The Surgeon General's Workshop on:

Maternal and Infant Health

Report

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES • Public Health Service • Office of the Assistant Secretary for Health

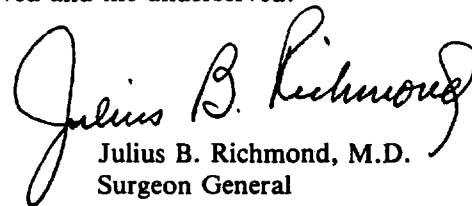
"Every woman should have quality prenatal care during the first three months of pregnancy."

Julius B. Richmond
Surgeon General of the United States

Preface

The Surgeon General's Workshop on Maternal and Infant Health was held because of our abiding interest in improving the health of this Nation's children. We can take great satisfaction with the recent decline in infant mortality which has been substantial; however, we may once again reach a plateau similar to that which occurred between 1955 and 1965, if we do not target our resources effectively. In addition, several population groups in the United States continue to have a significantly higher infant mortality and morbidity. These disparaties require very careful attention if we, as a Nation, can reduce and eliminate them.

The participants at this Surgeon General's Workshop were called on to develop recommendations for a social strategy to insure that all of our knowledge is being applied fully in the service of better health for parents and their infants and to help target our efforts, especially for those who remain vulnerable—the unserved and the underserved.



Julius B. Richmond, M.D.
Surgeon General

Planning Committee

Planning Commitee for the Surgeon General's Workshop On Maternal and Infant Health

CHAIRMAN	Ezra C. Davidson, Jr., M.D.
COMMITTEE MEMBERS	Kathryn Barnard, Ph.D. Alfred Brann, M.D. Stanley C. Graven, M.D. Ruby Hearn, Ph.D. Arthur Salisbury, M.D.
	Federal Representives Charlotte Catz, M.D. Stanley Greenspan, M.D. Don Hopkins, M.D. Mary Grace Kovar
STEERING COMMITTEE	Vince Hutchins, M.D. Workshop Director Woodie Kessel, M.D. Workshop Co-Director Carol Galaty, Executive Director Florence Foelak, Assistant to the Executive Director Morton Lebow, Director of Public Affairs

Contents

INTRODUCTION 1
RECOMMENDATIONS AND FINDINGS 3
EXCERPTS FROM KEYNOTE ADDRESSES 18
Julius B. Richmond — Opening Remarks 18
Patricia Roberts Harris — Address 19
George I. Lythcott — The Invisible Children 21
An International Perspective 23
Norman Kretchmer
Robert E. Greenberg
A Domestic View: Federal Maternal and Infant Health Services Programs 24
Gilbert S. Ommen
PANEL PRESENTATION SUMMARIES AND EXCERPTS 27
Review and Assessment of the Current Status of Knowledge, Services and Deficiencies 27
Obstetrical Perspective (Ryan)
Pediatric Perspective (Avery)
Psychosocial Perspective (Barnard)
Dimensions of the Problem 31
Who are the Underserved? (Davis)
The Multi-Risk Family: Clinical Perspectives (Greenspan)
The Promise of Regional Perinatal Care (Johnson)
Social Strategy Influences 35
The Epidemiology of Adverse Outcomes (Oakley)
Statewide Strategies for Developing Effective Perinatal Care Systems (Graven)
Data Systems and Information as Tools for Making the System Operate More Effectively (Brann)

The Needed Resources 40
Public/Private Financing of Maternal and Child Health Care (Jones)
Highlights from the Report of the Select Panel for the Promotion of Child Health (Schorr)
Human Resources for Delivering Needed Maternal and Child Health Services (Green)
Appendix A - Participants 45
Appendix B - Needed Services 50
(from Report of Select Panel for The Promotion of Child Health)

Introduction

Since the turn of the century, the United States has made great advances in improving infant health, as indicated by the infant mortality rate. From an infant mortality rate of more than 100 deaths per 1,000 live births in the early 1900s, infant mortality declined steadily until the 1950s. After almost ten years of relatively little change from the mid-1950s to the mid-1960s, the marked decline in infant mortality resumed, to a rate of 13.0 deaths per 1,000 live births in 1979.

While recognizing this significant achievement, Surgeon General Julius B. Richmond has said: "If we are to accelerate or even continue the progress we have made in improving maternal and infant health in this Nation, we must have a firm knowledge base drawn from science and sound professional practice, assess our commitment of current health resources and services directed at improving pregnancy outcome, and develop the social strategies needed to target our efforts, especially toward those who remain unserved and underserved."

To contribute to the achievement of these goals, as well as furthering the over-all disease prevention and health promotion objectives set by the Department of Health and Human Services for the 1990s, Dr. Richmond convened the first Surgeon General's Workshop on Maternal and Infant Health, December 14-17, 1980, in Reston, Va. The Workshop brought together 72 health and social services professionals, economic experts, consumer representatives and State, Federal and local government officials for intensive discussions of the subject.

The principal objective of the Workshop was to survey and analyze the state-of-the-art and to develop policy recommendations for a national social strategy that would help assure the continuation of past progress in reducing infant mortality and morbidity and improving pregnancy outcome in the United States, with particular attention to populations at greatest risk. The Workshop participants reviewed national objectives for maternal and infant health, explored the development of alternative indices for maternal and infant health status and addressed the unresolved problems that raise barriers to further reduction of infant mortality and morbidity.

The Workshop was asked to build on the work of the Child Health Initiative of the Secretary of Health and Human Services, the Surgeon General's Reports on Health Promotion and Disease Prevention, *Healthy People*, and *Promoting Health and Preventing Disease: Objectives for the Nation*, and the Report of the Select Panel for the Promotion of Child Health.

The Workshop focused on three basic themes: improvement of service delivery to the underserved; expansion of health promotion and prevention services; and knowledge development. The participants were divided into three discussion groups to consider Urban Issues, Rural Issues and Issues of Knowledge Development and Application. Their assignments were two-fold:

A. To review and assess the current status of:
   - The state-of-the-art of knowledge concerning health services and treatment interventions that affect maternal and infant health.
   - The present systems, approaches and services available to improve maternal and infant health.
   - The deficiencies in current services and knowledge related to improving maternal and infant health.
   - Allocation of resources for maternal and infant health.

B. To develop social strategies to:
   - Target, improve and expand services to maintain the improvement of maternal and infant health, especially for populations at risk of adverse outcomes.
   - Expand health promotion and prevention services for maternal and infant health.
   - Develop and apply knowledge needed to continue to improve maternal and infant health.

In considering these strategies, the participants were asked to include and identify the roles and responsibilities of government, public and private agencies and organizations, private health care providers, and the public at large for the development of partnerships and coalitions in meeting identified needs.

After separately discussing the issues, the three participant groups combined to consider the various findings and recommendations in a total context and refine them for presentation to the Surgeon General.

Presenting the findings and recommendations of the Workshop to the Surgeon General, Workshop Chairman Ezra C. Davidson, M.D., summarized the deliberations that concentrated on social strategies that will be needed to continue to reduce infant mortality in the United States and to assure that no groups are left out of future progress as further reductions are achieved.

One of the main messages growing out of the Workshop was that services and public education should insure that care to pregnant women begin in the first three months of pregnancy and continue through the early life of the infant.

Recommendations and Findings

INTRODUCTION

In a democratic society, public support is essential to political decisions favorable to any policy and program initiatives. In the area of maternal and infant health, with its complex medical, social and economic implications, several elements are necessary to the achievement of favorable decisions and goals.

First, there must be an effort to maintain the problems of infant and maternal health high on the national agenda.

Second, there is a need to form strong coalitions of leaders and interest groups in the public and private sectors who support the cause of healthy mothers and infants and are willing to work toward advancing that objective.

Third, an informed citizenry is a source of strength in working to achieve national objectives.

These three principles require placing relevant information before leaders in the administrative and legislative branches of government, members of the involved professions, public interest groups and the public at large. Available data and other information can be mobilized to attract the attention of many sectors of society and to mold a strong constituency for maternal and child health and well-being. Themes to recognize in supporting the cause of maternal and child health include:

- Problems in maternal and infant health are social problems, in addition to being those of individuals and families, and, therefore, are legitimate and significant domains for public policy.
- The effect of resources allocated to these problems, and the programs these resources helped to mount, are among the very few in health and human services that can be measured in solid and quantitative ways. Data demonstrate spectacular relations between national investments and results obtained. They also indicate a strong measure of efficiency and effectiveness in the use of resources.
- Controlling a problem is different from liquidating it. Health problems related to infants and mothers are controllable and great strides have been made. However, the levels of control already attained can be reduced if vigilance is lowered or resources and efforts are cut back.
- There remain wide variations in rates of mortality and morbidity among different sectors of the population, some of the rates being unacceptably high.

• Support for policies and programs related to infant and maternal care is rooted in basic human decency and certainly in prevailing American values. It is important, however, to make the point that there are many economic benefits that flow from the proposed policies and programs. Information can be compiled about the reduction in rates of hospitalization and long-term institutionalization, about reductions in the need for other costly services, and the economic returns from adults whose health was spared from serious problems through these programs. It would also be useful to gather and disseminate information about the relationship between infant morbidity and handicaps; subsequent abuse and neglect; and potential for crime, delinquency and other deviance.

The goals of policies in this area, the nature and organization of proposed programs, and information concerning infant and maternal health care should constitute the subject of public debate in national, regional and local forums encouraged by concerned agencies and interest groups.

The pluralism of American society is most likely to be reflected in pluralistic solutions. And, it is through debate at the various levels that programs can be evolved to meet general standards of quality and effectiveness while being tailored to unique local needs and environments.

It is with these concepts and principles in mind that the Workshop presents the following recommendations and findings which are not comprehensive, but point out high priority areas:

Recommendation 1

There should be a national initiative to assure prenatal evaluation and counseling in the first trimester of pregnancy for all pregnant women.

a. There should be a linkage of pregnancy diagnosis to opportunities to receive this care.

b. There should be no fiscal, categorical or administrative barriers to receipt of this prenatal evaluation.

c. The counseling should include information on the risks of smoking, consumption of alcohol and other drugs, and environmental hazards.

Recommendation 2

The Surgeon General's Workshop endorses the standards of prenatal and infant care, including psychosocial support and family planning services, proposed by the Select Panel for the Promotion of Child Health (See Appendix B).

Recommendation 3

Maternal and Child Health (MCH) care should take place within a regionalized system which focuses on primary providers and has service, education and quality assurance or evaluation components. This system should function under the direction of a regional council which works with MCH resource centers and other providers. Each MCH area should have a designated MCH center to serve as an educational, consultative and care resource to the region.

All MCH programs should have a strong mental health component which includes capacities for:

a. Identification and recognition of the special cultural and other individual differences in family functioning and prenatal and early child care patterns to guarantee appropriate service availability and effectiveness.

b. Provide expert consultation including where appropriate, diagnosis and preventive intervention planning to meet the needs of families where for a variety of reasons traditional clinical services are not available or are ineffective.

c. To make available appropriate expertise for integrated health, mental health, and special education services during the time of rapid central nervous system growth in the early years of life.

Rationale

There is evidence that regional perinatal programs are able significantly to improve pregnancy outcome with a comprehensive system functioning at all levels of health care delivery. The regional concept can be broadened to include all MCH activity. The focus of most MCH activity should be where primary care is given. Programs which function to centralize care at tertiary centers do not maximize outcome.

In addition to service, the ideal system must have sophisticated educational activities to improve and maintain professional skills and research or outcome evaluation to provide an objective basis for improvement and change. Systems with an objective data base are necessary for the efficient use of human and financial resources, and they allow targeting of specific problems.

The lack of appropriate effective MCH services are often related to an inability to understand and/or meet the special needs of at risk populations, especially the underserved.

Implementation

The lead agency for the implementation of a regionalized system should be the State health department. This agency, because of its responsibility to the entire State, should identify the appropriate regional structure. Regions must be logical and follow patient service patterns and not be bound by political jurisdictional boundaries (States, counties and health service agencies).

The State health department should create a statewide MCH council and regional councils when more than one region is designated. The councils should have memberships of health professionals and representation from a broad spectrum of organizations with an established interest in MCH and consumers.

Regional MCH resource centers should be designated by the councils for each region. These centers, often located at universities, would contract with the State to provide personnel, skills and leadership to meet the goals

and objectives established by the council. These centers must work in concert with the entire region. Specific activities of the resource centers should include: speciality and subspeciality medical services, including consultation and patient transportation, education, data collection and evaluation.

Much of the basic framework and maintenance of the regionalization effort can be accomplished through improved utilization of existing resources, such as Social Security Act Titles V, X, XIX, XX; WIC; and State matching funds, State education funds and private sector support.

Recommendation 4

To improve maternal and infant health, adequate financial support should be available to provide services, especially to the underserved and adolescents. Public programs and private insurance should provide comprehensive coverage for all pregnant women and infants, through such considerations as:

a. Revision of Title XIX State matching formula should be considered to address criteria such as low-income population, available State tax base funds, number of mothers and children in need, number of mothers and children served by public programs and hospital reimbursement policies.

b. Studying of revision of the Title V formula should be undertaken with consideration of links to need (e.g., number and rate of live births, infant mortality, low birthweight rate, adolescent pregnancies, adjusted income, level of education and performance criteria) as factors in the formula.

c. Increasing State legislature funding for perinatal services.

d. Finding ways to provide for the special needs of pregnant women and their children who do not have U.S. residential status.

e. Taking immediate remedial action before the above long-term changes are effected, to meet the financial crisis currently existing in urban inpatient and ambulatory care institutions for underserved populations.

f. Initiating policy changes that would permit service dollars to follow patients across political jurisdiction boundaries.

Recommendation 5

Expand mechanisms to pay for prenatal care, delivery and ongoing child health care for the uninsured.

Expansion of public financing programs.

Over seven million children and pregnant women are poor but ineligible for coverage under the Medicaid program. Many live in urban and rural areas but remain uncovered because they fail to meet restrictive eligibility criteria. For example:

- Many low-income women and children live in two-parent families, yet only 33 States cover children in intact families.
- A high proportion of pregnant women and children are poor but do not meet very strict State income requirements.
- Most States fail to cover women for their first pregnancy.

As a first step designed to address the most pressing coverage needs of the uninsured poor, we recommend that Federal/State health financing programs be required to cover all poor children and pregnant women regardless of family composition. This will assure that those most in need will not be denied access to vital pregnancy-related or child health services because of inability to pay for care.

Expansion of private insurance

Most Americans receive insurance coverage through the workplace. Yet a high proportion of urban and rural residents are without such protection because they tend to be employed in small firms, farming or self employed where there are no insurance benefits. Those residents who do receive insurance protection through employers are far more likely to have only minimal benefit coverage. We recommend that groups be formed to work with State legislatures to assure that all States require all insurers to include a minimal set of pregnancy-related and infant care benefits in all plans including:

- prenatal care
- all labor, delivery and postpartum care
- all medical care needed by infants in the first year of life and all preventive services up to age 5.
- making efforts to educate and mobilize interested parties (employers, employees, unions, legislatures) to assure that employer health insurance packages include comprehensive care for women and children.

These recommendations do not preclude other innovative approaches (e.g. "completion") but the basic necessity of ensuring universal coverage of services for mothers and infants cannot be compromised.

Recommendation 6

There must be support for extension of existing Federal, State and local programs to provide ambulatory prenatal care to areas without adequate resources.

Rationale

a. It is recognized that ambulatory prenatal services are woefully lacking in rural America in general. This may be the result of the lack of opportunity for a pregnant woman to enter the health care system because of the absence of trained personnel to provide these services.

b. The patient may not be able to pay for the services that are needed for optimal prenatal care. Many private providers are requiring payment in advance of services to be rendered.

c. Without adequate quantity and quality of prenatal services, early assessment or high risk identification may not be done in time to identify the type of specific care that may be needed.

Implementation

a. Require the provisions of prenatal care in all NHSC programs (freestanding and RHIs).

b. Require that CHCs provide ambulatory care for prenatal patients. Both a. and b. must be a system of referral for delivery and for return follow-up care.

c. Make it mandatory that prenatal services are a priority where local health departments receive Title V funds and that Title V agencies provide prenatal services if no other appropriate means are available.

d. Provide support for existing nurse midwifery and/or nurse practitioner programs; and accredited PA and Child Health Associate Programs.

e. Encourage the development of prepaid insurance programs, i.e. HMOs.

f. Concentration of efforts so that third party companies will be made to cover certain ambulatory services, i.e. outpatient sterilization, laboratory services, genetic counseling.

g. Create a regional perinatal council that may assist in recruitment and continuing education of the providers in rural areas.

h. Support the development of transportation systems for women to receive prenatal care as well as well-baby care for their infants.

i. Revise the definition of manpower for underserved areas to include areas where there may be a physician, but the physicians will not provide prenatal care and will not deliver babies.

j. Revise the GMENAC recommendations on the future need for training obstetricians and gynecologists in the light of the newly emerging information that many family practitioners in small rural areas are refusing to provide prenatal care and to deliver babies.

Recommendation 7

To improve nutrition the following recommendations are made in accord with those of the Select Panel:

- The Nation must be educated by all appropriate sectors of society—the health system, schools, the media, private industry and government—about health promoting and risk reducing diets.
- Employers and health care providers should take steps to encourage breast feeding and support mothers who choose to breast feed and are able to do so.
- Policies of both the public and private health care sectors should ensure that nutrition services become an integral part of health services for mothers and children.

Recommendation 8

The trend towards physicians in rural areas discontinuing the provision of maternity services should be moderated and if possible reversed.

Rationale

a. This trend is generally detrimental to the desired outcomes for mothers and infants.

b. The workgroup believes that all women should have accessibility to maternity services appropriate to their individual risk status as near to their homes as possible.

c. Maternity services delivered in community hospitals as appropriate under (b) will be generally more personal, convenient and less expensive.

Implementation

The Office for Maternal and Child Health should call a joint conference to include the American Academy of Family Physicians, American College of Obstetricians and Gynecologists, American Academy of Pediatrics, American Hospital Association, American Osteopathic Association, American Medical Association and other appropriate private and public agencies to examine this issue and make appropriate recommendations for correcting this problem.

Recommendation 9

Federal Food Programs (WIC, Food Stamp, Food Commodity and School Lunch) shall be introduced or extended to provide low income pregnant and postpartum women and infants with nutritious food and provide cultural and ethnic food choices.

Rationale

Nutrition has not been adequately recognized as an integral part of maternal/infant health services. Good nutrition is essential to the development and maintenance of optimum health. In addition, good nutrition reduces the frequency of such problems as anemia, toxemia, low birth weight, and nutritional deficiencies.

Implementation

Federal: The USDA should change the regulations of the Federal food programs to allow alternative ethnic and cultural foods—especially for Indochinese, Korean, Vietnamese and other minority groups whose needs have not been previously addressed.

State: Each State should see to it that low income pregnant and postpartum women and infants should receive food from one or more of the Federal food programs.

- Pregnant women should be given priority
- Within three years low income women and infants in all geographic areas of the State should have access to WIC services
- These services should be coordinated with maternal and child health programs.

Each State should see that the food programs offer education regarding maternal and infant health and family food budgeting and preparation.

Local: School Lunch Programs should be introduced or expanded to provide a free lunch for students who are low income expectant mothers.

Recommendation 10

The following data systems should be developed to improve management of perinatal programs:

a. Birth-death record linkages.

b. Uniform patient data base.

Recommendation 11

The Surgeon General should promote a single standard definition of maternal mortality, perinatal mortality and other measures of mortality relevant to maternal and infant health and work with State registrars and health officers to assure that standard measures are adopted in each State.

Recommendation 12

To improve maternal and infant health, the Secretary of HHS should convene a task force to explore approaches to developing effective quality assurance programs in public and private ambulatory care settings encompassing all members of the professional care team.

Recommendation 13

The Surgeon General should bring together the relevant parties, such as, public health, nursing, medicine, nutrition and other health professionals, to plan for the training of maternal and child health professionals. Service models for maternal and child health should be created as a basis for training and delivery of services. Elements of this training that the Workshop considers important include the following:

- Use of health teams.
- Utilization of mid-level practitioners.
- Emphasis on growth and development, psychosocial factors and nutrition.
- Emphasis on training in public policy and public administration.

(The above are in accord with the recommendations of the Select Panel.)

Recommendation 14

An organized program of education in systems development and community resource development pertaining to regionalized maternal and child health care should be provided for staff at State Health Department Perinatal Centers and university perinatal staff.

Rationale

There is enthusiasm for this concept in some rural areas which lack persons with expertise in developing such services. Providing training to appropriate persons would facilitate planning and implementation of regionalized perinatal services.

Implementation

Approach the Office for Maternal and Child Health, and private foundations for initial funding of such services.

Recommendation 15

We strongly recommend that in rural areas, maternal and infant services be strengthened through utilization of indigenous workers (Resource Parents).

Rationale

The traditional health care system has not been completely successful in promoting and enrolling women into early prenatal care. In addition it has been difficult to sustain mothers and infants in the system through the perinatal cycle (21 months) for a variety of reasons.

Indigenous workers have been successfully used in numerous health programs to extend accessibility, acceptability and continuity of care.

Indigenous workers (Resource Parents) could:

- Identify pregnant women who are not in a system of care
- Facilitate entry into the health care system and other community agency resources as needed
- Serve as interpreters for language and/or cultural values between patient and care provider
- Provide support so that mothers and infants will continue in the health care system for the prescribed course of care.

Qualifications

Resident of target area and respected member of target population, preferably a parent, who has demonstrated leadership, and has interest and ability to convey concepts and skills to parents.

Functions and Training

Job description, initial training, continuing education and consultation should be developed through the Area Resource Center jointly with the primary care and mental health providers and members of the local community. The curriculum may be based on guidelines from already established training programs, but should be designed to meet specific community needs.

Identification and Recruitment

The primary care provider may request selected agencies to assist in the identification and recruitment of Resource Parents, who may be volunteers or may be funded through the following sources: CETA, Title XX, Agricultural Extension, public agencies, project grants, local community funding such as service clubs, voluntary health services or church groups.

Recommendation 16

The Workshop supports the continued implementation of the Public Health Service genetic diseases program and encourages further regionalization and extension of the program to uncovered areas. Infants with abnormalities identified through mandated neonatal screening programs should be assured of follow-up and treatment.

Recommendation 17

Adolescents represent a special population with problems of sexuality, pregnancy and parenting. There should be special programs to meet the needs of this population, to include health, education, social, nutritional and other support services.

Recommendation 18

Each State should develop a plan to make prenatal and parenting education available to all families during pregnancy and to those families with preschool infants.

Rationale

Many families in urban and rural areas have no, or limited, access to prenatal and parenting information.

Implementation

The Office for Maternal and Child Health should work with State health departments to develop plans in cooperation with State and local prenatal and parenting education groups, and health providers to utilize present programs when available and create new programs where not available.

Recommendation 19

The Workshop supports the organizational changes recommended by the Select Panel to reduce fragmentation and improve administration of maternal and child health programs on the Federal level and the State level, including:

- Every State should review its options for consolidation of program effort related to maternal and child health and attempt to place authority over all relevant funding streams in an appropriate division in the State health unit.
- Creation of a Maternal and Child Health Advisory Council in each State.
- Establishment of a Maternal and Child Health Administration as an agency of the Public Health Service, which would include, at a minimum, the Title V MCH program, the Adolescent Pregnancy Program and Title X Family Planning.
- Creation in legislation of a National Commission on Maternal and Child Health.

Recommendation 20

The Workshop recognizes that there are a large number of people who are currently denied access to adequate maternal and infant care which interferes with improving pregnancy outcome and improving infant health. The Surgeon General and the Secretary of HHS should take strong measures to remove these barriers where they exist within programs providing maternal and child health training or services, such as:

- Racial, age and residential status discrimination.
- Insensitivity of providers.

- Lack of respect for patients.
- Refusal to place services in areas where the clients are located.
- Lack of recognition of clients as equal partners in efforts to provide services to the needy population.

Recommendation 21

Research should be continued to find more information concerning the initiation of labor.

Rationale

The knowledge already gained in this field holds great promise for attacking the high rate of pre-term births since the large portion of neonatal deaths comes the pre-term births.

Recommendation 22

A research program on pregnancy, birth and the infant should be supported to help increase the understanding of the problems of pregnancy, embryonic and fetal development, the birth process, lactation, and neonatal development.

Rationale

A research program in this area can and will contribute knowledge on methods to assess and determine fetal distress and immaturity, as well as knowledge concerning the transmission of genetic material and techniques for intrauterine diagnosis.

Implementation

Additional research opportunities should be pursued to find out:

a. What changes occur in uterine, placental, and fetal circulatory patterns following maternal exercise, stress, alcohol consumption, or smoking;

b. Effects on fetal development of chronic oxygen deprivation;

c. Fetal adaptation to less than optimal intrauterine environments;

d. Maternal and fetal roles in the onset of human labor;

e. Management techniques for high risk pregnancies; and

f. Neonatal disorders that compromise successful adaptation to extrauterine life.

Recommendation 23

A research program to study the causes of Sudden Infant Death Syndrome and to identify the risk factors that predispose an infant to SIDS should be carried forward.

Rationale

Efforts have already contributed toward understanding the relationship between chronic hypoxia and SIDS as well as the realization that SIDS victims are not as healthy as once believed.

Implementation

Two major groups of studies should be undertaken which include: an epidemiological study of SIDS risk factors and an expansion of basic studies on the causes of SIDS.

Recommendation 24

A research program should be carried forward on congenital defects which would support studies on inborn structural, functional, and biochemical defects found in the fetus and the newborn.

Rationale

Research in the past led to the rubella virus vaccines as well as techniques to detect congenital defects in utero.

Implementation

Studies should be carried forward to determine what genetic and cultural factors may regulate or interfere with normal development; how maternal, paternal and fetal exposure to potential teratogenic drugs and agents may be causes of newborn congenital malformations; and how genetic environmental factors interact to contribute to congenital defects.

Recommendation 25

A nutrition research program should be carried forward to gain more knowledge on infant feeding patterns, the development of dietary patterns and tastes, and the role of social and cultural factors in human nutrition.

Rationale

We have increased our understanding of nutrient requirements during pregnancy and infancy, the control of glucose metabolism in pregnant diabetic women, and the contribution of nutrients to hyaline membrane disease.

Implementation

We should continue and expand studies to:

a. Determine the nutritional status and requirements of pregnant women and the fetus;

b. Increase knowledge about nutritional management for premature infants;

c. Find the precursors and determinants of childhood obesity; and

d. Find out more about the role of breast milk in prevention of infection in the infant.

Recommendation 26

Develop an index of morbidity including indicies of assessing and measuring the well-being of populations of infants and families.

Rationale

Such an index would provide us at Federal, State and local levels with a sensitive tool to measure continued progress.

Recommendation 27

Facilitate the establishment of a State and/or subarea perinatal surveillance system along with the training of persons (perinatal epidemiologists) who would collect, analyze and distribute on a timely basis, perinatal information.

Rationale

The vital statistics system of the United States is the one certain data resource for developing trend information on birth weight and neonatal and postneonatal mortality for all areas. Some States have greatly enhanced the use of the system by linking birth and death records to increase our knowledge about risk factors which helps focus programs more closely on high risk sectors of the population.

Implementation

As linked birth and death record data become available, increased attention should be given to the production, analysis and dissemination of the data that are useful for policy and planning agencies. Fetal death statistics which vary from area to area require that new attention be given to improving the data base in all parts of the country for fetal mortality, particularly at gestation ages of 20 weeks or more. The National Center for Health Statistics should place these recommendations high on the agenda of its relationships with State health statistics agencies.

The Birth Defect Surveillance activities of CDC should be continued and expanded to broaden the search for causes of birth defects and to monitor the causes of infant pediatric morbidities.

CDC should expand the Epidemiologic Intelligence Service specifically to increase epidemiologic capacity in State perinatal and Maternal Child Health departments as it has done in State infection control units in State Health Departments.

Recommendation 28

Institute and/or continue population based longitudinal surveillance of significant childhood morbidities to help understand the magnitude and the correlation of these morbidities as the population matures.

Rationale

These represent major methods for better understanding risk factors and assessments of interventions for which new investments are needed. These studies are essential to understanding morbidity in children.

Recommendation 29

Establish community oriented, university based health services research centers responsible for collecting, analyzing, and disseminating data as well as training investigative perinatal health professionals.

Recommendation 30

Institute studies in health services, behavioral, and social research specifically looking at the characteristics of populations which do not receive prenatal as well as child care services. These studies should follow subsequent developmental patterns including infant and family patterns from the prenatal stage through the early years of life. They should also examine the characteristics of the present health care system which impede the delivery of such services as well as the patterns of care which provide effective services.

Rationale

Considerable new knowledge is needed to improve health services for mothers and infants especially for underserved segments of society. To improve health outcomes as much as possible, we need a better understanding of the precise events that affect pregnant women and infants and the range and variation in subsequent developmental patterns in the infants and their families.

Also, there is the need for more information about the nature and utilization of the interventions health professionals use to meet such risks and how to improve clinical service approaches and outcomes. The problem is complex considering the extended period from anticipation of pregnancy to the development of the fetus and the newborn through infancy.

Implementation

Significant investigations are needed to:

a. Determine the characteristics of populations not receiving prenatal and well-child care services and their subsequent developmental patterns and the characteristics of the supposed health care delivery system serving those populations and the ingredients of a more effective health care system.

b. Determine the differences in pregnancy outcomes between well served and unserved or underserved groups.

c. Study the organizational aspects for health services for mothers and infants including: the layout of services, the relationship of infant and maternal health care to other services, interprofessional relationships between professionals and other members of the staffs and develop the clinical science of intervention for the population at risk for poor outcomes.

Recommendation 31

Evaluate the effects of pluralistic service delivery approaches on maternal and infant health problems which have a multitude of causes.

Recommendation 32

Evaluate and monitor the consequences of diminishing and/or reallocation of resources currently supporting maternal and infant health services.

Recommendation 33

The Workshop urges the Surgeon General to use the influence of his office to develop a strategy of public information and education to promote the recognition of the great value to the nation of healthy pregnant women and infants.

Excerpts From Keynote Addresses

OPENING REMARKS, DECEMBER 14—
JULIUS B. RICHMOND, M.D.

Surgeon General and Assistant Secretary for Health, U.S. Department of Health and Human Services

In recent years, we have made considerable progress in the reduction of infant mortality. Chances that a child will be born alive and will live to his or her first birthday are better now than at any time in our history. Between 1965 and the present, infant mortality rates dropped almost 50 percent to the present rate of fewer than 13 deaths for each 1,000 live births.

Although this progress is dramatic and encouraging, the mortality rates for black infants—twice the rate for whites—is unacceptable in our society. And it is disturbing that the gap in the rates between white and black is not narrowing.

In the light of progress we have made, and in view of the glaring gaps, it was felt there should be a review of where we have been and where we are going in order to make improvements and to sustain and, even, accelerate progress. It is time to take an inventory and for that reason this Workshop was organized to bring to bear expertise and competence on the subject of parental and infant health, which underscores the role of both mother and father in the assurance of good infant health.

There are inequities within the general progress we have made in promoting infant and child health. For example, low income populations today are seeing providers of care as frequently as the more affluent. The problem is they are not necessarily getting the right kind of services, not receiving preventive services and, usually, services characterized by lack of continuity.

We need now to develop strategies that will enable us to cope with these and other problems in effective ways.

I think that we are very fortunate in this country that these efforts to improve maternal and infant health do not come from one source exclusively; not exclusively or even predominantly a Federal effort. Much health care is provided in this nation through the private sector and bringing together private and public actions becomes important as we pursue this effort.

Last year, the Surgeon General's Report on Prevention set as a national goal the reduction of infant mortality to a rate of nine per 1,000 live births by 1990. But we must recognize that the present rate of 13 per 1,000 is low enough to plateau once again. Then, the issues become much more complex

and difficult to assess and resolve. I am sure this group recognizes the seriousness of that problem and will provide valuable guidance as to how to proceed to continue to improve maternal and infant health for all parts of our society.

The shaping of public policy in a pluralistic society is a complex process. Three major factors interact in the development of improved programs.

The first is clearly a sound knowledge base from which we can generate improved programs. Certainly, through research and professional experience, we have a much richer knowledge base than we had several decades ago. It must continue to grow, but the knowledge base isn't always applied fully or evenly.

Therefore, we must turn our attention to the need for two additional dimensions: political will—or commitment of appropriate and adequate resources, and a social strategy to harness the knowledge base and the political will. Clearly, the commitment of resources is not enough unless we have the overall social strategy through which we will be able to exercise that will.

As to the timing of this Workshop, I suggest the agenda we are considering is an important one for our nation and I do not believe any administration will be refractory to considering the issues that will come out of this Workshop and the recommendations you will be generating. Those recommendations will need to go into the public domain and I believe they will be considered seriously by all decision makers in the public and private sectors. Recommendations from this Workshop will be important for all of those with responsibilities for the health and welfare of our population.

The health and welfare of our children is of particular importance. There is a special urgency because children have only one childhood that they pass through and, if they don't get the benefits of all that our society has for them, it becomes very difficult to go back and make restitution.

The Chilean poet Gabriela Mistral summed it up in these words: "The child cannot wait. Many things we need can wait, but he cannot. . .To him we cannot say 'tomorrow,' his name is 'today.' "

It is in that spirit that we meet. Your work will be important over time.

I am calling upon you to assist in developing the social strategy devoted to improving maternal and infant health in this nation. The strategy involves not only the Federal government, but also State and local governments, private voluntary and for-profit organizations, and academic institutions and foundations, all working together toward the common good.

ADDRESS, DECEMBER 15—PATRICIA ROBERTS HARRIS

Secretary of Health and Human Services

The fundamental issues which face this country will remain the same no matter who holds the reins of power and, traditionally, we have functioned within a broadly defined consensus about what we seek to accomplish in order to make this a "more perfect union."

In the area of health and human services, our shared concern about the well-being of our fellow citizens insures that we will face a number of issues, but today I want to focus on one issue about which all of us share concern—the health and well-being of mothers and children.

Every one of us—from President to private citizen—bears a special responsibility for the fate of the Nation's children. Children are at one and the same time our most valuable and our most vulnerable human resource. Their future is, in a very real sense, our future; and each generation owes to the next an investment in the health and well-being of children.

We need not approach the issue of child health today as a crisis. On balance, the statistical information indicates quite the contrary—that the health of our children has never been better. The infant mortality rate is at its lowest point in the nation's history; infectious diseases have been reduced dramatically; parents today have a better chance of raising healthy children into adulthood than at any point in world history.

We can be proud of those accomplishments. At the same time, a closer look indicates that not all the vital signs are good.

The most disturbing sign of trouble is that Americans do not share equally in this improved health status. Black infants, for instance, have a mortality rate which is nearly double that of whites. Furthermore, among children aged one to four, minority children die at a rate 70 percent greater than white children; and non-white children die from disease and birth defects at rates 25 percent higher than whites.

Poor children—a disproportionate number of whom are minorities—inherit ill health along with their poverty; and ill health at such an early age can become a lifetime affliction.

The health of American children might be better than ever before, but the health of some American children and the health of countless other children beyond our borders is far worse than any of us can, or should, accept. I did not come here today, however, to wring my hands about such conditions. Those of you in this audience appreciate both our successes and the enormous challenge which lies ahead. And so, for us, the question is: "Where do we go from here?"

In my judgment two obstacles lie before us—one, a largely technological and managerial challenge and the other a test of our moral commitment. On the one hand we must have the tools to do the job and, on the other, the will to get it done.

In our evolving understanding of the full meaning of the words "equal opportunity," we must now recognize that adequate health care is a prerequisite to equal opportunity in this society. Health care must be a right for all our people and adequate health care for infants and children, those who are just beginning life, is clearly essential.

This, then, is my message to you today. As involved as you are every day, in the delivery of services, in research, and in the better management of programs, you and this country cannot afford to lose sight of the other obstacle

which stands between us and better health for our children. In addition to those specific roles which must be played in securing maternal and child health, you must become advocates of a cause; this country needs your help in making certain that all your fellow citizens understand as you do how much remains to be done if all children of this planet are to have a chance for decent health.

We can bring about change. We may complain about shrinking resources, but the task can be accomplished if we manage those resources well and if we remain committed to the cause.

With help from millions of caring people in every walk of life, we can save children from the ravages of disease and poverty, and we must. For if we do not save the children, we shall have lost everything.

DECEMBER 16: THE INVISIBLE CHILDREN—GEORGE I. LYTHCOTT, M.D.

Administrator, Health Services Administration, Department of Health and Human Services

When we compare our progress in recent years with that of many other industrialized Nations, we find that we are not performing as well as we might in maternal and infant care. We rank 14th among the Nations in infant mortality. Our percentage of infants born with a low birthweight—7 percent—is not as good as Nations like Sweden, with 4 percent, or urban China, which was said to have had a prematurity rate of 2.5 percent during the 1970s.

At least in this context, then, the issue before us here is why have be done so poorly in comparative terms? And how can we improve our record?

My answer to the first question is: We have neglected the fundamentals of maternal and child health. That neglect is manifestly evident among the poor and most minorities. I call the young of these Americans our "invisible children." Tucked away in urban slums, rural backwaters and Indian reservations, they are all but invisible to most of America. They are hungry, ill-clothed and living in hostile environments. These children need a full measure of primary health care if they are to make it safely to adulthood.

The terrible irony of it all is that we have all but mastered the difficult, the complex and the heretofore considered impossible, but have overlooked the fundamental and the basic. Our health care system is a bit like a ballet virtuoso who can perform feats requiring the utmost agility, onstage, only to stumble headlong over a curtain rope, offstage.

Consider these facts: some 3.3 million rural poor families in America have no running water in their homes; another 7.2 million have to use "well water" which fails to meet drinking standards; and 6.5 million more use community water systems which also fail to meet standards. The answer lies less in advancing our already sophisticated medical science and technology and more in paying closer attention to the needs of those invisible mothers and children living in forgotten squalor.

It is the nature of these problems which lie at the very heart of this workshop's agenda. And it is the solution to these problems that will do the most to help us achieve those three goals for 1990 that Dr. Richmond spelled out in *Healthy People* last year: reduce infant mortality by 35 percent; reduce deaths among children one to 14 by 20 percent; and reduce deaths among adolescents and young adults by 20 percent.

Ambitious as these goals sound, they are achievable. Given the resources, the imagination and the commitment, we can reach those targets. Committing the resources is a decision that the Nation as a whole must make and the mood of Congress will be critical here. But imagination and commitment are ingredients well within the grasp of the health care community itself.

We must continue developing ideas that bring the programs of maternal and child health into a cohesive, productive relationship with one another. To achieve this does not necessarily require acts of law, but it does, indeed, require acts of imagination. The 34 improved pregnancy outcome projects scattered around the Nation are an example of this. These projects seek to make pregnancy and childbirth safer events for high-risk mothers living in poverty. They take dead aim at those invisible children and mothers. When federal support funds for these projects come to an end, the structures of collaboration they have brought into being will stay in place—bringing together the people and the resources of the State, the community, the hospital and the university medical center.

Ideas like this are helping to erode the petty rivalries and turf problems that I believe lie at the root of our so-called categorical health dilemma. Exciting experiments in integrated service are afoot now which shatter the myth that unbreachable walls exist between us. The laws which govern our categorical health programs were never meant to divide our enterprise, but were intended to fix responsibility and accountability. I submit that we can have the latter without sacrificing the former, if we keep our eye on what matters.

A critical reassessment of the economic and programmatic direction of our financing system is central and essential for all of us concerned about the health of mothers and children. We must redirect the billions of dollars of public and private reimbursements to provide incentives for keeping mothers and children well, and not merely paying for their care after they are sick.

We must plan for the future—select strategies that hold the promise of returning more to the Nation than their cost. Few areas of health offer more potential for realizing that aim than the health of children. We must begin making the case that our children are not only valuable in their own right, but respresent the Nation's primary investment in its future.

We have it within our technical grasp to complete the agenda in maternal and child health in the next ten years. Whether we shall do so depends in great part on the will, the vision and the imagination of experts like you.

An International Perspective

Norman Kretchmer, M.D., Director, National Institute of Child Health and Human Development

Robert E. Greenberg, M.D., Chairman, Department of Pediatrics, University of New Mexico School of Medicine

(These two scientists presented impressions of their recent 18-day visit to the Republic of China under a scientific study agreement between that Nation and the United States. The ten areas of study include child health and nutrition and human genetics. During the visit, urban and rural areas were observed.)

Kretchmer

One overriding impression of the Chinese situation regarding child health, nutrition and human genetics was the policy set by the government: "One child is the best, and two the most." Our hosts sought information from us from a technological viewpoint regarding human genetics and antenatal and postnatal diagnosis and postnatal care and nutrition in an effort to produce a perfect child.

One professor of obstetrics said the idea was: "'Since we are dealing with one child, that child is a treasure and, consequently, that child must be perfect." The Chinese are looking to the Americans to provide technological know-how to help them achieve that level throughout the Nation.

Prematurity rates were surprising: 6-10 percent in urban areas and 2-3 percent in rural areas, compared to the United States rate of 4-5 percent at the very best and 12-14 percent at worst.

The Nation is seriously deficient in research and medical education; the cultural revolution which took place some years ago put China back two generations in research.

Greenberg

We noted a sharp contrast in the implementation of a system of care—rural and urban—and a coalescence of therapeutic and preventive efforts, opposed to frequent separation that characterizes the American situation.

There are some 50 minority groups in China, but they represent only a small portion of the population so the people are generally of a quite common genetic stock. One is offered the research opportunity of investigating general genetic uniformity, compared to the disparity in the United States.

From our viewpoint, the reduced incidence of low birthweight infants that seems to characterize many areas of China is absolutely incredible. This represents an important area for investigation. If true, a marked reduction of low birthweight infants can be effected in the absence of technology and even secondary resources. I hope one of the outcomes of this Workshop will be the recognition of the importance of cross-cultural research efforts to determine low birthweight infant statistics.

A DOMESTIC VIEW: FEDERAL MATERNAL AND INFANT HEALTH SERVICES PROGRAMS

Gilbert S. Omenn, M.D.

Program Associate Director, Human Resources, Office of Management and Budget

Much progress can be documented by using the infant mortality rate as an indicator and a proxy for other health objectives. The infant mortality rate fell 44 percent in the United States between 1965 and 1978, dropping from 24.7 to 13.8 infant deaths per 1,000 live births. Masked in this significant overall decline, however, are substantial racial and geographic variations:

- In 1978, the nation's infant mortality rate for blacks was 23.1. In contrast, for Indians it was 13.7 and for whites 12.0. (No separate rate for Hispanics is currently available.) The rate for black thus was roughly twice the rate for white.
- In 1978, Statewide infant mortality rates ranged from 10.4 to 27.3. State rates for blacks ranged from 11.0 to 35.2, while the rates for whites ranged from 9.9 to 14.9.

For the five-year period 1971-75, county infant mortality rates ranged from 1.9 to 63.1. Nearly one-third of our 3,100 counties had rates in excess of 20.0.

My staff and I recently began an in-depth review of major programs which have as an explicit major goal the improvement of the health of mothers and children. It includes the Supplemental Feeding Program for Women, Infants and Children (WIC) in the Department of Agriculture and the Maternal and Child Health, Family Planning, Community Health Center and Head Start programs in HHS. It has been fascinating and gratifying to hear the budgets for these important, large federal programs justified by good results in terms of health status measures. In FY 1980, these five programs spent more than $1 billion on health and related services for more than 10 million American mothers and children. Many of the services provided through these programs are also funded by Medicaid. Thus, the total Federal funding channeled through these programs is substantially in excess of $1 billion.

Several recent efforts can be cited as examples of effective maternal and infant health program coordination.

In predominantly rural areas of Alabama, an Improved Pregnancy Outcome project was organized to combine funds from maternal and child health, family planning, National Health Service Corps, Appalachian Regional Commission and State programs. Regional health consulting and advocacy teams were established, county-based plans were developed for local maternal and child health services, and commitments are being negotiated between state and county health officials regarding the quantity and quality of services. Major improvements have been made in the analysis of vital sta-

tistics and in improving the data available on individual use of health services. The initiative has been most effective in reducing the State infant mortality rate—down from 20 in 1976 to below 14 in 1979. Maternal and fetal mortality rates have also decreased. Not all indices have improved, however, the incidences of teenage pregnancies and illegimate births have increased.

Again, in a rural area, north-central Florida, MHC, WIC and Title X Family Planning, Title XIX Medicaid and Title XX social services resources have been combined under the cooperative direction of the State and county health departments and the University of Florida Medical School. Teams dispatched from central project offices in Gainesville to different rural locations each day have helped reduce operating costs by centralized accounting, recordkeeping, external reporting and other administrative activities. They have been most effective in reducing repeat teenage pregnancies from 40 percent in 1977 to 5 percent in 1979. Other positive health achievements between 1977 and 1979 include a decrease in cesarean sections to 3 percent and decreases in the rates of fetal mortality and low weight births.

Other examples of effective State and local program coordination are found in South Carolina, Cincinnati, Denver and Portland. I trust that many of you in this Workshop will provide detailed information on these and other successful coordinating efforts. We need to encourage and strengthen these initiatives and develop effective methods of replicating them.

Resources from Federal health programs should go disproportionately, I believe, to those areas of greatest need with the best plans for addressing those needs successfully and efficiently with both public and private resources. Targeting can be based upon clear, quantified objectives for improvements in health status and health outcomes for defined population groups in specific geographic and political units. Local and State officials should be encouraged to tie together the resources available from the related Federal programs in a plan that offers the best chances in particular settings to achieve these objectives.

Despite the focus of Federal programs on improving maternal and child health, none allocates funds to States primarily on the basis of measures which directly reflect poor health status. WIC allocations are based primarily on each State's proportion of poor children under age five. The State's relative infant mortality rate is used in the formula, but it receives much less than equal weight. In addition, adjustments are made in the allocations so that States are able to maintain program levels from year to year. The WIC formula is not established by law, but at the discretion of the Secretary of Agriculture. Given the 1990 goals and WIC's health objectives, I recommend that we examine the desirability and feasibility of making formula changes which would more closely target WIC funds to States with the greatest health needs.

In the MCH program, almost half of the total program funds, by law, are allocated on the basis of the State's proportion of live births. Additional

funds are allocated to States using a formula determined by the Secretary of HHS. This administrative formula currently uses the State's proportion of live births, but factors-in the proportion of rural births and relative per capita income. Again, given the 1990 goals and MCH's objectives, we might consider changes in the MCH formulae, particularly administratively determined formulae.

I can recommend three immediate actions that might be considered by the working groups at this conference:

- Despite the availability of population, income and vital statistics for States, counties and some subcounty areas, there apparently has been no systematic effort to identify the "pockets" of poor health which represent our highest national priorities. Measured changes in health status should supplant simple input measures of "underservice" in allocating human and fiscal resources. Where improvements in quantifiable health status indicators are warranted, these should be developed.
- Current Federal programs, taken together, contain considerable flexibility to target funds by the methods and to the places where they can have the greatest impact. There should be support for cross-program strategies to guide operating decisions.
- Each of the five programs reviewed requires area need assessments in connection with project applications for funds approval. Specifications for these assessments are similar but their quality and usefulness vary widely across programs. Arrangements for cross-program sharing of need assessment data could improve current project grant awards and enhance administrative efficiency.

Panel Presentation Summaries and Excerpts

REVIEW AND ASSESSMENT OF THE CURRENT STATUS OF KNOWLEDGE, SERVICES AND DEFICIENCIES

Obstetrical Perspective

George Ryan, M.D.

Prenatal care for most patients begins in the first trimester of pregnancy, but approximately one-fourth of all pregnant women in the United States today receive less than adequate prenatal care.

The first physician visit is an opportunity, a time for identification of risk factors for a poor obstetrical outcome—for classification of patients as low risk, at risk or high risk and for planning the care of patients in a facility capable of handling expected and unexpected problems. Screening for preventable risks is also possible. For example, patients may be found to have bacteria in their urine. If undetected, serious kidney infections will be seen in about 50 percent of these cases, whereas prompt antibiotic therapy can virtually eliminate this risk.

Though not as yet possible, the prospect is that through screening a low risk group may be identified which could be cared for in a less expensive manner than the present classical care by obstetrical and gynecologic specialists and hospitalization in an expensive acute care facility.

Amniocentesis may be offered to patients at risk for genetic abnormalities and to women 35 years of age and older, due to the increased incidence of Down's syndrome (amniocentesis is highly recommended for those over 40). The risk of amniocentesis in prenatal diagnosis of genetic diseases is low, with less than one percent complications.

Most obstetricians and gynecologists today offer patients an opportunity to enroll in some sort of childbirth education program and to participate in some non-critical decisions related to the way they wish to have their babies—natural childbirth, anesthesia choices, analgesia during labor, breast feeding or bottle feeding, for example.

As the prenatal period enters its later phases, the physician is now able to assess growth and development of the intra-uterine fetus to a degree that was impossible even a decade ago. And, if there is some question of the rate of fetal growth, intra-uterine growth retardation may be assessed by serial ultrasound measurements of the biparietal and thoracic diameters of the fetus. Whether the fetus is thriving or in danger may be assessed by a non-

stress test which, when abnormal, can be followed by a stress test which has greater specificity.

If premature labor occurs, newer additions to the armamentarium include beta sympathomimetics, such as ritodrine, which have the effect of slowing or even stopping labor. Widespread use of these types of drugs will mean that more infants will reach the 2,500 gram dividing line between prematurity and maturity.

At the time of labor and delivery, family-centered maternity care has become a reality in all parts of the country and today not to have the husband or "significant other" present in labor and delivery is probably more the exception than the rule. Medication in labor has significantly decreased nationally and anesthesia tends to be local or regional with both saddle blocks and epideural anesthesia being very popular.

Delivery is still predominantly in hospitals—at 99 percent—but a growing realization that the hospital setting frequently does not supply a satisfying emotional experience for the mother and family has prompted the development of "birthing rooms" within hospitals. This, combined with an aggressive approach to family-centered maternity care, means the safety of the hospital can be combined with the home-like atmosphere and satisfying emotional experience promoted by advocates of alternative birth systems. Although a few alternative birth centers have grown up as freestanding and separate from hospitals, experience has not yet been broad enough with these entities to assess their safety or their future role. A small group of proponents of home birth exists, but conventional wisdom supports the view that the inevitable unexpected complications that occur at the time of labor and delivery place patients choosing this option in a less safe status than those delivered in the hospital. Nevertheless, no large scale study in this country has been performed to answer the question of whether there is some low risk group that can be delivered at home with reasonable assurance of safety.

Electronic fetal monitoring has become available widely, a modality that can be helpful in identifying fetal distress prior to serious damage to the baby. The role of this technology in the low risk patient, however, has been questioned and, at the present time, is not recommended for all patients, only for those at risk.

The increasing rate of cesarean sections has been a cause of concern for both the profession and the public. Analysis of indications for cesarean sections indicates that failure to progress in labor has increased rapidly and accounts for approximately one-third of all cesarean sections, and repeat cesarean sections account for another 20 percent. Avoidance of traumatic delivery with difficult mid-forceps, and avoidance of breech deliveries, are other evidences of changing practices which increases the cesarean section rate. But, at the same time, they have contributed to the fact that newborn and maternal mortality have fallen to all-time lows in the United States.

The current explosion in technology related to communications and data processing offers an opportunity to improve regional systems of perinatal

care far beyond what we might have imagined a decade ago. The dream of a widespread common data base (a sophisticated system to allow for multivariant correlational analysis) and the ability to more readily identify problems, are successful modes of therapy today.

Maternity care, which for years had almost a "tradeschool" aspect, has become a much more scientifically based discipline. In recent years, it has tempered the scientific trend with a move toward the humanism demanded by the women of this nation.

Pediatric Perspective

Mary Ellen Avery, M.D.

Of the more than three million infants to be born next year in the United States, some 2 to 3 percent will be born before 32 weeks of gestation and weigh less than 1,500 grams. About 30,000 infants will be born before 28 weeks and weigh between 500 and 1,000 grams—and about half of them ought to live.

Our society has charged pediatricians to provide optimal care for these very low birthweight infants, but what is optimal care? It must be based on understanding of the needs of the infants and, since experience with very small infants is relatively recent, continuated observation and study of postnatal adaptations and careful evaluation of all interventions is a major responsibility. The challenge is to reduce morbidity as well as mortality. A continuing problem is hyaline membrane disease and its complications. It can sometimes be prevented, but it requires more attention to improved ventilatory assistance and other kinds of supportive care.

The nutrition of small infants also deserves continued study. Our knowledge of precise protein, fatty acid, vitamin and mineral requirements is minimal.

Behaviorists remind us that infants should not be overloaded by stimuli which can be a problem in our well-lighted, noisy nurseries where physicians and nurses feel the need to perform many tests and where parents are intent on touching to establish a relationship with the infant.

Although I have focused on low birthweight infants, which comprise most neonatal deaths and account for a major share of the costs of intensive care, we should carefully note the occasional tragic loss of term or near-term infants.

Although neonatal mortality nationwide was down to 8.7 per 1,000 live births in 1979, in the best of circumstances, it would have been under 5. Thus, increasing availability of present knowledge must be a major priority. The long-term goal of prevention of premature onset of labor and understanding of the special needs of the newborn depend on continued major support of basic research in perinatal medicine and prenatal diagnosis.

I think the scientific community is poised to make major advances in understanding the biology of human reproduction, perhaps greater than at any time in history.

Psychosocial Perspective

Kathryn Barnard, R.N., Ph.D

In spite of attempts to collect scientific evidence identifying factors associated with a poor or good outcome of pregnancy, the resulting body of knowledge does not allow one to outline assured sets of variables that will enable us to identify which factors to attend to or change. It is important to identify which aspects of the individual and the individual-environment interaction are significant if we are to continue to reduce the rate of infant mortality and thereby improve the outcome of pregnancies and later health of children.

The interrelatedness of living systems must be recognized and it should be remembered that in providing health care we are dealing primarily with organization-family/group-person/organs-cell interplay which represents a complexity that has not been part of our scientific models of causation.

Since 1954, there has been a growing body of evidence that relates maternal anxiety and psychological conflict with complications of pregnancy and dysfunctional and prolonged labor. In spite of a 25-year span of recorded awareness of psychological states influencing the course of labor, it is only recently that our understanding has gone beyond the known association of anxiety and poor labor outcomes. One study has found that a woman's degree of conflict regarding her acceptance of pregnancy was positively correlated with her measured state of anxiety and serum level of epinephrine during phase 2 of labor, for example.

Several studies have related a general trait anxiety with complications of pregnancy, but few health care providers have reported specific means of assessing anxiety in relation to pregnancy or studies seeking to deal with anxiety reduction.

The emotional state of mothers has been associated with children's health. One study of children under 3 years of age with weights below the third percentile (in 23/40 cases where there was no organic cause for the growth retardation) found that the mother perceived herself as being depressed.

Another study concerned the effects of seven behavioral variables on fetal growth which seem to coincide with motivation for health. The behavioral variables included cigarette smoking, indulging in certain drugs, low weight gain during pregnancy, failure to obtain sufficient prenatal care, undertaking pregnancy when too young or too old, and being underweight for height at conception. There was an interelationship among variables—mothers who had one tended to have another; some had as many as 4/7. In mothers with multiple behavioral variables, there was an associated high incidence of premature birth and low birthweight, irrespective of socio-economic status.

Emotional state, whether it be anxiety, depression, conflict or motivation, cannot be considered apart from the environment. It is probable that emotional status of the mother both interacts with broader social and eco-

nomic factors and is greatly influenced by these variables. In turn, these social forces, given a particular emotional state, can either increase or decrease her susceptibility to pregnancy complications. However, few studies of emotional status have been done, other than on Anglo, middle-class samples.

There are several variables that most recent research into psychosocial aspects of pregnancy suggests as profitable when attempting to develop strategies for reducing infant mortality and in general improving pregnancy outcomes and infant health. Many authors point out that the outcomes of fetal death, immediate neonatal and death before the first year, may be related to different factors. In general, the longer the child lives, the more the general environment influences outcome, whereas during fetal and early neonatal periods, the greatest share of the influence comes from the status of the mother.

Evidence suggests that emotional state is associated with biological function and, furthermore, there is evidence that links the general and more specific qualities of the environment to the emotional status of the mother. None of these factors is considered adequately in prenatal or postnatal care. Additional research is needed to replicate the findings regarding conflict about acceptance of pregnancy, anxiety, life change, father involvement, motivation for self-care and prenatal care with pre-pregnant health state controlled.

Even with the need for more research, it seems justified to redesign prenatal care to meet the varied needs of different cultural groups; that the teaching and counseling role of the nurse be strengthened; and that these services be considered a routine of pregnancy care, rather than nice if available. In spite of frequent reference in the literature to the positive benefit of nursing services, the economic support of nurses to provide maternal-child care in communities has declined. Likewise, the increasing gap between infant mortality rates in black and poor populations demand that we reassess the services provided and, either through additional research or a reassessment of what we have done, change ineffective strategies. There is no escaping the fact that social equality must be considered. The opportunity for employment, food housing, day care and health services must be improved if we are to improve pregnancy and infant health outcomes.

DIMENSIONS OF THE PROBLEM

Who Are The Underserved?

Karen Davis, Ph.D.

The poor today are most often likely to be children, female or minorities. Slightly more than one-fifth of all children living in families are in low-income households. Women represent a disproportionate 60 percent of all persons at or below the poverty level and about one-third of them are between the ages of 16 and 44.

Mortality rates provide a basic means by which to assess health care services for poor children and pregnant women and the fact that infant mortality rates for blacks and other minorities are 80 percent higher than for whites speaks for itself. Further, in 1977, 12.3 of every 1,000 white infants born alive died before reaching the age of one, while the rate for non-whites was 21.7 per 1,000. Minority preschool children have a 50 percent higher death rate than their white counterparts.

Among indicators of healthful and preventive prenatal maternal and child health behaviors are disparities in utilization of health services. In this connection: children in fair or poor health in the the highest income groups made nearly 2.5 times more physician visits than children in the lowest income groups who reported similar health conditions. Data from 1976 show that: low income women were half as likely to receive early prenatal care as high income women and women from high income families were 40 percent more likely to receive a breast examination or Pap test than women from low income families.

The Multi-Risk Family: Clinical Perspectives

Stanley I. Greenspan, M.D.

Infant morbidity, including social, psychological and cognitive functioning, is now a major national concern. This concern has perhaps necessarily been of secondary importance to those related to reducing risk factors associated with infant mortality.

But, as we become increasingly successful in reducing mortality rates through improved technology and delivery of services, we shall find that more babies are potentially capable of optimal development in social, psychological and cognitive dimensions. However, as the families we have studied taught us, the risks for morbidity are grave.

These risks encompass a broad range of human needs: the fundamental need to survive, associated with physical protection and care; the need to form a human attachment; the need to read and respond to the signals of the baby correctly; and the need to foster the youngster's own capacity for basic skills, such as reality testing, impulse modulation, mood organization, initiative and mastery. The risks of morbidity will remain great until programs are organized which integrate a prenatal and postnatal focus for at least three to five years.

These programs should take into account the needs of the infant and the family and plan their approaches by building on the potentially solid constitutional status of the infant as well as the specific vulnerabilities in the infants and their families. These approaches will offer promise to reverse the trends we see in multi-risk factor families, where one generation of a multiproblem family leads to another. Many of the families already represent the third or fourth generation and, on a case by case basis, have shown a capacity to reverse the trend of deteriorating cognitive, social and emotional functioning with appropriate preventively oriented services. Such services

must, in addition to the integrated prenatal and postnatal developmental focus, offer: (a) help with concrete supports, including food, housing and medical care; (b) an ongoing, consistent human relationship characterized by trust and positive expectations; and (c) specific expertise and services geared to help the infants and their families with their individual different needs at each phase of development.

While the costs of offering such programs are great, the costs of not offering them are even greater. The six percent who it has been estimated use the 50-70 percent of all services present an economic and social cost compound by the additional loss to society in potential contributors to the labor force and to creative endeavors.

Preventive programs are not as costly as may be imagined. When services are offered to an entire high-risk community, only a small percentage of families actually need the most intensive help. For example, a Michigan program found that the average cost per family was $850. In terms of screening and backup for an entire community, the cost per family for such services would average out into a significantly lesser amount.

Such approaches are necessary lest more children enter the ranks of those who are too late for prevention and too many for treatment.

The Promise of Regional Perinatal Care

Kenneth G. Johnson, M.D.

Within the past six years, much attention has been given to the strategy of regional planning for perinatal care. In the history of the delivery system for perinatal care, the attempt to broadcast the benefits of modern perinatal medicine to entire regions is a startling development. The concept of a regionalized system of perinatal care took off in the early 1970s. At that time, a great deal of optimism was generated among leaders in perinatal medicine about the potential benefits of regional planning for perinatal care. It was postulated that a regional plan would ensure access to the appropriate level of care for all women and their newborn within an entire region. In the past 20 years, we have moved along a continuum of increasing expectations, from life-or-death to the quality of the survivor—and to the social environment that will provide every child with a fair chance for optimal growth and development.

There is a danger in citing regional perinatal care as the modal strategy of the delivery system for such care. How well the system functions is determined by a complex interaction of natural and social supports, the physical environment and the medical support system. Within the highly complex delivery system for perinatal care, it is difficult and unwise to choose one determinant as the most important. The effects of poverty, unplanned pregnancies, poor nutrition and other social factors contribute enormously to the poor outcome of pregnancy.

Even with the virtual elimination of social and economic gaps in our society, there would still remain high-risk mothers and infants in need of effec-

tive medical intervention. To develop an effective delivery system, we cannot afford significant omissions. Uneven access to effective perinatal medical care has been and remains a problem and I believe all segments of providers of maternal and infant care should welcome the new strategy of regional perinatal care.

A regional plan is a network, within a defined region, of all providers of care at all levels of care and the target population includes all pregnant women. The functional elements include risk assessment, the use of a uniform information system and services provided by the regional perinatal center—consultative services, laboratory services, continuing education and training and transport services. The only reliable identifier of a participating hospital in this model is its inclusion in the regional information system.

Within the past five years, regional perinatal plans have become ubiquitous, one cannot cite a single State without some regional plan within its borders. Despite many variations, the concept of regional planning has been widely implemented.

As to benefits, in a 1979 survey by the American College of Obstetricians and Gynecologogists of obstetricians practicing in five regions where perinatal care had been regionalized, physicians reported improved access to consultation and care for their high-risk patients; and for themselves, improved educational programs. The physicians reported substantial improvements in facilities and equipment in community hospitals, in the level of obstetrical nursing, and in coordination of regional perinatal services.

Feasibility in 1980 is not an issue. For example, in the Cleveland region, 64 percent of all hospitals participate fully in the regional network, and 76 percent of all annual pregnancies and births are in the system.

How well the regional plan is working to anticipate poor outcome is reflected in changes in the number and proportion of high-risk mothers who are referred to perinatal centers before delivery (such patients usually being described as maternal transports or transfers). In the first two years of regionalizing perinatal care, sharp increases in the number of maternal transfers have occurred. In Arizona, for example, the number of mothers transported before delivery to perinatal centers in Tucson and Phoenix was 300 in 1975, the first year of the program, and exceeded 600 in 1979.

As to the cost of regionalizing perinatal care, a regional information system and a staff to provide consultative services to a region has been estimated in one study to be about $20 per mother-infant pair, or $200,000 per 10,000 deliveries per year. This is an incremental cost offset to some extent by the current cost to hospitals of maintaining obstetrical and neonatal records. Obviously, the cost is a tiny fraction of the cost of providing direct perinatal services in a region.

I am unable to cite any studies relating to the evaluation of the efficiency of regional perinatal care. But I believe that the case for regional perinatal care presently rests on its presentation as a prudent investment in organizing a system to improve standards of perinatal care and to assure access of the pregnant woman and newborn to the level of care they require. Considering

the alternative, at best an informal centralized network, regional perinatal care is a prudent investment.

It seems to me that the good news is that for the first time in an otherwise dismal history of efforts to regionalize personal health services, there has emerged from the medical professional sector vigorous support for regional perinatal care. Another good feature of regional perinatal care, largely unappreciated, is its melding of the private and public sectors in a common mission. I believe that the level of interest generated by regional perinatal care in coordinating and integrating the resources and actions of both the public and private sectors is unprecedented in our society.

When we consider the deep pockets of rural and urban failures of the nation's perinatal delivery system, we should welcome their inclusion in an orderly network of perinatal care. Bringing the ghetto hospital and the isolated rural hospital into the mainstream is clearly different from neglect.

Regional perinatal care is not a panacea, but it is a strategy that holds much promise. Despite is apparent ubiquity, regional perinatal care is still in its infancy and has far to grow before it will impact substantially on improving the outcome of pregnancy. Unless joined closely with the social support system, its benefits will be limited.

Regional networks of perinatal care can provide a substructure to which multiple programs that provide an array of services to mothers and infants can be affixed.

Perhaps the best feature of regional perinatal care is its unitary focus on the individual patient, assessing her needs and bringing interventions into place to reduce the risk of pregnancy to mother and infant. The success of regional perinatal care is totally dependent on the strength of the partnership that has created the network.

I believe that regional perinatal care offers the best opportunity to begin to structure an organization of maternal and infant care that will begin to deal with the complex interplay of social, medical and environmental factors that determine the outcome of pregnancy and early life; that it will start to close the gap in outcome between the haves and the have-nots in the society.

SOCIAL STRATEGY INFLUENCES

The Epidemiology of Adverse Outcomes

Godfrey Oakley, M.D.

There have been substantial reductions in the infant mortality rate in the United States over the past 30 years, including continued improvement over the last decade. Less attention, however, has been paid to trends in the major childhood morbidities—birth defects, mental retardation and cerebral palsy.

The best-studied trends are birth defects. Infant mortality due to congenital malformations has increased from 7 percent in 1916 to 18 percent in

1977. Present birth defects and prematurity account for 40 percent, or 16,000, infant deaths each year.

Up-to-date trend data for birth defects are collected through the Birth Defects Monitoring Program of Center for Disease Control. Each quarter, the incidence of some 150 birth defects is monitored for approximately one-third of all births. The majority of the categories have been stable since 1970, indicating that we are not making a great deal of progress in reducing these problems. The lack of progress is mainly due to lack of effective intervention strategies. Some large decreases are expected for several tube defects as soon as maternal serum alphafetoprotein screening becomes available.

Dramatic decreases were seen in the early 1970s for rhesus hemolytic disease. The decrease has plateaued in the last few years and it is not known how much lower the rate can go. Several cardiac defects have had an increasing evidence reported since 1970 (patent ductus arteriosis and ventricular septal defect).

The trends of major mental retardation have not been actively monitored in the United States. It is likely that there has been little overall improvement in this country as the rates reported from western countries over the last 40 years have been consistently in the 3-5/1,000 range. The largest and most recent study from the United States—the Collaborative Perinatal Study—had rates at the upper end of this range.

The prevalence of severe mental retardation has changed little, primarily because concomitant with decreased infant mortality in general has come a substantial improvement in survival of Down's syndrome babies—the most prevalent known cause of major mental retardation. Another 20-25 percent is due to single gene diseases.

Effective mental retardation prevention strategies have been implemented over the last decade for congenital rubella syndrome, PKU, hypothyroidism, lead poisoning and rhesus hemolytic disease. These diseases account for less than 5 percent of mental retardation. Similarly, the prevention of mental retardation from better prenatal and intrapartum care is directed at the 10 percent of mental retardation due to these factors. Progress can be expected as our health care improves and particularly as prenatal diagnosis for Down's syndrome and neonatal services for metabolic diseases becomes available to an increasing proportion of pregnant women and children.

There has been a great deal of concern about whether cerebral palsy would increase with decreasing rates of infant mortality. The most recent data for the United States is the Collaborative Perinatal Study which showed no trend. Population studies of cerebral palsy in Sweden and Australia have shown decreases in cerebral palsy parallel with decreases in infant mortality in the 1950s and 1960s. There is some concern over data in the early 1970s indicating that the rate could be increasing slightly.

The Collaborative Perinatal Study also pointed out that only nine percent of the cerebral palsy is among those at highest risk—infants weighing 1,500

grams or less. The Study showed that more than half of children with cerebral palsy were full-term infants. Prenatal factors can predict infant mortality. The Collaborative Perinatal Study data showed, in contrast, that some 60 prenatal factors could not distinguish among 50 children with severe mental or physical handicaps and normal controls.

With data presently available, it is reasonable to conclude that the dramatic decrease in infant mortality has not been accompanied by a similar reduction in prevalence of birth defects and mental retardation. Cerebral palsy, on the other hand, has decreased although there is concern about a possible recent rise.

Demographic changes that focused our attention on teenage pregnancies during the 1970s will lead to an increasing proportion and number of births to women 35 and older in the next decade. We must be prepared to deal with the expected near doubling in the number of babies born to women 35 and older other the next decade.

We need to continue to monitor the trends in birth defects. We must establish in the United States population-based studies to measure the prevalence of major childhood disabilities—especially severe mental retardation and cerebral palsy. Such studies would not only permit us to measure the impact of various interventions, such as prenatal diagnosis, neonatal screening and neonatal intensive care units, they would also permit the base from which to conduct epidemiologic studies of the causes of these diseases. We must remember that some of the predictors of, risk factors for, infant mortality are not the same for major pediatric morbidities. Attention is needed specially to defining the predictors of, and risk factors for, morbidities.

Statewide Strategies for Developing Effective Perinatal Care Systems

Stanley Graven, M.D.

Development of statewide strategies to improve the delivery of perinatal health care is a complex and intricate task. Each state and area has its own unique set of problems and resources. While there are many different strategies, there appear to be several principles or premises operative in locations where strategies have proved highly successful. The following operating principles or premises, which form a common thread, are proposed as important to the process of developing a strategy to improve health care for mothers and infants in an area as large as an entire state.

- People and institutions must be cultivated and encouraged to do things, not ordered or directed. Very little is accomplished by executive orders or centralized administrative directives.

- Areas or regions should be of manageable size and fall into logical areas which provide some common basis for addressing problems and developing solutions. Relatively little is accomplished through approaching the State as a whole.

• Constituencies and coalitions must be developed within each area and problems must be divided into manageable-sized component parts.

• Efforts should be focused on achieving small but long-term or permanent gains. Major thrusts usually die for lack of broad support and most long-term gains involve changes in peoples' attitudes and care practices.

• Sequence and timing are usually crucial for success—some issues and problems need to be left alone for periods of time while others need to be addressed promptly while the opportunity exists.

• Finding and involving the right people is essential. Plans and activities should focus on what people and institutions can do. Far too many plans and programs focus on legislating what individuals and institutions cannot or should not do. Most have the potential to do much more than they are presently doing, given support and encouragement.

• Solutions to care problems must involve a chemistry of resources, a partnership between private and public resources, perinatal centers and community hospitals and professional disciplines and the recipients of care.

• Professionals and patients do care, none wants adverse outcomes. Most health professionals, however, are working hard to keep up with often very unrealistic workloads and are doing a very reasonable job. What is often interpreted as opposition or indifference is fatigue, stress or inability to take on one more problem or issue.

• Health care for mothers and infants is closely tied to family, culture, and religion and should be delivered as close to home and support systems as is possible.

Among the components that should be included in the development of a statewide strategy: regional or area resource perinatal centers; health care institutions of varying capabilities; health professionals; community institutions and organizations; agencies that administer funds and programs and, of course, recipients of care. Any strategy must incorporate these six components and how they are involved, linked, motivated and supported will determine the shape of the strategy as well as its likelihood of success.

Data Systems and Information as Tools for Making the System Operate more Effectively

Alfred Brann, M.D.

Perinatal surveillance is a dynamic process through which data on the occurrence and distribution of perinatal events in a defined population are collected, tabulated, analyzed and disseminated. Because of improved knowledge and techniques today, epidemiologic data of this kind is more important than ever before in the effort to improve maternal and child health systems.

As long ago as 1862, Dr. Little pointed out a causal link between sub-optimal perinatal care and negative outcomes in a report entitled "On the Influence of Abnormal Parturition, Difficult Labors, Premature Births and Asphyxia Neonatorum, on the Mental and Physicial condition of the Child, especially in Relation to Deformities."

Since that time, there has been a continuing need, variably met, for the collection of adequate data to delineate factors in sub-optimal perinatal care that lead to poor outcomes. Today there is a need for an on-going perinatal care survillance system. Surveillance has evolved from monitoring the individual with a specific disease to the present monitoring of the health status of the population or populations and factors which influence it. Data collection has, in the past, shed light on maternal and infant health.

For example, it has been pointed out that low birthweight rates from the Renaissance to the early 1900s were approaching the rates of today's middle and upper-middle income groups in the United States. Although the data are relatively crude, they do suggest that birthweights in early times were improving, long before the availability of modern technology and techniques in perinatal care.

Surveillance has also shown us that the United States has the lowest birthweight-specific neonatal mortality rate in the world, but not the lowest general neonatal mortality rate. Sweden has the lowest general neonatal mortality rate in the world. When one examines these two statements, it is important to differentiate between birthweight-specific neonatal mortality rate and neonatal mortality rate. In Sweden, for example, we find the lowest neonatal morality rate *and* a very low low-birthweight rate. This tells us that an American baby of any weight has a better chance to survive than one in Sweden. This also suggests that our ability to care for neonates has progressed to great heights but that our ability to help mothers reach full term has not improved in the past 20 years, as it has in Sweden. Through this bit of information, we now see clearly that if we are going to reduce infant mortality we must now concentrate on reducing low birthweight rates rather than placing emphasis on keeping smaller and smaller babies alive.

The progress in reducing infant mortality to 9 per 1,000 by 1990 is going to be very difficult in that there now exists a unique problem - *pockets* of high infant mortality. This fact alone makes it mandatory to have a perinatal surveillance system which: can provide an accurate and detailed definition of perinatal problems; can reflect changes in the epidemiology of perinatal problems; can provide data for evaluation of infant morbidity, effectiveness of programs and services, and allocation of resources; and can indicate priorities for research that will lead to prevention of future problems.

My overriding recommendation would be for the establishment of a State and/or subarea perinatal surveillance system along with the training of perinatal epidemiologists who could collect, analyze and distribute on a timely basis, perinatal information and data on infant morbidity.

THE NEEDED RESOURCES

Public/Private Financing of Maternal and Child Health Care

Stanley B. Jones

Although insurance and financing systems for health care are extremely diverse, it is possible to distinguish five basic methods of financing health care for pregnant women and children: private payment, federal grants, Medicaid, public provider and voluntary giving. One can consider several kinds of changes that might lead to more desirable health care for children and pregnant women: (1) modification in the present private insurance system; (2) improving Medicaid as an insurer of health services for poor women and children; and (3) giving State governments substantial new roles in using public providers, grantees and others in the planning and start-up of community resources for care, in providing selective preventive and related services and in ensuring and coordinating appropriate utilization of care.

The objective is the establishment of an expanded government financing role only when private insurers and providers are unable or unlikely to meet the need. Although many changes might be made to improve the system, the following are just a few that could be considered in connection with more comprehensive revisions.

In the private system, all health insurance plans might be required to offer as an option or to actually include a standard set of services for children and pregnant women established by law, and changes made based on continuing review by the Secretary of Health and Human Services and recommendations of an Advisory Council on Health Insurance for Children and Pregnant Women. The standard set of services would include specified high priority preventive, prenatal and postnatal services and specified well-child care as mandatory minimums in every insurance policy sold.

The Medicaid program might be amended to require States to cover both mandatory and voluntary standard benefits without deductibles or coinsurance (similar to the CHAP proposal) and to reimburse providers at rates comparable to those used by private insurers without limits on amount, duration and scope, except as set by the Advisory Council. Medicaid eligibility requirements might be changed to require States to include all children (through age 18, for example) and all pregnant women who meet a uniform income standard.

Recipients of federal and federal-state grants for health services and public providers who receive federal funds might be required to negotiate "enrollment agreements" and "participating provider agreements" with Medicaid and private insurers, HMOs and self-insurers who insure a significant number of children and pregnant women in their area. They might also offer such services as they are qualified to offer to all pregnant women and children who seek services and collect for all covered services from

Medicaid and private insurers as broadened by this proposal in accordance with the rule for enrolling and/or participating providers.

Highlights from the Report of Select Panel for the Promotion of Child Health: Needed Maternal and Child Health Services

Lisbeth B. Schorr

The analysis, findings and recommendations of the Select Panel cover an extremely wide range of issues, including risks in the physical environment, health behavior, nutrition and health research, as well as the organization, financing and delivery of health services.

This presentation focuses on that aspect of our work which dealt with the personal health services needed by pregnant women, infants, children and adolescents.

The "needed services" identified by the Panel include not only traditional medical services, but a broad array of services to repond to health problems with major social and behavioral components. The Report focuses mainly on services that are preventive and typically delivered through primary care systems. This orientation stems from the Panel's mandate and from a belief that many of the strategies most likely to decrease overall mortality and morbidity in mothers and children lie in the domain of preventive services and primary care.

The process of defining needed services led the Panel to three major findings. First, and most important, the Panel identified three broad classes—of services—prenatal, delivery and postnatal care; comprehensive health care for children from birth through age five; and family planning services/that are so clearly effective, and so essential to good health, that no one needing these services should be without them. The Panel concluded that access to these basic minimal services be systematically and universally assured. National health policy must move from attempts to make these services more available to a much more active posture of assuring access. Needed action includes:

- Removal of all financial barriers to basic essential services, most immediately by improvements in Medicaid, private insurance and grant programs;
- Strengthening provider arrangements to provide or mobilize a broad range of services and to reach out into the community;
- Clear designation of ultimate responsibility among public agencies for assuring availability and access to the basic essential services.

A second category of services which merits special attention includes mental health and related psychosocial services, dental services, genetic services and, especially, services that promote access to care. Although each of these has unique attributes, they have in common an importance to health and also the fact that they are not now adequately available, particularly to some of the groups most in need of these services.

Third, a new mechanism must be created or mobilized to serve a variety of functions aimed at improving the content, quality and availability of health services for mothers and children—a Board on Health Services Standards or similar body. One reason many needed services are unavailable or underutilized is that public and private third-party payers tend not to finance them, and purchasers of third party payment programs are reluctant to purchase coverage for these services, in part because of the nature of the services. They are difficult to define precisely and their effectiveness appears closely related to circumstances under which they are provided, by whom and in relation to what other services. To help provide information on such issues, the Panel recommended that a Board on Health Services Standards be created, or that existing institutions be strengthened and consolidated, to perform the following functions:

- Review and define health services that should be available to mothers and children in light of new knowledge and changing health problems;
- Provide guidance to third-party payers and purchasers of health insurance regarding the effectiveness and appropriate use of a given service or sets of services, and the circumstances under which such services should be provided and financed.
- Provide information to third-party payers regarding the likely effects of their payment policies and practices on the availability of needed services, professional personnel, facilities and other health resources.

Targeting of services and funds, is emerging as an important theme of this Workshop: it is essential to distinguish among various kinds of targeting. The implications of targeting resources on underserved geographic areas, or on all children and pregnant women are very different from targeting programs to serve only those individuals and families which meet narrow definitions of medical, social or economic need. The pressures to allocate scarce resources are very real, but must not glibly be translated into ever more restrictive eligibility requirements that ultimately become barriers to the receipt of prompt and appropriate services.

The costs of certain forms of targeting must be considered along with the savings. Costs of targeting include the increased probability of a given individual falling through the cracks between programs, the lack of public support for programs limited to the poor, and the expense of sorting and resorting large numbers of families that move in and out of poverty and risk status.

Thus it is possible to advocate, as the Panel did, targeting resources on assuring that a range of particularly effective services is available to all who need them, and on programs to assure that resources are made available in underserved areas. We concluded, on the other hand, that with regard to long-term financing of personal health services, a program of universal entitlement is decisively preferable to one directed solely at the poor. When eligibility for a health financing program is tied to poverty status, the results are so detrimental in terms of quality, continuity and appropriate use of

care, incentives toward economic independence, public support and administrative efficiency that the price of targeting, in this instance, is too high.

Human Resources for Delivering Needed Maternal and Child Health Services

Morris Green, M.D.

Of some 3.3 million infants born alive annually in the United States, approximately .5 million (1:7) are considered to be at high risk and, of this number, approximately 50,000 infants die before the age of one year. In addition, 33,000 fetal deaths occur before or at birth and some 250,000 infants are born annually with congenital anomalies. The incidence of prematurity and low birth weight babies is twice as high for black as for white infants.

Of the projected 3.67 million women expected to become pregnant in 1980, 980,000 live in poverty: 560,000 of these women are on Medicaid and 420,000 women are below the poverty line but are not on Medicaid. The patterns of prenatal care vary widely among mothers of different social, racial, educational and demographic backgrounds. Black mothers consistently receive less prenatal care than white mothers; 58 percent of women with less than a high school education received prenatal care in 1977, compared to 82 percent of those with more than a high school education; pregnant adolescents are at the highest risk of receiving no or only third trimester prenatal care and unmarried mothers have one-fourth the prenatal care received by married mothers.

By increasing access of mothers and children to comprehensive services, current and past Federal and foundation initiatives in maternal and child health have made major contributions to the reduction of infant mortality. But inequities in services remain. Many mothers and infants, especially those of low income, are unserved either because services are unavailable or not properly utilized. Deficiencies include: limitation in personnel; uneven geographic distribution of personnel; low Medicaid reimbursement; patient disinterest or attitudinal barriers due to life experiences; lack of community understanding and support; fragmentation of programs and lack of coordination among community health and human service agencies; lack of education, outreach and followup activities; and inadequate adolescent health services.

In considering possible solutions to the situation, certain assumptions should be made, such as: improved access to and utilization of needed health services would lead to better health of mothers and infants; adequate prenatal care is associated with a reduction in birth of premature and other low birthweight infants; and while the ultimate goal of accessibility to appropriate health services for all is a valid one, population groups with the greatest needs should receive priority.

The system of health care services should be a cooperative one, integrating at administrative, service and educational levels the public and voluntary agencies, private and voluntary sectors and both the providers and

recipients of services. I would propose the term "District Health Cooperative for Mothers and Infants" (HCMI). The precise way in which HCMIs would be formed would depend on local settings and whether urban or rural.

Services would include treatment, prevention and health promotion for pregnant women and infants during the first year of life and services would be organized by districts. In the development of individual cooperatives, planning would attend not only to the problems and vulnerabilities in the individual patients, families and the community, but also to their strengths and potential resources. The package of services to be delivered would be determined in each district within national guidelines.

Among program elements to be included in cooperatives would be: prenatal care, including risk assessment and management; access to secondary and tertiary consultation, ambulatory or inpatient, for assessment and treatment; linkages to hospitals for labor, delivery and newborn care; outreach to ensure that mothers and infants receive the care they need; followup; adolescent health and family planning services; nutritional programs; mental health and psychologic support services; health education; education for parenting and home visits in early infancy.

Incentives would be offered for participation—patients receiving increased food stamps or other allowances; professionals, tax incentives or salary supplement; and individual citizens or corporations would receive tax incentives. Funding for cooperatives would be a blend of federal grants, local governmental funds, United Way, individual and corporate gifts, fund-raising events and grants from voluntary health agencies.

Staffing of cooperatives would depend on availability of professionals, but use of nurse practitioners, public health nurses and nurse-midwives linked to physician backup would be explored. In areas without obstetricians or pediatricians, family practitioners would be utilized.

APPENDIX A

PARTICIPANTS

Mary Ellen Avery, M.D.
Physician in Chief
Children's Hospital Medical Ctr.
Boston, MA

Kathryn Barnard, Ph.D.
Professor of Nursing
University of Washington
Seattle, WA

Alfred Brann, M.D.
Director of Newborn Medicine
Emory University
Atlanta, GA

Dorothy Bryan, Ph.D.
Program Director
National Council of Negro Women
Washington, DC

Alton B. Cobb, M.D.
State Health Official
Mississippi State Board of Health
Jackson, MS

Marvin Cornblath, M.D.
Special Asst. to Scientific Director
National Institute of Child Health and Human Development, NIH, PHS, DHHS
Bethesda, MD

George C. Cunningham, M.D.
Chief, MCH Branch
State Dept. of Health Services
Berkeley, CA

Martha A. Darling
Legislative Assistant to Senator Bradley
Washington, DC

Ezra Davidson, Jr., M.D.
Chairman OB/GYN
Drew Postgraduate Medical School
Los Angeles, CA

Karen Davis, Ph.D.
Administrator, Health Resources Administration, PHS, DHHS
Washington, DC

Sara DePersio, M.D.
Chief, MCH Medical Prog.
Oklahoma State Health Dept.
Oklahoma City, OK

Johanna T. Dwyer, D.Sc.
Director, Frances Stern Nutrition Ctr.
Boston, MA

Joanne Fischer
Chairwoman, National Women's Health Network
Philadelphia, PA

Florence Foelak
Staff Assistant, Health Resources Adm., PHS, DHHS
Hyattsville, MD

Henry W. Foster, M.D.
Chairman, Dept. OB/GYN
Meharry Medical College
Nashville, TN

Carol P. Galaty
Special Project Director
Office of the Surgeon General, PHS, DHHS
Washington, D.C.

Edward Gibbs, M.D.
Professor
University of Texas
Medical School
San Antonio, TX

Mitch Ginsberg, Ph.D.
Dean of School of Social Work
Columbia University
New York, NY

Stan Graven, M.D.,
Professor, Child Health
University of Missouri
Columbia, MO

Morris Green, M.D.
Chairman, Dept of Ped.
The Indiana University
School of Medicine
Indianapolis, IN

Robert E. Greenberg, M.D.
Chairman, Dept. of Ped.
University of New Mexico
School of Medicine
Albuquerque, NM

Stanley I. Greenspan, M.D.
Chief, Mental Health
Study Center
National Institute of Mental Health,
ADAMHA, PHS, DHHS
Adelphi, MD

Margaret Heagarty, M.D.
Director, Pediatrics
Harlem Hospital Center
New York, NY

Ruby Hearn, Ph.D.
Assistant Vice President
Robert Wood Johnson Foundation
Princeton, NJ

Claire Ho, R.D.,
MCH Nutrition Consultant
Hawaii Dept. of Health
Honolulu, HI

Don Hopkins, M.D.
Asst. Dir., Intl. Health
Centers for Disease Control,
PHS, DHHS
Atlanta, GA

Vince Hutchins, M.D.
Director, Office for Maternal
and Child Health,
HSA, PHS, DHHS
Rockville, MD

Thomas Jacobsen, M.D.
United Clinic, P.C.
Hettinger, ND

Juel Janis, Ph.D.
Special Asst. to the Assistant
Secretary for Health, PHS, DHHS
Washington, DC

Derrick Jelliffe, M.D.
Professor
UCLA, School of Public Health
Los Angeles, CA

Kenneth Johnson, M.D.
Director, Health Res. Serv. Ctr.
Kingston Hospital
Kingston, NY

Stan Jones
Vice President
Blue Cross-Blue Shield Assn.
Washington, DC

Carole Kauffman
White House Conference
on Children and Youth
Washington, DC

Elleen Kennedy, Ph.D.
Chief, Office of Policy Planning
and Evaluation, USDA
Washington, DC

Woodie Kessel, M.D.
Special Asst. to the Assistant Secretary for Health, PHS, DHHS
Washington, DC

Joel Kleinman, Ph.D.
Deputy Assoc. Director for Analysis
National Center for Health Statistics, PHS, DHHS
Hyattsville, MD

Mary Grace Kovar
Special Asst. for Data Policy and Analysis
Interview and Exam. Survey Prog. NCHS, PHS, DHHS
Hyattsville, MD

Norman Kretchmer, M.D.
Director, National Institute of Child Health and Human Development NIH, PHS, DHHS
Bethesda, MD

Robert C. Kreuzburg, MD
Maternal and Child Health Program Coordinator, Indian Health Service HSA, PHS, DHHS
Rockville, MD

Richard Krugman, M.D.
Institute of Medicine Fellow
Washington, DC

Mort Lebow
Director, Office of Public Affairs, PHS, DHHS
Washington, DC

Brian Little, M.D.
Secretary American GYN Society
Direct. and Prof. Dept. of OB/GYN University Hospital of Cleveland
Case Western Reserve University
Cleveland, OH

George A. Little, M.D.
Chairman, Dept. of MCH
Dartmouth Medical School
Hanover, NH

George I. Lythcott, M.D.
Administrator, Health Services Administration, PHS, DHHS
Rockville, MD

Michael McGinnis, M.D.
Deputy Asst. Sec. for Health and Asst. Surgeon General, PHS, DHHS
Washington, DC

Peggy McManus
Senior Research Associate
Health Policy Program
University of California
Washington, DC

Marie C. Meglen, CNM
Director, Improved Pregnancy Outcome
S.C. Dept. of Health and Environmental Control
Columbia, SC

Irwin R. Merkatz, M.D.
Director, Cleveland Reg. Perinatal Network
Case Western Reserve
University Hosp. of Cleveland
Cleveland, OH

Sister Jeanne Meurer
Professor of Nursing
St. Louis University
School of Nursing
St. Louis, MO

Susan Morgan
Acting Director, Div. of Health Resources and Services Analysis
Office of the Assistant Secretary for Planning and Evaluation, DHHS
Washington, DC

Hugo H. Muriel, M.D.
Commissioner, City of Chicago
Dept. of Health
Chicago, IL

Saad Z. Nagi, Ph.D.
Mershon Professor of
Sociology & Public Policy
Ohio State University
Columbus, OH

Buford Nichols, M.D.
Director of Children's Nutrition
Research Center
Baylor College of Med.
US Department of Agriculture
Houston, TX

Ervin Nichols, M.D.
Director of Practice
ACOG
Washington, DC

Lulu Mae Nix, Ed.D.
Director, Office of Adolescent
Pregnancy Programs,
PHS, DHHS
Washington, DC

Godfrey Oakley, M.D.
Chief, Birth Defects Br.
Bureau of Epidemiology, Centers
for Disease Control, PHS, DHHS
Atlanta, GA

Gilbert S. Omenn, M.D.
Assoc. Dir. for Human
Resources, Vet. & Labor
Office of Management and Budget
Washington, DC

Ernest Peterson
Acting Deputy Assistant
Secretary Population
Affairs, PHS, DHHS
Washington, DC

Paul Rettig
Staff Dir., Ways and Means
Subcommittee on Health
U.S. House of Representatives
Washington, DC

George Ryan, Jr., M.D.
President Elect, ACOG
Dept. OB/GYN
Univ. of Tennessee
Memphis, TN

Authur Salisbury, M.D.
Vice President for Medical Services
March of Dimes Birth Defects
Foundation
White Plains, NY

Clara Schiffer
Office of the Assistant Secretary for
Planning and Evaluation, DHHS
Washington, DC

Lisbeth Schorr
Chairperson, Select Panel for
the Promotion of Child Health
Washington, DC

Sam Shapiro
Director, Health Services,
Research and Development Center
The Johns Hopkins Medical
Institutions
Baltimore, MD

Aaron Shirley, M.D.
Project Director
Jackson-Hinds Comprehensive
Health Center
Jackson, MS

Faustina Solis, M.S.W.
Professor
Dept. of Community Medicine
Univ. of California-La Jolla
La Jolla, CA

Susanne A. Stoiber
Deputy Asst. Sec. for Health
 Planning and Evaluation,
 PHS, DHHS
Washington, DC

Phyllis Stubbs, M.D.
Medical Director
Head Start Health Services
Washington, DC

Mary Tierney, M.D.
Acting Director, Office of
 Child Health
Health Care Financing Adm.,
 DHHS
Washington, DC

Theodore Van Itallie, M.D.
Sp. Advisor to the Surgeon
 General on Human Nutrition and
 Ex. Sec. of Nutrition Coordinating
 Committee, DHHS
Washington, DC

Charlotte Wilen
Founding Chairperson
Council on Maternal and Infant
 Health, State of Georgia
Atlanta, GA

Phyllis Zucker
Child Health Specialist
Office of the Asst. Secretary for
 Health Planning, PHS, DHHS
Washington, DC

APPENDIX B

NEEDED SERVICES

(Excerpted from the Report of the Select Panel for the Promotion of Child Health, Vol. I, 1980, pages 153-58.)

In reading the lists,* several important caveats and explanatory notes should be kept in mind: First, the lists often describe a set of services preceded by the phrases "such as," "as needed," or "as appropriate." These phrases are designed to convey the notion that services must be tailored to an individual and take into account age, stage of development, past history, present risk and so forth. The lists are not a practice manual, but rather a compendium of broad categories of services that should be available and used to varying degrees and in varying combinations by an individual. Second, the lists also use the phrase ". . . to include." This phrase is intended to suggest that the units that follow are minimum components of a broad category, rather than examples or possible items for inclusion. For example, the topics to be covered in prenatal counseling—which in the list are preceded by the phrase "to include"—are viewed by the Panel as essentially a minimum set. Third, the lists intentionally avoid notations of periodicity—such as the desired frequency of health examinations or specific immunization schedules. In general, the Panel believes that the practice standards developed by such groups as the AAP and ACOG are most adequate at present for those services for which they have recommended specific schedules. Fourth, the age and developmental boundaries of the lists were somewhat arbitrarily determined. Although they correspond to the boundaries of many other lists of services reviewed, we recognize the inherent artificiality of such compartmentalization.

Health Services for Women of Reproductive Age, With a Special Focus on Services Relevant to Reproduction

I. Services for nonpregnant women that relate to the occurrence and course of future pregnancy
   - A. Diagnosis and treatment[a] or referral and followup of general health problems, both acute and chronic, that can adversely affect future pregnancy, fetal development, and maternal health such as:
     1. Sexually transmitted diseases
     2. Immune status (such as rubella)
     3. Gynecological anatomic and functional disorders
     4. Organic medical problems such as renal and heart diseases, hypertension, diabetes, and endocrine problems
     5. Inadequate nutritional status, including both under- and overweight
     6. Problems relating to fertility

7. Genetic risk (see I D)
8. Significant dental problems such as periodontal disease
9. Occupational exposures

B. Diagnosis and treatment[b] or referral and followup of mental health and behavioral problems, both acute and chronic, that can adversely affect pregnancy, fetal development, and maternal health such as:
1. Alcohol abuse, drug addiction or abuse, other substance abuse, and cigarette smoking
2. Significant mental disorders such as schizophrenia and depression

C. Comprehensive family planning services, including:
1. Information, education, and counseling regarding family planning concepts and techniques, and other issues such as the importance of prenatal care, and risks to mother and child of childbearing at extremes of the reproductive age span
2. Physical examination, including breast and pelvic examination, as indicated, and tests such as a Papanicolau smear, G.C. culture, urinalysis, and serological examination as appropriate
3. Provision of family planning methods and instruction regarding their use
4. Pregnancy testing with attendant counseling and referrals as appropriate (including for prenatal services, adoption, and abortion)
5. Infertility services, including counseling, information, education, and treatment
6. Sterilization services, including counseling, information, education, and treatment

D. Genetic screening and related services as needed to detect persons at risk, with counseling and referral as appropriate

E. Home health and homemaker services[d]

I. Services in the prenatal period

A. Early diagnosis of pregnancy

B. Counseling regarding plans for pregnancy continuation
1. For those electing to carry to term, referral for and provision of prenatal care and of adoption services if indicated. Referral to childbirth preparation classes as desired
2. For those electing abortion, referal to and provision of first or second trimester abortion, including family planning counseling

C. Prenatal care services including:
1. History (general medical, social and occupational, family and genetic background, health habits, previous pregnancies, and current pregnancy)
2. General physical examination including blood pressure, height and weight, and fetal development
3. Laboratory tests as appropriate, such as VDRL, Papanicolau smear, G. C. culture, hemoglobin/hematocrit, urinalysis for sugar and protein, Rh determination and irregular antibody screening, blood group determination, and rubella test
4. Diagnosis and treatment[a] or referral and followup of general health problems, both acute and chronic, preexisting or arising during the prenatal period, that can adversely affect pregnancy, fetal development, or maternal health

5. Diagnosis and treatment[b] or referral and followup of mental health problems, both acute and chronic, preexisting or arising during the prenatal period, that can adversely affect pregnancy, fetal development, or maternal health
6. Nutritional assessment and services[c] as needed. Provision of vitamin, iron, and other supplements as appropriate
7. Dental services with special attention to detection and treatment of periodontal disease
8. Screening, diagnosis (including amniocentesis), and counseling with followup for selected fetal genetic defects (such as neural tube defects, Down's syndrome, Tay-Sach's disease and sickle cell disease) with abortion services available
9. Services to identify and manage high-risk pregnancies to include provision of appropriate prenatal and perinatal care services for labor, delivery, and newborn care
10. Counseling and anticipatory guidance with followup and referrals as needed regarding:
    a. Physical activity and exercise
    b. Nutrition during pregnancy, including the importance of adequate but not excessive weight gain
    c. Avoidance during pregnancy of smoking, alcohol and other drugs; and of environmental hazards including radiation, hazardous chemicals, and various workplace hazards
    d. Signs of abnormal pregnancy and of the onset of labor
    e. Preparation of the woman (and her partner where appropriate) for labor and delivery, including plans for place of delivery and feelings about use of anesthesia
    f. Use of medication during pregnancy
    g. Infant nutritional needs and feeding practices, including breast feeding
    h. Child care arrangements
    i. Parenting skills, including meeting the physical, emotional, and intellectual needs of the infant, with specific appraisal to detect parents at risk of child abuse or neglect
    j. Planning for continuous and comprehensive pediatric care following delivery, including arrangements for a pediatric antenatal visit to link the family to pediatric care
    k. Emotional and social changes occasioned by the birth of a child, including changes in marital and family relationships, the special needs of the mother in the postpartum period, and preparing the home for the arrival of the newborn
    l. Other relevant topics in response to patient concern

D. Home health and homemaker services[d]

III. Services in the perinatal and postpartum periods

A. Assessing the progress of labor and the condition of the mother and fetus throughout labor

B. Medical services during labor and delivery for diagnosis and management of conditions threatening the mother and/or infant, including the availability of a Caesarean birth operation when indicated

C. Delivery of the baby by a qualified professional in a facility that has services needed to manage medical emergencies of the mother and/or newborn, or has ready access to such services

D. Diagnosis and treatment[a] or referral and followup of general health problems, both acute and chronic, preexisting or arising during the perinatal and postpartum periods that can adversely affect the mother's child-caring abilities.

E. Diagnosis and treatment[b] or referral and followup of mental health or behavioral problems, both acute and chronic, preexisting or arising during the perinatal and postpartum periods (including maternal depression) that can adversely affect the mother's child-caring abilities.

F. Counseling and anticipatory guidance with referrals and followup as needed regarding:
   1. Infant development and behavior
   2. Infant nutritional needs and feeding practices, including breast feeding
   3. Automobile restraints for infants and children, and general accident prevention concepts (especially home accidents and accidental poisoning)
   4. Infant stimulation and parenting skills, with specific appraisal to identify parents at risk of child abuse or neglect
   5. Need for and importance of immunizations
   6. Effect on children of parental smoking, use of alcohol and other drugs, and other health-damaging behaviors
   7. The importance of a source of continuous and comprehensive care for both mother and child, including identification of available resources to help with such problems as illness in the newborn or breast feeding difficulties
   8. Recognition and management of illness in the newborn
   9. Hygiene and first aid
   10. Child care arrangements
   11. Other relevant topics in response to parental concern

G. Home health and homemaker services[d]

H. Routine postpartum examination, with referrals and followup as needed, including:
   1. Laboratory services as appropriate
   2. Family planning services
   3. Counseling as appropriate regarding the topics noted in III F above and other relevant topics in response to parental concern

IV. Health education regarding such topics as:
   A. Items in II(C)10 and III F above
   B. Developing positive health habits
   C. Using health services appropriately
   D. Using community health resources such as WIC, food stamps, welfare and social services that bear significantly on health status

V. Access-related services:
   A. Transportation services as appropriate including
      1. Emergency medical transport services for both mother and newborn
      2. Transportation services associated with a regionalized perinatal and/or tertiary care network
      3. Transportation services that facilitate obtaining needed health services
   B. Outreach services
   C. Hotline, translator, and 24-hour emergency telephone services
   D. Child care services to facilitate obtaining needed health services

Health Services for Infants in the First Year of Life

I. Services in the neonatal period
   A. Evaluation of the newborn infant immediately after delivery and institution of appropriate support procedures such as nasal/oral suctioning
   B. Complete physical examination, including length, weight, and head circumference
   C. Laboratory tests to screen for genetically-determined diseases including PKU, hypothyroidism and galactosemia
   D. Diagnosis and treatment[a] or referral and followup of general health problems, both acute and chronic
   E. Preventive procedures to include
      1. Gonococcal eye infection prophylaxis
      2. Administration of vitamin K
   F. Services of a newborn intensive care unit as appropriate
   G. Nutritional assessment and services[c] and supplementation as needed
   H. Bonding and attachment support activities including provision for extended contact between parents and their infant immediately after delivery and, where desired by the parents, rooming-in arrangements or the equivalent
   I. Arrangements for continuous, comprehensive pediatric care for the newborn following discharge from the hospital
   J. Home health services[d]

II. Services during balance of first year of life
   A. Periodic health assessment to include:
      1. History and systems review (general medical and social, family and genetic background, with items of inquiry determined by age, developmental stage, and likelihood of potential problems)
      2. Complete physical examination to include:
         a. Height and weight
         b. Head circumference
         c. Developmental-behavioral assessment
         d. Vision and hearing evaluation
      3. Screening and laboratory tests as indicated, including hemoglobin/hematocrit and tuberculin skin test; and, for infants at risk, such procedures as lead poisoning, parasite, and sickle cell screening
      4. Nutritional assessment and services[c] and supplementation as needed (including provision of such supplements as iron and vitamin D, and fluoride if community water supply is not fluoridated
   B. Immunizations according to nationally recognized standards
   C. Diagnosis and treatment[a] or referral and followup of general health problems, both acute and chronic
   D. Home health services[d]

III. Services for families during infant's first year of life
   A. Counseling and anticipatory guidance with referrals and followup as needed regarding:
      1. Infant development and behavior
      2. Maternal nutritional needs, especially if breast feeding, and infant nutritional needs and feeding practices
      3. Automobile restraints for infants, and general accident prevention concepts (especially home accidents and accidental poisoning)
      4. Infant stimulation and parenting skills, with specific appraisal to identify parents at risk of child abuse or neglect

5. Need for and importance of immunizations
6. Effect on children of parental smoking, use of alcohol and other drugs, and other health-damaging behaviors
7. The importance of a source of continuous and comprehensive care for mother and child, including identification of available resources to help with such problems as sudden illness or breast feeding difficulties
8. Recognition and management of illness
9. Hygiene and first aid
10. Child care arrangements
11. Other relevant topics in response to parental concern

B. Counseling and provision of appropriate treatment[a,b] and/or referral to appropriate services (including home health and homemaker services[d]) as needed for parents:
1. Who have chronic illnesses, handicapping conditions, alcohol or drug problems, mental health problems (including maternal depression) or other health problems that seriously affect their capacity to care for the infant
2. Whose infant is seriously ill
3. Whose infant has a chronic illness or handicapping condition
4. Whose infant is or is about to be hospitalized

IV. Health education regarding such topics as:
A. Items in III A above
B. Developing positive health habits
C. Using health services appropriately
D. Using community health resources such as WIC, food stamps, welfare and social services that bear significantly on health status

V. Access-related services (see section V, Health Services for Women of Reproductive Age)

*In the lists:

[a]Services for both acute and chronic medical conditions include inpatient and outpatient services, clinic and physician office services, emergency services, laboratory and X-ray services, provision of prescribed drugs and vaccines, medical supplies and rehabilitation services.

[b]Services for both acute and chronic mental health conditions include inpatient and outpatient hospital services, long-term psychiatric care, clinic and physician office services, counseling and anticipatory guidance, crisis intervention services, laboratory services, and provision of prescribed drugs.

[c]Nutrition services include screening/assessment of nutritional status; dietary counseling to assist people to meet their normal and therapeutic nutrition needs; nutrition education; and provision of, or referral to, resources needed to improve or maintain nutritional health, i.e., supplemental food assistance, special feeding equipment, and food service programs.

[d]Home health services include the provision of medical, nursing, dietary, and rehabilitative services in the home; homemaker services including assistance for the family in routine household responsibilities when illness or disability interferes with such functions.

☆ U. S. GOVERNMENT PRINTING OFFICE : 1981 720-021/4701