

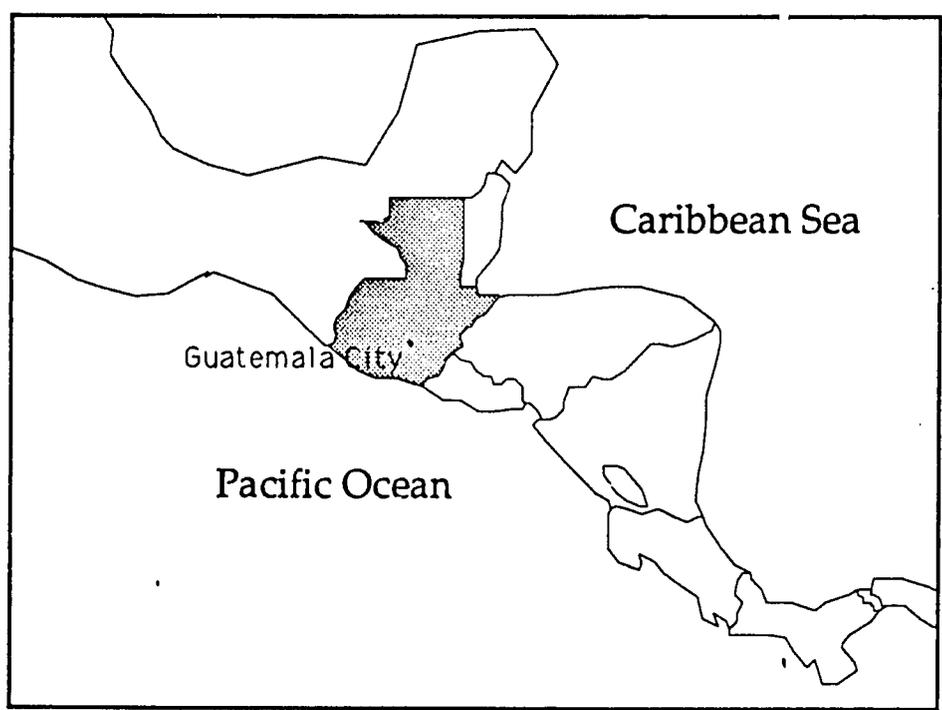
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Guatemala

Population and Health Profile

(Selected Data)

April 1990



Prepared with USAID, the Bureau for Latin America and the Caribbean,
Office of Development Resources



Center for International Health Information
USAID Health Information System
1601 N. Kent Street
Suite 1001
Arlington, Virginia 22209
(703) 524-5225

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The Center for International Health Information
Barton R. Burkhalter, Ph.D., Director
1601 N. Kent Street, Suite 1001
Arlington, VA 22209
(703) 524-5225
FAX (703) 243-4669
Telex 272785 ISTI UR

GUATEMALA

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This is one of a series of USAID Population and Health Profiles published by ISTI's Center for International Health Information. Each Profile contains a collection of tables, graphs and summary descriptions about the health and demographic conditions and activities in a country, including descriptions of USAID-supported activities in that country. While some of the information comes from the Center's databases, succinct reports from other publications are also included when available.

The USAID Population and Health Profiles are intended to provide current and trend data in a concise format to evaluation teams, consultants and other interested individuals, and are updated annually. They are not intended to provide a comprehensive description of the total health sector of a country. Contact the Center for information on the availability of other Country Population and Health Profiles and Standard Reports.

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DATA NOTES

DEMOGRAPHIC INDICATORS

The **Total Population** is a mid-year estimate of the total number of individuals in a country.

The **Number of Live Births** is an estimate of the number of children born alive in a given year.

The **Infant Mortality Rate** is the estimated number of deaths in infants (children under age one) in a given year per 1,000 live births in that same year. An IMR may be calculated by direct methods (counting births and deaths) or by indirect methods (applying well-established demographic models).

Although acknowledged as one of the best indicators of "development," the infant mortality rate is one of the more difficult to calculate. One problem inherent in the definition of the indicator is the fact that some portion of the deaths in the given year are occurring among children born in the previous year; that is the numerator of the indicator is determined in a different cohort of children than is the denominator. Estimates are generally made for a three or five year period to minimize the effects of this inherent weakness. For this reason, efforts to observe annual trends in this indicator can be misleading.

Child Mortality Rate: For each 1000 children who reach their first birthday in a given year, the child mortality rate is an estimate of the number of those children who will die before their fifth birthday.

Life Expectancy at Birth is an estimate of the average number of years a newborn can expect to live. Life expectancy is computed from age-specific death rates for a given year. It should be noted that low life expectancies in developing countries are, in large part, due to high infant mortality.

Children Under Age 1 is a mid-year estimate of the total number of children under age 1.

Annual Infant Deaths is an estimate of the number of deaths occurring to children under age one in a given year.

The **Total Fertility Rate** is an estimate of the average number of children a woman would bear during her entire reproductive lifespan given current age-specific fertility rates.

Sources: The primary source for all the demographic indicators except as otherwise noted is *World Population Prospects: 1988*, Population Division, Department of International Economic and Social Affairs, United Nations (referred to as UN/POP/1988). In addition, *World Population Profile: 1987*, Bureau of Census, U.S. Department of Commerce (referred to as BUCEN/1987) is a source for Total Population in the "Trends" table, page 4; *Mortality of Children under Age 5 World Estimates and Projections, 1950 - 2025*, Population Studies No. 105, Population Division, Department of International Economic and Social Affairs, United Nations (referred to as UN/POP/105) is the source for Child Mortality Rates. *Guatemala National Survey of Maternal and Infant Health: 1987*, Demographic and Health Surveys, Institute for Resource Development/Westinghouse (referred to as DHS/1987) is the source for the Infant Mortality Rate in the "How USAID Helps" Fact Sheet, Page 14.

VACCINATION COVERAGE RATES

Vaccination Coverage in Children is defined as an estimate of the percentage of living children between the ages

of 12 through 23 months who have been vaccinated before their first birthday -- three times in the cases of polio and DPT and once for both measles and BCG. Vaccination coverage rates are calculated in two ways. Administrative estimates are based on reports of the number of vaccines administered divided by an estimate of the pool of children eligible for vaccination. Survey estimates are based on sample surveys of children in the target age group and may or may not include children without vaccination cards whose mothers recall that their children had been vaccinated.

Vaccination Coverage in Mothers is an estimate of the proportion of women in a given time period who have received two doses of tetanus toxoid during their pregnancies. Currently under worldwide review, this indicator is being changed to account for the cumulative effect of tetanus toxoid boosters. A woman and her baby are protected against tetanus when a mother has had only one or, perhaps, no boosters during a given pregnancy so long as the woman had received the appropriate number of boosters in the years preceding the pregnancy in question. (The appropriate number varies with the number received and time elapsed.) The revised indicator is referred to as TT2+. Rates are computed using administrative methods or surveys.

Sources: The primary source for vaccination coverage data are the annual reports of the Expanded Programme on Immunization Report of the World Health Organization (referred to as WHO/EPI); the most recent being EPI/MISC/90.1, January 1990.

ORS ACCESS AND ORT USE RATES

The **ORS Access Rate** is an estimate of the proportion of the population under age five with reasonable access to a trained provider of Oral Rehydration Salts (ORS) who receives adequate supplies. This is a particularly difficult indicator to measure and, therefore, it may fluctuate dramatically as improved methods of estimation are devised.

The **ORT Use Rate** is an estimate of the proportion of all cases of diarrhea in children under age five treated with ORS and/or a recommended home fluid. ORT use may be determined using administrative means or surveys. In general, administrative estimates are based on estimates of the number of episodes of diarrhea in the target population for a given year and the quantity of ORS available. Thus changes in the estimates of the frequency of diarrhea episodes can alter the ORT Use Rate as well as "real" changes in the pattern of use. Surveys are more precise in that they focus on the actual behavior of mothers in the two week period prior to the survey.

Sources: The primary sources for data on oral rehydration, both access and use, are the annual reports of the Diarrheal Disease Control Program of the World Health Organization (referred to as WHO/CDD) except as otherwise noted. *Guatemala National Survey of Maternal and Infant Health: 1987*, Demographic and Health Surveys, Institute for Resource Development/Westinghouse (referred to as DHS/1987) is the source for ORT Use Rate in the "How USAID Helps" Fact Sheet, page 14.

CONTRACEPTIVE PREVALENCE

The **Contraceptive Prevalence Rate** is an estimate of the proportion of women, aged 15 through 44, married or in union, currently using contraception. "Modern methods" of contraception depend on the use of products, devices, or surgery, such as pills, injectables, IUDs, condoms, vag-

inal methods (spermicides, diaphragms, or caps), and voluntary sterilization. Traditional methods of contraception do not depend on the use of products or devices, such as periodic abstinence, rhythm, or withdrawal. "All methods" include modern and traditional methods.

Data from DHS/1987 in the "How USAID Helps" Fact Sheet, page 14, is for modern methods only. The source for the 1987 data on the "Trends" table, page 5, is from DHS/1987; the remaining data comes from BUCEN/1989. Data from BUCEN/1989 in the "Trends" table is for married women only, and the 1978 figure is for women aged 15 through 49 years. Data from 1978 and 1983 listed as "all methods" are actually modern methods plus withdrawal.

Sources: The source for the "Trends" table, page 5 is *World Population Profile:1989*, Bureau of the Census, U.S. Department of Commerce (referred to as BUCEN/1989). The source for the "How USAID Helps" Fact Sheet, page 14, is *Guatemala National Survey of Maternal and Infant Health: 1987*, Demographic and Health Surveys, Institute for Resources Development/Westinghouse (referred to as DHS/1987).

NUTRITION

Adequate Nutrition Status is the proportion of children 12 through 23 months of age who are adequately nourished. An individual child of a certain age is said to be adequately nourished if his/her weight is greater than the weight corresponding to two "Z-scores" (standard deviations) below the median for children of that age. The median weight and the distribution of weights around that median in a healthy population are taken from a standard established by the National Center For Health Statistics, endorsed by the World Health Organization.

Appropriate Infant Feeding is a composite estimate of the proportion of infants (children under age one) being breastfed and receiving other foods at an appropriate age according to the following criteria: breastfed through infancy with no bottle-feeding, exclusively breastfed through four months (120 days) of age and receiving other foods if over six months of age (181 days). Water is not considered acceptable in the first four months (120 days). ORS is considered acceptable at any age. Surveys are the only source of data to form this indicator. Surveys yield an estimate of how many children in the target group (children under 1) are being fed correctly at the moment of the survey. They do not give an indication of the proportion of children fed appropriately throughout their first year.

Exclusively Breastfed is an estimate of the proportion of infants through four months (120 days) of age who receive no foods or liquids other than breast milk.

Introduction of Solids is an estimate of the proportion of infants over six months (181 days) of age still breastfeeding but also receiving complementary weaning foods.

Median Duration of Breastfeeding is an estimate of the median duration of breastfeeding computed from cross-sectional survey data using the Current Status Method. According to this method, the value reported is the first month of life during which half of the children surveyed are no longer breastfed. The first month of life is counted as "0", the second as "1", etc.

Sources: The source for nutrition and feeding data in the "Trends" table, page 5 is *Guatemala National Survey of Maternal and Infant Health: 1987*, Demographic and Health Surveys, Institute for Resources Development/Westinghouse (referred to as DHS/1987). The source of

nutrition data in the "Anthropometric Indicators" table, page 7, is the Anthropometry System of the World Health Organization, Nutrition Unit.

WATER AND SANITATION

Urban Water Supply Coverage is an estimate of the percentage of all persons living in urban areas (defined as population centers of 2000 or more persons) who live within 200 meters of a stand pipe or fountain source of water.

Rural Water Supply Coverage is an estimate of the percentage of all persons not living in urban areas with a source of potable water close enough to the home that family members do not spend disproportionate amount of time fetching water.

Urban Adequate Sanitation Coverage is an estimate of the percentage of all persons living in urban areas (defined as population centers of 2000 or more persons) with sanitation service provided through sewer systems or individual in-house or in-compound excreta disposal facilities (latrines, septic tanks).

Rural Adequate Sanitation Coverage is an estimate of the percentage of all persons not living in urban areas with sanitation service provided through individual in-house or in-compound excreta disposal facilities (latrines).

Sources: *Planning for Central America Water Supply and Sanitation Program: Update*, WASH Field Report No 253, CDM and Associates, Arlington, VA May 1989 (referred to as WASH/1989).

USAID PROJECTS AND FUNDING

The primary source for information related to USAID projects is the USAID Health Projects Database (HPD) operated by ISTI's Center for International Health Information.

The HPD tracks bilateral, regional and centrally-funded USAID projects and sub-projects with a health component, including child survival, AIDS, nutrition, water supply and sanitation, and other health related activities. Projects are identified for the HPD through the annual Health and Child Survival Questionnaire, Annual Budget Submissions (ABS), and the Congressional Presentation (CP). The HPD includes some, but not all, health and nutrition related projects funded with local currency (PL480) or with Population Account monies. Project Development and Support (PD&S) activities are included in the HPD when they have been identified as health related in the CP, ABS or questionnaire.

With respect to the "Timeline" chart on page 12, Congressional Presentations from FY 1980 through FY 1990 were used to supplement HPD listings of population projects. An additional source for population project information was the Project Accounting Information System Data File (Report WW DAØIX), Office of Financial Management, USAID, December 1989.

Trends in Selected Demographic Indicators Guatemala 1950 - 2000

	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995	2000
Total Population (000)											
UN/POP/1988	-	-	-	-	5,246	6,022	6,916	7,963	9,197	10,621	12,221
BUCEN/1987	3,024	-	-	-	5,262	-	7,132	-	9,249	-	11,373
	1950- 1955	1955- 1960	1960- 1965	1965- 1970	1970- 1975	1975- 1980	1980- 1985	1985- 1990	1990- 1995	1995- 2000	
Infant Mortality Rate											
UN/POP/1988	141	131	119	108	95	82	70	59	48	40	
Child Mortality Rate											
UN/POP/#105	138	127	113	96	75	61	51	43	35	29	
Total Fertility Rate											
UN/POP/1988	7.1	6.9	6.8	6.6	6.5	6.4	6.1	5.8	5.4	4.9	
Number of Live Births											
UN/POP/1988	820	913	1020	1119	1268	1433	1588	1749	1916	2076	



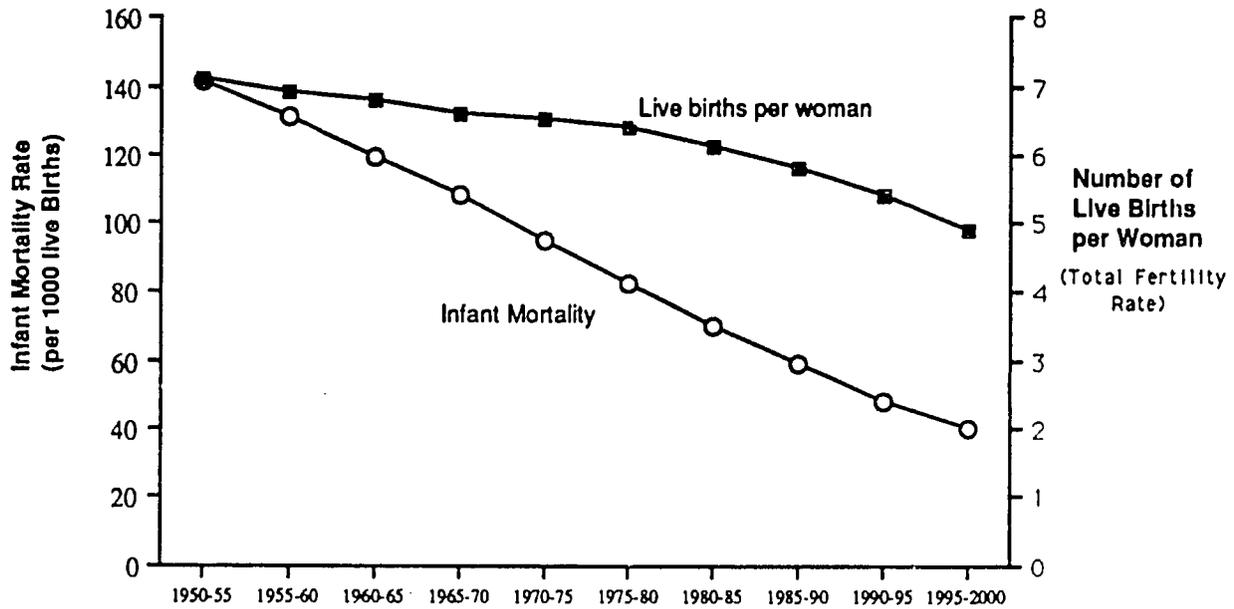
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Trends in Selected Health and Child Survival Indicators - Guatemala 1978 - 1988

	1978	1980	1981	1982	1983	1984	1985	1986	1987	1988
Vaccination Coverage- WHO/EPI										
a. BCG			29	28	24	33	30	7	34	38
b. DPT 3			42	45	43	48	21	33	18	47
c. Polio 3			42	45	43	47	21	36	18	55
d. Measles			8	12	9	24	23	47	24	54
e. Tetanus 2			1	1	-	-	-	-	12	-
ORS Access and ORT Use WHO/CDD, DHS/1987										
a. ORS Access							40	43	59	60
b. ORT Use							4	5	16	-
Contraceptive Prevalence DHS/1987, BUCEN/1989										
a. All Methods	19.4				25.0				23.2	
b. Modern Methods									19.0	
Nutrition and Infant Feeding DHS/1987										
a. Adequate Nutritional Status									55	
b. Median Duration of Breastfeeding (months)									20.4	
Malaria Cases Reported Guatemala Ministry of Health		62,656	76,994	80,070	64,024	75,367	54,958	42,609	-	-
Water Supply Coverage (% Served) WASH/1983										
a. Urban Areas		89%				74%		71%		68%
b. Rural Areas		19%				26%		27%		28%
Adequate Sanitation Coverage (% Served) WASH/1989										
a. Urban Areas		44%				42%		41%		40%
b. Rural Areas		21%				28%		29%		30%

See Data Notes on page 2.

THE DEMOGRAPHIC TRANSITION IN GUATEMALA, 1950 - 2000



Year	Infant Mortality Rate	Number of Live Births per Woman (Total Fertility Rate)
1950-55	141	7.1
1955-60	131	6.9
1960-65	119	6.8
1965-70	108	6.6
1970-75	95	6.5
1975-80	82	6.4
1980-85	70	6.1
1985-90	59	5.8
1990-95	48	5.4
1995-2000	40	4.9

Source: UN/POP/1988.



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Anthropometric Indicators of Nutritional Status in Guatemala

Region, Country Area	Dates of Survey		Number examined	Age Group (Years)	Weight for Height	Stun- d Weight for Age	Low Weight for Height	Obese Weight for Height	Notes	Ref. no.
	Months	Year(s)			Percent	below -2 SD	above +2 SD	and/or +2 SD		
National	1965-1967		576	0-3.99	4.1	62.8	38.1		2005	
			144E	0-0.99	5.2	33.8	23.0			
			144E	1	7.4	77.9	53.4			
			144E	2	3.1	66.7	42.6			
			145E	3	0.6	70.3	33.3			
Local	1969		231	0-5.99	3.1	65.4	39.8	Control Villages	2036	
			86	0-1.99	2.4	52.3	29.1			
			87	2.0-3.99	5.8	70.1	50.6			
			58	4.0-5.99	0.0	77.6	39.7			
			116	0-5.99	3.4	65.2	33.9	Boys--Control Villages		
			43	0-1.99	2.3	51.1	20.0			
			47	2-3.99	6.4	68.1	42.5			
			26	4-5.99	0.0	86.6	42.3			
			112	0-5.99	2.7	65.5	46.0	Girls--Control Villages		
			40	0-1.99	2.5	53.7	39.0			
			40	2-3.99	5.0	72.5	60.0			
			32	4-5.99	0.0	71.9	37.5			
		1972		334	0-5.99	2.6	64.7	42.8		Control Villages
			128	0-1.99	1.9	54.7	39.8			
			117	2-3.99	4.3	77.8	53.9			
			89	4-5.99	1.1	61.8	32.6			
			186	0-5.99	2.3	62.4	36.6	Boys--Control Villages		
			60	0-1.99	1.7	56.3	39.4			
			64	2-3.99	3.1	78.1	43.7			
			51	4-5.99	2.0	51.0	23.5			
			148	0-5.99	2.9	67.6	50.7	Girls--Control Villages		
			47	0-1.99	2.1	52.6	40.3			
			53	2-3.99	5.7	77.4	66.0			
			38	4-5.99	0.0	76.3	44.7			
	1973		296	0-5.99	4.2	69.3	50.7	Control Villages		
		88	0-1.99	2.5	55.7	48.9				
		113	2-3.99	6.2	81.4	59.3				
		95	4-5.99	3.2	67.4	42.1				
		162	0-5.99	4.4	67.3	46.9	Boys--Control Villages			
		45	0-1.99	0.0	57.8	33.3				
		68	2-3.99	8.8	79.4	52.9				
		49	4-5.99	2.0	59.2	32.6				
		134	0-5.99	3.9	71.6	55.2	Girls--Control Villages			
		43	0-1.99	5.3	53.5	44.2				
		45	2-3.99	2.2	84.4	68.9				
		46	4-5.99	4.3	76.1	52.2				
Rural	1983		582	0-4.99	1.7	67.6	36.8	Western Highlands	2064	
	1985		401	0-4.99	1.7	82.9	41.9			
	1987		1575	0-4.99	8.2	62.2	58.3			
			495	1-4.99	4.2	81.8	51.7			
	1988		1854	0-4.99	1.6	62.9	34.5			

E = Estimate I = Sample Size < 50

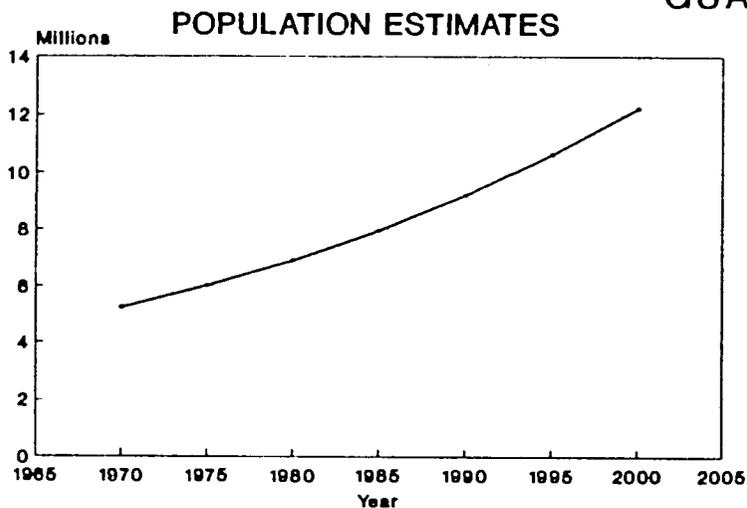
This table is taken directly from the World Health Organization's Anthropometry System. This recently developed system presents a collection of historical nutrition data as well as most current studies.

2005 Institute of Nutrition of Central America and Panama (INCAP). Unpublished data. 1965-67

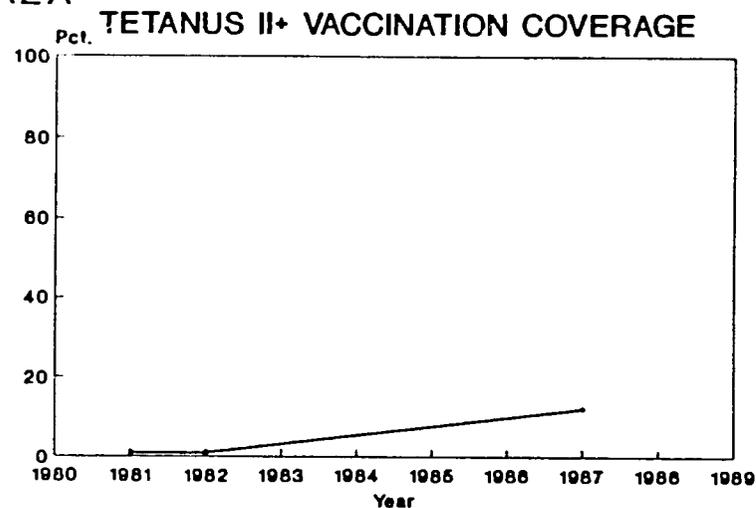
2036 INCAP (Dr. L.O. Angel). Data from longitudinal study of rural villages in Eastern Guatemala; and additional analysis. 1979

2064 INCAP Prevalence of undernutrition in the Western Highlands of Guatemala during the 1980s: Preschoolers. (Fax from INCAP). 1988

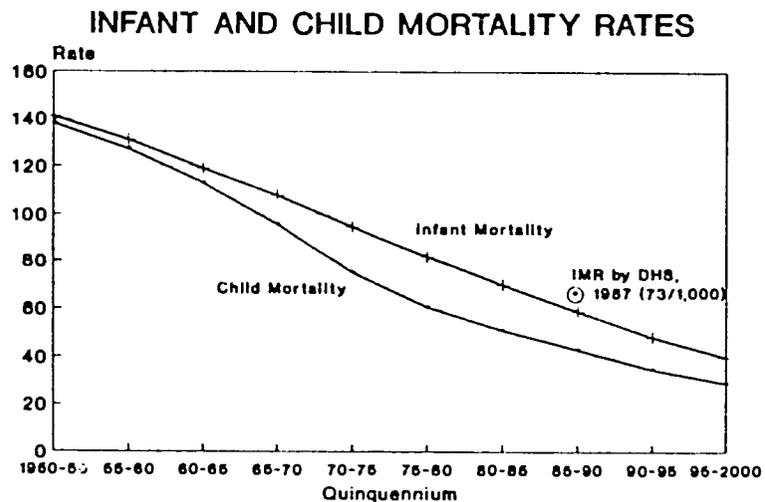
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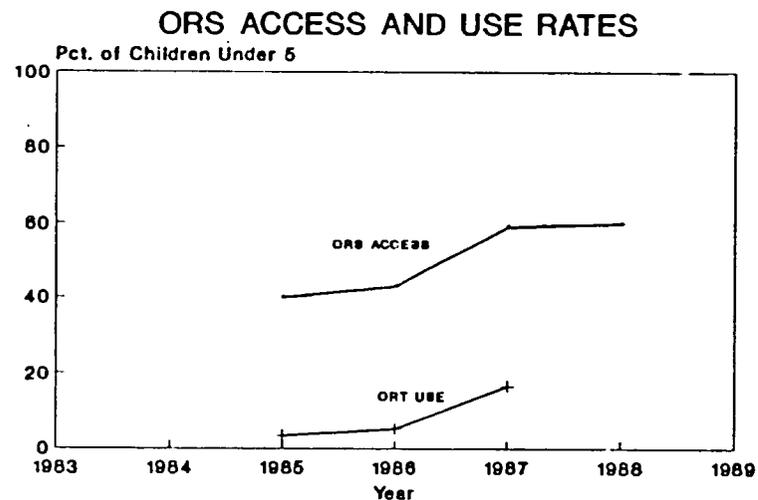
SOURCE: United Nations, World Population Prospects, 1988



SOURCE: World Health Organization Annual Reports of the EPI Programme

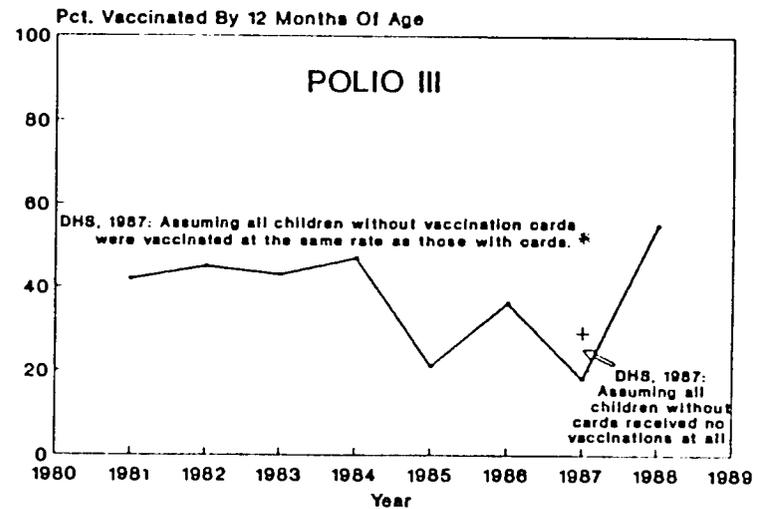
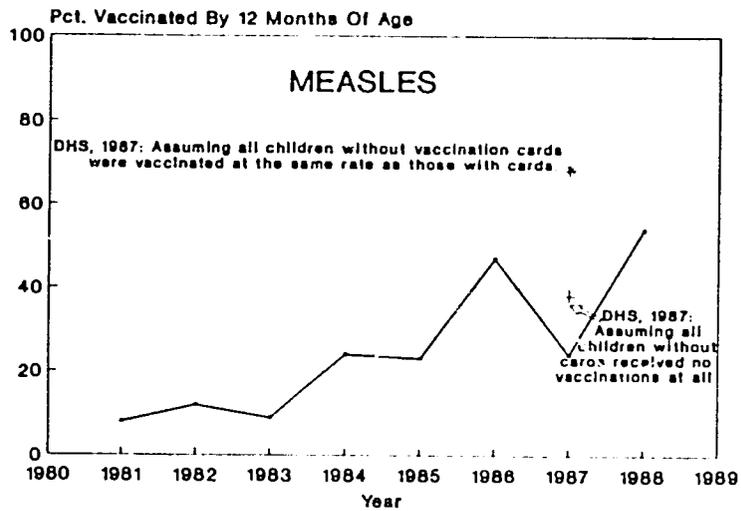
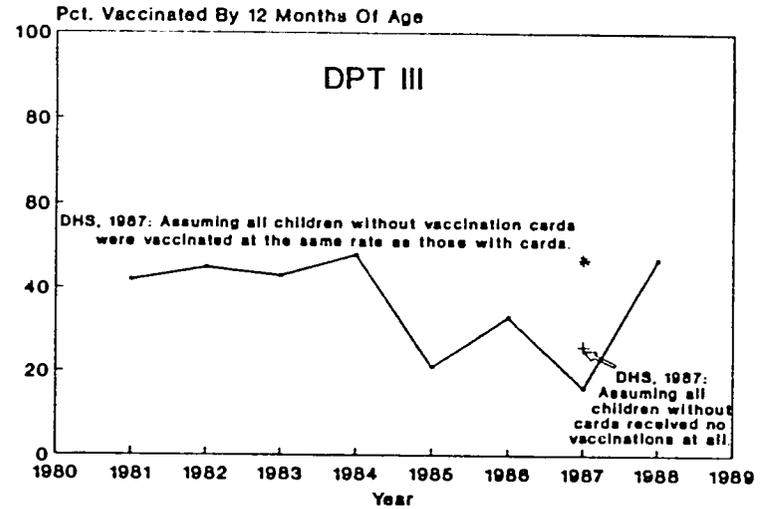
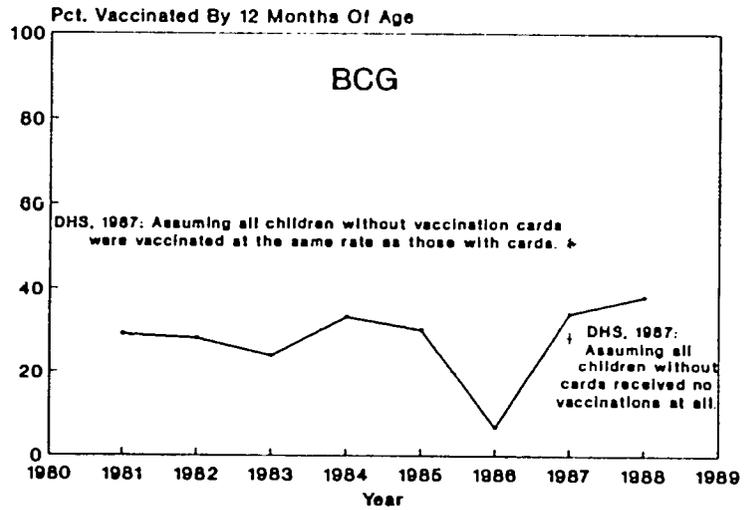


SOURCE: United Nations, 1988
 1) World Population Prospects, and
 2) Mortality of Children Under Age 5



SOURCE: World Health Organization, Annual Reports of the CDD Programme (1987 Use Rate: DHS, 1987)

VACCINATION COVERAGE RATES IN GUATEMALA



SOURCE: WHO, Annual Reports of the EPI Programme

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WATER AND SANITATION IN CENTRAL AMERICAN COUNTRIES

WATER SUPPLY COVERAGE

COUNTRY	YEAR	TOTAL POP-ULATION	ALL AREAS		URBAN AREAS			RURAL AREAS		
			POP SERVED	% SERVED	URBAN POP.	TOTAL SERVED	% SERVED	RURAL POP.	TOTAL SERVED	% SERVED
Belize	1984	156	98	63%	78	71	91%	78	27	35%
	1988	174	125	72%	89	80	90%	85	45	53%
Guatemala	1984	7,800	3,500	45%	3,100	2,300	74%	4,700	1,200	26%
	1988	8,800	3,880	44%	3,600	2,450	68%	5,200	1,430	28%
Honduras	1984	4,299	2,726	63%	1,700	1,405	83%	2,599	1,321	51%
	1988	4,377	3,054	70%	1,669	1,619	97%	2,708	1,435	53%
El Salvador	1984	4,700	2,261	48%	1,980	1,445	73%	2,720	816	30%
	1988	4,934	2,236	45%	2,072	1,864	90%	2,862	372	13%
Costa Rica	1984	2,405	2,154	90%	1,070	1,059	99%	1,335	1,095	82%
	1988	2,790	2,572	92%	1,490	1,490	100%	1,300	1,082	83%
Panama	1984	2,157	1,643	76%	1,127	1,116	99%	1,030	527	51%
	1988	2,305	1,981	86%	1,230	1,220	99%	1,075	761	71%

Population figures are rounded to nearest thousand.

ADEQUATE SANITATION COVERAGE

COUNTRY	YEAR	TOTAL POP-ULATION	ALL AREAS		URBAN AREAS			RURAL AREAS		
			POP SERVED	% SERVED	URBAN POP.	TOTAL SERVED	% SERVED	RURAL POP.	TOTAL SERVED	% SERVED
Belize	1984	156	97	62%	78	48	62%	78	49	63%
	1988	174	145	83%	89	80	90%	85	65	76%
Guatemala	1984	7,800	2,600	33%	3,100	1,300	42%	4,700	1,300	28%
	1988	8,800	3,000	34%	3,600	1,450	40%	5,200	1,550	28%
Honduras	1984	4,299	2,560	60%	1,700	1,349	79%	2,599	1,211	47%
	1988	4,377	3,068	70%	1,669	1,552	93%	2,708	1,516	56%
E. Salvador	1984	4,700	2,355	50%	1,980	1,485	75%	2,720	870	32%
	1988	4,934	2,911	59%	2,072	1,927	93%	2,862	984	34%
Costa Rica	1984	2,405	2,319	96%	1,070	1,059	99%	1,335	1,260	94%
	1988	2,790	2,678	96%	1,490	1,475	99%	1,300	1,203	93%
Panama	1984	2,157	1,367	63%	1,127	687	61%	1,030	680	66%
	1988	2,305	1,856	81%	1,230	1,071	87%	1,075	785	73%

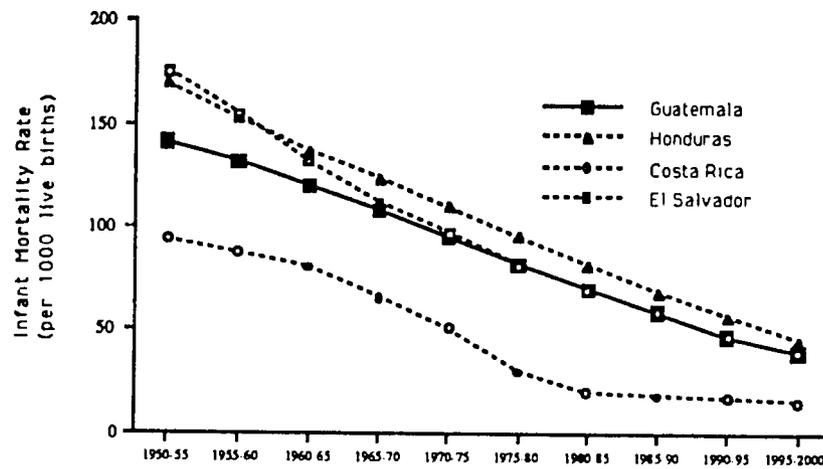
Population figures are rounded to nearest thousand.

Source: WASH/1989 (See Data Notes)

Guatemala Child Survival Indicators Compared to Neighboring Countries

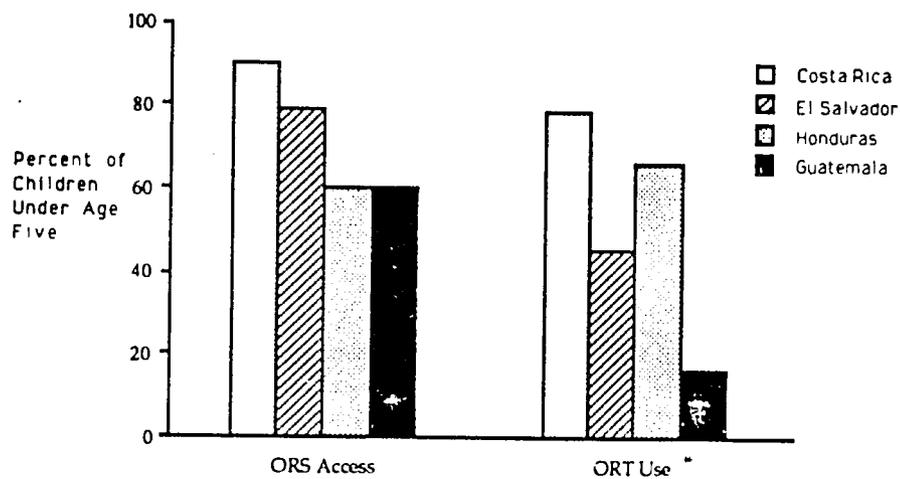
Estimates of Total Mortality Rates

Source UN/POP/1988



1988 ORS Access and ORT Use Rates:

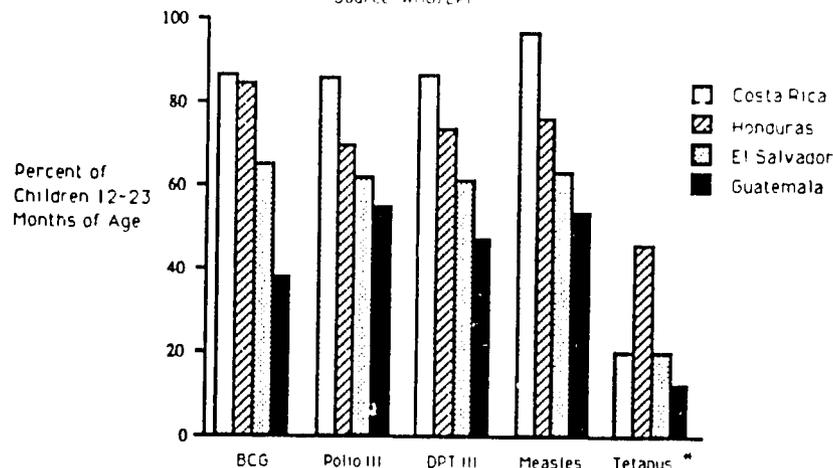
Source WHO/CDD



*ORT Use data for Costa Rica and Guatemala are from 1987

1988 Vaccination Coverage Data

Source WHO/EPI

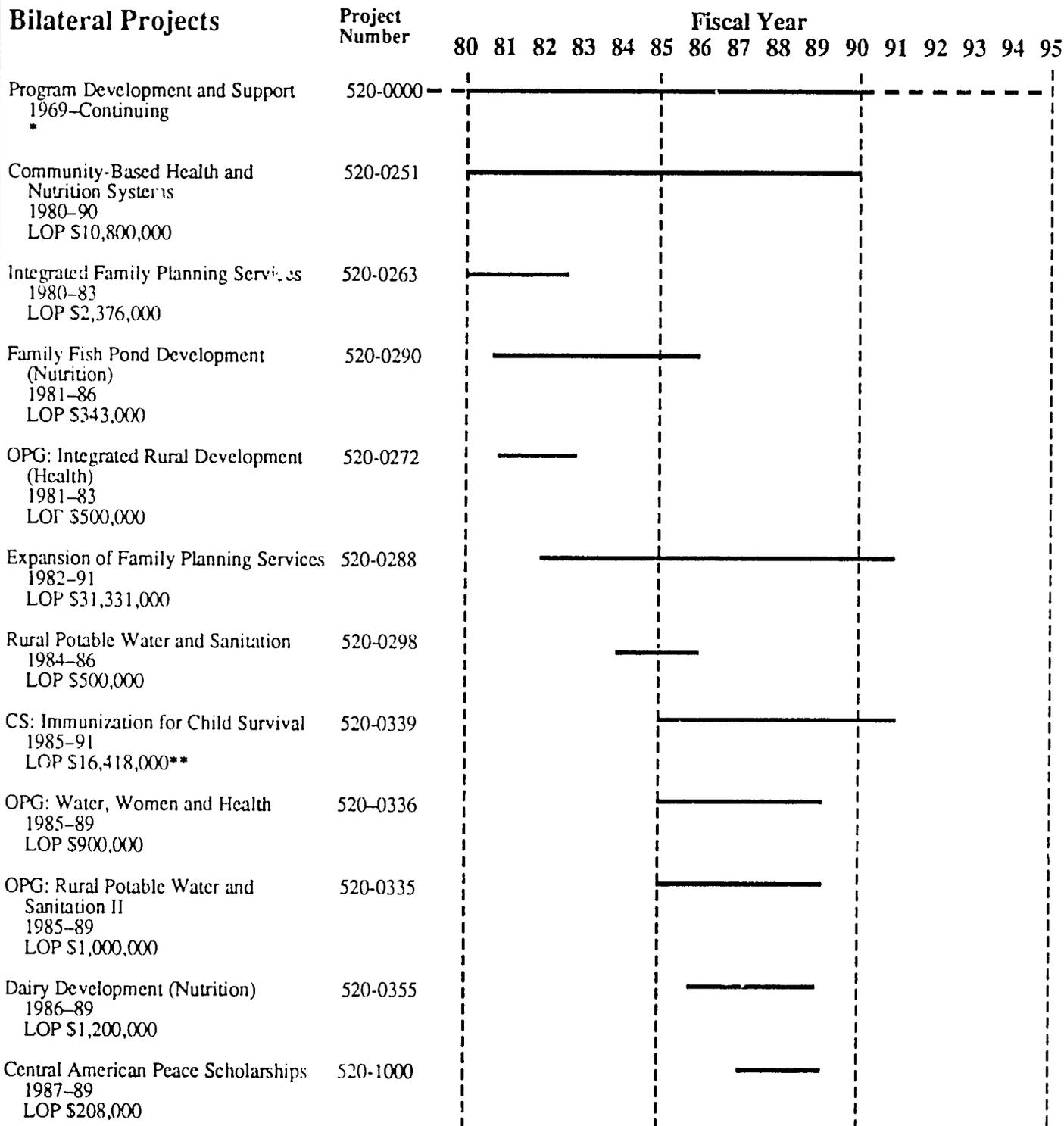


*Tetanus II data are for 1987 except for El Salvador which is for 1983

Timeline of USAID Bilateral Activities Related to Health in Guatemala FY 1980 to Present

This chart contains USAID-funded bilateral projects active since 1980 known to contain a health, child survival, population or nutrition component. The project's beginning year and ending year appear after the project title. Dollar amount is the approximate total authorized life-of-project (LOP) funds for the entire project and not an amount allocated to a specific component of the project. Please see Data Notes.

Regional USAID projects active since 1985, known to contain a health or child survival component but for which timeline data are not currently available at CIHI include: LAC Accelerated Immunization, Malaria and Essential Drugs, Technology Development/Transfer in Health; ROCAP projects include: Food Assistance Program and ORT, Growth Monitoring and Nutrition Education.



*Total Authorized LOP is not available as this is a continuing project.

**This figure was supplied by the Mission; the 1991 Congressional Presentation reflects \$18,418,000.

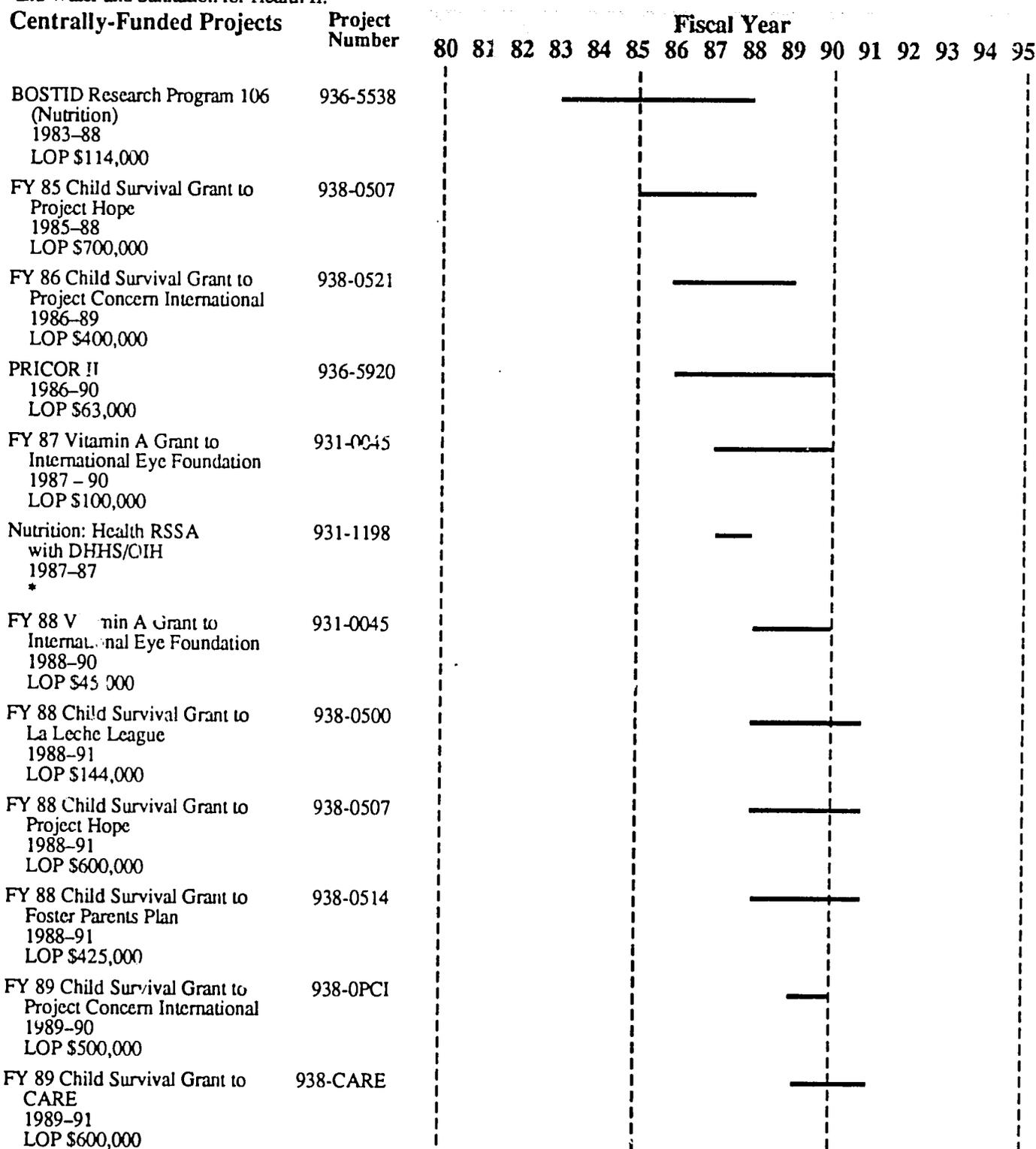


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Timeline of USAID Centrally-Funded Activities Related to Health in Guatemala FY 1980 to Present

This chart contains USAID centrally-funded projects active in Guatemala since 1980 known to contain a health or child survival component. Some projects with nutrition components are also included. The project's beginning year and ending year appear after the project title. The dollar amount is the approximate total authorized life-of-project (LOP) funds for Guatemala.

Centrally funded projects known to have worked in Guatemala in health related areas but for which timeline data are not currently available in CIHI include: AIDSCOM, AIDSTECH, Applied Diarrheal Disease Research, CSAP Support, Demographic and Health Surveys, HEALTHCOM, Improvement of Maternal/Infant Diet, Lactation Management, Maternal/Neonatal Health and Nutrition, Medex Support, Nutrition Education and Social Marketing, ORT Help, Peace Corps, PRICOR I, PRITECH I & II, Project SUPPORT, REACH, Technical Advisors in AIDS/Child Survival, Vector Biology and Control, Vitamin A for Health, and Water and Sanitation for Health II.



*Country-specific funding information is currently not available in the Center's Health Projects Database.

Republic of Guatemala

How USAID Helps



Demographic Indicators

Total Population:	8,935,000 (89)
Infant Mortality Rate:	72/1,000 (87)
Life Expectancy at Birth:	63 Years (89)
Children Under 15:	345,000 (89)
Annual Infant Deaths:	20,000 (89)
Total Fertility Rate:	5.6 Children (89)
Child Survival Indicators	
Immunization Coverage:	
DPT3:	47% (88)
Polio3:	55% (88)
Measles:	54% (88)
BCG:	38% (88)
Tetanus2+:	12% (87)
Oral Rehydration Therapy:	
ORS Access Rate:	60% (88)
ORT Use Rate:	16% (87)
Contraceptive Prevalence:	19% (87)*
Adequate Nutritional Status:	55% (87)
Appropriate Infant Feeding:	N/A
Exclusively Breastfed:	N/A
Introduction of Solids:	N/A
Duration of Breastfeeding:	20.6 Months (87)

See Data Notes

USAID Child Survival and Health Fact Sheet
USAID Health Information System
CIHI, March 1990

Guatemala Highlights

■ A local coalition of the Ministry of Health (MOH), the National Committee to Promote Breastfeeding, Johnson and Johnson Pharmaceuticals, USAID, UNICEF, the Pan American Health Organization and local public and private institutions is working together to reduce mortality from diarrhea-related dehydration in Guatemala. A private sector firm has launched a new oral rehydration salts (ORS) product, and a public sector manufacturer has designed packaging for a soon-to-be released ORS packet. Other activities include the involvement of advertising agencies, market research firms and radio studios in mass media activities.

Bilateral Projects

■ Immunization and ORT Services for Child Survival supports the MOH in cooperation with PAHO, Rotary International and UNICEF to improve immunization coverage and oral rehydration therapy (ORT). Multi-donor coordination in immunization resulted in 95 percent completion of the cold chain to deliver vaccines and distribute 5.5 million ORS packets. A three-day workshop of donor agencies, the MOH and public and private sector participants promoted the establishment of oral rehydration units in 22 hospitals.

■ Expansion of Family Planning Services project supports the International Planned Parenthood Federation affiliate, APROFAH and local organizations to provide all child survival interventions nationwide. An award-winning TV commercial, TV drama, and theatrical production with child-spacing themes were used to reach families throughout the country.

■ Water, Women and Health, administered through CARE, supports water and sanitation systems for rural communities in the mountainous western region. Personal hygiene education accompanies the construction of facilities.

■ Community-Based Health and Nutrition Systems, a project with the Division de Saneamiento del Medio of the MOH, supports efforts to develop and improve local water and sanitation systems for small rural communities in six departments. More than 16,000 latrines and 168 water supply systems have been built.

■ Rural Potable Water and Sanitation II was implemented by Agua del Pueblo, a local private voluntary organization. With labor provided by the community, the project built water and latrine systems for 14 rural communities.

USAID/Washington Support

U.S. Private Voluntary Organizations

■ Foster Parents Plan is working in three municipalities to improve maternal and child health through feeding and nutrition programs, control of diarrhea and respiratory infections, immunizations and maternal care.

■ International Eye Foundation supports the National Committee for the Blind and Deaf and the Center for Studies of Sensory Impairment, Aging and Metabolism in the promotion and delivery of nutritional vitamin A supplements to women and children in Alta Verapaz Province. NutriAtol is easy to prepare and is a culturally acceptable medicinal food that is given to patients recovering from diarrhea or measles to prevent vitamin A deficiency, resulting from poor feeding practices during bouts of these illnesses.

■ La Leche League International promotes breastfeeding among pregnant and lactating women through development of groups in an area of Guatemala City. Some 100 women, including 10 midwives, were trained and act as breastfeeding advocates and support-group leaders in the community.

■ Project Concern International (PCI) assists the MOH in expanding health services to women and children in an isolated mountainous city. Thirty-five health workers and 120 women and other community members were trained in immunization and diarrheal disease control. A fundamental link to the community was the training and use of community members, despite their illiteracy, for peer counseling and training. Specialized training materials for these peer counselors were developed and are now being used by PCI and the MOH in community health worker training programs nationwide.

■ Project HOPE worked with the Guatemalan government to provide all rural communities in tow departments with immunization, ORT and nutrition services. Primary emphasis is on training community health workers with some 500 completing the initial child survival training, and another 350 participating in refresher courses. Under the new grant, 1,500 community volunteers, who were trained in child survival interventions and monitoring techniques, are implementing and recording child survival activities using a new family registration system.

Bureau for Science and Technology Support

■ AIDSCOM assists the Association in Guatemala for Sex Education and the Regional Center for Audiovisuals in AIDS to conduct education and communication training for private sector health care personnel.

■ CSAP Support, through a resident Child Survival Fellow, provides long-term assistance to the Institute of Nutrition for Central America and Panama to strengthen its capacity to serve as headquarters for nutrition training and research programs.

■ HEALTHCOM provides technical assistance to the MOH to increase immunization coverage and reduce deaths due to dehydration from diarrhea. HEALTHCOM conducts training workshops for community health workers and is helping the MOH to develop a mass media communications program.

■ PRICOR II (Primary Health Care Operations Research) provides technical assistance to INCAP for growth monitoring and nutrition education. A systems analysis of growth monitoring activities was completed this year, as was training in conducting operations research for participants from throughout Central America.

Short-term technical assistance was reported by the following:

■ HealthTech in immunization, growth monitoring.

■ Improvement of Maternal/Infant Diet in supporting lactation management training for health professionals through the Wellstart/San Diego Lactation Program.

■ Malaria and Essential Drugs in training and research for malaria surveillance and vector control.

■ Maternal and Neonatal Health and Nutrition (MotherCare) in improving tetanus toxoid immunization coverage and assisting with maternal health programs.

■ Nutrition Education and Social Marketing in supporting research on breastfeeding, growth monitoring and appropriate infant feeding practices.

■ ORT Help in training Peace Corps volunteers in child survival interventions.

■ PRITECH (Techniques for Primary Health Care) in diarrheal disease control and ORT activities.

■ Project SUPPORT in assisting in the production and marketing of "Litrosol," the first locally manufactured ORS packet, and extensive market research for promotion.

*Modern Methods, All Methods =23.2. See Data Notes.

Guatemala
Fiscal Year Obligations for USAID-Funded
Projects Related to Health
FY 1985 - FY 1991
(\$000)

Project Title	Project Number	FY85	FY86	FY87	FY88	FY89	FY90	FY91
Program Development and Support	5200000	199	298	224	295	191	158	200
Community-Based Health and Nutrition Systems	5200251	5,000						
Expansion of Family Planning Services	5200288				2,760	1,870	2,200	
OPG: Rural Potable Water & Sanitation II	5200335	1,000						
OPG: Water, Women and Health	5200336	500				200	200	
CS: Immunization for Child Survival	5200339	3,300	6,400	6,718				2,000
Highlands Water and Sanitation (Proposed)	5200399							2,000
TOTAL		9,999	6,698	6,942	3,055	2,261	2,558	4,200

Funding is based on reported attributions for health, child survival and AIDS activities from all funding accounts.



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Guatemala

General Context

Political, Economic, and Social Situation

One of the most outstanding economic developments of the last decades has been the dynamic growth that the country was able to sustain from 1950 to 1978, during which time GDP grew at a cumulative rate of 5% a year. Farm production for export was diversified and industrial production increased, chiefly for the Central American Common Market, and imports of semi-finished goods and capital equipment rose. Real per capita income almost doubled. Despite this economic dynamism, income distribution could not be improved to any significant extent. To the contrary, the standard-of-living gap widened, with the different strata of the population benefiting unequally, and income concentration became more accentuated. Starting in 1978 economic growth decelerated progressively, and in 1982 and 1983 the growth rate plummeted to unprecedented negative figures of -3.5 and -2.5%, respectively. Exports declined and the availability of foreign exchange was reduced, owing especially to a flight of capital and a worsening of the terms of trade, which compelled a curtailment of imports. As for overall demand, factors most influential in slowing down output have been the persistent decline of private investment and exports and a drop of government expenditure in 1982 and 1983. This economic slump is a consequence of the worldwide economic crisis, which has made itself felt on the levels of exports and on the prices of most export commodities; another contributing factor has been the high interest

rates charged on external loans and the difficulties of access to external financing. In 1982 a policy of austerity in government expenditure was adopted; allocations to large-scale, low-priority projects were reduced, and a credit policy aimed at greater use of external financing was launched. In short, the country is in the throes of an economic, political, and social crisis of unprecedented dimensions reflected in major maladjustments in the external and public sectors, in unemployment, and in the inability to satisfy basic needs.

The most acute problems are a substantial underutilization of human resources, a low level of income and its unequal distribution functionally, regionally, and among the social strata. While open unemployment has been on the rise, the main problem in this area continues to be underemployment, which was equivalent to an unemployment of 33.2% in 1982. Open unemployment and equivalent underemployment combined were estimated at 41.7% in 1983. One of the characteristics of the labor force is its low level of skills and lack of schooling. In 1982 42% of the economically active population had not been to school at all and 25% had attended only the first three years of primary school. Data for March 1983 of the department of population and employment in the office of economic planning indicate that 41.5% of the income-earning population was illiterate, 43.3% had completed their primary education, 4.3% had received basic education, 5.6% had some degree of special training, and 0.3% had pursued university studies at the undergraduate and 0.1% at the postgraduate level.

Demography

It is estimated that in 1983 the population numbered 7.6 million and was growing at an average rate of 2.9% a year; for 1984 it is estimated to have reached 7.8 million.

Fertility and mortality have been in a downtrend, though remaining relatively high. In 1982 reported births totaled 306,737 for a birth rate of 38.3 per 1,000; 19% of births occurred in hospitals, 71% in homes, and 10% elsewhere. A decrease of mortality between 1950 and 1982 (from 20.5 per 1,000 to 9.7) raised life expectancy from 42 years in 1950 to 58 in 1982. It is calculated that life expectancy at birth in the period 1980-1985 was 60.7 (60 for men and 62 for women). The net reproduction ratio trended upward slightly between 1973 and 1981 (from an average of 2.30 children per woman in 1973 to 2.37 in 1980), indicating a tendency of fertility to remain high. In regard to age structure, 45.1% were under age 15, 41.8% from 15 to 44, and 13.1% 45 and older.

The geographic distribution of the population shifted considerably during the period 1950-1981. In Guatemala Department, the population grew faster than the national average growth rate; in other regions, as in the El Progreso, Santa Rosa, Jutiapa, and Jalapa Departments, it declined steadily in relative terms; the trend was similar in the high plateau, i.e., in San Marcos, Huehuetenango, Quezaltenango, Sololá, El Quiché, and Totonicapán Departments. The

average population density in the country was 64 persons per km², but this ranged from 12 persons per km² in El Petén and Alta Verapaz to 600 per km² in Guatemala Department. The most heavily populated regions are the high plateau, the Pacific coast, and greater Guatemala City. It is estimated that 35% of the population lives in urban areas and 65% in some 18,640 rural localities, most of which have fewer than 500 inhabitants.

Mortality

The crude death rate in 1981 was much higher among males (11.9) than among females (8.2). Between 25 and 30% of deaths were medically certified. That year the country's pathologies were of an eminently infectious nature, and there were problems of diagnosis, with 14% of all deaths being attributed to ill-defined conditions as the second-ranking diagnosis. The five major causes of death in 1982 are presented in Table 1.

Official mortality statistics point lately to a worsening of the health situation. It is evident that the downward trend of the general and infant mortality rates has been reversed (Table 2) and that maternal mortality has remained stable. About 50% of general mortality occurs in children under age 5.

Rural mortality is 33% higher than urban, and Indian mortality is 50% higher than that of the mes-

TABLE 1
The five leading causes of death per 100,000 population, Guatemala, 1981.

Causes of death (ICD, 9th revision)	All ages			Under 15			15 and over		
	Rank	No.	% ^a	Rank	No.	% ^a	Rank	No.	% ^a
All deaths		71,748	100.0		32,179	100.0		39,029	100.0
Symptoms, signs, and ill-defined conditions (780-799)		10,217	14.2		4,884	15.2		5,220	13.4
Total deaths from specified causes ^a		61,531	100.0		27,295	100.0		33,809	100.0
Intestinal infections caused by specified organisms and ill-defined (007-009)	1	11,113	18.1	1	7,784	28.5	3	3,313	9.8
Pneumonia and influenza (480-487)	2	8,415	13.7	2	5,538	20.3	4	2,857	8.5
Homicide, legal intervention, and war (E960-E978, E990-E999)	3	8,111	13.2	-	177	0.6	1	7,667	22.7
Accidents (E800-E949, E980-E989)	4	5,787	9.4	-	550	2.0	2	5,202	15.4
Certain conditions originating in the perinatal period (760-779)	5	3,432	5.6	3	3,432	12.6	-	-	-
Heart diseases (390-429)	-	2,813	4.6	-	56	0.2	5	2,749	8.1
Nutritional deficiencies (260-269)	-	2,552	4.1	5	1,262	4.6	-	1,270	3.8
Measles (055)	-	2,214	3.6	4	2,117	7.8	-	96	0.3

^a Percentages per cause are based on total deaths from specified causes.

TABLE 2
General, maternal, and infant mortality rates, Guatemala, 1970 and 1982-1984.

Rates	1970	1982	1983	1984
General mortality (per 1,000 population)	14.7	9.5	10.1	8.6
Maternal mortality (per 1,000 live births)	1.6	1.3	1.2	0.8
Infant mortality (per 1,000 live births)	80.5	48.3	81.1	68.5

tizo population. Mortality rates were in a downtrend in all departments in the country except El Petén. The general pattern of mortality in Guatemala is typical of the less developed countries: high mortality from infectious and parasitic diseases (30%) and ill-defined conditions (14%). Diseases of the heart and malignant neoplasms rank eighth and tenth among causes of death.

With respect to infant survival, the situation of the primary mother-child pair is quite critical. At the beginning of the 1980s there were more than a quarter of a million births, and as many as 307,000 live births in 1983. In 1982 a total of 69,772

Guatemalans died, 42% of them children under 5, mostly of diarrheal, respiratory, parasitic, and other infectious-contagious diseases. The mother's schooling correlates closely with mortality in the first years of life. For a mother with no education at all the probability of her child dying before the age of 2 is 169 per 1,000 children; if she has 10 or more years of school it decreases to 26 per 1,000.

The leading cause of death among males is homicide. This cause, together with injuries accidentally or intentionally inflicted, accounted in 1981 for more than 17.4% of all deaths among males of all ages (or 291 deaths per 100,000 males a year).

The Health Situation

Data on morbidity come from three sources: outpatient consultation with physicians in the health care institutions of the ministry of public health and social welfare, discharges from that ministry's hospitals, and notifications of communicable diseases. These data are of limited quality owing in most cases to limited possibilities for accurate diagnostic research, and also to lack of training of physicians in the keeping of correct morbidity records. The country's morbidity is primarily caused by infectious diseases—diarrhea, acute respiratory infections, diseases preventable by vaccination, parasitic diseases, malaria, and malnutrition. Table 3 shows the principal causes of outpatient consultations recorded in 1983. There were 1,359,597 consultations, which represents a very low utilization of 0.17 consultations per person per year; 20% of the visits were for

infectious and parasitic diseases—malaria in particular was in eighth place—18.5% of the cases were diagnosed as symptoms, signs and ill-defined conditions.

As is to be expected, the pattern of morbidities receiving care in hospitals is quite different from that of outpatient consultations. More than one-third of hospital admissions are due to causes related to pregnancy. Normal childbirth is the most frequent cause of admission (24.1%); direct obstetrical causes rank second (8.2%); and diseases of the genitourinary system third (5.8%) followed by other intestinal diseases (5.1%). Of deliveries, 18% are attended by physicians, 26% by trained midwives, and 56% by traditional birth attendants; 19% of deliveries are attended in hospitals and 3% in convalescent homes.

Most low-birthweight children are born in rural

TABLE 3
Principal causes of outpatient consultations, Guatemala, 1983.

Causes	No. of visits	%
Other infectious and parasitic diseases	120,405	10.5
Other diseases of the respiratory system	93,910	8.2
Other diseases of the digestive system	73,770	6.4
Other diseases of the nervous system and the senses	71,198	6.2
Diseases of the skin and musculoskeletal system	68,036	5.9
Other diseases of the genitourinary system	65,373	5.7
Malaria	64,024	5.6
Other intestinal infections	53,492	4.7
Anemia	37,598	3.3
Nutritional deficiencies	35,100	3.1
Other causes	464,606	41.7
Subtotal, known causes	1,147,514	
Symptoms, signs and ill-defined conditions	212,083	18.5
Total consultations	1,359,597	
Estimated total population: 7,926,692		

area, and this is due to the low coverage of care services, maternal malnutrition, inadequate sanitation, and socioeconomic factors.

Problems Affecting the General Population

The figures on accidents reported by medical units of the social security institute in 1983 indicate that out of a total of 41,604 accidents seen, 66% were work-related, and the remainder common accidents. The frequency of accidents was highest in the 21-30

year age group, and 93% of the sufferers were males; 43% of the accidents occur in the agricultural sector and 22% among the workers' sector. Common accidents accounted for 34% of the total, and of them 45% were traffic accidents.

The discharge of untreated sewage into rivers and other waterways creates the critical problem of water pollution. The use of synthetic organic chemicals such as organochlorine, phosphorus and carbonate compounds as agricultural pesticides is on the increase. Many are toxic to animals and build up in the food chain; their concentrations in water are still low.

The Health System

Health services are provided through a variety of institutions operating in both the public and the private sectors. The public sector comprises the ministry of public health and social welfare, the social security institute, municipal governments, the military health service, San Carlos University, social welfare, and the community system. The ministry of public health and social welfare is vested by law with responsibility for the country's entire population and coordinates the sector. The social security institute, which provides general medical care to workers and their dependents, is nationwide, uni-

tary, and obligatory; it is based on the broadest, most modern governing principles, and its ultimate purpose is to protect the country's population on the basis of contributions proportional to income and the distribution of benefits to each subscriber and his dependents. Municipal governments are responsible for water supply, the removal of wastes, and other aspects of basic sanitation, and in some cases maintain medical dispensaries. The military health service has a health care program for armed forces personnel. San Carlos University is an autonomous institution with departments of medicine, dentistry,

and pharmacy. Social welfare maintains day-care centers that provide health and recreation services. The community system, organized by the ministry through a program for involving members of the community in health activities, provides training for traditional midwives and health promoters and organizes committees of community leaders and other voluntary personnel to serve in health care programs.

The private sector consists of non-profit institutions such as the Red Cross, the National Tuberculosis League, the National Cancer League, the Alcoholism Prevention Foundation, the Mental Health League, and religious organizations, which cover approximately 2% of the population, and commercial institutions such as private hospitals, convalescent homes, clinics, and private practices. Of 59 private hospitals (nearly 1,200 beds) two-thirds are located in Guatemala City.

There can be no doubt of the need to promote planning and programming for the comprehensive and harmonious development of the services in both the administrative and technical areas so that coverage can be extended to the areas and population groups at greatest risk.

More than 90% of the country's institutional resources for the medical care of the population are in the public sector; the remaining 10% consist of private hospitals and convalescent homes, which in 1982 had 1,619 beds, 61% of them in the capital city. In towns of fewer than 2,000 inhabitants the average number of inhabitants per institution is 12,475. When it is considered that these localities are served almost exclusively by health posts—which average barely 2,800 man-hours of service a year—it is easily appreciated that coverage is very low. The average number of consultations is a mere 0.4 inhabitant, and there is virtually no inpatient hospital care. The ministry services 0.3 consultations inhabitant a year.

If the consultations in the social security establishments are counted, the number of consultations serviced by the public sector is 0.4 per inhabitant a year. However, 75% of the consultations in social security facilities take place in the capital, and the remaining 25% in towns of 10,000 to 100,000 inhabitants, which produces the following distribution of rates of consultation inhabitant year: 0.14 in towns of less than 10,000 inhabitants, 1.1 in towns of 10,000 to 100,000 inhabitants (where 6.6% of the population resides), and 0.9 in Guatemala City (with 19% of the population). Of course, adding the consultations handled in private institutions and by physicians in private practice in Guatemala City would raise the rate there well above 1 per inhabitant year.

With 12,991 beds, the public sector discharges about 300,000 patients a year, or 25.3/1,000 inhabi-

tants of which 18.2 (72%) are from the establishments of the ministry of public health and social welfare. More than one-third of those discharges take place in Guatemala City, and more than 83% in towns of more than 10,000 inhabitants, where 25% of the population reside. The ministry has organized the system into three management levels: the decision-making level, represented by the ministry's central headquarters; the technical and standard-setting level, which includes the general health services directorate and its central agencies; and the operational level, which consists of the 24 health areas in the country.

The health area now consists of a network of services of sufficiently diverse complexity to be divided into three levels. At the first level there are the health posts, which are actually the level of first official contact with the system. The second level is that of the intermediate care facilities, referred to as health centers, which provide 24-hour medical care to outpatients and have short-stay beds for maternal and child care, observation and a few emergency cases; the staff are physicians and a team of paramedical technicians who complement health measures. The third level is comprehensive and consists of the area hospital with disease prevention, health promotion, curative, and rehabilitation services. This level is complemented by the final-referral special services operating in the capital. In 1983 there were 614 health posts, 45 clinics, 235 health centers, 118 hospitals, and 12,991 beds. Of the number of hospital beds in the country, 18.7% are set aside for protracted stays (chronic illnesses) and the remainder are for short stays. The number of beds per 1,000 inhabitants is 1.7.

In 1984 the national expenditure on health was Q177.7 million (US\$177.7 million), of which 56% was incurred through the ministry, 33% through social security, and the remainder divided into equal parts among other public institutions and the private sector. This total expenditure amounted to 3.7% of GDP, and the per capita expenditure was Q23.38. About 12.7% of all government expenditures were incurred for health and not more than 6.5% of all public and private expenditures for health were covered by external financing.

An analysis of the budgets allocated in the last three years to the institutions constituting the sector reveals a real reduction imposed by the difficult economic situation besetting the country. Added to this adverse circumstance is the annual increase in care services owing in part to natural population growth and in part to the extension of those services to additional marginal rural settlements.

