Micronesian (Guam)	1	4	4	3	13	18	4
Percent "local"	10.0	50.0	57.1	42.9	81.3	62.1	57.1
4. White (Total)	20	32	29	35	38	39	7
White (Guam)	17	31	28	35	38	36	6
Percent "local"	85.0	96.9	96.6	100.0	100.0	92.3	85.7
5. Black (Total)	1	0	0	0	2	2	0
Black (Guam)	1	0	0	0	2	2	0
Percent "local"	100.0	-	-	-	100.0	100.0	-
6. Asian (Total)	4	8	16	9	30	30	6
Asian (Guam)	3	6	15	8	26	30	6
Percent "local"	75.0	75.0	93.8	88.9	86.7	100.0	100.0
7. Other (Total)	2	3	3	8	3	3	2
Other (Guam)	2	3	3	6	2	3	2
Percent "local"	100.0	100.0	100.0	75.0	66.7	100.0	100.0

Table 2. Cancer registrant death rates¹ by ethnicity and residence, both sexes, Guam, 1970-1999

Ethnicity	1970_4	1975_9	1980_4	1985_9	1990_4	1995_9	1999
1. Chamorro (Total)	59.6	61.7	78.1	79.1	82.3	87.7	84.4
Chamorro (Guam)	58.0	61.3	76.3	77.8	81.7	87.4	84.4
2. Filipino (Total)	43.2	20.8	63.8	78.8	67.1	72.4	86.1
Filipino (Guam)	43.2	19.7	63.8	76.8	65.6	72.4	86.1
3. Micronesian (Total)	193.6	121.8	80.8	42.4	56.5	73.3	85.2
Micronesian (Guam)	19.4	19.7	46.2	18.2	45.9	45.5	48.7
4. White (Total)	17.8	28.4	25.7	32.5	39.3	60.4	52.0
White (Guam)	15.2	27.5	24.8	32.5	39.3	55.7	44.6
5. Black (Total)	11.7	-	-	-	13.4	24.6	-
Black (Guam)	11.7	-	-	-	13.4	24.6	-
6. Asian (Total)	47.9	43.9	46.1	20.4	56.0	54.4	52.2
Asian (Guam)	35.9	32.9	43.2	18.1	48.5	54.4	52.2
7. Other (Total)	27.9	26.8	11.3	20.2	4.7	10.8	38.0
Other (Guam)	27.9	26.8	11.3	15.2	4.7	10.8	38.0

¹ Cases per 100,000 population

An additional table was prepared showing the cancers most frequently recorded in the GCR both for all Micronesians and only for those claiming a residence other than Guam (Table 3). Although some interesting apparent trends appear (for instance, all cancers of the rectum or anus among Chuukese recorded in the GCR were in non-residents), the numbers recorded are still too small to draw firm conclusions about the significance of these findings. Since a high proportion of cancers seen among Micronesians on Guam represent cases referred from their home islands, it may also be that these cases only represent those cancers most likely to be referred to Guam rather than being

representative of the cancers most commonly occurring within these ethnic groups in their home islands. More detailed and accurate information about the incidence of cancer among Micronesians must await the establishment of cancer registries in their respective countries.

References

- Haddock RL, Naval CL. Cancer on Guam. Guam Cancer Registry. ■