

**The Maternal & Child Health Services In Singapore**

**By**

**D I Pakshong**

Health  
children  
Singapore

## THE MATERNAL & CHILD HEALTH SERVICES IN SINGAPORE

(518)

Dr. I. PAKSHONG, Medical Superintendent,  
Maternal and Child Health Services (Singapore)

### Introduction

Health care provided specifically for mothers and children in Singapore began in 1907 as a home-visiting service by Public Health nurses. This was at first provided only in the city area of the island, and extended later to the outlying rural areas by 1927. Integration of these two separately administered Health Services in 1960 resulted in the formation of a single Maternal and Child Health Service (MCHS) within the Ministry of Health.

In 1976, in line with growing world recognition of the importance of primary health care, the Primary Health Care Services of the Ministry of Health came into being, incorporating the MCH, School Health, Outpatient and Training and Health Education Services into one department (see Appendix I : Ministry of Health, Singapore : Organisation Chart).

### Services and Functions

The MCHS provides a comprehensive health care programme for women of child-bearing age as well as for infants and preschool children up to the age of school entry at 6 years. (Appendix II : Services and Functions of MCHS).

There are currently 20 MCH centres located in areas of high population density. These comprise 12 polyclinics, 12 full-time and 5 part-time clinics (see Appendix III : Map showing distribution of MCH Clinics).

In addition to providing family planning services under the National Family Planning programme, the Department also supervises on behalf of the Singapore Family Planning and Population Board three free-standing Family Planning clinics, the Vasectomy & Family Planning Clinic for Men, and the Postpartum and Postabortal Contact Services operating at Government obstetrical hospital units.

The number of staff for a clinic area varies from 6 to 24 according to the size of the catchment area. (Appendix IV ; Staffing patterns.)

Full-time clinics serve populations above 30,000 while areas with lower population densities are served by part-time MCH clinics.

Attendances average 3,580 each day, and range from 30 patients at part-time centres, to 240 patients per day at polyclinics situated in the large housing estates.

### Services for Mothers

- a) Pregnant women are encouraged to attend MCH clinics for antenatal care as early as possible. They are seen regularly over a period of 6 to 7 months, during which time any abnormality or complication of pregnancy that is detected is referred to hospital. Routine screening for venereal disease and breast cancer is also carried out.

About 85 % of all births occur in Government hospitals, and 50 % of all pregnant women in Singapore seek antenatal care at MCH clinics.

- b) Family planning advice, consultations and annual checkups are given free of charge. Various types of contraceptives including condoms, diaphragms, pills, injections and IUDs are available at nominal cost. Assistance is also given to women who seek abortions or sterilisation at Government hospitals. Pregnancy testing is available on request.

Cervical cancer ('Pap') screening of Family planning patients is carried out every 3 years. Women are also taught Breast Self-Examination. A rubber model "Betsi" is used to demonstrate what different types of breast abnormalities feel like on palpation.

- c) Health education is an indispensable and integral part of MCH work. Every opportunity is taken to teach and persuade mothers to discard harmful beliefs and practices, and to adopt or adapt beneficial ones. Hence health talks are given regularly to mothers on topics such as family planning, antenatal care, breast feeding, infant care and nutrition, immunization, accident prevention, child development etc with the aid of posters, pamphlets, models, slides, films and other audiovisual aids.

Nutrition demonstrations are held regularly to show mothers how to prepare simple and well balanced meals for their children. The emphasis is on the use of cheap and locally available foodstuffs. Weaning food preparations suitable for various age groups are cooked and dished out for infants to sample and the mothers are encouraged to follow these recipes at home. Young modern-day fathers are sometimes interested enough to attend these sessions.

### Services for children

Babies are given routine physical examinations at their first visits to the clinics and they are also assessed periodically to ensure that they are developing normally. Through such examinations any handicap, congenital abnormality or delay in a particular development field can be detected and referred early for specialist remedial management. (Appendix V : Developmental Assessment of Children at MCH clinic). Children with emotional or psychological problems are referred for child guidance. Where applicable, parents of children with severe handicaps may also be referred for genetic counselling.

A preschool checkup and visual testing is given around 4 - 5 years of age and children with squints or visual defects are referred to specialists clinics for further management. Dental checks are also carried out on preschool children and they are referred for dental treatment as required.

Immunization against smallpox and diphtheria is required by law for all children in Singapore. Free immunizations against seven diseases : viz tuberculosis, smallpox, diphtheria, whooping cough, tetanus, poliomyelitis and measles, is available to all infants and preschool children. Immunization coverage for all these diseases (except measles) is high, (about 90 %) and accounts for the virtual absence of the first six diseases among the childhood population. This is a far cry from the 1950's when there were several hundreds of cases of diphtheria and poliomyelitis annually (Appendix VI : Graph Showing Annual Notifications of Diphtheria and Poliomyelitis cases in Singapore 1954 - 78).

Vaccination against measles has been offered since November 1976. Acceptance of this vaccine was initially very low, but since the recent announcement that from 1981 onwards, children registering for school would be checked for measles immunization by the Ministry of Education, the response to measles immunization has risen and is expected to improve. (Appendix VII : Immunization Schedule in MCH centres).

Treatment of minor ailments in infancy and childhood has always been a component of MCH care. However, in 1971, a deliberate policy decision was implemented to expand the preventive aspects of MCH care by the introduction of Well Baby sessions. In order to further increase the coverage of the screening procedures, in 1976 staff nurses were trained to perform developmental assessments of 2 - 3 years olds, and in 1980, of 6 month to 1 year old infants as well.

After the incorporation of MCH into the newly formed Primary Health Care Services in 1976, the proportion of sick children treated has increased slowly but inexorably. (Appendix VIII : Well & Sick Child Attendances at MCH centres, 1971 - 1978). Unless this trend is carefully monitored and kept in check, health promotion, educational and preventive services could be swamped by the insatiable demand for curative services (Appendix VIII and Appendix IX : Percentages of MCH attendances by types of services provided, 1969, 1974 and 1979).

A Mother and Child Health Record Book, for which a charge of Singapore \$1.00 is levied, was introduced in 1975. It is retained by the mother, and contains her family planning, obstetric and medical histories. The child's section records information on birth, immunization, growth charts, developmental progress and childhood diseases. The child's records can be detached by the School Health staff when the child enters primary school.

Field Services (Appendix X :Percentage of MCH Field Services by Categories of Persons visited, 1969, 1974 and 1979)

I) Domiciliary Aftercare Service for newly delivered mothers and their babies. (Post-partum Nursing Services)

Women who have delivered in Government hospitals and are discharged within 24 - 36 hours, are followed up at home by MCH midwives for 7 - 10 days after their deliveries. During their visits, MCH staff check that all is well with mother and baby, advise the mother on breast feeding, childcare, common neonatal problems, family planning, and immunization requirements, as well as informing her of the range of services available at her nearest MCH clinic. Newborn babies are closely examined to see if they develop jaundice or infections of eyes or umbilical cord during the critical first week of life. Any problem requiring medical attention is referred to the clinic doctor, who may in turn refer the patient to hospital if necessary.

The DAC Service covers 70% of all deliveries in Singapore in contrast to approximately 50% of pregnant women who register for Antenatal care in MCH clinics. (Appendix XI : Annual Number of AN & DAC patients compared to total number of Live and Still Births 1973 - 79).

II) Home Nursing Service

Since December 1976 nursing care in the home is provided by MCH nurses for non-ambulant chronic sick patients discharged from hospitals, as well as for the aged sick and the disabled referred by the Home Nursing Foundation. The nurses also try to teach patients' families to gradually take over the care and nursing of their sick and aged relatives whenever possible.

III) Followup of Special cases and Defaulters

Children at special risk and requiring more attention are visited to check on their progress, and to help the mothers with any problems. Defaulters from family planning, antenatal or immunization appointments who cannot be contacted by telephone or post are also visited by field staff. In addition they visit tuberculosis and leprosy contacts, and call on tuberculosis and leprosy patients who fail to keep their appointments at hospital clinics.

Other Functions

I) Supervision of Private Midwives

Private midwives licensed to practise in Singapore are supervised by MCH Nursing personnel to ensure that they comply with required standards of professional midwifery practice in accordance with the relevant statutory regulations.

II) Supervision of the Central Immunization Registry and Coordination of the Computerization of Immunization Programme

Immunization records of children of Singapore citizens or permanent residents, who were born in Singapore on or after 1 September 1975, have been computerized. Followup and maintenance of these records are coordinated by the MCHS, in cooperation with the Computer Services Department and various other Government Departments. (Appendix XII : Annual Number of Infants completing Primary Diphtheria Immunization at MCH Clinics and Private Doctors).

III) Assisting in looking after the welfare of adopted and fostered children

Information obtained by field staff regarding adopted or fostered children is passed on to the Social Welfare Department to assist them in monitoring the care of such children.

IV) Registration of Births at certain MCH centres

12 MCH centres are gazetted as birth registration centres for the 'rural' areas of Singapore.

V) Educational and Community Activities

MCH staff lecture on health and family planning to medical and paramedical students, graduates, member of the public as well to trainees and staff of other Government Departments and Institutions. They also assist at National Health and Family Planning campaigns, baby shows, and brief visitors on the National Family Planning and Population Programme and MCH Services.

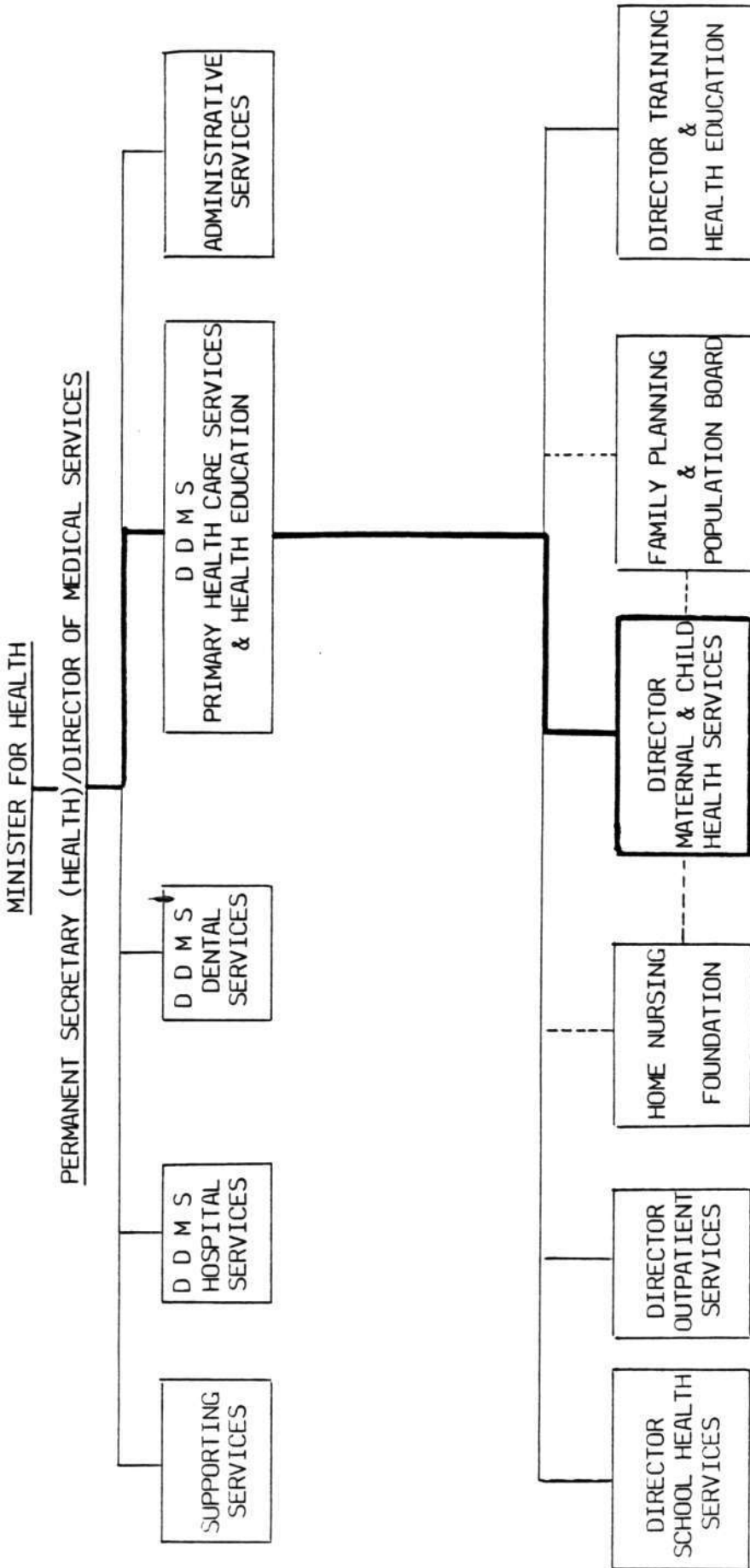
Conclusion

In 1931 the infant mortality rate in Singapore was a high 191.3 per 1000 live births and the maternal mortality rate was 7.5 per 1000 live births and still births (Appendix XIII : Singapore vital statistics relevant to the MCHS). By 1979 these rates have fallen to 13.2 per 1000 and 0.1. per 1000 respectively, with a Crude Birth Rate of 17.3 per 1000 and rate of natural increase at 1.2% (Appendix XIV : Some Singapore Vital Statistics).

The MCHS cannot claim all the credit for these improvements, since many factors, such as better environmental sanitation, housing, obstetric and paediatric services, a safe water supply etc, have contributed to our present standard of health. However it would probably be fair to say that the MCHS has undoubtedly contributed to these low infant and maternal mortality rates and birth rate, which are even better than those of some developed countries.

Appendix 1

MINISTRY OF HEALTH, SINGAPORE  
 ORGANIZATION CHART  
 (as from June 1980)



KEY : DDMS - Deputy Director of Medical Services

Appendix 2  
MATERNAL & CHILD HEALTH SERVICES AND FUNCTION

I SERVICES FOR MOTHERS :

1 - Family Planning

- (a) Consultation and advice on contraception including referral for subfertility
- (b) Sale of contraceptives
- (c) Periodic medical examination
- (d) Advice and assistance to those seeking sterilization and abortion
- (e) Pregnancy testing

2 - Maternity Services

- (a) Antenatal Care
- (b) Emergency Intranatal care
- (c) Domiciliary. After-Care or Post-Partum Home Nursing Service for certain categories of newly delivered mothers and infants discharged from Government hospitals.
- (d) Postnatal Check-up
- (e) Advice and treatment of mothers during the puerperium i.e. the 6 week period immediately following confinement.

3 - Cancer Prevention

- (a) Cervical cancer screening
- (b) Screening for Breast Cancer & other abnormalities & teaching of regular breast self-examination.

II SERVICES FOR CHILDREN (FROM BIRTH TO 6 YEARS OF AGE) :

1 - Immunization

Comprehensive immunization programme against tuberculosis, smallpox, diphtheria, pertussis, tetanus, poliomyelitis and measles.

2 - Health Screening

- (a) Regular follow-up and special care of 'high risk' children viz premature babies, jaundiced babies, malnourished and handicapped children etc.
- (b) Developmental assessment of well children including testing for deafness, squints and visual acuity.
- (c) Screening for dental caries with referral to Dental Clinics.

3 - Consultation and Advisory Service

Advice and assistance on mothercraft, feeding problem, child development etc. in the clinic & during home visits.

4 - Treatment

- (a) Treatment of minor ailments
- (b) Referral to specialists units when necessary

III - OTHER SERVICES :

1 - Field Services

- (a) Domiciliary After-Care Service to newly delivered mothers and their babies
- (b) Home Nursing of patients discharged from Government hospitals, and the aged and infirm referred by the Home Nursing Foundation
- (c) Follow-up of children requiring special care, defaulters from family planning, antenatal and immunization appointments, tuberculosis and leprosy patients and their contacts.

2 - Health Education

- (a) Individual and group talks/demonstrations with illustrative film shows, slides and pamphlets during family plannings, antenatal and child welfare sessions.
- (b) Nutrition demonstrations and advice on diets for mothers and children of varying ages.

3 - Food Supplements

Free supply of powdered milk, vitamin and iron supplements and infant foods to undernourished children.

IV - OTHER FUNCTIONS

1 - Supervision of the Central Immunization Registry (CIR) - Co-ordination of the Computerization of Immunization Programme.

2 - Supervision of Private Midwives

3 - Registration of Births in 'rural' areas at designated MCH clinics.

4 - Lectures on Health & Family Planning to the public and other Government Departments and institutions.

5 - Assisting Social Welfare Department in looking after the welfare of transferred, adopted and fostered children of preschool age, and teenaged mothers.

6 - Community Health Activities e.g. Baby shows, Community Centre talks.

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Appendix 4  
MCHC STAFFING PATTERNS

<u>Grades of Staff</u>	<u>Part-Time Clinic</u>	<u>Full-Time Clinic with Part-time MO</u>	<u>Full-Time Clinic with Full-Time MO</u>
Medical Officer	1 Part-time	1 Part-time	1
Nursing Officer	1 Part-time	1	2
Staff Nurse	1 - 2	4 - 6	8 - 10
Midwife	1 - 2	4 - 6	8 - 10
Dispensing Assistant	-	0 - 1	0 - 1
Clerk	1 Part-time	1	2
M & H Servant	1 - 2	4	4

Appendix 5

# DEVELOPMENTAL ASSESSMENT OF CHILDREN AT MCH CENTRES

PARAMETERS ASSESSED	AGES AT WHICH TESTS ARE DONE
GROSS MOTOR FUNCTIONS	6 WEEKS
VISION & FINE MANIPULATION	6 MONTHS
HEARING & LANGUAGE	1 YEAR
SKILLS & SOCIAL BEHAVIOUR	2 YEARS
	3 YEARS



Appendix 13  
SINGAPORE VITAL STATISTICS relevant to the M & CH Services

	1931	1941	1951	1961	1971	1979
INFANT MORTALITY RATE (Per 1000 Live Births)	191.3	Not Available	75.2	32.3	20.1	13.2
NEONATAL MORTALITY RATE (Per 1000 Live Births)	Not Available	Not Available	29.2	17.7	14.0	9.8
PERINATAL MORTALITY RATE (Per 1000 Live & Still Births)	Not Available	Not Available	34.6	26.2	21.0	14.9
STILLBIRTH RATE (Per 1000 Live & Still Births)	27.0	23.2	16.4	12.6	9.2	6.6
MATERNAL MORTALITY RATE (Per 1000 Live & Still Births)	7.5	4.1	1.6	0.4	0.2	0.1

Appendix 14  
Some SINGAPORE VITAL STATISTICS

YEAR	1931	1941	1951	1961	1966	1971	1979
TOTAL MID-YEAR POPULATION (MILLIONS)	0.56	0.77	1.07	1.70	1.93	2.11	2.36
CRUDE BIRTH RATE (per 1000 population)	36.4	44.7	45.0	35.2	28.3	22.3	17.3
CRUDE DEATH RATE (per 1000 population)	24.2	20.8	11.6	5.9	5.4	5.4	5.3
RATE OF NATURAL INCREASE (per 1000 population)	12.2	23.9	33.4	29.3	22.9	16.9	12.0

START OF NATIONAL  
 FAMILY PLANNING  
 PROGRAMME

Some appendices (n° 3, 6, 8, 9, 10, 11, 12) were not reproduced for technical reasons but can be obtained on request by writing to the author Dr. I. Pakshong, or to ICC or AMIC.