

*Country Health Profile*

# **PAPUA NEW GUINEA**

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## **Health Situation & Statistics Report 1994**



**Center for International Health Information**  
1601 N. Kent Street, Suite 1001  
Arlington, VA 22209

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**The Center for International Health Information  
1601 N. Kent Street, Suite 1001  
Arlington, VA 22209  
(703) 524 - 5225  
FAX (703) 243 - 4669  
E-Mail address: [cihi@gaia.info.usaid.gov](mailto:cihi@gaia.info.usaid.gov)**

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# PAPUA NEW GUINEA

## Country Health Profile

**T**his is one of a series of Country Health Profiles produced by the Center for International Health Information (CIHI). Each profile contains descriptive information and tables on the country's health and demographic characteristics, health indicators and trends, and when available, the health care system. Profile information is compiled from CIHI's databases and reference library, as well as through research and analysis of other data sources and reports.

The profiles are intended to provide current and trend data in a concise format for policy and decision-making, planning and evaluation, and monitoring of health status for use by individuals and organizations. Contact CIHI at the address on the preceding page for information on the availability of other health profiles and standard reports.

This profile contains national level health and demographic statistics available in CIHI's databases as of the date noted in each section. In order to enable CIHI to report the most current health and demographic statistics, please provide any more recent or more accurate data by contacting the center at the address on the previous page or through USAID, Office of Health and Nutrition, Center for Population, Health and Nutrition, Bureau for Global Programs, Field Support and Research.

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*\* Sources in this profile are referred to by a seven-digit code. Generally, the first three letters refer to an organization, agency, etc., and the first two numbers indicate the year of the publication or other source document. A complete list of sources appears at the end of the profile.*

# I: HEALTH & DEMOGRAPHIC OVERVIEW

## Current Demographic and Health Indicators

JULY 1994

Demographic Indicators			
INDICATOR	VALUE	YEAR	SOURCE
Total Population	4,156,400	1993	UNP9200
Urban Population	708,400	1993	UNP9200
Women Ages 15-49	988,200	1993	UNP9200
Infant Mortality	114	1993	WBK9302
Under 5 Mortality	166	1993	WBK9302
Maternal Mortality	700	1989	WHM9157
Life Expectancy At Birth	56	1993	UNP9200
Number of Births	138,736	1993	UNP9200
Annual Infant Deaths	15,802	1993	CALXX01
Total Fertility Rate	4.8	1993	UNP9200

Child Survival Indicators			
INDICATOR	PERCENT	YEAR	SOURCE
Vaccination Coverage			
BCG	68	1992	WHE9301
DPT 3	61	1992	WHE9301
Measles	58	1992	WHE9301
Polio 3	61	1992	WHE9301
Tetanus 2	47	1992	WHE9301
DPT Drop Out	NA		
Oral Rehydration Therapy			
ORS Access Rate	95	1993	WHD9401
ORS and/or RHF Use	51	1993	WHD9401
Contraceptive Prevalence			
Modern Methods (15-49)	NA		
All Methods (15-49)	5	1980	BUC8905
Nutrition			
Adequate Nutritional Status	NA		
Appropriate Infant Feeding	NA		
A) Exclusive Breastfeeding	NA		
B) Complementary Feeding	NA		
Continued Breastfeeding	NA		

Other Health Indicators			
INDICATOR	PERCENT	YEAR	SOURCE
HIV-1 Seroprevalence			
Urban	0	1991	BUC9103
Rural	0	1991	BUC9103
Access to Improved Water			
Urban	94	1990	WHO9200
Rural	20	1990	WHO9200
Access to Sanitation			
Urban	57	1990	WHO9200
Rural	50	1990	WHO9101
Deliveries/Trained Attendants	20	1989	WHM9162

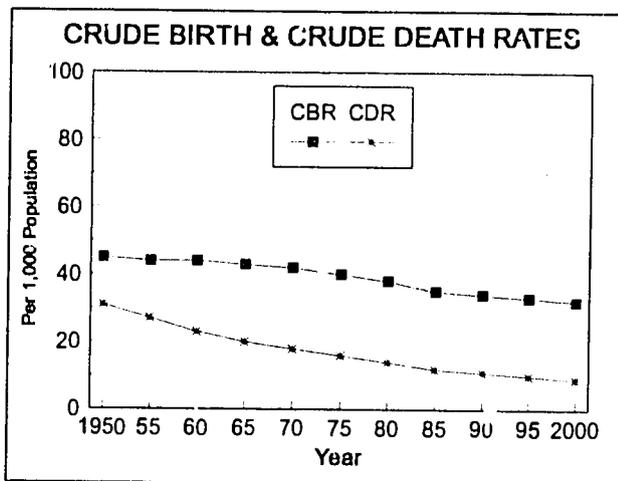
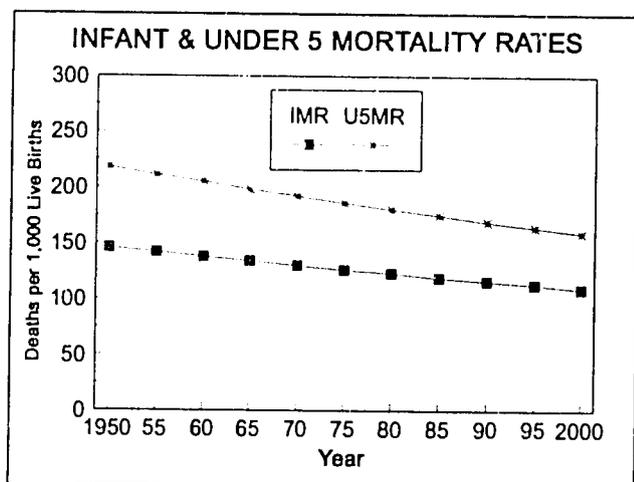
NA = Not available



## Trends in Selected Demographic and Health Indicators

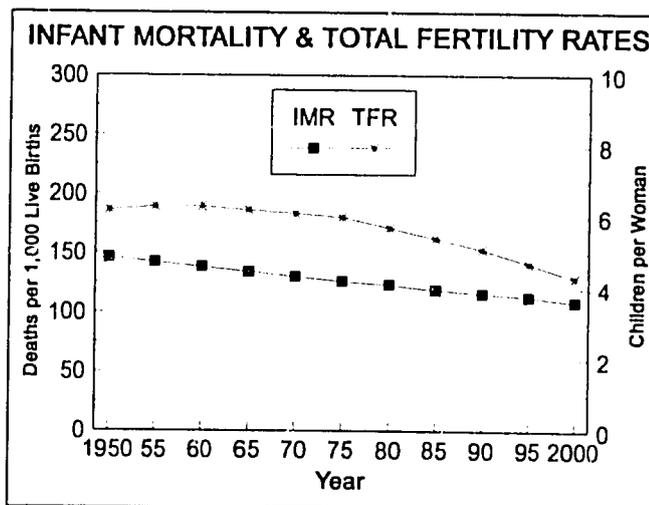
JULY 1994

INDICATOR	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995	2000	SOURCE
Infant Mortality	146	142	138	134	130	126	123	119	116	113	109	WBK9302
Under Five Mortality	218	211	205	198	192	186	180	175	169	164	159	WBK9302
Crude Birth Rate	45	44	44	43	42	40	38	35	34	33	32	UNP9200
Crude Death Rate	31	27	23	20	18	16	14	12	11	10	9	UNP9200
Avg. Annual Growth Rate	1	2	2	2	2	2	2	2	2	2	2	UNP9200
Total Fertility Rate	6.2	6.3	6.3	6.2	6.1	6.0	5.7	5.4	5.1	4.7	4.3	UNP9200



### IMR and TFR

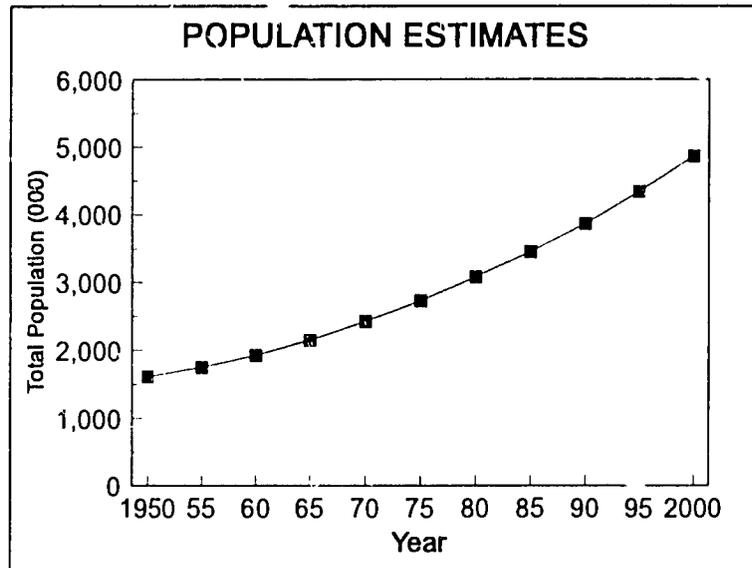
The relationship between IMR and TFR is currently a subject under review by the scientific community. While there is not conclusive evidence that the IMR and TFR are causally linked and necessarily decline together, there is empirical evidence for suspecting that such a reinforcing relationship exists as the pattern is observable in most countries.



## Population Estimates/Pyramid

JULY 1994

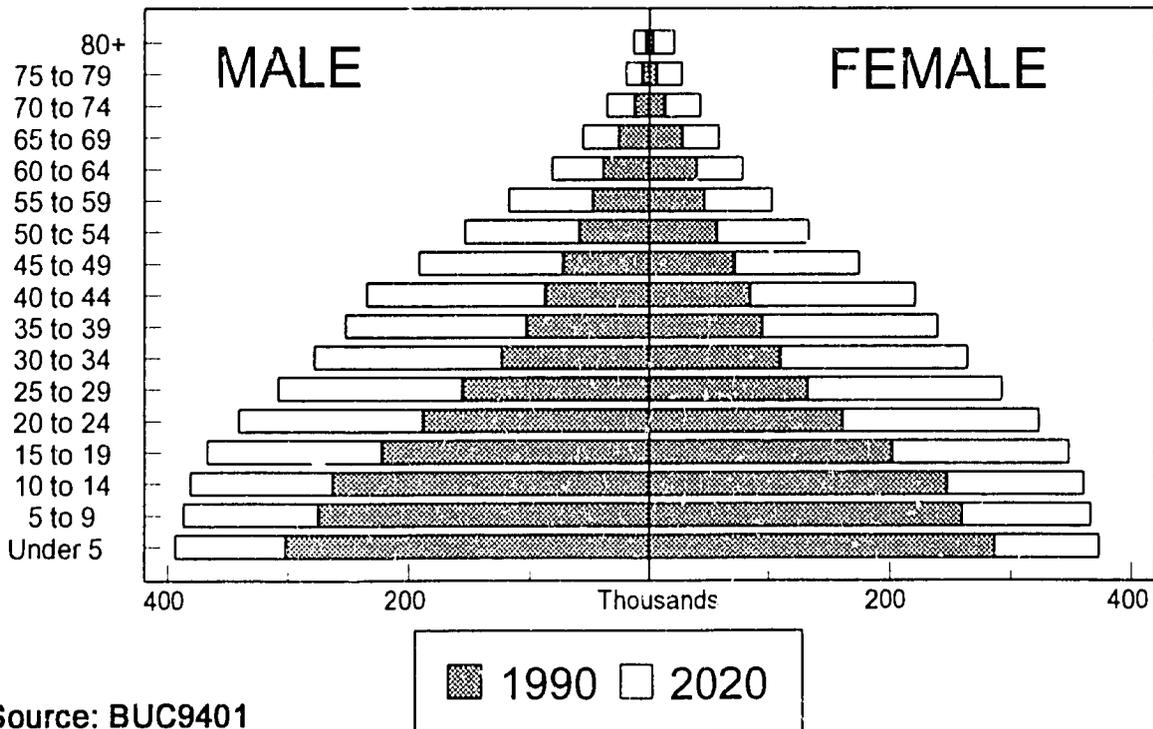
POPULATION ESTIMATES (000s)		
YEAR	VALUE	SOURCE
1950	1,613	UNP9200
1955	1,744	UNP9200
1960	1,920	UNP9200
1965	2,148	UNP9200
1970	2,422	UNP9200
1975	2,729	UNP9200
1980	3,086	UNP9200
1985	3,460	UNP9200
1990	3,875	UNP9200
1995	4,344	UNP9200
2000	4,867	UNP9200



## CURRENT & PROJECTED POPULATION

By Age & Gender: 1990 - 2020

Total Population 1990: 3,823,437 Total Population 2020: 7,044,351



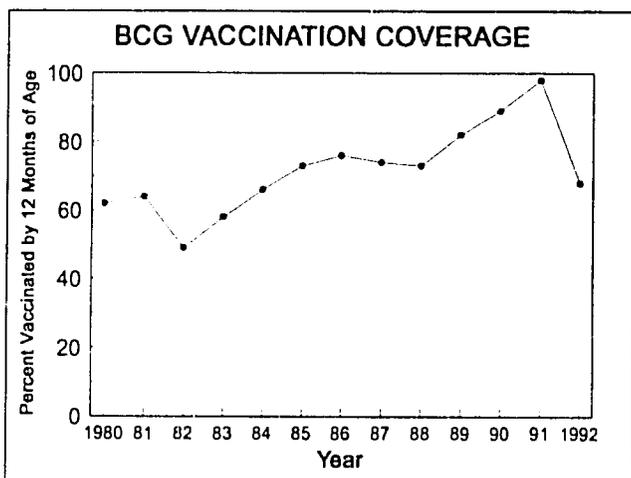
Source: BUC9401



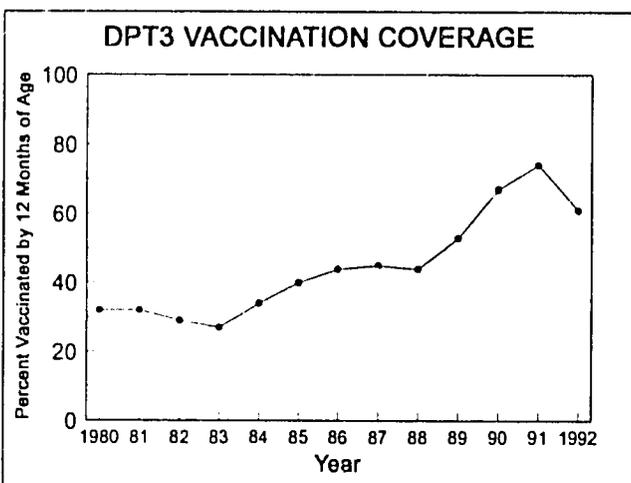
## Trends in Selected Health and Child Survival Indicators

### Vaccination Coverage Rates

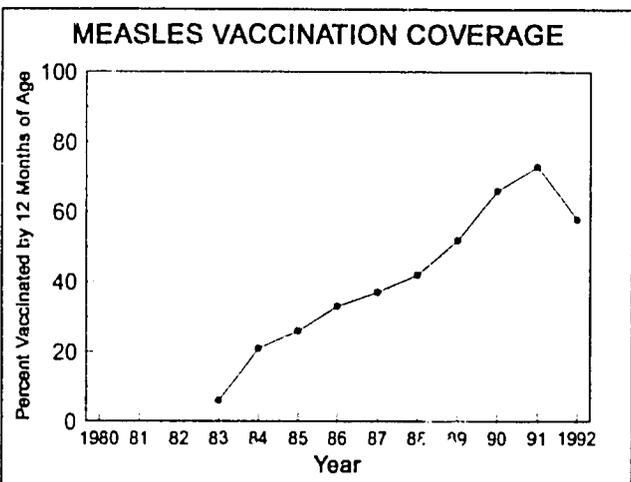
JULY 1994



BCG COVERAGE		
YEAR	PERCENT	SOURCE
1980	62	WHE8801
1981	64	WHE8801
1982	49	WHE8801
1983	58	WHE8801
1984	66	WHE8801
1985	73	WHE8801
1986	76	WHE8801
1987	74	WHE8801
1988	73	WHE8900
1989	82	WHE9001
1990	89	WHE9200
1991	98	WHE9300
1992	68	WHE9301

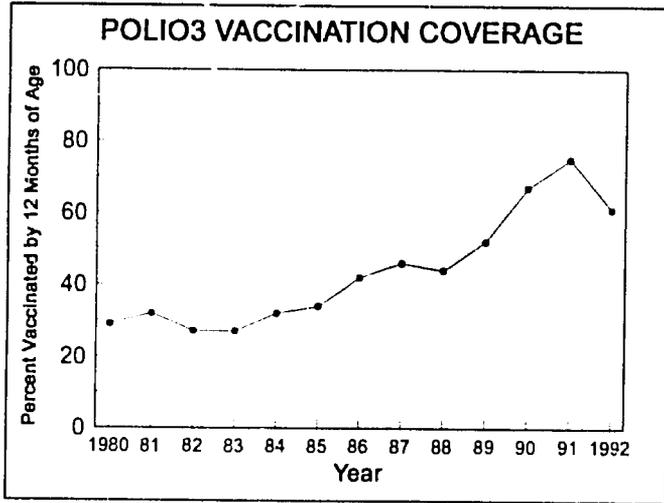


DPT3 COVERAGE		
YEAR	PERCENT	SOURCE
1980	32	WHE8801
1981	32	WHE8801
1982	29	WHE8801
1983	27	WHE8801
1984	34	WHE8801
1985	40	WHE8801
1986	44	WHE8801
1987	45	WHE8900
1988	44	WHE8900
1989	53	WHE9001
1990	67	WHE9200
1991	74	WHE9300
1992	61	WHE9301

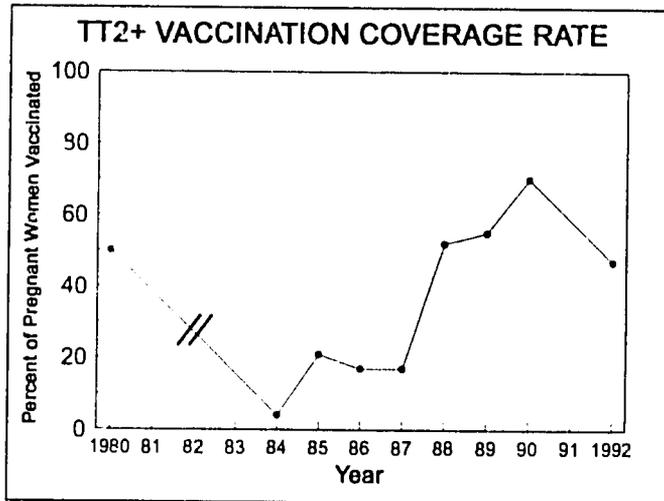


MEASLES COVERAGE		
YEAR	PERCENT	SOURCE
1980	NA	
1981	NA	
1982	NA	
1983	6	WHE8801
1984	21	WHE8801
1985	26	WHE8801
1986	33	WHE8801
1987	37	WHE8900
1988	42	WHE8900
1989	52	WHE9001
1990	66	WHE9200
1991	73	WHE9300
1992	58	WHE9301

Vaccination Coverage Rates, continued



POLIO3 COVERAGE		
YEAR	PERCENT	SOURCE
1980	29	WHE8801
1981	32	WHE8801
1982	27	WHE8801
1983	27	WHE8801
1984	32	WHE8801
1985	34	WHE8801
1986	42	WHE8801
1987	46	WHE8900
1988	44	WHE8900
1989	52	WHE9001
1990	67	WHE9200
1991	75	WHE9300
1992	61	WHE9301

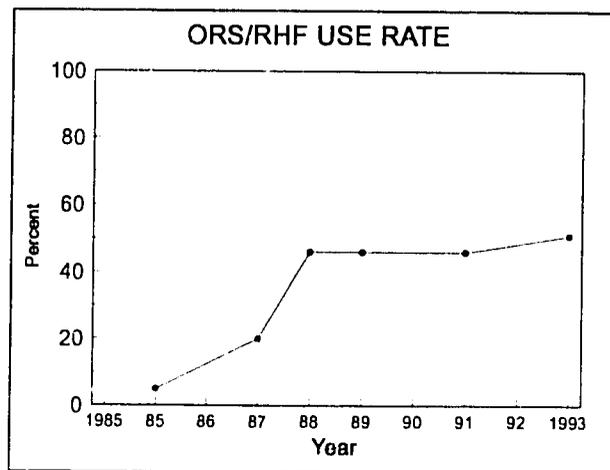
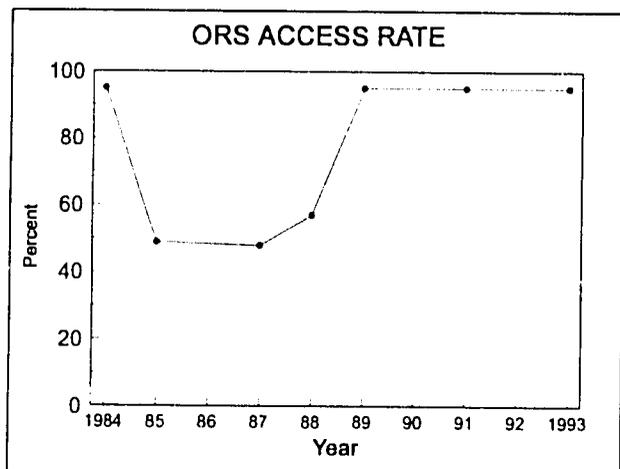


TT2+ COVERAGE		
YEAR	PERCENT	SOURCE
1980	50	WHE8801
1981	NA	
1982	NA	
1983	NA	
1984	4	WHE8801
1985	21	WHE8801
1986	17	WHE8801
1987	17	WHE8900
1988	52	WHE8900
1989	55	WHE9001
1990	70	WHE9200
1991	NA	
1992	47	WHE9301



## ORS Access, ORS and/or RHF Use Rates

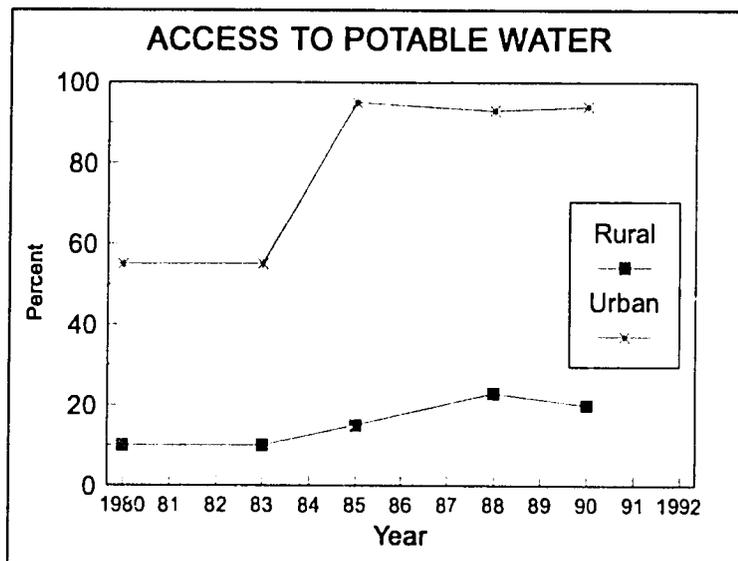
JULY 1994



INDICATOR	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
ORS Access	95	49	NA	48	57	95	NA	95	NA	95
Source	WHD8700	WHD8700		WHD8900	WHD9000	WHD9100		WHD9201		WHD9401
ORS/RHF Use	NA	5	NA	20	46	46	NA	46	NA	51
Source		WHD8700		WHD8900	WHD9000	WHD9100		WHD9201		WHD9401

### Access to Potable Water

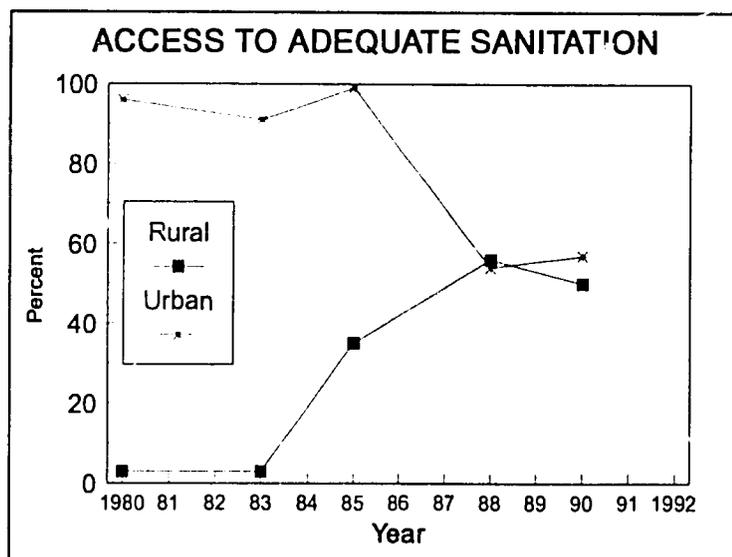
JULY 1994



YEAR	RURAL	SOURCE	URBAN	SOURCE
1980	10	WHO9101	55	WHO9101
1981	NA		NA	
1982	NA		NA	
1983	10	WHO9101	55	WHO9101
1984	NA		NA	
1985	15	WHO9101	95	WHO9101
1986	NA		NA	
1987	NA		NA	
1988	23	WHO9101	93	WHO9101
1989	NA		NA	
1990	20	WHO9200	94	WHO9200
1991	NA		NA	
1992	NA		NA	
1993	NA		NA	

### Access to Adequate Sanitation

JULY 1994

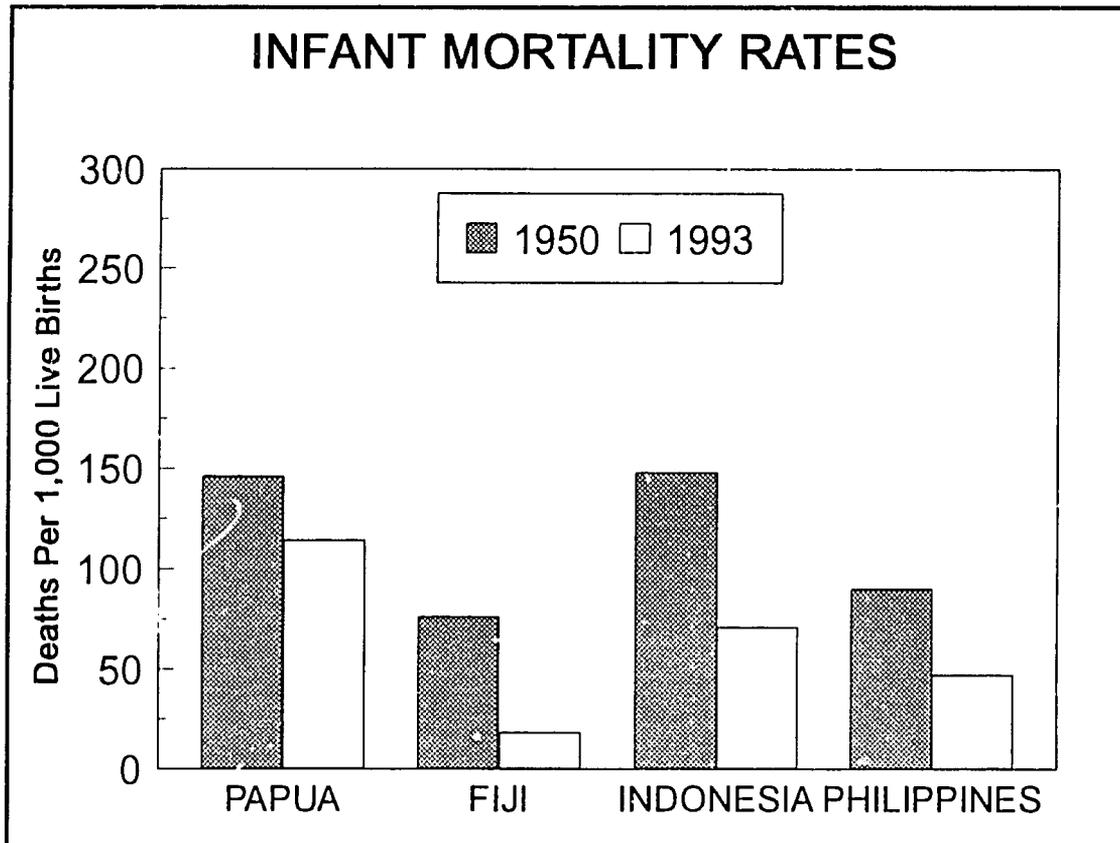


YEAR	RURAL	SOURCE	URBAN	SOURCE
1980	3	WHO9101	96	WHO9101
1981	NA		NA	
1982	NA		NA	
1983	3	WHO9101	91	WHO9101
1984	NA		NA	
1985	35	WHO9101	99	WHO9101
1986	NA		NA	
1987	NA		NA	
1988	56	WHO9101	54	WHO9101
1989	NA		NA	
1990	50	WHO9101	57	WHO9200
1991	NA		NA	
1992	NA		NA	
1993	NA		NA	

## COMPARATIVE INDICATORS

### Comparative IMR Rates

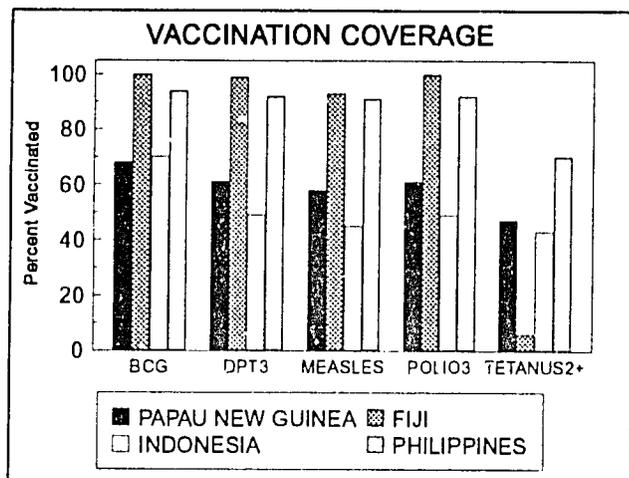
JULY 1994



COUNTRY	1950	SOURCE	1993	SOURCE
PAPUA NEW GUINEA	146	WBK9302	114	WBK9302
FIJI	76	BUC9302	18	BUC9302
INDONESIA	148	WBK9302	71	WBK9302
PHILIPPINES	90	WBK9302	47	WBK9302

### Comparative Vaccination Coverage Rates

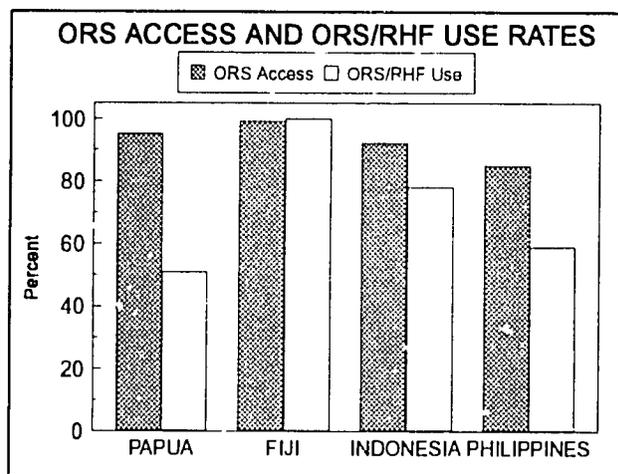
JULY 1994



COUNTRY	INDICATOR	YEAR	VALUE	SOURCE
PAPUA NEW GUINEA	BCG	1992	68	WHE9301
	DPT 3	1992	61	WHE9301
	Measles	1992	58	WHE9301
	Polio 3	1992	61	WHE9301
	Tetanus 2	1992	47	WHE9301
FIJI	BCG	1991	100	WHE9202
	DPT 3	1991	99	WHE9202
	Measles	1991	93	WHE9202
	Polio 3	1991	100	WHE9202
	Tetanus 2	1991	6	WHE9202
INDONESIA	BCG	1991	70	DHS9210
	DPT 3	1991	49	DHS9210
	Measles	1991	45	DHS9210
	Polio 3	1991	49	DHS9210
	Tetanus 2	1991	43	DHS9210
PHILIPPINES	BCG	1992	94	WHE9301
	DPT 3	1992	92	WHE9301
	Measles	1992	91	WHE9301
	Polio 3	1992	92	WHE9301
	Tetanus 2	1992	70	WHE9301

### Comparative ORS Access, ORS and/or RHF Use Rates

JULY 1994



COUNTRY	INDICATOR	YEAR	VALUE	SOURCE
PAPUA NEW GUINEA	ORS Access Rate	1993	95	WHD9401
	ORT Use Rate	1993	51	WHD9401
FIJI	ORS Access Rate	1993	99	WHD9401
	ORT Use Rate	1993	100	WHD9401
INDONESIA	ORS Access Rate	1991	92	WHD9200
	ORT Use Rate	1993	78	WHD9401
PHILIPPINES	ORS Access Rate	1993	85	WHD9401
	ORT Use Rate	1993	59	WHD9401



## II: DATA NOTES

JULY 1994

### *Notes On Mortality Estimation*

Throughout this profile, references are made to infant and under 5 mortality rates for individual countries or groups of countries. In past years, the primary source of data on infant mortality was the World Population Prospects, a set of estimates updated every two years by the Estimates and Projections Section of the Population Division of the Department of International Economic and Social Affairs, United Nations. The primary source of data on under 5 mortality was a special report published in 1988 by the same group. Where another source, such as a recent Demographic and Health Survey or a national census, was available for a given country, the reported values from that source were cited in place of the United Nations estimates if the technical staff of USAID in the Country Mission and/or the appropriate regional bureaus confirmed the validity of the alternative source.

Known as indirect estimates, those of the United Nations are generated from accepted demographic models which combine the results of all available surveys and censuses in a given country to produce a single time series of estimates and projections. When new empirical data becomes available for a given country, the entire time series of estimates and projections is updated. Thus, using conventional demographic approaches, a survey done in 1990 may generate a new estimate of a mortality rate for 1970 or 1980.

During 1993, a new set of estimates for mortality was generated for 82 countries for publication in the World

Development Report 1993 and a forthcoming UNICEF publication entitled The Progress of Nations. Based on a curve-fitting model, the methodology applied to generate these new estimates purports to depict more accurately the trend derived from all available data sources for a country. Like the estimates generated using conventional demographic models, the entire time series might change upon the addition of a new empirical source. These estimates were made available to USAID through the courtesy of the World Development Report of the World Bank and UNICEF.

The selection of the mortality rates was done through a consultative process involving representatives of the Office of Health in USAID's Research and Development Bureau, USAID's Regional Bureaus and, in many cases, the USAID Country Missions. The source determined to best reflect the reality in a country for the current values of infant and under 5 mortality was identified and one of a number of a computation procedures, depending on the source selected for the current value, was applied to estimate the longitudinal rates. The consideration of the additional source of data developed for the World Development Report and UNICEF during the consultative process has prompted some changes in the reporting of mortality rates from those reported in recent years.

### *Definitions*

#### *Demographic Indicators*

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

**Average Annual Rate of Growth:** An estimate of the rate at which a population is increasing (or decreasing) in a given year.

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

**Under 5 Mortality Rate:** The estimated number of children born in a given year who will die before reaching age five per thousand live births in that same year. This rate may also be calculated by direct or indirect methods.

**Maternal Mortality Ratio:** The estimated number of maternal deaths per 100,000 live births where a maternal death is one which occurs when a woman is pregnant or within 42 days of termination of pregnancy from any cause related to or aggravated by the pregnancy or its management. Although sometimes referred to as a rate, this measure is actually a ratio because the unit of measurement of the numerator (maternal deaths) is different than that of the denominator (live births). The measure would be a rate if the units were the same. Extremely difficult to measure, maternal mortality can be derived from vital registration systems (usually underestimated), community studies and surveys (requires very large sample sizes) or hospital registration (usually overestimated).

**Crude Birth Rate:** An estimate of the number of live births per 1,000 population in a given year.

**Crude Death Rate:** An estimate of the number of deaths per 1,000 population in a given year.

## II: Data Notes

**Life Expectancy At Birth:** 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.

**Number of Births:** An estimate of the number of births occurring in a given year.

**Annual Infant Deaths:** An estimate of the number of deaths occurring to children under age one in a given year.

**Total Fertility Rate:** An estimate of the average number of children a woman would bear during her lifetime given current age-specific fertility rates.

### *Child Survival Indicators*

**Vaccination Coverage In Children:** An estimate of the proportion of living children between the ages of 12 and 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 inoculations of an antigen given during a year to children who have not yet reached their first birthday divided by an estimate of the pool of children under one year of age eligible for vaccination. Survey estimates are based on samples of children between the ages of 12 and 23 months.

**Vaccination Coverage In Mothers:** An estimate of the proportion of women in a given time period who have received two doses of tetanus toxoid during their pregnancies. This indicator is being changed in many countries 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 of boosters required during any given pregnancy varies with number received previously and the time elapsed.) The revised indicator is referred to as TT2+. Rates are computed using administrative methods or surveys.

**DPT Drop-out Rate:** An estimate of the proportion of living children between the ages of 12 and 23 months who received at least one DPT vaccination but who did not receive the entire series of three vaccinations before their first birthdays.

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

**ORS and/or Recommended Home Fluid (RHF) Use Rate:** 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 treating diarrhea in the two-week period prior to the survey.

**Contraceptive Prevalence Rate:** An estimate of the proportion of women, aged 15 through 44 (or, in some countries, 15 through 49), in union or married, currently using a modern method of contraception. Where sources fail to distinguish modern and traditional methods, the combined rate is shown.

**Adequate Nutritional Status:** 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" (two standard deviations) below the median weight achieved by 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 (WHO). The indicator for the population as a whole is the proportion of children 12 through 23 months of age who are adequately nourished.

**Appropriate Infant Feeding:** 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 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 infants are being fed correctly at the moment of the survey. They do not give an indication of the proportion of individual children fed appropriately throughout their first year of life. A number of sub-indicators may be calculated from the data used to form the composite, of which two are presented in this report.



**Exclusive Breastfeeding:** An estimate of the proportion of infants less than four months (120 days) of age who receive no foods or liquids other than breast milk.

**Complementary Feeding:** An estimate of the proportion of infants six to nine months of age (181 days to 299 days) still breastfeeding but also receiving complementary weaning foods.

**Continued Breastfeeding:** An estimate of the proportion of children breastfed for at least one year. In this report, all values presented for this indicator are the proportion of children 12 to 15 months of age at the time of the survey still receiving breast milk.

### *Other Health Indicators*

**HIV-1 Seroprevalence, Urban:** An estimate of the proportion of all persons (pregnant women, blood donors, and other persons with no known risk factors) living in urban areas infected with HIV-1, the most virulent and globally prevalent strain of the human immunodeficiency virus.

**HIV-1 Seroprevalence, Rural:** An estimate of the proportion of all persons living in rural areas infected with HIV-1.

**Access to Improved Water, Urban:** An estimate of the proportion of all persons living in urban areas (defined roughly as population centers of 2,000 or more persons) who live within 200 meters of a stand pipe or fountain source of water.

**Access to Improved Water, Rural:** An estimate of the proportion of all persons not living in urban areas with a source of water close enough to home that family members do not spend a disproportionate amount of time fetching water.

**Access to Sanitation, Urban:** An estimate of the proportion of all persons living in urban areas with

sanitation service provided through sewer systems or individual in-house or in-compound excreta disposal facilities (latrines).

**Access to Sanitation, Rural:** An estimate of the proportion of all persons not living in urban areas with sanitation coverage provided through individual in-house or in-compound excreta disposal facilities (latrines).

**Deliveries By Trained Attendants:** An estimate of the proportion of deliveries attended by at least one physician, nurse, midwife, or trained traditional birth attendant.

**III: SOURCES**

JULY 1994

- BUC8905 United Nations Economic and Social Commission for Asia and the Pacific as cited in U.S. Bureau of the Census. U.S. Department of Commerce. World Population Profile: 1989. Washington, D.C.: U.S. Government Printing Office, 1989.
- BUC9103 Bureau of Census, Center for International Research, Recent HIV Seroprevalence Levels By Country, April, 1992
- BUC9302 Time series estimates of Infant Mortality generated by applying the ratio of the BUCEN estimate for 1992 to the World Population Prospects estimate for 1992 to the annual values dating back to 1950 as estimated in the World Population Prospects. Under 5 Mortality estimates are calculated by applying the appropriate Coale-Demeny model to the Infant Mortality estimates.
- BUC9401 U.S. Bureau of the Census (BUCEN). International Data Base. Version dated March, 1994.
- CALXX01 Calculated from the values for total population, crude birth rate and infant mortality from designated sources for those variables.
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- UNP9200 Department of International Economic and Social Affairs, United Nations. World Population Prospects 1992. (ST/ESA/SER.A/120) New York: UN, 1992.
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