

Lack of Prenatal Care—A Re-Emerging Health Problem on Guam

Robert L. Haddock¹, DVM, MPH, Margaret Murphy-Bell², Cynthia L. Naval³, MS, Carolyn Garrido⁴

Abstract

Objective: A study was conducted to determine the ethnic profile of new mothers on Guam, their use of prenatal care services, causes for the failure of some women to receive any prenatal care, and suggestions to improve participation in this important health care measure.

Methods: Data from birth certificates for the period 1970-2004 were reviewed to determine the ethnicity of mothers and their prenatal care. In addition, a survey of mothers who delivered without any prenatal care was conducted to learn their reasons for not receiving prenatal care, where they would prefer to receive such care in the future, and their suggestions for encouraging participation in prenatal care programs.

Results: The percent of Micronesian mothers who received no prenatal care during their pregnancies increased by more than 4 times (461%) over the study period. Lack of medical insurance (24.3% of respondents) and lack of transportation (22.6% of respondents) were the leading reasons given for not receiving prenatal care during their pregnancies. Nearly half (48.2%) of respondents indicated they would prefer to receive prenatal care at public health clinics, the number favoring North, Central, or Southern clinics roughly reflecting population numbers of the areas served by those clinics.

Conclusions: Targeted measures should be taken to assure that basic prenatal care is accessible to mothers who do not have health insurance and have limited transportation resources.

Introduction

Guam is a multi-ethnic island community in the Western Pacific where no ethnic group constitutes as much as 50% of the population. In the 2000 census native Guamanians (Chamorros) constituted 37 percent of the island's population, Filipinos constituted 26 percent, 7 percent were White, 4 percent were Chuukese, 14 percent identified with 2 or more races and 12 percent identified with other racial or ethnic groups (3). Several cases of congenital syphilis were reported on Guam recently after having been absent

from the island for many years. Beyond the fact that these cases indicate that the spread of sexually transmitted disease continues to be a problem on Guam, they also suggest that prenatal care for some women giving birth on Guam has been inadequate.

Since timely, high-quality prenatal care can both help to prevent poor birth outcomes and improve maternal health¹, a study was initiated to determine the Guam populations most lacking of prenatal care, the reasons pregnant women failed to obtain prenatal care, and possible means to improve utilization of this important preventive health practice.

Methods

To assess the nature and magnitude of the problem of inadequate prenatal care on Guam, data obtained from birth certificates of infants born on Guam from 1970 through 2004 and summarized in Annual Statistical Reports prepared by the Office of Vital Statistics (1970-1997) and additional computerized data provided by the Office of Planning and Evaluation, Department of Public Health and Social Services (1998-2004) were reviewed. This data included self-reported ethnicity of mother, village of mother's residence at time of delivery, marital status, and month of first pre-natal physician visit. In the context of this study, the term "Micronesian" ethnicity meant Micronesians other than Guam Chamorros and included women of the Republic of the Marshall Islands, the Federated States of Micronesia (Kosrae, Pohnpei, Chuuk and Yap States), the Commonwealth of the Northern Mariana Islands, and the Republic of Belau ethnicity.

In addition to reviewing birth certificate data, a survey of mothers who delivered without any prenatal care during their pregnancy was conducted to learn their reasons for not receiving this care, where they would prefer to receive such care in the future and suggestions for encouraging women to participate in prenatal care programs. The survey instrument was prepared by consultation between the Territorial Epidemiologist, the administrator of Guam's Maternal and Child Health Program, and a Program Planner experienced in conducting surveys. Mothers requesting birth certificates at Guam's Office of Vital Statistics who had received no prenatal care were asked to participate in the survey while they waited (fathers or other

Office of Epidemiology and Research

²Maternal and Child Health Program

³Office of Planning and Evaluation

⁴Office of Vital Statistics

relatives requesting birth certificates did not participate in the survey). Participation was strictly voluntary with lack of prenatal care being the only qualification for selection. No attempt was made to assure that respondents were geographically, ethnically or otherwise representative of the island as a whole. A total of 201 questionnaires were completed. Data were entered and analyzed using EpiInfo-6 software⁶.

Results

Prenatal care data for women delivering on Guam from 1970 through 2004 is summarized by 5-year periods in Table 1. The data reveal that for Chamorro and Micronesian mothers as well as all mothers of Guam in general, the percent of both those initiating prenatal care during the first trimester of their pregnancy and those who received no prenatal care at all increased during the period studied. The data clearly show that the population most at risk of failing to receive any prenatal care is Micronesian mothers, with Chamorro mothers showing a similar but somewhat less dramatic recent trend. Although the Chamorro population of Guam is larger than the Micronesian population, Micronesian births with a history of no prenatal care exceed those of Chamorro births in absolute numbers as well as rate. Micronesian women constitute only about 9% of women of childbearing age

on Guam³ but in 2004 they accounted for 54% of deliveries with no prenatal care.

Lack of medical insurance and lack of transportation were the leading reasons given by survey respondents for not receiving prenatal care (Table 2, Question 1).

For the period 2000-2004 women of the southern Guam village of Umatac had the highest rate of delivery with no prenatal care at 12.2% of births. According to the 2000 census this village also had the lowest per capita income of any village on Guam. (Table 3).

Almost half (48.2%) of survey respondents indicated that they would prefer to receive prenatal care services at a public health clinic (Table 2, Question 2) but almost all indicated that they were not aware that these services were available without charge (Table 2, Question 3).

Discussion

The results of this study suggest that while adequate prenatal care has been available to some segments of Guam's population, certain other segments of the population have been unable or unwilling to access appropriate prenatal care. It is apparent that Chamorro and Micronesian populations of Guam are those most likely to belong to the latter group. Mothers of the predominantly Chamorro southern Guam village

Table 1: Percent for Guam mothers initiating prenatal care during first trimester or lacking any prenatal care by ethnicity for 5-year periods, 1970-2004¹

1 st Visit (%)	1970-74	1975-79	1980-84	1985-89	1990-94	1995-99	2000-04
All Races							
1 st Trimester	42.0	56.1	62.3	59.4	60.3	64.4	61.4
No Prenatal	1.2	2.7	1.3	3.2	3.5	6.0	7.3
Total Births	15,609	15,071	15,254	16,974	20,821	21,131	17,253
Micronesian							
1 st Trimester	20.8	32.8	44.1	36.3	40.4	39.7	34.9
No Prenatal	3.1	7.8	3.9	6.9	13.9	14.6	17.4
Total Births	683	714	1,014	1,244	2,347	3,713	3,541
Chamorro							
1 st Trimester	27.4	47.7	57.5	52.9	62.3	61.7	59.6
No Prenatal	1.8	3.1	1.5	3.7	3.4	6.6	6.9
Total Births	7,801	6,763	6,797	7,648	8,926	8,923	7,298
Filipino							
1 st Trimester	45.5	62.3	69.2	61.9	74.2	78.6	76.8
No Prenatal	0.6	1.1	1.1	2.4	1.2	1.2	2.0
Total Births	2,733	3,101	3,082	3,711	4,974	4,869	3,725
Caucasian							
1 st Trimester	73.0	72.8	70.1	78.4	80.7	82.0	87.7
No Prenatal	0.1	0.4	0.5	1.4	0.6	1.9	0.5
Total Births	3,592	2,944	2,884	2,737	2,408	1,802	1,108
Asian							
1 st Trimester	52.4	61.0	73.6	69.6	74.7	88.7	77.5
No Prenatal	1.5	9.3	0.6	3.2	1.5	1.9	1.7
Total Births	481	793	527	496	854	927	821

¹This table has been compiled from data extracted from Annual Statistical Reports, Office of Vital Statistics (1970-1997), and from additional data provided by the Office of Planning and Evaluation, Department of Public Health and Social Services.

Table 2: Number of responses (and percent of respondents) to questions in a survey of mothers who received no prenatal care (201 respondents).

Question 1: Why did you NOT receive any prenatal medical care (no doctor appointment while you were pregnant)? Please circle all answers that apply.

	NUMBER	PERCENT
a. I did not know I was pregnant.	59	17.5%
b. I was unable to afford a doctor appointment.	47	14.0%
c. I did not have transportation.	82	24.3%
d. I do not have health insurance.	76	22.6%
e. I have already had children before and was not worried.	27	8.0%
f. A relative (mother, sister, aunt, etc.) helped and advised me regarding my pregnancy.	18	5.3%
g. I did not want anyone else to know I was pregnant.	19	5.6%
h. My husband (boyfriend) did not want me to see a doctor.	5	1.5%
i. I saw a midwife (<i>pattera</i>) for my care during pregnancy.	4	1.2%
j. Other	0	0.0%
TOTAL RESPONSES	337	100%

Question 2: From whom would you prefer to receive medical care during future pregnancies?

a. Private physician	57	34.3%
b. Public Health clinic		
1. Dededo	38	22.9%
2. Mangilao	37	22.3%
3. Inarajan	5	3.0%
c. Guam Memorial Hospital	27	16.3%
d. Midwife (<i>pattera</i>)	2	1.2%
e. Other	0	0.0%
TOTAL RESPONSES	166	100%

Question 3: Were you aware of the Maternal and Child Health program at Mangilao PublicHealth that offers free prenatal care services?

a. Yes	5	3.5%
b. No	139	96.5%
TOTAL RESPONSES	144	100%

Question 4. If you answered “Yes” to question #3 above, what was the most important reason why you did not participate in this program?

No transportation	14	48.3%
No baby sitter	5	17.2%
No insurance	3	10.3%
Wasn't worried, had previous kids.	2	6.9%
Had help from a relative.	1	3.5%
Family doesn't believe in prenatal care.	1	3.5%
Didn't know I was pregnant.	1	3.5%
Scared to go to Public Health	1	3.5%
Uncomfortable with male doctor	1	3.5%
TOTAL RESPONSES	29	100%

Question 5. What can Public Health do to encourage participation in their prenatal care program?

The most frequent responses (19) related to publicizing services through the mass media. Other responses included the following:

- Provide universal health insurance.
- Provide prenatal care at home.
- Have prenatal clinics on weekends.
- Provide more appointment slots.
- Make classes mandatory or lose [welfare] benefits
- Have translators for people who can't speak English.
- Have female physicians.
- Provide classes in schools on the importance of prenatal care.

of Umatac had the highest rate of birthing without any prenatal care during the period 2000-2004. The low utilization of prenatal care even in a village served by a Public Health Clinic is of particular concern. The principal idea behind establishing the Southern Region Community Health Center (SRCHC) in the neighboring village of Inarajan was to assure access to adequate health care for residents of the more traditional and less populated southern villages of Guam. While Guam is a relatively small island (approximately 35 miles long by 5-8 miles wide and 210 sq. miles in area), the distances involved in reaching health care services may still be daunting to those without access to adequate transportation. The SRCHC is approximately 10.75 miles from the village of Umatac suggesting that even what many people in a mobile society would consider a modest distance may be a substantial obstacle to mothers without access to adequate transportation. According to the 2000 census of Guam, Umatac also had the lowest per capita income of any village on Guam further suggesting that lack of prenatal care is related to economic issues.

Although Guam has a public transportation system, it is limited in scope and routes are not readily accessible to many lower-income communities. This is particularly the case of those only accessed by unpaved roads since bus companies only traverse paved roads (although a paved road passes through Umatac, there is only 1 bus daily in each direction between Umatac and Inarajan). An effort to assure that public transportation is accessible within reasonable

Table 3: Average annual percent of births with no prenatal care 2000-2004¹, population in 2000² and average per capita income (thousands) in 1999² for Guam Villages.

Guam Villages	No Prenatal Care Percent	Population	Per Capita Income
Yigo	8.3	19,474	9.3
Dededo	8.2	42,980	8.4
Tamuning	8.0	18,012	13.7
Mangilao	8.6	13,313	9.3
Barrigada	5.7	8,652	10.6
Mongmong-Toto-Maite	9.5	5,845	10.5
Hagatna	6.9	1,100	12.2
Agana Heights	4.4	3,940	11.6
Sinajana	6.5	2,853	10.1
Chalan Pago-Ordot	6.9	5,923	9.0
Asan-Maina	5.4	2,090	12.1
Piti	4.9	1,666	14.5
Santa Rita	5.2	7,500	9.7
Agat	6.5	5,656	7.9
Yona	7.5	6,484	9.8
Talofoto	6.9	3,215	9.6
Inarajan	7.7	3,052	7.5
Merizo	5.7	2,163	8.2
Umatac	12.5	887	6.7

¹Office of Vital Statistics, Guam Department of Public Health and Social Services.

²U.S. Census Bureau 2000. Census of Population and Housing: Guam.

walking distance of every Guam household would do much to solve the problem of lack of access to primary health care due to lack of transportation.

In 1956 a total of 17 village-based public health clinics providing complete pre-natal, well-child and maternal care outpatient services as well as some cancer detection services, family planning information and home care supervision were serving Guam's civilian communities² but by the early 1970's, encouraged by federal grants, a policy of providing more comprehensive services in centralized locations was inaugurated. The SRCHC, located in the largely rural village of Inarajan, opened its doors in 1971 and the Northern Region Community Health Center (NRCHC), located in the village of Dededo, the island's most populous village, opened in 1984. In addition to the traditional public health services provided by the village clinics, these centers offered dental health and communicable disease control services as well as chronic disease care and some crippled children services. Unfortunately, as financial resources to support public health staffing dwindled with the hard economic times associated with a Japanese economic downturn and the resulting decline of Guam's tourism revenues, the readily accessible village public health clinics have been closed. During the same period the public health nursing staff, backbone of all public health activities, fell from 48 (including 39 RN's) in 1970 when Guam's population was 84,996 to only 23 (including 16 RN's) in 2005 when the island's population had increased to 168,564^{2,5}.

In 2005 23% of Guam's population had no medical insurance⁴. This figure is in agreement with questionnaire responses "I was not able to afford a doctor's appointment" (14% of respondents) and "I do not have health insurance" (22.6% of respondents), and further supports the view that a lack of financial



resources is a leading cause of women on Guam failing to obtain any prenatal care.

In deciding where health services are most needed, total patient load could be the most important factor. This study has shown that the village with the greatest total number of mothers without prenatal care was Dededo, also the site of the NRCHC. Dededo village is also the most populous village on Guam and because it is also the largest in area as well (approximately 30 sq. miles), women from remote locations may have to travel more than 6 miles to reach their nearest health center.

The fact that many women were not aware of free prenatal care available from Guam public health clinics was both discouraging and enlightening (Table 2, Question 3). As might be anticipated, many of the responses to the question, "What can Public Health do to encourage participation in their prenatal care program?" (Table 2, Question 5) related to the need for better communication about the services available to pregnant women.

Conclusions

The dual problems of financing basic health care for all and assuring access to these services are not unique to Guam and, as elsewhere, solutions are likely to be both complex and costly. While searching for solutions to these problems, however, increased effort should be made in less problematic areas such as more effectively targeting information about the availability of existing prenatal care services to the communities and ethnic populations most in need of these services.

Acknowledgements

The authors wish to thank Dr. Kathryn L. Braun for reviewing the manuscript and for her helpful suggestions.

Corresponding author:

Dr. R. L. Haddock
Guam Department of Public Health and Social Services
123 Chalan Kareta Mangilao
GU 96913-6304
E-mail: robhad@yahoo.com

References

1. U.S. Department of Health and Human Services. Healthy People 2010. Vols. 1 & 2. Washington, DC: U.S. Government Printing Office; 2000.
2. Guam Department of Public Health and Social Services. Annual Report, 1970.
3. U.S. Census Bureau. 2000 Census of Population and Housing: Guam. Government Printing Office, Washington, DC, May 2004.

4. University of Guam Co-operative Extension Service: Access, affordability, prevention: report of findings and options for Guam's uninsured. Unpublished report, Mangilao, Guam, 2005.
5. Yatar J. Personal communication. 2005.
6. Dean AG, Dean JA, Coulombier D, et al. Epi Info™, Version 6.04a, a word processing, database, and statistics program for public health on IBM-compatible microcomputers. Atlanta: Centers for Disease Control and Prevention, July 1996.