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REVIEW OF THE JAMAICAN HEALTH SECTOR AND AN ASSESSMENT OF OPPORTUNITIES FOR EXTERNAL DONOR SUPPORT

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F. Curtiss Swezy, Dr.P.H.
Team Leader

Joel R. Greenspan, M.D., M.P.H.
U.S. Centers for Disease Control

Larry J. Forgy
Abt Associates

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Curtiss Swezy, Team Leader
Joel Greenspan

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Executive Summary

This assessment is concerned with the interrelated issues of the status of health in Jamaica, management within the Ministry of Health, and questions of how the government will be able to afford its current program and the continuing demands of a developing country society.

Crude death rates have declined over the last decade, as have official estimates of infant mortality. However, the accuracy of these data are questionable and there is known underreporting of infant deaths by as much as 50%. About half the years of potential life lost before age 65 are due to gastrointestinal and respiratory infectious diseases, prematurity and congenital anomalies, and malnutrition, all of which primarily affect infants and children.

Gastrointestinal infections are leading causes of morbidity and mortality in children, but poor surveillance and laboratory support pose obstacles to fully understanding the causes of the problem. Vaccine coverage among children under 5 has improved recently, but as of 1984 only 50% of young children were fully vaccinated by age 1. Family planning is falling short in meeting the needs of high risk groups: adolescents and women over 35, whose infants are at greater risk of dying. Although nutritional status of Jamaican children is better than in other Caribbean countries, increasing numbers of children are being hospitalized for malnutrition related symptoms.

Cases of AIDS are increasing rapidly in Jamaica. Men, women and infants have been affected and HIV infection is apparent in all parts of the country. Other STDs affect thousands of Jamaicans each year and contribute to high infant and child morbidity and mortality. Problems that deserve attention include improved health information systems, upgraded laboratory systems, and AIDS and STD control.

Thus there are serious health problems that are not being adequately addressed. Management and financial difficulties within the Ministry of Health are compounding the problem because together they impede effective operation of basic health services and disease control programs.

The MOH is undertaking a series of management innovations to strengthen its service delivery: "Rationalization," to reassess the functions of small rural hospitals and PHC clinics; "decentralization," to delegate programmatic and budgetary decision making to local health areas; and "integration," to merge PHC and hospital management. Financial management reform is occurring with performance-based budgeting. The MOH has been assisted in these endeavors by the Administrative Reform Programme, a government-wide program to strengthen the civil service.

Low government salaries are the single biggest management issue. Vacancies at the time of this review ranged from a low of less than

20% for public health nurses to over 60% for radiographers; one-third of all physician positions were unfilled. Low productivity and morale evolve from low salaries.

The financial position of the MOH is largely to blame for the deterioration in MOH services. Although the MOH has received an increasing share of the government budget over the last 5 years, the overall budget has declined and the real per capita resources of the ministry have declined by about 30 percent.

About one-third of all ambulatory care is private and consumers come from all income groups. Over 90% of hospital care in Jamaica is provided in public hospitals. Thus the government is the source of costly inpatient care. The financial strains on the government are forcing the MOH to look toward alternative financing arrangements.

The MOH is pursuing several alternative financing ventures, including private management of all parish facilities and private management of hospitals (Ogle Committee recommendations). The government is also pursuing ways to improve the effectiveness and financial condition of the public health delivery system.

Among the activities where A.I.D. could make a major contribution are the following:

- Improve the MOH's health information system, especially for infectious and chronic diseases, and improve the system of collecting and analyzing vital statistics
- Ensure adequate incentives and infrastructure to allow the new central laboratory to operate effectively
- Develop a strong, vertical program to track and control AIDS and other STDs.
- Collaborate with other donors in supporting the ARP
- Assist the government in revising its legal and regulatory structure in public health
- Assist the MOH in designing and evaluating its privatization efforts; promoting greater private sector activities in health care delivery; developing alternative means of improving drug availability; and strengthening the management, financial solvency, and operation of all MOH services through better incentives for providers and greater cost sharing with users.

I. OVERVIEW OF THE HEALTH SECTOR IN JAMAICA

A. Evolution of the Health Care System

The English colony of Jamaica began in 1655 as a combination of small freeholders and large plantation owners. Shortly thereafter, however, the small freeholders were forced out and the economy and politics of the island became dominated by British sugar plantation owners. When British servants and indentured field hands proved particularly unsuited for plantation field work, the owners turned to the large-scale importation of black slaves from Africa. The bulk of the population in Jamaica are descendents of these forced migrants.

During this period the first vestiges of a health care system were implemented as an economic necessity and to ward off the ravages of waves of communicable disease for landowner and slave alike. In 1776 Kingston Public Hospital was established and remains the largest resident care facility on the island to this day. The Consolidated Slave Act of 1792 further required each sugar estate to have a medical officer to provide necessary medical services and to report causes of death.

In 1807 the British parliament abolished the slave trade; emancipation occurred in 1834. Suddenly, the economic and social structures were wrenched into the modern era. Former slaves who were provided health care in order to protect the investment of their plantation owners were now required to pay for such care. In the 1850s and 1860s a series of epidemics of cholera and smallpox precipitated the passage of the Public Health Law of 1867. This led to the creation of the Medical Organization of Jamaica, with a medical officer overseeing 40 medical districts, and later the establishment of Union and Marine Hospitals. In 1873 a Mental Hospital Law established the first institution for the mentally ill, and by the turn of the century a series of small hospitals were providing secondary care throughout the island.

After World War I the first serious steps in primary health care were undertaken with campaigns organized against hookworm, malaria, yaws, and tuberculosis. It was not until after World War II, however, that the University of the West Indies was founded (1948), with the later addition of University Hospital and the National Chest Hospital (1949), and the establishment of the Ministry of Health (1953).

At the time of independence (1962) the system of health care that had evolved was based on the United Kingdom's model of government-subsidized, hospital-centered curative service. In the 1970s primary health care began to develop as a separate, and parallel, responsibility of the government. A policy commitment was made to primary health care in 1978, and a formal plan was launched to provide a network of primary health care (PHC) centers throughout

the island. This plan has been approximately 85% implemented and is the basis for PHC service delivery system in Jamaica today.

At the same time that the PHC network was being developed, the nature of disease in Jamaica was in transition. A shift was occurring away from infectious diseases toward chronic degenerative problems. Leading causes of hospitalization today are accidents/violence, cardiovascular disorders, and degenerative diseases. Of particular importance to primary health care is that many of these health problems are preventable.

B. Population and Demographics

The population of Jamaica is approximately 2.5 million, increasing from 1.6 million in 1962. Population growth appears to have decreased over the past two decades, in line with a recent drop in the total fertility rate (TFR). The TFR was estimated to be 3.5 in 1980; by 1984 this had fallen to 3.0. An active national family planning program has undoubtedly facilitated the decreases in population growth. However, other factors, notably out-migration of reproductive-aged women, have also played a role.

The crude birth rate and the crude death rate are estimated to be 23.1 and 5.7, respectively. Although infant mortality is listed at 13.2/1000, there is evidence that 35-50% of infant deaths in Jamaica are not registered.

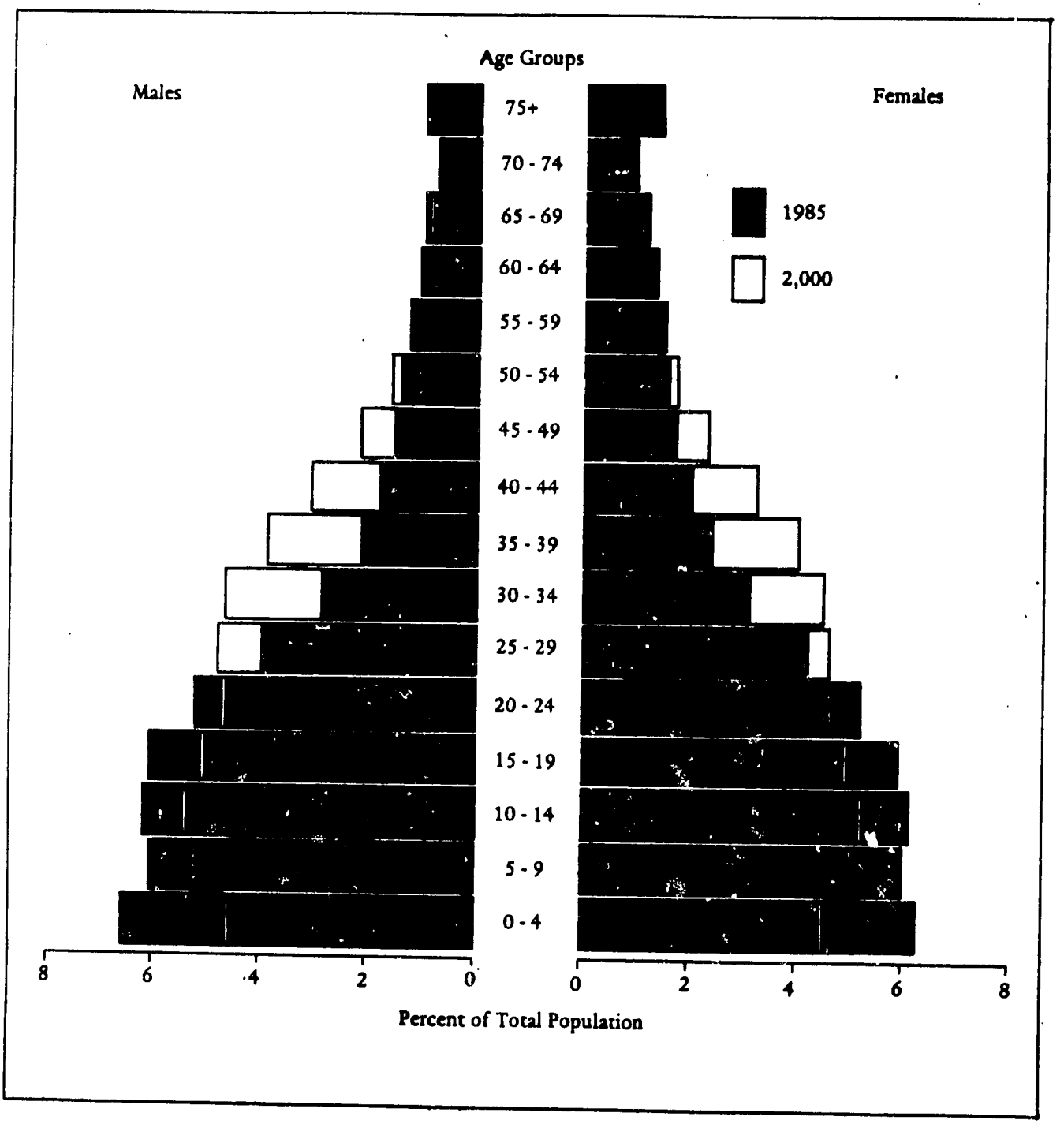
Jamaica's population is approximately evenly divided between rural and urban residents. Although in recent years internal migration to the urban areas has increased somewhat, the population is not heavily concentrated in the capital city as is the case in some other developing countries. Neither are the perimeters of Kingston ringed with temporary shelters or squatters' communities. However, the "bedroom suburbs," particularly to the west of Kingston, have grown substantially in the past half decade. On the north coast Montego Bay is also experiencing rapid growth.

A review of Jamaica's age structure shows that in 1985 the population was still relatively young (Figure 1). This means that dependency ratios are relatively high, exacerbating an unemployment rate of nearly 25%. Projections for the year 2000 indicate that the population will slowly age, accelerating the current health transition from infectious diseases of childhood and high maternal mortality to chronic and degenerative disease patterns.

Socially, Jamaican women have achieved an independence that many in developed countries have only recently acquired. Jamaica is one of the few countries in the world where female literacy is higher than

PROJECTED AGE STRUCTURE FOR JAMAICA
1985 AND 2000
(Medium Projection)

Figure 1



male literacy (Samuels, 1987). As a result, women play a vital role in the economic and social life of the nation. The MOH, as an institution, is a reflection of this; many senior-level staff are women. Three forms of marital union are recognized in Jamaica: visiting, common-law, and legalized marriage. Virtually no social stigma is attached to childbearing outside of a permanent union. As a result, fertility is high in the early reproductive age groups.

C. Summary of the Jamaican Public Health System

Jamaica has a parliamentary form of government with a bicameral legislature. The chief executive officer is the Prime Minister, the political leader of the incumbent party. Each cabinet member heads a governmental ministry and is an elected member of parliament. The senior administrative officer for each ministry, the Permanent Secretary, is usually a career civil servant. Permanent secretaries generally serve through successive political administrations and often remain in their respective ministries for a considerable number of years. This is in contrast to many other Caribbean Commonwealth countries where the practice is to rotate permanent secretaries among ministries.

The 15 ministries in the government of Jamaica (GOJ) include both core ministries and line ministries. The core ministries serve other branches of government. They include the Ministry of Finance and Planning (MOFP) and the Ministry of Public Service (MPS). The MOFP oversees the financial management of the government budget and approves the expenditures of the other ministries. The MPS helps to establish uniformity in the recruitment of civil servants and to promote equity in grade and salary levels. The line ministries have a targeted service orientation and include the Ministries of Agriculture, Education, and Construction, and the Ministry of Health.

1. Organization of the MOH

Figure 2 is an organizational chart of the Ministry of Health (MOH). The senior medical officer is the Chief Medical Officer. The Minister of Health, a physician, is an elected member of Parliament as are the two junior ministers, the Minister of State and the Parliamentary Secretary.

2. Policies and goals of the MOH

The MOH is charged with ensuring equitable access to "at least a basic level of health care" by all Jamaicans (GOJ, MOH, Primary Health Care, 1978). The MOH has done this by establishing government-subsidized health centers and hospitals throughout the island (Figure 3). The great majority of Jamaica's population live within a few miles of a government health facility. Although such areas as the Blue Mountain Range and the Cockpit Country present obstacles of topography, the major restrictions to access to care in

Figure 2
Organizational Chart of the Ministry of Health

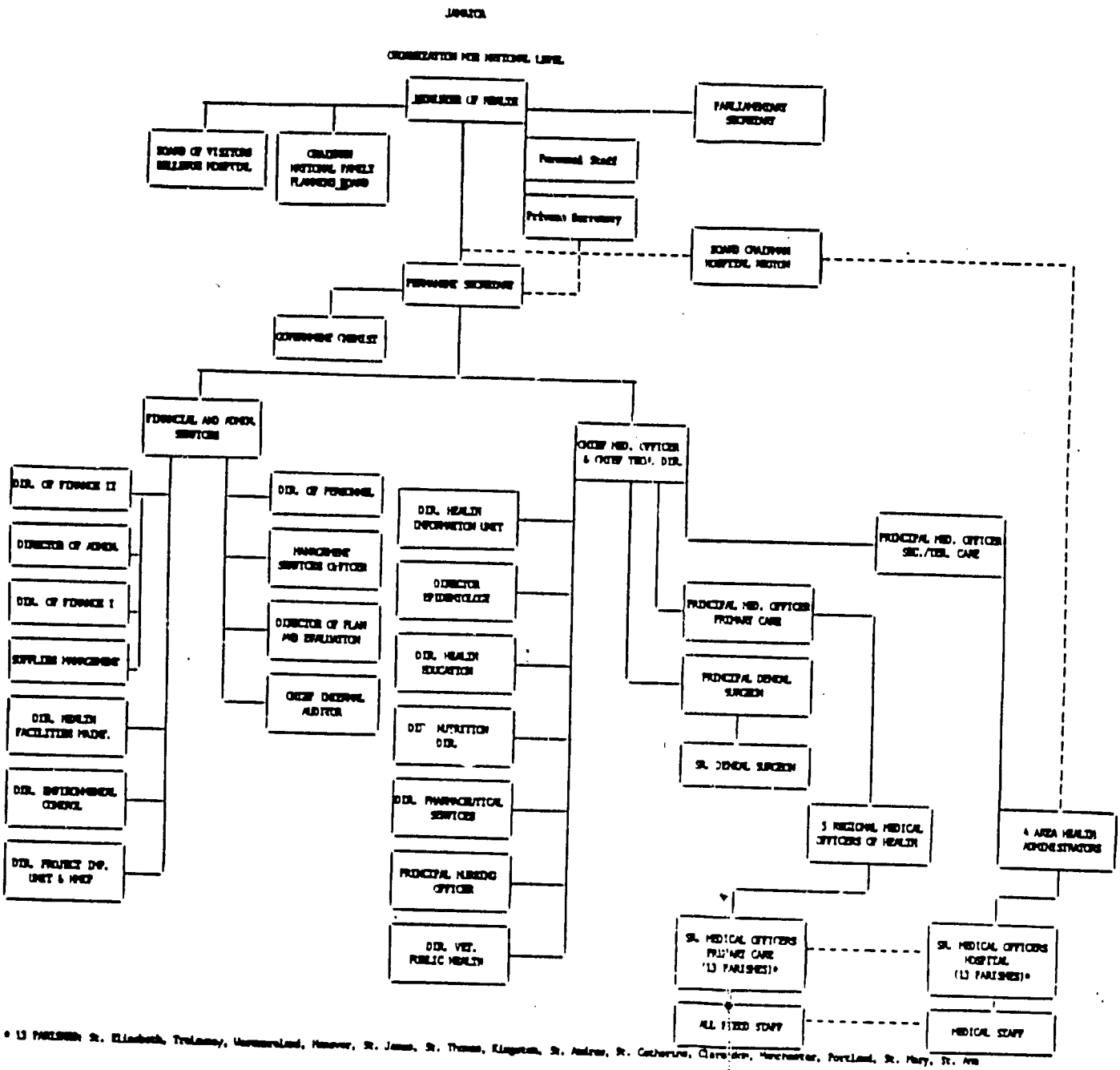
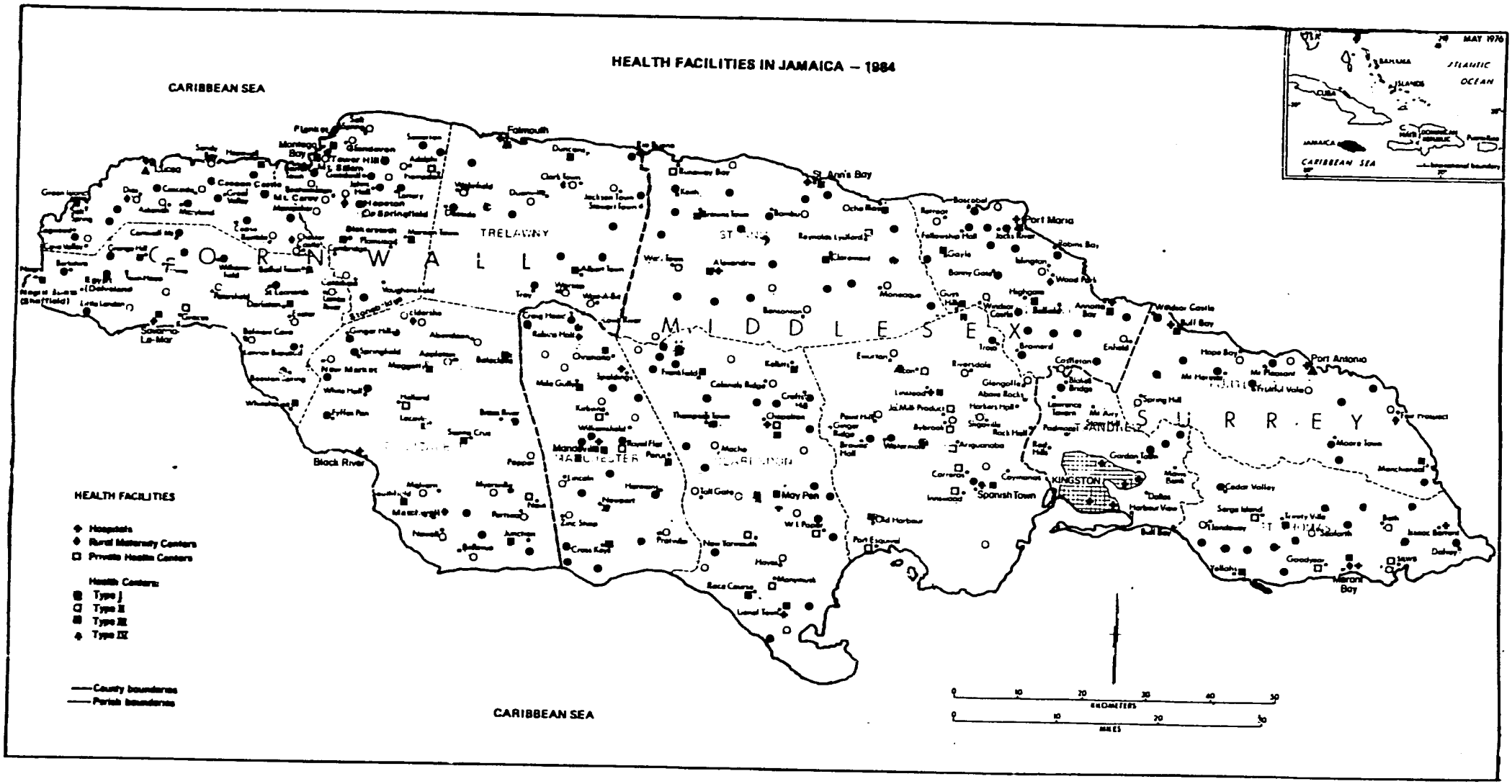


Figure 3
Locations of Public Hospitals and Health Centers: Jamaica, 1984



Jamaica relate to the management, staffing, and supply of existing facilities.

MOH policy pronouncements recognize a partnership between public and private care. Nevertheless, most health care -- particularly hospital (secondary and tertiary) care -- in Jamaica is delivered free by the government. The MOH therefore has the added role of monitoring the standards of health care delivered by the government.

Priorities of the MOH include the following three activities.

a. Exploring health financing alternatives

Making financing alternatives a priority has evolved as a response to the ever-increasing costs of providing health care, particularly secondary and tertiary care (GOJ, MOH, Ministry of Health Policy, 1984). In practical terms this means that the MOH is trying to reduce its direct role in the provision of curative care while not abrogating its role of ensuring equal access to care to all Jamaicans.

b. Increasing and improving family planning services

Increasing the quantity and quality of family planning services provided through government facilities is a second priority. A stated goal of the GOJ is to have a population that does not exceed 3 million by the year 2000.

c. Increasing staff competence

The third priority of the MOH is to raise the level of competence of management and support staff to that of the technical specialists in the Ministry (GOJ, MOH, Ministry of Health Policy, 1984). Efforts include a variety of activities in human resource management and management information systems as well as structural changes involving cost accounting by service activity, integration of PHC and secondary care administration, and decentralization of decision-making to the operational level.

3. MOH service provision

The MOH operates two parallel health care systems: a hospital network and a primary health care (PHC) network, each with its own regions. The hospital network has ten regions; the PHC network is based upon the 13 parishes in Jamaica.

The hospital system is composed of a network of secondary care hospitals, comprising approximately 7,000 beds and operated along patterns established during British colonial rule. The hospitals vary in the level of care provided and include a few tertiary hospitals, including maternity and psychiatric facilities (Appendix

I). The University Hospital at the University of the West Indies (UWI) is technically a public facility but has far more autonomy in setting policy and in managing operations than any public hospital. Moreover, its quality is perceived as possibly higher than that of any other Jamaican hospital.

The PHC network is composed of 374 health centers (including five new polyclinics) located throughout the island (Appendix II). These centers, classified as Types I through V, offer preventive, promotive, and primary curative care. Staff and services vary by type of facility but generally do not include physicians.

D. Private Sector Health Care in Jamaica

1. Private ambulatory and hospital care

The private health sector is comprised of private physicians who work out of their own offices and clinics and private hospitals. There are about 1200 physicians and interns in Jamaica. A 1983 survey found that about two-thirds of them were exclusively in private practice (Rawlins and Segree, 1983). In addition, about 60% of the 350-400 doctors employed by the MOH have private afternoon practices. Private hospital care comprises about 250-300 beds. Only 6 private hospitals operate on the island. There also appears to have been little growth in private hospital care in recent years.

2. Private financing arrangements

a. Health maintenance organizations

A health maintenance organization (HMO) established by Life of Jamaica in 1985 currently has about 5,000 members, and is growing rapidly. Although the company enrolls employees only in groups of five or more, it plans to expand into even smaller companies and eventually to individual enrollees. The HMO now operates at a loss, but estimates it can break even at about 15,000 members. Fees are $55 per month for the employee and an additional $100 per month for an entire family. Rather than hiring a physician staff, the HMO contracts with individual doctors for treatment of members.

b. Health insurance

About 12-15% of Jamaica's population have health insurance coverage, most of which is used to pay for private physician care outside of hospitals. The approximately 350,000 Jamaicans covered by health insurance are estimated by Life of Jamaica to represent about one-half of the private fee-for-service market. Most health insurance companies charge monthly premiums in the range of J$30-$50. The companies retain about 25% of the premiums for overhead, in contrast to the U.S. where approximately 90% of premiums are paid out to claims. Small scale and the resulting high overhead costs in the

relatively modest Jamaican market are the reasons given for the discrepancy.

E. Macroeconomic Environment and Public Health

The Jamaican macroeconomic situation has deteriorated seriously in the last decade. Major foreign exchange earnings from bauxite, alumina, and tourism all declined during this period. As a result the real per capita gross domestic product (GDP) dropped by 25% from 1974 to the present (Abel-Smith, 1987). Nearly one-quarter of the work force is officially classified as unemployed.

The current GOJ has been involved in a long-term shift to less government involvement in the economy and more reliance on the private sector. As a result, the government budget as a percentage of the GDP has been falling since the beginning of the decade (Table 1). Total government expenditures in 1986-87 were projected to be 42% of the GDP, but this reflects the high debt service of the government. Net of amortization and interest of both foreign and domestic debt, the government budget is only 24% of the GDP. Total recurrent expenditure is projected at 28% of the GDP, 11% for interest payments and 17% for other activities.

Table 1. Government expenditures as percentage of GDP: Jamaica, 1980-86

Expenditure	1980/81	81/82	82/83	83/84	84/85	85/86
Total	50.3	48.5	47.2	48.7	37.4	37.7
Recurrent	32.9	32.2	32.6	35.0	28.8	27.1

Source: Social and Economic Survey of Jamaica

Despite increasingly difficult times for the nation, the MOH has received increasing dollar support from the government. The MOH budget for recurrent costs has grown as a percentage of the government budget over the last three years from 7.8% to 9.2% (Table 2), reflecting an increasing commitment to health; the MOH has stated that the 9.2% is expected to remain stable for the next few years (Project Hope, 1985). The MOH receives much less of the government capital budget, perhaps because of foreign donor assistance in capital projects.

Still, real spending by the MOH has fallen significantly during the decade, and has only recently begun to increase (Table 3). The smaller real budget reflects the shrinking role of the national government in the economy and a high rate of inflation. Per capita spending has declined as well, with public sector spending falling by about one-third in real (adjusting for inflation) terms.

Table 2. Ministry of Health budget allocation as a percentage of total national budget: Jamaica, 1984-87

Year	Capital	Recurrent	Total
1984/85	1.4	7.8	6.3
1985/86	0.7	8.4	6.1
1986/87	2.0	9.2	6.5

Source: Social and Economic Survey of Jamaica

Table 3. Ministry of Health expenditures: Jamaica, 1981-86

Expenditure	81/82	82/83	83/84	84/85	85/86
Total (millions)	186.5	200.5	203.4	235.9	290.8
GDP deflator	1.08	1.19	1.38	1.88	2.33
Total (real)	172.38	168.71	147.83	125.79	124.8
Per capita	84.53	89.2	90.7	102.5	125.8
Per capita (real)	78.13	75.06	65.92	54.66	53.99

Source: Social and Economic Survey of Jamaica

II. HEALTH AND NUTRITION STATUS

This section outlines Jamaica's health problems in terms of mortality, morbidity, and measurable conditions such as malnutrition that predispose an individual to illness or death. Some of the health problems are organized by the principal stages of life: infancy and childhood, and adulthood. Other issues discussed include communicable disease control and water quality.

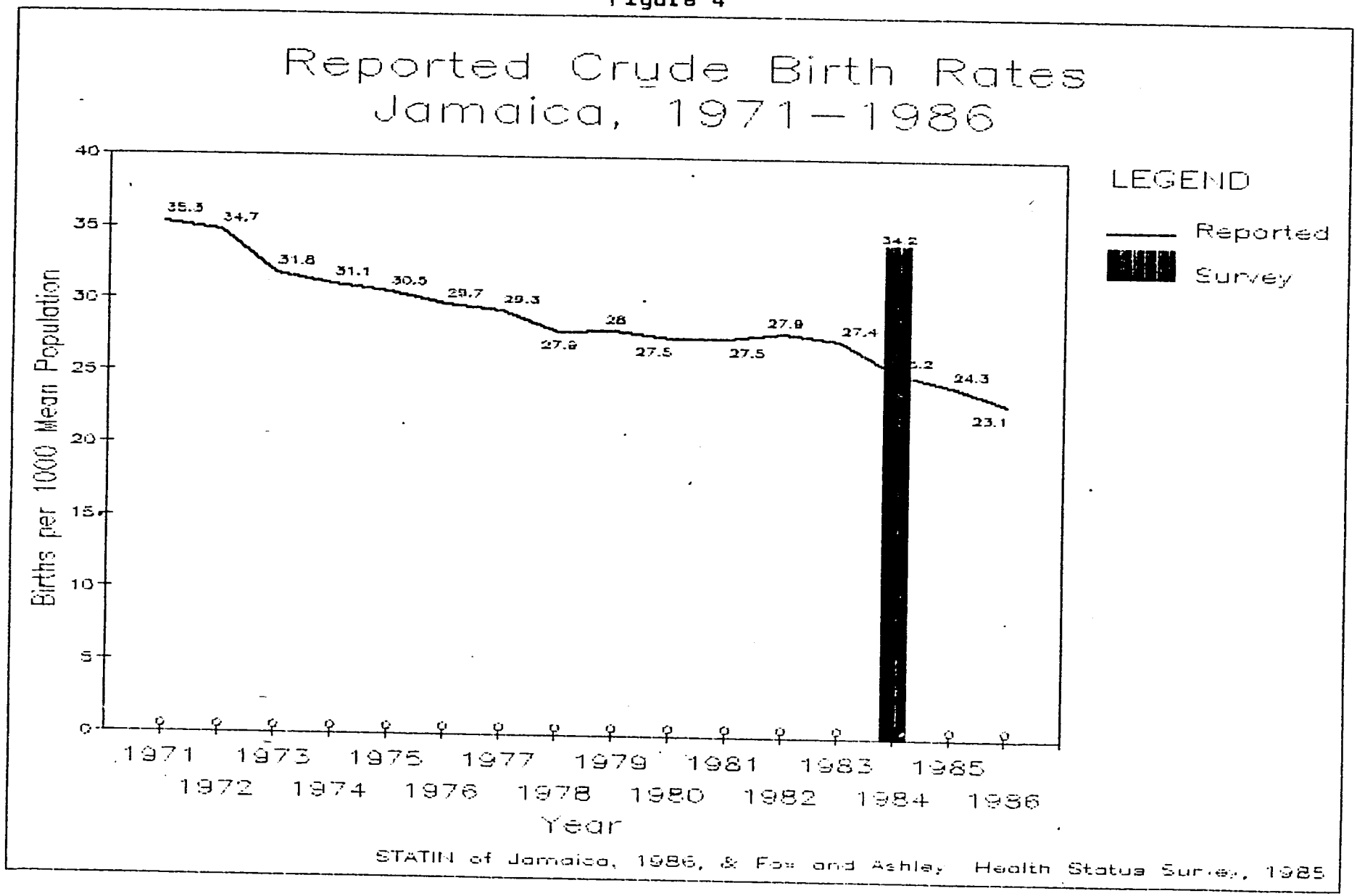
A. Reporting of Vital Statistics

An examination of morbidity and mortality trends for Jamaica is hampered by the absence of timely national vital statistics. The Registrar General's Department in the Ministry of Construction is responsible for the collection, analysis, and dissemination of information pertaining to vital events (births, deaths, marriages, and divorces) for Jamaica. A 1984 report of births for 1977-81 is the latest official publication of the Registrar General's Department. The latest official analysis of mortality data was done for deaths occurring in 1978. The Registrar General's Department does, however, provide more recent provisional information on fertility and mortality upon request, and the assessment team was able to review so-me of these data.

The consistent underreporting of births, infant deaths, and deaths from injuries has probably contributed to significant underestimation of fertility and infant mortality, and of the effect of injuries on the health of high-risk groups -- most notably adolescents and young adult men. Special studies and surveys have verified the underregistration of many vital events. For example, a study in St. James, Trelawny, and Hanover parishes in 1980 found that 69% of the infant deaths that occurred in the three parishes that year were not registered (Desai et al., 1983). The following year in Clarendon, researchers found 8% of births, 14% of adult deaths, 33% of infant deaths,- and 54% of perinatal deaths unregistered (Gordon, 1981). More recently, a national household survey conducted in 1985 estimated that as many as 15% of births and 36-53% of infant deaths had not been registered (Fox and Ashley, 1985).

Underregistration of deaths from injuries has been documented and occurs frequently due to the legal requirement for a coroner's inquiry when such a death occurs (Taylor, 1987). For example, police statistics for 1981 report 405 homicides and 257 traffic fatalities. In that same year only 208 deaths from all injuries and accidents were reported by the Registrar General's Department (GOJ, MOH, Annual Report of the Chief Medical Officer, 1986).

Figure 4


Reported Crude Birth Rates
Jamaica, 1971—1986
Births per 1000 Mean Population
40
35
30
25
20
15
10
5
0
35.5
34.7
31.8
31.1
30.5
29.7
29.3
27.8
28
27.5
27.5
27.9
27.4
34.2
24.3
23.1
1971
1972
1973
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
Year
LEGEND
Reported
Survey
STATIN of Jamaica, 1986, & Fox and Ashley Health Status Survey, 1985

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B. Birth and Death Rates

Figure 4 shows the reported crude birth rates (births per 1000 population) from 1971 to 1986. According to data from the Registrar General's Department which is not adjusted for underregistration, the birth rate decreased over that period. However, an estimate of the crude birth rate in 1984, derived from a national household survey, shows the rate at 34.2 per 1000, nearly the same as the reported rate for 1972. Crude death rates (Figure 5) decreased in a similar pattern from 8.5 per 1000 in 1971 to 5.7 per 1000 in 1986. To what degree this decrease may be an artifact of underregistered deaths is unknown.

C. Causes of Death

The leading causes of death in Jamaica in 1981 were cerebrovascular disease, heart disease, cancer, hypertensive disease, and diabetes (Table 4). The category "accidents and adverse effects" is ranked ninth. If the official count were supplemented by police statistics for that year, however, this category would have been the fifth leading cause of death.

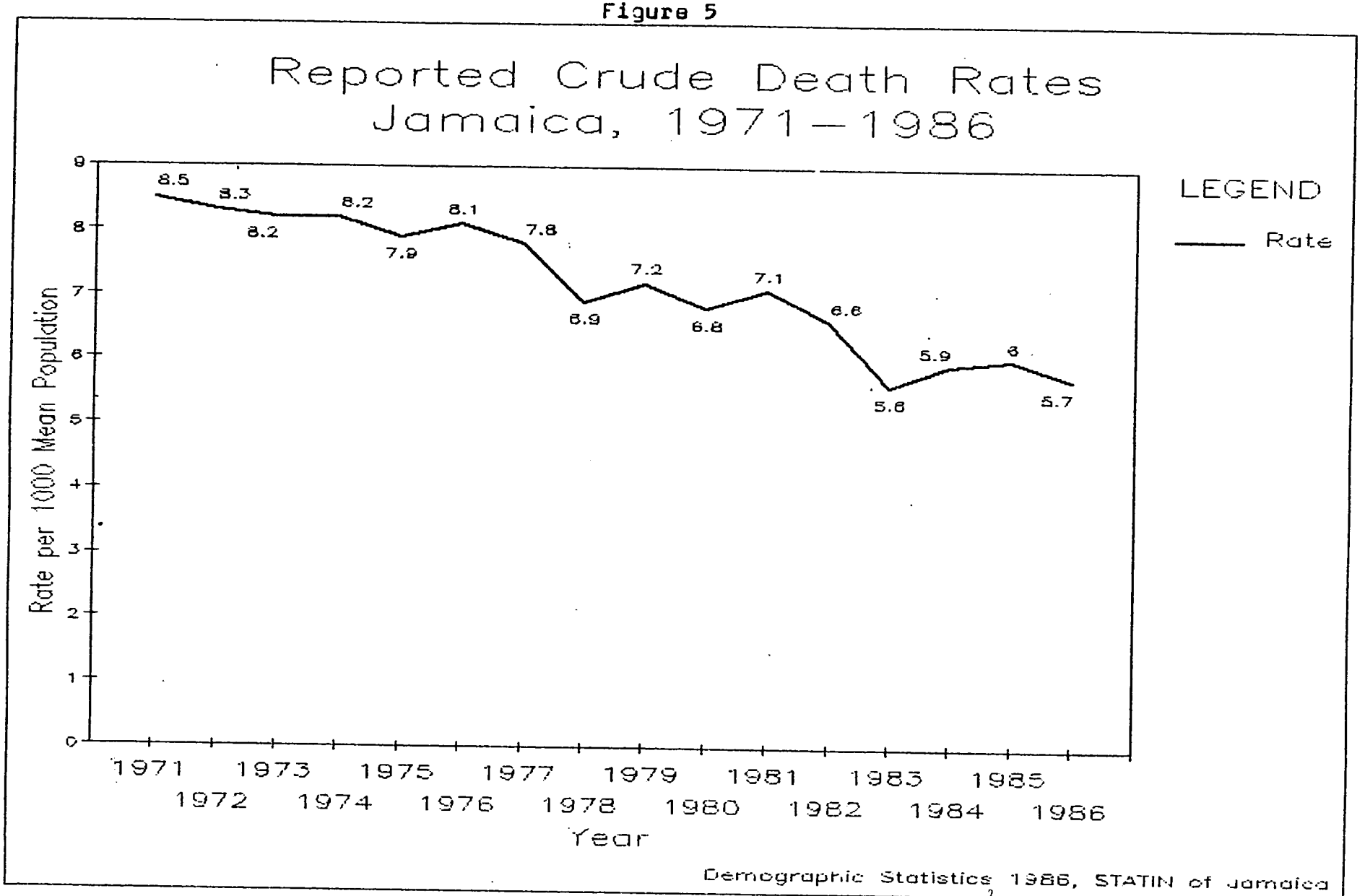
D. Years of Potential Life Lost

Since most deaths occur in older persons, ranking causes of death as in Table 4 tends to be influenced by the underlying disease processes that occur in this age group. A Years of Potential Life Lost (YPLL) analysis, however, takes into account the notion of premature mortality so that deaths occurring in young people are weighed more heavily than those occurring in older people (US Public Health Service, CDC, 1986). YPLL is the number of years of life lost as a result of a specific cause of death for a person who dies before a predetermined end point (e.g., age 65). For example, if a 20-year-old person dies in an accident, the YPLL is 45 years. The sum of all the individual YPLLs for accidents would be the total YPLL attributable to accidents for a given year. The YPLL for other causes of death is derived in a similar manner.

From a group of 13 selected causes of death, the estimated total YPLL before age 65 in Jamaica in 1981 was approximately 104,000 years (Figure 6) (Scott, 1987). Children who died under the age of 2 that year contributed about 43,000 years of potential life lost, or 41% of the total -- a low estimate considering documented underregistration of infant deaths. Children who died between ages 2 and 14 contributed another 14,000 years, or 14% of the total.

When the total YPLL is distributed into 13 cause-specific groups, (Figure 7), the leading cause of YPLL is non-respiratory infectious

Figure 5


Reported Crude Death Rates
Jamaica, 1971 – 1986
Rate per 1000 Mean Population
0
1
2
3
4
5
6
7
8
9
8.5
8.3
8.2
8.2
7.9
8.1
7.8
6.9
7.2
6.8
7.1
6.6
5.6
5.9
6
5.7
1971
1972
1973
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
Year
LEGEND
Rate
Demographic Statistics 1986, STATIN of Jamaica

14

Table 4

TABLE

NUMBER AND RATES FOR LEADING CAUSES OF DEATH IN 1981
WITH COMPARATIVE RATES FOR 1979-81

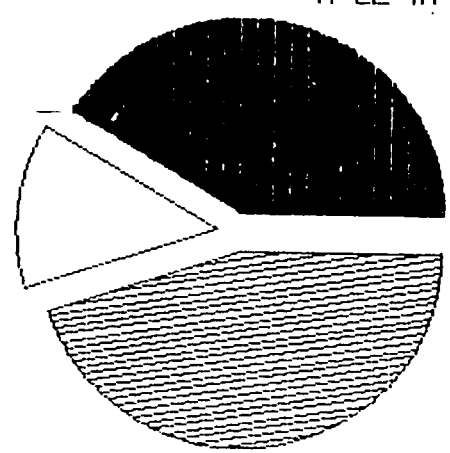
RANK 1981	CAUSE	NUMBER (1)	RATE (2)		
		12,578	1981	1980	1979
	ALL CAUSES	12,578	581.7	559.9	580.8
1.	Cerebrovascular Disease	1,967	91.0	85.1	87.4
2.	Heart Disease	1,933	89.4	84.7	86.2
3.	Malignant Neoplasms	1,558	76.2	69.5	81.6
4.	Hypertensive Disease	762	35.2	29.9	33.7
5.	Diabetes Mellitus	484	22.4	22.8	33.8
6.	Pneumonia and Influenza	400	18.5	17.5	20.7
7.	Infectious Intestinal Disease	365	16.9	18.1	17.9
8.	Nephritis, Nephrotic Syndrome and Nephrosis	220	10.2	9.0	9.8
9.	Accidents and Adverse Effects	208	9.6	13.4	12.7
10.	Certain conditions originating in the perinatal period.	188	8.7	10.3	17.5
11.	Nutritional Deficiencies	183	8.5	6.4	7.5
12.	Bronchitis, Emphysema and Athsma	175	8.1	8.0	9.6
13.	Ulcer of the Stomach and Duodeneum	120	5.5	6.2	6.9
14.	Chronic Liver Disease and Cirrhosis	102	4.7	4.9	5.4
15.	Athero Sclerosis	98	4.5	5.3	5.0
	All other causes	3,815	176.3	168.8	144.1

(1) Source: Registrar General's Department, Jamaica

(2) Rates expressed per 100,000 population based on Registrar General's Tabulations of deaths by cause and by year of occurrence.

Figure 6

Estim. Years of Potential Life Lost (YPLL) Before Age 65, By Age Jamaica, 1981

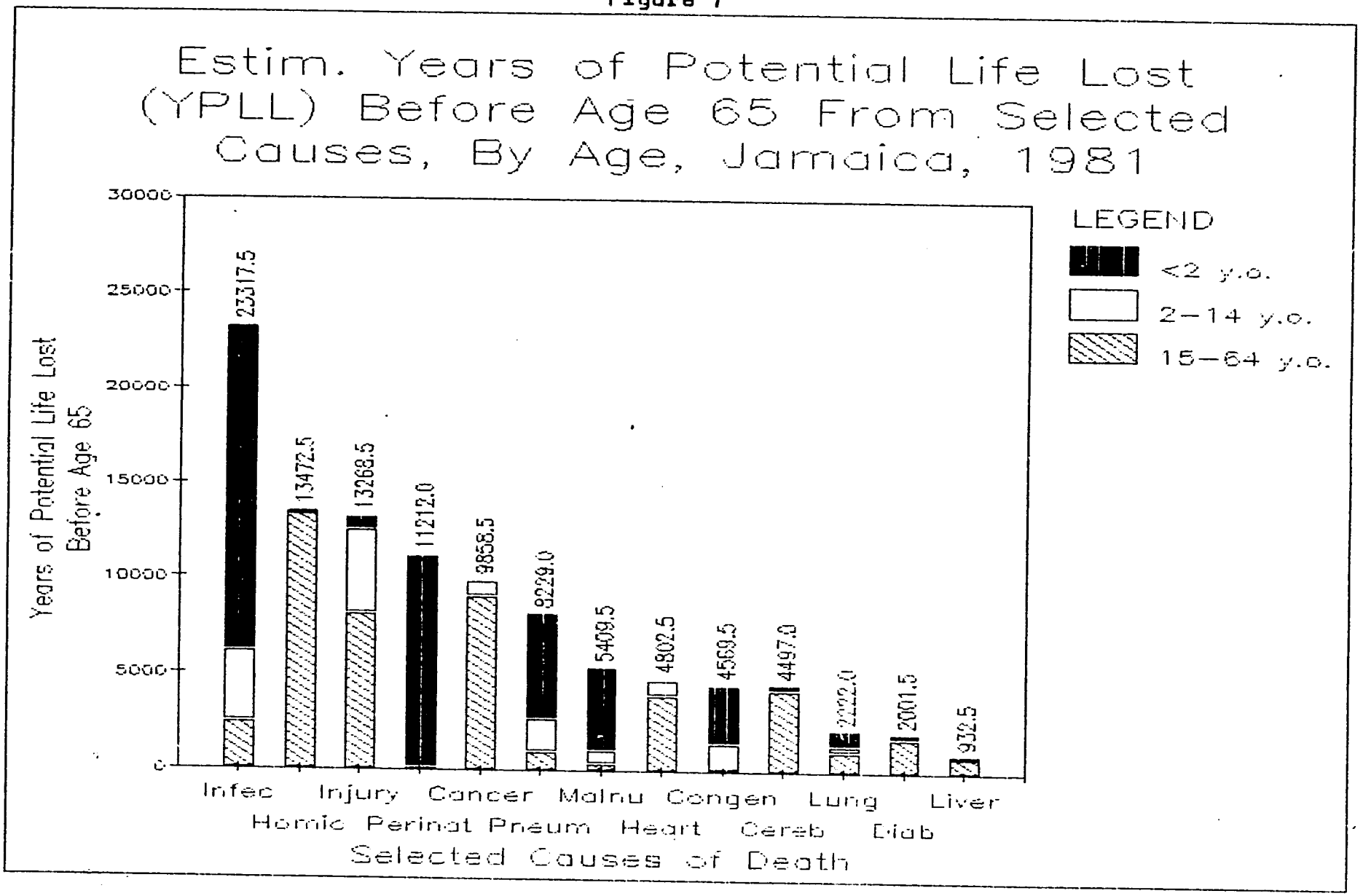


YPLL From Selected Causes of Mortality = 103792.5 yrs

Data from Health Info. Unit, MOH

16

Figure 7


Estim. Years of Potential Life Lost (YPLL) Before Age 65 From Selected Causes, By Age, Jamaica, 1981
Years of Potential Life Lost Before Age 65
30000
25000
20000
15000
10000
5000
0
23317.5
13472.5
13268.5
11212.0
9858.5
8229.0
5409.5
4802.5
4569.5
4497.0
2222.0
2001.5
932.5
Infec
Injury
Cancer
Malnu
Congen
Lung
Liver
Homic
Perinat
Pneum
Heart
Cereb
Diab
Selected Causes of Death
LEGEND
<2 y.o.
2-14 y.o.
15-64 y.o.

diseases (INFEC). Most of these deaths were from gastrointestinal infections. Within this category, children under age 2 and children aged 2-14 are associated with 75% and 15% of the YPLL, respectively. Deaths from respiratory infections (PNEUM) are the sixth leading cause of YPLL in Jamaica, with children under age 15 contributing the majority of YPLL. These two infectious disease categories were responsible for 30% of the YPLL in Jamaica in 1981.

Intentional and unintentional injuries (HOMIC & INJURY) are the second and third leading causes of YPLL. (YPLL was estimated from Jamaica Police Department statistics.) These are deaths primarily from homicide and auto accidents. In the U.S., intentional and unintentional injury rank fourth and first as causes of YPLL, respectively. In Jamaica these two groups represent about 26% of YPLL.

Deaths due to prematurity (PERINAT) and congenital anomalies (CONGEN) in infants and children are responsible for 16% of YPLL. Malnutrition is the seventh leading cause; most of these deaths also occur in the younger age groups. Malnutrition is often an underlying cause of gastrointestinal illness.

Deaths from chronic diseases (cancer, heart disease, chronic lung disease, diabetes, and liver disease) complete the remaining top 13 categories. The majority of these deaths occur in adults and as a group comprise 25% of YPLL.

Figure 8 is a summary of YPLL for Jamaica in 1981. Premature deaths from gastrointestinal and respiratory infections, prematurity and congenital anomalies, and malnutrition occur mainly in young children. A similar pattern would emerge in most developing countries. On the other hand, about half of Jamaica's premature deaths are caused by injuries and chronic diseases, which is more characteristic of developed countries.

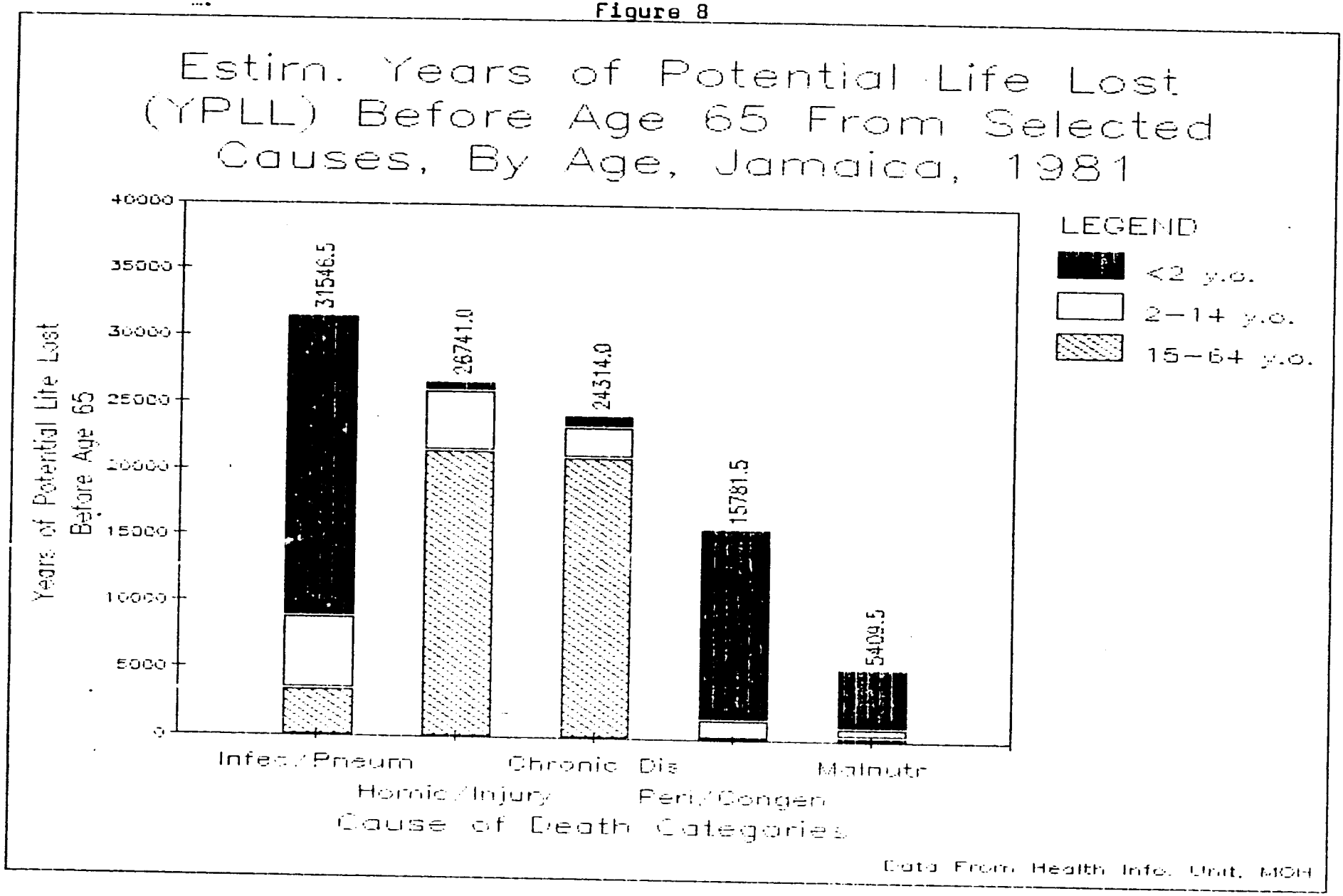
E. Health Problems of Infants and Children

The discussion of health problems of infants and children covers three areas: infant mortality, infant and childhood morbidity, and nutritional status.

1. Infant mortality

Neither the magnitude nor the secular trends in infant mortality have been adequately measured in Jamaica in the past decade. The underregistration of infant deaths imposes limits on the ability to analyze this problem. Official published infant mortality rates for the past few years are very low and are likely inaccurate (Figure 9). The rate for Jamaica for 1984 (13.2/1000 live births) approximates the 1984 rate for the U.S. (10.6). Although the rate varies considerably by geographic area (Figure 10), this variation must be

Figure 8



Data From Health Info. Unit, MOH

Figure 9

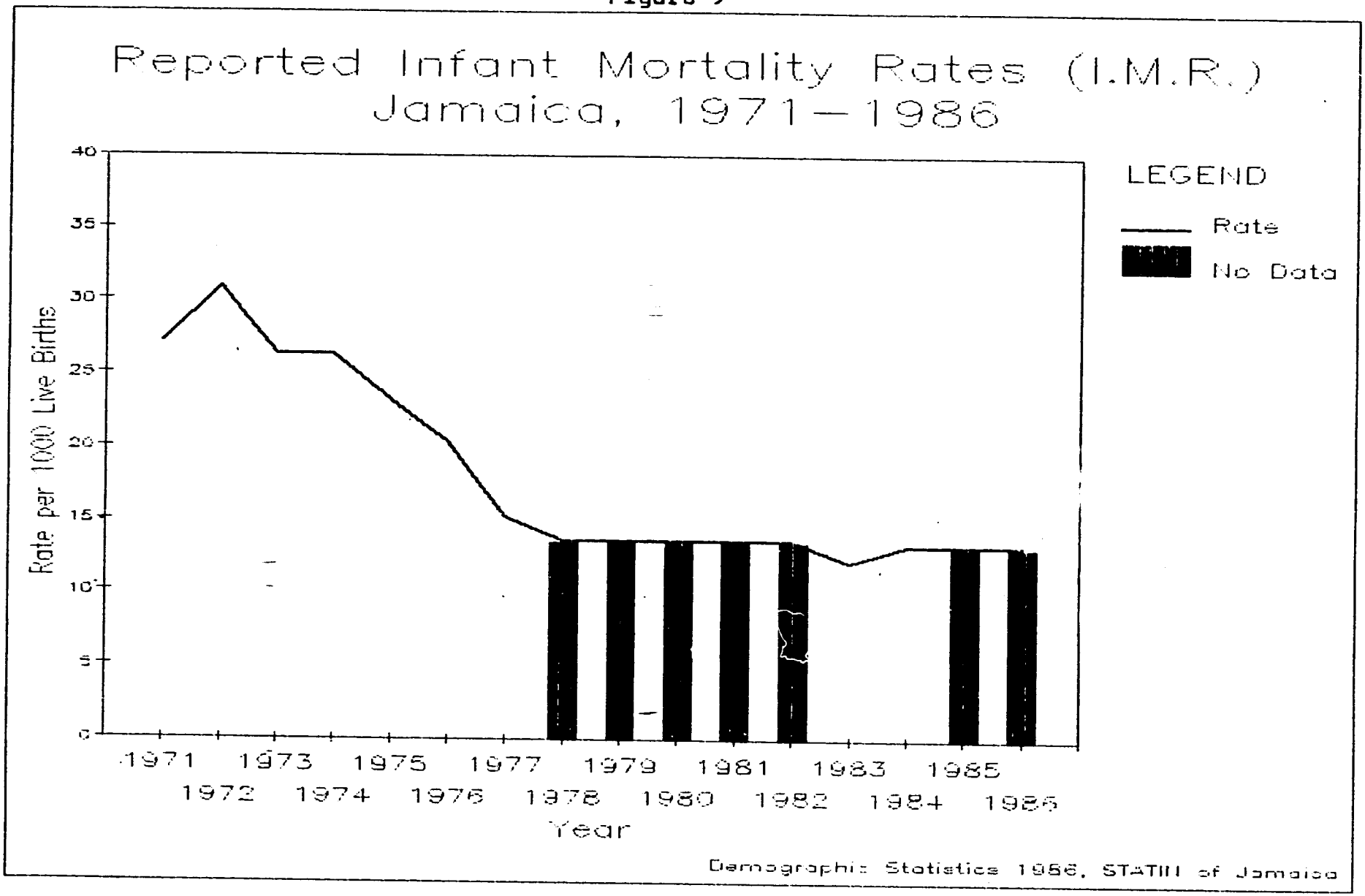
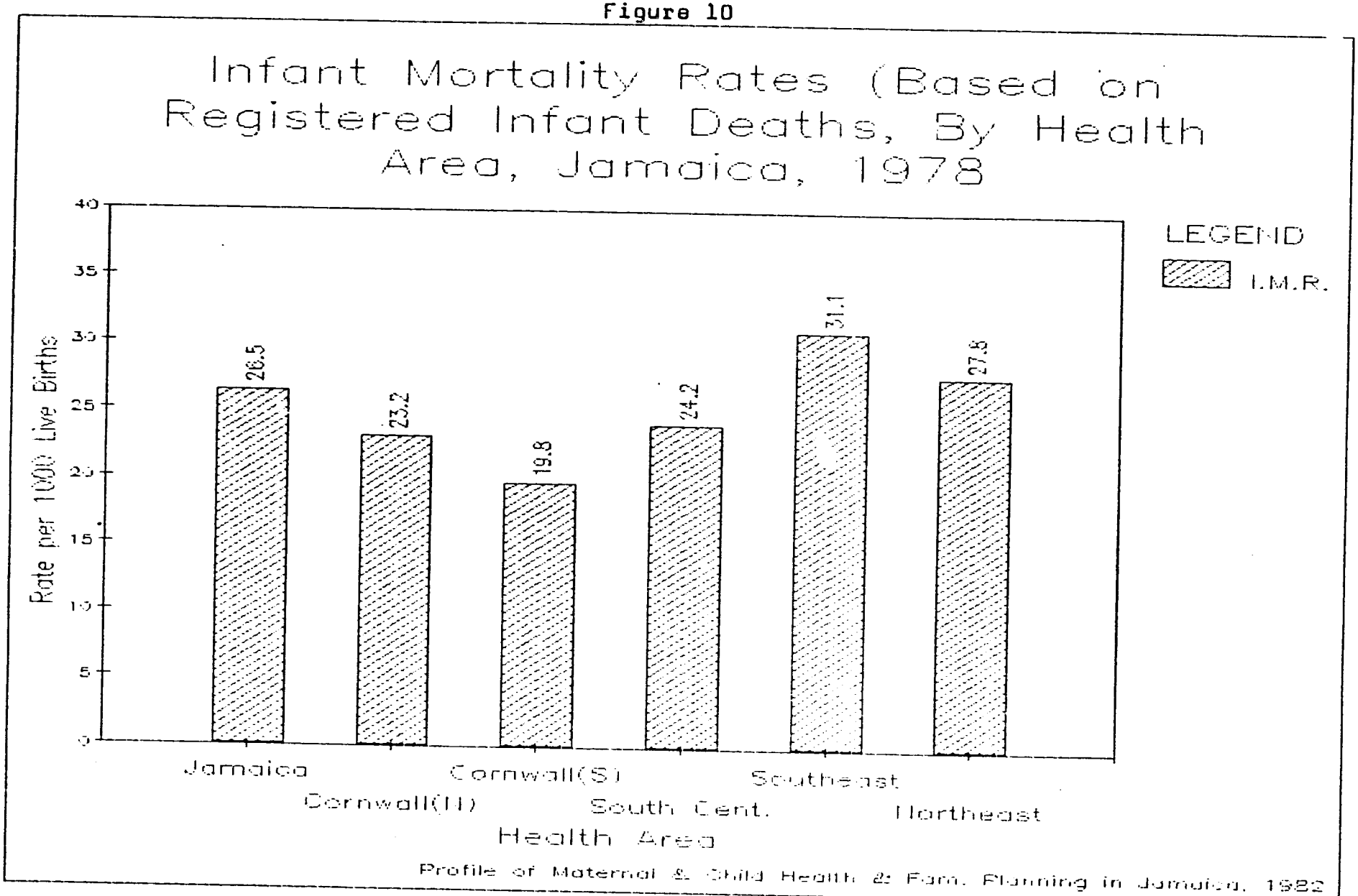

Reported Infant Mortality Rates (I.M.R.)
Jamaica, 1971—1986
Rate per 1000 Live Births
40
35
30
25
20
15
10
5
0
1971
1972
1973
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
Year
LEGEND
Rate
No Data
Demographic Statistics 1986, STATIN of Jamaica

Figure 10



Profile of Maternal & Child Health & Fam. Planning in Jamaica, 1982

interpreted with caution. The possibility of disproportionate underregistration by geographic area would make such comparisons invalid.

The main factors influencing infant survival in the neonatal period (the first 28 days of life) are: birthweight and quality of antenatal and perinatal care. In most populations, birthweight is highly correlated with maternal age and socioeconomic status. The highest percentages of low birthweight babies are typically seen in the youngest and oldest mothers. If fewer babies were born whose birthweight was low, fewer infants would die. This would tend to occur naturally if the proportion of births to teenagers and women over age 35 was reduced. While this is desirable in any population, it is difficult; there have been only modest gains in reducing the percentage of low birthweight babies even in many developed countries.

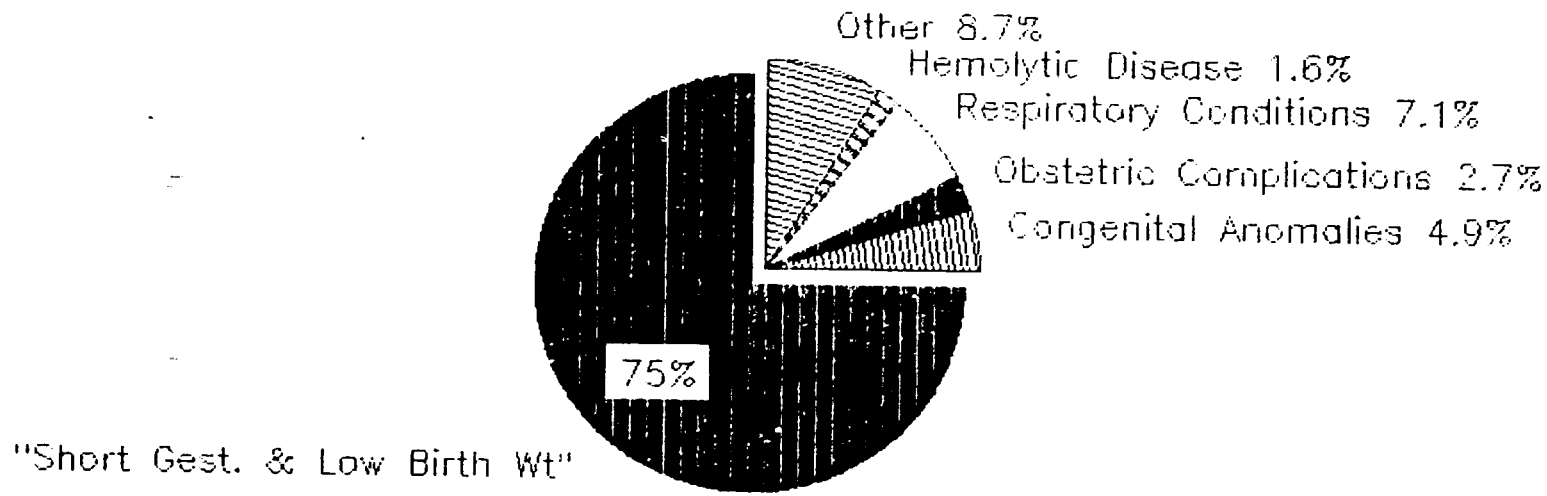
The risk of death for low birthweight babies depends primarily on how the medical care system assesses and manages high-risk pregnancies and how the system is able to care for high-risk infants. In the U.S. the steady decline in neonatal mortality is attributable to improved recognition and referral of high-risk pregnancies and the special care received by these babies during and immediately after delivery. Even an average weight infant may, however, suffer serious complications if elementary standards of medical care are not available at the time of birth.

In Jamaica, Ashley et al. (1985) reviewed neonatal mortality (deaths occurring in the first 28 days of life) at Victoria Jubilee Hospital (a public maternity hospital) in 1982 where 22% of all births in Jamaica and 70% of the births in Kingston occurred. Adolescent mothers and women over age 35 had the highest percentage of low birthweight babies (Appendix III, Figure A-1). The youngest and oldest mothers also had the highest stillbirth ratio (stillbirths/1000 live births) (Appendix III, Figure A-2) and neonatal mortality rates (Appendix III, Figure A-3). Prematurity (short gestation) and low birthweight were the factors associated with 75% of the neonatal deaths (Figure 11). It would be important to know the extent to which the health delivery system was adequately staffed, trained, and equipped to manage these high-risk infants. Although the team was unable to assess the quality and intensity of care these infants received, this issue is under active review in the MOH's ongoing perinatal study.

The ability to evaluate and manage high-risk pregnancies is dependent not only on the quality of hospital care but also on the amount and quality of prenatal care. Figure A-4 (Appendix III) documents the antenatal conditions present in women whose babies died in the neonatal period at Victoria Jubilee Hospital in 1982. Nearly all the conditions listed either are amenable to medical

Figure 11

Reported Causes of Neonatal Death
Victoria Jubilee Hospital
Kingston, Jamaica, 1982



No. = 183

Ashley, et.al.,1985

22

management antenatally or require special care during labor and delivery. Antenatal services aimed at reducing maternal and infant mortality include nutrition counseling and weight monitoring, monitoring of maternal blood pressure, and complete laboratory assessments for maternal anemia and the presence of curable infections such as syphilis, gonorrhea, and chlamydia, and other infections such as hepatitis B, herpes, and human immunodeficiency virus.

If the experience of women delivering at Victoria Jubilee Hospital is typical, however, women in Jamaica tend not to begin antenatal care until late in pregnancy (Appendix III, Figure A-5). There are many reasons for this: They may not recognize the importance of prenatal care; they may perceive barriers to care (inconvenient clinic hours or lack of transportation to a facility); or they may assume poor quality of care in government facilities. It is essential that the reasons for this pattern be understood before implementing any plan to improve the timing and number of antenatal visits.

2. Infant and childhood morbidity

The same problems associated with the leading causes of YPLL in infants and children in Jamaica are also the leading causes of morbidity in these age groups. The main reasons for hospitalization in infants (under age 1) are gastrointestinal illnesses, perinatal conditions (e.g., prematurity), and respiratory illnesses (Figure 12) (GOJ, MOH, Profile of Maternal and Child Health and Family Planning, 1985, 1987). Malnutrition and injuries are also important causes. For children (ages 1-4) the main reasons for hospitalization are respiratory illnesses, injuries, and gastrointestinal illnesses (Figure 13) (GOJ, MOH, Profile of Maternal and Child Health and Family Planning, 1985, 1987). Malnutrition is another leading cause of hospitalization in this age group.

To estimate the relative cost of hospitalization and the severity of illness in children the assessment team reviewed data from the Bustamante Hospital for Children (GOJ, MOH, Report on the Morbidity Pattern of Inpatients, 1979, 1981). This hospital cares for children in the Kingston St. Andrew (KSA) metropolitan area and may not be representative of all children in the country.

The relative cost (resources used) is estimated by the total number of days of care for each cause of morbidity. Injuries required the most days of care (Appendix III, Figure A-6); respiratory and gastrointestinal infections also required a substantial number of days of care, followed by malnutrition.

The severity of illness can be estimated by the average length of stay required for each cause of morbidity. It is assumed in such an

Figure 12

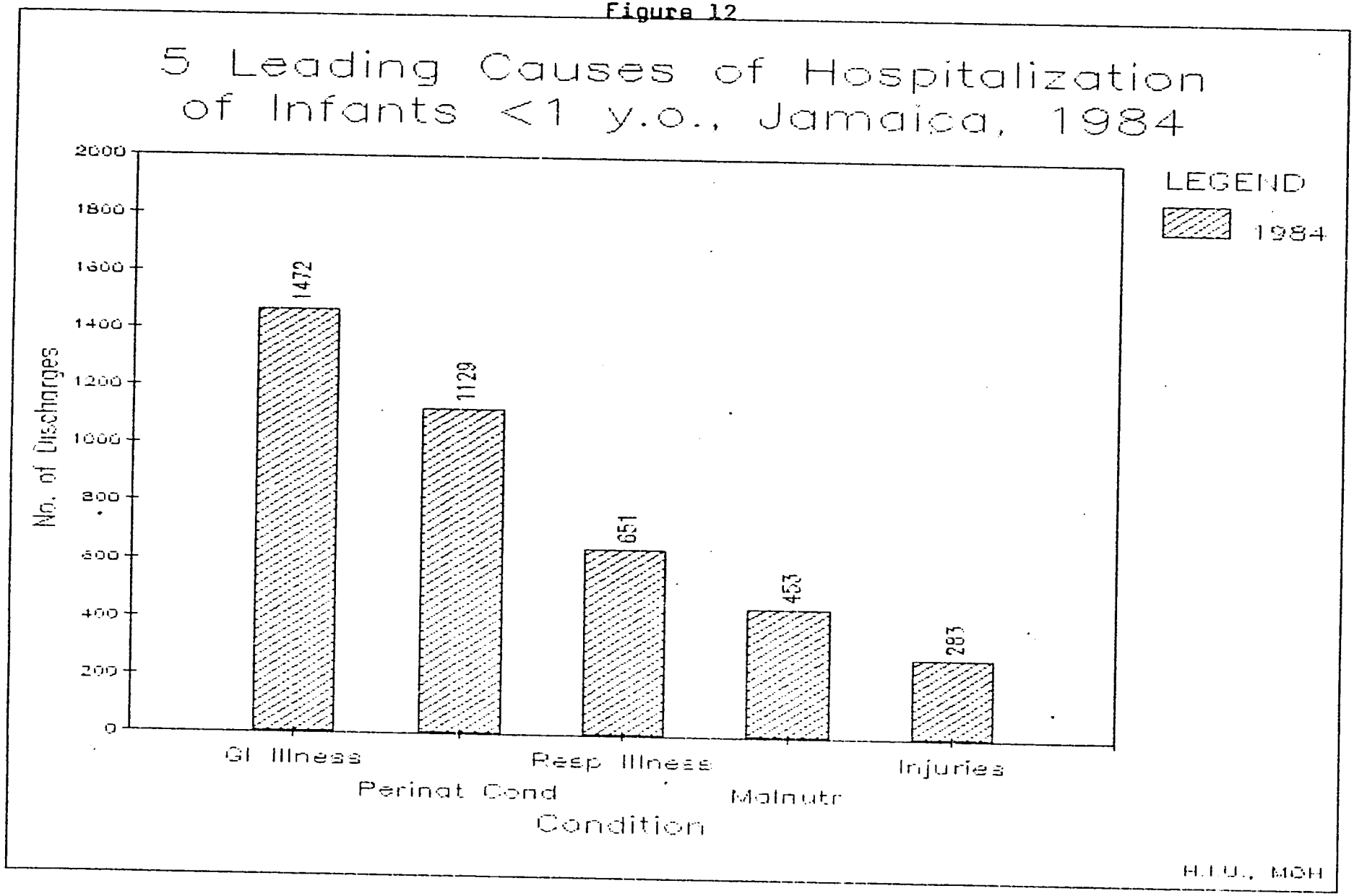
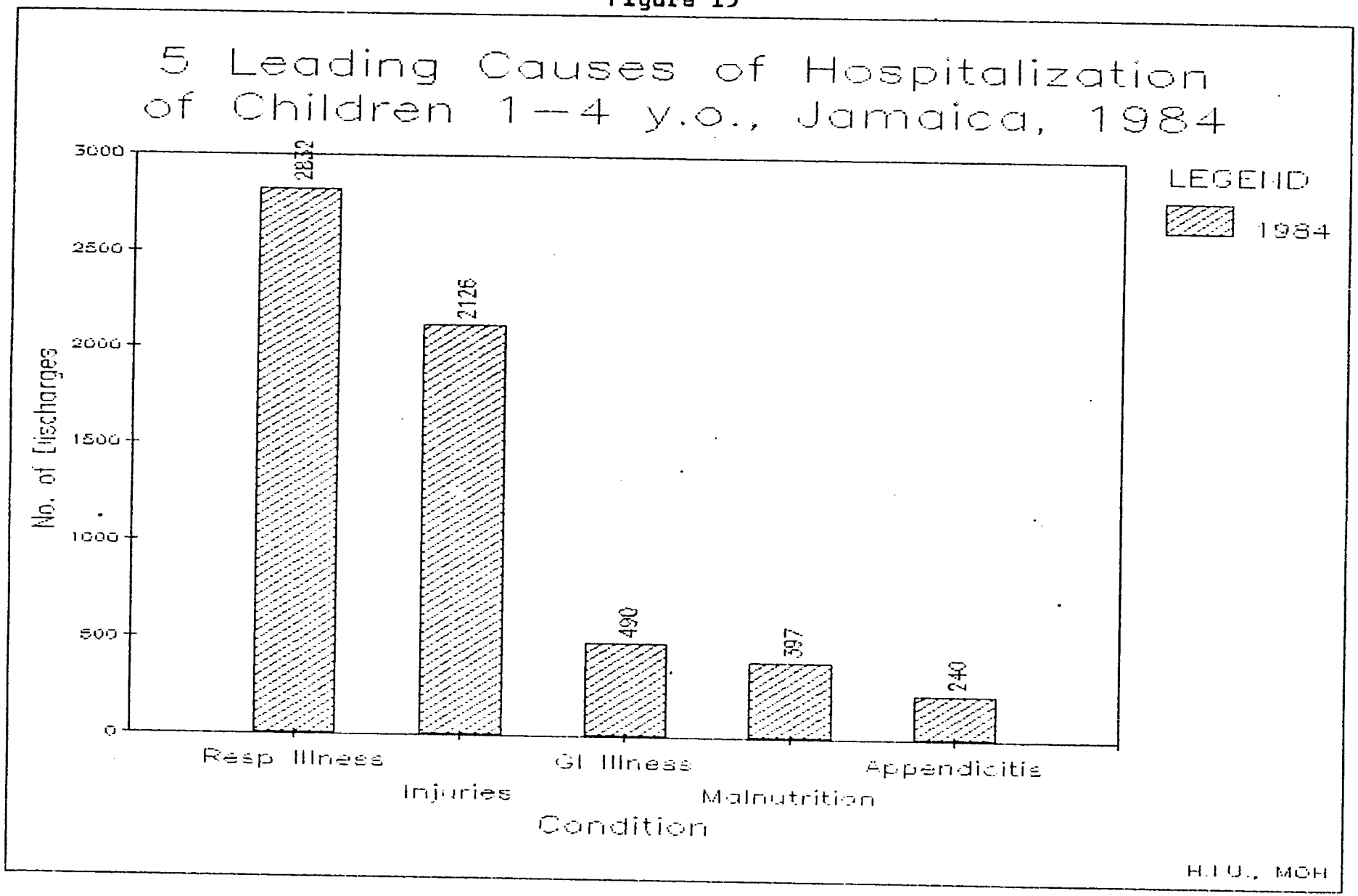

5 Leading Causes of Hospitalization of Infants <1 y.o., Jamaica, 1984
No. of Discharges
2000
1800
1600
1400
1200
1000
800
600
400
200
0
1472
1129
651
453
283
GI Illness
Perinat Cond
Resp Illness
Malnutr
Injuries
Condition
LEGEND
1984
H.I.U., MOH

Figure 13


5 Leading Causes of Hospitalization of Children 1—4 y.o., Jamaica, 1984
No. of Discharges
3000
2500
2000
1500
1000
500
0
2832
2126
490
397
240
Resp Illness
Injuries
GI Illness
Malnutrition
Appendicitis
Condition
LEGEND
1984
H.I.U., MOH

estimate that the condition of the child improved with hospitalization and that the child did not ultimately die as a result of the disease or injury. Malnutrition had the highest average length of stay, twice as long as the next leading cause (Appendix III, Figure A-7).

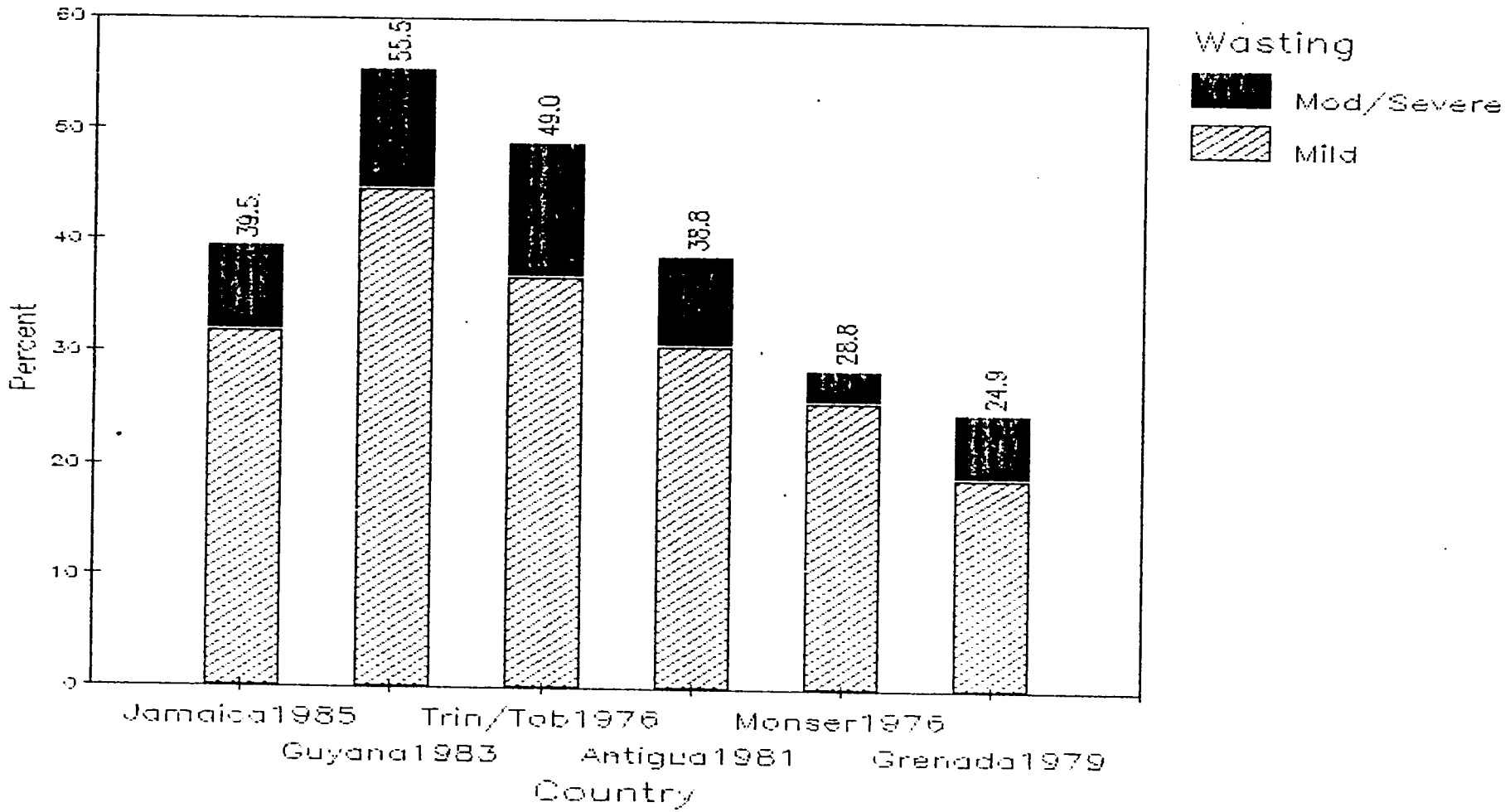
3. Nutritional status

A commonly used indicator of a community's health status is the proportion of children falling below a certain level of standard indices for weight and height. Terms in common use that describe nutritional deficits are: wasting and stunting. Wasting describes a deficit in weight usually in reference to a child's height. Stunting describes a deficit in height usually in reference to a child's age. Wasting indicates a deficit in body mass compared with the amount expected for a child of the same height, and is caused by a failure to gain weight or from actual weight loss. Infection is often a precipitating factor. Wasting may develop over a short period of time and with proper attention may be reversed quickly. Stunting, on the other hand, means a slowing of skeletal growth and is usually associated with poor economic conditions, chronic or repeated infections, and inadequate food. It often takes several years for the accumulated consequences of growth retardation to be manifested.

The nutritional status of children in Jamaica is better than in some Caribbean countries and worse than in others (Figure 14). Recent evidence suggests, however, that nutritional status in some parts of Jamaica may in fact be deteriorating. For example, both the number and the rate of hospitalizations for malnutrition-related illnesses increased between 1978 and 1986 (Figure 15).

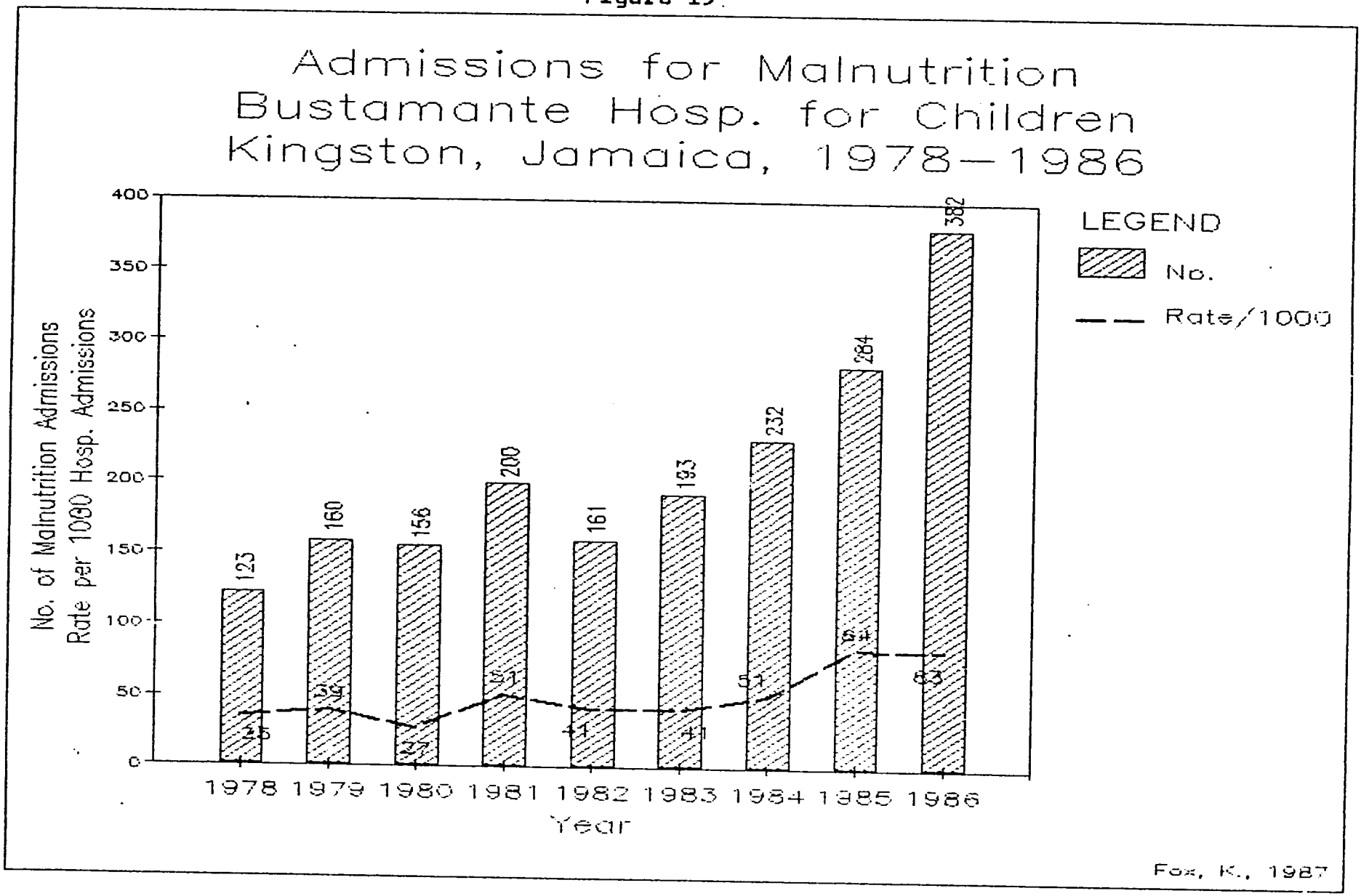
The MOH completed a baseline national survey of the nutritional status of children under age 10 in 1985 (Fox and Ashley, 1985). Measurements were obtained to assess both wasting and stunting in a representative household sample of Jamaican children. Moderate to severe wasting was detected in 5.1% of the children measured. Also noted were considerable regional differences in childhood wasting (Appendix III, Figure A-8). The two parishes comprising the southern part of Cornwall (Westmoreland and St. Elizabeth) and the three parishes comprising the South Central Health Area (Manchester, Clarendon, and St. Catherine) had the highest percentages of wasting. St. Elizabeth and St. Catherine parishes had levels of 16% and 13%, respectively, for children under age 5 (Appendix III, Figure A-9). The prevalence of wasting in Jamaica is highest in children under age 1 (Appendix III, Figure A-10) who may be experiencing the nutritional deficiencies associated with weaning at a time when diarrheal infections are common.

Figure 14



PAHO: Food & Nutrition Profile (Caribbean) 1984

Figure 15


Admissions for Malnutrition
Bustamante Hosp. for Children
Kingston, Jamaica, 1978—1986
No. of Malnutrition Admissions
Rate per 1000 Hosp. Admissions
400
350
300
250
200
150
100
50
0
123
160
156
200
161
193
232
284
382
1978 1979 1980 1981 1982 1983 1984 1985 1986
Year
LEGEND
No.
Rate/1000
Fox, K., 1987

The national prevalence of stunting in children under age 5 was found to be 7.1% in 1985 (Appendix III, Figure A-11). The geographic areas with the highest prevalence of wasting were also the areas with the highest percentages of moderate to severe stunting. The prevalence of stunting was lowest in children under age 6 months and highest in two-year-olds (Appendix III, Figure A-12). This is consistent with the insidious nature of the processes leading to this condition. All told, in 1985, 11.3% of children under age 5 had a moderate to severe nutritional deficiency as measured by low weight for height and low height for age (Appendix III, Figure A-13).

The long-term solution to improving nutritional status is improved economic conditions. In the short term, nutritionally deficient children require food supplementation and treatment of infections. There is some evidence to suggest that the children who need this extra care the most may be the least likely to receive health center-based care. When the results of nutritional assessments done in health centers in early 1985 were compared with national survey results, a lower proportion of wasting was observed in clinic attendees than would be expected based on the survey results (Appendix III, Figure A-14). Children with the most severe wasting were also the children with the lowest percentage of completed polio vaccinations and the highest percentage with no doses of polio vaccine at all (Appendix III, Figure A-15). This may imply that the most severely nutritionally deficient children may not be brought to health centers on a regular basis.

F. Health Problems of Adults

The major health problems of Jamaican adults are injuries and chronic diseases. Recent information and trends for these health problems are discussed below, followed by a discussion of maternal mortality.

1. Injuries

The most complete information pertaining to the number of deaths from intentional and unintentional injuries is available from the Jamaica Police Department where statistics are kept on homicides and auto accidents. Jamaican laws require that all violent deaths be investigated by the police and that a coroner's inquiry be completed before the cause of death is certified. Because a coroner's inquiry may take several years to complete and because there are minimal linkages between the police department a-nd the Registrar General's Department, deaths from injuries are often never registered.

a. Homicide

Violence in general and homicide in particular are prominent topics of discussion in all sectors of Jamaican society. The concern is not only about the tragic loss of life, but also that the fear created by this problem could potentially affect the inflow of foreign exchange

and impede long-term economic growth. The slow economic recovery and the related crime and drug-related activity and political rivalry at the community level are possible contributing factors that deserve further study and evaluation.

The number of homicides in Jamaica has steadily increased since 1973 (Figure 16). Within the period 1973-86, nearly twice as many homicides occurred in 1980, an election year, than in any other year. Homicide victims are more likely to be male than female; the average victim is around 30 years old. Homicide contributes to many years of potential life lost in Jamaica because so many of the victims are relatively young. It is a modern public health problem without obvious and easy short-term solutions.

b. Traffic accidents

Most unintentional injury deaths in Jamaica are caused by traffic accidents. This includes persons who drive or ride as passengers in motor vehicles as well as pedestrians who are struck by these vehicles. About 300 traffic fatalities occur in Jamaica each year (Figure 17), with about 25% of these deaths involving pedestrian children under age 15 (Taylor, 1987). Both fatality rates and injury rates vary widely by parish (Appendix III, Figures A-16 and A-17). Compared to the U.S. population, Jamaicans have an estimated ten-fold higher risk of being involved in a fatal traffic accident, on a per miles-driven basis (Appendix III, Figure A-18). The reasons for this difference require further study. We know from the U.S. experience that driving safer vehicles, building safer roads and highways, and changing driver and pedestrian behavior can reduce auto-related fatalities. Although it is difficult to get people to drive more slowly, wear seat belts and use child safety seats, and avoid alcohol when driving, a coordinated national effort towards this end could have the same results in Jamaica as occurred in the U.S. in recent years (Appendix III, Figure A-19).

Figure 16

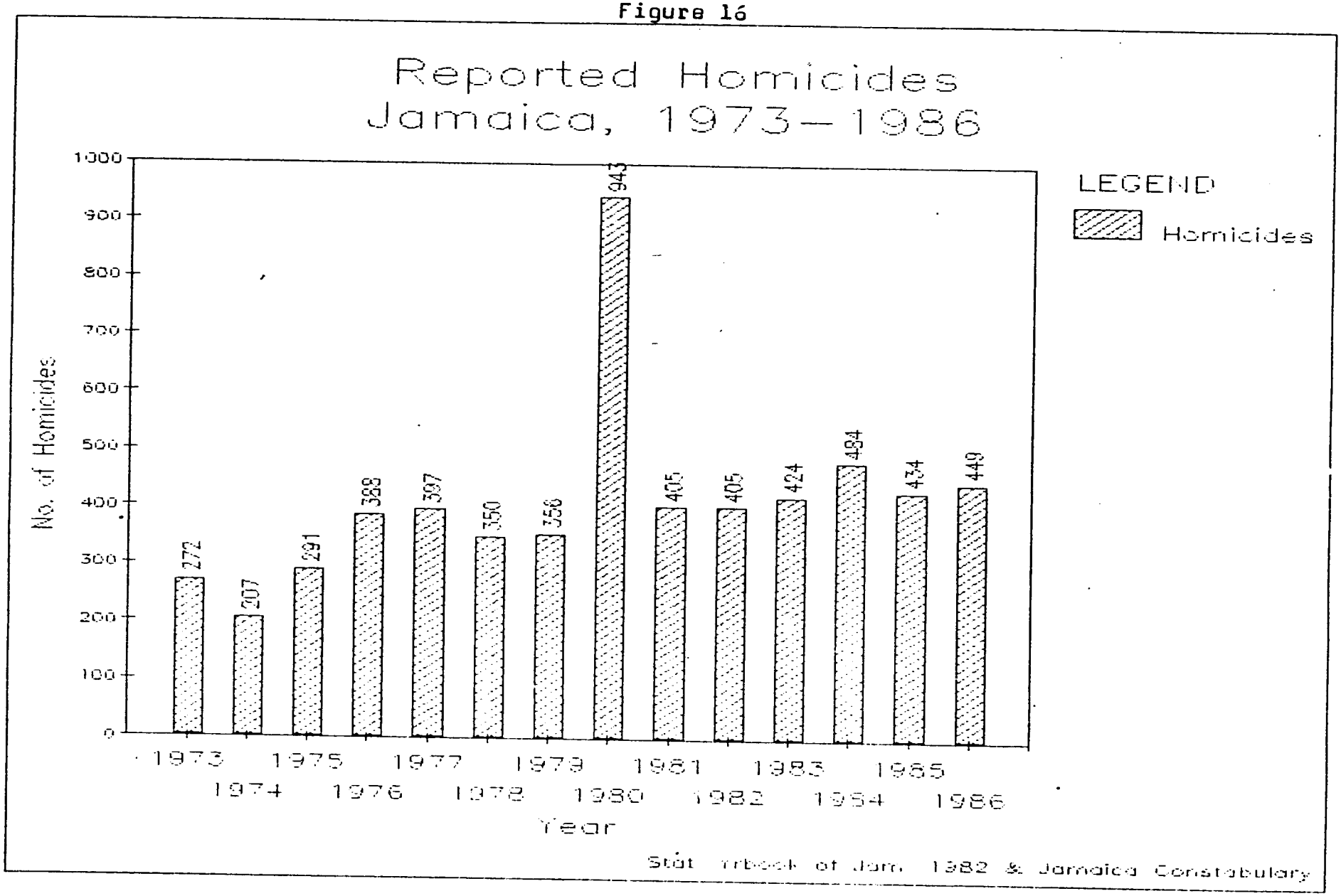
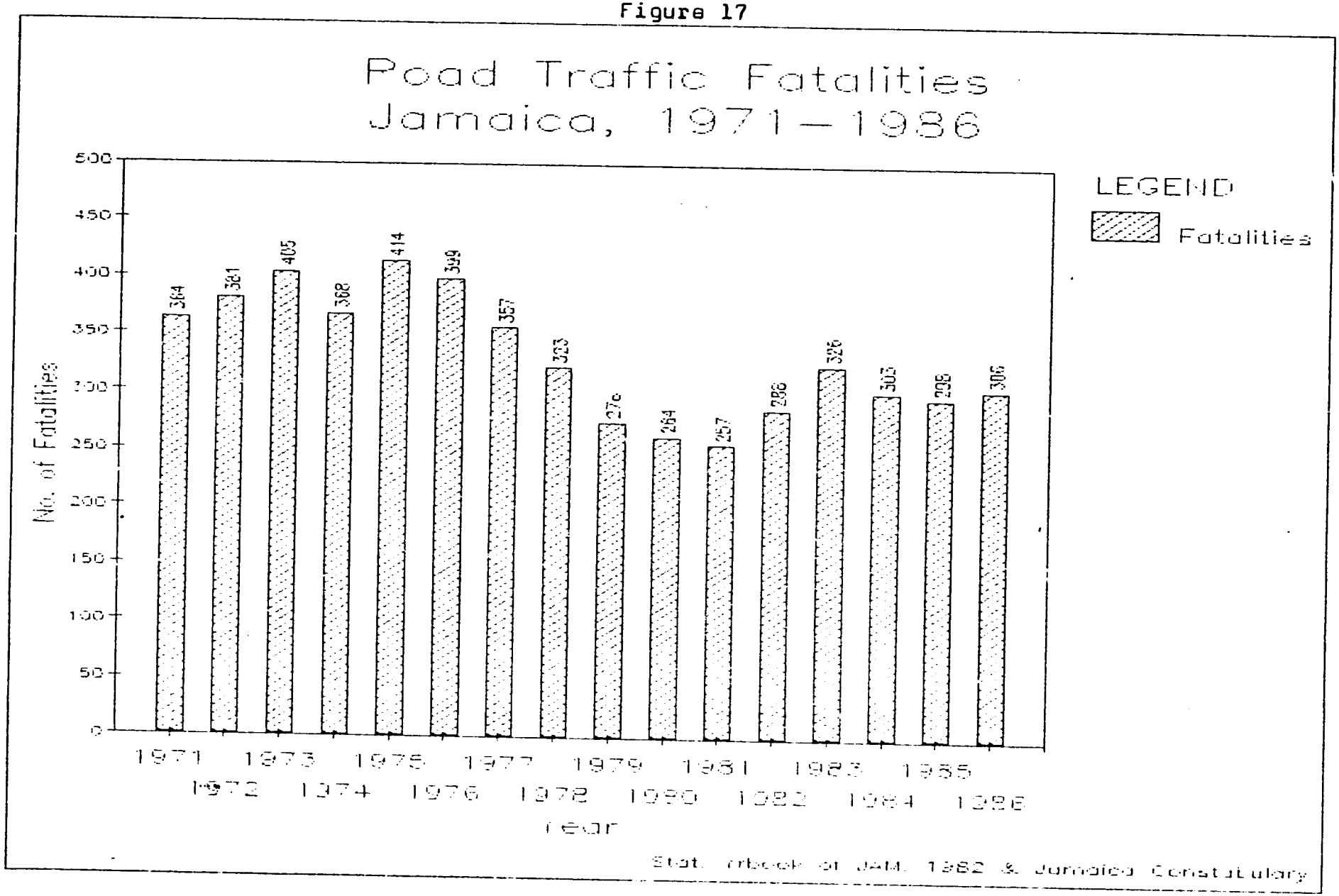

Reported Homicides
Jamaica, 1973–1986
No. of Homicides
1000
900
800
700
600
500
400
300
200
100
0
272
207
291
388
397
350
356
943
405
405
424
484
434
449
1973
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
Year
LEGEND
Homicides
Stat Yrbook of Jam. 1982 & Jamaica Constabulary

Figure 17


Road Traffic Fatalities
Jamaica, 1971—1986
LEGEND
Fatalities
No. of Fatalities
500
450
400
350
300
250
200
150
100
50
0
364
381
405
368
414
399
357
323
276
264
257
286
326
303
298
306
1971
1972
1973
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
Year
Stat. Yrbook of JAM. 1982 & Jamaica Constabulary

2. Chronic diseases

In 1981, cancer, heart disease, cerebrovascular disease, chronic lung disease, diabetes, and chronic liver disease taken together resulted in almost as many years of potential life lost in Jamaican adults as did injuries. With the aging of the large younger cohorts in the country, increasing numbers of Jamaicans are reaching adulthood where the risk of developing chronic diseases increases dramatically (see Figure 1).

Developing strategies to prevent, control, and limit disability due to chronic diseases must take into account the characteristics of these diseases, especially the strong behavioral component and the implications of screening programs for early detection. Eliminating or reducing the behavioral component (e.g., tobacco use) depends to a great extent on public awareness and the willingness/ability of individuals to alter their behavior.

Many chronic/degenerative diseases develop slowly and may be present in an asymptomatic (e.g., diabetes) or preinvasive (e.g., cervical cancer) phase. Screening to detect a serious disease in its early, asymptomatic stage requires health services directed toward people who outwardly appear healthy. Such services can significantly compete with the services needed by ill persons. Also, early detection of chronic diseases may mean increased utilization of expensive or long-term medical care (e.g., surgery, chemotherapy, radiotherapy, medication). It thus creates a dilemma to detect chronic disease early (which is relatively easy and inexpensive) and not be able to provide the next level of service to cure or control the progression of the disease. Private voluntary organizations (PVOs) in Jamaica play a significant role in increasing public awareness and providing screening services for chronic diseases at little or no cost to the public. Among the leading organizations are the Jamaica Cancer Society, the Jamaica Diabetes Society, and the Heart Foundation of Jamaica.

a. Cancer

Much of what is known about trends in cancer incidence in Jamaica comes from the Jamaica Cancer Registry at the UWI Medical School. Begun in 1958, the cancer registry contains information on all cancers diagnosed in Kingston and St. Andrew (Brooks, 1987). The staff's active compilation of information from hospitals, physicians, and laboratories has made the registry a very useful and important surveillance tool.

The incidence of lung cancer, a preventable form of cancer caused by tobacco use, in Jamaica is 4-5 times higher in men than in women (Appendix III, Figure A-20). The incidence of lung cancer in men increased more than 50% in 1978 compared with 1958. The incidence of cancer of the liver is also higher in men (Appendix III, Figure A-21). This is another preventable cancer, linked to alcohol

ingestion.

Cancer of the cervix is curable if discovered in its early-, usually asymptomatic, stage. Since expanded efforts to identify this cancer in its early stages in women began in Jamaica in the mid- to late 1960s, the proportion of cervical cancers detected in the early vs. late stages has increased steadily (Appendix III, Figure A-22). These figures demonstrate the effectiveness of screening programs in Jamaica to detect disease in its early stages. Breast cancer incidence in Jamaica has also been increasing (Appendix III, Figure A-23).

b. Diabetes

Diabetes is a chronic metabolic disease that is relatively easy to detect and control. Although an estimated 60,000-100,000 Jamaican adults are affected by diabetes, experts believe that few persons receive the necessary care to adequately control the disease. When diabetes persists in an uncontrolled state, severe complications result. For example, diabetes is considered the leading cause of adult blindness in Jamaica (Morrison, 1987). Diabetes also affects the function of the nerves an-d other blood vessels. Diabetics are more likely to develop heart disease, kidney disease, and strokes than non-diabetics and diabetics often develop gangrene of the extremities and severe skin infections. The morbidity resulting from diabetes is a leading cause of hospitalization of adults in Jamaica. In 1983, the longest average length of stay for adults in Jamaican hospitals was due to diabetes and its complications (Morrison, 1987).

Early detection, periodic monitoring, diet counselling, and drugs are all important components of a strategy to reduce the severity and cost of diabetes-related complications. Ongoing research in Jamaica has identified a form of adult diabetes that may be related to the occurrence of malnutrition during childhood (Morrison, 1985). Further research may clarify the association between ill health at one stage of life and complications at a later stage.

3. Maternal mortality

Walker et al. (1986) examined maternal mortality in detail in Jamaica for 1981-83. Many more maternal deaths were discovered as a result of this inquiry than had previously been recognized (Figure 18). The lowest maternal mortality rate was observed for 20-24-year-old women (Figure 19). The rate for adolescents was slightly higher, but the rate for women over age 34 was 3-5 times higher than for the younger women.

The underlying causes of neonatal and maternal mortality are strikingly similar. A pattern that emerges for deaths in both groups is the presence of identifiable, manageable maternal risk

Figure 18

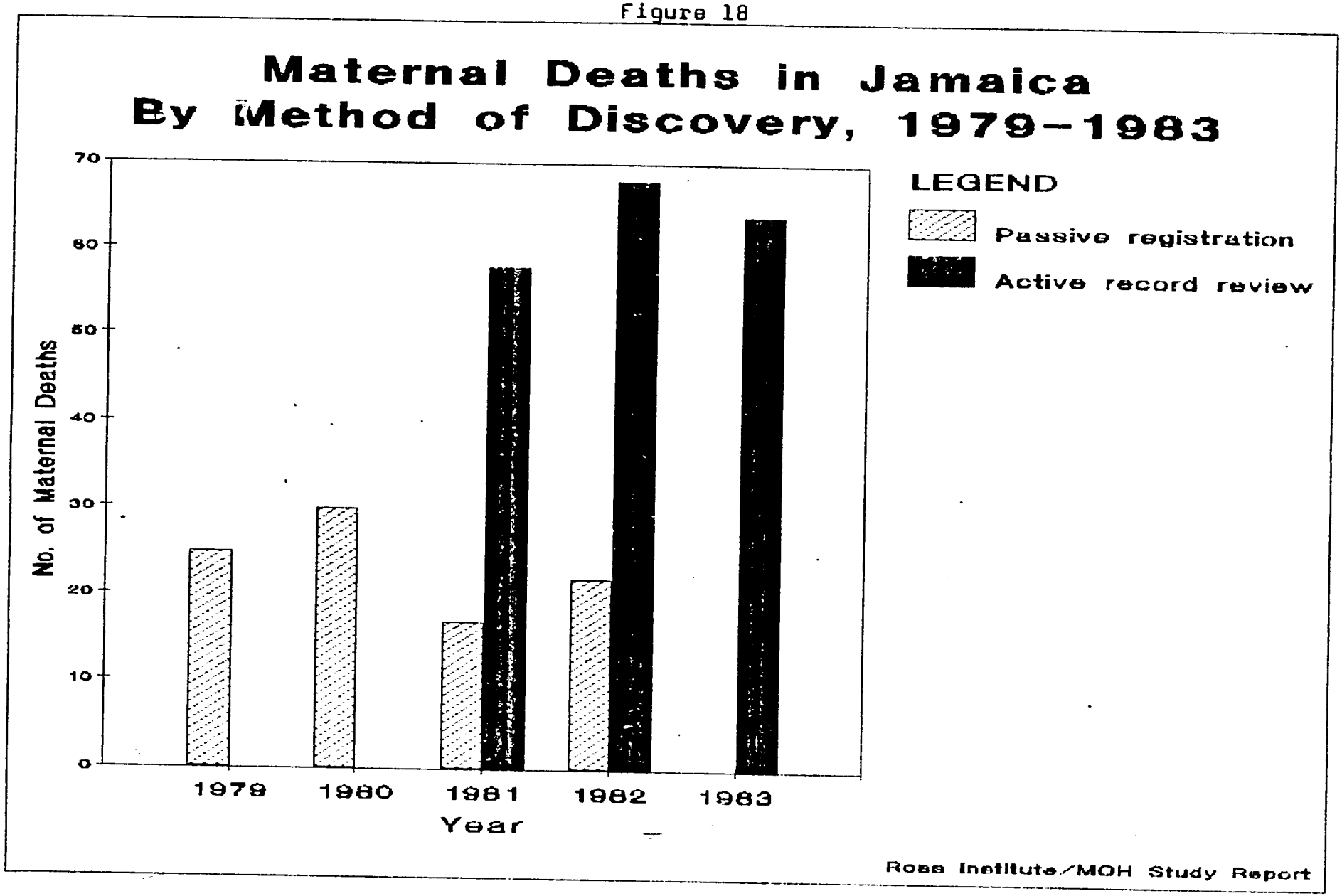
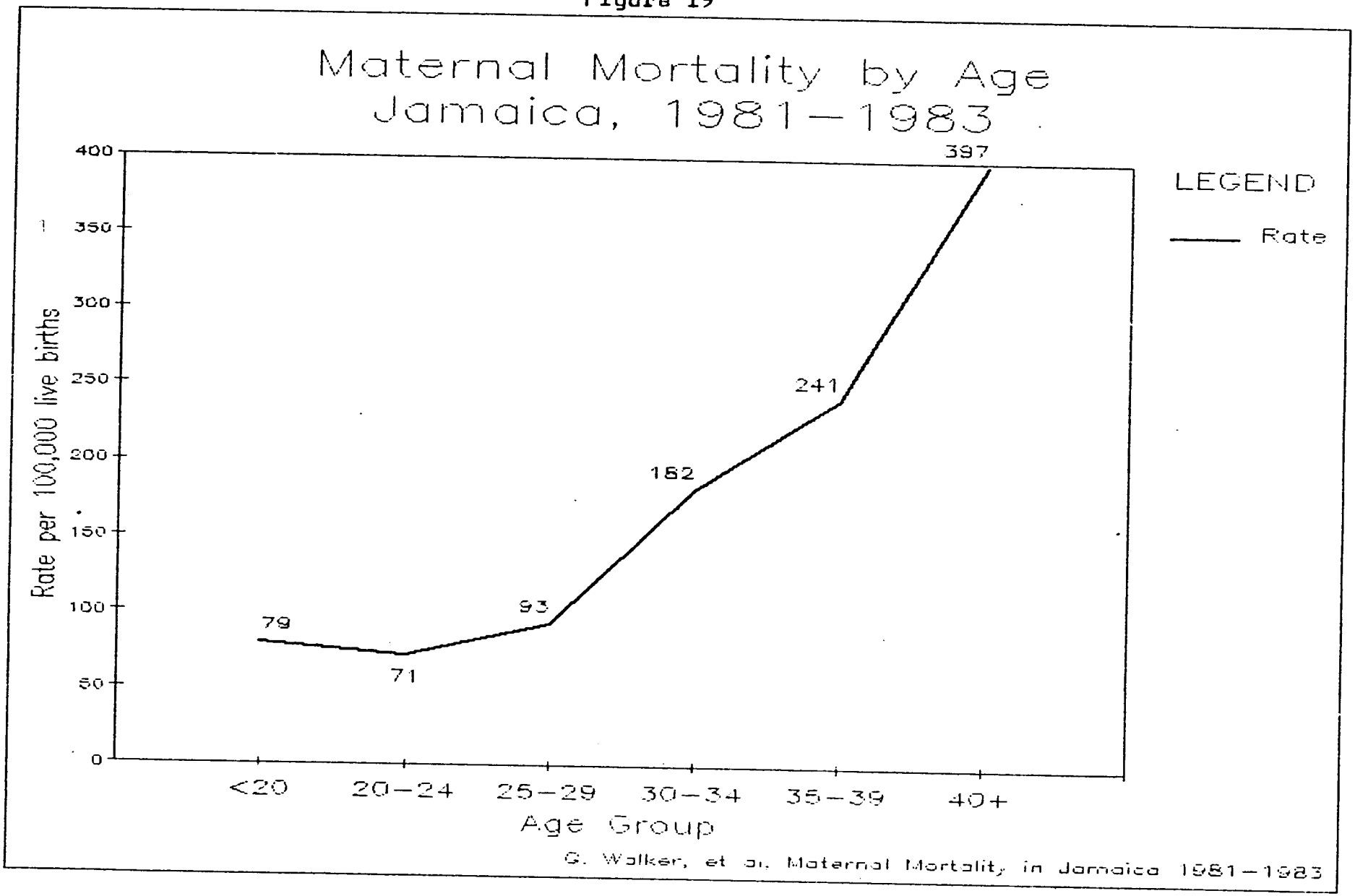

Maternal Deaths in Jamaica
By Method of Discovery, 1979-1983
No. of Maternal Deaths
70
60
50
40
30
20
10
0
1979
1980
1981
1982
1983
Year
LEGEND
Passive registration
Active record review
Ross Institute/MOH Study Report

Figure 19


Maternal Mortality by Age
Jamaica, 1981–1983
Rate per 100,000 live births
400
350
300
250
200
150
100
50
0
79
71
93
182
241
397
<20
20–24
25–29
30–34
35–39
40+
Age Group
LEGEND
Rate
G. Walker, et al. Maternal Mortality in Jamaica 1981–1983

factors that were not identified or managed appropriately antenatally or during delivery. For example, many women (24%) in Jamaica do not deliver in a hospital setting (Walker and Ashley, 1985) (Appendix III, Figure A-24). In a high-risk pregnancy this can be potentially fatal to both mother and baby. The risk of maternal death could also be reduced if women received early, regular prenatal care. Prenatal care must, however, be in a health care system with enough sufficiently trained personnel supported by properly equipped and supplied facilities so that risk factors can be identified early and brought under control before severe complications develop.

G. Control of Communicable Diseases

1. AIDS and other sexually transmissible diseases

Acquired immunodeficiency syndrome (AIDS) is one of several sexually transmissible diseases (STDs) that affect young men and women in Jamaica. AIDS is likely to be the most serious public health problem in the world for several decades, but other STDs pose grave problems as well. STDs not only result in much human suffering, but their treatment and the medical complications they cause are expensive and impose great demands on the health service system. Women and children bear an inordinate amount of the STD burden. STDs are major causes of sterility and are an underlying factor in the development of ectopic pregnancies. Even cancer of the cervix may be linked to herpes infections. Congenital syphilis can result in fetal and infant deaths, congenital anomalies, and mental retardation. Newborns infected with herpes, chlamydia, or gonorrhea during birth may develop fatal brain inflammation, pneumonia, or eye infections.

a. AIDS

The first case of AIDS in Jamaica was diagnosed in 1982. It was not until 1987, however, that the exponential increase in AIDS cases in Jamaica became obvious (Figure 20). As of September 1987, 29 cases had been reported, the majority of whom have already died. Most early cases of AIDS were male migrant farm workers who were presumably exposed to the virus while working in the U.S. (Figueroa, 1987) (Figure 21). Investigations of 1987 cases suggest that the recently diagnosed persons were exposed to the virus in Jamaica. As in many developing countries, AIDS in Jamaica affects the young, sexually active population, both men and women (Figure 22). Women who are positive for the virus can transmit the infection to their babies during pregnancy or childbirth. Cases of pediatric AIDS have also appeared in Jamaica for the first time this year.

Although infected persons may not develop symptoms of illness for many years, these asymptomatic carriers may potentially infect each new sexual partner throughout their lifetimes. This pool of asymptomatic infected persons can be identified by a blood test that

Figure 20

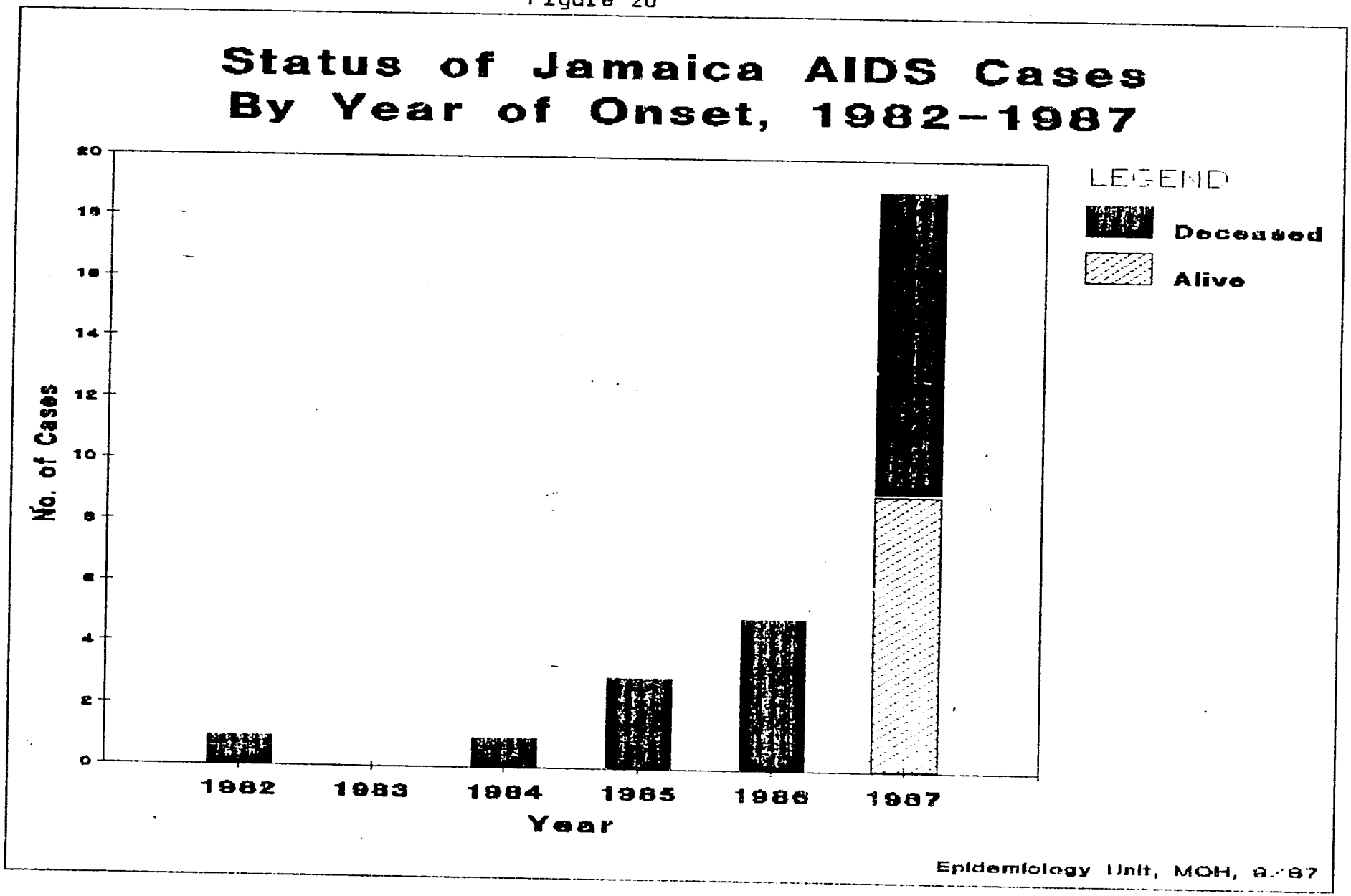

Status of Jamaica AIDS Cases
By Year of Onset, 1982-1987
No. of Cases
0
2
4
6
8
10
12
14
16
18
20
1982
1983
1984
1985
1986
1987
Year
LEGEND
Deceased
Alive
Epidemiology Unit, MOH, 9/87

Figure 21

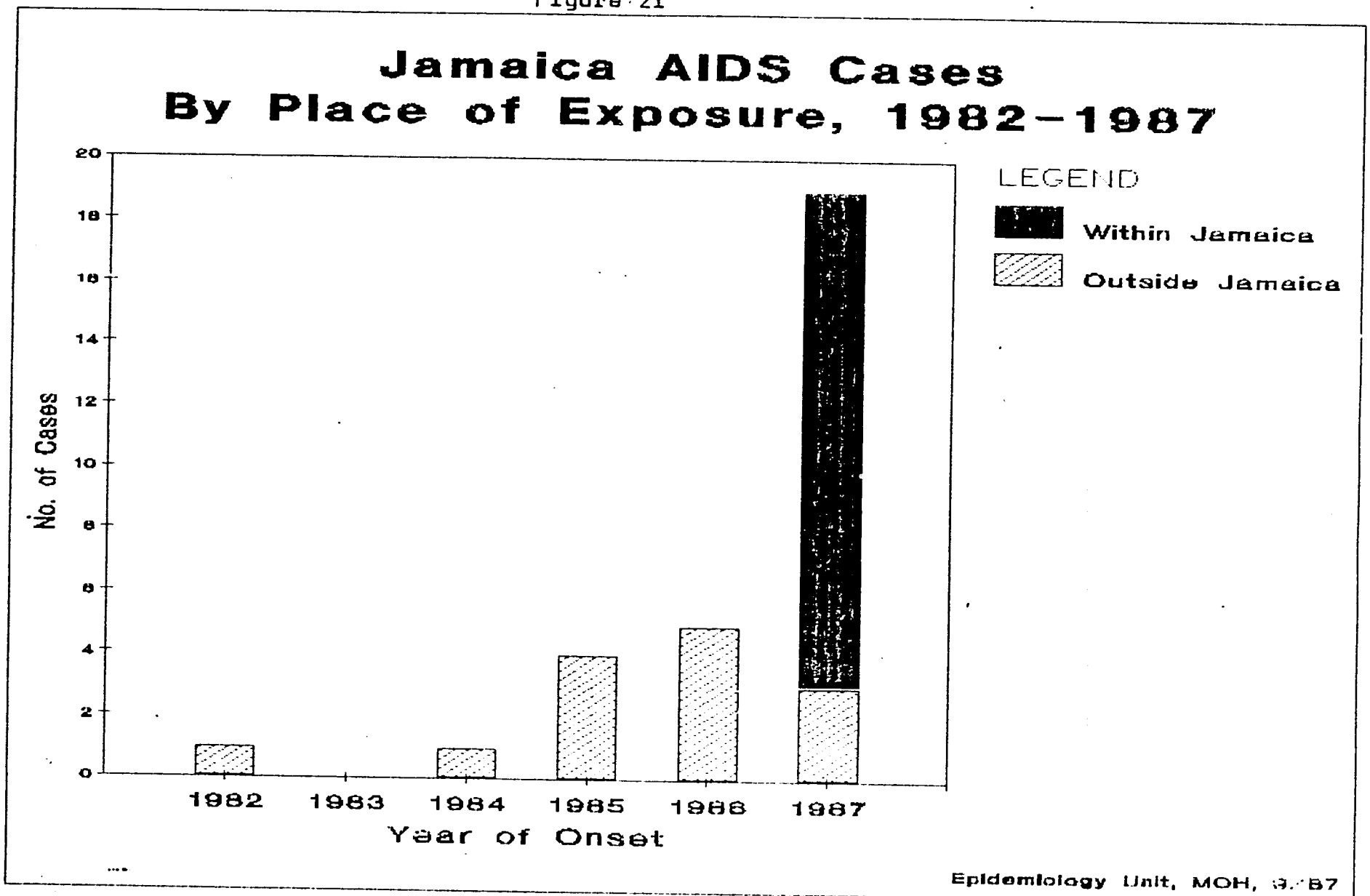
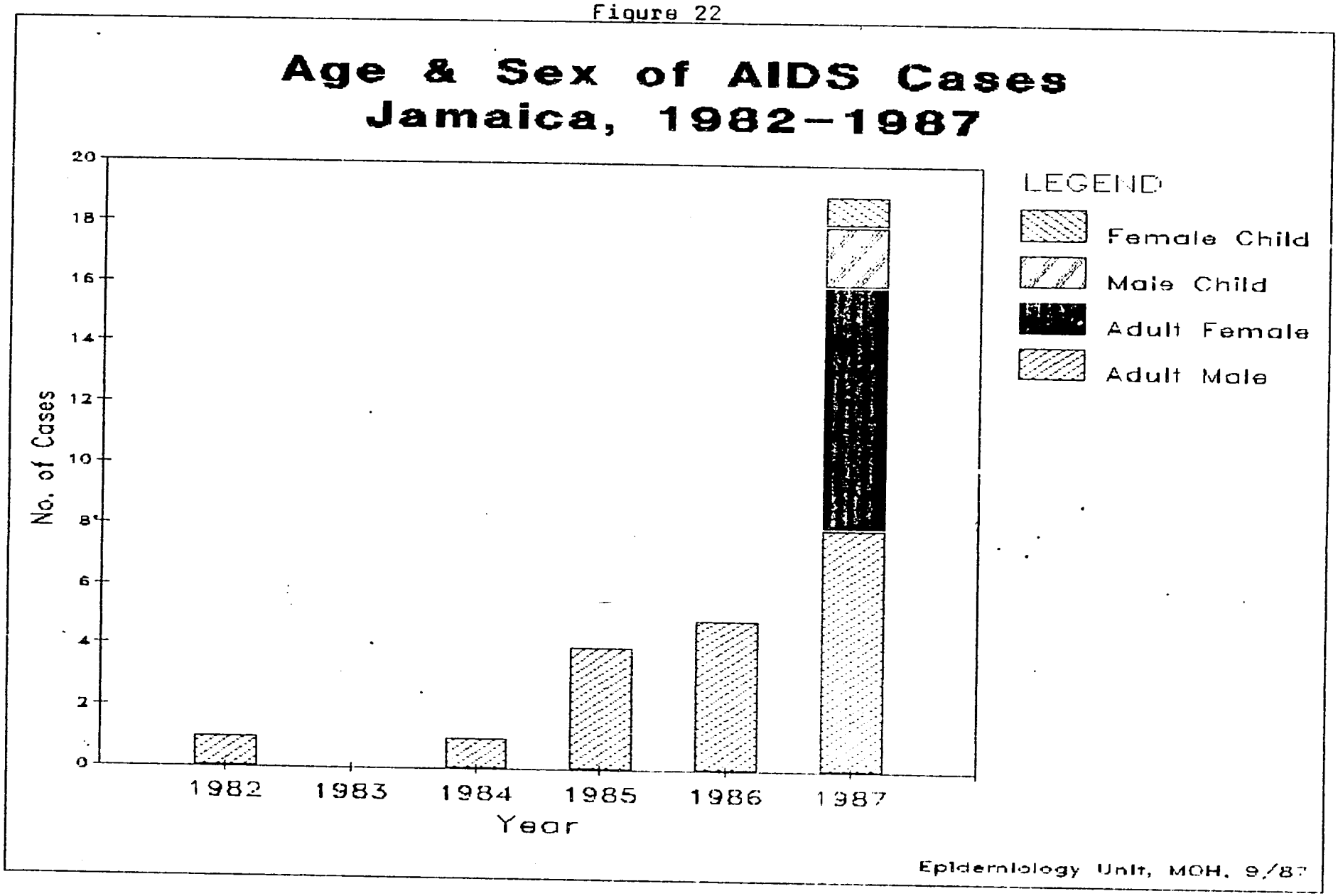

Jamaica AIDS Cases
By Place of Exposure, 1982-1987
No. of Cases
0
2
4
6
8
10
12
14
16
18
20
1982
1983
1984
1985
1986
1987
Year of Onset
LEGEND
Within Jamaica
Outside Jamaica
Epidemiology Unit, MOH, 3/87

Figure 22


Age & Sex of AIDS Cases
Jamaica, 1982-1987
No. of Cases
0
2
4
6
8
10
12
14
16
18
20
1982
1983
1984
1985
1986
1987
Year
LEGEND
Female Child
Male Child
Adult Female
Adult Male
Epidemiology Unit, MOH, 9/87

detects antibodies to the human immunodeficiency virus (HIV), the AIDS-causing agent. The results of screening efforts in Jamaica indicate that there are infected persons in all parts of the country (Figure 23). Many new AIDS cases will surely be diagnosed in Jamaica over the next 5-10 years. The availability of public education campaigns, screening programs, and barrier method contraceptives (condoms) may help reduce the impact of this disease on the population of Jamaica.

b. Other STDs

Although the annual incidence of common STDs such as gonorrhea, syphilis, and chlamydia is unknown, local experts estimate an incidence of as many as 100,000 cases of gonorrhea and syphilis each year (Braithwaite, 1987). About 25% of the cases are in teenagers. At Kingston's largest STD clinic more than half the patients treated have had one or more previous episodes of STD. It has been estimated that hospitalizations for pelvic inflammatory disease (a complication of gonorrheal and chlamydial infections) may cost J$2.5-4.0 million each year.

Congenital syphilis appears to be a worsening problem in Jamaica (Braithwaite, 1987). In 1980 only four cases were detected, but by 1986, the number had increased to 16. In the first 7 months of 1987, 24 cases were found. This infection is relatively easy to diagnose and treat antenatally. The reasons for the apparent increase in this preventable infection deserve further attention.

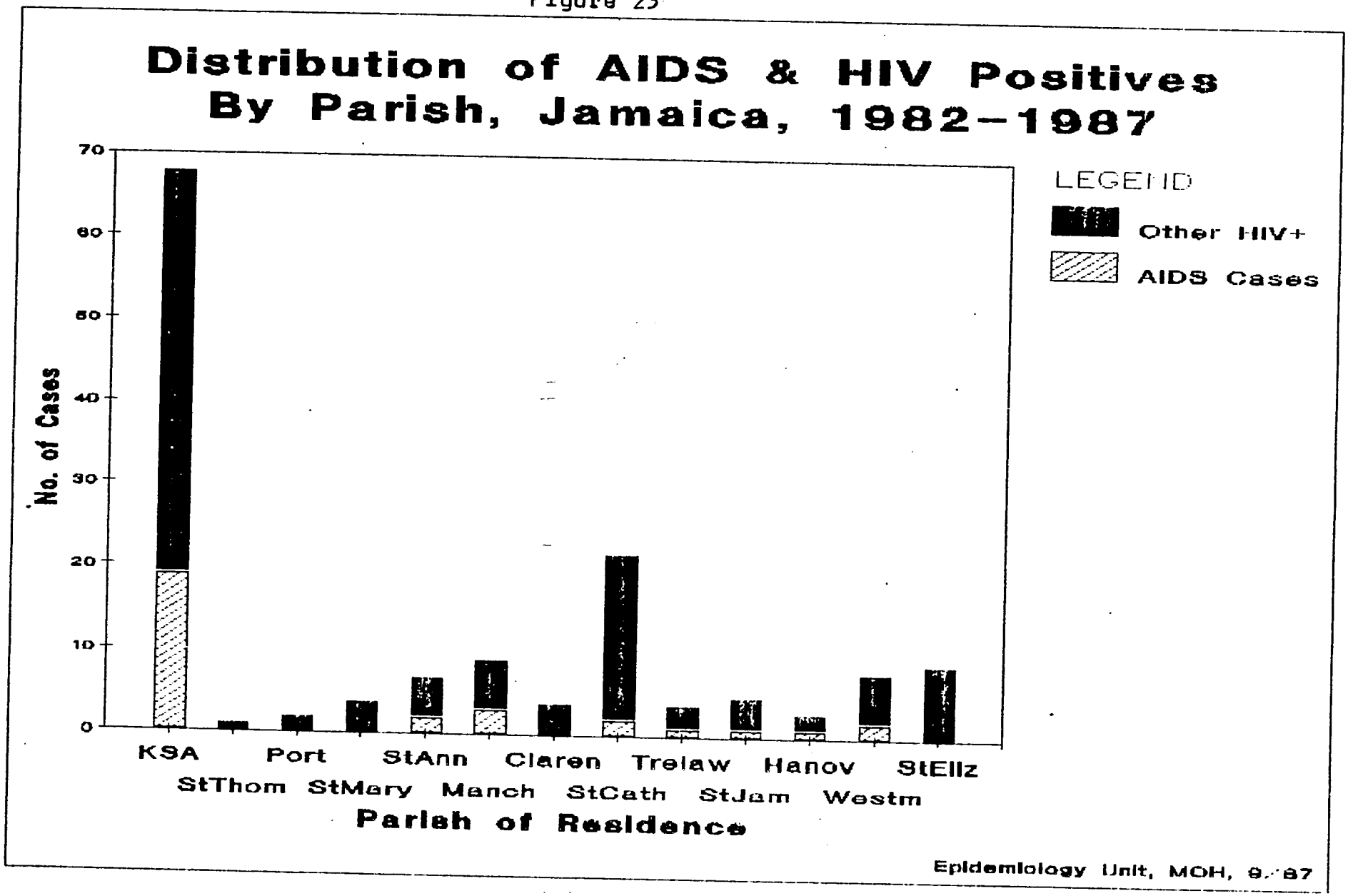
Resistant strains of gonorrhea are also present in Jamaica (Braithwaite, 1987). As much as 10% of the gonorrhea diagnosed in public clinics is resistant to penicillin. This has serious implications for an already financially stressed health care system as the drugs required to treat resistant strains are many times more expensive than penicillin.

An effective STD control strategy has three components: service, education, and surveillance.

Service: The control of STDs depends on the availability of well-staffed and well-equipped facilities in which symptomatic patients are diagnosed and treated with effective medication. Clinic patients should be counseled about STD prevention, and trained investigators should trace and treat each patient's sexual contacts. Screening services in antenatal and family planning clinics should be available to detect reservoirs of asymptomatic women.

Such STD services are scarce in Jamaica (Schultz, 1986). Only 6 of the 13 parishes provide STD services in a clinic setting. Because clinics are invariably understaffed, some patients do not receive care even after waiting all day. Understaffing also limits contact tracing; currently fewer than 1 in 7 named contacts are located and treated. STD diagnoses should be confirmed with laboratory tests,

Figure 23


Distribution of AIDS & HIV Positives
By Parish, Jamaica, 1982-1987
No. of Cases
70
60
50
40
30
20
10
0
KSA
StThom
Port
StMary
StAnn
Manch
Claren
StCath
Trelaw
StJam
Hanov
Westm
StEllz
Parish of Residence
LEGEND
Other HIV+
AIDS Cases
Epidemiology Unit, MOH, 9/87

42

but the central laboratory provides very limited services for STD diagnosis and does not routinely test for resistant strains of gonorrhea.

Education: Community-based STD education programs should be directed at school children before and during the time they become sexually active. One of the principal goals of the Association for the Control of Sexually Transmitted Diseases (ACOSTRAD) in Jamaica is public education and awareness about STDs. This PVO also provides and promotes teacher education about STDs.

Surveillance: The ongoing collection and analysis of information on STD cases is essential to define specific disease patterns and to target high-risk groups for education and service. STD surveillance in Jamaica is generally incomplete primarily because there are no regulations requiring an official notification. Even though as many as 50% of STD cases are treated by physicians in the private sector, none of these cases are reported to parish medical officers. The absence of adequate surveillance data creates obstacles to effective planning and evaluation.

2. Gastrointestinal illness

The MOH maintains two surveillance systems for gastroenteritis: a sentinel reporting system and a laboratory-based system (Figueroa, 1987). In the sentinel reporting system hospital outpatient department personnel complete a weekly tally of the number of visits for gastroenteritis. This weekly tally is forwarded to the Epidemiology Unit in the MOH. Because there is no accompanying information about age, place of residence, date of onset, or specific cause of gastroenteritis, this system has limited epidemiological usefulness. It is not possible to determine whether illness is occurring primarily in children or adults, in urban or rural areas, or is caused by food or waterborne pathogens. About 15,000 cases of gastroenteritis are reported each year via the sentinel system (Appendix III, Figure A-25). Because this is a voluntary reporting system, the variation observed in the number of cases reported during 1978-86 may be a reflection of incomplete and inconsistent reporting.

The other surveillance system is a laboratory-based system for identifying cases of typhoid fever, a bacterial infection caused by a strain of salmonella. The number of confirmed cases of typhoid fever in Jamaica for 1976-86 is shown in Figure A-26 (Appendix III). As typhoid fever is spread by contaminated food or water, all reported cases should be investigated in an effort to locate chronic typhoid carriers who may be foodhandlers. The existence of a laboratory-based surveillance system establishes a basis for ongoing epidemiologic investigation, analysis, and control of this problem. In practice, however, staff shortages and limited training both centrally and at the parish level result in a scarcity of thorough investigations of typhoid fever outbreaks.

3. Vaccine-preventable diseases

Vaccines are among the safest and most effective measures available to prevent infectious and communicable diseases, especially in children. Considerable progress has been made in reducing the incidence of vaccine-preventable diseases in Jamaica, but potentially serious gaps in vaccine coverage still exist.

Monitoring of national trends in vaccine-preventable diseases is dependent on voluntary notification of parish health officials who in turn send information to the Epidemiology Unit in the MOH. As very few reports are received from hospitals or private sector physicians, however, the completeness of disease reporting is questionable. Despite shortfalls in disease surveillance, national outbreaks of vaccine-preventable diseases have been noted in the past few years. Measles outbreaks affecting thousands of children occurred in 1978, 1981, and 1982 (Figure 24). An outbreak of poliomyelitis resulted in 60 cases and 2 deaths in 1982 (Figueroa, 1987). In that same year several hundred cases of whooping cough (pertussis) were also reported (Figure 25). Cases of tetanus, diphtheria, and rubella are detected regularly.

a. Vaccine policy

National vaccination policy calls for infants to receive BCG (to immunize against tuberculosis), measles vaccine, and three doses each of diphtheria, tetanus, pertussis (DTP) and oral polio vaccine (OPV) within the first year of life (Ashley, 1987). DTP and OPV booster doses are to be administered at 18 months of age. A second DTP booster is required prior to school entry. Rubella vaccine is administered to prepubertal girls and women in the reproductive ages to prevent congenital rubella syndrome. Insufficient funds are available to purchase rubella vaccine for infants.

A 1986 law requires school-age children to be completely immunized before school entry. The presence of such laws increases parental awareness about childhood vaccination, but such legal provisions are effective only if they are strictly enforced by school officials. In order to work well, such a legal provision requires close cooperation between health and education officials.

b. Vaccine supply and distribution

Vaccines are administered in well-child clinics throughout the country's PHC system. Vaccines are purchased centrally by the MOH and distributed to the health centers. Delays in the procurement process sometimes result in depletion of national vaccine stockpiles and/or shortages at the local clinics. To maintain their potency vaccines must be kept cold prior to administration. Poor refrigerator maintenance and theft of refrigerator motors in remote health centers have contributed to considerable vaccine wastage.

Figure 24

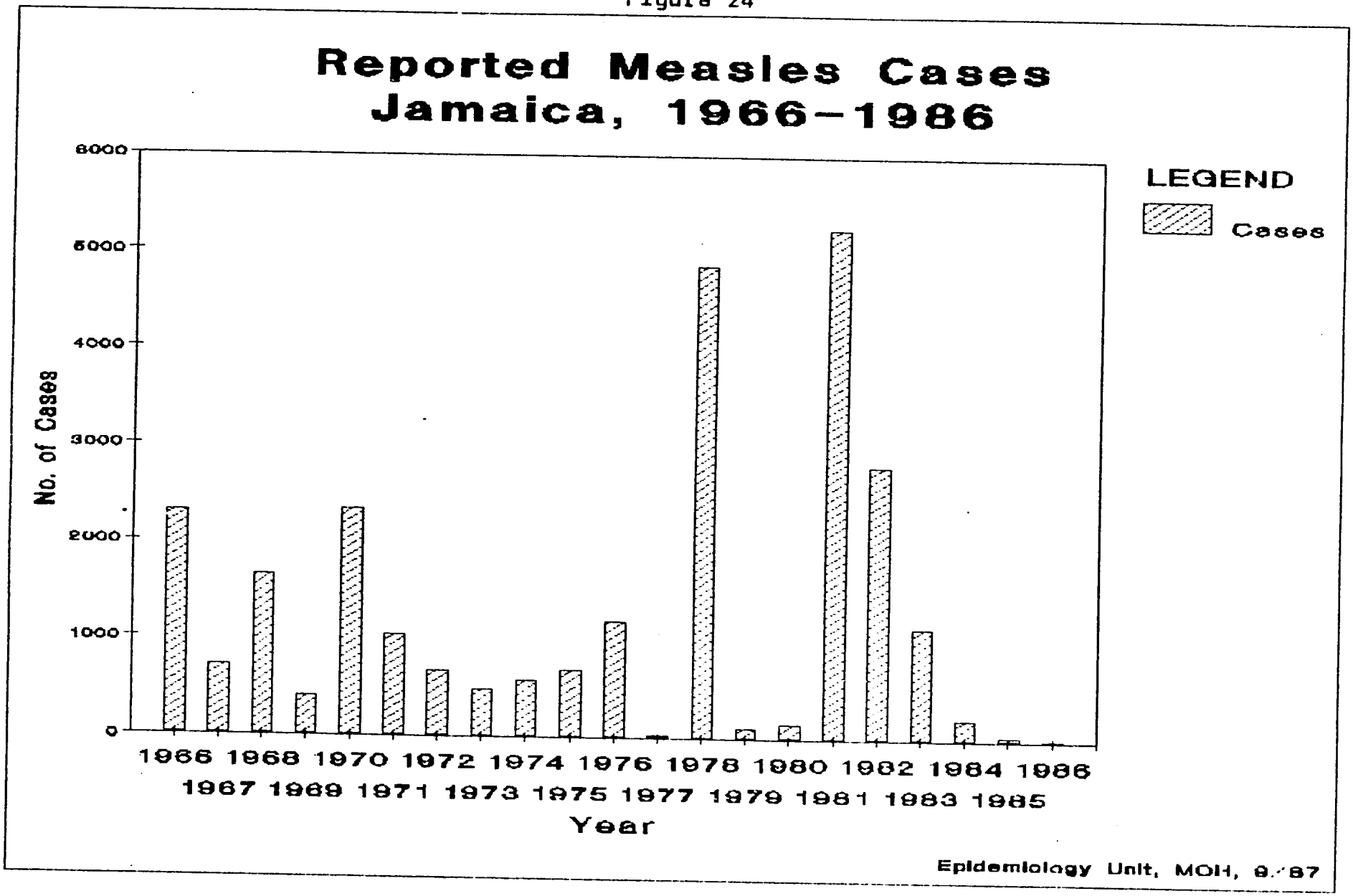
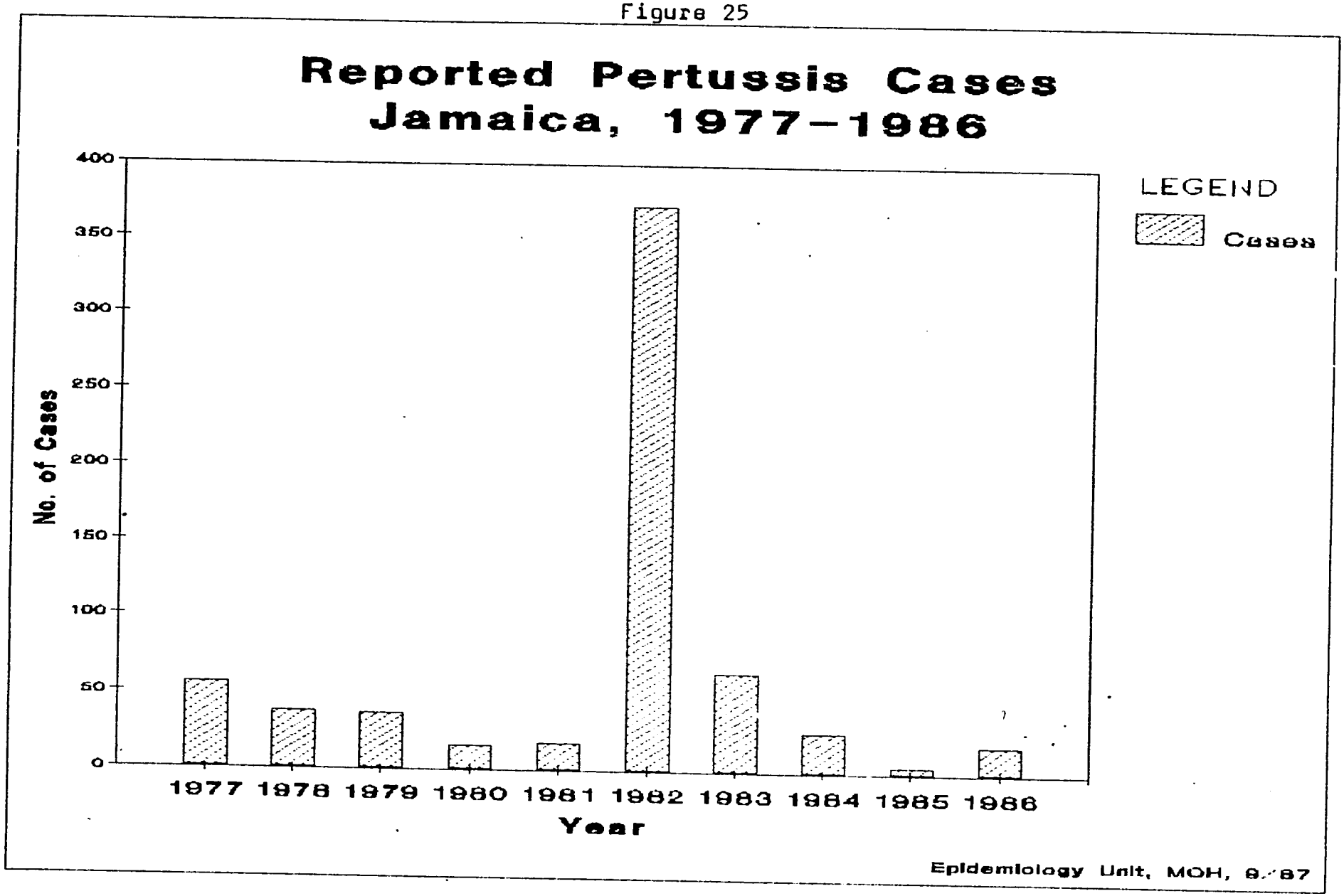

Reported Measles Cases
Jamaica, 1966-1986
No. of Cases
6000
5000
4000
3000
2000
1000
0
1966 1968 1970 1972 1974 1976 1978 1980 1982 1984 1986
1967 1969 1971 1973 1975 1977 1979 1981 1983 1985
Year
LEGEND
Cases
Epidemiology Unit, MOH, 9/87

Figure 25


Reported Pertussis Cases
Jamaica, 1977-1986
No. of Cases
400
350
300
250
200
150
100
50
0
1977 1978 1979 1980 1981 1982 1983 1984 1985 1986
Year
LEGEND
Cases
Epidemiology Unit, MOH, 8/87

c. Vaccine coverage

To limit serious complications from vaccine-preventable diseases, children should be immunized at the earliest recommended time. The MOH conducted a national household survey in 1985 in part to determine gaps in vaccine coverage in preschool and school-age children (Fox and Ashley, 1985). About 20% of infants and preschoolers were only partially immunized with polio and DTP vaccine and about 5% were completely unimmunized (Appendix III, Figures A-27 and A-28). The most serious gaps in coverage were noted in the southwestern and south central parts of the country, where 24-28% of the children were partially immunized and 8-13% were completely unimmunized.

In all, only about 50% of young children in Jamaica receive the full complement of recommended vaccines during the first year of life (Appendix III, Figure A-29). Further study is needed to determine what role parental awareness, access to service, and vaccine supply shortages contribute to this deficiency. Potentially serious gaps in vaccine coverage of children age 5-9 were also noted in the 1985 survey. Nationally, 25% of children in this age group had fewer than three doses of polio vaccine and 33% had fewer than three doses of DTP (Appendix III, Figures A-30 and A-31). In theory all of these children remain at some risk of illness. The largest gaps in coverage were again noted in the southwestern and south central areas of the country.

The daily concentration of children in school affords an efficient environment for disease transmission. Even small pockets (as low as 2-3%) of susceptible children can sustain measles transmission in a school, and in Jamaica large numbers of measles-susceptible children may be attending school (Appendix III, Figure A-32). The potential for spread of measles in schools is high unless the school entry law is vigorously enforced.

H. Water Quality

Jamaica has ample fresh water sources. Fresh water is obtained from rivers and springs (surface water), deep wells, and rain catchment. The 969 separate water supplies in Jamaica are all managed by the National Water Commission, which is responsible for finding and developing new sources of fresh water, for building, staffing, and maintaining water treatment facilities, and for maintaining the water distribution system.

1. Water treatment

Clean water is vital to good health. A variety of water treatment processes are used in the country to improve water quality. A common form of water treatment is the addition of small concentrations of chlorine to inactivate common waterborne

pathogens. Where large amounts of surface water are consumed additional processing is required to remove impurities. Only about half the government-managed water supplies in Jamaica are treated (Figure 26). About 25 large-scale treatment facilities have been built to process large surface-water supplies. The remainder of the treated supplies rely on chlorine as the only form of water treatment. About 81% of the population has access to government managed, treated water (Appendix III, Figure A-33). Of the remaining 19% of the population, 12% have access to government-managed, untreated (raw) water and 7% do not yet have access to a government-managed water supply. The latter group for the most part rely on their own means of obtaining fresh water.

The percentage of the population consuming untreated water is not distributed proportionately. Nearly a third of the population in the southern part of Cornwall consumes raw water in contrast to only 3% in the Southeast Health Area (Figure 27). The variation by parish is even more striking (Figure 28); in Westmoreland more than half the population consumes raw water in contrast to 0% in K.S.A.

2. Monitoring of water quality

Availability of water treatment facilities does not necessarily mean that uncontaminated water will reach the consumer. Because millions of gallons of water are used daily, frequent inspections to detect possible bacterial contamination or inadequate levels of chlorine are necessary. Monitoring of water quality is the responsibility of the MOH and is carried out at the parish level by public health inspectors. Chlorine levels can be monitored in the field with portable equipment, but detecting bacteria in water depends on laboratory services.

There are significant gaps in the level of water quality monitoring in Jamaica for determining both bacterial contamination and the presence of adequate chlorine levels (Figure 29). Given the number of water supplies in the country, about 1200 laboratory tests for bacteria in water should be performed monthly (Reid, 1987). In 1986, only 3200 such tests were performed on the water supply system for the year. To maintain consistent chlorine levels and because of the potential danger of excess chlorine in the water due to malfunctioning equipment, chlorine levels should be monitored more frequently. Of the estimated 60,000 tests that should have been performed in 1986, only 10,500 were actually done.

The gaps in water quality monitoring are attributable to a shortage of inspectors and laboratory personnel. For example, in a 2-3 month period in 1986, no bacterial testing of water was performed in the central laboratory due understaffing. From the limited monitoring that has been completed, however, the assessment team noted potentially serious problems with actual water quality. In approximately 25% of the samples of treated water tested for residual

Figure 26

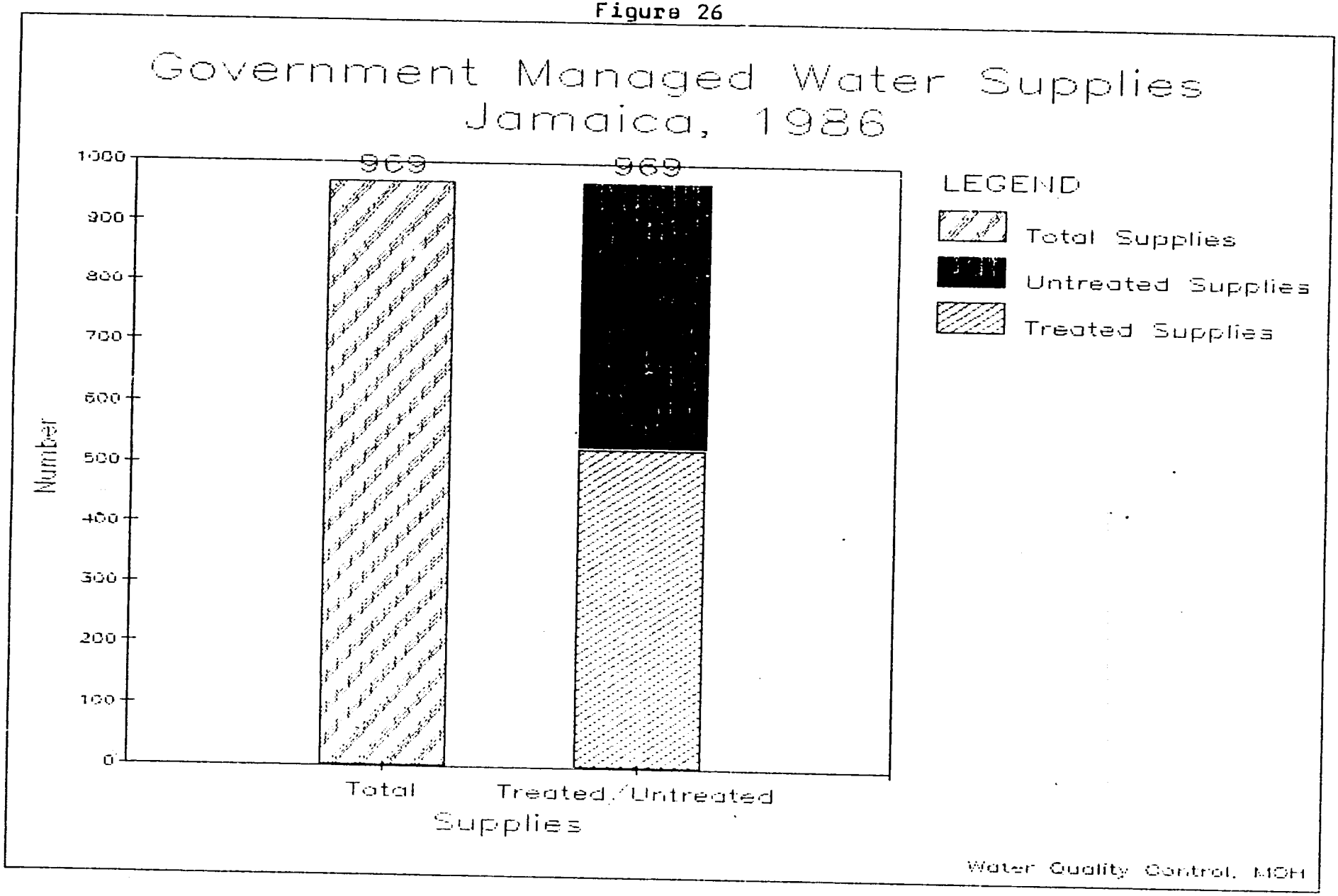

Government Managed Water Supplies
Jamaica, 1986
969
969
1000
900
800
700
600
500
400
300
200
100
0
Number
Total
Treated/Untreated
Supplies
LEGEND
Total Supplies
Untreated Supplies
Treated Supplies
Water Quality Control, MOH

Figure 27

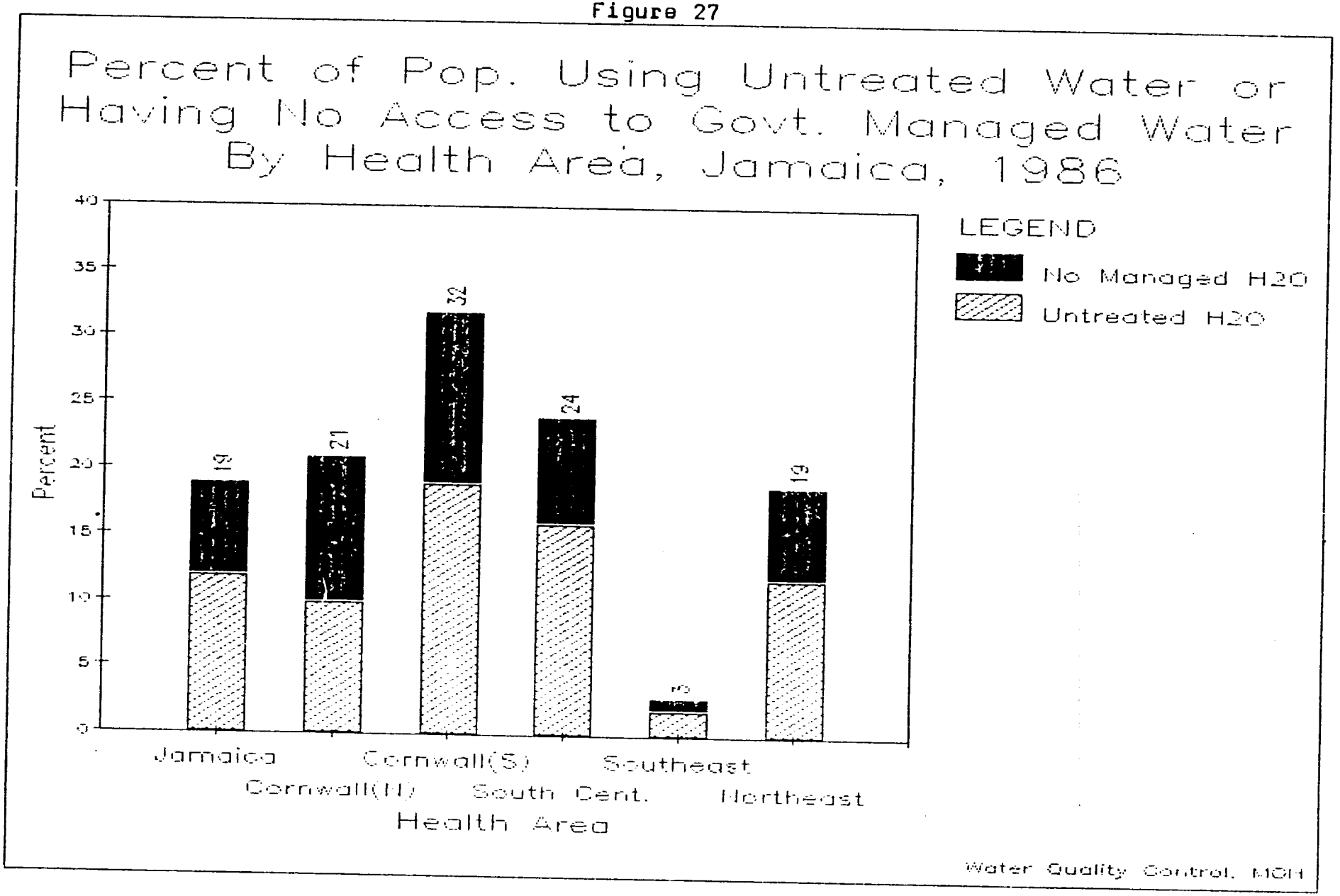

Percent of Pop. Using Untreated Water or Having No Access to Govt. Managed Water By Health Area, Jamaica, 1986
Percent
40
35
30
25
20
15
10
5
0
19
21
32
24
19
Jamaica
Cornwall(W)
Cornwall(S)
South Cent.
Southeast
Northeast
Health Area
LEGEND
No Managed H2O
Untreated H2O
Water Quality Control, MOH

Figure 28

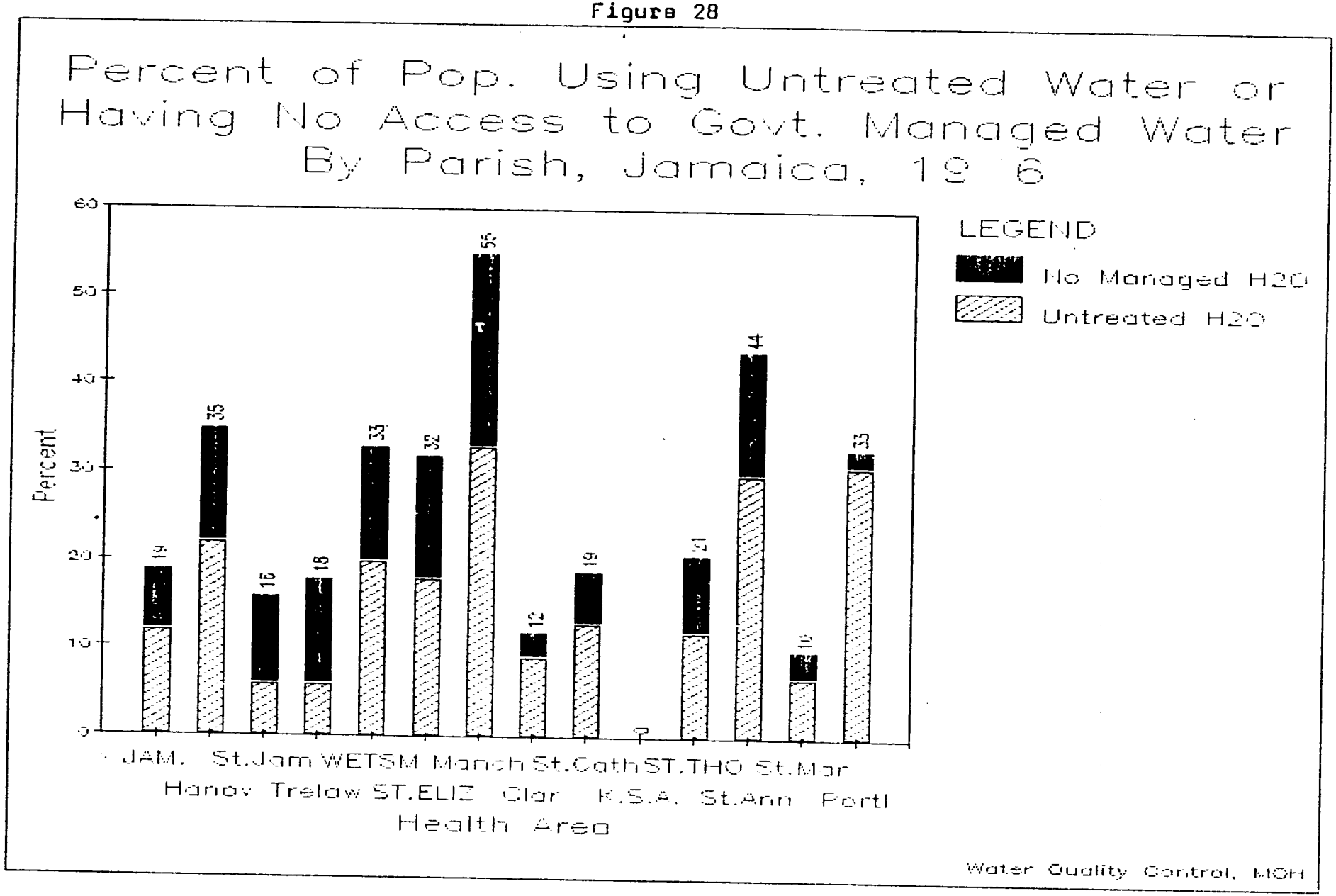
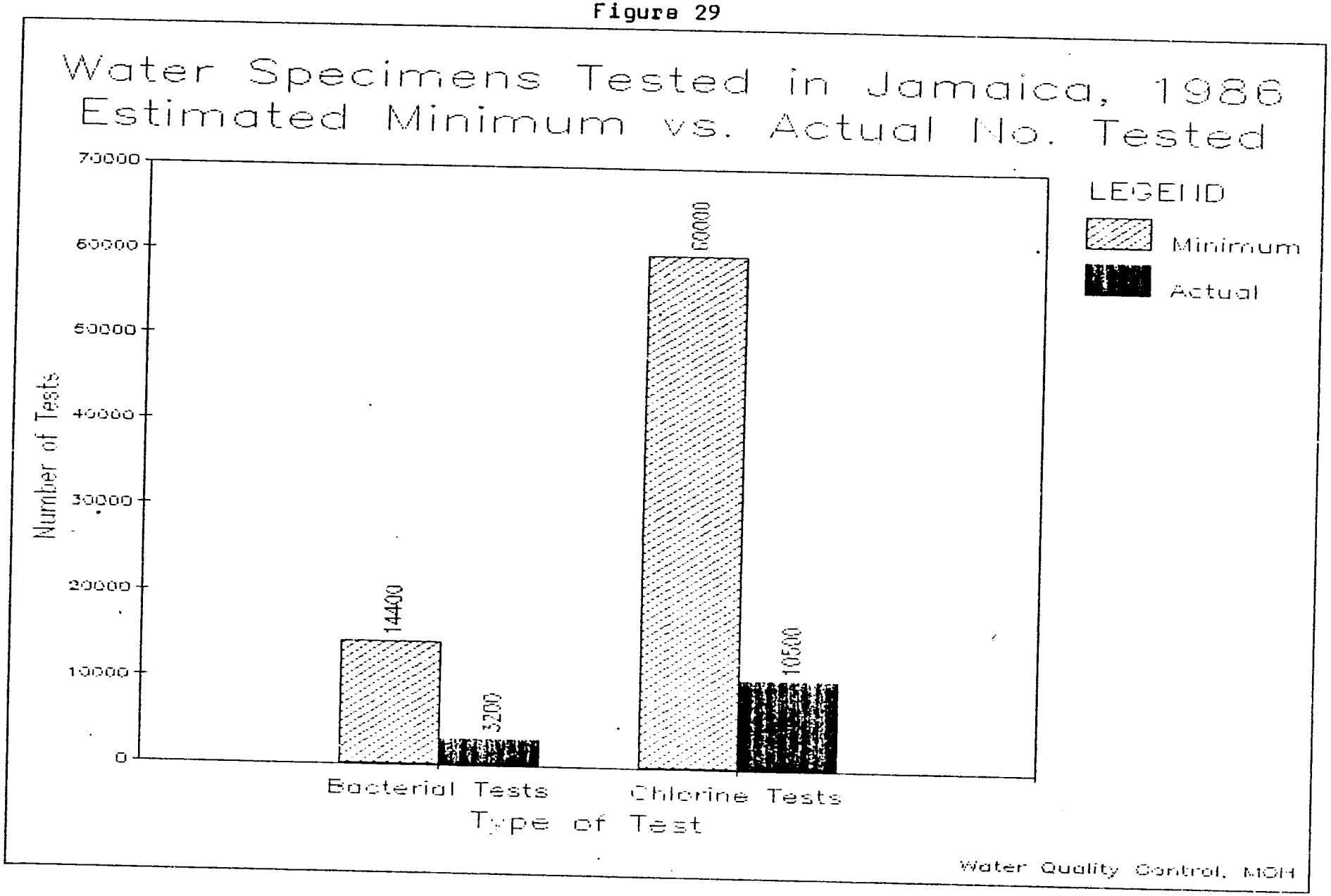

Percent of Pop. Using Untreated Water or Having No Access to Govt. Managed Water By Parish, Jamaica, 19 6
Percent
60
50
40
30
20
10
0
19
35
16
18
33
32
55
12
19
0
21
44
10
33
JAM.
St.Jam
WETSM
Manch
St.Cath
ST.THO
St.Mar
Hanov
Trelaw
ST.ELIZ
Clar
K.S.A.
St.Ann
Portl
Health Area
LEGEND
No Managed H2O
Untreated H2O
Water Quality Control, MOH

Figure 29


Water Specimens Tested in Jamaica, 1986
Estimated Minimum vs. Actual No. Tested
70000
60000
50000
40000
30000
20000
10000
0
Number of Tests
14400
3200
60000
10500
Bacterial Tests
Chlorine Tests
Type of Test
LEGEND
Minimum
Actual
Water Quality Control, MOH

levels of chlorine in the distribution system, no chlorine was detected (Reid, 1987). This potential problem area should be evaluated thoroughly to minimize the risk of waterborne diseases.

III. MANAGEMENT IN THE PUBLIC HEALTH SECTOR

This section describes the structural constraints within the Jamaican civil service and the impact these have on the efficient operation of the MOH. A review is also included of some reform measures that are being undertaken by the GOJ and management innovations being implemented by the MOH.

A. Requirements of a Management System

In order for goods and/or services to be delivered by an organization there must be in place certain basic components. These usually come under the heading of administration or management. The requirements of a management system are:

- A mission statement and strategic plan that get the program from where it is at the moment to where policy makers want it to be
- Sufficient financial resources to operate the system at a consensus level of satisfactory performance and a fiscal control system to manage the resources
- A personnel system that recruits qualified candidates and is empowered to reward superior effort, foster career development, and eliminate less productive members
- A management information system that accumulates accurate information, in a timely manner, from those who have it and transmits it to those who need it
- Administrative support systems that keep the program moving.

In addition, there must exist an atmosphere that reinforces the value of the enterprise, acknowledges the contributions of individuals in the overall operation, and reinforces efforts based upon high performance and respect for the integrity of others. A cursory review of the MOH in Jamaica reveals management issues that require addressing. Some of these problems stem from unique circumstances within the MOH; others represent external constraints that the MOH has limited power to change.

B. Fiscal Control

The MOH Finance Division is responsible for budgeting and fiscal control. In the hospital network budgets are set at the regional level, with some involvement of the hospital boards. In the PHC network medical officers initiate the budgets for the health centers in their parishes. In the best of circumstances, the health

committees for individual centers provide some input in the process. The formal procedure begins with the medical officer presenting to MOH/Kingston a consolidated budget for the entire parish. Traditionally, this has been a "line item" budget for such categories as salaries, rent, utilities, and medical supplies. Individual hospital region and parish budgets are reviewed in Kingston by the appropriate principal medical officer and forwarded to the Finance Division. A budget committee, which includes the Permanent Secretary, Chief Medical Officer, heads of various administrative departments, and the chief of the medical services involved (PHC or hospitals), reviews the budgets. The Finance Division prepares a consolidated budget for the entire Ministry. Recurrent cost budgets are reviewed and negotiated with the MOFP; budgets for capital expenditures are reviewed and approved by the Prime Minister's office. The Minister of Health presents and defends the budget in Parliament.

An initial advance, or "warrant," is forwarded to each hospital region and parish. Subsequent monthly payments are contingent upon receiving a reconciliation of the previous payment. The rationale for this monthly release and reconciliation procedure is that the scarcity of funds precludes a more phased system. The lack of flexibility on the part of MOH financial managers is also a function of the tight management control retained by the MOFP.

Under British colonial rule medical service was something that was provided, with little thought given to the cost of care, efficiencies in service delivery, savings in curative care resulting from effective PHC, or comparative costs of competing services (immunization vs. safe water). In the past few years, however, Jamaica has learned that public services do have a cost and that no system can provide all things to all people. This has precipitated some sound, and politically courageous, decisions on the allocation of scarce resources to the health sector.

For example, in response to a pilot study demonstrating that different mixes of clinic personnel could more efficiently handle the patient load (Zachariah et al., 1987), a project is planned to see if savings can actually be generated by restaffing clinics based on more efficient patterns of utilization. However, since the MOFP retains such tight control over the allocation of finances and the MPS has authority over personnel positions and classifications, the MOH must fight for the authority to realign staff and budgets to maximize service per cost. The Administrative Reform Programme (ARP), a government-wide program designed to address constraints on the operation of the civil service, could clearly be an ally in helping the MOH gain this authority (see Appendix IV).

C. Personnel System

1. Recruiting and retaining staff

Serious problems for the MOH are the recruiting and retaining of management staff and medical and technical specialists. Although this problem is not unique to the MOH, it clearly affects the fulfillment of the Ministry's mandate.

The repeated criticisms of the operation of the MOH, particularly the hospital network, can be traced in large part to staff vacancies. Table 5 documents the vacancies in critical medical and technical positions in the MOH in 1987. At any point in 1987, from one-quarter to one-third of the required medical positions were unfilled. The problem of unfilled vacancies is directly linked to the issue of overcentralization in the GOJ. This manifests itself at the level of both the line ministry -- MOH -- and the core ministries, particularly the MOFP, the MPS, and the independent Office of the Services Commission (OSC) of the Personal Services Commission. For example, when a Type I health center in a rural area requires a nurse, the request must be approved by the Director of Nursing at MOH headquarters. The Director of Nursing and the Personnel Department identify and interview suitable candidates. However, the MPS is the only ministry currently authorized to approve a position, and the OSC is the only body authorized to hire. Moreover, the MOFP must agree to fund the position even if the slot has been approved by the MPS. Therefore, the MOH staff must (a) receive approval from the MPS for the position, (b) receive authorization from the MOFP to fund the position, and (c) receive approval from the OSC to hire the individual. The process is time consuming and deprives the MOH of the authority to make personnel management decisions.

A similar circumlocution is required when the MOH wants to dismiss a person for cause. The MOH must request an "interdiction" from the OSC on an employee judged to be derelict. The OSC makes a judgment on a course of action, e.g., reprimand, half-pay, or temporary suspension. The OSC then hears and decides every case in the government, a process that can take over a year. The practical effect, according to informal reports by MOH staff, is that many supervisors simply do not take action against non-performing employees because it is not worth the effort. This undermines supervisory responsibility and promotes low productivity and low morale.

The important point to note, however, is that this is not an MOH problem; it is a GOJ problem. The MOH simply illustrates the problems that accrue from overcentralization of management and personnel functions.

Table 5. MOH vacancies, by occupational classification: Jamaica, 1987

Classification	Established posts	Number filled	Number vacant	% vacant
1. Physicians				
Grade IV	98	77	21	21%
Grade III	53	31	22	42%
Grade II	80	52	28	35%
Grade I	85	56	29	34%
Total	316	216	100	32%
2. Nurses				
Supervisors, public health nurses	219	180	39	18%
Clinical nurses, Sisters	536	411	125	23%
School nurses, nurse prac., family life eds.	1,674	1,204	470	28%
Asst. nurses, midwvs, comm. hlth aides	2,311	1,860	451	20%
Total	4,740	3,663	1,085	23%
3. Medical tech.	167	104	63	38%
4. Radiographers	60	23	37	62%
5. Pharmacists	151	95	56	37%
6. Physiotherapists	33	22	11	33%
7. Nutritionists/ dieticians	20	11	9	45%

Source: MOH Personnel Division

2. Salary levels

Perhaps the single greatest obstacle to recruiting and retaining high caliber staff is the low salary levels of the Jamaican civil service. A study in 1983 by Technical and Economic Development Associates documented that all civil service salaries are low, but that the remuneration of professional managers is proportionately lower than for technical staff (TEDA, 1983). A target of the ARP is therefore to raise the salaries of civil servants. In the past two years:

- Executive management staff received a one-time increase of over 20%.
- The senior management group and the top grades in the medical fields received a one-time increase of over 10%.
- Executive management and senior management staff will receive another 7% increase on 1 October 1987, retroactive to 1 July.
- Administrators, financial managers, and natural and applied science groups will receive an increase of 8-12 1/2% on 1 October 1987, retroactive to 1 July.
- Clerical and support staff will receive a 13 1/2% increase, also retroactive to 1 July.

Another component of the ARP is the process of "reclassification," or redrawing the competency levels and salary grades for civil service positions. This is an opportunity for the MOH to aggressively pursue the upgrading of managerial positions and to ensure that technical medical specialties are categorized at a level congruent with training and skill levels.

3. Personnel coverage

With shortages at virtually every facility in the MOH system there is little or no room for "backup." Leave days, departmental leave, sick leave, and bank holidays total 65 days a year (13 weeks) for government employees. The result is that civil service workers have 3 months of leave per year. This means a significant number of vacant posts at every point during the year.

A recent article in the West Indies Medical Journal indicates that the greatest percentage of "unproductive" time in observed clinics is due to absenteeism (Desai and McCaw, 1987). Medical officers' total "unproductive" time was measured at 35%; for dentists the total was 69%. The authors explain that a significant proportion of this "absent" time may be due to circumstances beyond the control of the medical staff, e.g., non-functioning equipment. That is only an index, however, of another breakdown in the management system of the

MOH -- a breakdown that is correctable within the present authority of the Ministry.

One possibility for addressing this situation is for the MOH to press for the authority to pay staff more if they work more. The funds could perhaps be shifted from unfilled posts to cover these additional costs. The individual employee would receive more money, posts would be covered, and presumably service would increase. A corollary would be paying a premium to staff members who have excellent performance records. Again, the ARP should be sough-t out as an ally in obtaining authorization for such changes.

D. Health Information Systems

An effectively functioning national health information system has three fundamental uses:

1. It helps public health planners and decision makers detect and monitor adverse health events, prioritize health problems, and develop and implement effective strategies for disease control and prevention.

2. It enables researchers who are trying to understand the natural processes and causal factors of adverse health outcomes in a population to develop and test their theories.

3. It helps evaluators determine whether current health service and health promotion programs are effective strategies for disease control.

To be most useful health information must be:

- Complete: It should detect all or nearly all of the mortality or morbidity of interest).
- Accurate: What is reported should be what actually occurs.
- Timely: The information should be available to information users at the earliest possible time to contribute to effective decision making.

In order to arrive at an accurate and complete picture of Jamaica's health problems the assessment team reviewed many published and unpublished reports and examined factors that contributed to or detracted from the completeness, accuracy, and timeliness of the information contained in the reports. It quickly became apparent that many organizations both within and outside the MOH need health information. However, no organized, coordinated approach to collecting, analyzing, and distributing health information to decision makers and other users of health information was observed.

Fundamental health information that facilitates problem definition, problem solving, and evaluation includes five main components:

1. Vital statistics: data on the births and deaths that occur in the country. This is the source of age-specific fertility data and age- and cause-specific mortality data. In Jamaica vital statistics are the responsibility of the Registrar General's Department in the Ministry of Construction.

2. Surveillance systems: systems of disease monitoring that may be established by the public health laws or that are begun and maintained by voluntary service organizations. The reporting of certain communicable diseases by health workers and laboratories is an example of such a system mandated by law; a registry of cancers maintained by a PVO is another. Surveillance systems describe new events that occur in a given period of time and are useful in detecting unusual patterns of disease or death. Any ongoing collection, analysis, and dissemination of information on adverse health events can be classified as surveillance.

3. Surveys: special studies used to describe health status or to determine knowledge, attitudes, and health practices at a given point in time. Because they rely on collecting information from a sample of people rather than the whole population, the design of the survey and the unbiased collection of the information are important considerations when trying to generalize survey findings to the population as a whole.

4. National experiments: investigations of outbreaks or epidemics. These are defined as the concentration of a greater than expected number of a similar adverse health event within a short period of time, usually hours, days, or weeks. Examples are outbreaks of measles, dengue, or food poisoning. When they occur a response from the public health sector is often indicated in order to prevent more individuals from becoming ill.

5. Controlled experiments: special studies that, unlike surveys, are designed to describe adverse health events and to determine what factors distinguish ill persons from persons who are not ill.

E. Administrative Support Systems

A serious problem for the MOH is the weak performance of its management support systems: vehicle maintenance, equipment repair, and drug logistics. Inventory controls and performance monitoring do not appear to be in place. Long lead times required by the MOH procurement process make it difficult to accurately anticipate future commodity needs. This problem is compounded by insufficient funds to purchase equipment and supplies, leading to a scarcity of spare parts, frequent breakdowns due to lack of preventive maintenance, and depletion of basic health center supplies. Inadequate transportation

is the focus of the most attention during discussions with field staff. Vehicles are not readily available when health center staff need to make home visits. A further frustration is the lack of coordination between the PHC network and the hospital system; there is no reciprocal access to vehicles, even with sufficient justification.

F. MOH Management Innovations

The MOH is currently in the process of undergoing some management changes that have the potential to significantly streamline operations and focus the Ministry on its role and objectives. These changes involve broad policy alternatives as well as day-to-day operational procedures. They include: rationalization, integration/decentralization, and performance budgeting.

1. Rationalization

"Rationalization" is the term that has been applied to the reappraisal of hospital utilization, particularly of small rural hospitals that are relatively costly to operate but that have low utilization rates. The result of this process has been the managerially efficient, but politically difficult, decision to downgrade five small secondary care hospitals into "polyclinics." These will become Type III health centers with the added feature of lying-in facilities for normal deliveries. Significant savings in re-current costs and staff have already been demonstrated.

To balance the services lost from downgrading five hospitals, selected other hospitals will have beds added without increasing the basic range of services now given. Polyclinics will refer patients who require hospitalization to these expanded facilities, designated "receiving hospitals."

A third component is the upgrading of some highly-utilized hospitals. Specialty services to be added include radiology, physiotherapy, ophthalmology, and laboratory support.

2. Integration/decentralization

The MOH is very aware of the fact that operational decision making is concentrated in Kingston. In addition, it is recognized that what has emerged as a two-part system -- PHC and secondary care hospitals -- has a number of problems. Management functions and personnel are duplicated in the two independently operated systems. Coordination is also inhibited, and referrals from health centers to hospitals are not smooth. Frequently, patients go to hospitals for routine primary health care that the system is designed to provide in health centers. The process is further confused by the fact that the jurisdictions for PHC do not coincide with the ten hospital regions.

The MOH has started to address these problems through a two-part change in management aimed at: (1) merging the parallel PHC and hospital systems -- integration -- and (2) delegating more authority, and responsibility, to managers at the area level -- decentralization. For example, in the PHC system groups of parishes are being merged as "health areas" for the delivery of PHC services. One pilot area has been created and another is being formed. There have been discussions that a PHC/hospital health area could eventually be managed under the direction of a single area health director.

3. Performance budgeting

An important tool in the process of decentralization and integration will be performance budgeting. The area health directors, who are closest to the action, will be expected to monitor the achievement of preset goals, within budgetary limits, for their respective areas. They will therefore gain both the authority and the responsibility to efficiently implement the MOH program (See Appendix IV).

Ultimately, the MOH would like the authority to make management decisions on the type of service mix and personnel required to implement its program in the most efficient manner. Information from the PRICOR operations study would be utilized for such decision making (PRICOR, 1987). At the moment, however, the Ministry does not have the authority from the MOFP, the MPS, or the OSC to operate the program in such a manner.

G. Strategic Planning

Over the past five years the policy initiatives of the MOH have, in many cases, been forced upon the staff by fiscal constraints. Nevertheless, the directions they are taking are consistent with the appropriate role of a public health department. Still, because many of the positive steps have been reactions to problems of the moment there has not been an opportunity to put together a strategic plan that permits the MOH to assess where it wants to be in five years, where it is now, and how it will get from its present position to the desired position.

The present policy statements of the MOH are broad descriptions of the intent of the government to ensure a basic level of health care for all Jamaican citizens in a respectful environment, without regard to their ability to pay. Traditionally, one year's program is an extension of the previous year's inputs. This is routinely a "planning" style with line-item budgeting. Performance budgeting has introduced the opportunity for the MOH to turn this process around. Instead of looking back and reacting to events, the Ministry is in a position to apply forward thinking and planning directed toward explicit goals.

An enhancement to the development of a strategic plan is the crafting of a mission statement that combines the broad objectives of Ministry policy with operational goals. Drafting a mission statement can have the residual benefit of compelling the MOH to review and assess the desired role of a public health department in the 1980s and 1990s. Some of the recent policy decisions -- rationalization, decentralization, performance budgeting -- have initiated this process, but seemingly in a piecemeal fashion. The formal exercise of drafting a mission statement and defining the role of the MOH as part of a five-year strategic plan could integrate these various initiatives into a coherent plan that can then receive policy approval, be articulated to all members of the system (including external donors), and be initiated.

In order for a strategic plan to work there must be a locus for operational and strategic data to be gathered in a timely manner, analyzed, and reported to decision-makers. As part of the forward planning of the MOH it is already envisioned that the health information, planning and evaluation, and epidemiology units will be combined. This combined unit is an obvious center for monitoring the implementation of a strategic plan. Shortfalls, such as in logistical support, maintenance, and purchasing, will become immediately apparent and corrective actions can be taken. At the end of each fiscal cycle performance budgeting will permit the measurement of outputs and the costs for each program component, which then will become the basis for modifying and implementing the next year of the plan.

IV. ECONOMIC AND FINANCIAL ASSESSMENT OF THE JAMAICAN HEALTH SECTOR

A. Problems of Underfinancing

In recent years, the decline in real spending (see Section I.E.), both overall and on a per capita basis, has affected the quality and quantity of health services delivered at public facilities. It is impossible to maintain a given level of service when resources are dwindling. Supplies, maintenance, and equipment replacement have borne the brunt of the financial strain, which seriously erodes the system's ability to cope with patients.

As early as 1982, the Cumper report warned that given current trends, the demand for health services from the public system would soon outstrip the Ministry's budget. The Stevens report a year later also found that the MOH was underfinanced. A Project Hope report (1985) on a 1985 MOH workshop notes similar findings.

The total MOH budget allotment for 1984-85 was about J$260 million, with about J$240 million going toward recurrent expenditures. The MOH system includes hospitals, health centers, training programs, and support services. The total value of plant and equipment is approximately J$500 million, but the 1984-85 maintenance budget was only J$20 million, with a mere J$3 million to cover recurrent costs. The actual costs of the MOH system were in excess of J$300 million, and the Ministry was faced with a shortfall in February 1985 of J$73 million, with the largest components being personal emoluments and drugs. As a result, services have suffered, although a crisis in primary care was avoided due to the depth of service built up in preceding years. Although the redundancy program has in the past year resulted in some savings, serious shortfalls remain for personal emoluments, medical supplies, and other items.

The MOH has recently attempted to supplement its budget allocations through reforms in the user fee system at public facilities. A revised fee schedule, combined with a radical policy to allow facilities to retain one- half of all fees collected, have encouraged hospitals to supplement their budgets with revenues from patients. The new fee schedule does not cover actual costs, and there is no provision for charging full costs to patients, even those with sufficient resources or private insurance. Fees were set at a level to recover 10-20% of costs, although the ability to retain fee revenue has reportedly raised the rate of collection substantially. This outcome has not yet been evaluated, however.

No fees are being collected at the clinic level, either for consultations or for drugs, and the MOH is reluctant to collect fees for PHC. The potential for greater cost recovery appears to exist and these deserve attention, especially since it is one important and simple method for increasing revenue in public health facilities.

B. Health Care Spending in Jamaica

1. Household expenditures

A 1985 study by the Ross Institute of Tropical Hygiene found that Jamaicans spend a significant amount of their income on health, and that the combined public and private health care expenditures are substantial, as the data in Table 6 suggest.

In 1983, more than 45% of health care spending in Jamaica occurred in the private sector. Although private hospitals accounted for only about 10% of all hospital spending, Jamaicans spent more than twice as much on private ambulatory care as on publicly provided outpatient care, reflecting the low fees in public facilities. Given the relative costs of inpatient and outpatient care, the data confirm that the government is covering a disproportionately high percentage of overall costs.

Why individuals select private providers rather than government clinics was not explored in the report, but the lack of physicians at PHC clinics, shortages of drugs and supplies in public facilities and long waits (especially at hospital outpatient departments) may have played a role. Moreover, the cost of physician consultations and drugs, the core of outpatient care, are far more modest than inpatient services at a private hospital. Hence individuals will seek private ambulatory care and pay the associated charges, but resort to public subsidies when the costs escalate, as they do for private inpatient care.

A 1984 survey (Planning Institute of Jamaica, 1986; Statistical Institute of Jamaica, 1986) of household expenditures indicates that households spend about 1.5% of their disposable income on health. Table 7 summarizes household total and health expenditures, and the amounts and percent of income spent on health. Lower income groups spend a smaller proportional amount, increasing to more than 2% of income for high-income households. If average household income in 1984 is estimated at J$12,348, the average expenditure on health was about J$200; the MOH estimates a government health expenditure of about J$100 per capita. Thus the total public and private health expenditures were about J$600-650 per household in 1984, assuming an average household size of 4.3 persons.

Since per capita consumption expenditures have been estimated to have risen about 40% since 1984, out-of-pocket expenditures by the average Jamaican household in 1986 total about J$275 for health. The MOH estimates a per capita expenditure of about J$163 in 1986-87, making a total public and private expenditure on health of J$950-1,000 per household in 1986/87. Thus overall health expenditures rose roughly 40% between 1984 and the 1986/87 period.

Table 6. Estimated Expenditure on Health Care, 1983 (000's)

	Public	Private
Hospital inpatient	103,836	12,314
Hospital outpatient	27,357	5,282
Health Centers	27,877	11,973
Private Practitioners		102,135
Total	159,070	131,603

Source:Ross Institute Report, 1985

Table 7. Distribution of Household Expenditure on Health

Expenditure Group	% of all Households	Ave. household Expenditure	Health care spending Percent	Ave. Amt.
J$ 0-3,000	11.82	$1,822	1.12	20.41
3,001-6,000	19.08	4,558	1.02	46.49
6,001-9,000	17.63	7,435	1.15	94.02
9,001-12,000	13.18	10,405	1.05	109.25
12,001-15,000	10.29	13,454	1.20	161.45
15,001-18,000	6.88	16,370	1.62	265.19
18,001-21,000	5.30	19,411	1.63	316.40
21,001-24,000	4.11	22,379	1.68	375.97
24,001-27,000	2.99	25,432	1.84	467.95
27,001-30,000	2.28	28,435	2.02	574.39
30,000+	6.44	42,156	2.25	948.51

Source:Household Expenditure Survey, 1984; Statistical Inst. of Jamaica.

2. Health insurance

As already mentioned, only about 12-15% of Jamaica's population have insurance coverage, most of which is used to pay for private physician care outside of hospitals. The approximately 350,000 Jamaicans covered by health insurance are estimated by Life of Jamaica to represent about one- half of the private fee-for-service market. The largely free public hospital system may be an impediment to more widespread use of health insurance, since the risk of illness is currently borne almost entirely by the government. Insurance merely ensures that the patient will be able to afford private health care if the need or preference arises.

Public hospitals do not charge patients with insurance any differently than indigent patients. The University Hospital, which is also heavily subsidized for all income groups, charges insurance companies at a higher rate, but even these charges do not cover the full cost of care. Major problems in public hospitals are the lack of personnel, collection mechanisms and fee schedules to effectively handle reimbursements through private health insurance. Providing incentives to encourage employers to provide health insurance, establishing incentives for private industry to expand insurance coverage, and aggressively pursuing reimbursement from those who have insurance could together contribute to greater cost sharing for expensive inpatient care. Moreover, these initiatives would promote demand for private insurance.

C. Use of Health Services in Jamaica

1. Public sector health services

Use of service delivery by the MOH has been declining in recent years, both at the hospital and PHC levels. Although the data are incomplete and of generally poor quality, Table 8 shows the trends in public health care use over the 1983-86 period. There is no evidence that the decline in hospitalization is a response to improving health status. Rather, it is more likely either related to the absence of services, such as a shortage of doctors and other health personnel (See Section III.C.), or a response to the long waiting times reported by public facilities. The deterioration in quality is cited by those within and outside the system as the reason for seeking alternative sources of care (e.g., ambulatory care), but no hard evidence is available to confirm this..

2. Private sector health services

Whereas most hospital care is rendered at public institutions, a large portion of ambulatory care is provided by private physicians, as the information in Table 9 suggests. In 1983, private practitioners provided more than one-third of all ambulatory

Table 8. Trends in Public Health Care in Jamaica, 1983-86

	1983	1984	1985	1986
Hospital (000's)				
Discharges	154	147	133	129
Outpat.		552	447	421
Casualty		531	402	429
Health Clinics (000's)				
Antenatal	141	144	146	144
Postnatal	61	62	66	69
Child Health	360	352	352	429
Fam. Planning	228	298	367	359
Curative	927	1,138	1,064	1,015
Home visits	376	463	303	231
Dental visits	80	115	129	126
Total	2,173	2,571	2,426	2,373

Sources: Economic and Social Survey Jamaica, Planning Inst. of Jamaica, and Statistical Yearbook of Jamaica, Statistical Institute of Jamaica.

Table 9. Health Care Contacts: Jamaica, 1983

Type of Contact	Number ('000)	Percentage
Hospital Discharges	159	100
Public	148	93
Private	11	7
Ambulatory Contacts	5161	100
Hospital OP/Casualty	1206	23
Clinic, MCH	782	15
Clinic, curative	931	18
Home visits	372	7
Private practitioners	1870	36

Source: Ross Institute Report, 1984

contacts, despite the J$40-80 per visit charge and the limited health insurance coverage on the island.

a. Physicians in private practice

As already discussed, the number of physicians in private practice include those in private practice as well doctors employed by the MOH who are allowed to have a private afternoon practice, and about 60% do. The large number of private doctors practice less intensively than do their public counterparts as indicated in Table 10. Nevertheless, both have a significant patient load.

The aforementioned physician survey also produced an income profile of private physicians. A summary of their findings are presented in Table 11. Somewhat surprisingly, patients of private physicians are not concentrated in the upper classes. This could be a consequence of nonavailability of free services from the MOH, or it could reflect a willingness to pay for what is perceived as better care in the private sector. Physicians were asked to identify patients by the following criteria: "'upper class' was meant to represent persons from the wealthiest groups in the society or top governmental persons in a general sense, and business people of substance. 'Working class' was meant to include the broad group of persons in the society without professional training and without incomes which might afford them obvious 'middle class' standards of living."

Table 10. Weekly Patient Load for Physicians, Jamaica, 1983

	Site of Practice	Mean patients per week
Government:	Hospital	95
	Health Center	128
	University Hosp.	103
	Univ. Health Cent.	46
Private:	Offices/Clinics	85
	Hospitals	23

Source: Physician Survey, 1983

Table 11. Social Class of Patients: Jamaica, 1983

	Percent in Government practice	Percent in Private practice
Upper Class	5	10
Middle Class	30	44
Working Class	64	46
Indigent	19	4

Source: Physician Survey, 1983

b. Private hospital care

In contrast to private ambulatory care, private hospital care, comprising only about 250-300 beds, is somewhat rare in Jamaica. Only 7 private hospitals operate on the island. There also appears to be little growth in private hospital care, as the number of private annual discharges in 1985 was approximately the same as a decade previously.

Three main reasons seem to account for the lack of private hospital care: First, private hospitals appear to be poorly managed, and most are not generating any profit. A recent USAID-funded analysis of one private hospital reported a lack of professional management and no clear understanding of the use of hospital resources (Trevor Hamilton and Associates, 1987). The consultants pointed out that virtually all decisions were made by the medical staff. Hospital management at virtually all the private hospitals is the responsibility of untrained, inexperienced individuals. All seven hospitals adhere to a commonly established fee schedule without regard to their own costs, or what the market will bear. Moreover, although occupancy rates are generally respectable, it is estimated that a constant 90% occupancy rate is required to allow these facilities to break even, based on current modes of operation.

Second, the UWI hospital is an available alternative. The teaching hospital at the UWI was noted by both public and private sources for its quality care and low prices. Most high-technology, tertiary care is available only at this hospital or at Kingston Public Hospital, and UWI secondary care is considered superior to that available at either private or other public institutions.

Third, the Jamaican ability to pay for sudden major medical expenditures is limited. Insurance payments often consist of a cash payment to the patient, with no obligation to show hospital reimbursement. Thus there is little provision for payment of sudden large medical bills through the private sector and few have the resources to pay on their own.

c. Health maintenance organizations

Life of Jamaica's health maintenance organization (HMO) discussed earlier is the only pre-paid group practice organization in Jamaica. It is designed to operate as a variant on the preferred provider organization (PPO).

Thus, reliance on private hospitals is constrained by the limited supply of private facilities and the small number of individuals covered by insurance. Moreover, some treatment can be obtained only at the University Hospital or KPH, and these are typically costly, high technology services. And although curative ambulatory care is increasingly provided by private physicians, the more expensive inpatient care is still predominantly subsidized by the government.

D. Health Financing Issues

Most of the major problems and constraints of the MOH are related to the severe lack of funds caused by a declining real budget. Additional problems emerge regarding the efficient allocation of budget resources and legal barriers to more efficient operations. The low pay of MOH physicians and the scarcity of drugs obstruct day-to-day operations. The deteriorating condition of MOH capital resources also seriously affects service delivery. Legal constraints on the MOH include the civil service statutes and the requirements on fees collected at the MOH hospitals.

The problems of the health clinics most often mentioned by MOH officials are directly related to the unavailability of physicians and drugs. Because of clinic shortages, it is alleged that Jamaicans either resort to private care or bypass the clinics to obtain more expensive care directly from the public hospitals. The result is inappropriate service delivery at the hospital level. Another consequence of the failure of the PHC clinics in service delivery is a problem with continuity of care. This is particularly troublesome in cases where managed care is important. As a result, MOH officials have stated that an inordinate number of hospital admissions are from chronic controllable diseases such as diabetes and hypertension. The largest single category of admissions to the Kingston Public Hospital surgery wards, for example, is diabetics.

E. Current Initiatives of the MOH

There is considerable support both within the MOH and in the government at large for reform of the current financial system to reduce costs and increase efficiency. In September of this year, the Ministry held its second workshop within three years to develop a plan of action for the next five years. Among the priorities identified were alternative financing and financial reform of the current system. Perhaps the most important alternative financing endeavor of the government was the creation of a committee headed by Mr. Philmore Ogle to investigate privatization alternatives for MOH hospitals. This committee has become the focal point for debate regarding privatization options for the MOH. The committee's preliminary report in 1985 discussed a number of alternatives for coordinating MOH activities with those of the private sector, and a second report in 1987 offered concrete suggestions ranging from national insurance to a fee-for-service, to privatization of an entire parish's public health service. This committee has worked with the Ministry and other government officials in proposing three realistic pilot projects. These projects are in the process of being finalized and put into operation on an experimental basis. In addition, the MOH is engaging in financial reform of the public sector.

1. Pilot projects in privatization

Acting on the recommendations of the Ogle Committee, the MOH is planning three pilot projects designed to consign public service provision to private management on an experimental basis. Each of these projects involves a different level of private control and risk, and one involves additional changes in the health delivery system. The three projects under consideration include: 1.) the privatization of a parish level public health network (though the government would continue to retain ownership), and, 2.) the contracting out of the management of a public hospital; in one case with the management at risk for financial loss; and, 3.) in the other with the MOH at risk. Sites being considered for the first of these projects include St. Catherine and St. Ann parishes.

a. Private management of a public health network

In this project, the most completely formulated of the three plans and by far the most innovative and ambitious, a private company or consortium would take over the management of both the hospital and the curative components of clinic services within one parish.

There are several major components to this project. In brief, the MOH would like a private group to operate the MOH facilities at their own risk. The MOH would cover treatment of indigents with a per person payment, and subsidize treatment of near indigents. Other persons would be treated on a fee-for-service basis. The creation of a Health Facilities Trust (discussed below) would enable the private concern to control and manage the operation in a cost effective manner. To determine the feasibility of such a project, the private group would have to determine both the expected revenues generated and the probable cost of running the system. These issues are discussed below.

Substantial components of this project remain to be worked out, and include details of possible HMO arrangements; issues of what services the HMO will be liable for; whether doctors or the corporation will be at risk for cost of care; and what arrangements will be made for exceptionally costly cases must be resolved. The MOH may want to accept the cost of care for cases that are high cost outliers within existing public specialty hospitals. In addition, who is responsible for the cost of care of patients transferred to the public system must be made explicit.

The financing for this project is expected to come from both the MOH and from those in the population with the ability to pay. Preliminary planning is for indigent subsidies to be calculated on some cost basis which will provide sufficient resources to cover the cost of a minimum acceptable level of care for the target population. This would be paid to the private group as a capitated amount. This will be a difficult process, given the paucity of cost and service

specific utilization data. Calculating of the cost of a minimum level of care involves a number of conceptual and practical problems. First, it is likely that the concept of a minimum level of care will be impossible to define. An alternative approach to implicitly set medical standards that has been used in the U.S., is to establish a peer review organization (PRO) to monitor the activities of physicians and their employers. These PROs follow established protocols, but actual determination of appropriate care is made on the basis of the individual case. The costs, however, cannot be as easily addressed, and some period of experimentation may be needed to determine the necessary MOH subsidy.

The population covered will be quite broad, but qualifying standards and procedures for government coverage have yet to be worked out. About 40% of the population is considered indigent, easily identifiable, and eligible for medical coverage. However, a large segment of near indigents, perhaps 30% of the population, is considered at least partially in need of government medical subsidies, but not easily identifiable. Thus the determination of the size of the MOH target population, their medical needs and their subsidy requirements are not known. This must be determined before dealing with the problems of measuring the ex ante costs of needed services.

Cost containment is vital to the success of the project, with the most important issue the control of labor costs and the productivity of labor. The MOH has proposed the creation of a Health Facilities Trust, under which all the facilities to be managed privately will be vested in what the Ogle Committee calls a "private trust with public responsibilities." The private management would then lease the facilities from the trust. It is envisioned that the leasing company through the trust would be able to set remuneration levels for staff. Management would be able to return any unacceptable employees to the public sector. This would accomplish two purposes. First, it would allow private management to pay sufficient salaries to attract and keep doctors, nurses, and medical technicians. Second, it would allow them to remove civil service employees without the complicated process required for civil servants in the MOH. The MOH believes that this arrangement would give the private group sufficient latitude to control costs and promote productivity. It is expected that the privatization arrangement will result in significantly lower costs of operation, and/or higher quality care for the same expenditure.

b. Private management of a public hospital: management at risk.

In this more modest project, the Health Facilities Trust would enter into a contract with a private firm to manage a public hospital, with the management firm responsible for any profits or losses. This would provide ample incentive for efficient operation. This project would allow less freedom to experiment with different methods of revenue generation. The capitated, HMO-style contracts used in the

larger project would probably not be appropriate here. (HMO success is often attributed to the ability to avoid costly hospital care through more intensive use of less expensive ambulatory facilities. If the private consortium were to manage only hospital care without ancillary outpatient care, then a capitated system would probably not produce a significant savings.) The project might result, however, in lower operating costs through efficient staff incentives and management.

Problems with this alternative center around the setting of fees. If the MOH were to allow the management firm to set fees, firms would be more willing to accept risk of losses. The MOH, however, likely will want to retain some control over charges. If fees are set at less than cost to provide some subsidy to all hospital users, then losses will be certain. In such a case, no private firms will be accept any risk. Thus this issue needs additional review before it can be finalized, since it is key to the attractiveness of the experiments to private firms.

c. Private management of public hospital: no private risk

This alternative is similar to the second, with the difference that the private management firm would assume no liability for losses. The ability to retain possible profits if fees are set to cover costs may, however, provide some incentives for efficient operation. Advantages are the lower cost of this type of management contract for the MOH and the possibility of increased interest by private groups because of reduced risk.

F. Economic Rationale for Privatization

When properly executed, these endeavors could produce substantial economic benefit. These benefits will occur both in the areas of greater revenues and lower costs in the health care system, and ultimately more efficient operation of the hospitals and clinics. The MOH will benefit from both, with increasing revenues paying for former MOH provided care, and more efficient operations reducing the costs of care purchased by the MOH.

-Greater revenues within the health delivery system. Currently, the MOH pays the full cost of hospital care for nearly the entire population. If privatization results in even 25-30% of the population paying for their own hospital care, the Ministry will be much more solvent. A major goal of privatization is to place responsibility for hospital care on the shoulders of those able to pay. While the MOH will continue to provide hospital care for a substantial portion of the population by purchasing the care, those with sufficient income will be placing more resources in health care delivery through higher fees.

Alternatives being considered as sources of operating revenue for

these projects include an add-on to the current social security taxes, or some other sort of compulsory payment mechanisms. The ability to opt out of the compulsory payment with private insurance coverage is being considered. It is quite possible, however, that the privatization projects can be conducted independently of any nationally raised revenues. The MOH may be able to finance its portion of these experiments out of funds that would have gone to operation of the hospitals.

-More efficient operation. The costs of care paid for by the MOH should be significantly reduced in the project areas. The primary cost reduction will occur through more efficient use of labor employed by the Health Facilities Trust. Although some staff salaries will rise, the ability to allocate labor more efficiently with penalties, rewards, and removals will be a major component in increasing efficiency. The impetus for undertaking these efficiency changes will come from the profit motive driving the private management firm. Given any level of revenues, financial performance will depend on cost minimization.

More efficient allocation of resources also may occur if the system can be structured to encourage greater use of the clinics and less use of hospitals. This could be one important result of the parish-wide experiment. By diverting patients to greater clinic use, the private management firm could significantly reduce the per capita cost of providing care without any degradation in quality of care.

-Gaps in privatization development. There are, however, a number of continuing concerns about the operation of these projects. Although it is appropriate and economically sound to set up these projects in selected parishes, adequate provisions will have to be made for migration of patients either into or out of the project areas. If the quality of care improves substantially, many of the indigent and near indigent may seek care in the project area. Unless adequate provisions are made, this could result in a large increase in costs either for the contractor or for the MOH. On the other hand, if fees are raised substantially in these parishes, persons not covered by the MOH may avoid payment by seeking care in MOH facilities in adjoining parishes. This would both increase the workload of the MOH and decrease the revenue of the pilot projects. This potential must be acknowledged and accommodated as needed.

However, while privatization relieves the government of providing services, it also creates costs both in direct outlays and in oversight and regulation of private contractors. It is important to balance the benefits against the costs to both the private producers and the MOH staff. Experimenting with alternative options and building in thorough evaluations may help the government decide the most financially beneficial form of contract, but oversight of multiple contracts to multiple contractors could also become cumbersome and expensive. It may be more efficient to focus on fewer, well-defined activities. This is an empirical question that

can be determined as projects take shape, but it is an issue of importance in insuring MOH oversight.

G. Financial reforms of the public sector

Although the proposed pilot projects will involve the private sector in the delivery of health care in selected parishes, most health care services in Jamaica will continue to be delivered through the MOH for the foreseeable future. To streamline the delivery of these services, the MOH has embarked on financial arrangements intended to lower costs or to increase efficiency. These include the contracting out of some hospital services.

The housekeeping services at Kingston Public Hospital, previously carried out by civil service employees with low incentives and low productivity, was turned over to a private firm in September 1987. When the private concern took over, a large number of jobs were declared redundant and the workers dismissed. The private concern is using fewer employees, but paying them more. USAID is paying for the cost of a one time major cleanup for the hospital, after which the MOH will be responsible for maintenance.

V. DONOR SUPPORT

Jamaica is the recipient of large amounts of assistance -- grants, loans, technical assistance, training, and volunteers -- from foreign donors. Funding is supplied by both multilateral and bilateral agencies. The GOJ is frequently required to provide some matching funds and personnel; all loan support must be repaid.

The MOFP Planning Institute of Jamaica (1984) estimates that the health sector ranks sixth in terms of sectors receiving off-shore support; the population sector ranks fourth. Added together, the health/population sector would be third overall in terms of foreign assistance. Most support is routed through the MOFP, although some funds are distributed directly to the MOH and are thus unreported by the Planning Institute.

The Planning Institute's Official Development Assistance Bulletin for 1985 lists 36 donors to Jamaica: 20 multilateral and 16 bilateral. At least 13 of these support the health sector. The MOH draft health plan (1987) identifies sources, or potential sources, of off-shore funding in support of the program. The assessment team made a brief examination of the six agencies identified by MOH staff as the major contributors to their program. Below is a brief synopsis of this current and proposed support. Also included is a summary of PVO activities in Jamaica.

A. USAID/K

USAID/K has long supported the health sector in Jamaica. This assistance has included loans to the MOH, grant assistance to the National Family Planning Board (not covered in this assessment), support to Jamaican PVOs that conduct health activities (Council of Voluntary Social Services, 1987), funding for the installation of safe water facilities, and funding for the MOH's Health Management Improvement Project (HMIP) (Table 12). The HMIP will be completed in March 1989 with special provision in a recent project amendment for helping the MOH delineate and implement alternatives to health financing (See Section IV). Past and current activities of this project include support in eight broad areas.

1. Renovation

The physical facilities of many of the PHC centers have deteriorated badly. HMIP has taken responsibility for the physical refurbishment of 65 health centers. When appropriate, equipment has also been supplied under this phase of the project.

Table 12. USAID/K support (US$) to the MOH through HMIP

Area of support	USAID/K		GOJ
	Grant	Loan	
Technical assistance	588,585	1,083,000	77,170
Commodities	300,000	3,170,000	439,520
Renovations	1,907,780	3,717,400	566,530
Support costs	185,000	315,000	2,956,840
Training	35,635	263,000	28,270
Inflation		5,600	

TOTAL: USAID/K 11,571,000
GOJ 4,068,330

Source: HMIP, Amendment No. 5, p.3.

2. Support for rationalization

The MOH has reassessed its original plan for the distribution of health centers and hospitals throughout the island, upgrading some facilities and downgrading others based on population and utilization rates. To support this process HMIP was called upon to refurbish six rural hospitals as polyclinics.

3. MOH central office

HMIP has also provided needed material support for MOH headquarters in Kingston. This support has been for basic furnishings including desks, chairs, and desktop computers. Currently, a request is pending for the purchase of a mini-mainframe for financial, medical, and pharmaceutical recordkeeping, as well as for the use of the information and epidemiological units.

4. Training

HMIP's efforts in training led in 1986 to the drafting by MOH staff of a master training plan. HMIP has also sponsored a series of technical and managerial training sessions, most of which have been conducted in Jamaica, drawing upon expatriate trainers or Jamaican managers from the private sector. In a few instances MOH staff have been sent out of country for short-term training. The Administrative Staff College has facilitated the conduct of many of the in-country training sessions.

5. Management systems

A central initiative of HMIP has been to help the MOH develop management systems, including: (1) headquarters management, (2) nutrition surveillance, (3) standardized recordkeeping, (4) supply management systems, and (5) disaster relief plans. Audiovisual equipment has been introduced to support training activities with HMIP providing training in the use and maintenance of this equipment. Field management systems are the next priority areas for HMIP staff.

6. Community participation

HMIP has also been instrumental in developing community participation activities in the areas surrounding individual health centers. This has included the formation of health committees and the provision of training to local residents in management and technical fields. Income-generating activities, such as improved animal husbandry techniques and stock and vegetable production, have also been introduced. The MOH has been assisted in these efforts by the Ministries of Agriculture and Youth and Community Development.

7. PHC maintenance system

Under HMIP's direction, artisans were recruited and will be trained in the maintenance and repair of buildings and basic medical

equipment. These artisans will be placed in the parishes with technically qualified supervisors assigned at the area level.

8. PRICOR managerial experiment

In 1984, PRICOR, a centrally funded operations research project, detected less than optimal utilization of staff at health centers (Zachariah, 1986). Plans are being completed for the trial implementation of the recommendations in that report, to be supported by HMIP.

B. World Bank

The World Bank is proposing major support to the Ministry's family planning and health activities. A seven-year project scheduled to begin in early 1988 will have three components: (1) population and family planning programs, (2) health sector improvement, and (3) innovative sub-projects. World Bank support to Jamaica's population program is not a major focus of the current review. However, the proposed Population and Health Project acknowledges the interrelationship between maternal age and child spacing and improved maternal and child health. The health sector improvement phase of the project intends to support:

- Strengthening health management systems
- Restructuring referral systems
- Improving cost recovery and health financing systems.

Five full-time consultants will be retained by the GOJ to support the project. Sub-activities will be undertaken with the National Family Planning Board, the Planning Institute of Jamaica, and the MOH, with the MOH designated as the lead agency. Four consultants are to be retained by April 1988, to work with four MOH units:

- General administration and services
- Planning and evaluation
- Management information
- Epidemiology.

The MOH is currently in the process of combining the planning and evaluation, management information, and epidemiology units. As a component of this initiative the Ministry is also developing centralized information databases supported by electronic data processing equipment. The estimated cost of the Population and Health Project is US$12.4 million: $10 million as a loan, $0.65

million from UNFPA co-financing, and $1.75 million provided by the GOJ.

C. Inter-American Development Bank

As a consequence of the recent decline in Jamaica's economy, fewer funds have been available for the public sector. In addition, the MOH has been receiving a declining proportion of government expenditures. To cope with this set of circumstances the MOH has cut back on facilities maintenance, with the result that the secondary and tertiary care hospitals have fallen into serious disrepair. This, in turn, has adversely affected quality of care and made it more difficult than ever to retain medical staff. Not surprisingly, the issue of poor medical services at the nation's hospitals has entered political discussions. In response, the GOJ is negotiating with the Inter-American Development Bank (IDB) for a loan of approximately US$52 million to restore the hospitals to first-rate operating condition, with improvements to be based on the findings of PAHO's exhaustive 1987 study of the hospital system. Project activities are to be coordinated with PAHO's ongoing technical assistance to the Jamaican hospital program and the evolving comprehensive electronic data processing system within the MOH.

D. European Economic Community

The services of the central government laboratory have been severely hampered for many years by an inadequate physical facility, staff turnover, non-functioning equipment, and inadequate supply systems. The European Economic Community (EEC) had made an agreement with the GOJ to build a new central public health laboratory. The total grant amount is US$5.5 million, with the anticipated expenditures broken down as follows:

- $3.6 million: construction costs for a new 5-story laboratory building. Construction began in September 1987 with completion expected in 18-24 months.

- $1.5 million: laboratory equipment for the new building. New equipment will also be purchased for KPH and Cornwall Regional Hospital laboratories and for laboratories in Type II and Type III health centers.

- $0.4 million: refrigerated vehicles for specimen transport and limited training for lab technicians who will operate the new equipment.

E. UNICEF

The UNICEF Projects Office in Jamaica is charged with raising funds from national UNICEF committees for specific activities. Small-scale community projects currently supported by the Jamaican office of UNICEF include latrine construction in four parishes, repair of local water systems, and health education in nine depressed urban communities in Kingston and Montego Bay. UNICEF's long support of research on PHC in Jamaica has resulted in the development, in conjunction with UNESCO and USAID/K, of a school curriculum that includes nutrition education, a study of perinatal mortality, and a planned study to identify high risk children. Another service that UNICEF provides is the procurement of supplies and equipment for the Jamaican health sector. For example, UNICEF purchases ORT packets for which the GOJ pays on a "reimbursable procurement" basis. UNICEF has also agreed to use their established channels to do much of the procurement for the World Bank's proposed -Population and Health Project.

F. Pan American Health Organization

One of the most active agencies in support of the MOH is the inter-American regional office of the World Health Organization -- the Pan American Health Organization (PAHO). PAHO provides technical assistance through regional advisors in Washington and full-time staff in Kingston. PAHO advisors have made important contributions in health manpower assessment and planning (Brown et al., 1987; GOJ, MOH, Draft Five-Year Work Programme, 1987). Working with senior staff of the Division of Personnel and the MOH Planning Unit PAHO advisors have helped draft a review of personnel needs within the system and a comprehensive work plan for 1987-91.

PAHO has also been active in strengthening management services throughout the Ministry. This includes providing management training at the district level, assisting with the electronic data processing systems in nine regional hospitals, developing a monthly hospital reporting system with a built-in feedback component, and linking the hospital network to the PHC system, particularly in instituting performance budgeting.

A major PAHO effort was a comprehensive review of the hospital system for the IDB. This assessment is the basis of plans by the GOJ and the IDB to refurbish hospitals in Jamaica. Other areas of PAHO assistance to the MOH include:

- Training: development of the public health curriculum at UWI; support for advanced nursing training; and training in team management, leadership skills, and technical areas including epidemiology

- Environmental health: testing and monitoring of water and

air quality; inspection of sanitation and industrial waste facilities; and occupational health

- Research: support for studies on health and management issues including manpower needs, health district catchment areas, epidemiological surveillance, and fluoride levels.

As with UNICEF, PAHO provides a purchasing service to member countries, including Jamaica, particularly in the procurement and delivery of vaccines.

G. Private Voluntary Organizations

A large number of Jamaican private and voluntary organizations (PVOs) support an assortment of social activities, including improved health. One important stimulus for these activities is the United Way of Jamaica (UWJ), a fund-raising and technical assistance agency for the Jamaican PVO community. UWJ raises funds from the GOJ, private contributors (individuals and corporations), and external donors, particularly USAID/K. Any PVO in Jamaica may apply for financial assistance as long as they are registered with the GOJ and meet certain management criteria. In 1985 UWJ made awards to 20 Jamaican PVOs; in 1986 another 17 organizations received funding.

A major focus of UWJ is the development of institutional capacity among PVOs. Emphasis is on program monitoring and fiscal accountability. In addition, technical assistance is given in establishing fund-raising drives by the individual PVOs. UWJ itself has been quite successful in raising funds. In 1986 they raised over J$1 million; the target for 1987 is J$4.5 million.

UWJ provides a range of technical assistance to recipient PVOs in the form of financial management and office operations, program monitoring, training, fund raising, and even technical expertise in agriculture and health. They accomplish this through an extensive list of volunteers registered in their "skills bank." More than 50 individuals and corporations have agreed to help PVOs with management and technological assistance. This service is provided pro bono as a contribution through UWJ to the volunteer sector.

Many Jamaican PVOs can be characterized as "health" PVOs that implement important health activities. The assessment team examined a representative group of these for a sense of the kinds of services delivered and the contribution they make to the health sector in Jamaica.

1. Jamaica Cancer Society

This PVO has been active in Jamaica since 1955. The Society sponsors public education campaigns to increase public awareness about cancer and the importance of screening. It has sponsored clinics for

cervical and breast cancer screening since 1972. Approximately 9500 women are screened annually. A J$20 donation is suggested for this service, but no one is denied service due to inability to pay. Recent programs include follow-up clinics staffed by volunteer physicians and nurses who perform minor outpatient surgical procedures for women with abnormal Pap smears.

2. Jamaica Diabetes Society

This PVO promotes programs to increase public awareness about diabetes. It sponsors public screening clinics to check for elevated blood glucose. The Society's clinic is available daily to diabetics who wish to check their sugar levels or blood pressure.

3. Heart Foundation of Jamaica

This very active PVO sponsors weekly radio messages about cardiovascular disease. Once a month it sponsors a community call-in radio program with a volunteer expert who answers questions. The Foundation has its own screening program. At the request of businesses and schools, Foundation volunteers set up a comprehensive screening clinic on site where individuals are screened with an electrocardioanalyzer for early signs of heart disease. They also provide blood pressure and blood sugar testing. A $40 donation is suggested for this service. Foundation volunteers also sponsor hypertension screening in public markets and offices. About 6,000-8,000 persons are screened annually. The Foundation provides training in cardiopulmonary resuscitation (CPR) to physicians, nurses, and persons employed in the tourist industry. Recently the Foundation began a rheumatic fever control program. It is establishing a national registry of active rheumatic fever cases and is collaborating with health personnel in government health centers to follow-up on persons who do not return regularly for refills of penicillin.

VI. IMPLEMENTATION STRATEGY

Jamaica's health problems range from preventable childhood diseases to chronic and degenerative disorders -- a pattern typical of a country in the health transition that accompanies development. Addressing these problems has become increasingly difficult because of decreases in real resources in the MOH. This has led to a deterioration in the quality of care and has precipitated a public debate on alternative means of structuring and financing health care services.

There are areas in the Jamaican health system where carefully targeted support from an external donor could improve the health status of the Jamaican population. This support should be coordinated with the GOJ and other donors. The team recommends donor support in six areas.

A. Health information system

Reliable health information is the foundation of effective public health decision making and program evaluation. The assessment team observed a gap in the systematic collection, analysis, and dissemination of complete, timely, and accurate health information. Problems with underregistration of births and deaths have been recognized for years. There is no reliable, well-coordinated system for monitoring national trends in infectious diseases, chronic/degenerative diseases, or occupational diseases.

A World Bank Population and Health Project will provide extensive technical assistance to the MOH in the area of health information. Plans call for combining the Planning and Evaluation Unit, Health Information Unit, and the Epidemiology Unit into a surveillance and information section. PAHO and the IDB will also provide assistance.

Additional support could be used to improve the timely collection of vital statistics. Presently, births are underreported by an estimated 10-15%; and many births are not registered until the children are ready to enter school. Stillbirths and infant deaths are often never recorded. Consideration should also be given to providing some additional technical assistance to help coordinate the activities of the different components of the system. The MOH would benefit from experienced specialists who could help develop a comprehensive system that collects complete data, analyses it in a timely fashion, and reports the information to public health decision-makers.

B. Laboratory service system

Laboratory services are essential to quality clinical care. A well-functioning, full service laboratory system also provides important

epidemiologic information for tracking the incidence and prevalence of diseases in a population. Laboratory facilities, equipment, staffing, and financing have been inadequate in Jamaica for many years.

A new central public health laboratory, funded by the EEC, is now under construction. This promises to be a modern, well-equipped facility, but how well it functions as an asset to clinical care and disease surveillance depends on how well it is operated and managed. Improving the management of laboratory services is an opportunity for a donor to support an important component of the health service infrastructure. Moreover, without incentives to providers the facility is likely to follow the path of other MOH facilities that are underfunded: low productivity, deteriorated equipment and insufficient technical expertise.

Donor support is clearly needed to maximize the laboratory's service potential. Included in the list of needs are:

- Computers and data management software
- Incentives to promote efficiency
- Some degree of autonomy to set charges and control staff, especially with regard to salaries (topping government salaries and hiring above public sector levels.
- Training in laboratory management and quality control
- Training in information management
- Training in equipment maintenance
- Technical assistance to develop systems for collecting, transporting, and logging specimens

C. AIDS/STDs

AIDS is a recently recognized STD in Jamaica which appears firmly established in all parts of the country. Other STDs are also serious public health problems. Chronic STD infections in women can lead to sterility and ectopic pregnancies. Children infected with STDs in utero or during birth may die, be mentally retarded, or develop life-threatening postnatal infections.

Areas for donor support include:

- Sponsorship of an STD confirmatory and research

laboratory within the new central public health laboratory

- Support for incorporating STD screening and education into family planning and antenatal clinics

- Training for STD counselors in techniques of contact tracing.

- Support for PVOs promoting STD education and awareness

- Training for physicians and nurses, public and private, in STD diagnosis and treatment

D. Management reform

The MOH is grappling with a host of management problems ranging from structural issues (e.g., an overcentralized management structure) to process issues (e.g., inadequate supervision, low morale, and an environment that does not reinforce productivity). Previous attempts of external donors have had mixed results. Still, every input into the MOH is ultimately dependent on the management system for utilization of resources and institutionalization of skills. If the fundamental issues of management are not addressed, all external assistance could be inefficiently used or wasted.

One resource that the MOH has already utilized is the Administrative Reform Programme. Technical assistance has been provided in program review and assessment, performance budgeting, and management training. The current ARP project continues to 1988. A second loan will likely be approved to extend the program for another four years. However, the new loan will cover only slightly more than half of the project's budget. This will require buy-ins from additional donors, particularly for assistance to the line ministries such as the MOH.

The ARP could provide technical assistance to the MOH in management training and strategic planning. Support of the ARP on behalf of the MOH would be a relatively low-cost way to provide on-going technical support to the management of the MOH.

E. Legislation and regulations

As the MOH begins to curtail its role in curative care it can begin to focus on protecting the community's health. One component that has not been rigorously implemented is the enforcement of public health regulations. Many laws have to be written or revised; regulations need to be formulated from existing laws. The MOH staff shared with the assessment team a list of 17 laws and/or regulations

that require revision. (Appendix V). Donor support could be most useful in supporting a Jamaican legal expert to assist the MOH in this effort.

F. Public and private financing initiatives

The MOH plans to experiment with privatization of components of the health care system. This is a complex and innovative endeavor of potentially high pay-off. These experiments need careful and thorough evaluation. In addition, most of the activities of the MOH will continue to remain public. The MOH must deal with efficiency and financial issues in the public sector, regardless of the outcome of privatization activities. USAID has an important role to play in both types of financing activities.

Privatization of MOH facilities, as recommended by the Ogle Committee, is of high priority to the MOH. The experiments have the capacity to relieve the Ministry of a large financial burden over the long run, and to increase efficiency in hospital operation. However, the information and financing needs are substantial. USAID could provide short term assistance in developing the needed information base for privatization and long term guidance in execution of the project and evaluation of health and financial impacts. A detailed cost study of hospital operations, and reliable predictions of revenues from alternative fee structures will be demanded by private concerns before any contract is signed.

Promoting greater private sector initiatives in health care delivery necessitates access to capital and foreign exchange in particular. A possible donor role would be to provide foreign exchange loans to existing or planned private groups interested in private health care services. Grant funds could be made available to the GOJ to be loaned out to private groups investing in health care delivery. Loans would be made in US dollars, and repayment to the GOJ by the borrower made in local currency. Alternatively, other intermediary organizations such as the Trafalgar Development Bank, a venture capital organization already receiving loan-on funds from A.I.D., could become involved. This component would allow private health providers access to capital, and more importantly, to foreign exchange.

The MOH has already made bold moves to contract out some hospital functions to the private sector. In September 1987 the food and laundry services of the three-hospital complex in Kingston were transferred to a private contractor. This management change should be evaluated in terms of quality of services and costs. External donor support and technical assistance will be needed for such an evaluation.

One of the most serious issues in public health care delivery has been the chronic shortages of drugs within the MOH. A number of

options exist to improve the drug distribution system, including the following:

- Subsidizing drugs sold through commercial outlets (on the model of contraceptive social marketing);
- Selling (generic) drugs in MOH facilities at cost as a "backup" to free drugs;
- Implementing a voucher system where MOH patients would receive free, or discounted, drugs from a commercial pharmacist; and,
- Establishing revolving funds operated by the community as drug cooperatives.

If any of these options are viable, donors could assist in providing seed money and technical assistance to establish them.

In summary, the Assessment Team recommends that donor support -- technical assistance, commodities, training, and funding -- be provided in support of the MOH in the following areas:

- laboratory service system
- management information system
- AIDS and STDs
- management reform
- legislation and regulations
- alternatives health financing, both in the public and private sectors.

The Assessment Team believes this support has a high potential for positively affecting the health sector in Jamaica. There is generally high receptivity on the part of senior MOH staff to working in these areas. This support must be coordinated with resources being provided by the GOJ and other donors and this report has attempted to detail what additional support is available and how these added recommendations would complement, not duplicate, existing resources.

Key Contacts

AID/Washington

Katherine Jones-Patron
Health Development Officer, LAC

Barbara Spaid
Health Development Officer, LAC

Patricia Moser
Former Health Advisor, USAID/K (by telephone)

USAID/Kingston

William Joslin
Director

Myron Golden
Deputy Director

John Coury
Chief, H/P/N Division

Rebecca Cohn
Health Advisor

Christine Moody
Director, HMIP

Michael McClindon
Economist

Walter Coles
Private Sector Advisor

U.S./Embassy/Kingston

Kevin Whitaker
Second Secretary

Ministry of Health/Kingston

The Hon. Kenneth Baugh
Minister of Health

The Hon. Karl Samuda
Minister of State

The Hon. Horace Chang
Parliamentary Secretary

Rupert Ramcharan
Permanent Secretary

John McHardy
Chief Medical Officer

Clover Parker
Director of Finance

Cedric Taylor
Director of Personnel

Leurice Brown
Assistant Director of Personnel

Rosalee Pusey
Records Manager, Department of Personnel

Audley Morrison
Director of Administration

Carmen Bowen-Wright
Principal Medical Officer (Primary Health Care)

Janet De La Grande
Principal Medical Officer (Mental Health)

Peter Figueroa
Principal Medical Officer (Epidemiology)

James Murray
Principal Public Health Officer

Deanna Ashley
Senior Medical Officer (MCH/Family Planning)

Marilyn Reid
Senior Medical Officer, Southeast Area

Sheila Forrester-Campbell
Senior Medical Officer, Cornwall Health Area

Alfred Braithwaite
Senior Medical Officer (STDs)

Mr. Clark
Senior Public Health Inspector, Epidemiology Unit

Canute Reid
Supervisory Public Health Inspector, Water Quality Control, Environmental Unit

Deepal Gunawardena
Engineer, Water Quality Control, Environmental Unit

Roy Campbell
Public Health Inspector, Occupational Health

W. Burroughs
Public Health Inspector, Waste Water Management

Dr. Gordon
Director, Central Public Health Laboratory

Kristen Fox
Nutritionist, Division of Nutrition

Dr. D. Pande
Director, Chest Clinic

Winston Schloss
Director, Veterinary Public Health

Audley Edwards
Principal Dental Surgeon

Carol Gayle
Director, Health Information Unit

Heather Scott
Statistician, Health Information Unit

Lester Woolery
Director, Pharmaceutical Services

Rudolph Shoucair
Chairman, Kingston Hospital Board

Milton Berry
Chief Training Officer

Sybil Brooks
Nursing Supervisor, Occupational Health
(Coordinator, Project Implementation Plans)

Samuel Stennet
Administrator, Cornwall Health Area

Joyce Vincent
Director, Planning and Evaluation Unit

Ministry of Finance

Anatol Clark
Budget Analyst

Ministry of Finance, Planning Institute of Jamaica

Marlene Tomlinson
Health Desk Officer

Wilford Grant
Demographer

Grace Strong
Manpower Planning

Ministry of Public Service

Winston Oliver

Ministry of Public Service, Administrative Staff College

George Briggs
Director

Desmond Cameron
Senior Lecturer

Ministry of Construction

Mrs. Carnegie
Registrar General, Registrar General's Department

Administrative Reform Program

Marie Slyfield
Executive Director (Human Resources Development)

R.V. Irvine
Executive Director (Financial Management)

Pan American Health Organization/Washington

Peter Carr
Regional Health Management Advisor

Marilynn Rice
Regional Health Education Advisor

Lee Howard
Special Advisor to the Director General (retired)

Pan American Health Organization/Kingston

Dr. Norma Andrews
Director, Jamaica Office

David Taylor
Advisor, Hospital Administration

Barry Wint
Team Leader, Hospital Restoration Project World Bank/Washington

Bruce Carlson
Human Resource Development Officer, LAC

World Bank/Kingston

Robert Abramson
Consultant, ARP

Aubrey Armstrong
Consultant, ARP

James Kearns
Consultant, ARP

EEC

Mr. J. Rodwell
Laboratory Project Officer

University of the West Indies/Mona Campus

Sir Kenneth Standard
Chairman, Department of Social and Preventive Medicine

Dr. Alafia Samuels
Department of Social and Preventive Medicine

Dr. Patricia Desai
Department of Social and Preventive Medicine

Affette McCaw
Department of Social and Preventive Medicine

Dr. Winsome Segree
Department of Family Medicine

Dr. Errol Morrison
Department of Biochemistry

Dr. Stanley Brooks
Department of Pathology

Dr. Carl Stone
Department of Social Sciences

United Way of Jamaica

Avis Henriques
President

Freedom House/Boston

Toye Brown Byrd
Consultant, United Way of Jamaica

National Family Planning Board

June Rattray
Executive Director

PADCO Jamaica

Robert Merrill
Chief of Party, USAID Contract Team
Ministry of Construction (Housing)

Heart Foundation of Jamaica

Jeanne Shearer
Manager

Jamaica Cancer Society

Lady Daphne Philips
Administrative Officer

Maureen Raje
Outreach Coordinator

Ena Samuels
Clinic Director

Jamaica Police Department

R.B. Taylor
Senior Superintendent, Criminal Investigations Branch

Management Sciences for Health (PRITECH)/Washington

John Alden
Director

Danielle Grant
Program Officer

Trevor Hamilton and Associates

Trevor Hamilton
President

Jamaica HMO

Marianne Kannelley
General Manager

Wylie Lopez
President

Jamaica Association of Private Hospitals

Dr. John Martin
President

Medical Associates Hospital

John McBean
Administrator

Other
LLoyd Robinson
Architect (Public Health Laboratory)

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List of Appendices

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Appendix II: PHC Health Centers in Jamaica, by Type

Appendix III: Figures Summarizing Health Status Indicators

Appendix IV: Opportunities for the MOH within the GOJ Administrative Reform Program (ARP)

Appendix V: Public Health Laws and Regulations

Appendix I

Hospitals in Jamaica by Type

There are 22 acute care government and 7 specialty hospitals in Jamaica offering secondary and tertiary care. In addition, there are 6 private hospitals that offer secondary care on a fee-for-service basis.

I. Government hospitals

A. Type A

(includes University Hospital of UWI which is not operated by MOH)

Referral hospitals for the entire nation offering a wide array of secondary and tertiary care. All Type A hospitals are located in Kingston or Montego Bay.

B. Type B

Located in larger urban centers, these hospitals offer care in at least four basic services:

- General surgery
- Internal medicine
- Obstetrics and gynecology
- Pediatrics.

Type B hospitals are supposed to serve as referral institutions for neighboring Type C hospitals.

C. Type C

District hospitals that provide the first level of care. Often staffed by two or three physicians, they provide service in general medicine and maternity and child care. Many have surgeons who can provide emergency surgical service. Type C hospitals are structured to interface with the health centers of the PHC system.

D. Specialty hospitals

Providing care island-wide in the areas of:

- Mental health
- Chest diseases
- Oncology (hospice care)
- Physical rehabilitation.

Victoria Jubilee Hospital, a maternity hospital, is considered part of the Kingston Public Hospital complex and, thus, is not generally viewed as a separate specialty hospital.

II. Private hospitals: 6

A small number of hospitals offering secondary care on a fee-for-service basis.

Appendix II

PHC Health Centers by Type

SATELLITE HEALTH CENTER

A building with no fixed staff. Professionals from a Type I facility visit on a regularly scheduled basis, e.g., twice a month. Serves underserved populations in remote rural areas.

TYPE I

The basic unit; staffed by a midwife and two community aides. The population served, 4,000 to 5,000, is provided with MCH services including home visits for children, mothers, and the elderly.

TYPE II

A more fully staffed health center with a public health nurse, public health inspector, and registered nurse. The District Medical Officer and the dentist visit the center on a scheduled basis. The population served is approximately 10,000 to 12,000.

TYPE III

The basic administrative unit of the PHC system is the district where the Type III health center is located. The staff includes the physician who is the District Medical Officer, a dentist, a nurse practitioner, a public health nurse, and an inspector. The population served runs from 16,000 to 20,000.

TYPE IV

Sometimes the district health center is located in the parish office of the main town or on the campus of the parish hospital, in which instance it is designated a Type IV health center. The staff and services are the same as those in a Type III facility.

TYPE V

A large comprehensive health center in a major urban area. Has a large staff of health professionals offering a wide array of preventive, promotive, and curative services. Currently there is one Type V health center in Kingston and another planned for Montego

Bay.

RURAL POLYCLINIC

Originally a small rural hospital, the 5 facilities designated as polyclinics have been converted, through the process of "rationalization," to Type III health centers. They retain a maternity ward of 6-10 beds for normal deliveries. These polyclinics have also been provided with transportation so that emergency cases can be transferred expeditiously to neighboring hospitals.

Appendix III

Figures Summarizing Health Status Indicators

Figure A-1

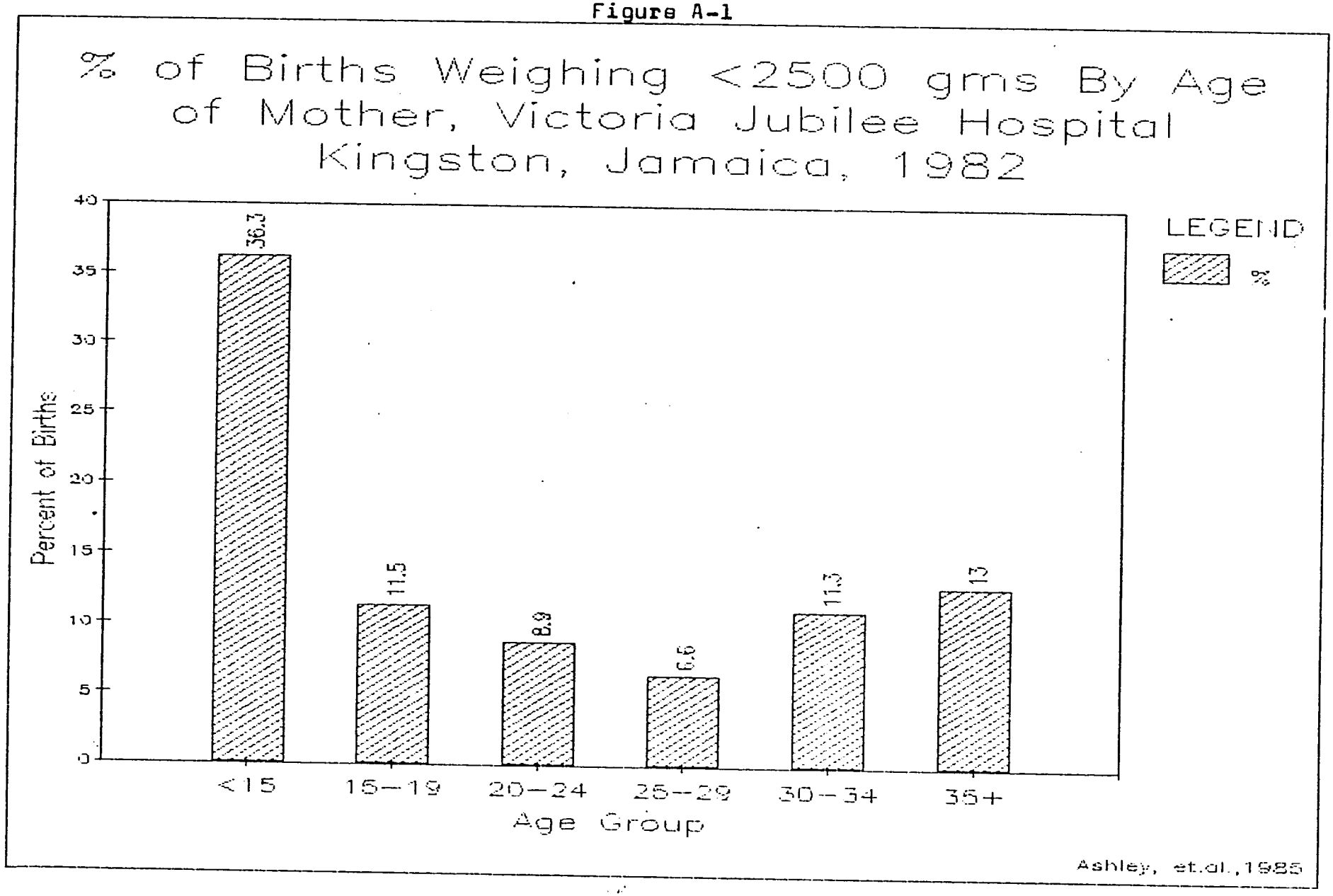

% of Births Weighing <2500 gms By Age of Mother, Victoria Jubilee Hospital Kingston, Jamaica, 1982
Percent of Births
40
35
30
25
20
15
10
5
0
36.3
11.5
8.9
6.6
11.3
13
<15
15-19
20-24
25-29
30-34
35+
Age Group
LEGEND
%
Ashley, et.al.,1985

Figure A-2

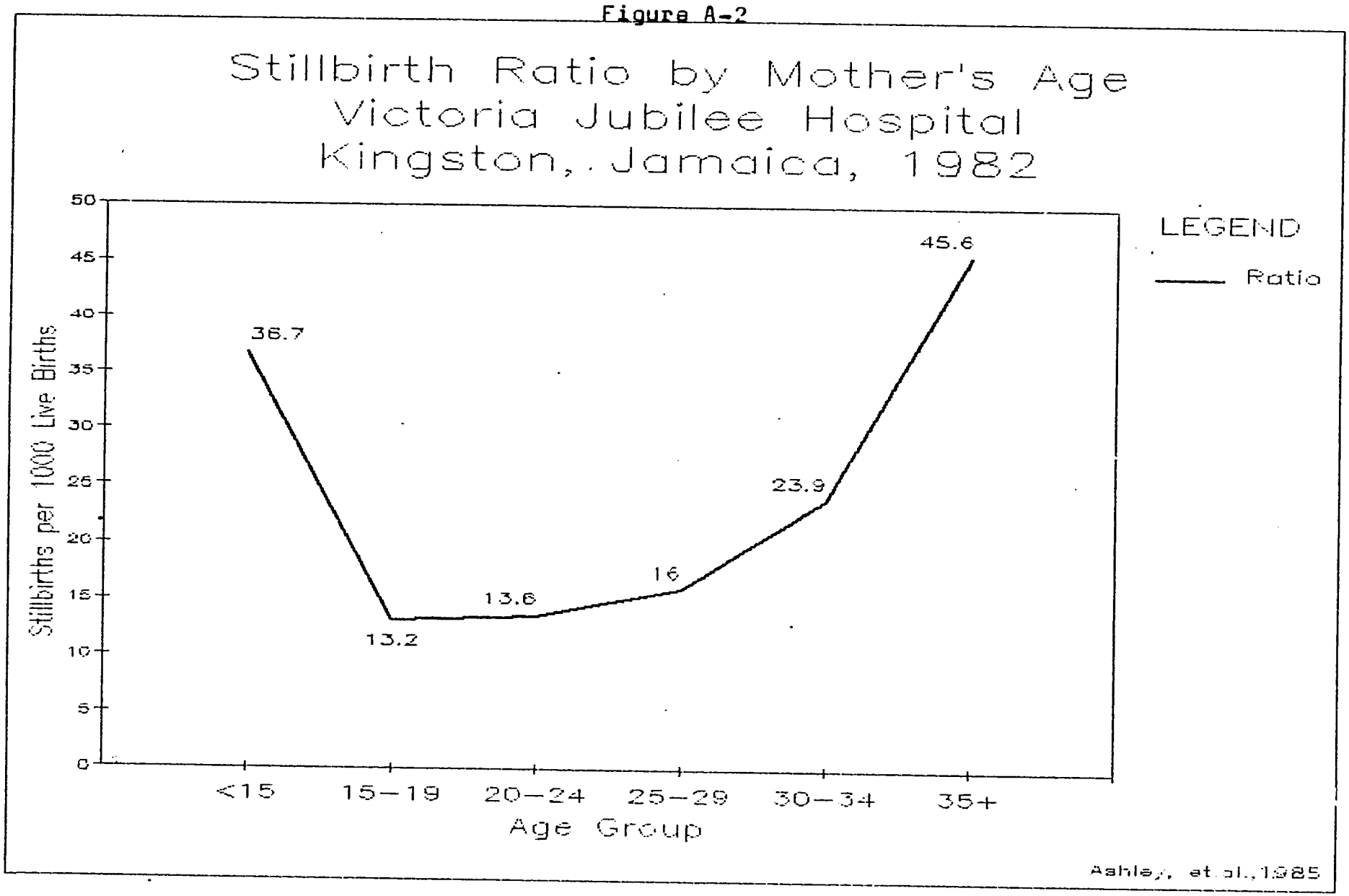

Stillbirth Ratio by Mother's Age
Victoria Jubilee Hospital
Kingston, Jamaica, 1982
Stillbirths per 1000 Live Births
50
45
40
35
30
25
20
15
10
5
0
36.7
13.2
13.6
16
23.9
45.6
<15
15–19
20–24
25–29
30–34
35+
Age Group
LEGEND
Ratio
Ashley, et al., 1985

Figure A-3

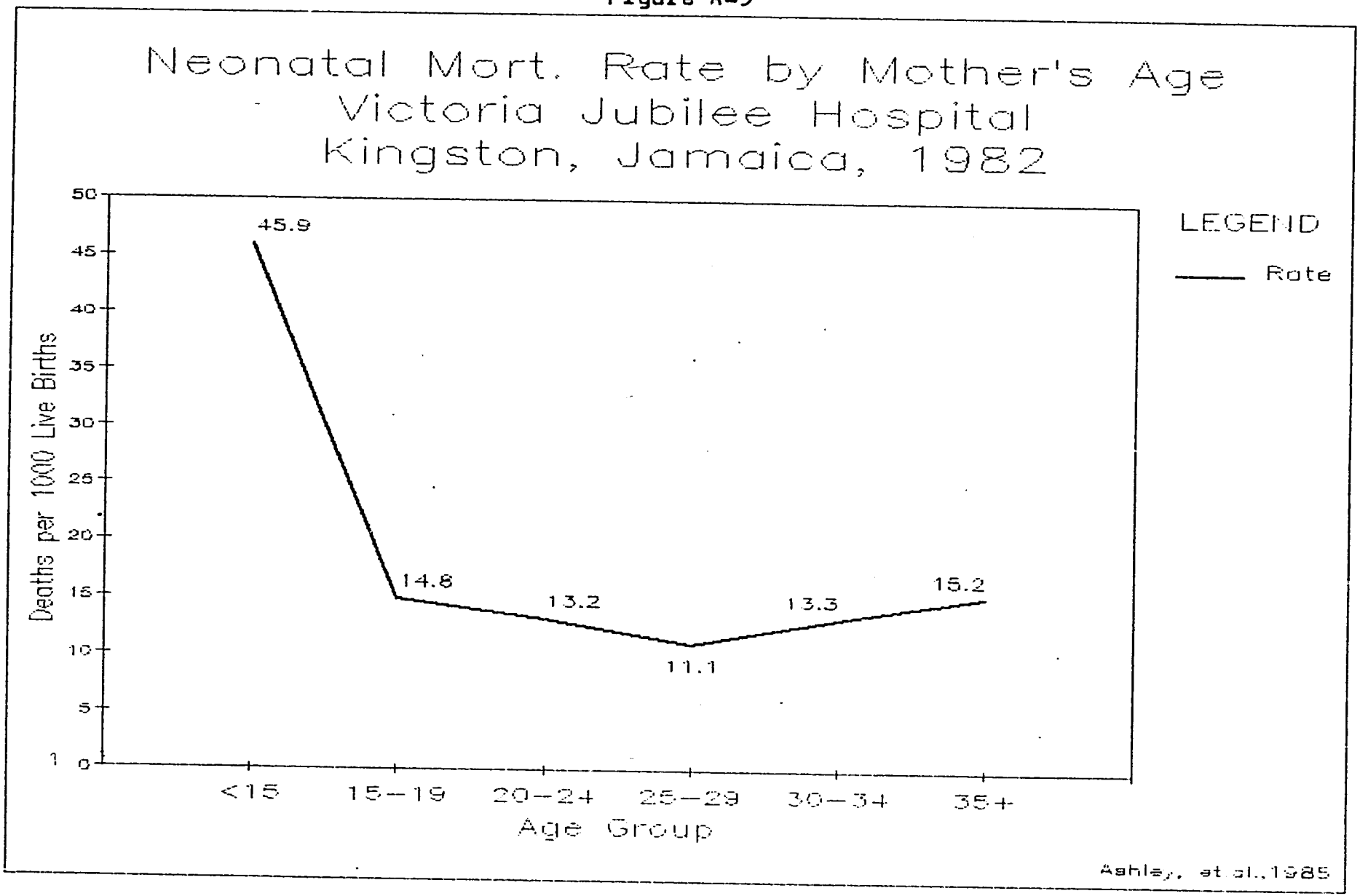
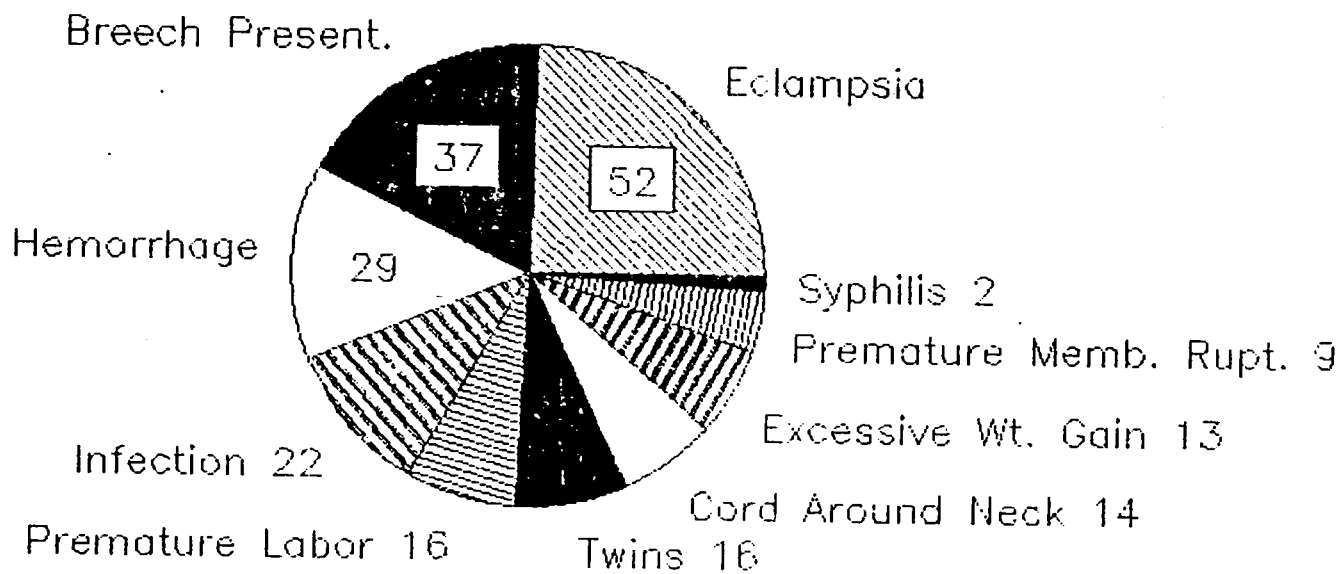

Neonatal Mort. Rate by Mother's Age
Victoria Jubilee Hospital
Kingston, Jamaica, 1982
Deaths per 1000 Live Births
50
45
40
35
30
25
20
15
10
5
0
45.9
14.8
13.2
11.1
13.3
15.2
<15
15-19
20-24
25-29
30-34
35+
Age Group
LEGEND
Rate
Ashley, et al.,1985

Figure A-4

No. of Neonatal Deaths By Antenatal Maternal Condition*, Vict. Jub. Hosp. Kingston, Jamaica, 1982



*Some women had more than 1 condition

Ashley, et al, 1985

Figure A-5

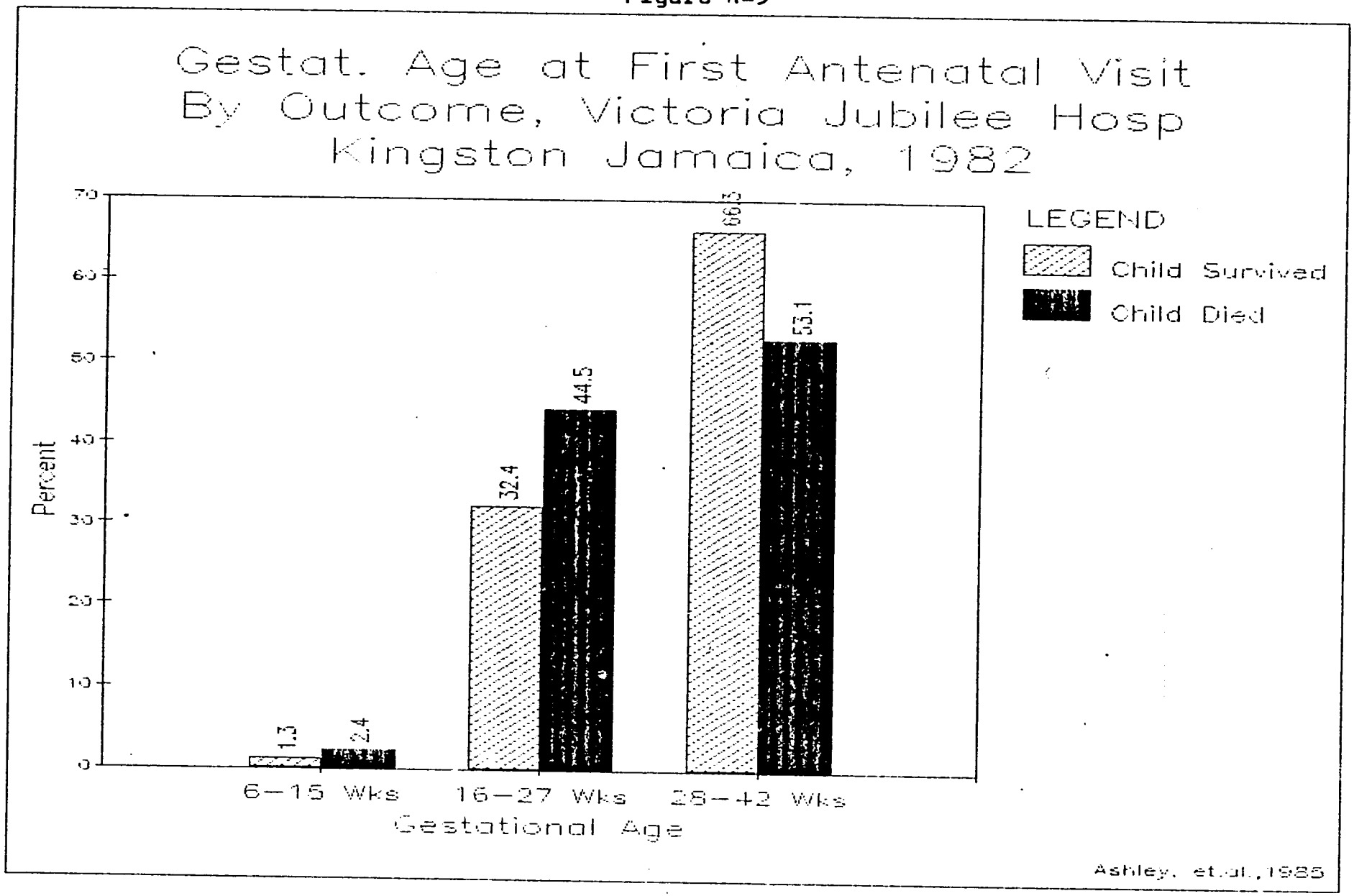
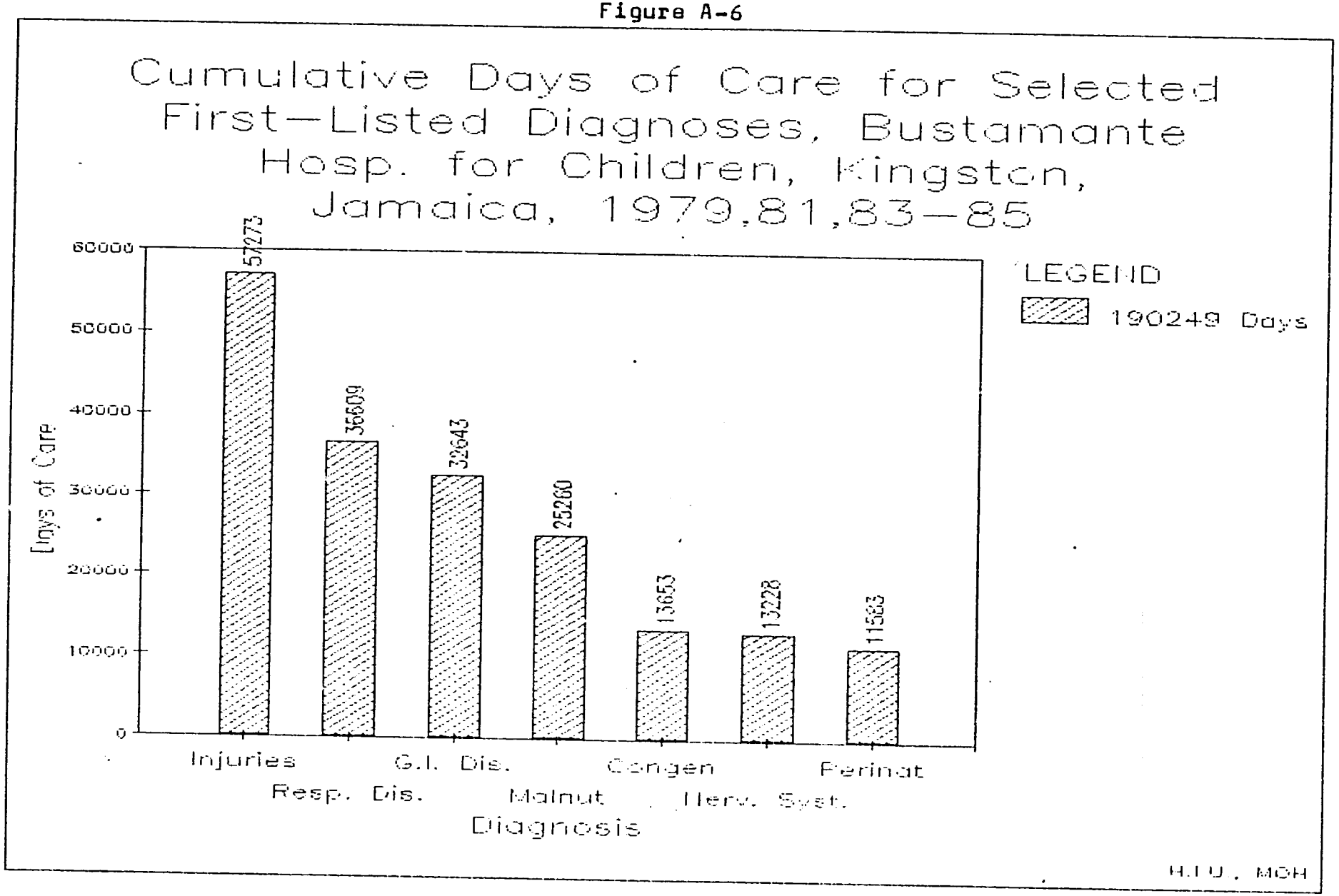

Gestat. Age at First Antenatal Visit
By Outcome, Victoria Jubilee Hosp
Kingston Jamaica, 1982
Percent
70
60
50
40
30
20
10
0
1.3
2.4
32.4
44.5
66.3
53.1
6-15 Wks
16-27 Wks
28-42 Wks
Gestational Age
LEGEND
Child Survived
Child Died
Ashley, et.al.,1985

Figure A-6



116

Figure A-7

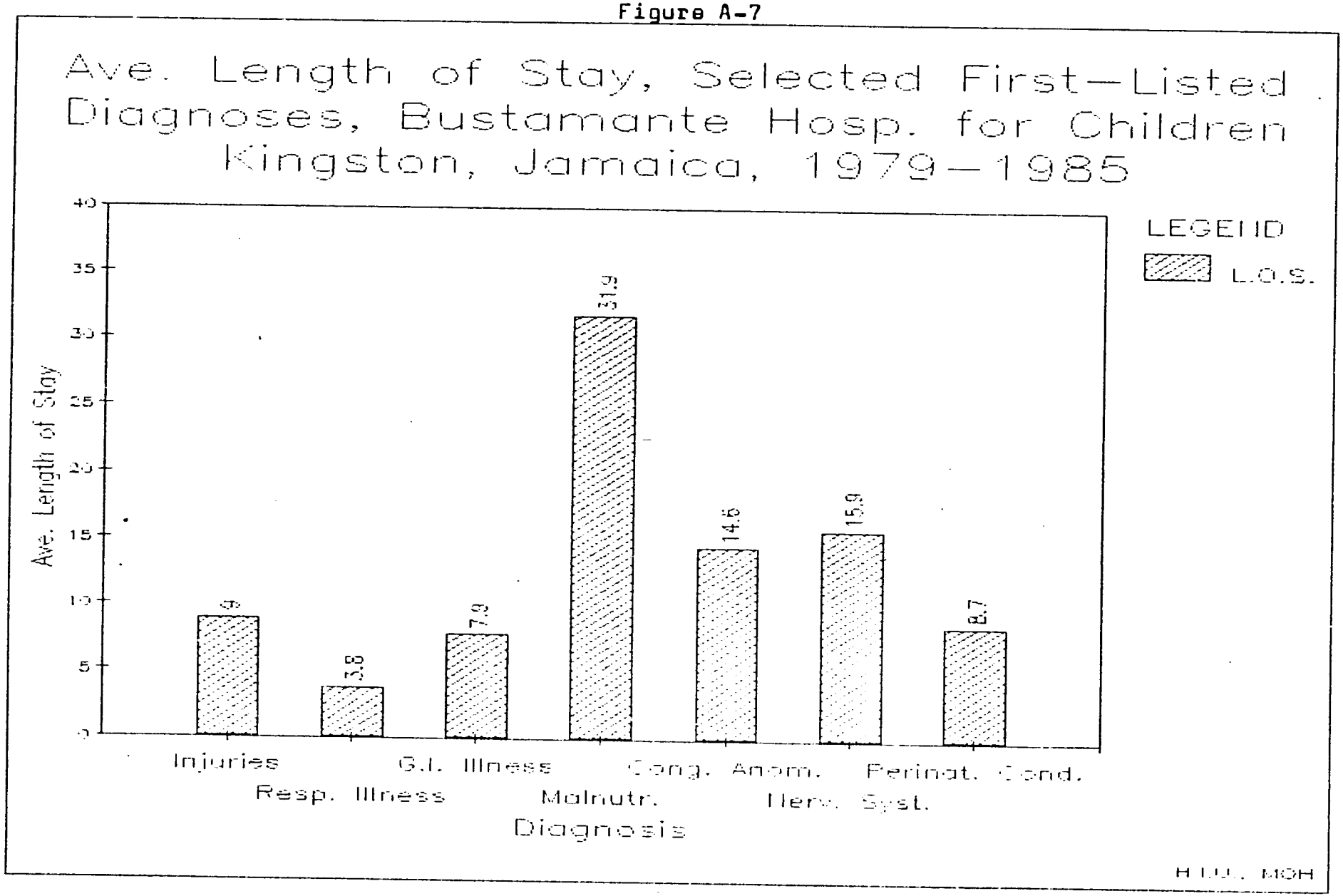
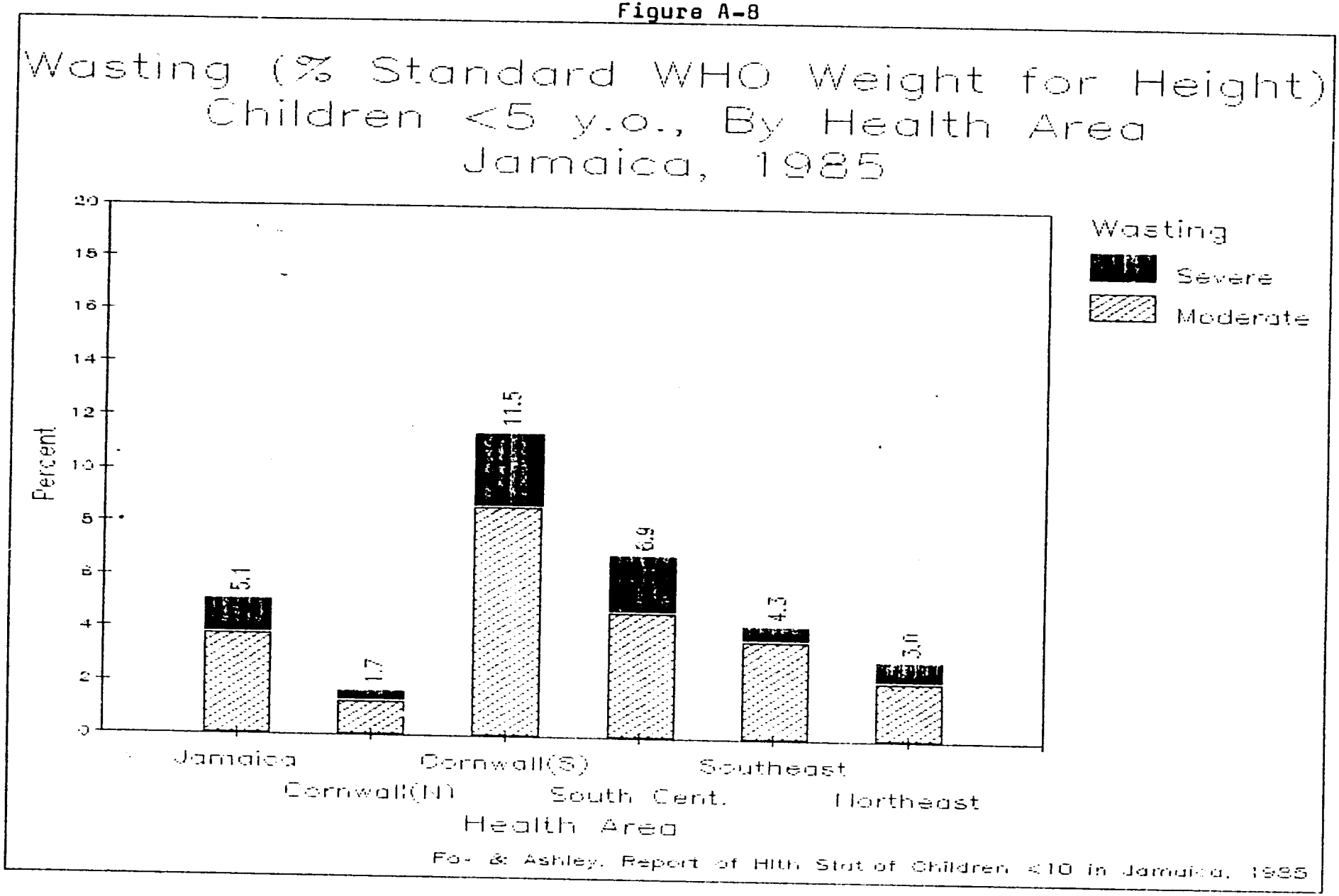
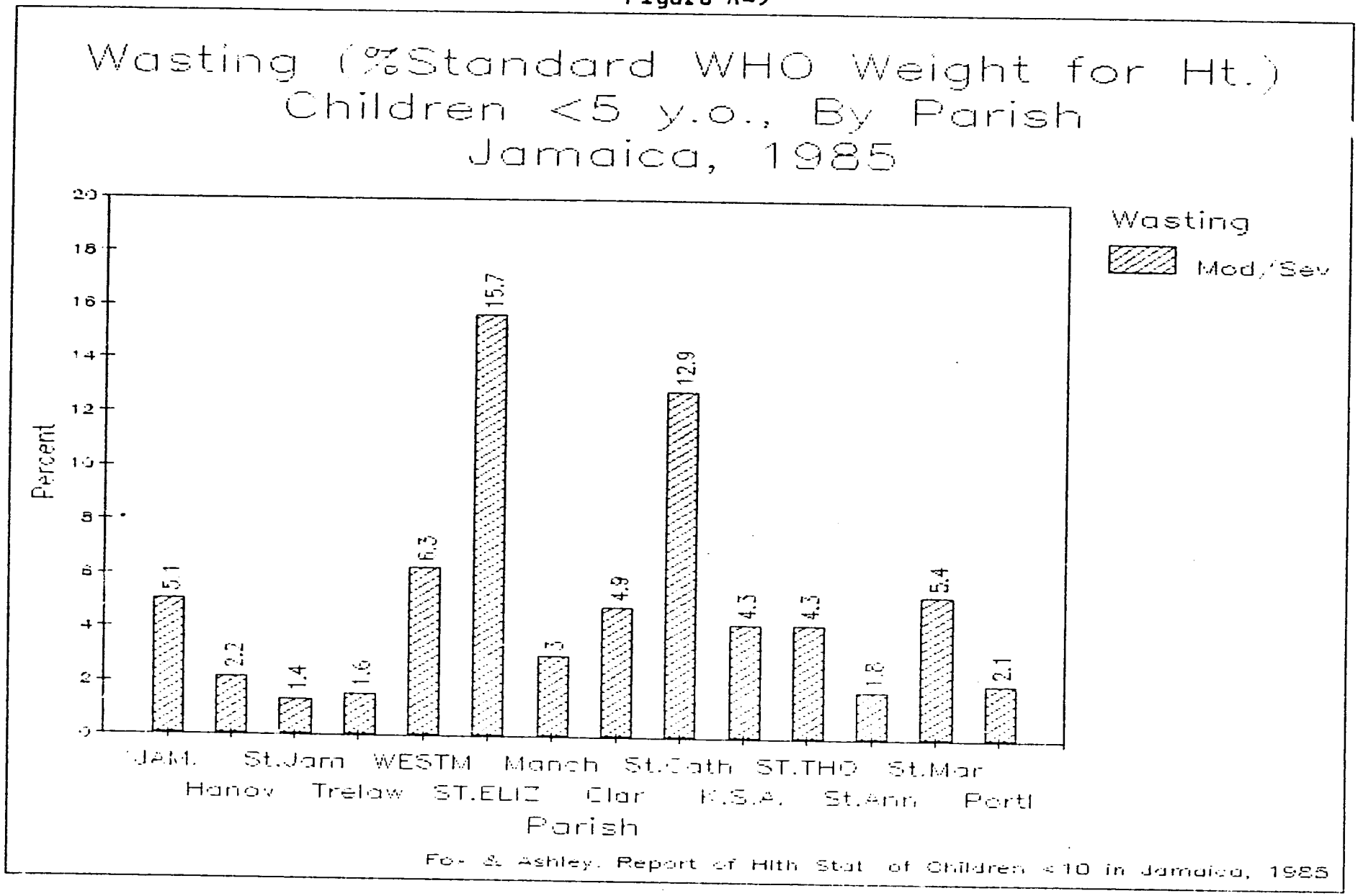

Ave. Length of Stay, Selected First—Listed Diagnoses, Bustamante Hosp. for Children Kingston, Jamaica, 1979—1985
Ave. Length of Stay
40
35
30
25
20
15
10
5
0
9
3.8
7.9
31.9
14.6
15.9
8.7
Injuries
Resp. Illness
G.I. Illness
Malnutr.
Cong. Anom.
Nerv. Syst.
Perinat. Cond.
Diagnosis
LEGEND
L.O.S.
H.I.U., MOH

Figure A-8



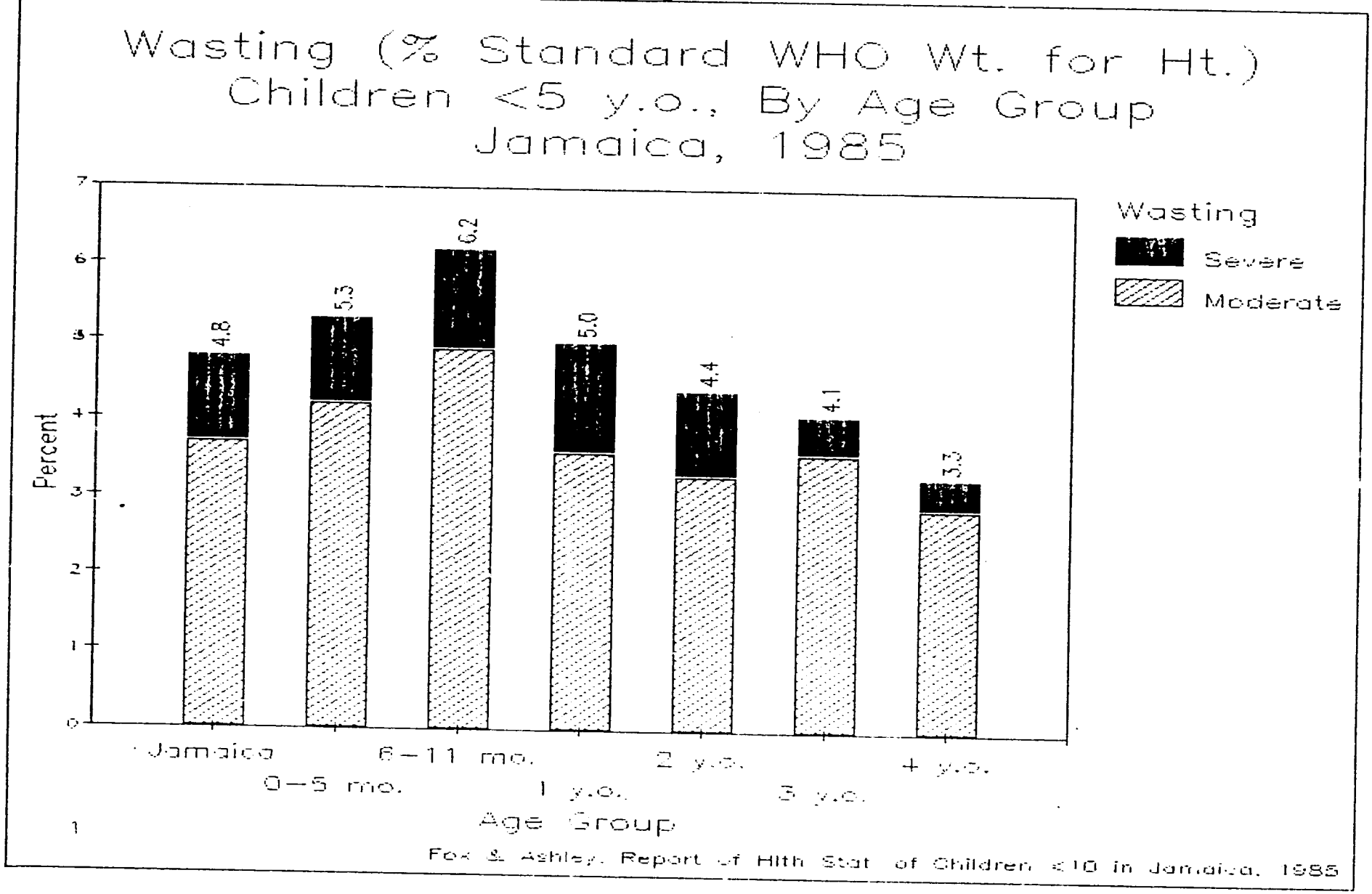
Fo- & Ashley. Report of Hlth Stut of Children <10 in Jamaica, 1985

Figure A-9



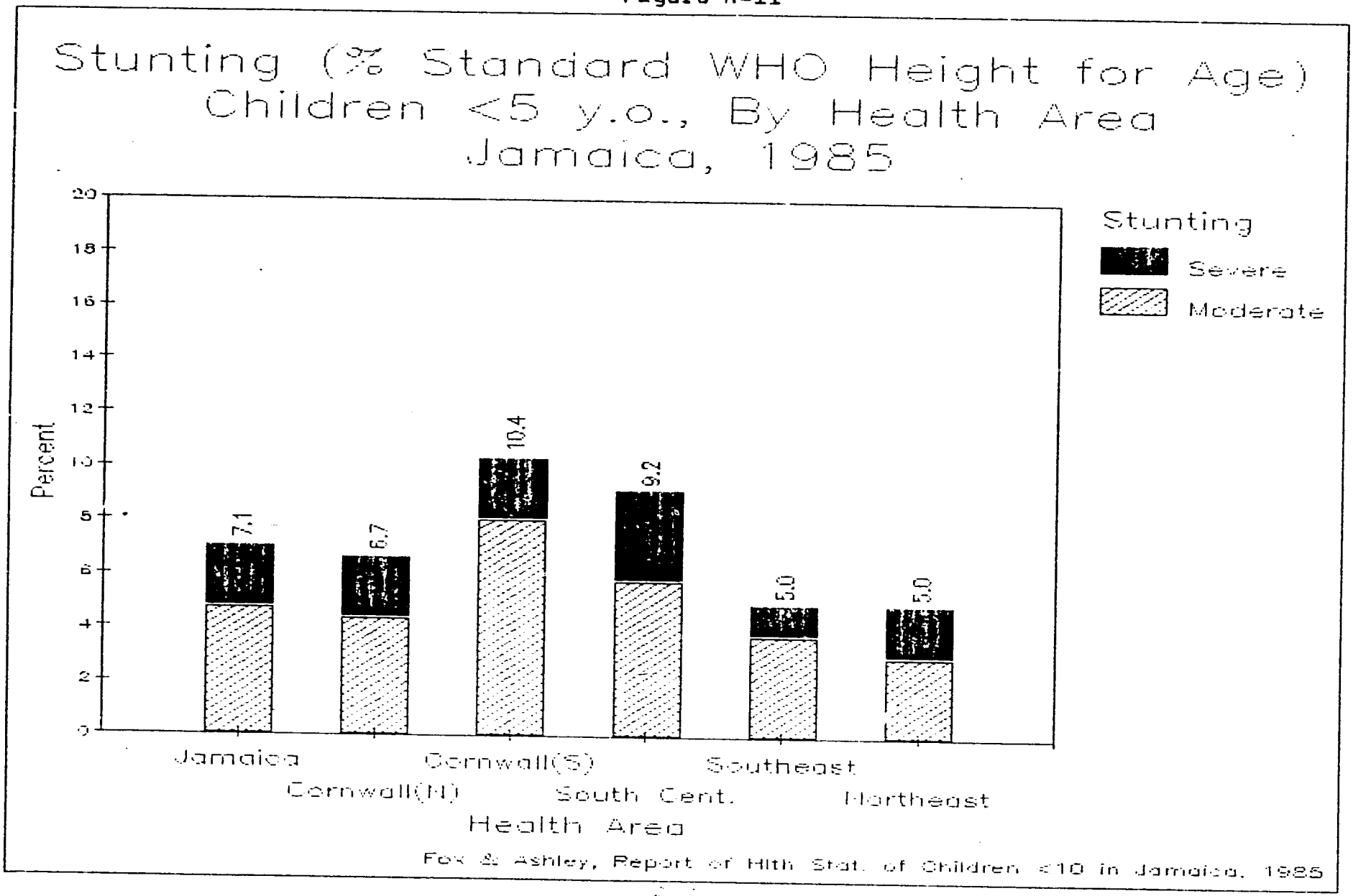
Fox & Ashley. Report of Hlth Stat of Children <10 in Jamaica, 1985

Figure A-10



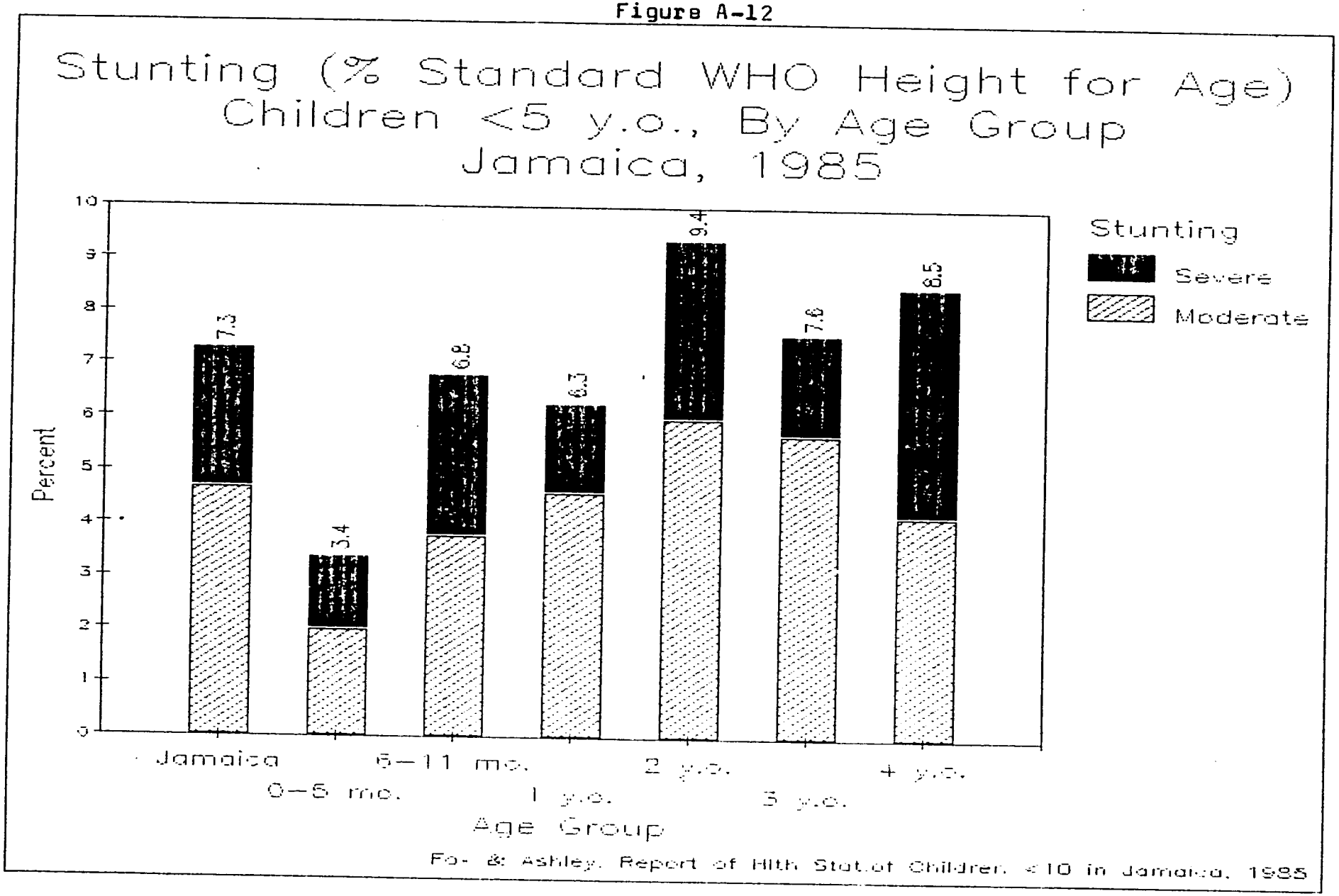
Fox & Ashley, Report of Hlth Stat of Children <10 in Jamaica, 1985

Figure A-11



Fox & Ashley, Report of Hlth Stat. of Children <10 in Jamaica, 1985

Figure A-12



Fo- & Ashley. Report of Hlth Stat.of Children. <10 in Jamaica. 1985

Figure A-13

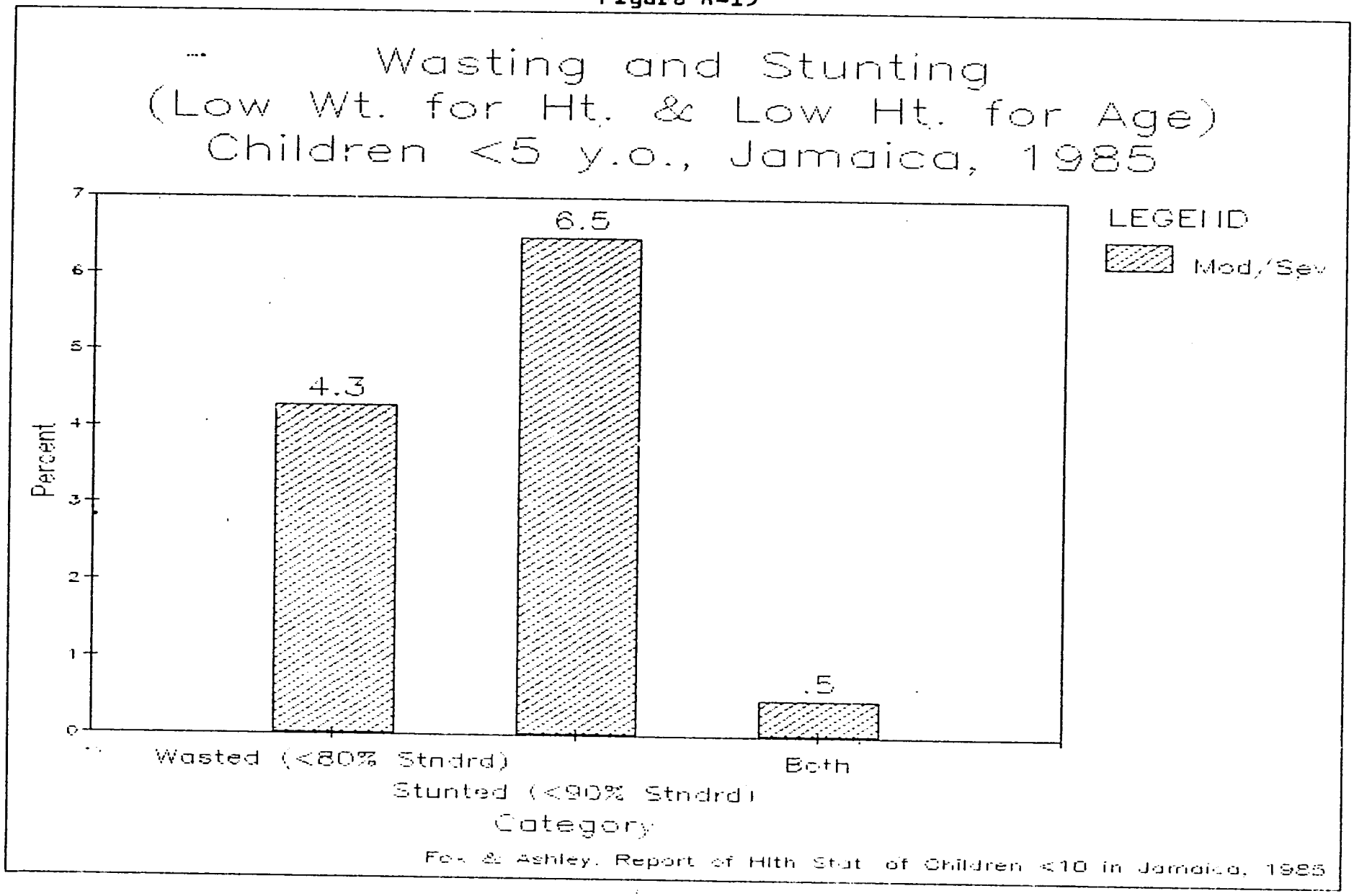

Wasting and Stunting
(Low Wt. for Ht. & Low Ht. for Age)
Children <5 y.o., Jamaica, 1985
Percent
0
1
2
3
4
5
6
7
4.3
6.5
.5
Wasted (<80% Stndrd)
Stunted (<90% Stndrd)
Both
Category
LEGEND
Mod/Sev
Fox & Ashley. Report of Hlth Stat of Children <10 in Jamaica, 1985

Figure A-14

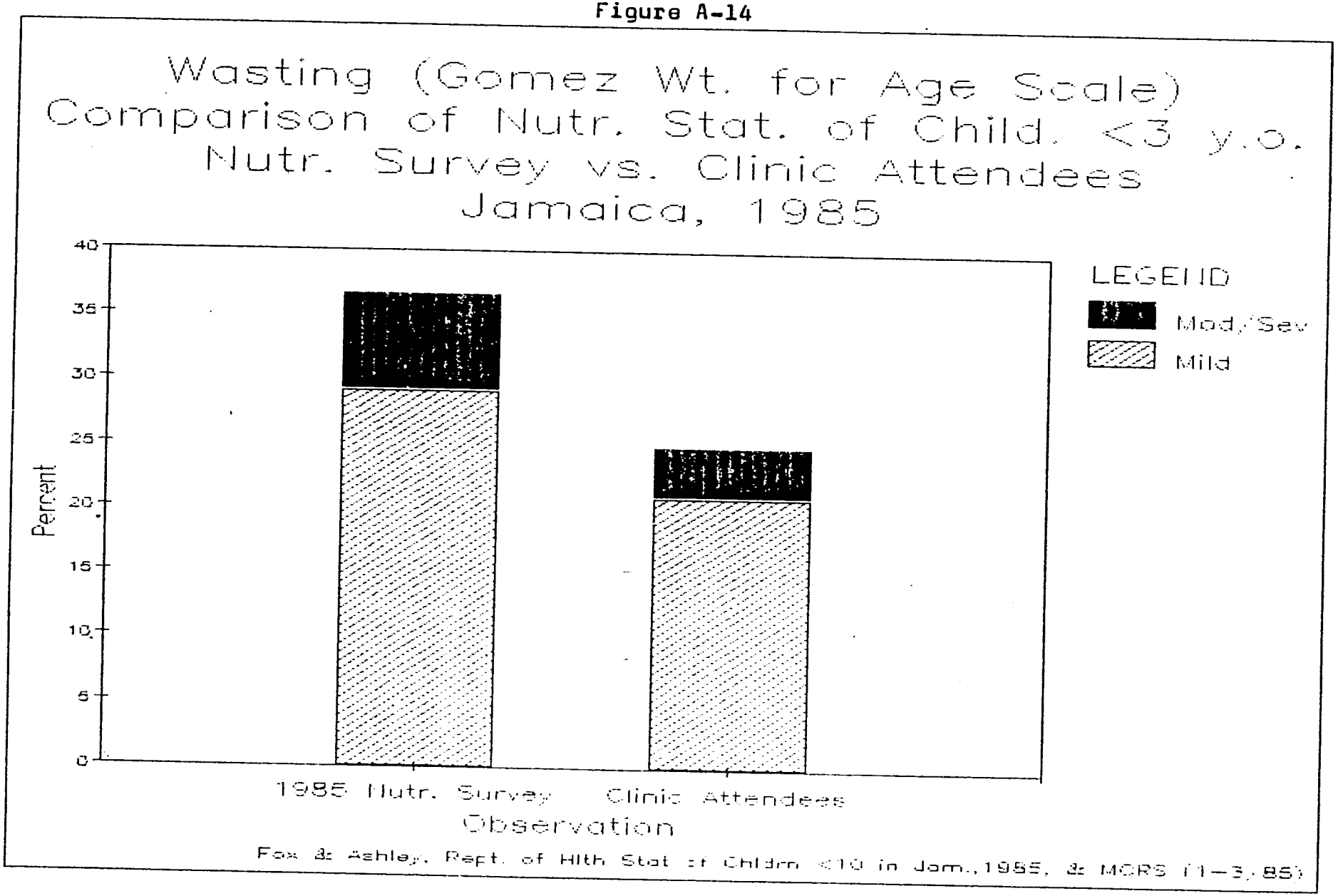
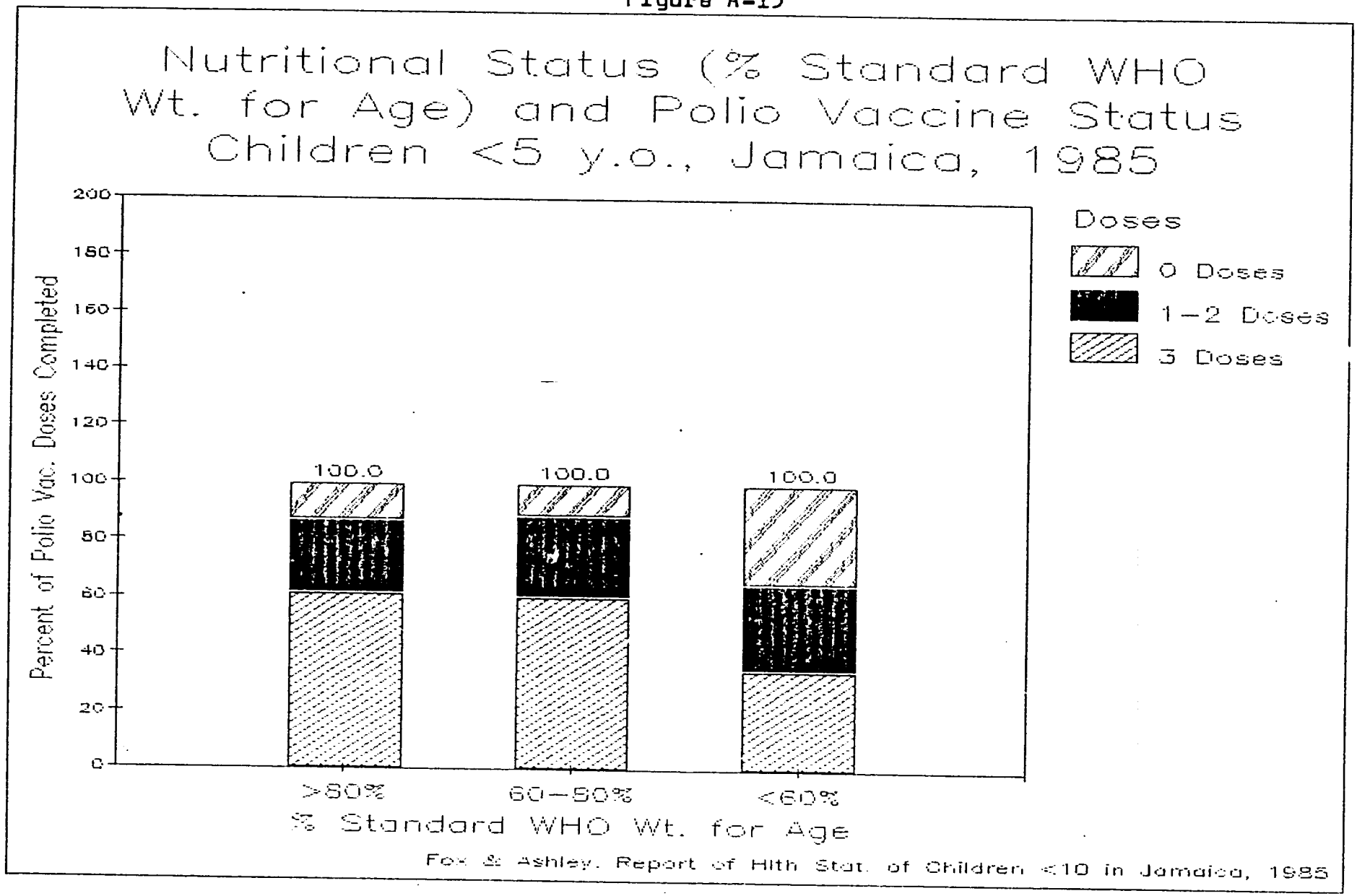
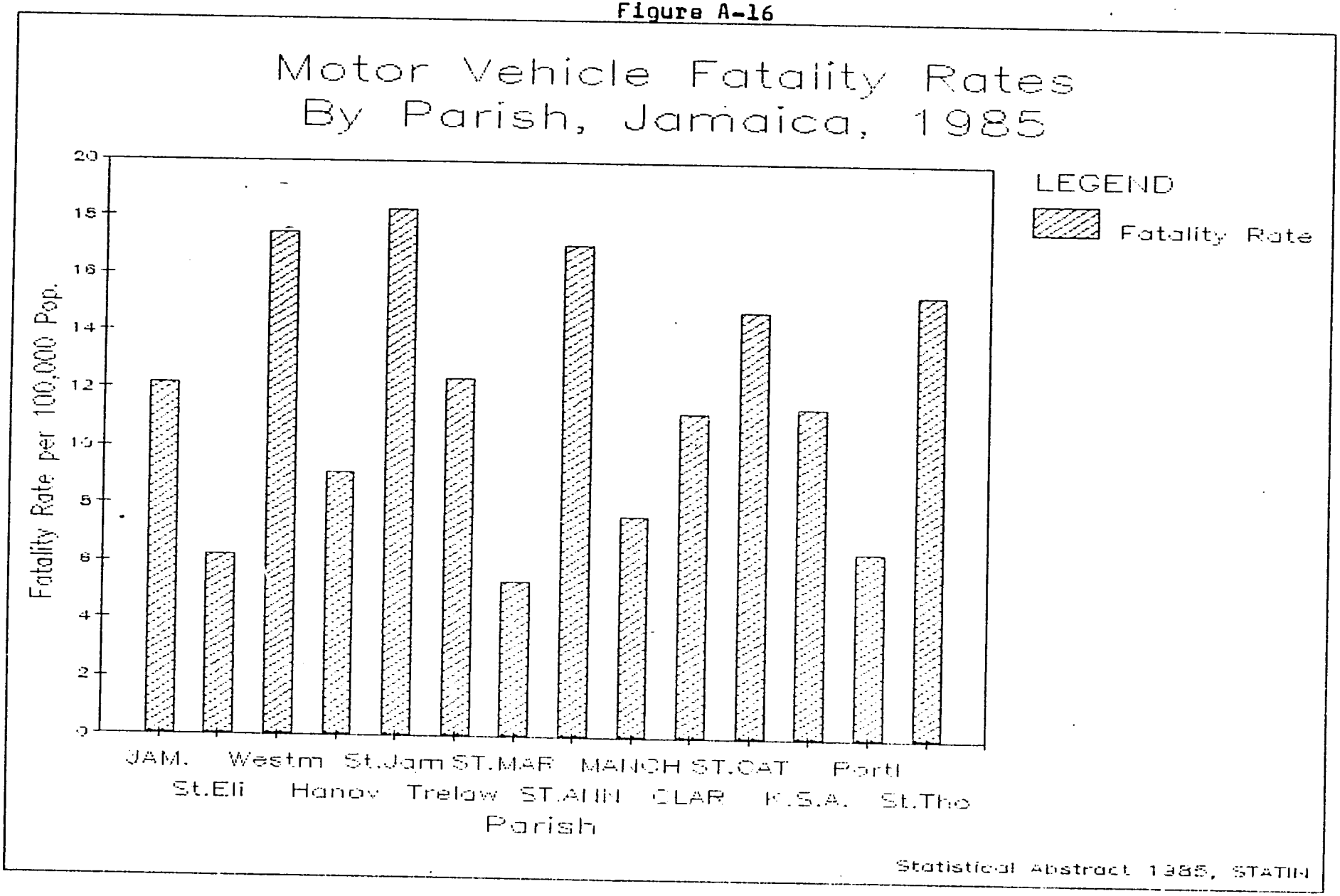

Wasting (Gomez Wt. for Age Scale)
Comparison of Nutr. Stat. of Child. <3 y.o.
Nutr. Survey vs. Clinic Attendees
Jamaica, 1985
Percent
40
35
30
25
20
15
10
5
0
LEGEND
Mod./Sev
Mild
1985 Nutr. Survey
Clinic Attendees
Observation
Fox & Ashley, Rept. of Hlth Stat of Chldrn <10 in Jam.,1985, & MCRS (1-3/85)

Figure A-15



Fox & Ashley. Report of Hlth Stat. of Children <10 in Jamaica, 1985

Figure A-16



Statistical Abstract 1985, STATIN

Figure A-17

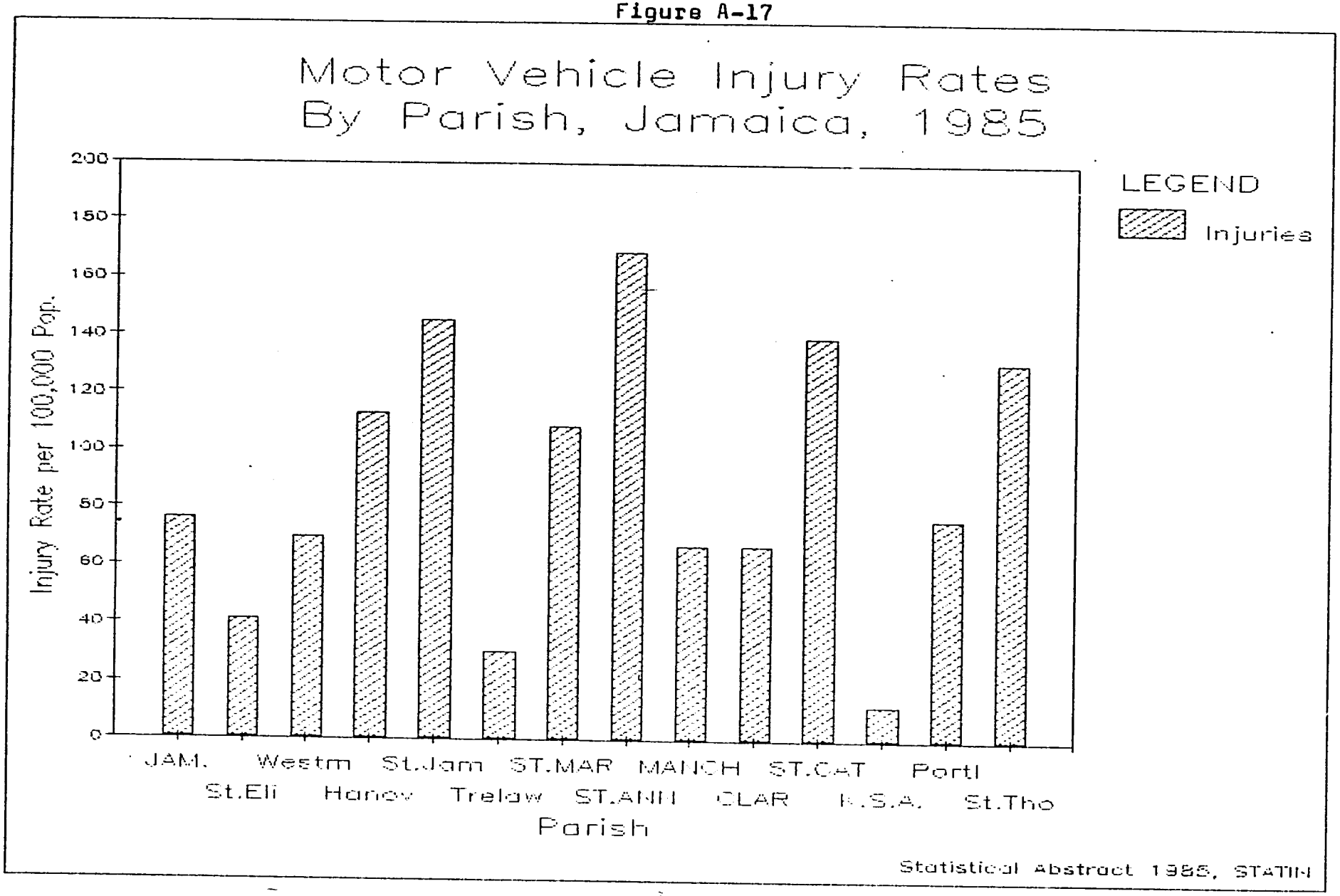

Motor Vehicle Injury Rates
By Parish, Jamaica, 1985
Injury Rate per 100,000 Pop.
200
150
160
140
120
100
50
60
40
20
0
JAM.
Westm
St.Jam
ST.MAR
MANCH
ST.CAT
Portl
St.Eli
Hanov
Trelaw
ST.ANN
CLAR
K.S.A.
St.Tho
Parish
LEGEND
Injuries
Statistical Abstract 1985, STATIN

Figure A-18

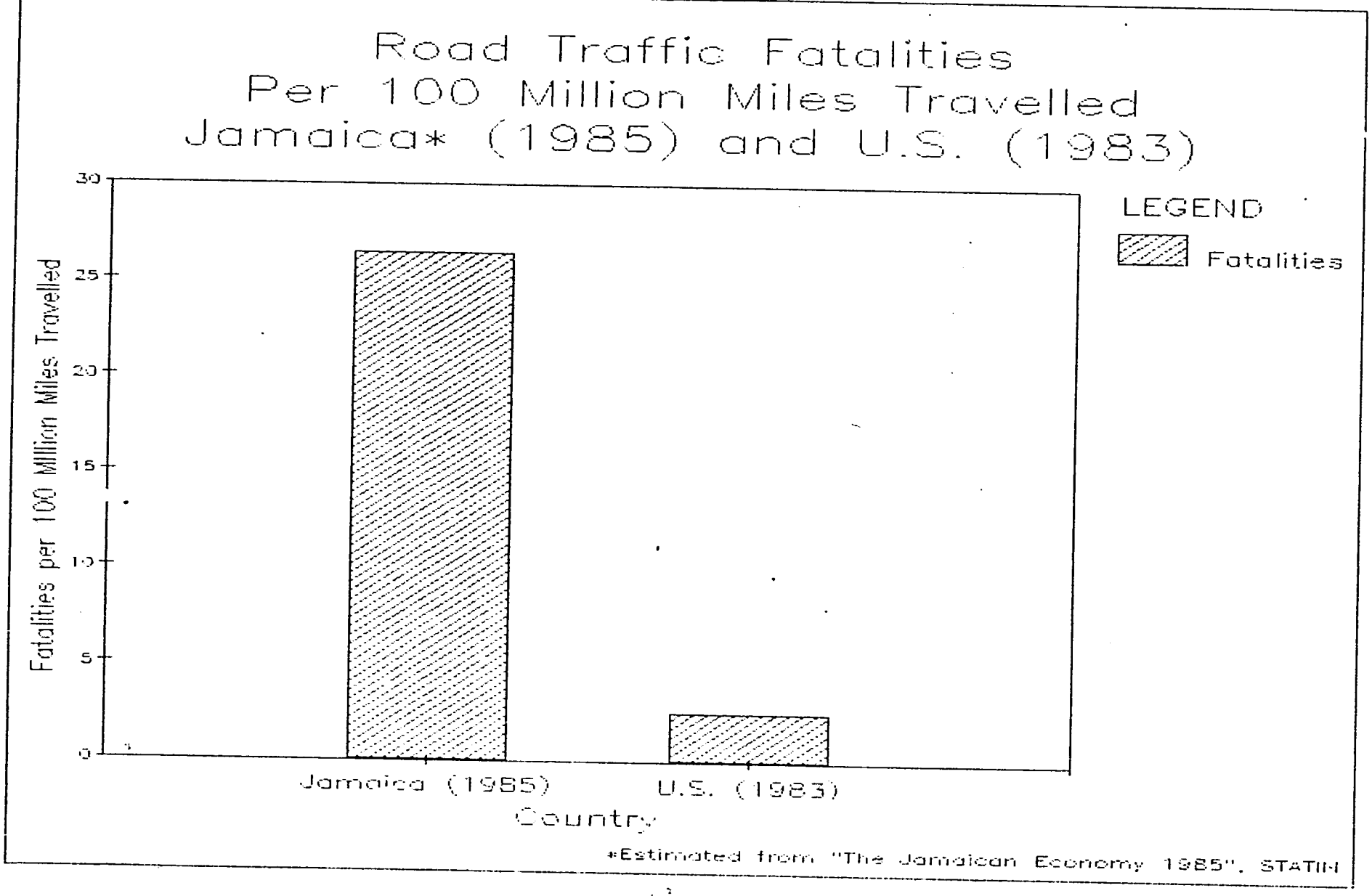

Road Traffic Fatalities
Per 100 Million Miles Travelled
Jamaica* (1985) and U.S. (1983)
Fatalities per 100 Million Miles Travelled
30
25
20
15
10
5
0
Jamaica (1985)
U.S. (1983)
Country
LEGEND
Fatalities
*Estimated from "The Jamaican Economy 1985", STATIN

Figure A-19

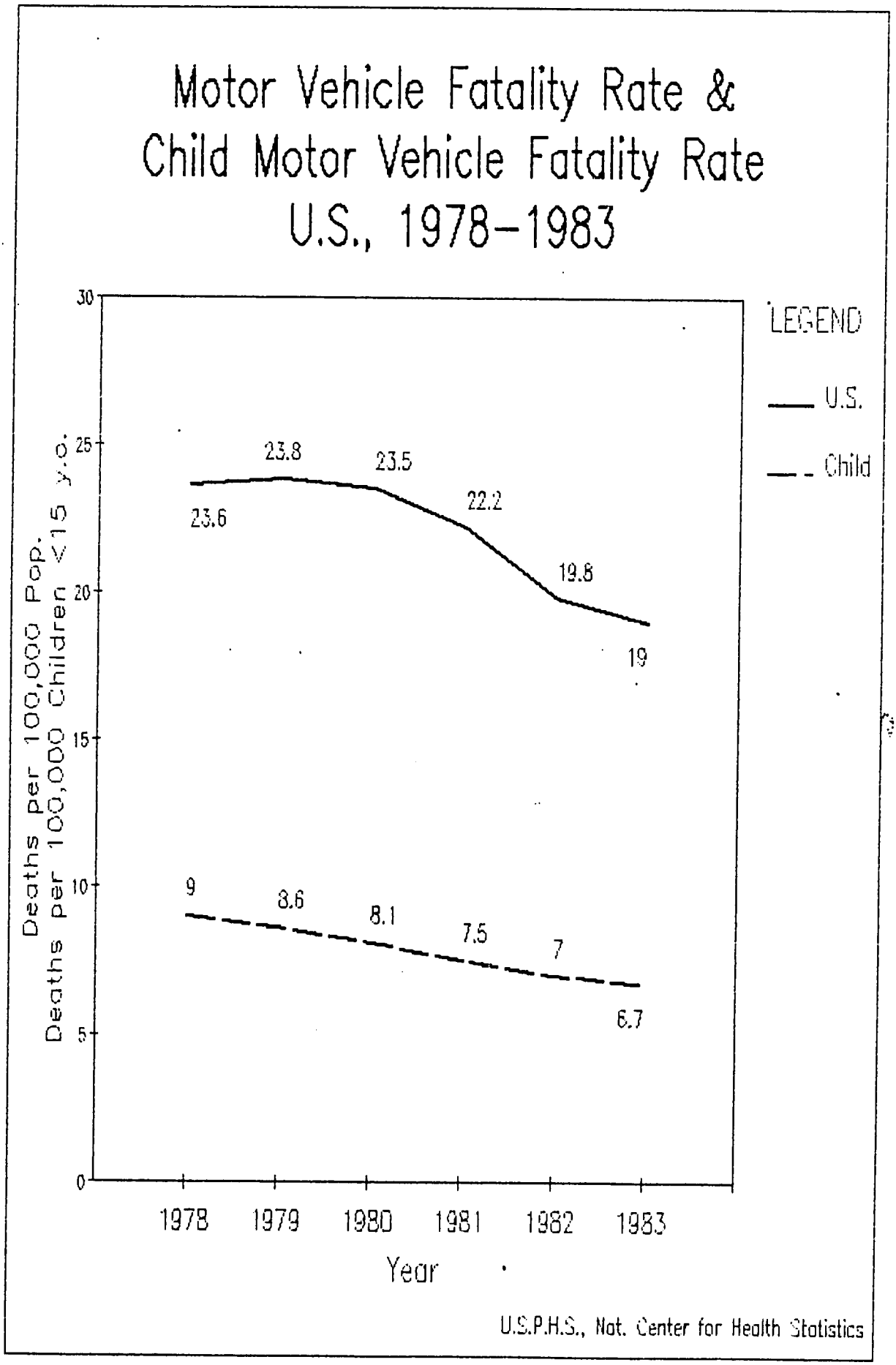

Motor Vehicle Fatality Rate &
Child Motor Vehicle Fatality Rate
U.S., 1978-1983
LEGEND
U.S.
Child
Deaths per 100,000 Pop.
Deaths per 100,000 Children <15 y.o.
30
25
20
15
10
5
0
23.6
23.8
23.5
22.2
19.8
19
9
8.6
8.1
7.5
7
6.7
1978
1979
1980
1981
1982
1983
Year
U.S.P.H.S., Nat. Center for Health Statistics

Figure A-20

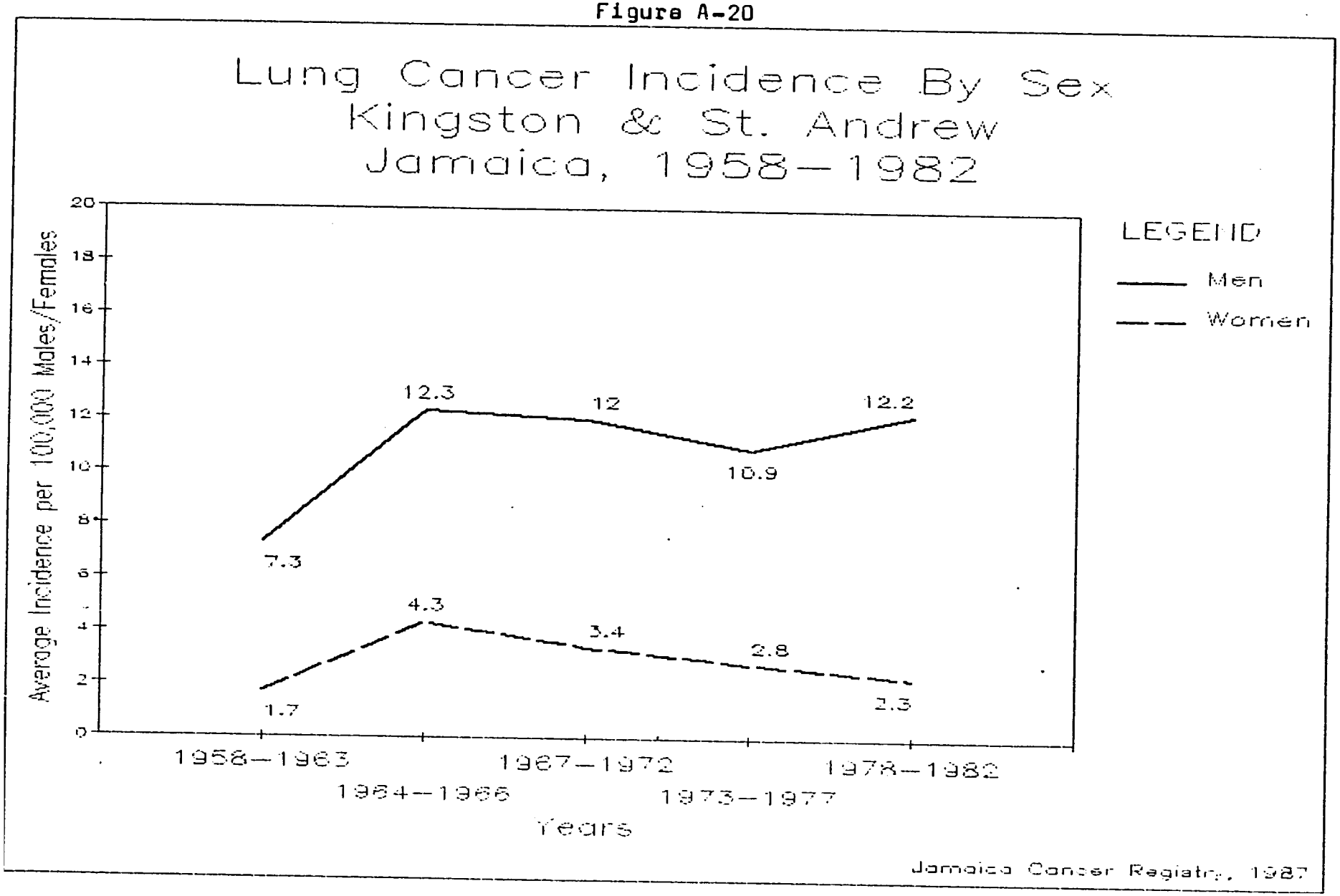

Lung Cancer Incidence By Sex
Kingston & St. Andrew
Jamaica, 1958–1982
Average Incidence per 100,000 Males/Females
20
18
16
14
12
10
8
6
4
2
0
12.3
12
12.2
10.9
7.3
4.3
3.4
2.8
1.7
2.3
1958–1963
1964–1966
1967–1972
1973–1977
1978–1982
Years
LEGEND
Men
Women
Jamaica Cancer Registry, 1987

Figure A-21

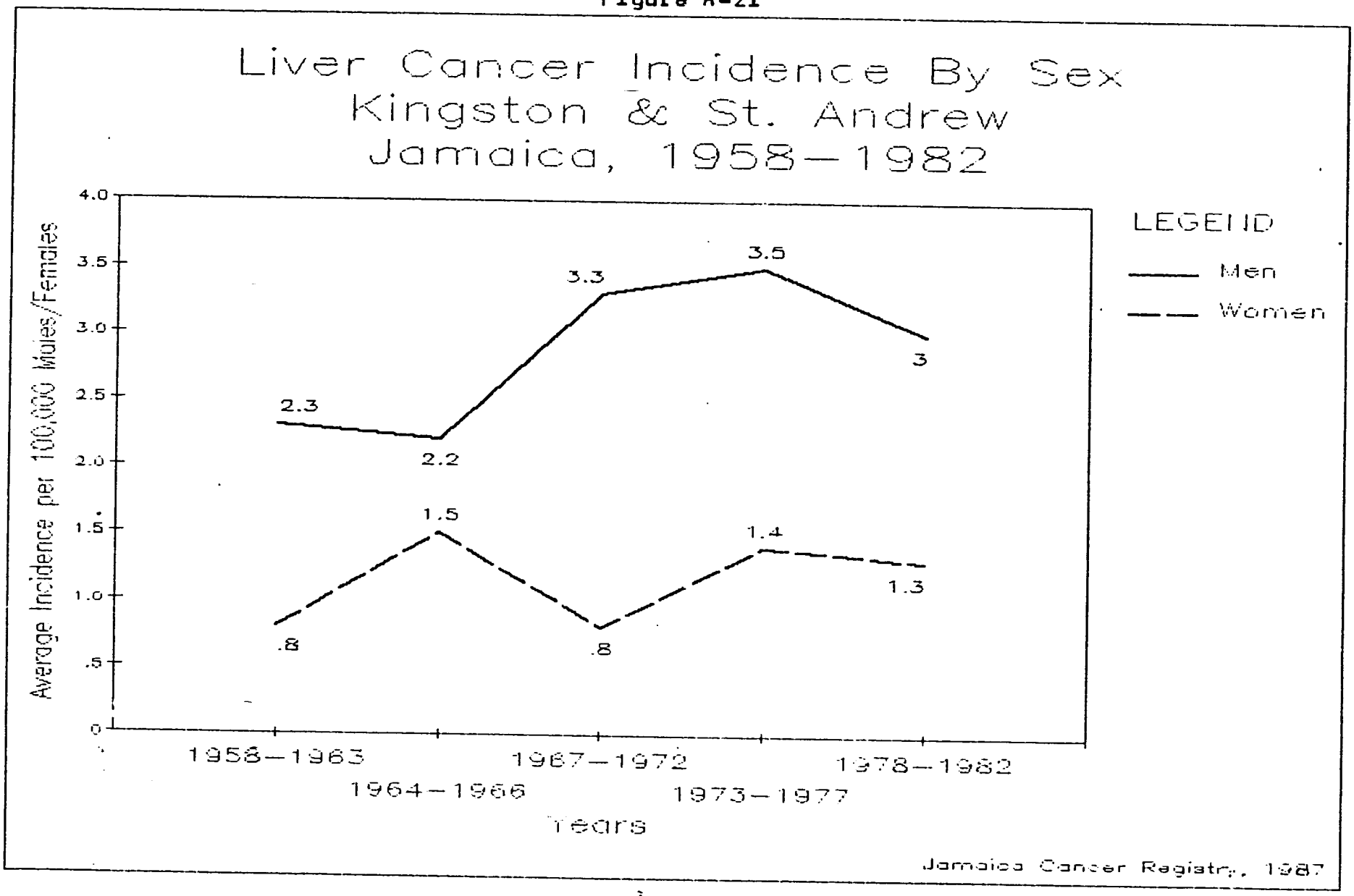

Liver Cancer Incidence By Sex
Kingston & St. Andrew
Jamaica, 1958—1982
Average Incidence per 100,000 Males/Females
4.0
3.5
3.0
2.5
2.0
1.5
1.0
.5
0
2.3
2.2
3.3
3.5
3
.8
1.5
.8
1.4
1.3
1958—1963
1964—1966
1967—1972
1973—1977
1978—1982
Years
LEGEND
Men
Women
Jamaica Cancer Registry, 1987

Figure A-22

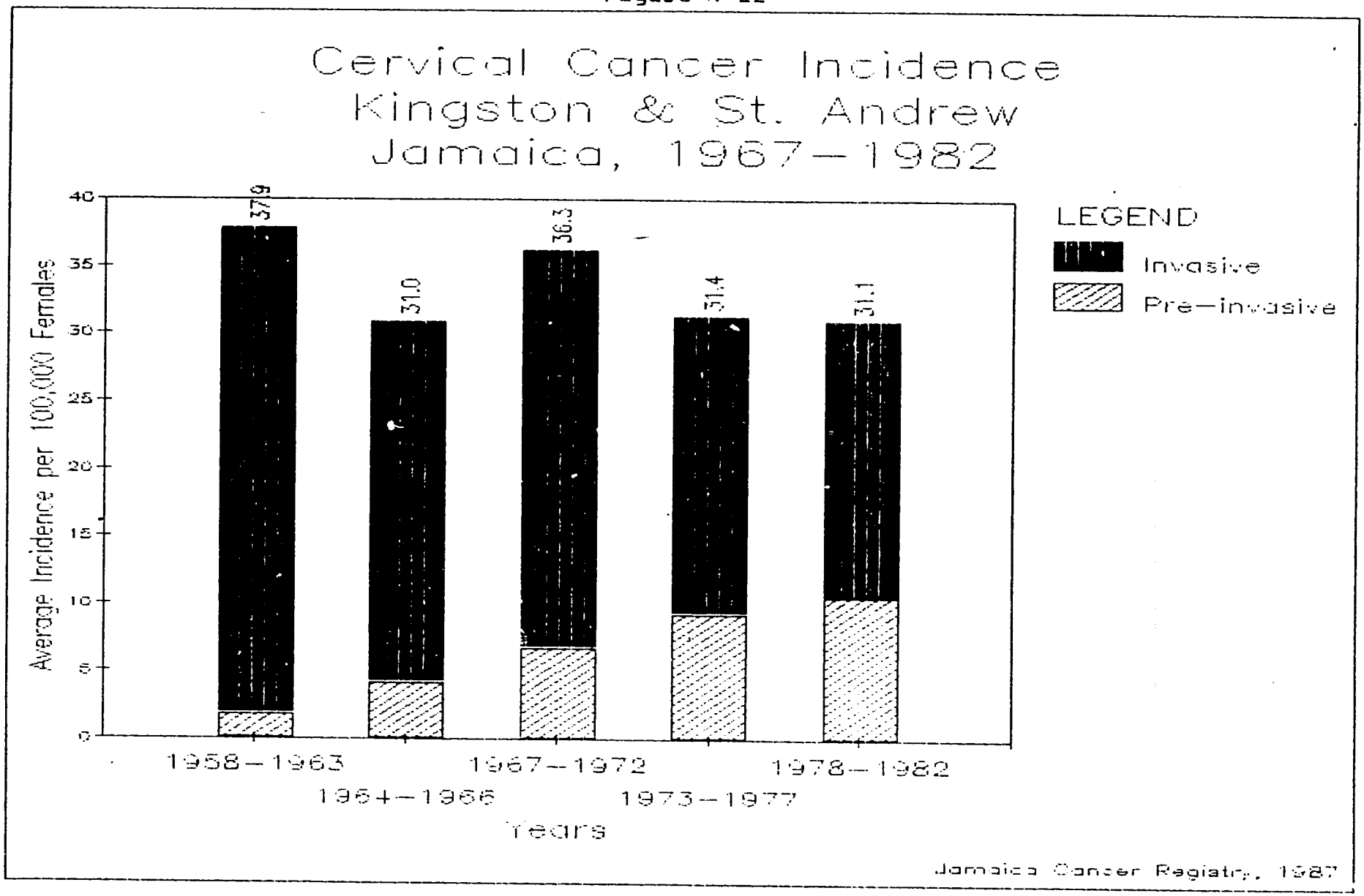

Cervical Cancer Incidence
Kingston & St. Andrew
Jamaica, 1967—1982
Average Incidence per 100,000 Females
40
35
30
25
20
15
10
5
0
37.9
31.0
36.3
31.4
31.1
1958—1963
1964—1966
1967—1972
1973—1977
1978—1982
Years
LEGEND
Invasive
Pre—invasive
Jamaica Cancer Registry, 1987

Figure A-23

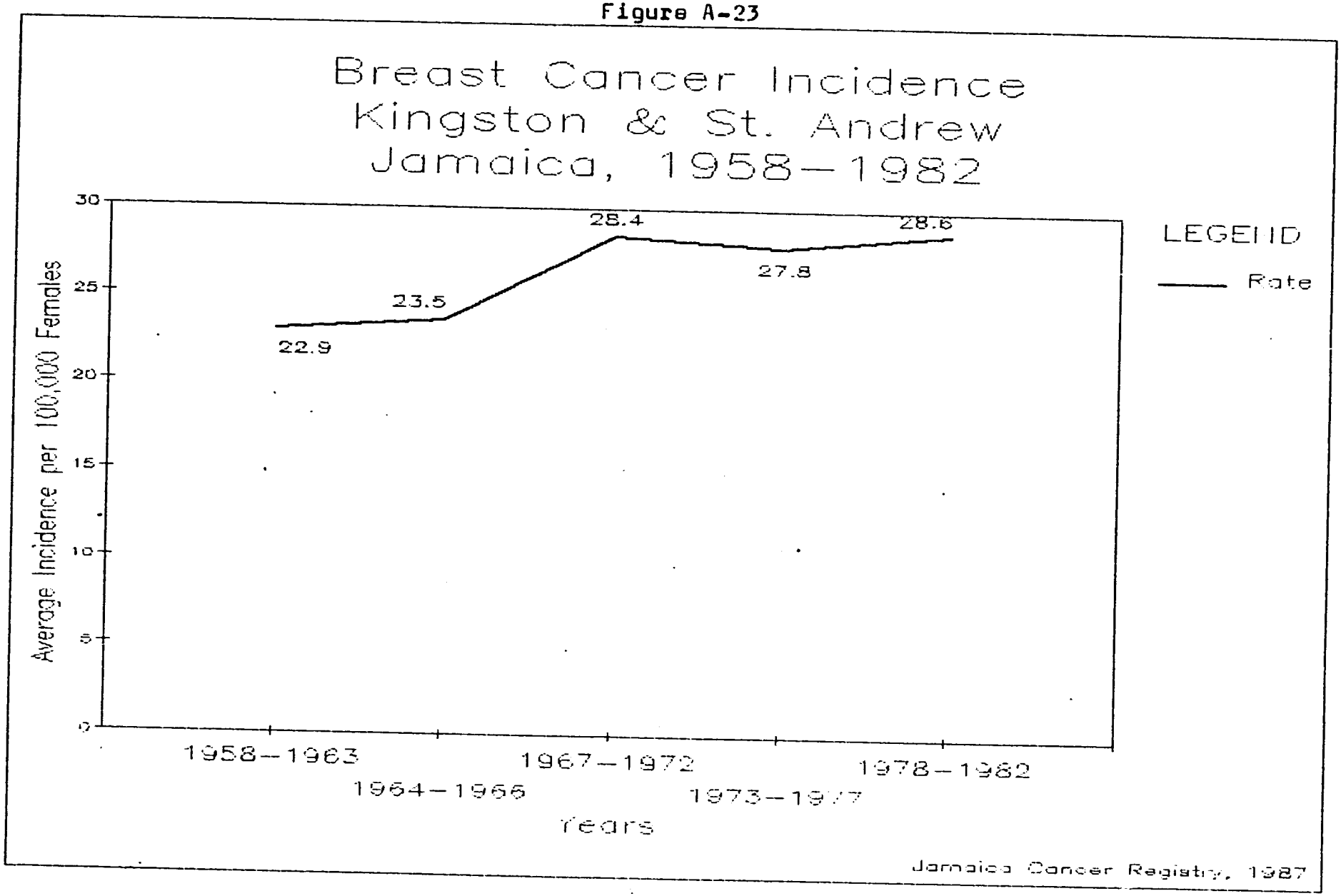

Breast Cancer Incidence
Kingston & St. Andrew
Jamaica, 1958–1982
Average Incidence per 100,000 Females
30
25
20
15
10
5
0
22.9
23.5
28.4
27.8
28.6
1958–1963
1964–1966
1967–1972
1973–1977
1978–1982
Years
LEGEND
Rate
Jamaica Cancer Registry, 1987

Figure A-24

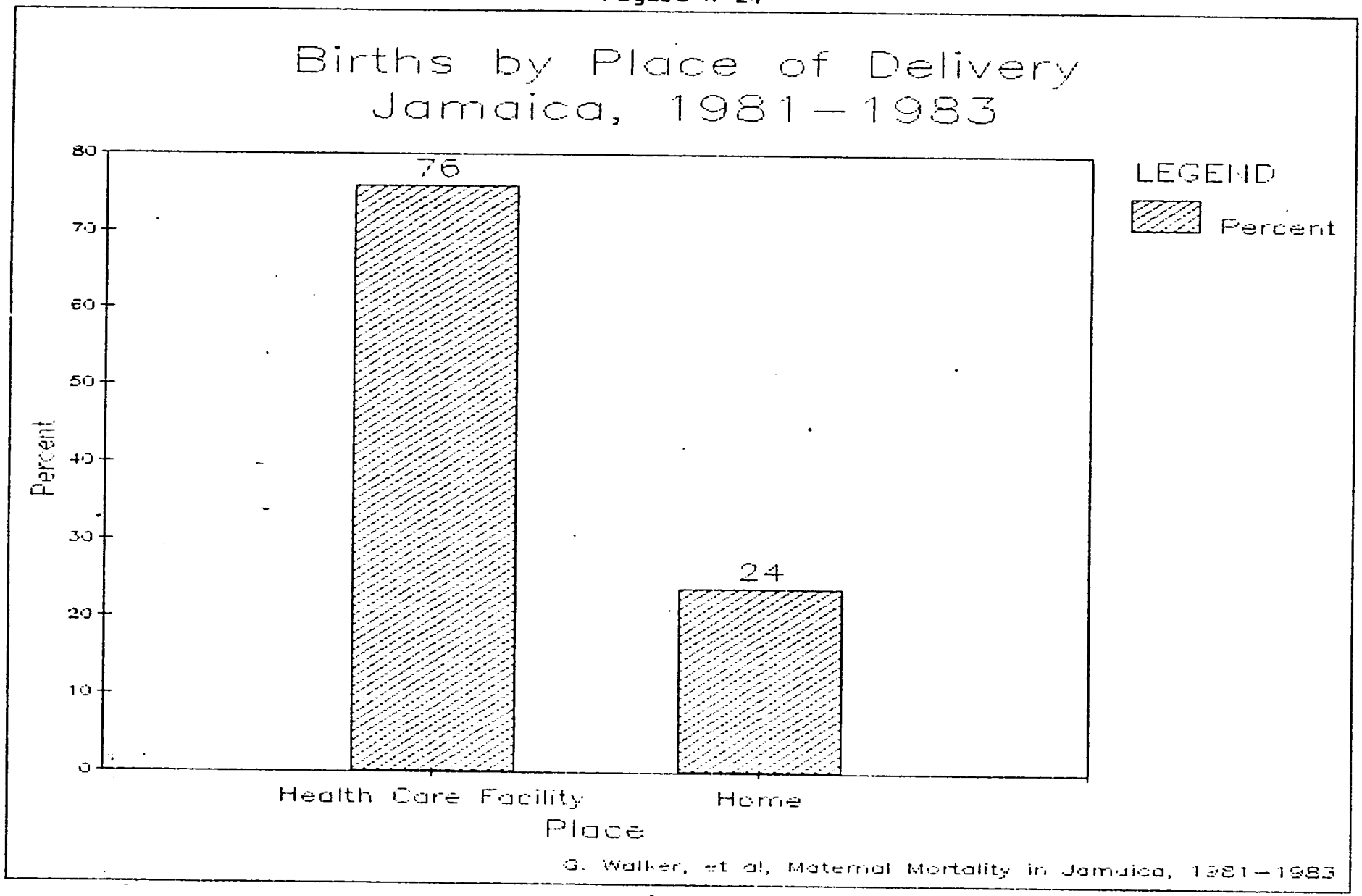

Births by Place of Delivery
Jamaica, 1981 – 1983
80
70
60
50
40
30
20
10
0
Percent
76
24
Health Care Facility
Home
Place
LEGEND
Percent
G. Walker, et al, Maternal Mortality in Jamaica, 1981 – 1983

Figure A-25

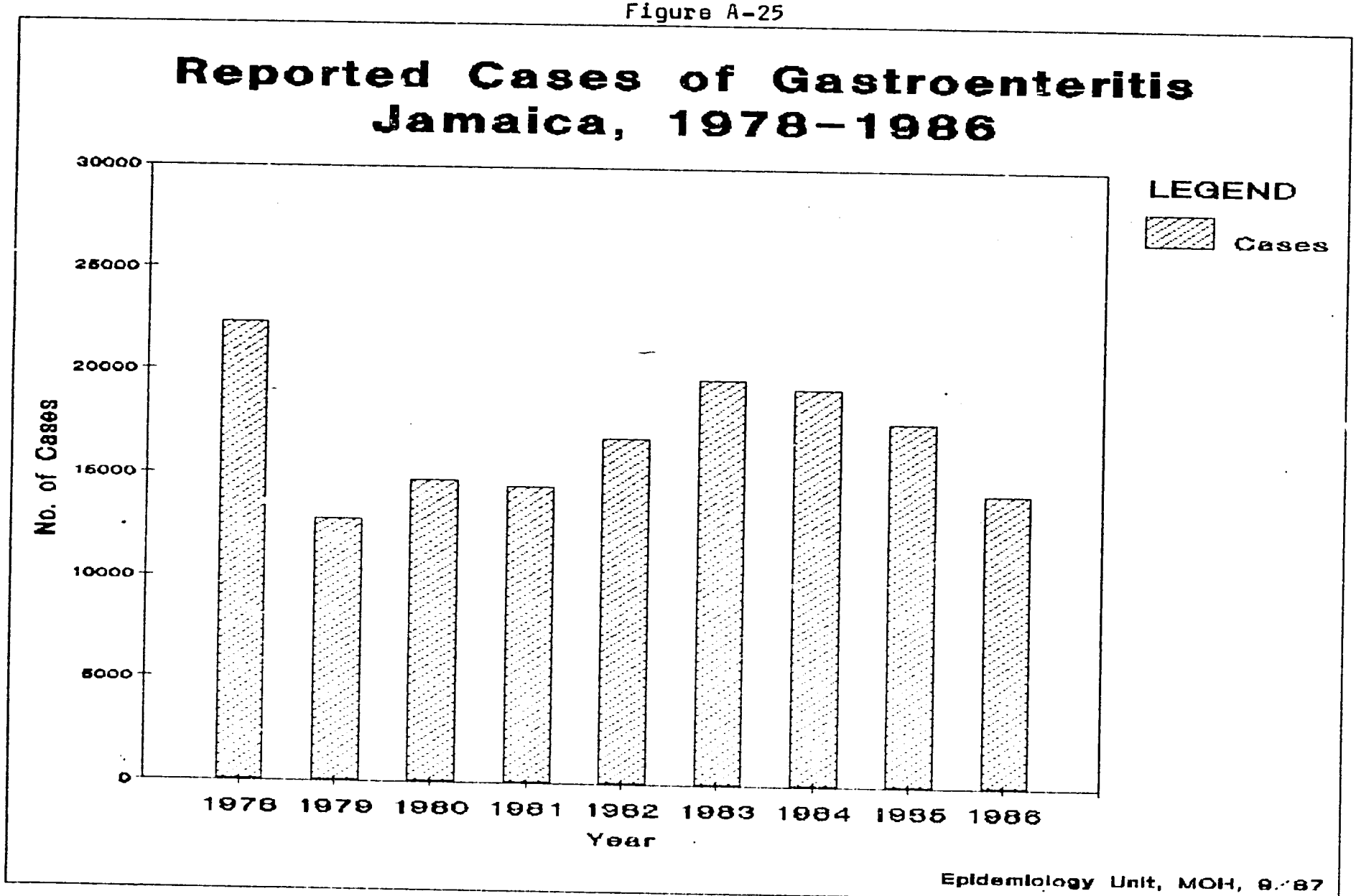

Reported Cases of Gastroenteritis
Jamaica, 1978-1986
30000
25000
20000
15000
10000
5000
0
No. of Cases
1978
1979
1980
1981
1982
1983
1984
1985
1986
Year
LEGEND
Cases
Epidemiology Unit, MOH, 9/87

Figure A-26

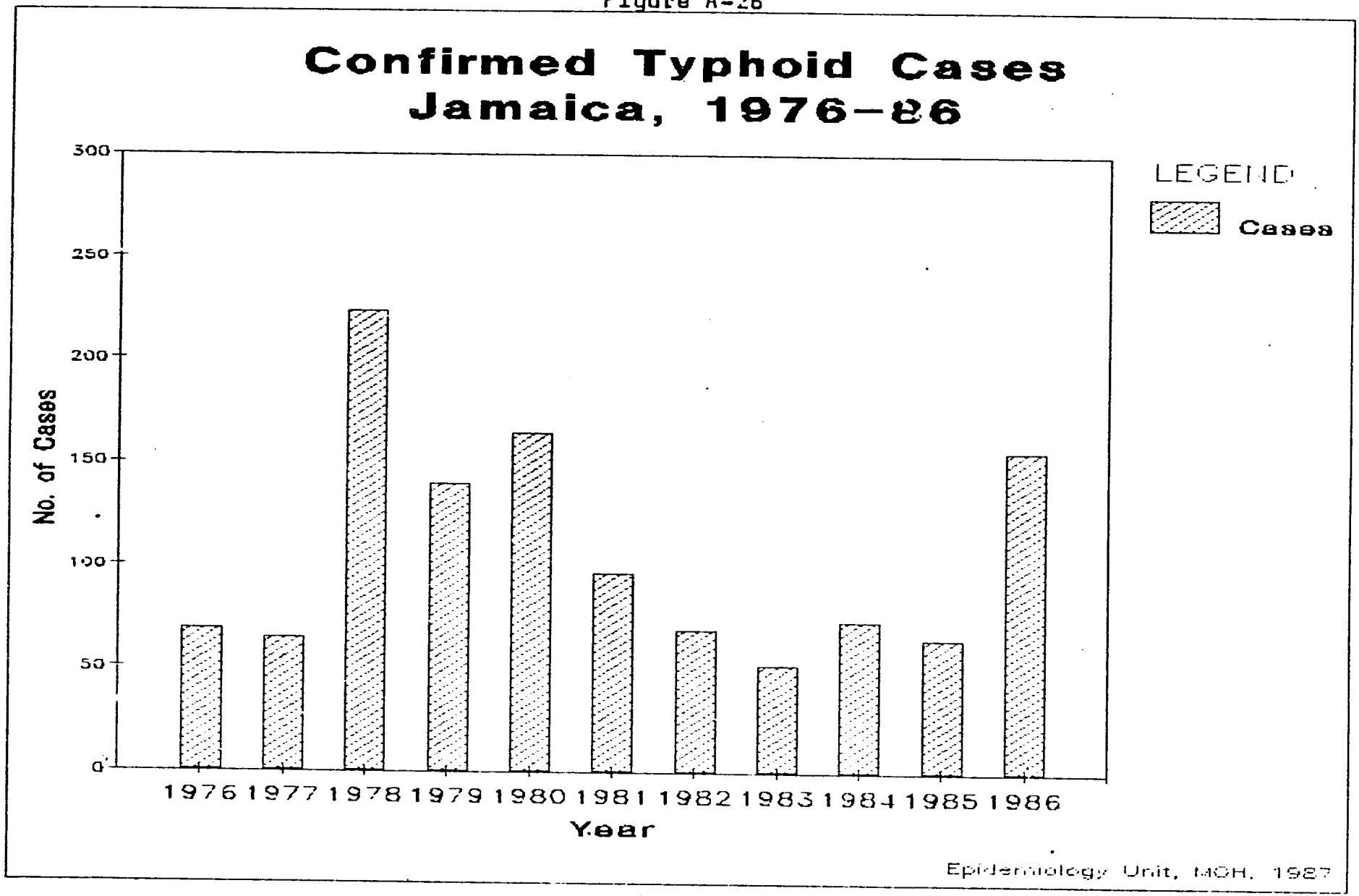
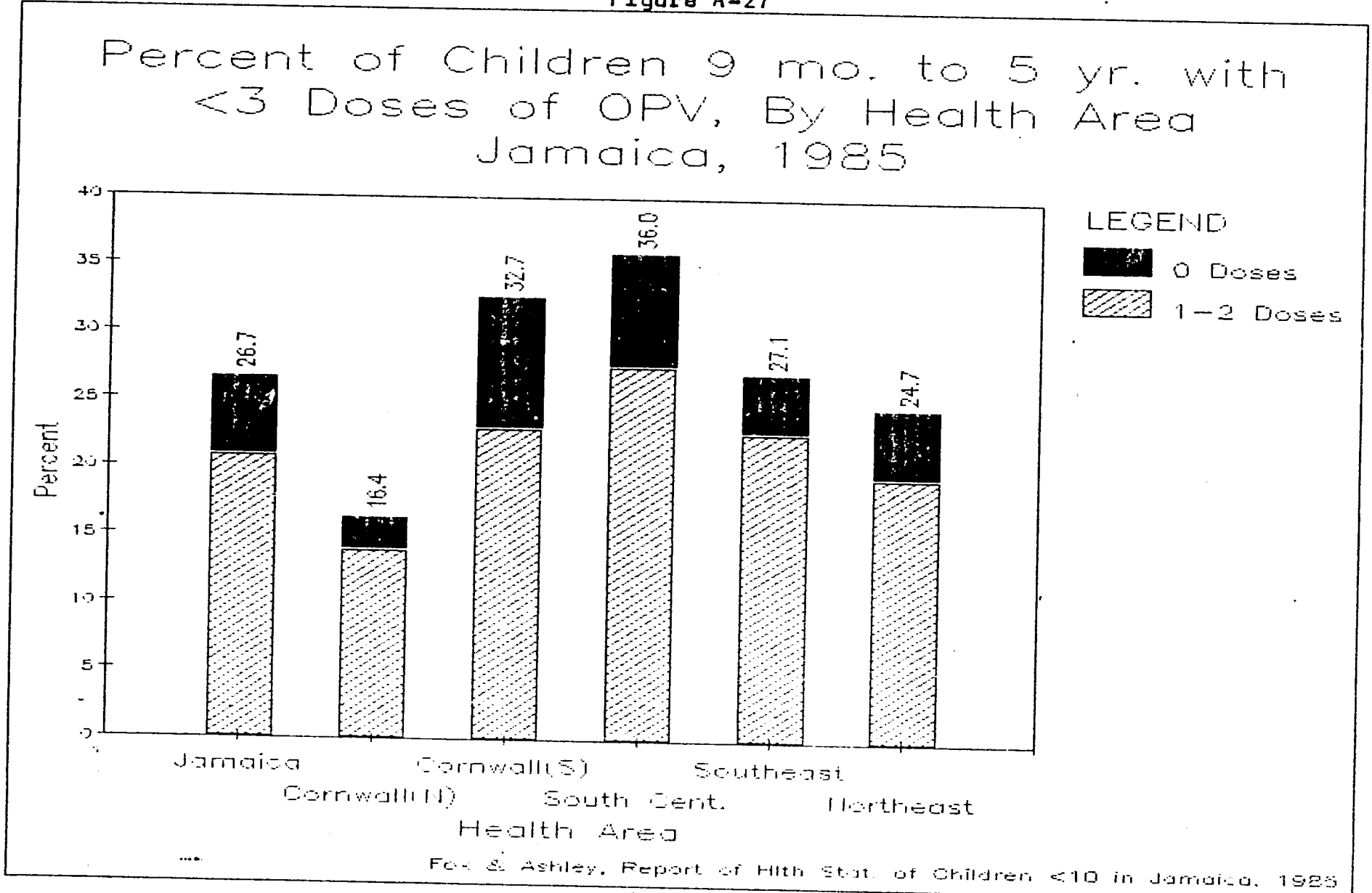

Confirmed Typhoid Cases
Jamaica, 1976-86
No. of Cases
300
250
200
150
100
50
0
1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986
Year
LEGEND
Cases
Epidemiology Unit, MOH, 1987

Figure A-27



Fox & Ashley, Report of Hlth Stat. of Children <10 in Jamaica, 1985

Figure A-28

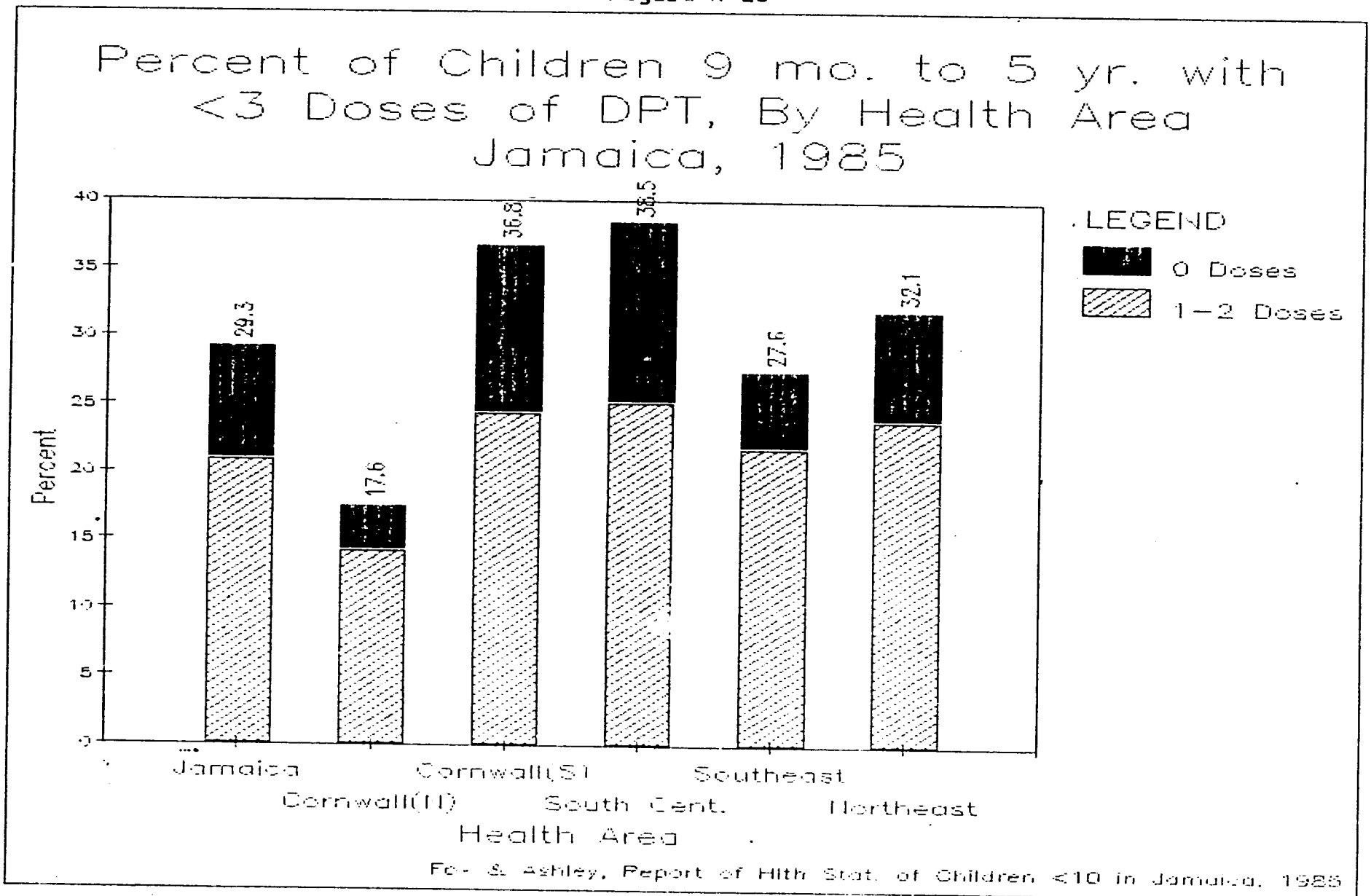
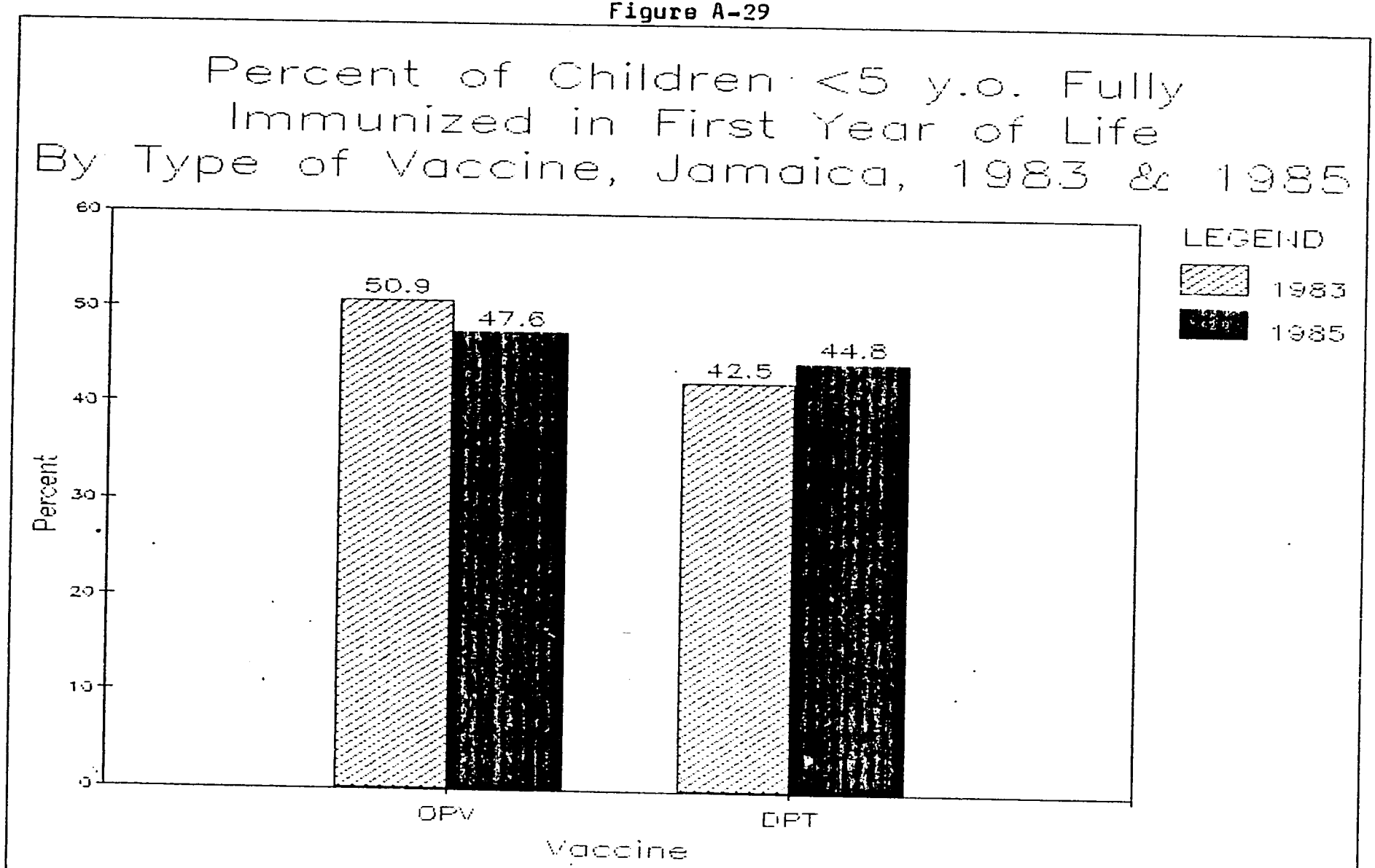
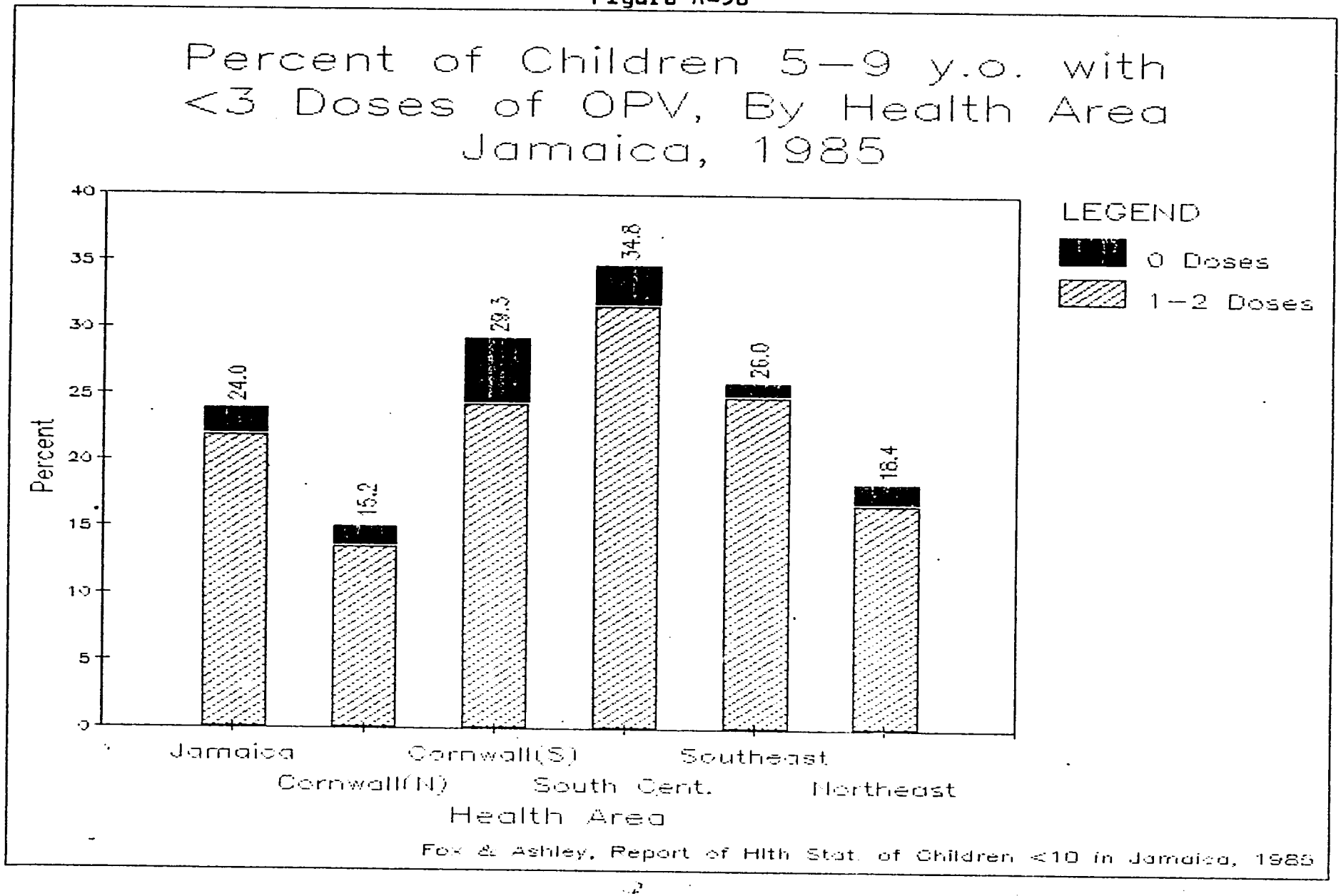

Percent of Children 9 mo. to 5 yr. with <3 Doses of DPT, By Health Area Jamaica, 1985
Percent
40
35
30
25
20
15
10
5
0
29.3
17.6
36.8
38.5
27.6
32.1
LEGEND
0 Doses
1-2 Doses
Jamaica
Cornwall(S)
Southeast
Cornwall(N)
South Cent.
Northeast
Health Area
Fox & Ashley, Report of Hlth Stat. of Children <10 in Jamaica, 1985

Figure A-29



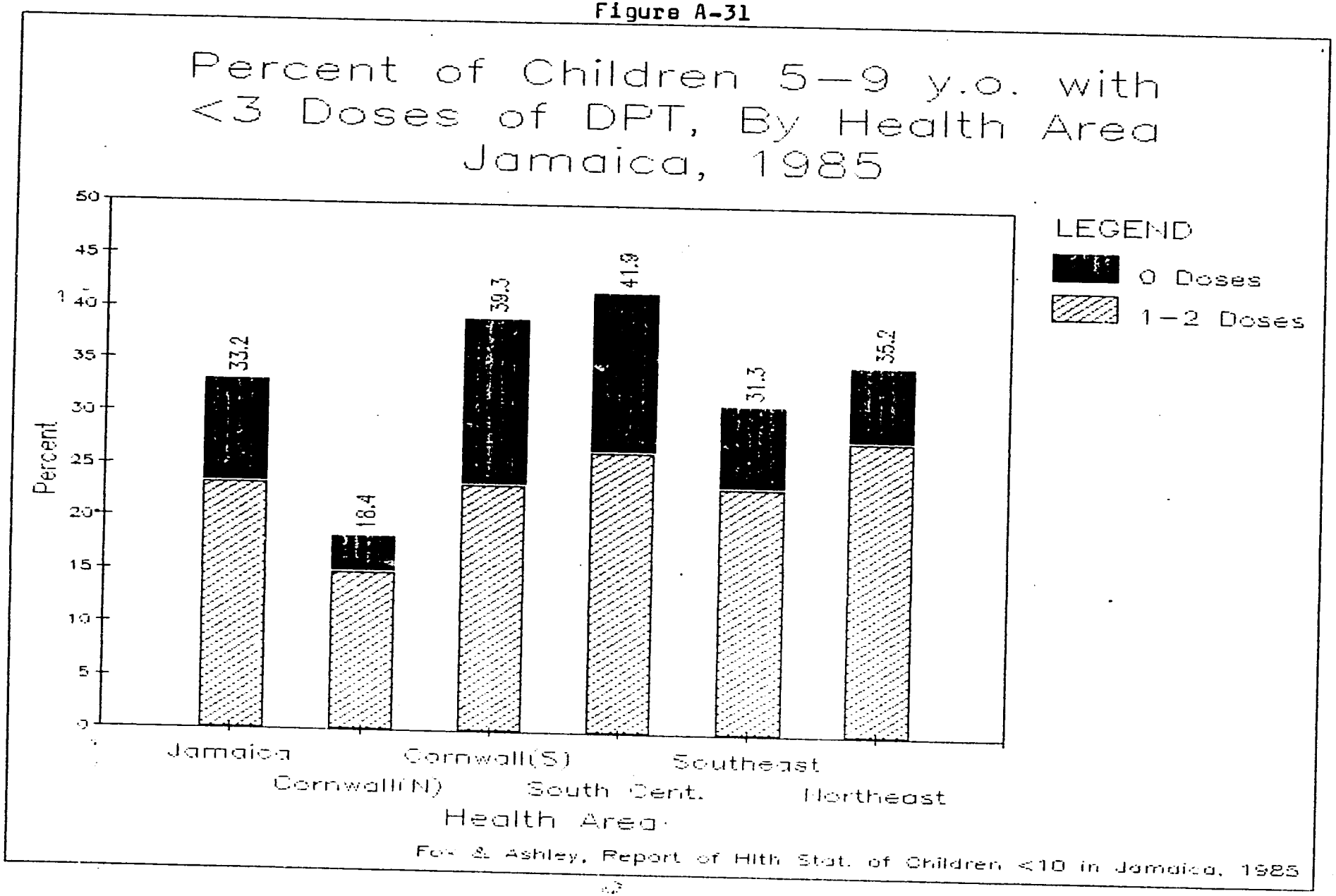
Fox & Ashley, Report of Hlth Stat. of Children <10 in Jamaica, 1985

Figure A-30



Fox & Ashley, Report of Hlth Stat. of Children <10 in Jamaica, 1985

Figure A-31



Fox & Ashley, Report of Hlth Stat. of Children <10 in Jamaica, 1985

Figure A-32

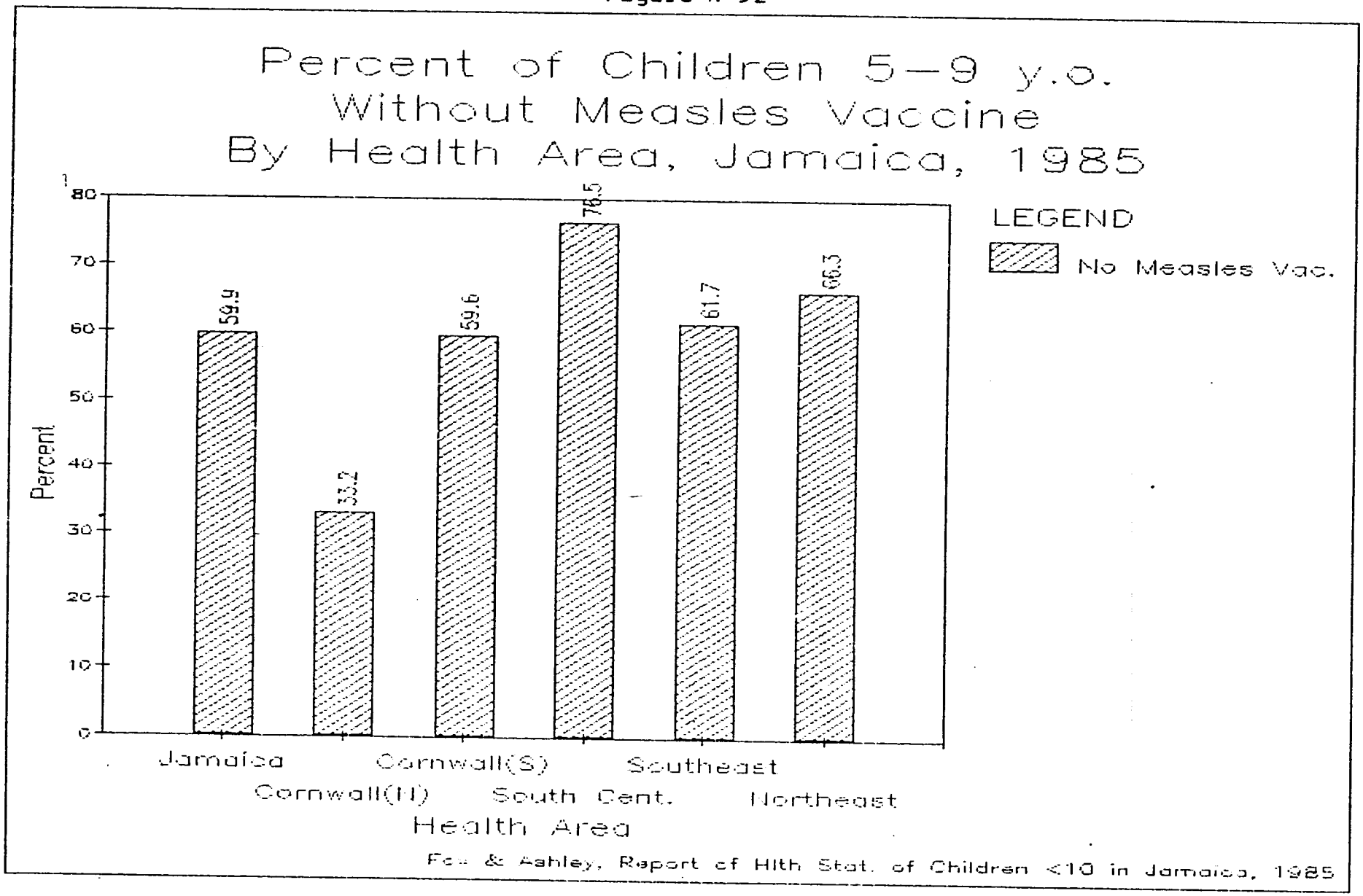
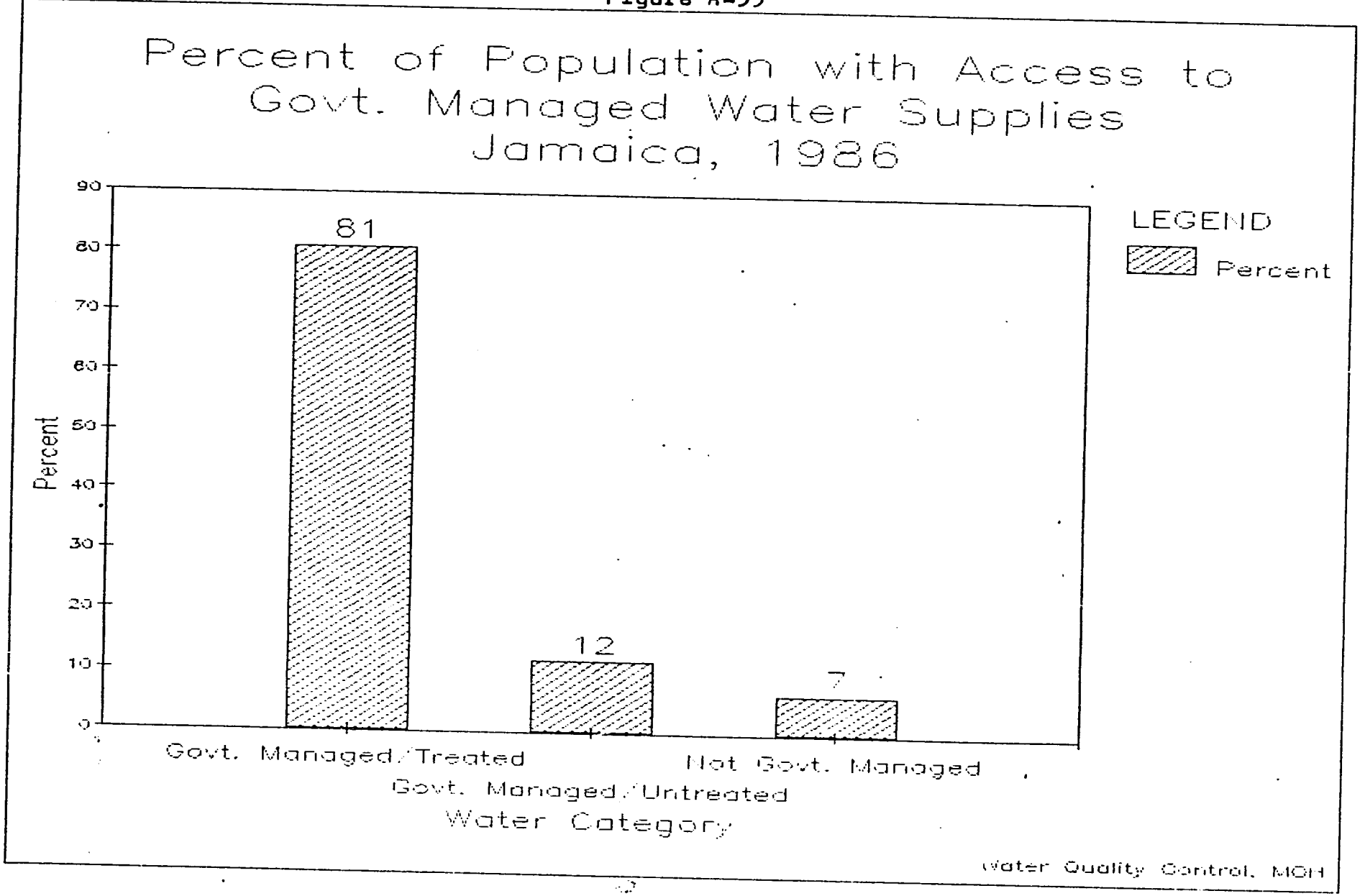

Percent of Children 5—9 y.o.
Without Measles Vaccine
By Health Area, Jamaica, 1985
Percent
80
70
60
50
40
30
20
10
0
59.9
33.2
59.6
76.5
61.7
66.3
Jamaica
Cornwall(N)
Cornwall(S)
South Cent.
Southeast
Northeast
Health Area
LEGEND
No Measles Vac.
Fox & Ashley, Report of Hlth Stat. of Children <10 in Jamaica, 1985

Figure A-33


Percent of Population with Access to
Govt. Managed Water Supplies
Jamaica, 1986
Percent
90
80
70
60
50
40
30
20
10
0
81
12
7
Govt. Managed/Treated
Govt. Managed/Untreated
Not Govt. Managed
Water Category
LEGEND
Percent
Water Quality Control, MOH

Appendix IV

Opportunities for Collaboration between the MOH and the GOJ Administrative Reform Program (ARP)

At the time of independence an appointment to the Jamaican civil service was considered very prestigious; top college graduates aspired to such positions. As time went by, however, the prestige of working for the government declined. For the past several years attracting high caliber staff has been difficult, turnover has been high and morale low, and, generally, working for the government has been viewed as a low prestige activity. For the Ministry of Health this affects the recruitment and retention of physicians, nurses, and medically skilled staff. These circumstances also affect the retention, advancement, and productivity of the essential management staff required to support a health service.

Throughout the GOJ, problems exist in overcentralization, lack of delegation of authority, and reluctance to accept responsibility. This is particularly true of selected core ministries, e.g., the MOFP and the MPS. The issue of territoriality also affects the Office of the Services Commission of the Public Service Commission (OSC/PSC), which was set up to protect the rights of government employees but which has limited the authority of the line ministries in the area of human resources management. The effect of this concentration of decision-making power among the core agencies has been very debilitating to the MOH and other line agencies.

The GOJ has long recognized the constraints on maintaining an efficient career civil service. When the World Bank began discussions on restructuring loans to the GOJ in the early 1980s one of the areas of concern was public sector management. The Bank noted a variety of shortcomings in management, human resource development, centralization of decision-making, delegation of authority and responsibility, and the general conduct of the nation's affairs.

In 1983, as part of the process of structural readjustment, a government-wide program was initiated to address a number of recognized constraints on the effective and efficient operation of the civil service. This initiative -- the Administrative Reform Program (ARP) -- was desired by both the World Bank and the GOJ. As a result, a 4-year loan in the amount of US$4.8 million was negotiated in 1984. The broad purposes of the loan are to restructure some of the core ministries, pursue decentralization of certain financial and human resource development functions from the core ministries to line ministries, and assist the line ministries in restructuring their organizations so as to more sharply focus on goals and objectives.

The ARP builds on the GOJ's long-term efforts to strengthen the public sector. In 1973, the Minister of Finance (and current Prime Minister) created the Ministry of Public Service to promote a core of career civil service officers. In 1979 the Administrative Staff College (ASC) was founded to provide training for the senior executive corps largely as an effort to halt the movement of top managers out of government service.

Administrative research by the ASC has documented the problems of low pay, low motivation, and low morale among government workers (Green et al., 1983). Prior to negotiating the loan with the World Bank, an institutional audit conducted by Technical and Economic Development Associates (TEDA) clearly documented the constraints on the system, particularly the constricting effect on line ministries of the tight control exerted by the MPS and the MOFP (TEDA, 1983).

The TEDA report notes that there is a pattern of overlapping jurisdictions between core ministries and line ministries, a style that overcentralizes the operations of government, and, of particular relevance to the MOH, a lack of recognition given to management as a professional specialization. The review notes that the OSC/PSC has done an excellent job of providing stability to the civil service by offering legal protection to government employees. But the authors noted that "the highly centralized case-by-case approach of both the MPS and the PSC is detrimental to prompt and efficient administration of human resource actions" (TEDA, 1983, p. 15).

The TEDA report further notes that the historical roots to the current situation in Jamaica can be traced to the period when Jamaica was a British colony:

> . . . there is a cultural aspect inherited from the colonial administration that considers management a skill to be acquired on the job; a skill which does not require professional training. This attitude has a strong bearing on the situation (TEDA, 1983, p. 17).

On the issue of management as a profession, the report continues:

> In Jamaica, as in most of the developing world, professional status is associated with law, medicine, engineering, etc. In the public sector, management is associated with book-keeping and other clerical services (TEDA, 1983, p. 17).

This last point is particularly relevant to any examination of the MOH, but it is important to remember that the assessments conducted by the ASC, TEDA, and others apply to the entire civil service and not any particular line ministry. Table A-1 illustrates this point by comparing the top salaries for GOJ technical staff with those of management personnel in 1984. illustrates this point by comparing

the top salaries for GOJ technical staff with those of management personnel in 1984.

Table A-1. Top salary scales, by technical and managerial classification: Jamaica, April 1984

Classification	Top grade	Maximum salary (J$)
1. Medical/technical staff		
Attorneys	JLG-LL VI	36,788
Engineers	ASG-VII	36,518
Physicians	MDG-MD- VI	36,518
Veterinarians	MDG-VM VI	31,455
Dentists	MDG-DT	31,455
2. Managerial staff		
Finance	FAA VI	21,060
Personnel	PMA IV	19,980
Industrial relations	PMA IV	19,980

Source: TEDA, Table VII, "Career Potential in Selected Fields," p.18.

The TEDA review points out that decentralization from core to line ministries requires that the line ministries be able to take on new roles and responsibilities. Again, without speaking specifically about any line ministry, the reviewers note:

> Another factor which makes decentralization difficult is the centralized tradition of government inherited from the colonial administration which tends to weaken the line manager who is closest to the action level. In Jamaica, this tradition is largely responsible for the line or programme manager's lack of authority and his consequent refusal to be held responsible for the performance of management functions. In addition, most

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> of those promoted to management positions have not been provided with management training, as they moved up the ladder, to complement their specific professional training (TEDA, 1983, p. 34).

The ARP operates under the direction of the Inter-Ministerial Committee on Administrative Reform (IMCAR) headed by the Prime Minister. A Working Group on Administrative Reform has been created to monitor the day-to-day activities and is chaired by the Permanent Secretary of the Office of the Prime Minister.

There are two task forces under ARP: (a) the Financial Management Reform Task Force chaired by the Permanent Secretary of MOFP and (b) the Committee on Public Service Reform chaired by the Permanent Secretary of MPS. A secretariat has been created and staffed with experts in financial management, human resource development, systems analysis, and project implementation. The secretariat, including expatriate advisors, is funded under the terms of the World Bank loan. This small professional staff provides technical assistance to the various core and line ministries embraced by the program.

ARP has three basic thrusts: (a) improved financial management, (b) human resource development, and (c) line ministry restructuring. In the area of financial management ARP has worked to improve the internal operations of the MOFP. To date they have succeeded in (a) reorganizing the budget division, (b) establishing a management information system including computerization of operations, (c) establishing a Controller General's position, and (d) having approximately 40% of the MOFP's budget for 1987/88 prepared in a performance budget format.

A. Financial Reform

One of the persistent criticisms of the MOFP is that it takes too long for staff to act on budget requests from line agencies. MOH financial managers specifically noted this as a problem with "the system." Working with the ARP, the MOFP has made significant strides to improve its performance and be responsive to line ministry requests for annual budget approval, current year drawdowns, and review of expenditure statements. It is anticipated that the new management information system, augmented by electronic data processing equipment, will facilitate this process and that line ministries will soon begin to see the results of these efforts.

Perhaps a more controversial innovation is the creation of the position of Controller General within the MOFP. There is a need for effective accounting control across the system. The centralized

Diagram A-1

Organization of the Administrative Reform Programme

Controller General will promote this. However, key auditing staff within each line ministry are to be designated to the staff of the Controller General, not to the line ministry. Financial management staff within MOH have expressed reservations about the efficacy of this because the loyalty of the Controller General's staff will be not to the MOH but to the MOFP, perhaps creating some friction.

A key component of financial reform within ARP is a shift from the current system of line item budgeting to a format of performance budgeting where charges will be attributed to cost centers. This will permit evaluation based on program achievements (e.g., number of immunizations given) and cost of services. Significant progress has been made in getting MOFP changed over to this new format and work has also begun to make this change in the line ministries including MOH.

C. Human Resource Management Reform

A second thrust of the ARP is to strengthen the cadre of civil servants. Several initiatives are underway. In 1986, under the impetus of ARP and with the support of the Prime Minister, a special one-time raise in salary and allowances was approved for the most senior-level managers. These increases were more than 10-20% per annum, depending upon job classification. More recently, on 1 October 1987, a salary and allowances increase was approved, retroactive to July 1. These increases were in the range of 7-13 1/2%, signaling the GOJ's recognition that the only way the government is going to function is to pay employees a reasonable wage. In 1988 a third civil service salary increase will be instituted -- an across-the-board raise of 15%. The initial target of the ARP is to raise civil service salaries to within 80% of public sector entities (e.g., Jamaica Commodity -Trading Corporation, Jamaica National Investment Promotion Co.). In addition, a survey is currently underway to compare government salaries with equivalent private sector positions.

Another activity is a reclassification of government positions. This is particularly important to the MOH because many difficult to fill technical positions are grouped with relatively low skill positions in other ministries, thus making it impossible to keep MOH positions filled. MOH personnel specialists are participating in this reclassification exercise.

A more important effort of the ARP, and one that is meeting more resistance, is to get the core ministries to delegate more authority to line ministries. Nowhere is this constraint more fully felt than in the area of personnel management. Currently, the MOH can identify an individual for a particular position, but the MPS retains the authority to hire the individual and the MOFP retains the decision-making control on whether or not to fund the position. Further, every personnel action, for reprimand, sanction, or

dismissal, must presently be forwarded to the OSC/PSC for action. The net effect is that the line ministries have the authority neither to hire or to fire employees. This has been most damaging on supervisor-subordinate relations. The negative impact has been great on productivity and discipline.

ARP is working with MPS and OSC/PSC to delegate personnel functions to the line ministries and to assume a role of overseer, e.g., from a controlling to a facilitating function. Personnel directors within the MOH indicate they will greatly welcome such a change, while at the same time retaining a certain degree of skepticism about its actually happening.

C. Line Age . Reorganization

The third thrust is to assist line ministries, including the MOH, to reorganize to more effectively carry out their mandates. The MOH has been selected as one of the initial ministries for assistance from ARP in this process. This appears to be a result of both ARP recognizing that MOH has the largest number of employees of any GOJ ministry and a receptivity on the part of MOH senior managers given that the ARP staff has provided useful technical assistance.

In 1985 the MOH requested assistance from ARP to conduct the first Ministry retreat. Senior staff spent 2 1/2 days reviewing goals, constraints on successful attainment of stated objectives, and recommendations for improvements (Vincent, 1987). During the assessment team's visit to Jamaica the second senior level retreat was held, again with the assistance of ARP technical consultants. A frank and open review was conducted of the obstacles that the Ministry faces. One product of this retreat was the consensus identification of 14 priority program areas (Vincent, 1987). A senior staff member was identified for each of the 14 priority areas and assigned responsibility for drafting an action plan. As a follow-up to the retreat a program plan coordinator was named by the MOH to ensure that the plans are completed and are integrated into a comprehensive Ministry plan for 1988-89.

Senior MOH staff appear receptive to the technical assistance they have received so far from ARP. Financial management staff are particularly enthusiastic about shifting from line item to performance budgeting. They indicate that this conforms with their ideas for rigorous management, integration of PHC and secondary care management, and decentralization of management, including budgeting authority, to the health areas. MOH staff envision the possibility that a Management Implementation Team, similar to that which exists at headquarters, might well be created at the area level as part of this process. Comments on ARP technical assistance in the budgeting process were consistently positive (with the exception of the observations about the Controller General's staff noted above).

D. MOH-ARP Coordination

MOH/ARP activities so far include receiving the pay raises and participating in the reclassification process. In addition, the MOH has:

- Requested ARP consultant assistance in conducting two ministry retreats
- Received technical assistance in implementing performance budgeting
- Attended short-term management training programs (often under the direction of ASC)
- Initiated performance budgeting in conjunction with the MOH's efforts to decentralize management functions to the PHC areas
- Created a Ministry Implementation Team to monitor the progress of the priority program plans.

E. Future Plans/Funding

Future directions of the ARP include:

- Revising and modernizing government-wide administrative policies, laws, and regulations
- Establishing a computer support system for core and line ministries;
- Upgrading management training facilities and programs at ASC
- Strengthening management in line ministries, including the MOH.

Funds for ARP staff and consultants are provided by a GOJ loan with the World Bank (1984 Technical Assistance Loan 2507-JM). Funding runs through June 1988. GOJ and World Bank representatives are currently discussing a second project (ARP II). While there is general optimism that the World Bank will provide continued funding, project activities have expanded greatly. As a result, it is clear that additional sources of funding will be required from GOJ and external donors, particularly for follow-up activities within the line ministries, including the MOH.

MOH activities that could be included in such an ARP II project include:

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- Shifting the environment of the MOH to make it receptive to change --
  - recognizing the importance of the managerial function
  - reinforcing/rewarding productivity
  - restructuring authority to support supervision

- Enhancing the skills of management staff --
  - upgrading the quantity/quality of training
  - linking training to career development

- Assisting in financial reorganization --
  - implementing performance budgeting system-wide
  - training health area managers in performance budgeting/evaluation

- Strengthening management --
  - assisting in team development
  - directing management of change/decision making
  - training trainers

- Developing a strategic plan --
  - Drafting a mission statement
  - Identifying a future desired position
  - Establishing criteria for including program activities
  - Building mechanisms for monitoring compliance and progress.

These activities must be coordinated between the MOH Management Implementation Team, World Bank supported management advisors, PAHO, and ARP staff. Additional support from other funding sources could readily accelerate the process of improving the management structure and operations within MOH.

Appendix V

Public Health Laws and Regulations

The following laws and regulations have been identified as requiring drafting or revising to promote public health in Jamaica:

1. Public Health Act, 1974: amendments
2. Dangerous Drug Act
3. Excise Duty Act
4. Coroner's Act
5. Food and Drug Act
6. Auxiliary Health Personnel Licensing Act
7. Food Protection Law
8. Meat Inspection Law
9. Required Reporting of Communicable Diseases
10. Mental Health Legislation
11. Export of Jamaican Foods to the U.S.
12. Use of Water Resources
13. Mandatory Immunization
14. Generic Drug Act
15. Transportation of Hazardous Wastes
16. Public Cleansing Law
17. Pesticide Control Act