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