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THIRTY-FOURTH WORLD HEALTH ASSEMBLY

Provisional agenda item 41

HEALTH CONDITIONS OF THE ARAB POPULATION IN THE OCCUPIED ARAB TERRITORIES, INCLUDING PALESTINE

At the request of the Delegation of Israel, the Director-General has the honour to transmit to the Thirty-fourth World Health Assembly, for its information, a report[1] by the Minister of Health of Israel.

[1] Annex.

ANNEX

MISSION PERMANENTE D'ISRAEL
AUPRES DES NATIONS UNIES A GENEVE

Geneva, 27 April 1981

Dear Dr Mahler,

Please find enclosed "A Report by the Minister of Health of Israel to the Thirty-Fourth World Health Assembly, Geneva, May 1981" on the Health and Health Services in Judaea-Samaria, Gaza and Sinai 1980-1981.

I would appreciate it if the Report could be circulated as an official document of the Thirty-Fourth World Health Assembly.

Yours sincerely,

(signed) Joel Barromi
Ambassador
Permanent Representative

Dr Halfdan MAHLER
Director-General
World Health Organization
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HEALTH AND HEALTH SERVICES IN JUDAEA-SAMARIA, GAZA AND SINAI 1980-1981

A Report by the Ministry of Health of Israel
to the Thirty-fourth World Health Assembly, Geneva, May 1981

Jerusalem, March 1981

CONTENTS

FORWARD

In 1967 responsibility for the health of the population of Gaza-Sinai and Judaea-Samaria passed to the Israeli authority administering the territories. This responsibility was interpreted in an active and progressive fashion and the governing authorities have undertaken to advance the health of the people.

The health of a people depends as much on its socio-economic condition as on its health services, so that any reasonable attempt to improve the health of a people must include efforts to provide jobs, improved family income, education, municipal and social services, as well as dealing with preventive health care, primary care and of course, treatment services in the community and in specialized facilities such as hospitals.

Over the past fourteen years, great effort and investment have been expended by Israel, both in Gaza-Sinai and Judaea-Samaria to méet these needs.

The goal of advancing the health status of these populations which in 1967 were at the generally low standards prevalent in the Middle East[1] has been partially met. Socio-economic conditions and expectations are vastly different than those which existed prior to 1967 in terms of jobs, incomes, education, housing and municipal services. Personal health services at the primary level have been developed on a widespread basis to meet modern medical standards. Hospital services have also developed from previously primitive levels to modern and progressive standards. The approach has been in keeping with the important concepts embodied in the Declaration of Alma-Ata of WHO and UNICEF.

As a result of these changes the health condition of the people of the territories has improved substantially, and measurably. Achieving the WHO goal of "health for all" in the territories, measured against continually rising expectations of the public, of the medical community and indeed, of the international community. More remains to be done, but much has been achieved, and a strong basis has been laid for the improved health condition of a rapidly advancing population.

The facts presented in this document will portray this progress to the objective observer. Constructive evaluation is a part of the planning process; preparation of this document will therefore also contribute toward further advances in the health condition of the people of Gaza-Sinai and Judaea-Samaria.

Mr E. Shostak
Minister of Health

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[1] Middle East Health - Eastern Mediterranean Region, WHO, Alexandria 1980.

CHAPTER ONE

GENERAL INTRODUCTION AND HIGHLIGHTS

Between 1976 and 1981 there has been a continuing and cumulative development of the health service infrastructure of both primary care and specialized services in the regions of Judaea-Samaria and Gaza-Sinai. There has been dramatic socio-economic development, with full employment, in contrast to the previous situation of widespread unemployment and under-employment. The progressive development of community infrastructure services such as safe water, garbage collection and disposal and sewage systems has been undertaken. As a result of this combination of factors the health status of the populations of Judaea-Samaria and Gaza-Sinai has improved markedly in terms of physical, mental and social well-being.

Health service development in Judaea-Samaria over the years 1967 to 1981 has emphasized expansion and refinement of specialty and hospital services, as well as further development of basic public health and primary care services. Hospital services have expanded quantitatively and qualitatively and now include a wide range of basic and specialized medical services including oncology, renal dialysis, vascular surgery and others. Hospital deliveries increased from some 13% in 1968 to 44.5% in 1979. Major advances have also been achieved in public health sanitation, immunization, maternal and child care and other primary care services. The array of preventive, diagnostic, curative and rehabilitative services available to residents of the regions have also improved both qualitatively and quantitatively. There has also been substantial improvement in health manpower staffing and education, and in public health education.

In Gaza-Sinai basic health services prior to 1967 were less well developed than those in Judaea-Samaria. Therefore, health planning concentrated on building the basic environmental, preventive and primary care services, along with gradual refinement of specialty and hospital services.[1] Considerable progress has been made in maternal and child health care through establishment of a widespread network of Maternal and Child Health Clinics and their recent conversion to integrated comprehensive preventive and therapeutic community health centres. There has been a major expansion in primary care services. Deliveries in hospital have increased markedly in recent years, from less than 10% in 1967 to 67% in 1980. The decline in infant mortality from more than 120/1000 live births prior to 1967 to an estimated 43/1000 live births in 1980 is further evidence of progress in this area.

Considerable progress has been made in manpower development in both Judaea-Samaria and Gaza-Sinai. Training of nursing personnel (both registered and practical nurses) has been increased substantially both at the pre- and post-diploma levels. There have also been large increases in hospital and community service personnel during the period. Post-graduate and in-service training in the regions, in Israel, and abroad have contributed much to staff development, including WHO fellowships for doctors, nurses and other staff to study abroad for periods of 3-6 months.

Integration of preventive and treatment services, at the MCH centre and primary care clinic level in both territories has increased access to care, utilization of services, and serves as the effective vehicule for expanded immunization programmes, oral rehydration for diarrhoeal disease, widened coverage for prenatal care, hospital deliveries, well child care and other primary care services.

Patterns of health care, morbidity and mortality have shifted both in Judaea-Samaria and in Gaza-Sinai. Communicable diseases continue to be a health problem, although the major prevalence of infective diseases such as tuberculosis, trachoma, malaria, parasitic diseases, polio, diphtheria and measles have been substantially reduced or eliminated. Some infections diseases continue to be a problem through importation via visitors and residents returning from neighbouring countries.

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[1] See Figure IV.

The Ministry of Health of Israel continues to assist the administration of the areas in the development of the health services, with specialist consultative services, staff training and other areas of programme development.

Considerable effort and resources are being applied to meet the needs in the areas, and health status in the areas has improved from the pre-1967 level of underdevelopment, to the present level approaching that of countries with medium levels of health status development.

Health planning and specific developments in expanding programmes of immunization, improving sanitation, extension of preventive and primary care services, increasing sophistication of hospital specialty services, medical records, programmes to control polio and to reduce morbidity and mortality of diarrhoeal diseases among infants constitute "country health programming" which have contributed much to advancing health status. The emphasis of expanding maternal and child health services of recent years will be extended in the period ahead.

Since 1967 all residents of the territories without any exceptions have had full access to government health services, including primary care, local hospital services and referred services in specialty units of Israeli hospitals. The recent development of voluntary health insurance is also contributing to improved access to the growing range of local and referred services.

GAZA-SINAI

Highlights of Health Service Development (1967-1981)

- Population growth from 356 thousand in 1968 to 432.7 thousand (1979).
- Per capita GNP increased, in constant currency, 10.8% per annum on average.
- Infant mortality rate declined from over 120 prior to 1967 to 43 per thousand in 1980 (including much improved registry of births and deaths).
- Postneonatal mortality declined from 60/1000 in 1969 to 32/1000 in 1979 and 28/1000 in 1980.
- Hospital deliveries increased from 20% before 1967, to 47% in 1977 to 61% in 1979 and 67% in 1980 of all deliveries.
- Hospital bed supply maintained at 1.9 beds/thousand population; a 20-bed obstetrical unit added in Shifa Hospital, and 25-bed psychiatric unit added without patient mental health services.
- Hospital utilization increased from 95 to 105 discharges per thousand population (1977-1980); the range of specialty. Services in the territory have increased, reducing the need to refer for specialty care to Israeli hospitals.
- Voluntary health insurance started in 1978, now covers 82% of population. Families pay US$ 4.00-5.00 per month, regardless of family size.
- Ambulatory care centres increased from 12 to 22 clinics which now include primary care and MCH services.
- Staff for government health services increased between 1967 and 1980 to levels:
    - physicians from 97 to 224 (an increase of 130%) - to 19 per ten thousand population
    - nurses from 241 to 485 (an increase of 101%) - to 89 per ten thousand population
    - paramedical from 66 to 169 (an increase of 156%)

- Manpower training programmes:
  - 2 new schools of nursing - one for RNs (15 graduates in 1980), one for LPNs (305 graduates since 1972)
  - Inservice training - Public health (4 months - 10 graduates)
    - Administration
- Polio control programme - adding killed vaccine for all infants to regular oral polio vaccine programme - reduction in attack rates.
- Oral rehydration programme to prevent gastroenteric morbidity begun in 1978 - health education, WHO Oral Rehydration Solution distribution throughout Gaza by MCH centres; reduction in hospital admissions, in malnutrition, deaths from gastroenteritis among infants.
- Health insurance has been established to improve access to health care, and now includes 82% of the population, including refugees and other residents of the population. Bedouins receive services free.

JUDAEA-SAMARIA

Highlights of Health Service Development (1967-1981)

- Population growth from 582 thousand in 1967 to 717 thousand (August 1980)
- Per capita GNP has increased an average annual increase of 9.6%, and private per capita consumption by a 7.4% (average annual increase)
- Hospital services and facilities increased and improved:
  - District hospitals developed specialized services,
  - Increased days of hospital care per 1000 population (543 in 1972, 588 in 1978, and 598 in 1979),
  - Increased discharges per thousand population (68 in 1972, 86 in 1978 and 91 in 1979)
  - Increased surgical procedures per 10 000 population (157 in 1972, 194 in 1978 and 209 in 1979)
  - Increased occupancy rates (72% in 1972 to 82% in 1979 and 1980)
- Maternal and child health services
  - MCH centres increased from 24 in 1967, to 57 in 1979, and 74 in 1980
  - General medical clinics increased from 89 in 1968 and 141 in 1980
  - Hospital deliveries increased from 13.5% in 1968 to 40.3% in 1978, and 44.5% in 1979
- Expanded immunization programme includes:
  - Basic diphtheria, pertussis, tetanus and oral polio vaccine coverage expanded to over 90% of child population
  - Measle vaccination now routine; coverage over 90%
  - BCG vaccination routine for children in grade I, and special coverage of children up to grade VI achieved; all Mantoux positives are investigated and case suspects treated and followed

  - Killed polio vaccine added to routine live oral polio vaccine programme; combined polio programme continued - using both live TOPV and inactivated vaccine

  - Rubella vaccination given to girls in grade VI - added in 1980

  - Diphtheria tetanus - booster added for school children in 1980

- Communicable disease control has successfully reduced and eliminated many diseases of adults and childhood

- Mental health services have been developed particularly through expanded outpatients services

- Environmental health monitoring and operations upgraded in terms of drinking water, sewage collection and treatment, garbage collection and disposal.

- Manpower in government health services increased:

  - Physicians from 55 to 177 (from 1967 to 1980)

  - Nurses from 317 to 623 in 1980

  - Paramedical staff 176 in 1980

- Nursing Schools opened in: Ramallah

  Nablus - increased Registered Nurse Programme from 25 to 47 students per year

  - including midwifery school in 1980

- Health insurance has been established and in 1980 covered 40% of the population.

CHAPTER TWO

GAZA-SINAI

Introduction

The health status of the population of Gaza and Sinai has improved as a result of a combination of factors including: continuing economic development, full employment, increased purchasing power, improved water, sewerage and sanitary systems, new housing programmes and improved educational standards, as well as improvements in the quality and quantity of health services.

The basic infrastructure of preventive and primary care services has been developed very substantially since 1967 in the Gaza-Sinai territories. MCH and primary care services have been started and vastly expanded. In the past two years, government health services added six new health centres to make a total of twenty-two, and expanded health centre services in all of them to include a comprehensive range of primary care, maternal and child health and other public health services.

The philosophy behind the development of services has been to bring health care to the patient and the community, rather than centralizing services and bringing the patient to the services. Primary care, in the sense defined by the World Health Organization - UNICEF, the Alma Ata Conference of 1978, is central to the development of services in Gaza-Sinai.

Hospital service development has also been substantial with complete redevelopment of hospital facilities, equipment and staffing to much higher standards than previously existed. Hospital staffing more than doubled in number in the professional categories, hospital utilization increased, and professional training programmes were initiated.

A voluntary health insurance plan instituted in 1976 now covers 82% of the Gaza population, whereby families pay approximately US$ 4.00-5.00 per month, regardless of family size, for comprehensive health benefit coverage including preventive and primary care, specialty and hospital services, including referred services in Israeli teaching hospitals.

Deliveries in hospital and maternal centres, which are free of charge to everyone in Gaza-North Sinai rose from less than 20% before 1967, to 47% in 1977 to 67% in 1980. Infant mortality has declined from more than 120/1000 (per thousand live births) before 1967 to approximately 86/1000 in 1969/70, 67/1000 in 1965 and 47/1000 in 1979 and 43/1000 in 1980. Both neonatal and postneonatal death rates declined by 23% and 33% respectively between 1975 and 1979. Continuing very high fertility, however, continues to impose its high morbidity and mortality on infants and children, indicating major needs in family planning and health education. UNRWA has recently been given a grant from WHO to promote family planning in its maternal, child health centres.

Demography

The population has experienced very rapid growth rate over the past 12 years (Table I), increasing from 356 to 450 thousand persons in 1978; with the return of El Arish to the Egyptian authorities, the population in the Gaza-Sinai area was 432.7 in 1979. A continuing very high birth rate (averaging over 50/1000 population per year since 1967), and a declining mortality rate are the basis of this population growth of some 96 thousand persons, or approximately 26% over the 10 years since 1968 - an average of 2.6% annually.

As a result of the high fertility, 46.5% of the population was under 14 in 1978 (Table II), while only 2.8% were 65 or over. The proportions of children under the age of 14 has declined since 1975 from 54% of the population to 46.5%, while the proportion of those 65 increased from 2.5% to 2.8% of the population in this time period.

TABLE I. POPULATION GROWTH GAZA-SINAI 1968-1979

	1968	1970	1972	1974	1976	1977	1978	1979[a]
Population (000's)	355.9	367.7	383.5	408.6	429.0	441.3	450.2	432.7
No. of births (000's)	15.5	15.9	18.3	21.1	22.4	21.4	22.9	22.6
Percent. increase	-	1.5%	2.0%	2.8%	2.5%	2.9%	2.0%	2.9%
Crude birth rate/thousand population	43.1	43.9	48.3	50.2	50.5	50.4	50.9	52.8
Fertility rate births/1000 female population between 15 and 49	N/A	N/A	206	218	N/A	N/A	N/A	204

[a] 1979 data excludes El Arish which was transferred to Egypt during the year 1979.

Note: Data based on Statistical Abstracts of Israel, Central Bureau of Statistics.

TABLE II. POPULATION - AGE - SEX DISTRIBUTION
GAZA-NORTH SINAI - 1979 (000's)

Age group	Female	Male	Total	%
0 - 4	40.9	44.1	85.0	19.6
5 - 14	55.3	60.8	116.0	26.8
15 - 19	25.5	28.4	54.0	12.5
20 - 29	35.0	36.5	71.5	16.5
30 - 44	32.2	19.8	52.0	12.0
45 - 64	23.0	19.5	42.5	9.8
65+	6.0	5.7	11.7	2.8
Total	217.9	214.8	432.7	100.0

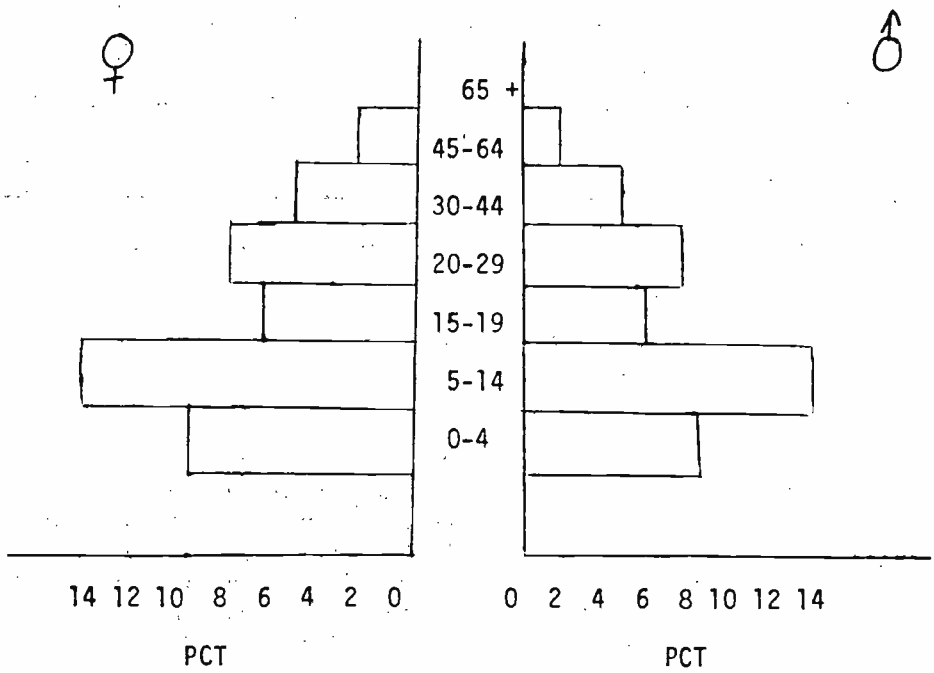
Note: Estimated population based on 1967 census and follow-up surveys.
1979 data excludes El Arish.

FIGURE I

AGE-SEX DISTRIBUTION OF POPULATION

GAZA-NORTH SINAI

1978



POPULATION - AGE - SEX DISTRIBUTION

GAZA-NORTH SINAI 1978

Socio-economic conditions

Socio-economic conditions continued to improve as a result of virtually full employment, with a 295% increase in per capita gross national product (GNP) from 1968 to 1979, while the increase in per capita private personal consumption in this period was 233%, in constant currency (in order to remove the inflation factor for the purpose of comparison). The annual average increase in per capita GNP and per capita private consumption (in constant currency or real terms with the inflation factor removed) were 10.8% and 8.5% respectively (See Table III). Improved purchasing power is manifested in availability of household facilities and in a housing building boom which has accelerated especially in the more recent years (See Tables VI and VIII).

TABLE III. PER CAPITA GROSS NATIONAL PRODUCT AND PRIVATE CONSUMPTION
GAZA-SINAI, 1968-1979
(In constant 1968 Israeli Pounds)

	1968	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	Annual Average Increase
Per Capita GNP in IL	363	506	574	680	751	783	818	902	925	956	1077	10.8%
Per Capita private consumption in IL	393	530	553	680	690	726	790	784	896	882	920	8.5%

Note: Data for 1976-1978 corrected. Error in average annual increase is corrected from previous report.

Source: Statistical Abstract of Israel 1980
Central Bureau of Statistics, Jerusalem, 1980.

The dramatic economic growth is largely based on growth in agricultural productivity, massive construction programmes, the beginnings of industrial development, widespread transfer of technology and vocational training in agriculture and industry, as well as the employment of Gaza residents in Israel. The net effect of all this activity has been the advent of continuing full employment (averaging over 99% since 1972) of the labour force (Table IV) which has grown from 56 thousand persons in 1970 to 80 thousand persons in 1978. Prior to 1967, unemployment in Gaza stood at 43% and those receiving welfare at 70%.

Free mobility of labour of the Gaza Strip population has also been a major factor in economic growth of Gaza. Increased productivity and construction activity in Gaza itself has been achieved with relatively stable labour force while the number of workers working in Israel has grown substantially over the years, absorbing a large proportion of the increase in the Gaza Strip work force (See Table III and V). This mobility, and the increasing economic interdependence with Israel, has been mutually beneficial both to Gaza where the imported income has had a stimulatory effect and to Israel because of its chronic labour shortage.

TABLE IV. LABOUR MOBILITY, PLACE OF EMPLOYMENT
GAZA STRIP POPULATION (000's) 1970-1979

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Worked in territories	52.9	51.5	46.0	45.6	46.7	46.7	48.3	49.5	48.7	45.5
Worked in Israel	5.9	8.2	17.5	22.7	26.3	25.9	27.8	27.5	31.4	34.3
Total	58.8	59.7	63.5	68.3	73.0	72.6	76.1	77.0	80.1	79.8

It should be noted that salaries and working conditions of persons employed in Israel are equivalent to those of Israelis. Furthermore, salaries and conditions of labour employed within the territories are increasingly approaching Israeli levels. This includes the right

to severance pay, work accident insurance, annual vacation with pay, sick pay, child allowance pay, seniority increments, religious holiday pay, health services insurance and health services in Israel. Periodic review of the labour situation by the International Labour Organisation have generally commented favourably on the employment and working conditions of Gaza residents within the area and in Israel.

TABLE V. EMPLOYMENT AND WAGE INDICATORS
GAZA-NORTH SINAI, 1968-1979

	1968	1970	1972	1973	1974	1975	1976	1977	1978	1979
% of population over age 14 in labour force	29.3	31.7	31.5	32.6	33.6	32.3	32.9	32.3	32.3	32.8
% employed of labour force	83.1	93.9	98.4	99.4	99.3	99.6	99.7	99.9	99.5	99.7
Average daily wage per employee (IL)	N/A	6.5	12.8	19.6	27.2	38.7	49.6	65.6	102.9	199.2

Civilian construction activity grew between 1970 and 1979 by annual average increases of between 29 and 42% with overall between 14- and 15-fold increases. This construction boom continues into 1981, in spite of a major slowdown in construction activity within Israel in the past several years (see Table VI).

TABLE VI. CIVILIAN BUILDING ACTIVITY - PUBLIC AND PRIVATE
GAZA AND NORTH SINAI, 1970-1979
(in thousands of square metres)

	1970	1972	1974	1976	1977	1978	1979	1970-1979 Annual Average Increase %
Residential Building Completed	16	75	126	193	181	208	248	39.8%
Total Buildings Completed	20	91	133	222	218	255	294	39.2
Residential Building Begun	19	106	124	244	237	274	336	42.2
Total Building Begun	24	124	135	294	287	330	403	29.1

Agricultural productivity in Gaza-North Sinai has also been characterized by major growth in the past decade, with a shift in emphasis to more rewarding cash crops, particularly in milk and egg production, which increased sixfold and fourfold respectively (Table VII). The value of agricultural production increased over sevenfold during this five year period, in terms of constant currency. This increased productivity has been achieved

with less manpower as more workers have been absorbed into non-agricultural work, and as mechanization has begun to be a significant factor with the advanced agricultural technology factor in the area. Tractors in Gaza-North Sinai increased from 199 in 1974 to 495 in 1979. Production per unit of land has doubled, with average annual increases of 13.2%. The income of self-employed farmers has grown at an average annual rate of some 15%.

TABLE VII. AGRICULTURAL ECONOMICS, ACTIVITY INDICATORS

GAZA-NORTH SINAI, 1967-1979

Agricultural Production (thousand tons)

	1967/68	1974/75	1977/78	1978/79
Citrus	91.0	201.4	180.6	189.6
Other Fruit	19.0	25.2	24.8	19.5
Meat	1.7	3.5	4.8	5.1
Milk	2.8	12.8	14.8	16.2
Eggs (millions)	10.0	32.8	40.0	47.5
TOTAL VALUE (millions IL)	36.3	296.6	1 254.3	2 002.4

Increased food production has been accompanied by increased food consumption and improved nutrition standards in the region. Agriculture is still the principal economic branch in Gaza, and its growth is an important contribution to the overall economic growth, including exports to Israel and neighbouring countries.

Water utilization in Gaza has been improved through education, conservation methods, improved irrigation techniques, control measures to prevent over-utilization and development of new ground water sources. Public water supply treatment and distribution systems have been vastly expanded and improved.

Standards of home services have also improved substantially since 1967 (Table VIII). Home electrification has increased from 17.9% in 1967 to 58% in 1979 after the region was connected to the electrical grid in Israel. Refrigerator ownership increased from 2.5% to 40.7%, home bathrooms/showers from 19.6% in 1972 to 55% in 1978. Individual home toilets have increased to 86% of private homes in 1977 with a large proportion of flush toilets connected to sewage collection systems. At present, most homes have radio and television. There are differences between urban and rural populations in terms of home services, but the differences are declining as rural areas are developing rapidly.

Housing has long been a major problem in the Gaza-North Sinai areas. Since 1967 the administration has undertaken massive housing development, particularly to provide adequate housing to refugees maintained over the years in grossly unsatisfactory conditions. In 1976 alone, 1000 new housing programmes have been a substantial factor in improved health status of the population. New housing is under construction in the entire area (Table IX). Refugees are helped to build their own homes in the vicinity with help by land grants and mortgages, or by accepting a new house built by the government which they generally expand and improve. These houses all include electricity, running water, indoor toilets connected to a central sewage disposal system. These new areas are served by streets, lights, schools, health centres, playgrounds and other amenities, including shopping areas. In spite of continuing government programmes, housing remains a problem.

TABLE VIII. HOME SERVICES OR APPLIANCES
GAZA-NORTH SINAI, 1967-1979
(Percentage of Homes with Services)

	1967	1972	1975	1977-1978	1979
Electricity	17.9%	22.8%	36.7%	75.0%	58%
Electrical Refrigerator	2.5	5.7	22.5	40.7	49.3
Radio	47.7	85.5	90.6	89.3	91.7
TV Sets	3.3	7.5	29.6	46.3	54.2
Toilet	70.7	78.1	78.6	86.0	N/A
Bathroom or Shower	N/A	19.6	34.4	55.0	N/A
Sewing Machine	N/A	19.1	26.9	27.0	28.8
Electric or Gas Heater	N/A	N/A	6.8	25.5	28.5
Electric or Gas Range	N/A	N/A	29.5	56.2	66.6

TABLE IX. PUBLIC HOUSING AND INFRASTRUCTURE PROJECTS FOR REFUGEES
GAZA-NORTH SINAI, 1967-1980

Area	New Housing Units Completed	Renovation/Expansion Existing Units	Infrastructure and Services
Rafah	1 350		All new housing areas are served by street lights, paved roads, central water supply piped to homes, indoor toilets connected to central sewage disposal, public garbage containers & collection, electricity, school health centres, shopping areas, etc.
Khan Yunis	1 188		
Gaza	1 470		
- Sheik Radwan - Central Refugee Camps		1 500 new rooms	2 000 private family toilets, water pipes, electricity, street lights, roads and pavement, playing grounds
- Gaza-Beit Lahya	Self Building project replacing refugee huts		

Note: Housing projects are primarily for rehabilitation of refugees and government employees.

Another indicator of increased economic activity and personal purchasing power is the increase from 1968 to 1979 of cars, trucks, and other vehicles and of licensed drivers. The total of vehicles increased by 325% and the total number of licensed drivers increased by 620% (See Table X).

TABLE X. MOTOR VEHICLES AND DRIVERS

GAZA-NORTH SINAI, 1968-1979

	Private Cars	Trucks and Commercial Vehicles	Buses and Minibuses	Tractors	Drivers
1968	919	818	24	-	2 675
1979	6 116	3 741	69	495	19 266

Note: 1979 data exclude El Arish.

Education

Education standards have risen sharply in Gaza-Sinai in terms of the quantity of facilities, increases in supply of trained teachers and the increasing number of pupils in the school system (Table XI).

TABLE XI. EDUCATIONAL SERVICES
GAZA-NORTH SINAI

SELECTED YEARS 1968-1979

	1967/68	1969/70	1971/72	1973/74	1975/76	1977/78	1978/79
Educational Institutions	166	194	235	275	304	-	291*
Classrooms	1746	2192	2550	3043	3436	3379	3624
Pupils (000's)	80.1	104.4	117.1	123.6	139.9	141.4	147.8

Note: The reduction in the number of educational institutions in 1978/79 is due to the return of the North West of Sinai (El Arish area) to Egypt. The number of classrooms and students in the Gaza-North Sinai region, however, increased.

In 1969-70, pupils registered represented 64.1% of the population aged 5-19. In 1979-80, 82.7% of the population aged 5-19 were registered in educational institutions.

Not only has the absolute number of pupils increased by more than two-thirds, but major changes have taken place in the quality of education, with more children staying on in school to more advanced education, more girls staying in school, the development of extensive vocational schooling, and greater entry into higher education.

Social services are carried out by trained Arab social workers. A vast change in the employment situation has reduced the social welfare needs of the population. Various international organizations provide a variety of services in the territory, as do local charitable organizations.

Morbidity and Mortality Trends

Prior to 1967, morbidity and mortality trends in the Gaza-North Sinai areas were characterized by malnutrition, infectious diseases, high infant mortality and other aspects of an underdeveloped region in terms of health and socio-economic status.

Since 1967, there was a major development of basic preventive health services, and development of both preventive and curative services. As a result of the cumulative effects of these measures, coupled with improved standards of living, incomes, and housing, the patterns of disease have begun to shift toward those of a developed area, although problems in preventable morbidity and mortality remain. The leading causes of death today are cardiovascular disease, neoplastic disorders and accidents among adults while infant deaths are evenly divided among neonatal causes, gastroenteritis, and chest infections.

Health Planning

The planned development of health services in Gaza-Sinai since 1967 has focused on developing preventive care systems (sanitation and MCH services primarily); secondly, a complete renovation of the government hospitals in terms of equipment, facilities, specialty services, and programmes; and thirdly, developing health manpower by expanding the number of health care providers, and by developing health manpower training programmes.

Established with a twenty bed unit, recently expanded to twenty-five beds, with community out-reach, in the Gaza Ophthalmic Hospital, to supplement the new extensive ambulatory and day care mental health service developed in the past several years. Dr Harding revisited Gaza in August 1980 to review the recent development of the psychiatric service under the direction of a local psychiatrist who recently completed his psychiatric training in England.

Further planning will be based on increased external review of experts in various fields in order to maintain objective assessment as part of the development process.

FIGURE II

PRIORITIES IN DEVELOPMENT OF HEALTH SERVICES

GAZA-NORTH SINAI

STAGE ONE

Environmental Health:-

Water	- Safety control achieved 1978.
Sewage	- Canalization and treatment plants - under construction in most towns - date of termination 1983.
Solid Waste Disposal	- Ongoing process.
Malaria Control	- Achieved in 1971 - ongoing process.

Preventive Medicine:-

Health Education	- Ongoing process.
Vaccination	- Coverage of 90% - 1978.

Primary Care:-

Clinics existing in all villages, and neighbourhoods 1980.

Comprehensive:-

Mother and Child Services	- Existing in all villages and neighbourhoods - 1980.
Development of Peripheral - Maternity Centres:-	- Ongoing process.
Basic Mental Health Services	- Started 1978.
Secondary Hospital Services	- Completed (2.2 hospital bed - per 1000 population).
Development of Manpower	- Completed for step 1:- one physician per 1800 population 0.5 nurse per hospital bed.

STAGE TWO - In Process

Integration of Community Health Services	- Well advanced 1980.
Deliveries in Medical Institutions	- Increased to 67% in 1980.
Mental Health Services	- Commenced 1979.
Community and Hospital	

Tertiary Hospital Services (New Shifa Medical Centre)

Present:	- ccu Renal Dialysis Oncology (Stage 1) Haematology (Stage 1) Urology Maxillo Facial Surgery (Stage 1) Neonatalogy (Stage 1)
Planned:	- Neonatalogy (Stage 2) Oncology (Stage 2) Haematology (Stage 2) Maxillo Facial Surgery (Stage 2) Endocrinology Nephrology Paediatric Surgery Plastic surgery Pathology Genetic counselling

Documentation

Teaching	- Epidemiology and Health Information Centre established 1980.
Research	Teaching in International MPH course at Hebrew University Medical Faculty, Jerusalem and lectures at Beersheva and other universities. In service training programmes are being developed. Polio control and ORS projects underway since 1978.
Publication	- Gaza Medical Bulletin

A new phase of programming begins with greater stress on integrated community health services, combining preventative and primary care in comprehensive health centres, bringing specialist services from the hospitals to the community health centres (this already is a very successful programme for hospital based paediatricians from the Nasser Children's Hospital).

Consultations with WHO experts, including Professor J.L. Melnick, on polio and Dr Robert Cook, WHO Regional Adviser on Maternal and Child Health and Nutrition, Dr Barua, special consultant on the WHO oral rehydration systems, Dr T.W. Harding on mental health services and Dr Pisa on cardiovascular diseases. have been extremely helpful in outlining progress to date and recommending new developments. The recommendations made by Professor Melnick have been implemented with marked success; many of the recommendations made by Dr Cook have also been implemented - including the polio programme, measles immunization, mantoux testing and BCG, oral rehydration, improved follow-up for infant birth and death reporting, and measures to increase maternal care. The oral rehydration programme being implemented is in keeping with the programme outlined by Drs Cook and Barua. Dr Harding's recommendations have been helpful in developing mental health services. Dr Cook revisited Gaza in January 1981 to review the oral rehydration project with the local committee including government and UNRWA staff.

Health Insurance

Health insurance for government and municipal employees, as well as workers employed in Israel, was established in 1972. In 1978, this insurance plan was extended to include families enrolled on a voluntary basis, paying a monthly premium in the order of US$ 4 per family for comprehensive health care services.

Up to December 1980, 361 000 persons (64 000 family units - an increase from 59 000 in 1979) were enrolled, constituting 82% of the population of the region (an increase from 77% in 1979).

The insurance covers preventive and primary care government health services, maternity care, local and referred hospital care, including all specialized services not available locally, such as oncology and neurosurgery. Those not enrolled in the health insurance plan may enroll at any time, including the time of service needs.

Manpower and Training

Continuing medical education has become active in recent years. Weekly clinical and monthly clinical-pathological conferences are held in the Shifa Hospital in the Children's Hospital. Medical conferences have been held frequently on many medical subjects with medical staff from Gaza and various hospitals in Israel, including Tel Hashomer, Beersheba, Ashkelon and Beilinson Hospitals. The Gaza Medical Bulletin, which started in 1975 and has continued publication since, contributes to continuing medical education. A major international symposium on Polio was held in Gaza in 1977, including participation by Professor Melnick, Israeli public health officials, medical staff from Judaea and Samaria, as well as from Gaza.

A variety of new and expanded health manpower training programmes have been established (see Table XIX). Expanded training of both Registered Nurses and Practical Nurses in improved local facilities has increased numbers and quality of staff, as well as professional opportunities for local young people. The supply of nursing personnel has increased (Table XII) and the performance and morale of hospital and health centre staff have improved.

The emphasis at the new School of Nursing of Registered Nurses in Gaza is on community health, providing a centre of important new source of manpower orientation to community health needs. Recently, nursing administration and teaching methods have been added to the programme. Postgraduate training for physicians and other health workers has improved.

TABLE XII. MANPOWER TRAINING PROGRAMMES

GAZA-SINAI, 1972-1979

Classification	School	Opening	Students	Comments
Registered Nurses	Gaza School of Nursing	Opened in Sept. 1976 in expanded and upgraded facilities	18 students in 3-year, Israeli equivalent, course with training begun in 1977	Stress on community health instruction. Staff recently completed 6 months in-service course at Ramallah Hospital with West Bank and Israeli instruction staff.
Registered Nurses	Khan Yunis Hospital School of Nursing		15 students in 1979	In 1977, five staff instructors finished a course of 6 months in-service instruction at Gaza Hospital.
	Shifa Hospital (Gaza)	Opened in 1973. Building renovated and expanded in 1975	20 students graduated in 1973, 60 in 1976, 58 in 1977, 36 in 1978, 52 in 1979. Total graduated to date: over 400.	This group has achieved high quality performance in examinations based on Israeli hospital curricula.
X-ray, Laboratory and Anaesthetic Technicians	Shifa Hospital	Courses started in 1972-1973.	20 X-ray and 20 lab technicians per year in one year courses; 7 dentists finished a course of one year training and study in X-ray department and they are helping in the department.	
X-ray Technicians	Shifa Hospital	1980	25 students	
Physiotherapy	Baptist Hospital (Gaza)	Physiotherapy course of 4 registered nurses. 18 months duration, commenced in 1975	6 RN students in employ of Ministry of Health graduated in Sept. 1976.	5 university-graduated physiotherapists (4 year training in Egyptian universities) have been appointed in the physiotherapist department. One of our doctors specialized in physiotherapy and came back to work in 1979.
Medical Records	In Ashkelon	Course started in April 1978 till June 1978	Graduated 12 medical recorders	

TABLE XII. MANPOWER TRAINING PROGRAMMES

GAZA-SINAI, 1972-1979 (continued)

Classification	School	Opening	Students	Comments
Administration: Hospital Administration and Assistants	In Israeli Hospitals	6 month course in 1979	17 graduated	
Storekeepers	In Israel	6 month course in 1979	13 graduated	
Health Educators	In Ashkelon	3 months in 1971	13 graduated	Working in MCH centres
Physicians	Israel & abroad	Since 1977 up to 1979	15 doctors in several specialty branches of medicine	
Physicians: Medical unit directors	In Jerusalem	6 months in-service administration training in Hadassah	18 graduated	
Nursing Instructors	Ramallah in conjunction with Judaea and Samaria	1976-Ramallah 1978-Gaza 1980-Gaza	7 from Gaza 7 from Gaza 10 from Gaza	Registered nurses with at least two years' experience are trained as nursing instructors.
Operating Room Technicians	In Gaza School of Nursing	Opened in 1981	20 students for 18 months	Operating theatre technicians to be employed in Gaza hospitals. High school graduation required.

Health manpower employed in the government health service in nursing has increased by 101%, in medical staff by 130% and in paramedical staff by 156% over that of May 1967. The increase in health manpower is even more striking if the change is taken from the situation immediately following the 1967 war when many Egyptian medical and other staff left the area.

TABLE XIII. PERSONNEL IN GOVERNMENTAL HEALTH SERVICES - MEDICAL AND PARAMEDICAL

GAZA-SINAI, 1967-1980

	May 1967	Sept. 1967	1974	1976	1977	1978	1979	1980	% Increase May 1967 to 1980
Physicians	97	36	119	154	164	216	216	224	130%
Nurses (Reg'd and Practical)	214	217	308	498	477	486	516	485	101
Technical and Paramedical	66	49	147	162	152	172	171	169	156
Administration and Services	508	548	394	517	480	496	500	491	-1.9
Total	912	850	1 068	1 331	1 213	1 370	1 403	1 369	50

Since 1967, a variety of postgraduate training programmes for medical, nursing and paramedical-technical staff from Gaza-Sinai in Israel and West Bank hospitals have contributed to general staff development within the areas.

WHO fellowships have been provided for Gaza-Sinai and Judea-Samaria health professionals to study in Britain for periods of approximately 3-6 months.

This provided an advanced postgraduate programme in a variety of areas of health care need in the community and served to advance health care work in these areas.

Primary Care

Maternal and Child Health

A great deal of effort has been extended to improve maternal and child health in the Gaza-Sinai area which continues to have a very high fertility rate. Previously maternal and child care was extremely limited in scope and there were no MCH centres as such (except UNRWA centres). MCH centres now operate throughout the territory providing prenatal and well child care to a growing proportion of the population in these categories. Infant mortality was extremely high, estimated to be in excess of 120 per thousand live births in the pre-1967 period. It has fallen from approximately 90/1000 in the 1970-72 period to 47/1000 in 1979 and 43/1000 in 1980. Reporting of births and infant deaths is very much improved, as reporting by midwives and other services is compulsory and because home visits follow non-compliance so that unreported deaths are discovered. Investigation of unreported neonatal deaths is under way as a cooperative endeavour of the UNRWA and government health services.

Priority has been placed on the establishment of Maternal and Child Health Centres for prenatal and infant care and improvement in services for delivery. Twenty-two MCH Centres have been established and utilization of these centres has increased dramatically over the years from 33 000 visits to 361.5 thousand in 1979, an average of 15 visits per live birth and infancy. UNRWA also operates 9 MCH centres in the area. Pregnant women on their first visit are examined by a physician or midwife, including a pelvic examination. Blood work, including Rh, blood group, Coombs' test, VDRL and HB^h, is done. Follow-up visits (approximately 8) include blood pressure, weight, oedema, urinalysis, fundal height and foetal heart tones are examined and recorded. Iron and folic acid are given routinely. Tetanus toxiod is given routinely in the first trimester.

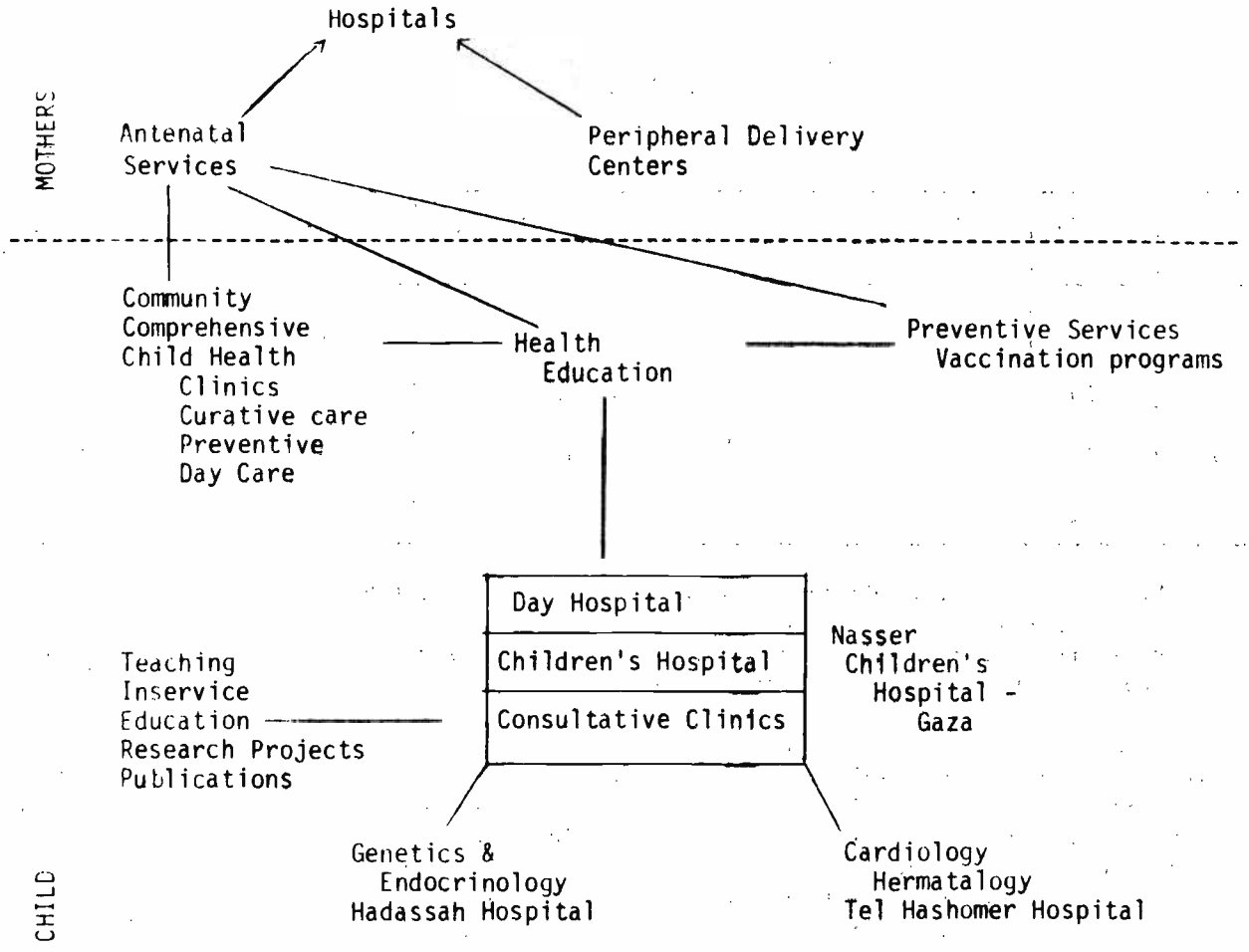
In 1975, the government MCH Centres began their conversion to comprehensive mother and child care centres combining diagnostic, treatment and preventive services. This has led to a greater awareness of maternal and child health by the population. Linkage of the MCH centres to the Nasser Children's Hospital since 1977 has added specialty paediatric services to the centres, and has increased the contact between primary care of children and specialty hospital service. Paediatricians from the hospital visit all MCH centres regularly, and the MCH centres staff also spend time at the hospital. Strong professional linkages have developed which have benefited both community and hospital care.

All general hospitals serving the area now have modern, well-equipped and staffed paediatric services, with newly established day hospitals to provide nursing and medical observation for the heavy volume of cases of summer diarrhoea and respiratory infection in infants and toddlers. The day hospital service has improved treatment services for these common problems, which still cause significant morbidity and mortality.

Paediatricians from the children's hospital visit the MCH centres routinely and see the children during their key developmental periods. Recordings of weight, height, head circumference and general development are taken during the average of 8-10 preventive and curative visits to the centres in the first year of life. Haemoglobin is checked at 9 months. Iron supplementation to the normal feeding is being established in 1981 as a routine in addition to Vitamin A + D, and a stress on nutritional education for the mothers.

FIGURE III. MATERNAL AND CHILD HEALTH SERVICES

GAZA-NORTH SINAI



The special programme of oral rehydration (ORS) for prevention of morbidity of diarrhoeal diseases begun in 1979 has reduced the number of admissions to the Children's Hospital for dehydration. Excellent cooperation between UNRWA and the government MCH programmes has helped this project to become effective, with WHO assistance.

Hospital and maternal health centre deliveries have increased gradually to 47% in 1977, then to 61% of all births in 1979 and 67% in 1980 (See Table XII). This increase in the past several years particularly is a result of the health insurance plan which in 1980 covered 82% of the population, and the increased supply of primary care services. The vital statistics of child-health have improved significantly. Home deliveries are carried out by 145 traditional midwives (Dais), who are licensed and supervised by the health department, which checks their instruments, requires attendance at educational programmes including hospital experience in obstetrical units for some. Greater stress will be placed on supervision of standards of care and reporting in the future.

TABLE XIV. BIRTHS BY CARE AGENCY AND HOSPITAL DELIVERY
GAZA-NORTH SINAI
1977-1980

	UNRWA	Baptist Hosp.	Government Health Services	All Deliveries	% Hospital Deliveries
1977	3 782	70	5 948	21 400	47%
1978	3 764	69	7 822	21 751	54%
1979	3 915	107	8 619	20 737	61%
1980	3 834	122	10 033	20 916	67%

Note: All deliveries include those in care of UNRWA, Baptist Hospital, government health services and private care at home. Registry is based on public health registry system. The registry system has been changed for births (and deaths) from 1 January 1981 to improve reporting.

Infant mortality has fallen from an estimated 120/1000 live births in 1967 to 43/1000 live births in 1980. (See Table XIV). Reporting of births and deaths in infancy have improved particularly since 1976 so that follow-up of non-reporting infants for care in the MCH centres is intensive. During 1980, a special investigation of unreported perinatal deaths was undertaken by the government health service in cooperation with UNRWA health services; it is anticipated that this will assist in improving the data base, and in facilitating better reporting in the future, including correcting of vital statistics based on substantiated findings of this special investigation, including studies of populations with higher than average mortality rates.

High fertility, grand multiparity and high and early maternal ages are all factors in continuing high risk levels for infants. Improvements in sanitary home conditions, improving standards of living, and greater access to prenatal care have all contributed to substantial declines in these rates. UNRWA maternal and child care centres have begun to work with the family planning needs of the population, stressing the importance of spacing of pregnancies both for the health of the mother and the child.

TABLE XV. VITAL STATISTICS, MATERNAL AND CHILD HEALTH
GAZA AREA
1969-1980

	1969/70	71/72	73/74	1974	1975	1977	1978	1979	1980
Stillbirth rate	11.9	10.2	7.2	N/A	3.5	3.9	3.3	4.4	N/A
Neo-natal mortality rate	25.7	25.9	20.9	19.5	21.5	14.4	13.8	15.0	15.0
Post-neonatal mortality rate	60.3	60.0	56.2	47.5	47.8	46.9	37.0	32.0	28.0
Infant mortality rate	86.0	85.9	77.1	67.1	69.3	63.0	50.8	47.0	43.0

Note: Reporting of infant mortality has improved very much in recent years particularly as the proportion of births in hospitals increases (67% in 1980). Neo-natal death reporting is under review by a joint committee of the government health services and UNRWA, so that the neo-natal mortality rates particularly are subject to revision. 1980 data preliminary from government health service information centre.

Source: Statistical Abstracts of Israel. Central Bureau of Statistics.

The picture is one of steady progress, but improvement is still needed and is planned. Further extension of prenatal care, hospital deliveries, postnatal care, improved sanitation and infectious disease control measures are being implemented. Greater emphasis is being laid on health education in maternal and child health as well as family planning within a comprehensive maternal and child health programme, through the growing network and utilization of MCH centre services. A new stress on supervision of village midwives, high risk pregnancy identification and care, maternal nutrition, prevention of anaemia in pregnancy and infancy will strengthen maternal and child health services. The excellent cooperation between hospital and community services (including those of the government and those of UNRWA) is strengthening the care of infants and children, in general as well as in the highly successful oral rehydration project.

Infectious Disease Control

Vaccination of children has been the cornerstone of the infectious disease control programme, supported by improved environmental sanitation and treatment services. Emphasis on polio, DPT, BCG, Measles and Smallpox (stopped in 1980) vaccination has led to widespread coverage estimated to be over 90%. Table XVI outlines the immunization programme carried out in the region.

FIGURE IV

INFANT MORTALITY RATES

GAZA-NORTH SINAI

1969 - 1980

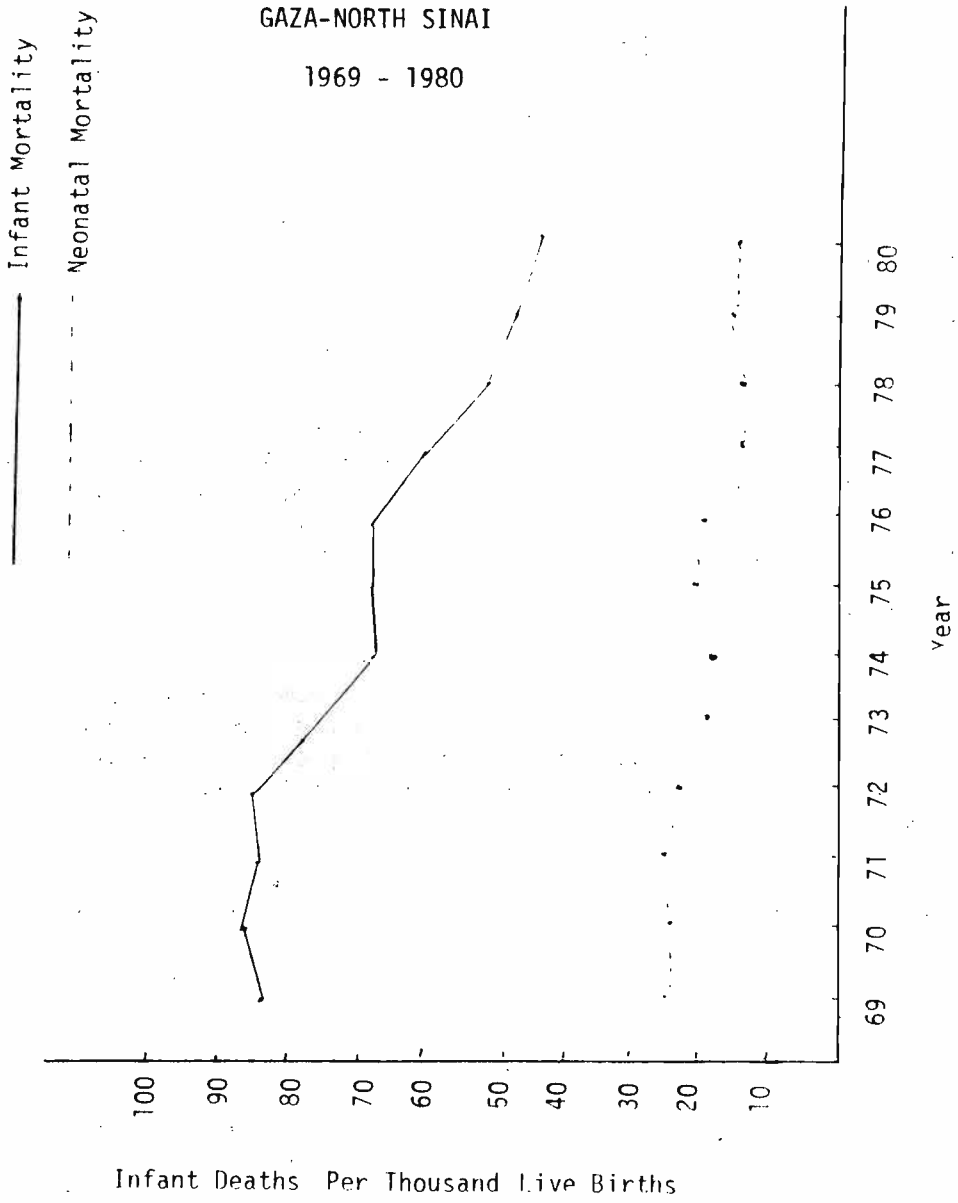


TABLE XVI. EXPANDED IMMUNIZATION PROGRAMME

GAZA-SINAI

DISEASE/AGENT	Pre-1967	Post 1967
Diphtheria Pertussis DPT Tetanus Vaccine	Commenced prior to 1967	Coverage increased now over 90%
Triple Oral Polio (TOPV) Vaccine	Not used prior to 1967	Started in 1968 Coverage now 90%. Special TOPV campaigns were carried out in 1974 and 1976.
Smallpox Vaccine	Given since 1948, very good coverage	Stopped end of 1980.
Measles Vaccine	Not used prior to 1967	Started in 1970, with low coverage of some 50%. 80% coverage achieved in 1978, and over 90% in 1979. Given during first year to assure higher coverage rate.
BCG Vaccine	Given to school-children	Since 1974 given to infants with coverage over 90%. Also given to Mantoux negative schoolchildren.
Inactivated (Salk) Polio Vaccine	1965-67 special one dose campaign with Salk Vaccine 50% coverage	Since 1978 two doses given to infants (with DPT) in addition to TOPV - coverage over 90%.
Tetanus Toxoid		Since 1977 given to pregnant women.

Note: Includes immunization through government and UNRWA MCH services. The government supplies all vaccines to UNRWA which follows the same immunization schedule.

Reporting of infectious disease has improved in the Gaza area particularly as primary care services operated by the government health services have been expanded to reach more of the population. Reporting remains a problem as a basis for epidemiologic information.

A centre for Epidemiology and Health Information was established at the beginning of 1981 staffed by a trained physician epidemiologist (a recent MPH graduate), a nurse and trained medical records staff. A monthly epidemiologic bulletin beginning in 1981 includes birth data, deaths, by cause and age group, immunizations, reported infectious diseases including laboratory data, mental health and cancer data, hospitalizations and ambulatory care information. The unit is responsible for investigation of infectious diseases of public health importance, and for development of health surveillance systems.

Oral polio vaccine has been used in the Gaza strip since 1968. Though 80-90% of the susceptible infants have been vaccinated, the epidemiological pattern of the paralytic disease did not change significantly. The mean annual incidence continued to be around 10 per 100 000 population. Two outbreaks occurred in 1974 and 1976 involving 75 and 77 infants respectively - an incidence of 18 per 100 000 population. In the first epidemic 34% of the paralyzed children have received 3-4 doses of TOPV. This percentage increased to 50 in the second epidemic and to 61 in 1977. A parallelism was found between the prevalence of diarrhoeal disease and vaccine failure and a causal effect was postulated.

To overcome this problem a programme of immunization was started early in 1978 combining both live and killed polio vaccines.

While it is too early for a definite evaluation of the programme, the preliminary results are encouraging. The outbreak expected in 1978 did not materialize and the incidence rate of the disease has decreased to 3.1 per 100 000 population. Moreover no definite case of paralytic disease has been reported among children who have received the killed vaccine.

TABLE XVII. INFECTIOUS DISEASES REPORTED FROM HOSPITALS AND CLINICS

GAZA 1967-1979

1979	1978	1977	1976	1975	1974	1973	1972	1971	1970	1969	1968	1967	Disease
10	10	7	3	5	12	63	55	50	26	36	78	119	Typhoid[1]
16	30	12	-	2	5	11	4	4	2	4	8	3	Para-Typhoid A+B[1]
26	36	35	41	28	19	5	6	9	13	16	19	65	Meningitis
-	4	2	2	1	-	-	-	-	-	-	-	3	Diphtheria[2]
53	38	71	76	45	44	28	43	38	50	25	52	56	Tetanus[3]
1	-	11	25	46	1	4	31	2	111	30	199	125	Pertussis
-	-	1	-	-	1	-	-	8	-	-	8	9	Erysipelas
9	18	77	76	17	75	27	2	-	19	41	30	41	Poliomyelitis[4]
-	-	12	-	-	5	12	25	33	19	22	42	17	Syphilis
-	1	3	-	-	-	2	5	1	5	8	6	6	Gonorrhoea
392	459	803	719	572	337	475	1359	5552	2223	1465	1677	651	Measles[5]
54	96	158	357	327	337	686	1039	1069	1130	875	676	874	Infectious Hepatitis
-	-	-	-	-	-	-	-	-	-	-	1	-	Relapsing Fever
-	-	-	37	-	-	-	-	-	243	-	-	-	Cholera

Note: 1. Typhoid and Paratyphoid cases are based upon laboratory reports.

2. Diphtheria cases have been reported exclusively from isolated Bedouin groups living in the central Sinai.

3. Tetanus neonatorum cases continue to occur mainly among Bedouins who do not come for care. In 1980 17 cases occurred. All pregnant women under care are given tetanus toxoid. An epidemiologic service has recently been established, and is investigating the problem.

4. Polio cases suspect and under investigation in 1980 - 13.

5. All recent cases of measles have been mild, with only two hospitalizations in 1979.

Certain diseases have been virtually eradicated, including:

Malaria - no indigenous cases have been identified since 1972.

Surveillance of cases suspected for malaria is carried out in the public health laboratories.

Trachoma - no new cases in recent years.

Cholera - imported cases with secondary spread have occurred, with two small outbreaks in 1970 and 1976. The area has been cholera-free since 1976, although there were large outbreaks in neighbouring countries. In spite of stringent testing, no cases were identified during 1978, 1979 and 1980.

A small number of cases of diphtheria continue to appear among isolated Bedouin for whom immunization coverage is less complete.

Polio: In the year 1977 a big campaign had started to reduce poliomyelitis cases by the aid of WHO and in full cooperation of all health agencies in the area, (using Salk and Sabin vaccines). The number of cases was reduced from 78 in 1976 to 19 in 1979. In addition to the five feedings of Triple Oral Polio Vaccine (TOPV) given during the first year (at 2, 3, 5, 6, and 12 months) each child is given two doses of inactivated (Salk) vaccine (along with DPT) at two and five months of age. The number of cases of polio occurring each year has dipped from the peak years of 1974 and 1976 with 75 and 76 cases respectively to 18 and 19 cases respectively in 1978 and 1979.

Tetanus remains a problem, particularly tetanus neonatorum, mostly among Bedouin not under care in an MCH programme. A programme for immunization of women at the age of fertility in Bedouin camps is under way. Pregnant women in care of MCH centres and UNRWA centres are given tetanus toxoid. All children in care of government or UNRWA health centres are given tetanus toxoid routinely.

Rift Valley Fever - the health authorities are taking precautions to prevent the entry of Rift Valley Fever into the territory. A large scale programme based on surveillance, immunization of susceptible animals, immunizing humans at special risk, and vector control was carried out in 1979. Continuing surveillance of sero-surveys are being carried out among animals, sample populations and persons with fevers of unknown origin.

Rift Valley Fever is an arbo-virus which appeared in large epizootics and epidemics in Egypt in 1977 and 1978. Spraying places such as waste and sewage water in the cities throughout the Gaza Strip was carried out. Exposed field, laboratory and hospital staff were immunized. Sample blood tests were taken from workers in the meat shops and slaughter houses. A group of workers from the Department of Health of Gaza worked with a team screening people returning from the pilgrimage to Mecca in November 1979, including some 15 thousand persons from Gaza, the West Bank and Israel.

Measles vaccination began in 1970 at a low level of acceptance. At present due to the development of the preventive services, and of public understanding the coverage has reached 90%. There has been a major reduction in the number of cases of measles reported, from a peak of 5552 cases in 1971 to 392 cases in 1979. Only two hospitalizations occurred for measles in 1979. Measles immunization is carried out at age nine months to assure continued high coverage.

Tuberculosis control programmes have been carried out in this area for many years, and include BCG vaccination of newborns routinely (since 1974), and of school aged children after Mantoux testing, in keeping with current WHO recommendations.

Rheumatic heart disease is an important but declining component of the overall cardiovascular disease picture. Increased primary care services and health insurance will enhance early care of streptococcol diseases, and affect their prevalence. A programme of epidemiologic follow-up of rheumatic fever cases will be undertaken during 1981.

In 1978 a programme designed to reduce the mortality and morbidity of diarrhoeal diseases among infants was launched, with WHO assistance, and with a high degree of cooperation between government health services and those of UNRWA. This programme was centred on widespread use of the WHO oral rehydration formula, prepared locally, for early care of infantile diarrhoea in order to prevent dehydration with its attendant mortality and morbidity. Wide-scale publicity through radio, posters and education in MCH and other health centres brought the matter to public attention. Preliminary data already indicate a reduction in mortality, hospital admissions, intravenous infusions, and morbidity from diarrhoeal disease among infants. MCH centres which are now routinely visited by paediatricians from Nasser Children's Hospital, are fully involved in the programme as is the hospital itself. Preliminary data show a decline of 35% in hospital days of care for infants and young children as a result of diarrhoeal disease. Case fatality rates in the Khan Yunis hospital have also declined by 35%. Postneonatal mortality during the diarrhoeá season has declined by 46%. Diarrhoea-related mortality in children below three years of age has declined by 49% in the past two years. A report of the first three years experience will be published after the summer of 1981.

Although there are no indigenous cases of malaria or bilharzia, parasitic diseases are present in the form of ascariasis, giardiasis, pinworms, tenia saginata, and localized cases of ankylostomiases. A programme of early case finding has been started at the end of 1979 in some health centres serving populations with high prevalence rates. Investigation and treatment was carried out of suspect and laboratory confirmed cases. The projects to eradicate ankylostoma from two non-endemic areas (Jabaliyeh and Dir el Bahah) were carried out in 1971 and 1975. School examinations of schoolchildren were performed, positive cases treated and home visits to detect contacts, carry out environmental changes and health education. This system has also been applied in endemic areas. Comprehensive maternal and child health centres are now doing school examinations for all parasitosis including ascariasis; cases discovered treated and followed up.

Control of communicable diseases among children has been a key element in the development for the past 13 years in Gaza and Sinai. The decline in infant mortality, and a major degree of control of diseases such as polio, measles as well as diphtheria, pertussis and tetanus has been established. The new programme to improve polio control (combining use of the routine oral polio vaccine with addition of killed polio vaccine to the routine DPT) has already shown good results in lowering the attack rate in an endemic polio area. The new programme to reduce diarrhoeal disease mortality and morbidity begun in 1978 will be continued in the years ahead to further reduce infant mortality, hospitalizations and other morbidity.

Hospital services

Hospital services for Gaza-Sinai are based on the two regions (northern and southern) provided by five government, and one private hospital.

Major strides forward have been achieved in terms of quantitative and qualitative aspects of hospital care for Gaza-Sinai residents. The Shifa Hospital serving the northern Gaza strip added a number of important specialty services, and increased the number and the range of medical specialists on staff. This hospital is in the midst of a massive redevelopment programme which began in 1976 and recently entered a new phase with the completion of a new internal medicine department. Construction has started on the new central building of the hospital which will include a new emergency service, five operating theatres, post operative recovery service, urology and orthopaedics. This building should be operated during 1983-84.

The Nasser Children's Hospital was established and enlarged and completely renovated, replacing a poorly operated infectious disease hospital. This hospital has greatly expanded its services through active staff involvement in widely spread comprehensive mother and child care centres through the Gaza Strip (now numbering 22). Specialty services for premature

infants in the hospital has increased in scope. Visiting Israeli specialists participate in ambulatory clinics, paediatric surgery, cardiology, endocrinology and genetics. A day-hospital service has been established in Nasser Children's Hospital especially for children needing medical and nursing care for short periods of time, including summer diarrhoeas and in winter respiratory infections - improving patient care without the trauma and expense of unnecessary hospitalization.

The newly established Ophthalmic Hospital is a well-equipped facility providing an important area-wide service in an area previously endemic to chronic eye diseases such as trachoma with widespread eye damage. The new corneal graft service established in 1975 is able to provide ophthalmic rehabilitation to persons previously blinded by chronic eye disease. A referral link and consulting service is provided by an Israeli hospital ophthalmic service at Assaf Harofeh Hospital providing an important backup service.

The Khan Yunis Hospital was closed in 1972 and completely renovated, re-equipped and expanded from 118 to 210 beds and reopened in 1974; it was again expanded to 243 beds in 1976.

The infrastructure and level of services for hospital care in Gaza has made major improvement over the past 13 years, and a process of gradual refinement and updating with increased local specialties service potential along with increasingly sophisticated equipment is being developed over the next several years.

TABLE XVIII. HOSPITAL FACILITIES

GAZA-SINAI

1980

Hospital	No. Beds	Services Before 1967	Services Added Since 1967
Shifa Hospital (Gaza)	310	Medicine, Surgery, Obs. Gyn.	. ENT with OPD (1973) . Renal Dialysis (1973) . Gastroenterology & gastroscopy (1975) . Radiology (1973) . Library (1972) . Medical Records (1976) . Renovated Obstetrics Gynaecology (1976) . Nephrology clinic (1973) . Neurology clinic (1976) . Genetics Clinic . Cardiology clinic . I.C.C.U. (1978) . Gynaecology - 20 beds added (1979) . A post mortem refrigerator (1978) . Maxillo facial surgery department (1980)

Comments - Shifa Hospital

Since 1975 a high degree of specialty service organization, including conferences and continuing education was established. Specialty clinics in nephrology, genetics, neurology and cardiology were established in 1975 with visiting specialists from Israeli hospitals (Tel Hashomer and Hadassah) and surgical paediatricians (from Hadassah Hospital, Jerusalem) and a paediatrician (from Beer Sheva University).

Rebuilding and extension of internal medicine department (No. 3) has been opened in 1978. A completely new infrastructure has been completed in 1978, including water supply (with storage tank) sewage system linked to municipal sewage network, electricity with internal emergency generator, a complete new telephone system and exchange, central oxygen supplies, kitchens, library reception areas, central heating, hot water by solar heaters and electricity.

The radiology service was established in 1973 with assistance of an Israeli consultant on a full-time basis. The X-ray now has three modern units including tomography image intensifier. A fourth unit is to be added during 1981-82.

The ICCU was established in 1978 with seven beds. A maxillo facial surgery service was established in 1980 by a local specialist who recently completed his training at Ashkelon Hospital.

A haematology service was founded in 1980, under the direction of a local physician who is in the midst of his training in Tel Hashomer Hospital. New equipment including a teaching microscope and automatic thrombocounter has been ordered.

The oncology service, operates a day care centre in Rimalt Clinic since 1977. This was run by an Israeli team, but in 1980 the service was transferred to a local oncologist who is in training at Tel Hashomer Hospital. A tumour board consisting of the oncologist, the treating physician and a radiologist has been established which reviews every cancer case.

The obstetric service is to be expanded by an additional twenty beds in addition to the twenty beds added in 1980, for a total of 100 beds.

A burn unit is being established in 1981 as part of the surgical department. A physiotherapy department was established in 1979 run by a local specialist in physical medicine. A complete endoscopy system will be added during 1981, allowing local investigation and treatment for patients previously referred to Israeli hospitals.

Hospital	No. Beds	Services before 1967	Services added since 1967
Ophthalmology Hospital (Gaza)	57	Hospital was opened in 1968. Previous eye care was by one Egyptian ophthalmologist	Psychiatric outpatient service (1979) Psychiatric inpatient service - 18 beds (1980)

Comments - Ophthalmology Hospital

Medical staff of 6 local ophthalmologists is augmented by weekly visits by an Israeli consultant; referral to Ashkelon and Assaf Harofeh Hospitals for complex cases. Modern equipment and standards now allow for carrying out a wide range of ophthalmic surgical procedures previously referred to Israeli hospitals.

A new psychiatric department was added in 1979 in an unused separate section of this hospital, psychiatric with 18 beds. Five nurses and a training of 3 months in Bethlehem Psychiatric Hospital for this purpose. The senior psychiatrist was trained in England; 3 psychiatrists staff both the inpatient and outpatient service, with one psychologist.

Hospital	No. Beds	Services before 1967	Services added since 1967
Khan Yunis Hospital (Southern Gaza Strip)	118 beds up to 1972, when renovated & extended to 243 beds in 1976	Medicine Surgery Paediatrics Ob/Gyn	All services completed renovated & re-equipped (1972-1973) Orthopaedics (1973) Physiotherapy (1975) Medical Records (1977) Bacteriology lab (1981) X-ray (1972) ICCU (1981)

Comments - Khan Yunis Hospital

ICCU opened in February 1981. Central heating was established in 1978. The operating theatre was renovated. The X-ray department was extended and 3 new X-ray machines were added. In planning - connexion to central sewage network.

Hospital	No. Beds	Services before 1967	Services added since 1967
Burej Chest Hospital Gaza	210 beds	TB Services Broncho-pulmonary services (acute & chronic). Out-patient referral clinic	BCG vaccination programme for infants. School tuberculin testing of children TB screening programme

Comments - Burej Chest Hospital

In 1979 the number of beds was reduced to 70 (with agreement of UNRWA) which are specified to TB care only. Planning is in process for a community health centre on the grounds of the hospital.

Hospital	No. Beds	Services before 1967	Services added since 1967
Nasser Children's Hospital	135 beds	Building was used for private surgical (40 beds), obstetric/ gynaecology (50 beds)	1972 - hospital refurbished to paediatric hospital which had previously been a department in Shifa Hospital Day hospital (1975)

Comments - Nasser Children's Hospital

Hospital now consists of three paediatric departments, premature, nursery, day care observation/treatment unit, consultation and follow-up clinic. Hospital staff responsible for paediatric care in community health centres.

The infrastructure services were completely renovated (1975-1977) including a new water supply system, sewage disposal connected to the municipal network, electricity including an emergency generator, a telephone network, central oxygen supply.

A total parenteral nutrition service is to be established during 1981.

Hospital Utilization

Hospital utilization has increased in recent years in local government hospitals, and in Israeli hospitals for patients referred by the government health services. Total hospital utilization by Gaza-Sinai residents has increased in the number of discharges, but reduced in overall days of care and average length of stay (see Table XIX). The Epidemiology and Health Information Centre has recently begun to analyse current trends in hospital service utilization including surgical procedures for its periodic epidemiologic reports. This will provide an important new tool for evaluation of health care, and assist in future planning for development of health services.

TABLE XIX. HOSPITAL UTILIZATION INDICATORS

GAZA-SINAI

1977-1980

	1977	1978	1979	1980*
Government Hospitals:				
- Discharges	39 505	41 675	41 725	42 633
- Days of Care	216 131	235 850	223 662	201 427
- Occupancy	63%	69%	69%	63%
- Average length of stay	5.5	5.6	5.5	4.7
- Day care	9 084	8 647	8 589	9 076
Israeli Hospitals:				
- Discharges	975	991	963	1 907
- Days of care	14 658	14 075	14 930	12 073
- Average length of stay	14.0	14.0	15.5	8.6
Non Government Hospital:				
- Baptist Hospital				
- Discharges	1 729	926	1 209	1 504
- Days of Care	15 737	6 816	7 548	9 506
Total Discharges/1000 population	95	96	101	105
- Days of care/1000 population	563	569	584	519
- Average length of stay	5.9	5.8	5.7	4.9
- Surgical operations/ 1000 population	32.8	30.1	31.8	N/A

* 1980 - excludes El Arish population.

Ambulatory Care

In 1979 the out-patient clinics of Shifa Hospital, as in Khan Yunis and the Nasser Paediatric Hospital, were removed out of the hospital to new buildings in the area. Hospitals now have out-patient consultant clinics in all branches. The Rimalt Clinic in Gaza is a specialty clinic recently renovated and extended. It is staffed by specialists visiting from various hospitals in Israel, as well as providing central laboratory public health, oncology and other specialty services. A new dental clinic is to be opened during 1980.

Ambulatory care is provided by government hospital staff through various specialty referral clinics at the hospitals, and more recently through public health programmes incorporating curative or primary care services with preventive services. This step of integrating primary care with preventive services began to be implemented through Maternal and Child Health Centres - now converted to comprehensive mother and child health care centres - there are now 22 such centres throughout the Gaza-Northern Sinai region. In addition, 23 dispensaries (expanded from the 10 existing prior to 1967) have added preventive services to their normal pattern of primary care. Each clinic has a diabetic clinic service. Most dispensaries have a basic laboratory capable of urine, stool and blood work. These centres have 1 or 2 medical doctors on site, and are assisted by visiting paediatrician services (from the Nasser Children's Hospital). The stress is on bringing appropriate services to the patient in the community as opposed to bringing all patients to the hospital.

The start at integration of preventive and primary care services with support of visiting specialty staff has only recently begun (1975). Its effect however appears already to have been noticeable in maternal and child care. Its long term implications for more effective health education and improved health status can only be observed over a longer period of time. More specialty services will be visiting primary care centres in

future to bring improved health care closer to the population. Most major community clinics are visited on a weekly basis by specialists in internal medicine to review difficult cases. The clinics are also visited by gynaecologists, dermatologists, orthopaedists (during 1981) and the psychiatrist in the Khan Yunis area.

Sheikh Radwan Health Centre serves a population of twenty thousand persons who have moved from the beach camp to the new housing development of Sheikh Radwan. The health centre is a model of expanded community health and primary care services, including MCH, care of the elderly and chronically ill, primary medical care for all ages, and care of students in elementary school. Service staff includes physicians, nurses, social workers, and others. Home visits are made for evaluation of home-condition of children entering grade one. Home visits are also made for care of the chronically ill. This centre which opened in 1978 is also being utilized for staff education in relation to developing comprehensive services in the other health centres serving the area.

Ambulatory visits to physicians in the government health service centres have increased over the years - from 549 thousand in 1974 to 769 thousand in 1980. A decline in medical visits experienced in 1976 and 1977 followed the introduction of visit charges for medical visits. This was, however, followed by rapid increases in visits in 1978 and 1979 as the health insurance plan was instituted (see Table XX), which eliminated payments at the time of service.

TABLE XX. AMBULATORY VISITS TO PHYSICIAN
GOVERNMENT AND UNRWA HEALTH SERVICES

GAZA-NORTH SINAI

1974-1979

(000's)

	1972	1974	1976	1977	1978	1979	1980
Gov't health visits to doctors (000's)	575	610	552	488	613	769	760

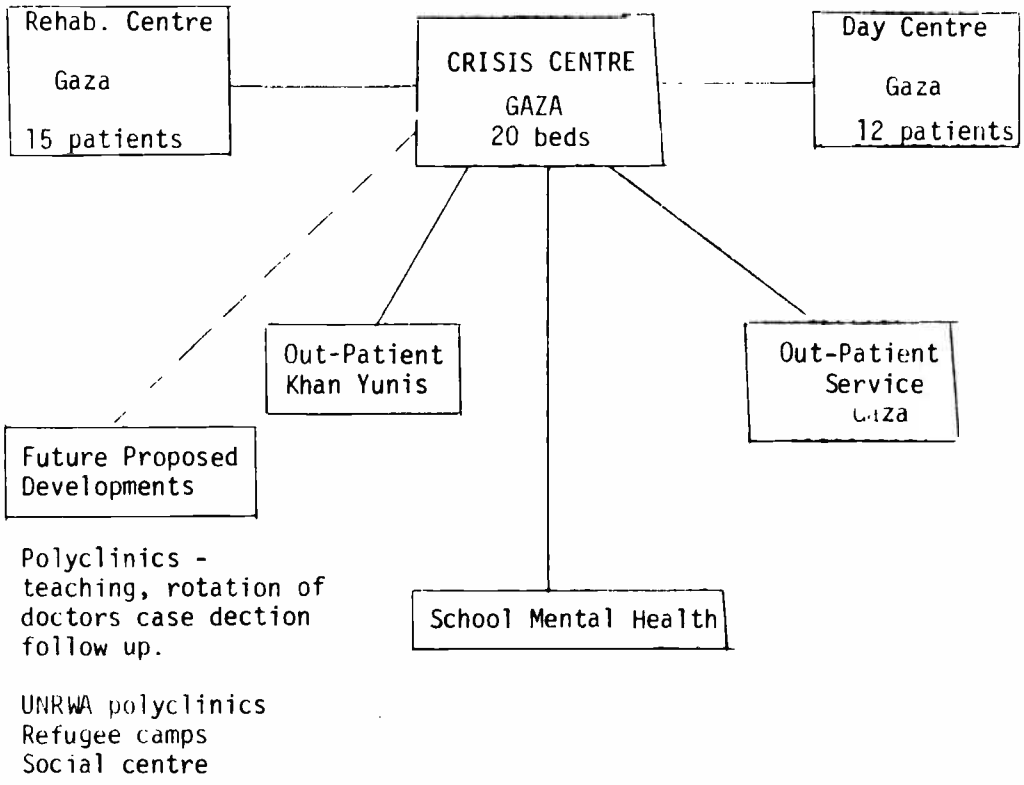
Mental Health

Mental health services have up until recently been provided to the Gaza-Sinai population through the Bethlehem Psychiatric Hospital. This hospital has been converted to a more active psychiatric service by reduction of total beds, increased staffing, shortened average length of stay, and a greater stress on out-patient care.

A psychiatric service has now been established in Gaza with emphasis on day care, out-patient clinics, now operating in Gaza and Khan Yunis with consultation services to hospitals, medical clinics and schools. The day care and out-patient service is located in an unused building at the Gaza Ophthalmic Hospital. The psychiatrist in charge is a local resident who recently completed specialty training in London, England. An 18 bed acute psychiatric in-patient service opened in March 1980 in the Gaza Ophthalmic Hospital staffed by psychiatrists and social workers. The stress of the psychiatric service is on ambulatory care in general medical clinics or in the specialty psychiatric clinic supported by day care and by in-patient care of a short term nature. Figure V outlines the components of this programme, including future developments proposed.

FIGURE V. MENTAL HEALTH PROGRAMME

GAZA-NORTH SINAI



Formation of a plan for development of psychiatric services was ably assisted by a consultant from the World Health Organization (Dr T. W. Harding) in 1979. Assessing mental health of a total population by accepted medical criteria includes hospitalization data, suicide, homicide, accident rates, as well as clinical service data from ambulatory care services. By such measures - no evidence of excess mental ill health has been demonstrated in Gaza-Sinai area. Further experience with expanded psychiatric services in the government health service may help to develop more epidemiologic data on this subject. Dr Harding revisited the service in August 1980.

Public Health Services

Health Education

In 1979, 13 persons were trained in a three month programme conducted in Ashkelon Hospital to be community health educators. After experience in various programmes throughout the region, each was attached to a mother and child health centre to develop and implement health education activities.

Environmental Health

Significant advances in environmental health including safe public drinking water, sewage collection and disposal, garbage collection and disposal as well as food control have contributed to the general improvement in the health situation.

Laboratory Services

Our laboratory division is composed of two big laboratories; the Rimalt Clinic laboratory serving the Northern district of Gaza strip, and the Khan Yunis laboratory serving the Southern district of Gaza strip. Besides these two big laboratories there are laboratories in the

Shifa Hospital, the Nasser Children's Hospital, the Bureij Hospital as well as five out-patient clinic laboratories close to the polyclinics: Surani, Gibalin, Dir-El-Balah, Rafiah and Rimalt. Rimalt laboratory has the following divisions: bacteriology, serology, biochemistry, parasitology, haematology. It was established in 1968 with only four practical technicians. Since 1973, new methods were introduced into all laboratories with an internal and external control programme. The internal control programme is done with known values of normal and abnormal specimens. The external control programme is a programme organized by the Wellcome company, in which they send sample sera with unknown values which are tested and the results forwarded to the Wellcome Co. Monthly we receive the correct results. Once per half year according to our results they grade us in comparison with participating Israeli laboratories. This year our laboratories had been graded number 8 of 22 Israeli laboratories.

New tests introduced were thyroid formations (like T_4 and T_3), new micromethods of bilirubin, L.D.H., CPK, D-Xylose, digoxin, triglycerides, serum iron, total IBC, G6 PD and Lithium. In Bacteriology we introduced new serological tests. The bacteriology laboratory which gives results of culture and sensitivity of specimens including blood, urine, pus, sputum, stool, CSF, and wounds. Routine testing of water samples for coliform bacteria is carried out for all the deep underwater ground wells of the Gaza strip. In 1973 we opened a new laboratory in Khan Yunis Hospital having the following divisions: blood bank, biochemistry haematology, parasitology, and outpatient laboratory; in February 1981 a new bacteriology laboratory was added.

Shifa Hospital laboratory was newly renovated after 1973 where a fire burned the old laboratory. This laboratory has a division of blood bank, haematology, parasitology and urgent biochemistry tests; the rest are done at the Rimalt Clinic.

The Nasser Children's Hospital and Bureij Hospital have an emergency laboratory doing all the basic haematology, stools and urine tests. The Shifa Hospital, Rimalt Clinic and Khan Yunis Hospital laboratories are open 24 hours daily, and give immediate results to I.C.C. units, oncology, blood transfusion, haemophiliac department, artificial kidney and to any other emergency department.

In each of our laboratories we have 2 graduate technicians, with B.Sc or M.Sc, and 30 practical technicians (graduates of technical school of Ramallah and Baptist Hospitals). In-service training is a key part of the programme, in which lectures and international congress of biochemistry and bacteriology and visits to Tel-Hashomer and Hadassah Hospital laboratories in order to become familiar with new and modern techniques.

Food Control

Food control activities of the public health division of the Gaza health service must be seen in the contact of the direct connexion between standards of the food industry with hygienic conditions of the community. Although some industries have operated on high standards, most have been working at a minimum or below minimum standards.

Much progress has been made in the food industry, particularly through emphasis on refrigerators in meat shops, running hot water in restaurants, general improvement in public buildings and cleanliness.

Two new slaughterhouses were established in 1978 by the municipalities (Jabaliyeh and Khan Yunis), and three others were renovated with increased capacity and modern equipment - also municipally operated and supervised by the public health service.

All imported foods are tested bacteriologically and chemically before release for sale to the public. The public health department veterinarian (with a Master's degree in public health) works in close cooperation with the veterinary service of the Ministry of Agriculture. There is a continual control on standards of bacterial and chemical content of food products, and some problems such as food colours and additives, which are no longer permitted.

Table XXI outlines the gradual increase in the number of large food processing and marketing businesses and its control by the Department of Health of Gaza-Sinai.

TABLE XXI. FOOD INDUSTRY FOOD TESTS AND COURT CASES

GAZA-NORTH SINAI, 1973-1979

	No. of licensed businesses	No. of large food processing businesses	No. of large marketing businesses	Laboratory tests			Court cases
				Bact.	Chem.	Total	
1973	1100	50	950	800	233	1033	641
1974	1120	52	1068	800	400	1300	417
1975	1260	54	1206	1160	900	2010	432
1976	1395	55	1340	1070	100	2070	233
1977	1440	59	1381	900	700	1606	422
1978	1408	60	1388	1100	1000	2000	283
1979	1594	67	1527	1100	1023	2123	451

The water resources and their use in the Gaza district

Gaza is an arid area where annual precipitation is 150 mm in the south and 350 mm in the north. Agriculture in the strip is based mainly on irrigated crops which are therefore dependent on the amount of water available.

Water sources

Today, 1776 wells are in operation in the area, 1716 for agriculture and 58 for urban consumption. These wells pump water from a great depth and are the only source of water.

Problems associated with water

Since 1967, research has been carried out in the area. Surveys and hydrological measurements showed that over-exploitation was causing the water level to drop and the salt content of well water to rise.

In recent years, 120 million cubic metres of water a year was being used while the wells refilled at a rate of only 70-80 million cubic metres. These figures showed that over-pumping was at a level of 40-50 million cubic metres a year.

Over-pumping leads to three grave outcomes:

(1) A fall in the water level in the wells of 15-20 cm a year.

(2) A rise in the salt level of 15-25 milligrams of chlorine per litre of water a year.

(3) The penetration of sea water into pumps in the inland area, in some cases as far as 1.5 kilometres inland from the coastline.

It was clear that the quality of water in the region was depreciating. Sixty per cent. of the water had more than 400 milligrams of chlorine per litre which endangered some of the crops. Water of this low purity level is on the borderline of what is permitted for human consumption as drinking water.

Underlying causes of the problem

Agriculture

There was no planning or direction in the development of agriculture. Many citrus fruit groves were planted without taking into account the amount of water available in the area as a whole.

Wells were drilled without paying heed to this problem and in practice, anybody with the necessary authorization could drill a well and use as much water as he wanted.

Irrigation methods

In the past, all the crops were watered using open irrigation methods and flooding. This caused considerable wastage of water. Sometimes twice or three times as much water as necessary was squandered on the crops.

The proliferation of wells

There were no guidelines regulating the spacing of wells and the distance between them. Each farmer selected his own drilling site without taking the damage he might cause his neighbours into account or the damage to the area as a whole.

The situation was especially serious in the south of the strip around Khan Yunis and the eastern villages. Two orchards had already been uprooted because of it.

Steps taken by the military administration to halt the deterioration process and improve the situation are as follows.

In 1975, an order was issued concerning water in the area and giving legal validity to arrangements concerning the use of water. The order lays down the following provisions:

(1) It is forbidden to sink wells without the permission of the appropriate authorities.

(2) It is forbidden to plant new citrus groves without permission.

(3) The distribution of water for agriculture is according to the crops already being cultivated.

(4) It is obligatory to measure the water in all existing wells.

(5) Problems between water consumers and well owners are to be settled. In addition:

(a) A wide-ranging information service was started which worked through written publications, the broadcasting media, organized farmers' conferences and activities in schools etc.

(b) An expert committee of the Water Commission gave technical assistance in planning irrigation systems by evaluating all proposed schemes.

(c) Farmers ready to set up sprinklers, rotators or drip irrigation systems on their land were given financial encouragement. This today amounts to a grant of IL. 1000 for every dunam where such systems have been introduced.

(d) Loans were given to transform pumps in wells to permit high pressure pumping (today there is a move to change the loan to a grant of 25% of the cost of the changeover).

(e) Intensive counselling was undertaken in the use of irrigation systems and on the amount of water needed for each crop.

(f) Financial compensation was granted to farmers changing the crops on their land from those which need a lot of water such as citrus fruits to other crops. This compensation is a one-time payment determined by the amount of water the farmer saves out of his allotment.

(g) Four water councils were established in the area to assist in finding solutions to particular problems between water consumers and well owners.

Results so far

In 1978/79, after the imposition of a water ceiling for the whole area, we achieved a saving of 20 million cubic metres which meant that over-pumping had been decreased to a level of 20-30 million cubic metres a year.

Last year, we saved an additional 1-2 million cubic metres despite a controlled increase in the area under cultivation (strawberries in the northern region) and a rise in the ceiling as laid down by the local appeals committee. People who broke the water regulations were heavily fined and this year also, we have begun collecting the money from people who were fined.

Regional Water Projects

The Eastern village plant

This plant was completed two years ago. It supplies drinking water from the coastal drainage area to the villages Bani Suheila (the large and small), Abasan and Ikhaz'a.

The water is pumped out of four wells from the Khan Yunis beach and brought through a metal pipeline and a reservoir to Bani Mouhil'a and from there pushed through to the four villages.

In the future, this plant will also supply water to Khan Yunis.

The central camps plant

This plant is still under construction. It is based on sinking five to seven wells from the Deir el Balah drain and would supply four central camps and the town of Deir el Balah.

So far, three wells have been sunk and the pipe and pumping equipment has been ordered.

First stage operations of the plant should begin in 1980.

Drinking water

Up until 1970 testing of drinking water safety was sporadic. Since 1970, an orderly drinking water testing programme has been carried out. The programme of regular testing of public water supplies is based on 2 E. coli per 100 ml water as an acceptable standard. If more than 2 E. coli per 100 ml are found the water is retested, and if again more than 2 E. coli are found the water source supplying the polluted pipelines are chlorinated for between five and 14 days.

In most cities drip chlorinators have been replaced by automatic chlorinators. Surveillance testing shows the water supplies to be of a good public health standard. Chemical testing also indicates good water standards. Saline water used by villages in the Khan Yunis area has recently been replaced by high quality wells dug by the Mekorot Water Company. The natural fluoride content of drinking water in the region is generally within the standard recommended for prevention of dental caries.

Solid waste collection and disposal

In all urban areas public garbage collection containers (1000 litres) have been provided, with collection either by hand cart, horse cart, and increasingly by tractor cart, or modern tip truck. Gaza city, for example operates 150 public garbage containers, 50 hand carts, 10 horse carts, one tractor cart, one bulldozer, one small truck, two modern tip trucks, three mobile automatic means, and has 144 staff (as compared to 60 pre-1967) for garbage collection and disposal.

Although general awareness of public hygiene needs has been problematic, there has been a radical change in the past several years as a result of improved facilities, more efficient collection and cleaning, and generally improved awareness of public health and sanitation.

Sewage collection and disposal

Before 1967 only part of the City of Gaza had a public sewage system (approximately 25 km in length) which serviced the old part of the city. All the rest of the area used various types of dry and wet wells with and without septic tanks. The public sewage system serviced approximately 50% of the population of Gaza. Up until 1970 some local residents purposely blocked man-holes in order to cause the raw sewage to spill into small agricultural plots of land dispersed throughout the city. Since 1970 this has been stopped and there has been constant vigilance to find offenders illegally using sewage water for agriculture. Results of laboratory tests of water, sewage and vegetables are maintained. During 1981, this problem has reappeared and active surveillance to control this is under way through destruction of affected crops.

In the last few years the sewage system in Gaza has been enlarged and now there is approximately 47 km of piping, with two new oxidation ponds in operation. Khan Yunis has a new central sewage collection and treatment system, with expansion under way at the present time. Jabaliyeh's central sewage collection and treatment system (oxidation pond) was opened in 1979.

Dir-el Balach is in the process of planning a public sewage system.

Malaria control

Gaza-North Sinai has been free of indigenous malaria cases since 1973. Anti-malarial control activities are carried on both by the local city government and by the regional government. Emphasis has been placed on larvicidal spraying, except in emergencies when cases of imported malaria have been discovered, when houses, bushes, in the surrounding areas are sprayed for adult mosquitos. Larval typing activity is maintained as a routine.

In 1979 vector control activity was increased because of the threat of rift valley fever entering the area from Egypt.

CHAPTER THREE

SOUTH SINAI

Introduction

Considerable advancement in the health status and health services of the nomadic Bedouin population of South Sinai has been achieved in the past fourteen years by provision of improved preventive services and the development of a primary care service network. In 1979, responsibility for the area was returned to the Egyptian government, including all health services. Services developed during the years of Israeli responsibility have been transferred to the Egyptian authorities, hopefully with prospects for cooperation in relationship to health needs of the population in the future. The area of South Sinai still under Israeli authority includes Ophira (Sharm el Sheikh) and a line from near Santa Katarina (which returned to Egyptian control) to Eilat.

Demographic and Socio-Economic Status

The population of South Sinai under Israeli authority is approximately 3000 persons living in Bedouin encampments and semi-permanent settlements scattered through this large desert terrain.

The basic economy is traditionally based on migratory animal husbandry involving sheep, goat and camel herding as well as some date agriculture. In recent years employment in settlements such as Ophira (Sharm el Sheikh), Dahab and A'Tour, in construction and in tourism, have been major economic growth factors, increasing local incomes and purchasing power.

Education of children was vastly expanded and improved such that virtually all children now attend primary schools.

Public Health Services

Health care has been provided free of charge and organized around health centres and rural clinics, as well as mobile clinics providing preventive and treatment services. Hospitalization is in both Gaza and Israeli hospitals and is free.

Emphasis has been placed on maternal and child health and infectious disease control as well as in provision of safe drinking water. Immunization of children (BCG, DPT, Tetanus, TOPV, oral polio, measles, and smallpox) has been stressed and widespread coverage has been achieved. Tuberculosis screening and parasitic disease control programmes have been stepped up in 1976.

Primary Care

A network of primary care services has been developed for the South Sinai population based on health centres, mobile clinics, and rural dispensaries - all responsible both for preventive and curative services.

The health centres are located in permanent settled areas and serve as bases for mobile clinic programmes as well as to provide care locally. Local dispensaries in semi-permanent settled areas provide a range of preventive and curative services.

Table XXII sets out the programmes and services available through the Health Centres and Local Dispensaries - all of which were developed since 1967.

Staffing of health services in South Sinai has been based upon training of local Bedouin health workers in El-Arish and Israeli hospitals. Medical assistants staffing local dispensaries have proven to be very effective and competent personnel handling preventive and diagnostic services including clinical and laboratory examinations, as well as managing first aid therapy and referral services.

TABLE XXII. LOCAL HEALTH SERVICES

SOUTH SINAI

1979

Health Centres	Population Served	Services
Ophira (Sharm el Sheikh)	3000	Staff - one doctor, one staff nurse, one practical nurse, one medical assistant, one driver. Consulting Services - visiting internist, Paediatrician and Gynaecologist services. Diagnostic facilities (minor laboratory and ECG). Ambulance and helicopter emergency service. Dental service (once per week). Provides mobile clinic services to village encampments served by local dispensaries. Infirmary.
Local Dispensary In each settlement		. Medical visits (1-3 times weekly) . Paediatrician visits . Medical assistant - 24 hours' coverage . Education by helicopter or ambulance . First aid . Pharmaceutical service . Maternal and Child Health nurses clinics (weekly) . Public health nurse weekly visits . Vaccination programmes including DPT, Polio, Measles and BCG Bedouin population treated utilized 4852 visits to ambulatory clinics, and 1650 visits to maternal and child health services. 437 children (Bedouin) were seen in the dental clinic in Ophira in 1980. The Ophira health centre includes an infirmary for mildly ill patients needing day care.

A vaccination campaign has been carried out among the South Sinai population and achieved coverage of all children between three months and 12 years of age with DPT, Polio, Smallpox and Measles. A campaign against TB carried out in 1976 examined 1500 persons by a medical-nursing and laboratory staff team. Each person was examined clinically and this was followed with a Mantoux test and chest X-ray. This resulted in identification of six cases of active TB, 28 cases of "probably active TB", nine cases of non-active TB, three cases of pulmonary malignancy, nine cases of pneumoconiosis, two cases of situs inversus and a number of cases of pulmonary or cardiovascular-pulmonary disease.

Polio control was extended by adding killed polio vaccine (Salk) to the routine DPT vaccine for 2 immunizations, while five oral feedings of Triple Oral Polio Vaccine (TOPV) are given during the second year of life. Immunization coverage of Sinai children is estimated to be in excess of 85%.

Rift Valley Fever prevention activities in the Sinai have concentrated on active surveillance for the disease (including educational activities among the Bedouin population, and periodic blood sample surveys), active immunization of all livestock (including marking of immunized animals and reimmunization after one year), vector control (anti-mosquito larviciding and adulticiding activities), and preparation of diagnostic and hospital referral centres for this disease.

Public health and primary care in the Sinai has been developed taking into account the nomadic life style, and difficult conditions of the area. Transfer of these services to the Egyptian authorities was accomplished during 1979 with little dislocation for the rural population. Future cooperation in maintaining and improving health conditions for the population will be a symbol of the extent of peaceful neighbourly relations between Egypt and Israel.

CHAPTER FOUR

JUDAEA-SAMARIA

Introduction

The population of Judaea-Samaria has benifited from major increases in per capita real incomes and purchasing power, improved housing and living conditions and improvement of the social infrastructure and services, such as safe water, sewage systems and garbage disposal.

Hospital facilities and services have been improved and upgraded through development of specialty services. At the same time, there has been an increase in preventive and primary care services and considerable progress made in development of manpower training programmes. The health services of Judaea-Samaria are undergoing a process of expansion and integration of preventive with curative services of the community level. Community clinics previously providing curative services are now providing preventive services as well, and provide a strong base for expansion of prevention programmes.

In the past several years, particular progress has been made in health manpower education, epidemiological reporting, medical records, polio control, tuberculosis control, specialty hospital services, cancer treatment, eye care and other services. Health planning for future development of health services and health service organization, coupled with growth in health manpower, and successful launching of comprehensive health insurance on a voluntary basis to some 40% of the population provide a strong basis for further advances in the services of Judaea and Samaria.

From 1967, all residents of Judaea-Samaria, regardless of nationality or status, have had equal access to all governmental health services. Approximately one third of those supported by international relief agencies live in camps, while the remainder live among the general population of Judaea-Samaria. UNRWA continues to supply ambulatory and MCH services, mainly to those living in the camps, and refers patients to Augusta Victoria Hospital in Jerusalem, as well as to other hospitals in Israel. All workers from the region employed in Israel are entitled to health services related to work injuries.

Demography

The population of Judaea-Samaria has grown steadily over the past 13 years, increasing by some one hundred and sixteen thousand persons, as seen in Tables XXII and XXIII. This growth is due to an extremely high birth rate (over 45 per thousand population) and fertility rates (over 200 per thousand females between ages 15 and 49), as well as a low crude mortality rate (under 6 per thousand population).

TABLE XXIII. POPULATION, BIRTH AND DEATH RATES, JUDAEA-SAMARIA
SELECTED YEARS, 1968-1979 (000's)

	1968	1970	1975	1977	1978	1979
Population	548.1	603.9	665.1	681.2	690.1	699.6
Births	25.6	26.5	30.5	31.3	30.4	31.5
Percentage increase	-	1.5	0.5	1.5	1.3	1.3
Crude birth rate	44.3	43.7	44.9	45.9	44.0	44.9
Crude death rate	5.1	5.6	6.0	5.5	5.4	5.1

Note: Population and births in thousands; crude birth and death rates are births and deaths per thousand population.

Source: Data from Statistical Abstracts of Israel, to 1980; Central Bureau of Statistics; Jerusalem, 1979 data provisional.

TABLE XXIV. POPULATION, AGE-SEX DISTRIBUTION, JUDAEA-SAMARIA
1979 (000's)

Age-group	Female	Male	Total	%
0-4	59.6	65.4	125.0	17.9
5-14	89.9	100.4	190.2	27.2
15-19	44.2	49.7	93.9	13.4
20-29	53.2	54.5	107.8	15.4
30-44	47.8	34.3	82.1	11.7
45-64	41.0	32.8	73.3	10.5
65+	13.7	13.6	27.4	3.9
Total	349.4	350.1	699.6	100.0%

Socio-economic conditions

Prior to 1967, the economy of Judaea and Samaria was characterized by widespread unemployment, dependence on welfare, subsistence level farming and labouring, with few opportunities for skilled labour. In the space of just over a decade, a major improvement in the socio-economic situation of the region has occurred.

Since 1967, the economy of Judaea and Samaria has been characterized by rapid growth, along with very substantial increase in the standard of living of the residents. A major factor in this dramatic change has been the interaction of the economies of the areas with that of Israel, as well as with neighbouring countries.

Nearly full employment, large scale vocational training, large scale unionization of labour and major emphasis on the conditions of workers have been very influential factors in the socio-economic condition of Judaea-Samaria in the past decade. As a result, the standard of living in Judaea-Samaria has shown a constant rise.

The gross national product per capita has nearly tripled in real terms, and personal private consumption per capita has more than doubled (see Table XXV).

TABLE XXV. PER CAPITA GROSS NATIONAL PRODUCT AND PRIVATE CONSUMPTION, JUDAEA-SAMARIA, SELECTED YEARS 1968-1979
(constant 1968 Israeli pounds)

	1968	1970	1972	1974	1976	1977	1978	1979	Average annual incr.
Per capita GNP	595	781	1193	1358	1509	1465	1667	1632	9.6%
Per capita private consumption	612	778	999	1060	1217	1222	1250	1341	7.4%

Note: Figures are expressed in constant Israeli pounds in order to provide a basis of comparison which excludes the factor of inflation. Figures are corrected as per Statistical Abstract 1980.

While the population has grown in the region, an increasing proportion of the total population over age 14 is in the labour force, (rising from 30% in 1968 to 33.6% in 1979), and a growing proportion of the labour force is employed (89.2% in 1968 to 99% in 1979). The total labour force has increased (from 114.5 thousand in 1970 to 131.5 thousand in 1978), as seen in Table XXVI.

TABLE XXVI. EMPLOYMENT AND WAGE INDICATORS
JUDAEA-SAMARIA, 1968-1979

	1968	1970	1972	1976	1977	1978	1979
% labour force of population over age 14	30.1	36.7	37.6	35.4	33.9	34.0	33.6
% employed of labour force	89.2	96.7	98.9	98.8	98.8	99.0	99.0
Average daily wage per employee (IL)	N/A	11.8	13.7	50.0	68.0	105.5	209.3

Persons working in Israel are entitled to salaries and conditions based on those of Israeli workers including severance pay, work accident insurance, child allowances, seniority pay, annual vacation and religious holidays with pay, health services insurance and health services in Israel.

Employment in Israel, which rose from 14.7 thousand in 1970 to 39.1 thousand in 1979, absorbed most of the growth of the labour force (Table XXVII). The number of persons employed within the region remains basically stable while productivity has increased markedly. Free mobility of labour has been a major factor in boosting per capita earnings and the total economy of the region through the achievement of nearly full employment.

TABLE XXVII. LABOUR MOBILITY AND PLACE OF EMPLOYMENT
JUDAEA-SAMARIA (thousands), 1970-1979

	1970	1971	1972	1976	1977	1978	1979
Worked in region	99.8	91.2	90.3	92.6	91.9	94.0	92.5
Worked in Israel	14.7	25.6	33.4	35.7	34.7	36.1	39.8
Total	114.5	116.8	123.7	128.3	126.6	130.1	132.3

Civilian construction activity, in terms of thousands of square metres built as an indicator of economic activity increased between 1970 and 1978, by a factor of over 600%, despite Israel's recent economic recession and decrease in building activity. In effect a housing boom has been under way in recent years raising the quantity and the quality of housing throughout Judaea and Samaria (Table XXVIII).

TABLE XXVIII. CIVILIAN BUILDING ACTIVITY, PUBLIC AND PRIVATE,
JUDAEA-SAMARIA (thousands of square metres), 1970-1978

	1970	1971	1972	1976	1977	1978	1979	1970-78 average annual increase
Residential building completed	76	134	160	474	504	542	568	58.8%
Total building completed	109	166	199	580	628	655	708	50.5
Residential building begun	101	185	260	530	541	637	642	48.6
Total building begun	140	224	326	647	683	785	779	41.4

Agriculture is still the principal economic branch of Judaea-Samaria, but has undergone a massive reformation from a backward, inefficient and low productivity industry to a highly productive relatively modern economic factor, with Israeli technical help. Productivity has grown at an annual average rate of 17.5% mainly as a result of agrotechnical improvements and capital intensive activity. As a result employment in agriculture has been reduced, while productivity per unit of land and water has been doubled. Improved production has contributed to economic growth, nutritional standards, exports and well-being of both the rural and urban populations of Judaea and Samaria. Agricultural productivity has shown a growth of between 30% and 164% in amounts of particular agricultural products since 1967, and many times over in terms of current sale value (see Table XXIX).

TABLE XXIX. AGRICULTURAL ACTIVITY INDICATORS, PRODUCTION QUANTITIES (in thousands of tons) 1967-1979

	1967/68	1975/76	1976/77	1977/78	1978/79	1967-79 % increase
Field crops	23.5	35.2	38.4	41.1	41.2	75.3%
Vegetables and potatoes	60.0	147.3	149.4	156.3	141.3	135.5%
Citrus and	30.0	74.1	85.5	80.8	79.1	163.7%
other fruit	47.9	76.6	78.8	95.4	87.0	81.6%
Meat	10.3	22.4	20.5	19.8	23.5	128.2%
Eggs (millions)	25.0	38.0	40.0	44.5	44.5	78.0%
Milk	30.3	41.5	39.6	39.9	39.4	30.0%
Value total (IL millions)	135.0	1535.1	1734.0	3713.9		1751%

Note: Data from: Administered Territories Statistics Quarterly, 5.674.7 Vol. IX No. 2.

This greatly increased agricultural production of the West Bank has been accompanied by increased purchasing power resulting in significantly improved family nutrition including average caloric intake and consumption of first class protein.

Water utilization for agricultural and domestic use has been expanded vigorously: domestic water consumption in Judaea-Samaria has increased from 5.4 to 14.6 million cubic metres between 1967 and 1979. Water quality and distribution have been emphasized in development of regional public water works systems - increased from two to ten. Many new wells have been sunk, storage pools built, water mains extended, and household connexions developed (including in 43 villages). Conservation methods have been established and more efficient irrigation systems are now used widely in the territory.

Standards of home services have also risen substantially with large increases in proportion of homes having electricity, refrigerators, radios, television sets, home baths and showers and home toilets (see Table XXX). Increased home electrification and basic service improvement are important basic health factors associated with improved quality of life.

TABLE XXX. HOME SERVICES AND APPLIANCES

JUDAEA-SAMARIA

(Percentage of homes with services)

1967-1979

	1967	1972	1974	1975	1976	1977	1978	1979
Electricity	23.1%	30.4%	47.5%	48%	-	67.7%	74.2%	*
Electrical Refrigerators	4.8	13.8	22.6	27.5	30.0	33.1	35.8	41.3
Radio	57.9	74.9	79.9	84.6	83.4	78.7	79.2	79.8
TV set	1.8	10.0	20.5	26.2	30.4	36.0	41.1	46.7
Bathroom, bath or shower	17.3	28.2	40.7	-	-	-	-	-
Toilet	58.4	73.0	78.9	-	-	-	-	-
Electric or gas heater	-	-	8.3	10.8	-	-	16.0	17.0
Electric or gas range	5.0	-	32.7	43.0	-	-	65.6	72.8

* Towns 97%, villages 71%.

Increased economic activity and personal purchasing power is also indicated by a growth of 349% of vehicles and 609% of drivers between 1968 and 1979 (see Table XXXI).

TABLE XXXI. MOTOR VEHICLES AND DRIVERS

JUDAEA-SAMARIA

1968-1979

	Private cars	Trucks and Commercial Vehicles	Buses and Minibuses	Tractors	Drivers
1968	1 626	1 299	194	459	3 711
1979	9 648	7 092	498	1 898	26 328

Education

Education has also expanded and improved, in terms of the numbers of classrooms in larger more comprehensive schools. The numbers of school age children in educational programmes (Table IX). In 1968, only 57% of children and young people aged 5-18 attended school; by 1979/80 this had reached 87%.

Secondary and post secondary education has more than doubled (Table XXXII) in the population of Judaea-Samaria and Gaza-Sinai. Teacher training has expanded tenfold over the decade (Table XXXII). There are now five universities and colleges in the region, whereas none existed in 1967. Large numbers of local residents study in universities abroad.

TABLE XXXII. EDUCATIONAL SERVICES - GOVERNMENT, PRIVATE AND UNRWA

JUDAEA-SAMARIA

SELECTED YEARS 1967-1980

	1967/8	1969/70	1971/2	1973/4	1975/6	1976/7	1977/8	1978/9	1979/80
Educational institutions	1 188	880	-	-	-	-	880	985	1 043
Classes	4 402	5 231	5 962	6 543	6 921	6 916	6 780	7 239	7 601
Pupils (000's)	142.2	177.5	196.2	207.7	229.1	230.7	234.9	247.4	258.9

The education system uses the Jordanian curriculum and textbooks, and operates with local teachers, supervisors and administrators. In addition to government, UNRWA and private schools help to serve the population for some 10% of the school aged population.

Girls now attend school in increasing numbers and proportions, including staying on to high school graduation, and attending university including studies in medicine, engineering and law.

Vocational training has been emphasized and 26 vocational courses in 19 cities with some 2 500 places for students have been developed since 1967. Courses are based on vocational standards in Israel and taught by local Arab instructors. Graduates are much in demand for work in Israel, in the territories and in Arab countries. Between 1968 and 1980 a total of 37.5 thousand students graduated from vocational training in Judaea-Samaria and Gaza-Sinai.

Higher education in Judaea-Samaria has expanded vigorously in this period. There are four new universities with modern facilities including libraries, laboratories, enlarged staff. They are coeducational and accept students from Gaza, Jerusalem and Israel, as well as other countries. The number of students increased from 4652 in 1979/80 to 6218 in 1980/81, while the number of lecturers increased from 311 to 374 in the same period. Graduates are employed in the local school system and in neighbouring countries.

TABLE XXXIII. PUPILS BY TYPE OF INSTITUTION - GOVERNMENT, PRIVATE AND UNRWA

JUDAEA-SAMARIA, GAZA-SINAI AND GOLAN HEIGHTS

VARIOUS YEARS 1967-1979

(000's)

	1967/8	1969/70	1971/2	1973/4	1975/6	1976/7	1977/8	1978/9	1979/80
Kindergarten	3.9	7.6	9.2	10.9	11.6	11.1	11.3	11.5	12.6
Primary Schools	163.2	191.9	211.3	228.6	243.2	253.8	241.1	252.4	256.7
Preparatory Schools Grades VII-IX	40.2	55.5	60.1	58.8	74.0	78.3	82.2	85.0	85.0
Secondary Schools Grades X-XII	15.6	26.3	30.5	31.1	37.6	39.6	44.5	47.0	51.0
Teaching training	0.3	2.0	2.1	1.9	2.6	3.0	2.3	1.2	1.4
TOTAL	223.5	283.4	313.2	331.3	369.0	367.6	381.4	399.0	409.1

Morbidity and mortality

Analysis of reported causes of death in Judaea-Samaria indicates a shift in mortality patterns within a relatively stable number of deaths. Cardiovascular and cerebrovascular diseases have become the leading defined cause of death, with infectious respiratory and gastrointestinal diseases in third and fourth places. Diseases of infancy are now in fifth place; neoplastic disease is in sixth place. Death certificates are completed by local physicians serving the area. Accuracy, specificity and completeness of reporting, while improving, still leaves much to be desired.

Morbidity patterns based on ambulatory care visits indicate the continuing prominence of infectious disease in the relatively young population. Hospitalization data show cardiovascular, surgical and neoplastic disorders as the main causes for admission. There is increasing referral to teaching hospitals in Israel for cardiovascular, oncologic, surgical, radiological and other more sophisticated care. With development of specialty units in hospitals, a wider range of surgical, orthopaedic and other procedures, including renal dialysis and chemotherapy for cancer are carried out locally.

Epidemiological surveillance, based on reports of communicable disease, death certificates, ambulatory clinic and hospital diagnostic data, suggests that the pattern of diseases is shifting toward that of "developed countries". Polio, malaria, trachoma and parasitic diseases are largely eliminated as causes of new morbidity. Measles, gastrointestinal and respiratory infectious disorders are still present but declining in importance as causes of death and morbidity.

Organization of Health Services

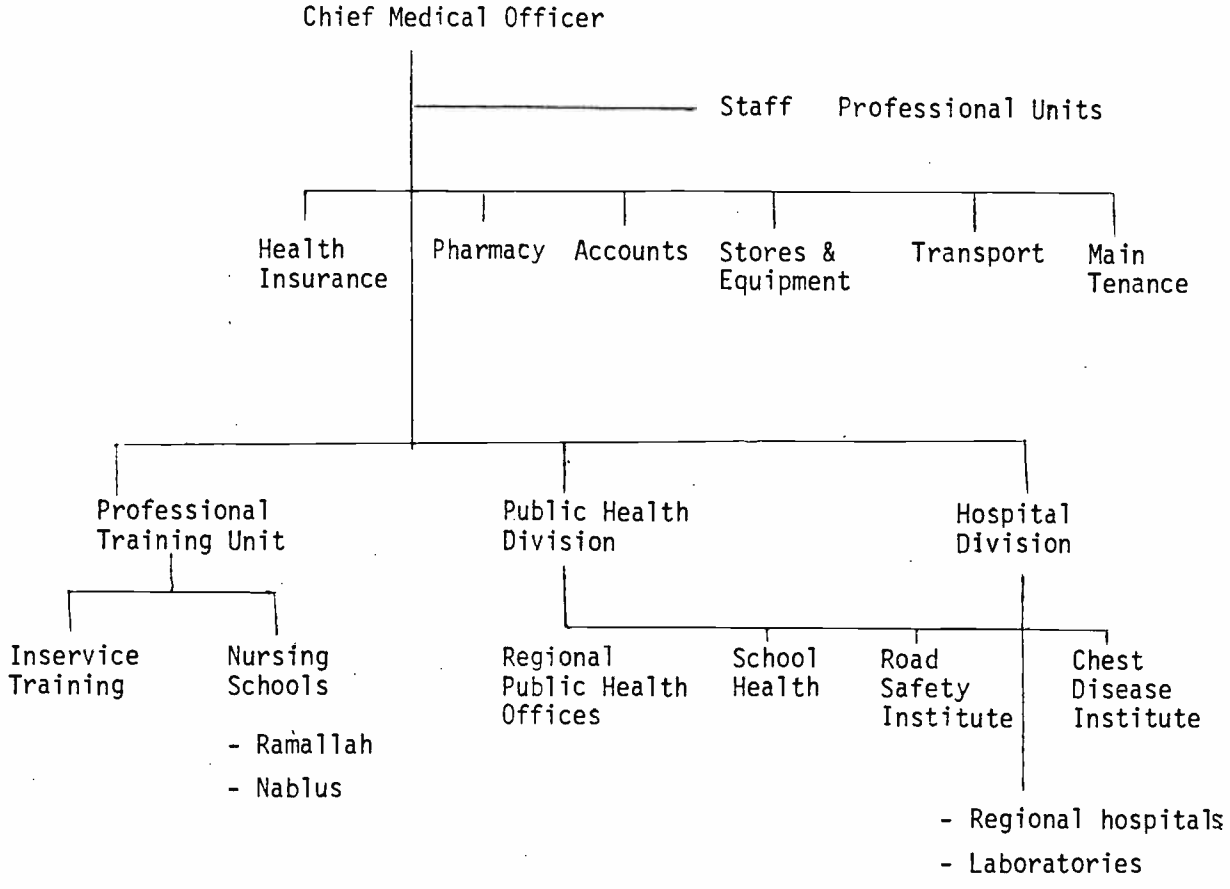
The government health services in Judaea-Samaria are responsible for supervision of public health and provide preventive and curative services to a large proportion of the population. Other providers of health care include UNRWA, voluntary agencies and private services.

Government health services are structured according to the table of organization set out in the following figure. The Chief Medical Officer is responsible administratively to the Military Government, and professionally to the Director General of the Ministry of Health. The operational divisions (i.e. Professional Training, Public Health and Hospitals) are directed by local professionals. Laboratories have recently been transferred to the Hospitals Division (Figure VI).

FIGURE VI. GOVERNMENT HEALTH SERVICE

JUDAEA-SAMARIA

TABLE OF ORGANIZATION 1980



Health planning

In 1970, a health plan for Judaea and Samaria was developed by local health personnel under the direction of the late Dr Daniel Pridan, Chief Medical Officer for the territory. This plan spelled out important deficiencies in the health situation in the territory, and recommended attention to be given to a number of specific developments in health services facilities and health manpower over a period of years. This plan served as a guide to the government health service, particularly in development of maternal and child health services, immunization, ambulatory care, sanitation, hospital services, health insurance and regional rural health centres. As a result, a programme was commenced emphasizing development of the four basic departments in the regional hospitals: internal medicine, general surgery, obstetrics and paediatrics, with further specialty departments added subsequently. Rural and regional health centres were developed and basic public health programming expanded vigorously.

In 1978, a committee of senior officials of the Judaea-Samaria government health service, and the Israel Ministry of Health reviewed the health situation of Judaea-Samaria, to recommend future priorities and organization of services. This committee, under the chairmanship of Professor B. Modan, now Director General of the Israel Ministry of Health, included the Director of Public Health of Judaea and Samaria, the Director of the Public Health Service of Israel, the Director of Hospital Services in Judaea-Samaria and other local health officials.

The plan developed by the Modan Committee recommended integration of preventive and curative services, with decentralization of administrative responsibility for the services. The establishment of a Health Council to undertake responsibility for planning and operation of government health services is recommended in order to increase local responsibility for the health services.

A detailed programme of further development of sanitation, school health, immunization, health insurance, primary care, health manpower training programmes and hospital specialty services was outlined to provide a basis for future developments. Future projects under planning include Oral Rehydration (ORS), Rheumatic Fever control and High Risk Pregnancy identification and follow-up.

DEVELOPMENT OF HEALTH SERVICES

JUDAEA-SAMARIA

STAGE ONE

Environmental health

Water	- Since 1967 over 60 villages were connected to central water supply systems. Expansions of water supply systems - ongoing process. Monetary and chlorination of drinking water is practised on preventive basis.
Sewage	- Sewage collection systems and treatment plants have been extended - under construction in most towns.
Solid waste disposal	- Solid waste disposal and collection have been altered and modernized.
Malaria control	- In 1970 the area was declared malaria-free by WHO and under surveillance.
Leishmaniasis	- under surveillance.
Food quality control	- ongoing process.

Preventive medicine

Vaccination	- coverage over 80%.
Mother and child services	- MCH centres increased from 23 in 1968 to 79 in 1980 - ongoing process.
Health education	- developed and expanded.

Primary care

General medical clinics	- increased from 89 in 1968 to 143 in 1980.
General hospital services	- improved and expanded.
Mental health services	- hospitalization services to all population. ambulatory and consultative services expanded during 1971-1981.

STAGE TWO - in process

Integration of hospitals and public health services.

Extension of public health services.

Extension of functions of the central clinics to level of district health centres.

Developing of general clinics into family and community health clinics (primary health care, MCH services, immunization services, health services for the elderly, including home care).

Extension of sanitation services - drinking water, food, garbage, disposal, and sewage disposal.

Development and extension of the three original medical centres: Nablus (north), Ramallah (Centre), Hebron (South).

Improvement of infrastructure and level of maintenance in all hospitals.

Training programmes for the health services staff according to the various professions.

Extension of number of those insured in voluntary health insurance.

Hospital facilities and services

Hospital resources

Hospital services for Judaea-Samaria are based on seven hospital districts, each of which is served by a general hospital with the four basic departments of medicine, surgery, obstetrics/gynaecology and paediatrics. Nablus district is now served by two general hospitals. Two of these district hospitals (Nablus and Ramallah) also serve as regional hospitals, and provide the southern and northern regions respectively with other specialty services as outlined in Table XI. The psychiatric hospital in Bethlehem serves the entire region, as well as the Gaza-Sinai population.

Emphasis has been placed on increasing the range and improving the quality of basic hospital services, by expanding government hospitals and improving basic infrastructure, including "hotel" services and supportive medical services, such as laboratory and radiographic units.

In the first stage ensuring the four basic services headed by specialists in all district hospitals was the basic goal. Following achievement of this goal, a second stage (1972 to present) to develop further specialized units both for the regional and district hospitals was entered upon; and is continuing at present. All hospital projects were carried out with full coordination and cooperation of local medical staff, which was being expanded in number and specialty training during this period of time (Table XII). Much effort and expenditure has gone into upgrading of the basic infrastructure services of hospitals.

Medical staff has been increased in all governmental hospitals in keeping with the added specialty services. Considerable upgrading in overall medical staffing has also occurred as a result of the return home of qualified specialists who had gone abroad for specialty training. At present approximately half of the hospital medical staff are physicians who have gone abroad for specialty training. Approximately half of the hospital medical staff are physicians who have returned to Judaea-Samaria since 1967 after carrying out post-graduate training in the United States, Western Europe, Eastern Europe, Australia or Arab countries. In the past two years alone, thirty-one newly returned physicians have entered government service making up 18% of the total present medical staff of government services in Judaea-Samaria.

Public voluntary hospitals have also advanced. Caritas Hospital in Bethlehem is a newly rebuilt paediatric hospital of 73 beds, supplied with modern equipment and staff with help from the Caritas organization of Germany and Switzerland. This hospital has a premature newborn unit which serves the whole region; more difficult cases are sent to Hadassah Hospital, Mt. Scopus. A new obstetric hospital is now being planned in Beit Sahour by local charitable women's organizations. Other public voluntary hospitals sponsored by Christian organizations in the Bethlehem area include the French Hospital (a general hospital of 60 beds), and the Mt. David Hospital for orthopaedics which is now building a new hospital facility (an increase from 45 to 100 beds). In the Nablus area, with its predominantly Moslem population - two public voluntary general hospitals have been operating for many years, sponsored by local women's organizations, Ittichad Hospital and the Evangelical Arabic Hospital.

In 1968, three blood banks were functioning a central blood bank in Jerusalem and two blood banks in Hebron and Nablus hospitals. Since then, three more blood banks were opened in Ramallah (1970), Jenin (1972) and Tulkarem hospitals (1973). Another blood bank has been built in Beit Jallah hospital. Another blood bank has been opened in the Ittichad private hospital in Nablus (1977). With the completion of development of blood banks in hospitals in all districts, the central blood bank in Jerusalem was closed.

The oncology service was established in 1978 at Beit Jallah Hospital in cooperation with Assaf Harofeh Hospital in Israel, under the direction of Dr Yoav Horn. This service provides modern diagnostic treatment and referral services, with chemotherapy provided locally, and radiotherapy carried out by the same team in a specialized cancer centre. The service has registered some 700 new patients, with follow-up services, including chemotherapy and radiotherapy sessions, totalling nearly five thousand.

A breast cancer screening clinic was recently opened in Beit Jallah Hospital. Negotiations continue toward establishing a comprehensive cancer service at Baraka Hospital near Hebron. A satellite cancer clinic will shortly be opened in Rafidia Hospital, Nablus.

Referrals are received from all 17 hospitals in the region, governmental and nongovernmental. Patients requiring further care are treated in Assaf Harafeh Hospital, and cases requiring radiotherapy are treated in Tel Hashomer Hospital, where overnight stay in a hostel is arranged during treatment. The services are free and the costs are borne either by the health insurance plan, or by the military government of Judaea-Samaria. Several scientific papers have been accepted for publication in international journals on this experience.

A similar cooperative arrangement was established in 1979 with the opening of the new ten bed ophthalmology department in Hebron Hospital, including consultation and surgery, in conjunction with staff of Assaf Harofeh Hospital in Israel. This unit serves the whole of Judaea-Samaria.

Other recent developments include an intensive care unit in Rafidia Hospital Nablus, physiotherapy in Beit Jallah Hospital, new sterile supply centre in Nablus Rafidia Hospital and new dialysis equipment in Rafidia.

TABLE XXXIV

GOVERNMENT HOSPITAL FACILITIES

JUDAEA-SAMARIA

1980

Hospital	No. beds	Services before 1967	Services added since 1967	Comments
Rafidia Hospital	120	-	Surgery 1976 Orthopaedics 1976 Ob/Gyn 1976 Coronary Care Unit 1977	The Rafidia Hospital was opened in 1976 resulting in improved services in Nablus and region. Medical staff comprises twenty physicians. A satellite cancer clinic will be opened in 1981.
Jenin Hospital	55	General Surgery	Ob/Gyn 1971 Paediatrics 1972 Medicine 1972	Medical staff increased from four to eight-and-a-half. Broadening of services plus improved equipment/facilities improved level of district hospital function.
Tulkarem Hospital	60	General Surgery	Medicine Ob/Gyn 1972 Paediatrics 1975	Medical staff increased from two to seven-and-a-half. Renovation of operating suite completion in 1979 - includes two theatres central sterilization, recovery room and doctors room. The operating rooms were re-equipped.
Beit Jallah Hospital	60	Surgery	Medicine 1974 Orthopaedics 1976 Neurosurgery 1977 OB 1978 Oncology 1978 Physiotherapy 1979 Allergology 1975	Medical staff increased from two to nine. The oncological department serves the whole of Judaea-Samaria. A breast cancer screening clinic was opened in 1981.
Hebron Hospital	100	Surgery	Ob/Gyn 1970 Paediatrics 1973	Medical staff increased from three to twelve. The ophthalmology department consists of 10 beds and serves all of Judaea-Samaria.
Jericho Hospital	48	General	Orthopaedics 1972-1976 Physiotherapy & Rehab. Medicine 1973 Obstetrics 1973 Paediatrics 1973 Surgery 1973	Medical staff increased from two to six. The orthopaedic department was converted in 1976 into physiotherapy-rehabilitation department.
Bethlehem Psychiatric Hospital	320	Psychiatric		Outpatient clinics increased from one to three in 1975. Medical staff increased from four to ten - kitchen was renovated in 1979.
Ramallah Hospital	124	Medicine Surgery	Paediatrics 1970 Ob/Gyn 1973 Renal Dialysis 1973 Vascular Surgery 1975 Gastroenterology 1976 Coronary Care Unit 1977 ENT 1979 Histopathology 1979 X-ray 1979 Premature Care Unit 1980	General hospital for southern region plus specialty referral hospital for various services. Medical staff increased from five to twenty-two in 1980. A new X-ray facility was opened in 1979. New construction of additional floor is under way to provide a new surgical department including surgical intensive care, three operating rooms, central supply and recovery room.
Old Nablus Hospital	83	Surgery Medicine Ob/Gyn ENT	Paediatrics 1973 Renal Dialysis	Medical staff increased from seven to nine.

Utilization of hospital services

Hospital utilization by residents has increased both numerically and qualitatively in local hospital facilities as well as in Israeli hospitals. The number of hospitals including public voluntary, governmental and private hospitals, increased from 14 to 17; hospital beds increased from 1281 to 1406 in 1979, hospital discharges and days of care increased both in absolute terms, and in rates per 1000 population (from 543 to 598/1000 population in 1979). Surgical operations performed in local hospitals increased again, both in absolute terms (by 56% between 1972 and 1979), and in rates per 10 000 population (from 157/10 000 to 209/10 000 population in 1979) (see Table XXXV).

TABLE XXXV. HOSPITAL AND SURGICAL UTILIZATION

JUDAEA-SAMARIA

1972-1979

	1972	1973	1974	1975	1976	1977	1978	1979
Hospitals (Total)*	14	16	16	16	17	17	17	17
Total Hospital Beds	1282	1409	1393	1344	1375	1328	1334	1406
No. of Hospital Discharges (000's)	43.0	43.4	46.6	50.1	52.6	52.5	59.2	63.9
Days of care (000's)	341.6	359.4	381.8	395.9	398.2	383.1	405.5	417.8
% Occupancy	72.1	70.8	76.0	80.5	80.6	77.4	81.6	81.9
Population (000's)	629.0	646.2	661.6	665.4	670.9	681.2	690.1	698.9
Discharges/1000 Population (general hospitals)	68.3	67.1	70.4	75.3	78.3	77.1	85.7	91.4
Days of care per 1000 Population (general hospitals)	543.1	556.2	577.1	595.0	593.5	562.3	587.6	597.8
Average length of stay (general hospitals)	7.9	8.2	8.1	7.8	7.6	7.3	6.8	6.5
Surgical operations (000's)	9.9	9.4	11.0	12.4	13.1	13.8	13.4	14.6
Surgical operations per 1000 population	15.7	14.5	16.6	18.2	19.5	20.3	19.4	20.9

* Includes general, maternity and psychiatric hospitals.

Tables XXXV and XXXVI give some overall comparisons between 1968 and 1979, showing an expansion in total bed supply in West Bank hospital beds, professional staffing per unit, hospital admissions, and days of care per thousand population, surgical procedures and maternity usage of hospitals.

With increasing occupancy rates, declining average length of stay, the utilization rate of hospital care has increased from 543 to 598 days per thousand population - rates in keeping with the relatively young population by age distribution, and the growing availability of preventive and ambulatory care service. Surgical procedures increased from 157 to 209 per thousand population from 1972 to 1978.

TABLE XXXVI. GENERAL HOSPITAL SERVICE INDICATORS

JUDAEA-SAMARIA

1968, 1977, 1978 and 1979

	1968	1977	1978	1979
Population (thousands)	581.7	681.0	690.1	698.9
No. of Government Hospitals	8	8	8	9
No. of Beds (general)	553	618	618	650
Non-Governmental Hospitals	8	8	8	8
No. of Beds (general)	328	390	436	436
Total No. of General Hospital Beds	881	1008	1054	1086
No. of General Beds/1000 Population	1.5	1.48	1.53	1.55
Medical, Nursing and Para-medical staff/hospital bed (government)	0.36	0.64	0.72	0.69
Administrative and support personnel/ hospital bed	0.27	0.36	0.39	0.37
Occupancy Rate - government hospitals	54.7%	56.2	70.4	73.3
Occupancy Rate - non-government hosp.	69.6%	65.5	65.0	65.6
% of Births Occurring in Hospitals	12.9%	35.4	40.3	44.5

General hospital bed supply has grown to keep pace with population growth, while utilization and occupancy rates have increased to 73% for governmental and 66% for non-governmental hospitals. Hospital deliveries have increased from 12.9% in 1968 to 40.3% in 1978, and 44.5% in 1979. Increased hospital utilization has been related to the development of the health insurance plan which now covers 40% of the population of Judaea-Samaria.

Treatment of West Bank residents in specialty units in Israeli hospitals increased from 30 patients in 1968 to 1088 in 1978 to 1444 in 1979. From 1967 to the end of 1979, 10 598 patients from Judaea and Samaria were hospitalized in Israeli hospitals, mostly paid for by the military government. Referrals and hospitalizations are primarily in cardiovascular, radiotherapy, neurosurgery, renal transplantation, ophthalmic and ENT surgery services.

In summary, hospital services and utilization have increased quantitatively and qualitatively for the residents of Judaea-Samaria over the years since 1967, with an increasing array of basic and specialty services provided locally by local staff, as well as with an increasing use of referral services to teaching hospitals within Israel.

Health Insurance

Health insurance for employees (and their families) of the administration was established in 1973. This provides comprehensive medical, hospital and prescription drug coverage, including inpatient, outpatient, referred services, laboratory tests and radiologic services. In February 1978, this plan was extended to open enrolment of family groups for all residents on a voluntary basis.

Insurance premiums for the health plan remain very low; in 1980 approximately 34-40 shekels depending on family situation ($4-5), per family per month. Benefits are comprehensive, and include hospital and specialist care both in local and in Israeli hospitals.

Approximately 280,000 persons, or 40% of the population of Judaea and Samaria are now insured in this health plan. This has already begun to increase hospital utilization, through increased occupancy rates (from 56.2% in 1977 to 73.3% in 1979), with a rise in hospital days of care by approximately 30%. It has also increased utilization of ambulatory care services.

The health insurance plan is considered to be very important to future development of health services in Judaea-Samaria by providing health care on a prepaid basis with participation on a voluntary basis. Further expansion of the plan will require time and positive experience by the population in their health care services.

Public Health

Primary care

Advances in public health in Judaea-Samaria have been substantial since 1967. The development of basic infectious disease control services especially in environmental sanitation, and immunization practices, effected major changes in the infectious disease pattern of the region. The development of maternal and child health services has also had a major impact on the health situation in the area. A network of primary care and maternal and child health services has been established throughout the region as a major focus in public health, particularly during the last few years. The public health service of Judaea-Samaria is organized into six districts, and a personal care programme based on rural and urban 141 clinics and health centres, 58 maternal and child health stations (MCH), chest disease clinics, a road safety institute, school health services, sanitation services, and immunization via mobile clinics in settlements not provided with clinics. Table XXXVI lists general medical clinics and maternal and child health stations in each district. In 1968, there were 89 general medical clinics - in 1980 there were 141. MCH centres have increased from 23 to 57 and 74 in 1980. Expansion of MCH centres has mainly been based upon adding MCH services in existing primary care medical clinics.

All general medical clinics are open from 8.00 am until 2.00 pm. Each clinic is staffed by a local nurse (registered or practical) who resides in or near the clinic and is available on 24 hour call for emergencies. Clinics are visited by a physician - mostly twice a week, and depending on the size of the population up to every day. The clinics receive any person requesting medical care. Those without health insurance pay a nominal fee for the service; those with health insurance receive care without direct payment.

Maternal and child health

In the area of maternal and child health the government health programme has achieved the following goals:

(a) establishing a network of MCH centres in urban and rural areas throughout the region;

(b) now most MCH centres are combined health centres providing preventive and curative services;

(c) increased hospital deliveries;

(d) improved hospital facilities for deliveries and management of newborns; separate delivery rooms in each hospital with a minimum of three midwives in each department;

TABLE XXXVII. MEDICAL AND MATERNAL & CHILD HEALTH

GOVERNMENT AND UNRWA

JUDAEA-SAMARIA

1980

District	District Population (000's)	No. of Government General Medical Clinics	Number of Government MCH Centres	UNRWA	Total
Nablus	127.9	23	14	3	40
Tulkarem	120.9	33	22	2	57
Jenin	107.6	21	8	2	31
Hebron	140.5	30	7	2	39
Bethlehem & Jericho	88.1	9	8	3	20
Ramallah	113.3	25	15	4	44
TOTAL	690.1	698.9	74	16	231

(e) increased and improved manpower; midwives, physicians, public health nurses and others;

(f) expansion of immunization programme;

(g) nutrition and general health education;

(h) development of school health service;

(i) development of a control programme for diarrhoeal diseases.

MCH services have been expanded through establishing 51 new centres during the past 13 years, increasing the total from 23 to 74 in 1980. In the past three years alone 40 new MCH centres were opened, of which 16 were opened in 1980 (see Table XXXVIII).

This expansion of MCH service availability has led to an attendance and utilization of prenatal care, particularly in the villages. The MCH centres are staffed by registered midwives or nurses with training in midwifery. Each clinic is visited by a doctor in the public health service at least once a week. The centres are open from 8.00 am to 2.00 pm daily. UNRWA MCH centres serve the refugee population still resident in camps supervised by UNRWA.

TABLE XXXVIII. MOTHER AND CHILD HEALTH CENTRES

GOVERNMENT AND UNRWA

JUDAEA AND SAMARIA

1967-1980

	1967	Gov't Centres Opened in 1967-1977	Gov't Centres Opened in 1977-1980	Total Gov't MCH Centres 1980	Total UNRWA MCH Centres 1980
Nablus	2	2	9	14	3
Tulkarem	5	3	4	22	2
Jenin	4	3	-	8	2
Hebron	2	2	5	7	2
Bethlehem & Jericho	5	-	2	8	3
Ramallah	6	-	4	15	4
TOTAL	24	10	24	74	16

Each pregnant woman presenting is registered and followed during and after pregnancy free of charge. A medical record of prenatal care is completed on each case. Laboratory tests (Rh, blood type, haemoglobin and complete urinalysis) are performed after the first visit at the district laboratory. Laboratories for this purpose are available in each district, located in Ramallah, Nablus, Tulkarem, Salfit, Jenin, Jericho, Bethlehem and Hebron.

The pregnant woman is seen in the MCH centre each month until the seventh month, bi-weekly in the 7th and 8th months and weekly in the 9th month. Weight, BP, heart, breasts, urine for protein, foetalheart and fundal height are all checked and recorded at each visit. Iron and Folic Acid is given free for anaemia of pregnancy. A programme for identification of and intensive care for high risk pregnancies will commence during 1981/82.

In the villages, some 250 traditional midwives ("Dais") provide prenatal and home delivery services, which are reported to the district health office. Study days and medical instruction are arranged by the district health offices in order to improve their knowledge and practice of hygiene, prenatal care, high risk identification and referral as well as reporting of births and deaths. Dais are licensed annually by the district public health office.

Medical records based on the family registered in the MCH centres provide a basis for follow-up of the mother, and the children, in regard to immunization and well child care.

The MCH centres examine the infant monthly during the first year of life, twice a year during the second year and once before the end of the third year. The child is seen by a physician on his first visit and at the end of the first year, or during the year as needed. The MCH midwife or nurse examines the child for growth and development which is recorded on the child's chart. Stress is placed on nutrition and child care advice to the mother during these visits. Home visits for all registered families in need are arranged by the midwife or nurse.

TABLE XXXIX. VITAL STATISTICS

MATERNAL AND CHILD HEALTH, JUDAEA-SAMARIA

1968-1979

	1968	1970	1972	1974	1976	1978	1979
Births (000's)	25.6	26.5	28.8	29.8	31.7	31.4	31.7
Population (000's)	584.1	603.9	629.0	661.6	670.9	690.1	699.6
Crude Birth Rate	44.1	43.8	45.8	45.1	47.4	45.5	45.5
% Births in Hospital	13.5%	20.7	26.5	29.0	32.7	40.3	44.5
Neonatal Deaths	197	173	245	236	257	335	294
Postneonatal Deaths	663	573	817	707	618	593	542
Total Infant Deaths	860	746	1062	943	875	928	836
Neonatal Mortality Rate	7.7	6.5	8.5	7.8	8.2	10.6	9.3
Postneonatal Mortality Rate	26.0	21.6	28.4	23.0	19.8	18.9	17.1
Infant Mortality Rate	33.6	28.1	37.0	30.7	28.1	29.6	26.4

Note: 1. 1979 data preliminary.

2. Neonatal, postneonatal and infant death rates are per thousand live births. Crude birth rate is births per thousand population.

3. Reporting of infant deaths has increased in relation to increased hospital births and increased rural health services. Live born infants are registered for birth certificates, which initiates follow-up by the local MCH centre, or by immunization teams which visit each village. Some under-reporting of prenatal deaths during home deliveries still occurs.

4. Births in hospital includes both local and Israeli hospitals.

Hospital deliveries have increased from 13.5% in 1968 to over 44.5% of all deliveries in 1979. All deliveries in hospital are free of charge, including for those not covered by health insurance. The still low rate of hospital delivery, and early self discharge from hospital is the result of traditional acceptance of home delivery and heavy home responsibility for mothers of large families.

Hospital care for delivery and care of the newborn have been upgraded by establishing the new school for midwives in Nablus, opened in 1970, which has graduated some 60 qualified midwives (6 courses have been completed each of 24 months' duration). Hospital obstetrical departments are staffed by at least three qualified midwives and are under the supervision of obstetricians.

Increased medical nursing personnel in the hospitals (and levels of training) along with improved equipment, including delivery suites, respirators and incubators have also contributed to improved conditions for delivery and infancy care in the hospitals. Planning is under way for establishment of a neonatal special care unit at Ramallah Hospital. Caritas Hospital in Bethlehem now operates a neonatal Special Care unit. Intensive care neonatal care cases are referred to Hadassah Hospital in Jerusalem (up to 1978 - Ein Kerem, and since 1978 to Mt. Scopus).

Some 55% of deliveries still take place at home under midwife supervision; birth weights are not available for analysis, and an under-reporting of perinatal deaths, especially late stillbirths, may occur. Reporting of infant deaths, therefore, remains incomplete, however, as the proportion of deliveries occurring in hospitals increases, and as rural maternal health services expand, more complete overall reporting is occurring.

Acceptance by the population of the need for prenatal care, and hospital delivery remains a problem, which along with the high fertility and birth rates, results in continuing infant and maternal health problems. Improvements in services and outcomes have been achieved, but much remains to be done. More health education is needed, stressing spacing of pregnancies, the importance of early and complete prenatal care, the need for hospital delivery and emphasizing breast feeding, or good alternative infant feeding practices.

Fertility and birth rates of the population of Judaea-Samaria continue to be among the highest in the world. The availability of modern standards of prenatal and well child care have favourably influenced morbidity and mortality patterns. Maternal mortality has declined to very low levels. Infant mortality has declined over the years as indicated in Table XVIII as more deliveries are taking place in hospital, and as supervision of village midwife care has improved. Some under-reporting of early perinatal deaths may still be occurring during home deliveries, although the village midwives are reminded of the importance of complete reporting. Postneonatal death reporting is nearly complete since all infants registered are followed up by MCH staff.

Expanded immunization programme

The focus in care of infants has been on an expanded programme of immunization and in assessment of growth and development. More of the children are being reached in the well child care programme and the range of the immunizing agents included has been expanded. The present programme of immunization is as set out in the following Table XL.

TABLE XL. EXPANDED IMMUNIZATION PROGRAMME

JUDAEA-SAMARIA, 1981

Disease/agent	Ages given	Comments
(1) Smallpox	2-3 months	Introduced before 1967
(2) Diphtheria Pertussis Tetanus (DPT)	3, 4-1/2, 6 and 12 months	Introduced before 1967
(3) Triple oral polio vaccine (TOPV)	3, 4-1/2, 6 and 12 months	Introduced before 1967
(4) Measles	12-14 months	Introduced in 1969
(5) BCG	School aged children	Introduced in 1978 at school age. Tuberculin testing precedes the BCG. Ages covered in 1979 - 6, 7, 8 and 9th grades, and grades 2, 3, 4 and 5 in 1980. Routine Mantoux plus BCG was established in grade 1 in 1980. All Mantoux positives are investigated, and suspect cases treated and followed.
(6) Salk vaccine	Infants age 3 and 4-1/2 months	Introduced in 1978; given with DPT.
(7) Diphtheria/tetanus	Children grade II (aged 7)	Introduced in 1980
(8) Rubella	Girls in grade VI (aged 12)	Introduced in 1981

Coverage by immunization through the MCH centres has been increased particularly over the past three years because of the opening of 40 new centres, and by the supplementary immunization programmes carried out by UNRWA, and by field visits in small villages by public health personnel.

Table XL indicates immunization coverage (including governmental and UNRWA figures between the years 1970 and 1978. Triple vaccine (DPT and since 1978 with killed polio vaccine for 2 doses) has increased from 52% in 1970 to 88% in 1978. Measles vaccination (at age 17 months) has gained less acceptance, fluctuating from 70% in 1970 to 40% in 1972 and up to 60% in 1978. Smallpox coverage (at age 2 months) increased from 67% in 1972 to 88% in 1978.

The immunization programme has been expanded to include Measles (1969), Rubella (school aged children in 1980), BCG (1979, after Mantoux testing, children in school grades 6, 7, 8 and 9, and in 1980 grades 2, 3, 4, 5 and 6 were immunized with BCG). Measles coverage has been gradually increasing, with attendant reduction in incidence of the disease and morbidity.

BCG was introduced into the immunization programme following epidemiologic assessment of prevalence of Tuberculosis through radiography, tuberculin testing, with follow-up chest X-rays and review of tuberculosis cases presenting. While the overall incidence of TB is thought to be low, the advisability of routine BCG protection for Mantoux negatives was considered sufficiently important to warrant a special campaign in 1979 and 1980 to cover all school age children, and then to maintain as a routine BCG immunization of Mantoux negative children in grade 1.

TABLE XLI. IMMUNIZATION COVERAGE

JUDAEA AND SAMARIA

1970-1979

	1970		1974		1976		1978		1979	
	No. (000's)	%	No. (000's)	%	No. (000's)	%	No. (000's)	%	No. (000's)	%
DPT	17.2	65.0	21.1	70.8	27.8	87.6	21.6	71.0[a]	28 120	88.7
TOPV	22.6	86.4	23.1	77.3	24.2	76.1	26.5	26.5	29 372	92.6
Salk vaccine	-	-	-	-	-	-	7.2[b]	-	28 180	88.9
Smallpox	(-)	(-)	19.8	66.3	24.8	78.1	30.9	100.0	27 093[d]	-
Measles	21.6	81.7	17.1	57.1	20.7	65.2	22.1	72.4	19 664[e]	62.0

Note: (a) Data based on coverage at six months of age.
(b) Salk vaccine which is included in the quadruple (DPT) vaccine was introduced to children born in February 1978 and onward, i.e., vaccination actually started in April 1978. During the switchover from DPT to DPT Polio various problems resulted in a lower level of coverage that has been corrected during 1979.
(c) In addition to the routine vaccinations presented above two mass vaccination campaigns with Type I oral polio vaccine since Type I was the predominant type in polio cases in the area. In 1972, 40 000 children were covered, and in 1978, 50 000 children were covered by the special campaign.

(d) Smallpox vaccination stopped in September 1980, in accordance with WHO recommendations.

(e) Measles vaccination stopped during 1980 following two suspected reactions to the vaccinations. Following full investigation, the vaccine was rereleased for use with no further complications. A catch up campaign is currently under way.

In February 1978, based on advice and recommendations by the visiting WHO consultant Professor Joseph Menick of the University of Houston in Texas, the government health services in Judaea-Samaria and Gaza-Sinai, began the implementation of a new polio control programme. Up to that time, the polio control programme was based on use of Triple Oral Polio Vaccine (TOPV) for infants at ages 3, 4-1/2, 6 and 12 months. A change was recommended because of a continuance of polio cases even among immunized children, which were felt to be due to "interference" of other enteroviruses with uptake of the polio virus and effective immunization.

In February 1978, the decision to introduce a new and redoubled effort to eliminate polio was taken and a combined programme using oral polio vaccine (TOPV) with killed polio vaccine was undertaken. An initial mass campaign was carried out to immunize all children up to age two years with Type I oral polio in addition to the routine four doses of TOPV given to infants up to age one, because polio cases were primarily of Type I. This mass campaign reached a large proportion of children during a two week period with cooperation of government agencies, government health personnel, UNRWA and others. At the same time, in place of triple vaccine, Diphtheria, Pertussis and Tetanus (DPT), a quadruple vaccine (DPTP) was introduced as a routine well child care measure and continued up to the present time.

A reduction in the number of polio cases from 35 in 1976 to 17 in 1977, 13 in 1978, 3 in 1979 and 20 (suspect) in 1980 (see Table XL). In spite of regular introduction of wild polio virus via travellers from neighbouring countries where the disease is still widespread, the combined oral vaccine is seen to flood the environment and provide large scale immunity, while the killed vaccine increases the chances of full immunity early in infancy because of its avoidance of the interference factor of other enteroviruses prevalent in the area. The combination of 5 feedings of TOPV plus two inoculations of killed vaccine at 3-1/2 and 4-1/2 months, seems to overcome this interference, and establishes cellular immunity.

TABLE XLII. CASES OF PARALYTIC POLIO

JUDAEA-SAMARIA

1970-1980

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Cases	22	32	23	9	14	8	29	21	35	17	13	3	20*

* Suspected and under investigation.

Immunization coverage although improving in general remains unsatisfactory because of a continuing lack of awareness in the population as to the importance of vaccination. Measles vaccine in particular has not gained full acceptance, and some concern regarding reactions to measles vaccine reduced the participation in 1978 and 1979.

A recent innovation to improve coverage of well child care has been introduced whereby the public health district sanitarian receives from the registry of newborns in the public health offices, a listing of newborns by residence, and informs the local MCH centre. For newborns not under care during the pregancy, an invitation to attend the MCH centre is forwarded. If the mother does not bring the child, the MCH midwife or nurse does a home visit

and attempts to educate the mother as to the importance of supervision in the MCH centre and immunization. Legal action is undertaken if necessary, under the public health law of Jordan For newborns not attending MCH centres and who live in small remote villages the district sanitarian, who visits the village also for other reasons, gives immunization. Newborns, particularly in the cities, under care of private doctors, do not have immunization recorded. Families under care of UNRWA are looked after in UNRWA MCH centres, although they have full access to all government health care facilities. Part of the immunization material used in these centres is provided by the government, and routine reporting on immunization is provided.

Communicable disease control

Major progress has been achieved in communicable disease control in recent years. This has been based on improved sanitation, investigation and epidemiologic reporting systems.

The area was endemic for malaria where the Anopheles mosquito was prevalent, but malaria control and surveillance activities succeeded so that the territory, except for the Jordan Valley, was declared malaria-free (by WHO in 1970). Mosquito abatement activities continue, along with surveillance activities regarding vectors, and investigation of suspected human malaria cases. All new cases in recent years have been imported cases.

Cholera returned to the Middle East in recent years with a major outbreak in 1970 and minor ones in subsequent years. In 1970, 66 cases were detected, with the sources traced to transfer from neighbouring countries. Special attention was given to the problem of disease transmission through use of untreated sewage water for vegetable irrigation, a widespread practice until recent years. This practice has in large measure been stopped by order of the military government, by destruction of crops irrigated with sewage water, and permitting use of sewage water for irrigation only of selected field and orchard crops. As a result during the 1971, 1972, 1976 and 1977 cholera outbreaks in Jordan, Syria and other neighbouring countries there were very few cases in the region (1971 - one case, 1972 - seven cases, 1976 - no cases, 1977 - one case, 1978 - no cases, 1979 - eight cases). These are generally cases traced to sources or contacts outside the area. No immunizations were carried out during these outbreaks, and control by surveillance, epidemiologic and environmental sanitation techniques proved to be successful.

Leishmaniasis exists primarily in the Jordan Valley and the Salfit area. In the Jordan Valley, the vector control focused on spraying of the sandfly (Phlebotomus). In the Salfit area, epidemiologic investigation reveals that the disease is endemic even though the geographic conditions are not ideal. A team involving sanitarians and hospital based (Hadassah) skin specialists have carried out surveillance, case finding and vector control activities in the area.

The Hebron area has been considered endemic for tuberculosis and three tuberculosis centres have served the area for many years. The Hebron tuberculosis and chest disease centre was renovated and reorganized in 1979. Tuberculosis control has in the past focused on case finding and treatment. In 1977, an epidemiologic survey in Hebron area was carried out based on tuberculin testing, microfilm X-rays and follow-up X-rays on suspect cases in relatively high risk populations (e.g. Bedouins, ceramic and glass industry workers). In 1978 a plan to carry out BCG immunization of schoolchildren was adopted, and in 1979, all children in grades 6, 7, 8 and 9 were Mantoux tested (over 90% coverage) and negatives given BCG. Mantoux positives (1.6% of those examined) were sent to the local tuberculosis centres for further assessment. Several active pulmonary and extra-pulmonary tuberculosis cases were identified and were placed under treatment and follow-up. The BCG campaign on schoolchildren in 1979 examined 54 957 children (94% of the children in these grades) of whom 98.4% were negative and were immunized. Of the Mantoux positives, follow-up investigation revealed 10 new cases of pulmonary tuberculosis, 3 new cases of extra-pulmonary tuberculosis, 31 cases of inactive tuberculosis and 5 suspected cases.

In 1980, schoolchildren in grades 2, 3, 4, 5 and 6 are being Mantoux tested and followed-up similarly. A routine Mantoux testing and BCG programme for grade I students started in 1980. Clinical health services have been alerted for case finding and referral of new cases of TB. The number of new cases discovered in recent years is shown in Table XLIII.

TABLE XLIII. NEW TUBERCULOSIS CASES DIAGNOSED

VARIOUS YEARS

JUDAEA-SAMARIA

1970-1979

New Cases	1970	1972	1974	1976	1978	1979
Pulmonary	154	166	129	121	127	132
Extra-Pulmonary	117	42	86	9	14	13
Total	271	208	215	130	141	145

The tuberculosis control programme is therefore based on immunization of school aged children along with increased attention to case finding. The morbidity of tuberculosis appears to be declining.

An outbreak of diphtheria occurred in the town of Salfit in 1979 with six cases confirmed by laboratory diagnosis. All schoolchildren in grade I in the area were given a DT booster, and DT was then added to the routine programme as a booster for grade I children.

Rheumatic heart disease, an important but declining component of the overall cardiovascular disease picture, justified a secondary preventive programme being introduced, as recommended by Dr Z. Pisa, Chief of Cardiovascular Diseases of WHO. Detailed planning is under way to introduce this programme during 1981/82. Gastroenteric disease still remains a public health problem. Improved water treatment and distribution, sewage collection treatment, garbage collection and disposal as well as improved public health supervision of food, public eating places all have contributed to prevention of gastroenteric disease. In the event of gastroenteric infections disease outbreaks, active investigation takes place so as to identify and eliminate sources of contamination. Recent emphasis on reporting of communicable disease by local physicians and epidemiologic investigation of outbreaks is developing a stronger basis for assessing the extent of gastroenteric infection.

Gastroenteritis among infants remains a special problem. Preparations are under way to utilize oral rehydration as a preventive measure for serious dehydration based on WHO reccomendations. Oral rehydramixtures will be made widely available and highly publicized in order to initiate earliest possible effective measures against dehydration by the MCH centres, clinics, hospitals and other locations. During 1980 a pilot project was carried out in Ramallah district, and during 1981/82 a programme will be introduced to provide ORS through all health centres with regional centres for moderate cases, and hospital centres for severe cases.

Emphasis on breast feeding as a preventive measure for gastrointestinal disease, boiling of milk and water for infants, basic hygienic practice and the oral rehydration system are all being stressed in the MCH programme education activities as important aspects of prevention of gastroenteritis among infants.

The widespread epizootic and epidemic of Rift Valley Fever in Egypt in 1977 and 1978, caused much concern and special precautions were necessary in order to prevent the entry of this disease into this area. In coordination with the Steering Committee on Rift Valley Fever of the Israel Ministry of Health, a surveillance and control programme was established during 1978. This programme consisted of active surveillance (including blood sample surveys), immunization of large animals, vector control activities (anti-mosquito spraying), preparation of special laboratory and hospital facilities as well as control of (possibly infected)

meat products. The veterinary services carried out a vast vaccination campaign of all animal flocks (including sheep, goats, cattle and camels) in Judaea and Samaria in conjunction with a similar project in Israel and Gaza-Sinai. Every animal was marked after being vaccinated to ensure full coverage of vaccination. Local butchers and cattle farmers in risk areas were examined periodically in order to discover possible infection with this disease.

Pilgrims returning from their pilgrimage to Mecca, Saudi Arabia in November 1979, were examined by a medical/nursing team when entering the region via the Jordan bridges. Febrile patients were referred to Jericho Hospital where investigations were carried out. No cases of Rift Valley Fever were discovered.

Mental Health

The Bethlehem Psychiatric Hospital provides hospital care for both Judaea-Samaria and Gaza-Sinai, as well as for East Jerusalem residents. In recent years the hospital has increased its treatment capacity with fewer beds, as a result of shortened length of stay and greater emphasis on out-patient care (see Table XLIII). New Psychiatric services in Gaza reduce the burden of hospitalization of Gaza residents in the Bethlehem Hospital through local ambulatory, day care, as well as an in-patient care in a new 18-bed psychiatric unit in a Gaza hospital.

Hospitalization for serious mental disorders including psychotic, schizophrenic or depressive states has not increased significantly since 1968. The increase in out-patient psychiatric clinics and diagnostic and referral services has led to increased admissions for psychoneurotic disorders with shortened stays. Mental health staff increased by 20% from 1974 to 1976.

Out-patient psychiatric care has been extended to three locations in 1979, four locations in 1980, and five in 1981. The major psychiatric clinic is located at the Bethlehem Hospital, receiving referrals and follow-up from the central region of the territory. This clinic is staffed by the senior psychiatrist four days per week, with team conferences with all psychiatrists and social workers attending once per week. The psychiatric clinic at Tulkarem is staffed by a hospital based psychiatrist and social worker one day per week. A similar clinic operates in Nablus serving the Northern region, in Hebron for its region, and in Jenin for its district. A visit by Dr T. W. Harding, a WHO mental health expert in 1979, assisted government health service planning for mental health services, and in formulation of greater emphasis on out-patient care for the mentally ill as essential for improved mental health services.

TABLE XLIV. SELECTED INDICATORS OF MENTAL HEALTH SERVICES AND STATUS

JUDAEA-SAMARIA

1968-1969

	1968	1970	1972	1974	1976	1978	1979
Psychiatric beds	400	400	370	370	320	320	320
Admissions	425	351	533	788	796	821	865
Discharges	449	351	532	802	738	779	913
Out-patient clinics	1	1	1	1	3	3	3
Out-patient visits	4778	5113	4990	4962	7364	-	-
Total Psychiatric & Nursing Staff	107	110	106	107	129	129	129

Environmental Sanitation

Since 1967 over 60 villages were connected to central water supply systems so that 90 of the largest villages in the region are provided with potable and safe running water to the communities and homes. Major population centres including Hebron, Bethlehem, Beit Jallah and Beit Sahur completed major expansions in their water supply systems, involving a threefold increase in the total safe water supply. Nablus, Jenin, Tulkarem and Kalkilya increased their water supply systems with a twofold increase in volume. The increase in supply of public water was achieved by large scale drilling of new ground water sources.

The water resources and their use in Judaea and Samaria

1. General

Situated on the edge of one of the earth's arid zones, the Land of Israel was never blessed with an abundance of water. In fact, its resources of that precious commodity are so limited that the State of Israel has been forced to devote considerable effort and resources not only to the search for water, but also to the development of ways of conserving it and utilizing it most economically and effectively. Israel, in fact, has become a world example for the efficient use of water in agriculture through the use of advanced technologies and systems which have earned international recognition and been adopted for use in many countries including some of the most advanced in the world. Since June 1967, Israel has been applying its experience and know-how in this field to Judaea-Samaria and the Gaza district, making substantial investments to expand and improve the water systems in these areas.

2. The water resources of Judaea-Samaria

The main sources of water in Judaea-Samaria are wells and springs:

(a) Wells. Similar to Israeli law, Jordanian law (which is still in force in Judaea-Samaria) requires an official permit to be obtained prior to the digging or boring of a new well. At present, the competent authority of the Israeli administration in Judaea-Samaria for this matter is a water staff officer, who examines applications for permits with the assistance of an advisory committee. This committee, when making its recommendations, applies the Jordanian regulations governing the matter - regulations promulgated in 1966 which, inter alia, forbid the boring of new wells in three districts of Judaea-Samaria, namely Jericho, Ras Far'ah and Qabatieh-Jenin. The reason for this prohibition is that the water-bearing strata in these districts are over-exploited, so that increased pumping might result in a lowering of the table and the penetration of brackish water.

In twelve years of Israeli administration in Judaea-Samaria, between 1967 and 1979, a total of 80 applications for permits to prospect for water were received from Arab inhabitants. Thirty of these were approved, but not a single new well was sunk by the applicants. The reason for this failure is the high cost involved, amounting to about a quarter of a million dollars for each bore. Some wells, however, were sunk by municipalities or local councils and by the water staff officer.

At present, some 300 Arab wells (including several owned by the administration) and 17 Jewish-owned wells are operating in Judaea-Samaria. The Jewish-owned wells (sunk since 1967) have in no case caused a reduction of the water supply available to the Arab population. On the contrary, very often Arab farmers have benefited from the sinking of the Jewish-owned wells.

The majority of the Jewish-owned wells serving the Jewish villages have been sunk into water-bearing strata which had never been tapped before 1967, and, with the aid of modern equipment, have been drilled to a depth never before reached by Arab prospectors. In addition, the Israeli administration has sunk new wells for drinking water for the exclusive benefit of the population of Judaea-Samaria.

(b) Springs. During 13 years of Israeli administration the water consumption habits of the population of Judaea-Samaria have undergone profound changes. This has been a result of the rise in living standards, the increase of population and the general development in agriculture, industry and building. These changes have made it necessary for the Israeli administration to make readjustments and to take more vigorous action to ensure adequate water supplies to all. The following table shows the rise in water consumption over the years 1967 to 1979 (in millions of cubic metres)

Year	Domestic use from springs	Domestic use from wells	Domestic use from Mekorot Company[a]	Agricultural use from wells	Agricultural use from springs[b]
1967/68	2.0	3.4	-	30.0	37.0
1977/78	2.6	9.0	0.4	30.5	37.0
1978/79	2.2	10.3	2.1	30.0	37.0

[a] Supplied to Ramallah and the Hebron hill.

[b] Averages, the actual quantities fluctuating from 30 to 45 million cubic metres per year according to the rainfall.

The table thus reveals a considerable increase in domestic use as against an insignificant increase in the consumption of water for agriculture. However, despite the virtually unchanged consumption in agriculture, the cultivated area under irrigation was expanded by 150% and the yield was increased twelvefold; income from agriculture rose from $32.5 million (1967/68) to $90 million (1978/79). This was the result of modern methods of cultivation and economical watering systems introduced from Israel.

3. Improvements under Israeli administration

A comparison of the standard of the water supply and services in Judaea-Samaria today with that which prevailed under Jordanian rule reveals that, contrary to the allegations brought against it, Israel has since 1967 brought about a vast improvement in this field, visible in the large increase of the quantities of water supplied to the Arab population and in many other features listed below:

(a) Water supplies for domestic use. Throughout the period of Jordanian rule, no basic development was undertaken to ensure a regular water supply for domestic use. Most of the inhabitants drew water for their homes from nearby springs or from rainwater cisterns; piped water was available only in some of the larger towns, and its supply was intermittent or rationed; the quality of the water was low, and no chlorination was applied according to standards set for drinking water. In 1967 domestic water consumption was 5.4 million cubic metres. In 12 years under Israeli administration, it rose to 14.6 million cubic metres.

(b) Waterworks. Up to 1967 there were two public waterworks in the whole region of Judaea-Samaria, at Abood and at Shibtin, supplying together about 50 cubic metres per hour, or about a quarter of a million cubic metres per year. Since then, under the Israeli administration, the two existing waterworks have been enlarged and the following new regional establishments added: Herodion, Dotan, Beth Iba, A-Zawiyah, Bitunia, Deir Shaer, Tubas (handed back to the local council), and Bidan 1 (transferred to the Municipality of Nablus).

The following are the new wells provided by the Israeli administration:

	Yield (in cubic metres per hour)
Samu'	60
Herodion 2	400
Herodion 1	80
Deir Shaer	100
Shibtin 4	80
Bitunia	300
A-Zawiyah	100
Beth Iba	250
Dotan	300
Total yield	1 670 cubic metres per hour

(c) Pools. In 1967 there were 10 small storage pools in Judaea-Samaria, in the villages served by the government waterworks, with a total capacity of about 1000 cubic metres. Today, 10 additional pools have been constructed by the Israeli administration, with a total capacity of 9850 cubic metres - an increase of nearly 900% in storage capacity.

The following are the new pools provided by the Israeli administration:

	Capacity (in cubic metres)
Kiryat Arba	1 000
Mamreh	3 750
Bitunia	1 000
Deir Abu Mash'al	500
Bidiya	1 000
Deir Shaer	350
Yata	150
Dotan	1 000
Tubas	1 000
Akaba	100
Total capacity	9 850 cubic metres

(d) Water Mains. In 1967 there was a total of 45 kilometres (28 miles) of water mains, laid by the Jordanian government. Since then, 200 kilometres (125 miles) of mains have been added by the Israeli administration, representing an increase of 350%.

(e) Linkage to supply system. Under Jordanian rule, the supply system extended to 12 villages only - to public distribution points in each, with no extension to individual houses. Since 1967, the Israeli administration has laid supply networks in 43 villages, and running water is thus supplied from the main system to consumers' homes.

(f) Flow measurement and records

(i) Springs. The Jordanian authorities conducted flow measurement mainly of surface water. This included about 35 springs used by individual water-right owners. No chemical testing was practised. Today, the flow of all measurable major springs is measured and regular chemical tests are made. This control covers about 120 springs - an increase of some 240%.

(ii) Wells. In 1967, a total of 320 wells were operated in Judaea-Samaria, but no measurement of yield or chemical tests were made. Today, regular yield measurement and testing for chlorine content are the rule for all wells, as well as measurement of the water level.

(g) Installation of water metres. Up to 1967, no water metres were used at wells, nor was any other control exercised over quantities of water drawn, every well operator drawing as much water as he pleased. Since 1967, some 290 metres have been installed at wells to register the quantities of water drawn, and in 1976 a water quota was fixed and enforced for each well, in accordance with a Jordanian law for the control of natural sources promulgated by the Jordanian parliament in 1966.

(h) Water balance between Israel and Judaea-Samaria. Since 1967, there have been reciprocal transfers of water between Judaea-Samaria and Israel's territory within the Green Line, according to geographic and economic considerations. The balance of these water transactions in 1978-1979, for example, was adverse for Israel. Thus, 1 069 000 cubic metres were pumped from Judaea-Samaria to Israel (mainly from the Herodion waterworks to Jerusalem), while 2 098 000 cubic metres were pumped from Israel (within the Green Line) to Judaea-Samaria, mainly to Ramallah and the Hebron hill region. In 1979-1980, a quantity of 2 734 000 cubic metres was pumped from Israel to Judaea-Samaria, as against 546 000 cubic metres pumped from Judaea-Samaria to Israel, making an adverse balance for Israel of 2 188 000 cubic metres.

TABLE XLV. PUBLIC DRINKING WATER CONSUMPTION

Cities	Per Capita Water Consumption (in cubic metres)	
	1967	1980
Hebron	12.5	25-30
Jericho	13	26
Bethlehem Beit Jalla Beit Sahour	20	40
Ramallah El Bireh	12	30
Nablus	15	25
Tulkarem	20	60-70
Kalkilya	15	50
Salfit	8	17
Jenin	30	40
Tubas	10	32
Anabta	13	19

Note: Primarily home usage and small scale agriculture.

Monitoring of water standards is carried out regularly by district sanitarians at permanent sampling sites within the water system. The sites were selected based on a plan to ensure maximal supervision of the regional water supplies. Samples are sent for bacteriologic examination to the central public health laboratories in Nablus and Ramallah, which have recently been re-equipped for this purpose. Special tests are sent to the public health laboratory of the Ministry of Health in Jerusalem. A preliminary survey was carried out during 1979 for basic fluoride levels in local water supplies in order to prepare for possible future fluoridation if needed to reach preventive levels for dental health of children.

Chlorination of drinking water is practised on a preventive basis, and re-equipping of chlorination facilities have improved capability in those communities where chlorination previously was carried out, and chlorination was established in other communities including Jenin, Tubas, Kalkilya and Anabta. At present in 90% of the villages where central drinking water systems have been installed, routine chlorination is also practised.

Sewage collection systems in most urban areas have all been extended and re-equipped. Sewage treatment plants have been built in Jenin (1971), Tulkarem (1972) and Ramallah (1979) stage one of Hebron's sewage treatment was completed (1979). Master planning has been completed for El Bireh (construction to begin in 1980), Bethlehem/Beit Jallah/Beit Sahur, Kalkilyah and Nablus. The previous practice of use of sewage for irrigation of vegetables has now been stopped.

Solid garbage disposal has been altered drastically over the past dozen years. The practice of refuse disposal along roadsides has largely been displaced by the establishment of municipal garbage disposal sites. Garbage collection in the urban areas has been equipped and carried out by the municipalities on a modern basis in most cities. Most cities now have municipal garbage disposal sites.

Supervision of food quality has focused on food production, food marketing and public eating establishments. Public health laboratories in Nablus and Ramallah are equipped for bacteriological examination; other tests are referred to the Medical Standards Laboratory of the Ministry of Health in Jerusalem. Sanitary standards in food production and marketing are supervised routinely by district sanitarians. Use of food additives not complying with current standards has been stopped. Public health nuisances are investigated by district sanitarians based on complaints or routine observations. The public health law is the Jordanian Law Public Health Law No. 43 (1966) and Trade and Industry Law (1955) which provide for fines and nuisance abatement upon conviction in local courts. In 1978, some seven hundred such complaints and court cases were handled (1 per thousand population). Building planning approach based on public health needs is under supervision of the district health office.

Manpower

Staffing

Staffing of governmental health services has increased over the years as indicated in Table XLV indicating an overall growth from May 1967 (prior to Israeli responsibility for health care of the area) by approximately 51%. Medical, nursing and paramedical staffing in particular has more than doubled in this period of time.

The increase in health manpower as compared to both the pre-1967 situation and especially the period immediately following 1967 was dramatic. Medical staffing rose by approximately 80% since pre-1967, and by over 210% since the immediate post-war period. Similarly large increases in nursing personnel and technical and paramedical staff has occurred during the 1967-1978 period, as part of the increased level of service in hospitals of the area.

TABLE XLVI. PERSONNEL IN GOVERNMENTAL HEALTH SERVICE

JUDAEA-SAMARIA

1967-1979

	May 1967	Sept. 1967	1974		1977		1978		1979		1980	
			Est.	No.	Est.	No.	Est.	No.	Est.	No.	Est.	No.
Physicians	97	55	115	119	153	141	167	157	174	174	177	174
Nurses (registered and practical)	241	317	448	308	582	556	609	599	606	595	623	620
Technical and paramedical	66	94	149	147	182	160	184	176	178	169	176	169
Administrative & support service	508	312	325	493	425	386	464	438	466	446	446	440
TOTAL	912	778		1 067		1 243		1 270		1 384		1 403

Note: Columns are established positions (Est.) and the number actually employed (No.) for each category. Table is based on staff employed.

The new physicians are all local residents who undertook training in many countries including those in Western Europe, America and Eastern Europe as well as the Arab countries. In the past four years more than thirty new physicians joined the service, of which thirteen joined in 1979 alone, including a pathologist and neurologist (both firsts for the territory), and an ENT Specialist who heads the department in Ramallah hospital and operates out-patient services in Beit Jallah and Hebron Hospitals. As in many areas, nursing staff problems have been very important in the government health services in the region and required the development of a nursing school for registered nurses in Ramallah (opened in 1971), as well as schools for practical nurses. Most of the nurses added to the government health staff have come from these training programmes.

Paramedical staff, which has nearly doubled in number have also come primarily from schools established in the area in the past twelve years. Specialty and post-specialty training for medical personnel has been an important factor in development of services. Physicians have undertaken training in Israeli hospitals and abroad in public health, internal medicine, obstetrics and gynaecology, paediatrics, urology, paediatric orthopaedic surgery, allergy and dermatology and general surgery, gastroenterology, haematology, ENT and ophthalmology.

Manpower Development and Training

Up to 1967, local hospital services were limited in size and specialized services, but the expanded supply and range of hospital services since 1967, coupled with increased public health and primary care services, has placed considerable stress on manpower supply. Physicians have been recruited among local residents who went abroad for basic training and returned. Nursing and paramedical staff have had to be trained locally and appropriate training programmes introduced.

Manpower training programme development has been given a high priority, and a number of new courses were established (see Table XLVII). Medical libraries have been established in all public health offices and all hospitals to promote continuing medical education.

TABLE XLVII. HEALTH MANPOWER TRAINING PROGRAMMES

JUDAEA-SAMARIA SINCE 1967

Course	Location	Opening date	Duration	Enrolment	Comments
Midwives	Nablus	1970	2 years	12 students in 1980	Matriculation level. Teaching language: English
Practical Nurses	Tulkarem	1971	18 months	13 in 1980	Matriculation level. Instruction language: Arabic. The school was united with the Nursing School of Nablus and thus does not operate as of 1976.
Practical Nurses	Nablus	Dec. 1973	18 months	13 students per class	
Practical Nurses	Ramallah	Oct. 1971	3 years	1st year 23 2nd year 21 3rd year	Matriculation required. Language: English. 12 graduated in 1980, for a total of 93 graduates to date
Practical Nurses	Hebron	Jan. 1974	18 months	18 students	Male only. Closed in 1980 in conjunction with expanded practical nurse programme in Nablus.
Nursing Instructors	Jerusalem Ramallah Gaza	Various years since 1970	6 months	Total 15 graduates	Five nurses completed a six month course in nursing administration and teaching in 1979 in Gaza.
Nursing Specialties	Israeli Hospitals			9 graduates	Specialists in kidney unit operation, intensive care, eye disease, central sterile supply.
Pharmacist Assistants			9 months	14 graduates	
X-ray Technicians		1976	1 year	15 students	Developed with assistance of Tel Hashomer Hospital Radiology Department.
Others	Various teaching hospitals in Israel			Special short courses for medical specialists, nursing instructors, specialty nursing personnel, senior & intermediate administrative staff, and paramedical personnel, sanitation, laboratory, occupational therapy and other paramedical training courses have been operated in conjunction with medical services in Israel on a continuing basis.	

School nurses and public health nurses participated in an in-service training course on the subject of tuberculosis control, in preparation for the vaccination programme against TB. The nurses took part in the vaccination of schoolchildren in Tel Aviv and participated in a conference on prevention of tuberculosis and lung disease at the Jaffa Chest Centre.

Specialty and post-specialty training for medical personnel has been an important factor in development of services. Physicians have undertaken training in Israeli hospitals and abroad in public health, internal medicine, obstetrics and gynaecology, paediatrics urology, paediatric orthopaedic surgery, allergy and dermatology and general surgery, gastroenterology, haematology, ENT and ophthalmology. Study days and visits to Israeli teaching hospitals have helped to foster professional contact and exchange, as well as development of services, improved referral contact and visiting consultant services.

SUMMARY

As noted in the 1977 and subsequent reports of the WHO Special Committee of Experts, there has been a substantial improvement in the supply and distribution of health services in the areas of Judaea-Samaria (as in Gaza-Sinai).

The health situation in 1967 was characterized by a myriad of basic health problems. These included:
- unsatisfactory levels of general health education;
- widespread poverty;
- low standards of living;
- poor public and personal hygiene and sanitation;
- poor quality and distribution of health services;
- a scarcity of trained local health personnel;
- endemic malaria, TB, trachoma, childhood infectious and parasitic diseases.

The new administration undertook as an immediate priority the development of a basic infrastructure of preventive and curative services. This proved to be a large and complex task. Development of basic sanitation and environmental health services and personal preventive health services were given majority priority. Hospital services and health manpower development were also stressed. Real progress has been made in each of these areas in the past 14 years. More remains to be done especially in expanding MCH coverage and hospital deliveries, expanding health insurance coverage, improved sanitation, health education and in extending local manpower development programmes. Progress achieved has brought the health service to a new stage of development which will be a challenge for the years ahead.

CHAPTER FIVE

GOLAN HEIGHTS

Introduction

The indigenous population of the Golan Heights is made up of Druse villages with an economic base of agriculture and handicraft industries. Tremendous progress in agriculture particularly has taken place since 1967 with emphasis on orchard development, modern irrigation techniques, storage and marketing facilities with a resulting economic prosperity to the area.

The major villages are Majdal Shams, Bukhata, Massada, Rajah, and Ein Kanya.

Personal health services

Health services are provided through five clinics, located in each of the major villages. Services are provided by Kupat Holim (the General Sick Fund), Israel's largest health insurance and health service programme, which is affiliated with the labour movement. Some 60% of the population are fully insured with Kupat Holim (including social welfare cases and national insurance cases). Those who are not insured may receive services with payment for services.

Staff includes four doctors who visit the clinics between two and five times per week. Patients are referred for specialty care, laboratory X-ray at the Kupat Holim specialty clinic in Kiryat Shmona and in Israeli hospitals. A gynaecologist visits the clinic at Massada twice weekly to serve the total area. Physiotherapy and occupational therapy are provided in the Kiryat Shmona health centre.

Preventive services are provided to the total population without charge (including those insured and those not insured with Kupat Holim). These services are provided by the public health district of Sefad. Two public health nurses and a paediatrician provide examinations, health education, follow-up, immunizations and care of pregnant women according to the Israeli public health service criteria.

TABLE XLVIII. POPULATION AND PERSONAL HEALTH SERVICES

GOLAN VILLAGES - 1980

	Population	Hospital sessions per week	MCH sessions per week	Infants	Preschool children
Mijdal Shams	5 500	5	4	77	406
Bukhata	3 000	4	2	93	346
Massada	1 900	3	2	168	210
Ein Kanya	1 300	2	1	34	150
Rajah	800	2	1	22	109
Total	12 500				

Immunization coverage in 1980 in the first year of life was 88% of newborns for DPT and 75% for polio, and 70% in the second year of life. Children up to age three were given oral polio vaccine in a special campaign in 1979 and again in 1980 in addition to the routine programme. Follow-up campaigns on immunization of pre-schoolers has brought immunizations up to 93% coverage.

School health supervision includes immunization - Diphtheria and Tetanus to pupils in grade III, and German Measles to girls in grade VI.

Clinics and mother and child centres are maintained by the local authorities, with 75% reimbursement by the Ministry of Health.

Sanitation supervision is under direction of the public health office in Safed, and an extra sanitarian is assigned to the Druse villages of the Golan. Local authorities provide direct sanitation control activities with reimbursement of 75% by the Ministry of Health, including expenditures for garbage disposal, vector control activities and others.

TABLE XLIX. ENVIRONMENTAL SERVICES

GOLAN VILLAGES - 1980

	Garbage disposal	Sewage
Majdal Shams	Central disposal site under local authority	Septic tanks
Bakhata	"	Septic tanks 60% of homes
Massada	"	80% of homes have septic tanks
Ein Kanya	No central disposal site	Central sewage collection to 97% of village
Rajah	Central disposal site	Central sewage collection to 60% of village and large septic tanks

Garbage disposal at central disposal sites has been developed in most villages. Garbage collection is carried out by a local contractor with tractors three days per week. The Ministry of Health reimburses the local authorities for 75% of these costs.

Sewage is still primarily in the stage of outhouses and septic tanks, but Ein Kanya and Rajah have established central sewage collection systems and central septic tanks for sewage disposal.

Drinking water has much improved from the previous situation of relying on surface water of Birkat Ram which was very contaminated. In 1979, the Ministry of Health successfully undertook steps to change the water source to deep wells which are monitored by regular bacteriologic testing according to the Ministry of Health standards.

Supervision of sanitation in food establishments and restaurants is also carried out by the Ministry of Health.

CHAPTER SIX

SUMMARY AND CONCLUSIONS

The health status of the population of the regions continues to show signs of improvement both as a result of rising standards of living as well as better preventive and curative health services. Nearly full employment and greatly improved purchasing power for the population in the areas has been accompanied by improved basic water and sewage systems, housing conditions, nutrition and educational services.

In 1976, the WHO Special Committee of Experts which studied health services in these areas concluded that "There has been progress in the development of the infrastructure during the period 1967-1975, a considerable number of health centres, dispensaries and health posts having been set up in all the regions visited". The Committee made a number of observations and recommendations which have been incorporated into the planning process related to improvement in health services and health status of the people of these regions. Since that time the Committee has revisited and again indicated progress in health service development. Visits by experts of the World Health Organization, including Dr R. Cook, regarding child health services, Professor J. Melnick, regarding polio, Dr D. Barua, regarding oral rehydration for diarrhoeal diseases, Dr T. W. Harding in mental health services and Dr Pisa on cardiac diseases. The consultation of these experts have been invaluable in helping to identify problems, in formulating solutions to them and in follow-up consultations during repeat visits.

During 1976 development of services in the Gaza-Sinai areas have stressed preventive programmes in such areas as maternal and child health and communicable disease control. Substantial progress has been made in these areas. Emphasis in Judaea and Samaria has been mainly in the direction of upgrading standards of hospital care through improved specialty resosurces and standards, but since 1977 rapid progress in developing maternal and child health services has been emphasized. Voluntary health insurance covering nearly 45% of the population in Judaea and Samaria, and over 80% of the Gaza population has helped to improve access to health care.

For both areas, manpower training programmes have expanded and improved in quality while laboratory services have improved through better distribution of resources. Recruitment of medical specialists has greatly strengthened hospital and community services, and in Gaza the connexion between children's health care in the community and in the hospital has been a very effective model. A related consideration in health care in this part of the world has been the phenomenon of increasing use of Israeli health services by residents of Judaea and Samaria, referred for care, and to some extent by citizens of neighbouring countries.

This has not only been a major factor in Judaea, Samaria, Gaza, Sinai and Golan Heights, but also in respect of citizens of Jordan, Egypt, Syria and most particularly of Lebanon whose service system has suffered greatly under the weight of civil war, and continuing political problems.

A large increase in services to sick and wounded Lebanese citizens has been undertaken by Israeli health services, including both ambulatory and hospital care (some 60 000 ambulatory care at clinics at the "Good Fence" and 600 hospitalized cases) provided at the cost of the Israeli taxpayer.

Israel continues to demonstrate its readiness to provide health care to residents of these areas. The goal is to provide services of growing level of effectiveness and sophistication to the inhabitants.

Much progress has been made. An advancing health care programme has been established both in hospital services, and in community health services. A rising base level of these services has contributed much to improve health status for the population, their general welfare and future growth for the benefit of residents.

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