

## PREVALENCE OF CHRONIC DISEASES IN A DISTRICT OF SALVADOR, BAHIA, BRAZIL<sup>1</sup>

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*A survey of chronic and degenerative disease morbidity was conducted in a relatively well-to-do district of Salvador, Brazil. The results tend to support the argument that chronic diseases are becoming increasingly prominent in Brazil's urban centers.*

### Introduction

Until now, Brazilian governmental health planning has focused most strongly on the endemic and communicable diseases that are responsible for most deaths and extensive morbidity. This situation contrasts with that found in the United States and other developed countries, where cardiovascular diseases account for most of the deaths and where arterial hypertension is one of the most common and potent precursors of heart disease, cerebrovascular accidents (strokes), and congestive heart failure (1). Nevertheless, chronic and degenerative diseases such as these are coming to make an increasingly important contribution to the mortality statistics of Brazil and other Latin American countries, especially in the large urban centers (2).

In Northeastern Brazil, an extremely poor part of the country, mortality statistics are already pointing to changes in some state capitals. For example, in Fortaleza (Ceará State), Recife (Pernambuco State), and Salvador (Bahia State) the respective mortality from all

communicable diseases in 1977 was 104, 220, or 180 deaths per 100,000 inhabitants; except in Recife, this was less than the combined mortality from malignant tumors, heart disease and stroke, which together caused 195, 207, and 279 deaths per 100,000 population in those three cities, respectively, that year (3).

Laurenti has demonstrated secular change in the cardiovascular disease mortality of São Paulo that indicates a substantial increase in death from heart and cerebrovascular diseases between 1940 and 1969 (2). This same study draws attention to the frequent involvement of arterial hypertension in these deaths. It is also true, however, that the number of actual deaths from chronic and degenerative diseases in any given year does not necessarily reflect the current prevalence of those diseases in the population for various reasons—among them the fact that these diseases commonly run a long course—so that there is generally a considerable lag between occurrence of the disease and the victim's death.

Even so, the study of the prevalence of chronic diseases has not yet awakened great interest in Latin America, probably because of the continuing importance of endemic communicable diseases. A prevalence study of disability was conducted in Medellín, Colombia, in 1974; but this only provided data on incapacitation (4). The purpose of the study reported here, which was conducted between 1 September and 30 November 1979, was to ascertain the prevalence of certain chronic,

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noninfectious diseases in a district of Salvador, the capital of Bahia State.

### Study Population and Methods

The Salvador district selected for this study was Canela, a small middle to upper-middle class district with well-defined boundaries. This district was completely mapped, and all nonresidential buildings were excluded. A total of 1,400 residential units were registered, each apartment being counted as one residential unit. Of the total residential units, 108 (7 per cent) were found to be unoccupied. A systematic sample was then taken consisting of 25 per cent (323) of the remaining 1,292 occupied units. Within this sample, 25.1 per cent of the units could not be reached because doormen or other building personnel refused to grant admission. However, the occupants of the remaining 242 units agreed to answer a questionnaire. One of the 242 units was excluded because it was occupied by a Japanese family. The ultimate study population consisted of 810 individuals whose age distribution is shown in Table 1.

A single questionnaire (see Annex I) was used to record information about all the occupants over age 14 in each residential unit. This questionnaire, which had previously been tested in a pilot study of 100 families from another district with similar characteristics, consisted of queries requesting general information about each person and informa-

tion concerning the presence of noninfectious diseases diagnosed by physicians. Since the study population was not examined, the accuracy of the reported diagnoses was checked by assessing the appropriateness of the reported treatment being provided. The questionnaires were administered by five of the coauthors, who were medical students at the time. Each was attending a course on epidemiology, and each received special training in preparation for this work.

At each residence the answers needed to complete the questionnaire were provided by a principal family member, usually the wife. When it was impossible to administer the questionnaire directly to the person in charge, the oldest member of the family present (who had to be at least 20 years of age) was asked to provide the answers. Neither domestic servants nor illiterates were utilized as respondents. If no suitable respondent was available, the residence was revisited as many times as necessary to obtain accurate replies. Additional information on many of the diseases listed in the Annex was provided in the space indicated for "remarks." Regarding diseases of the digestive system, those with a firm diagnosis were included in the figures presented in Table 5; but vague conditions such as gastritis, liver disease, and constipation, as well as communicable parasitic or protozoan enteric diseases, were excluded. Similarly, conditions such as cystitis were excluded from diseases of the urinary tract.

Basic terms used in the questionnaire were defined as follows:

- *Family*: father, mother, children, and other blood relations living in the same residence.
- *Occupants*: family members and other individuals living in the residence. Some typical examples would be godchildren or foster children; domestic servants who had been living with the family for five years or more; or a group of individuals without family ties (such as a group of university students) who for any reason were living in the same residence.
- *Mental illness*: a mental disease with a precise diagnosis such as schizophrenia, manic depressive psychosis, etc.
- *Psychiatric disorder*: a behavioral or personality

Table 1. Distribution, by age and sex, of the 810 survey subjects.

Age (in years)	Males		Females	
	No.	%	No.	%
15 - 19	64	18.4	81	17.5
20 - 29	114	32.8	135	29.2
30 - 39	46	13.2	78	16.9
40 - 49	50	14.4	72	15.6
50 - 59	35	10.0	47	10.2
60 - 69	25	7.2	25	5.4
≥ 70	14	4.0	24	5.2
Total	348	100.0	462	100.0

disorder, such as depression or family maladjustment, that was not being treated and characterized as a mental illness.

The percentage prevalence (cases per 100 subjects) was calculated for all the diseases studied, and in appropriate cases the results for males and females were compared in order to see whether there was a statistically significant difference ( $p < 0.05$ ) between the two sets of data.

## Results

The diagnoses reported by the respondents appeared to be accurate in most cases and were frequently confirmed by laboratory examinations (such as electrocardiograms or radiologic examinations) when these were mentioned.

The educational level of the survey population (Table 2) is presented partly to indicate the survey population's socioeconomic status and partly to show that the respondents' educational backgrounds generally gave them the preparation needed to provide reliable answers to the questions asked.

Table 2. Educational levels, by sex, of the 810 survey subjects.

Educational level	Males		Females	
	No.	%	No.	%
University education (complete)	110	31.6	69	14.9
University education (incomplete)	73	21.0	64	13.9
Intermediate education <sup>a</sup>	31	8.9	75	16.2
Upper high school (complete or incomplete)	51	14.7	66	14.3
Lower high school completed	63	18.1	95	20.6
Primary school completed	16	4.6	72	15.6
Literate (incomplete primary school or barely literate)	4	1.1	9	1.9
Illiterate	0	0.0	12	2.6
Total	348	100.0	462	100.0

<sup>a</sup>A complete course of vocational training preparing students for professions such as primary school teaching, accounting, and various classes of technical work.

## Diseases of the Circulatory System

Diseases of the circulatory system were found among both men and women from age 20 onwards, a total of 95 cases (40 in men and 55 in women) being reported. The observed prevalences of arterial hypertension, heart disease, and stroke sequelae are presented by age and sex in Table 3. As may be noted, arterial hypertension was very prevalent among women above age 49, while the bulk of those afflicted with heart disease were males. A statistically significant difference ( $p < 0.05$ ) was found between the overall prevalences of arterial hypertension in males and females, and a highly significant difference ( $p < 0.01$ ) was found between the overall prevalences of heart disease in males and females.

The data on age-specific prevalences of arterial hypertension indicate that from age 60 years onward the prevalence among women was significantly higher than the prevalence among men ( $p < 0.05$ ). With respect to heart disease, despite the predominance of male cases, there was an insufficient number of cases to demonstrate that this predominance was statistically significant ( $p < 0.05$ ) in any specific age group except the 40-49 group. (For lack of female cases, the significance of the difference between men and women in the 50-59 group was not assessed.) Isolated cases of stroke sequelae were observed among men in all age groups above 49, but were only found in women over 69 years old. Taking both sexes together, the prevalence of stroke sequelae in subjects over age 59 was 4.5 per cent.

## Other Diseases

The prevalence of diabetes mellitus was 1.4 per cent among men and 2.8 per cent among women. These figures were not found to exhibit a statistically significant difference. However, it should be noted that female diabetics, unlike their male counterparts, were found in nearly all the age groups studied. Taking the two sexes together, the observed

**Table 3. Reported cases of arterial hypertension, heart disease, and stroke, by age and sex, among the Salvador survey subjects.**

Age group (in years)	Males						Females						Statistical significance of difference between sexes			
	Arterial hypertension		Heart disease		Stroke sequelae		Arterial hypertension		Heart disease		Stroke sequelae		Hypertension		Heart disease	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	Z	p	Z	p
15 - 19	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0				
20 - 29	1	0.9	-	0.0	-	0.0	3	2.2	-	0.0	-	0.0	0.81	>0.05		
30 - 39	3	6.5	-	0.0	-	0.0	3	3.8	-	0.0	-	0.0	0.68	>0.05		
40 - 49	1	2.0	5	10.0	-	0.0	6	8.3	1	1.4	-	0.0	1.48	>0.05	2.16	>0.05
50 - 59	9	25.7	4	11.4	1	2.8	12	25.5	-	0.0	-	0.0	0.02	>0.05		
60 - 69	5	20.0	5	20.0	1	4.0	13	52.0	1	4.0	-	0.0	2.36	<0.05	1.74	>0.05
≥ 70	2	14.3	2	14.3	1	7.1	13	54.2	1	4.2	2	8.3	2.43	<0.05	1.11	>0.05
Total	21	6.0 <sup>a</sup>	16	4.6 <sup>b</sup>	3	0.9 <sup>c</sup>	50	10.8 <sup>a</sup>	3	0.6 <sup>b</sup>	2	0.4 <sup>c</sup>				

<sup>a</sup>Z = 2.4; p < 0.05.

<sup>b</sup>Z = 3.77; p < 0.01.

<sup>c</sup>Z = 0.92; p > 0.05.

prevalence of diabetes was 2.2 per cent. The prevalence of hyperthyroidism among women was 1.3 per cent; hypothyroidism was observed only in women, at a prevalence of 0.4 per cent (Table 4).

Table 5 shows the observed prevalences of various different classes of diseases. As indicated, fairly similar prevalences of respiratory disease (mostly cases of bronchial asthma) were reported for males and females. All 10 of the reported disease cases in males were bronchial asthma. The same was true of seven of the 11 female cases, chronic bronchitis accounting for the remaining four cases of female respiratory disease.

Prevalence figures were low for chronic noninfectious diseases of the digestive tract—which included isolated cases of hiatal hernia, chronic enterocolitis of nonparasitic origin, intestinal diverticulosis, and cirrhosis of the liver (one case).

The prevalence of reported genitourinary tract diseases was also low; reported diseases included cases of urolithiasis, polycystic kidney, chronic renal insufficiency, and chronic pyelonephritis.

Five cases of nervous system disease, one of paraplegia resulting from a spinal cord lesion, and four of epilepsy were reported. One case of schizophrenia and one of manic-depressive psychosis accounted for the two reported mental disease cases. The three subjects with psychiatric disturbances had cases of depression and were undergoing psychotherapy or drug treatment.

Of the four cases of cancer, three were said to be skin cancer and one was reported as cancer of the prostate. Cases of deafness (five involving total deafness and the rest partial deafness) were most prevalent among women.

The relatively prevalent musculoskeletal diseases (reported for 9.8 per cent of the subjects) were more prevalent among women (13.6 per cent) than among men (4.6 per cent). This difference between the sexes was found to be statistically significant ( $p < 0.01$ ). The various types of musculoskeletal diseases involved are shown in Table 6.

Three subjects (a deaf-mute male, another male with congenital partial deafness, and a mongoloid woman) were found to have hereditary or congenital diseases.

## Discussion

Overall, like the pilot study, the survey found a high prevalence of chronic diseases. There was also general agreement between the survey and pilot study regarding the most prevalent diseases.

With respect to the chronic noninfectious diseases whose courses may be asymptomatic for some time, even the high prevalence rates obtained may represent something of an underestimate. This is because the inquiry was based on current diseases mentioned by the respondents rather than on direct clinical or laboratory examinations. Nevertheless, given the educational level of the survey population and the way in which the diagnoses were checked, it is felt that the inquiry was capable of defining the health status of the survey population vis-a-vis chronic diseases.

In the past, the prevalence of arterial hypertension, especially in men, appears to have been among the most underestimated. Supporting this argument, studies have shown that in various parts of the world hypertension is invariably present in 10 to 20 per cent of the middle-aged adults (1, 5). Regarding the present survey, attention should be drawn to the fact that the observed prevalence of arterial hypertension increased considerably from age 50 onwards in both sexes, especially among women. This finding agrees with information from other countries indicating that the prevalence of hypertension in women surpasses that in men at the time of menopause (6).

A previously reported survey on the prevalence of arterial hypertension in subjects under 40 years of age in the city of Salvador showed that this prevalence was significantly higher in males than in females up to age 30. Between ages 30 and 39 males continued to show a numerically higher prevalence, but the

**Table 4. Reported cases of diabetes and thyroid disease, by age and sex, among the Salvador survey subjects.**

Age group (in years)	Males						Females					
	Diabetes mellitus		Hyperthyroidism		Hypothyroidism		Diabetes mellitus		Hyperthyroidism		Hypothyroidism	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
15 - 19	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0
20 - 29	-	0.0	1	0.9	-	0.0	1	0.7	-	0.0	-	0.0
30 - 39	-	0.0	-	0.0	-	0.0	-	0.0	4	5.1	2	2.3
40 - 49	-	0.0	1	2.0	-	0.0	3	4.2	1	1.4	-	0.0
50 - 59	3	8.6	-	0.0	-	0.0	2	4.2	-	0.0	-	0.0
60 - 69	-	0.0	-	0.0	-	0.0	2	8.0	1	4.0	-	0.0
≥ 70	2	14.3 <sup>a</sup>	-	0.0	-	0.0	5	20.8 <sup>a</sup>	-	0.0	-	0.0
Total	5	1.4 <sup>b</sup>	2	0.6 <sup>c</sup>	-	0.0	13	2.8 <sup>b</sup>	6	1.3 <sup>c</sup>	2	0.4

<sup>a</sup>Z = 0.5; p > 0.05.

<sup>b</sup>Z = 1.36; p > 0.05.

<sup>c</sup>Z = 1.00; p > 0.05.

**Table 5. Reported cases of various categories of diseases, by sex, among the Salvador survey subjects.**

Disease category	Males		Females	
	No.	%	No.	%
Respiratory disease	10	2.9	11	2.4
Digestive tract disease	5	1.4	2	0.4
Genitourinary tract disease	2	0.6	9	1.9
Nervous system disease	3	0.9	2	0.4
Mental illness	—	0.0	2	0.4
Psychiatric disturbance	1	0.3	2	0.4
Musculoskeletal disease	16	4.6 <sup>a</sup>	63	13.6 <sup>a</sup>
Collagen disease	—	0.0	1	0.2
Cancer	2	0.6	2	0.4
Glaucoma	2	0.6	6	1.3
Deafness	7 <sup>b</sup>	2.0	12	2.6

<sup>a</sup>Z = 4.28; p < 0.01.

<sup>b</sup>Including two cases of congenital deafness.

**Table 6. Relative frequency of various musculoskeletal diseases found in 79 Salvador survey subjects.**

Type of disease	No. of subjects	% of 79 subjects
Scoliosis	26	32.9
Spondylarthrosis	22	27.9
Bursitis	8	10.1
Arthrosis	8	10.1
Lordosis	4	5.1
Herniated disc	1	1.3
"Rheumatism"	5	6.3
Unknown	5	6.3
Total	79	100.0

difference between the male and female prevalences was not statistically significant (7).

The prevalence of ischemic heart disease is generally acknowledged to be greater among men than women and to increase with age (1, 8). Supporting this point, an analysis of mortality from cardiovascular diseases in 10 Latin American cities and two cities in English-language areas (the United States and England) showed that ischemic heart disease was an important illness among men in almost all the Latin American cities (9). In a similar vein, the present Canela District survey found cardiac disease to be significantly more prevalent among males than among females. Furthermore, 12 of the 16 cases occurring among males were ischemic heart disease, while only

one of the three reported female heart disease cases was ischemic heart disease. (One woman had rheumatic cardiopathy and another had nonspecific cardiopathy showing left branch block on the ECG.) The existence of a statistically significant difference between the male and female heart disease data in the 40-49 age group suggests that risk factors for heart disease are present at an earlier age in men than in women.

It is well known that strokes, which are especially prevalent among those over 55, are among the three leading causes of death in a number of developed countries and the principal cause of death in Japan (10-15). Nevertheless, information about their prevalence is scarce and the prevalences recorded vary considerably from country to country. In the United States, for example, the prevalence recorded for people over 60 is 21 cases per 1,000 inhabitants, while in Hiroshima the recorded prevalence among people over 40 is 7.9 cases per 1,000 inhabitants (16). However, the prevalence observed in the present survey for people over 60 (45 cases per 1,000 subjects) is quite high, exceeding that cited for the United States. Furthermore, both the incidence and mortality figures for strokes in the city of Salvador are very high—higher than those observed in many developed countries (17).

In addition, strokes constitute a principal complication of arterial hypertension (18-26). For instance, a prospective study in Framingham, Massachusetts, found the risk of stroke to be seven times higher for those with high blood pressure than for those with normal blood pressure, and also found the risk of heart disease to be three times higher for those with high blood pressure (1).

With respect to diabetes, prevalences found by surveys comparable to ours have ranged from 1 to 3 per cent of the adult population (27). However, national rates recorded in Latin America have tended to vary over a somewhat wider range (from 1.18 per cent in Chile to 7.3 per cent in Venezuela), depending upon the diagnostic method used. A recent

prevalence recorded for Brazil was 2.7 per cent (28).

Within this context, it would appear that the prevalences observed in our study were within the normal limits, with the overall prevalence of 2.2 per cent being close to that previously recorded for São Paulo. Nevertheless, when our study's prevalences are broken down by age group, the rates of disease appear high among females over 39 years of age and very high for members of both sexes over 69 years old.

We were surprised to find eight cases of hyperthyroidism in a population of 810 individuals. Most of these cases occurred in females. The aforementioned 1962-1964 survey of urban mortality (27), which included samples from 10 Latin American cities, Bristol (England), and San Francisco, found that females accounted for 57 of 62 deaths from thyroid disease, the majority of these deaths being due to thyrotoxicosis.

The predominant disease of the respiratory system encountered in our survey was bronchial asthma. The fact that no cases of chronic bronchitis were observed among men is surprising, since smoking is one of the factors responsible for this condition.

The prevalence of digestive tract diseases among survey subjects of both sexes was relatively low, but it should be noted that several subjects reporting digestive tract disease symptoms were not included in the calculations for lack of a clear diagnosis.

Regarding genitourinary diseases, the most frequent problem encountered was urolithiasis. Cases of this disorder were included in the calculations even though symptoms were not present at the time of the survey—because the problem involved periodically migrating stones rather than cases resolved through previous surgery.

Regarding deafness, almost all the female cases occurred after age 40, and the prevalence was very marked above age 60. Many of these cases occurred in diabetic women. The observed situation among males was very different, five of the seven reported deafness

cases affecting males under 40 years of age. One of these cases was said to be caused by the use of streptomycin and two were congenital.

Musculoskeletal diseases were more common among women than men. Though the type and seriousness of these diseases vary, as a class they frequently lead to physical disability. For example, the aforementioned survey of disability in Medellín, Colombia, found these diseases to cause more overall disability than any of the various other causes studied (4).

The quality of the reporting done by the survey population was considered good, and the diagnoses cited were found to be accurate. Nevertheless, it should be noted that even for this survey population, discussion of certain personal medical problems involved social taboos. For this reason, we suspect that the prevalences of reported mental diseases and psychiatric disorders were low because some of these problems were not reported. Also, aside from one case of prostate cancer, serious kinds of cancer were not mentioned. It is possible that the presence of other family members during the interview prevented information being given about such cancers, either because of the seriousness of the case or because of the public belief that cancer has a poor prognosis.

Other works have cited higher prevalences of chronic diseases among groups with lower socioeconomic status than the population studied here (29). Moreover, the survey conducted in Medellín found the highest rate of disability to exist in the two lowest socioeconomic groups studied (4). Therefore, it should be stressed that our survey was conducted in a middle to upper-middle class district and that our results do not reflect the prevalences of chronic diseases in lower socioeconomic groups.

In analyzing chronic and degenerative diseases and accidents in 10 Latin American and two other cities, Laurenti (9) points out a need to provide more specialized services for these diseases, even though a large part of the available health resources will still have to be de-

voted to communicable diseases. We believe that the changes taking place in causes of death in the principal Brazilian state capitals, and even in some cities such as Salvador within the relatively poor northeast region, make it

necessary to be alert to the need to provide specific programs for chronic and degenerative diseases and to adapt such programs to the health priorities of these large urban centers.

### SUMMARY

The study reported here sought to gain insight into the epidemiology of chronic and degenerative diseases in Northeast Brazil. For that purpose a questionnaire survey was conducted in a relatively well-to-do district of Salvador, capital of the state of Bahia. A total of 810 inhabitants living in 241 residential units were included in the study. The disease cases reported by those answering the questionnaires were checked against the treatments being received; and even though the survey subjects were not examined, this check indicated that by and large the reports received were valid.

Overall, the survey recorded high prevalences of chronic diseases in both men and women. Cases of heart disease were reported in 13 per cent of the men over age 39, and cases of arterial hypertension in 22 per cent of those over age 49. Far fewer heart disease cases were reported among the women subjects, but cases of arterial hypertension were reported in 40 per cent of those women over age 49. Stroke sequelae were reported in small numbers of older subjects.

Cases of musculoskeletal disease (mostly scoliosis and spondylarthrosis) were reported in 10 per cent of the subjects, the prevalence among women (13.6 cases per 100) being considerably higher than

among men (4.6 cases per 100). Diabetes mellitus was reported in 18 per cent of the subjects over 70, and was also fairly prevalent among younger women—being reported in 5 per cent of those 40 to 69 years old. Cases of respiratory disease (bronchial asthma and chronic bronchitis) were reported in 21 subjects.

Cases of mental illness, cancer, congenital disease, thyroid disease, digestive tract disease, and diseases of the genitourinary tract reported by the survey respondents were relatively few. However, it seems likely that social taboos surrounding mental illness and the respondents' reluctance to discuss mental illness or cancer cases in front of other family members could have caused underreporting of these diseases. It should also be noted that the recorded prevalences for many of these diseases were apt to be low—because they do not blatantly manifest themselves for some time and because the survey subjects were not clinically examined. Overall, the results of this and other surveys suggest that mortality patterns in Brazil's urban centers have been changing, creating a need to provide specific programs designed to deal with chronic and degenerative diseases in those centers.

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ANNEX I: SURVEY QUESTIONNAIRE

FEDERAL UNIVERSITY OF BAHIA  
MEDICAL SCHOOL  
DEPARTMENT OF PREVENTIVE MEDICINE

QUESTIONNAIRE ON CHRONIC DISEASES

Questionnaire No.: \_\_\_\_\_ Date of interview: \_\_\_\_\_ / \_\_\_\_\_ /1979

Street name: \_\_\_\_\_ No.: \_\_\_\_\_ Apt.: \_\_\_\_\_

District: \_\_\_\_\_

1. Record of family members or occupants (card)

Identification No.*	Age ( $\geq$ 15)	Sex	Marital Status	Educational level	Occupation	Place of work

\*Identification No. codes: 0—head of household (husband); 00—wife; 1-12—children; 13-16—other relations (specify degree of relationship in remarks section); 14-20—other occupants (specify degree of affinity in remarks section).

1.a) Is any member of the family retired?

- ( ) yes
- ( ) no

If so, indicate

- ( ) by length of service:
- ( ) by age:
- ( ) by illness:

1.b) Is anyone away from work because of illness?

- ( ) yes
- ( ) no

If so, who?

2. Are any of the persons mentioned on the family or occupant record card suffering from any of the following diseases diagnosed by a physician?

Identification No.	Disease	Treatment received?		Type of ongoing treatment (name of medicine)	Medical care received	
		Yes	No		Private	Public
	a) arterial hypertension					
	b) diabetes mellitus					
	c) heart disease*					
	d) stroke (cerebrovascular accident sequelae)					
	e) bronchial asthma					
	f) chronic bronchitis					
	g) other respiratory disease*					
	h) digestive tract disease*					
	i) urinary tract disease*					
	j) musculoskeletal disease*					
	k) neurologic disease*					
	l) mental disease*					
	m) psychiatric disorder*					
	n) thyroid disease*					
	o) skin disease*					
	p) cancer*					
	q) congenital or hereditary disease*					
	r) total deafness*					
	s) partial deafness					
	t) blindness					
	u) glaucoma					

\*Specify the disease involved, by letter listed, in the remarks section.

3. Is any member of the family hospitalized at this time?

(    ) yes

(    ) no

If so, who?

For what reason?

4. Remarks

### POLIOMYELITIS IN COLOMBIA

During the first half of 1981, 272 cases of poliomyelitis, more than twice the number reported for the whole of 1980, were reported from 14 of Colombia's 31 health districts. One hundred forty-six cases occurred during an outbreak in the department of Atlántico on the north coast. This coincided with a large outbreak of gastroenteritis following unusually heavy rains. Hospital admissions due to poliomyelitis rose sharply in mid-May, reaching a peak of 27 cases in the first week of June 1981 and dropping to six cases by the first week of July. Ninety per cent of the patients were two years old or less, with the age at onset ranging from 45 days to 11 years. The highest attack rates were seen in children six to 23 months of age.

Of the 142 cases whose immunization history was available, nine were known to have received oral poliomyelitis vaccine. Two had received three doses of vaccine, two had received two, and five had received only the first dose.

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Source: *EPI Newsletter* 3(4), 1981.