

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 epidural 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 multivariate 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, continued observation and study of post-natal 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 interrelationship 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-

conomic 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 multi-problem 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 Gynecologists 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 its apparent ubiquity, regional perinatal care is still in its infancy and has far to go 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 alpha-fetoprotein 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 arteriosus 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 over 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 Physical 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 surveillance 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 mortality 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 respond 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 HCMI's 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, fundraising 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

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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, referral 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:

^aServices 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.

^bServices 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.

^cNutrition 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.

^dHome 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.