INTEGRATING MATERNAL AND CHILD HEALTH SERVICES WITH PRIMARY HEALTH CARE

Practical considerations

R. H. Hart
Loma Linda University
Loma Linda, CA, USA

M. A. Belsey
Division of Family Health
World Health Organization
Geneva, Switzerland

E. Tarimo
Division of Strengthening of Health Services
World Health Organization
Geneva, Switzerland
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Since the formulation of the goal of "Health for all by the year 2000", countries throughout the world have made efforts to strengthen and expand their systems of primary health care. The Declaration of Alma-Ata in 1978 identified eight essential elements of primary health care—education concerning prevailing health problems and methods of identifying, preventing and controlling them; promotion of food supply and proper nutrition; an adequate supply of safe water, and basic sanitation; maternal and child health care, including family planning; immunization against the major infectious diseases; prevention and control of locally endemic diseases; appropriate treatment of common diseases and injuries; and provision of essential drugs.

Historically, services that furnish the different components of health care have often developed in parallel but separately; now, however, it is widely accepted that the provision of a fully comprehensive health service requires their efficient integration. This book deals specifically with the integration of maternal and child health care—including family planning services—with the other components of primary health care, addressing the organizational and other problems raised. These problems include identifying the best system of integration, the necessary extension of technical skills and expansion of the workforce, supervision and referral logistics, the need for additional equipment and supplies, and the organization, services and monitoring of clinics.

Many of the basic concepts of primary health care are derived from maternal and child health care practices, and existing infrastructure should be utilized in the integration process wherever feasible. Integration of the two services should take place on several fronts, notably "horizontal" and "vertical". Horizontal integration aims to link together and coordinate the broad range of developmental services, including health, education, agriculture, water supply and sanitation, transport, communications, etc. If integration is to be achieved with maximum efficiency and have maximum impact, the interdependence of all these facets of development must be fully recognized.

Vertical integration is concerned with ensuring the vital linkage between different levels of care, from the national level down
through the district and health centre levels to the community and
the individual. This vertical linkage should be used for planning and
implementing services, for monitoring their impact, and to keep
health and development systems responsive to, and directed by, the
needs of the people.

**INTEGRATION IN PRIMARY HEALTH CARE HAS BOTH
A HORIZONTAL AND A VERTICAL COMPONENT**

The timing of particular events in the field of maternal and child
health can also be valuably exploited for purposes of integration
with primary health care. For instance, passive immunity to measles
wanes when infants reach about 9 months of age; at this time
weaning is generally well advanced and ovulation is therefore likely
to have been re-established in breast-feeding mothers. Thus, the
ideal time for immunizing infants against measles usually coincides
with the time when mothers may be seeking family planning advice.
Moreover, with the introduction of normal family food into infants'
diets, this is also a valuable time to educate mothers in the
prevention and management of diarrhoea and in food safety
generally.

This book examines in some detail the objectives of integrating
maternal and child health care into primary health care services,
identifies barriers to realizing that integration, clarifies the issues
involved and gives examples of innovation already achieved in some
countries. As part of an overall effort to strengthen primary health
care, it provides an overview of the organization, management,
implementation and evaluation of maternal and child health,
including family planning services, and should enable readers to
understand the different components of maternal and child health
programmes and the links between them. It should also help them to
identify the most appropriate circumstances and methods for
improving the social acceptability, effectiveness and efficiency of
maternal and child health and family planning programmes in their
own communities.

Because of the broad implications of the relationship between
maternal and child health and family planning, it is vital for health
personnel at all levels to understand the importance of integrating
maternal and child health/family planning into primary health care
and to support efforts to achieve this integration. This will entail the
appropriate education of existing staff and possible modifications to
the curricula of some training programmes. It may well be
impossible to effect a complete reorganization and offer all
components of primary health care at one time; a phased process is then in order, with appropriate changes in staffing, equipment, supplies and organizational patterns proceeding concurrently. Community and family self-reliance should be given high priority during the reorganization phase.

This publication is aimed at programme managers, from district to national level, who are concerned with primary health care and with maternal and child health, including family planning. It may also be used at several levels in relevant training programmes, or equally well as a framework for the analysis and evaluation of activities in these areas. Those who provide primary training for community health workers and for auxiliary and other nonprofessional staff could use it as a basis for the development of locally suitable training materials. It should also be helpful to programme managers responsible for developing and designing national curricula for different levels of health worker, providing them with a framework for an integrated curriculum.
When organizational changes are proposed, it is important to understand the background of existing services and why they have evolved as they have. This is helpful in dealing with concerns on the part of the staff and the community about the proposed changes and for planning the timing and phasing of measures for the integration of services. It is most important to ensure that no useful elements of an old system are lost in the plan for a new one.

Maternal and child health

History of maternal and child health care

One of the oldest components of health care is certainly midwifery; assistance at delivery, whether performed by a relative or by a village matriarch, is a feature of practically every culture. More importantly, a recent WHO review of traditional birth practices shows that many are physiologically sound and beneficial, including the use of traditional delivery positions (squatting, kneeling, standing), allowing delivery of the placenta before cutting the cord, delivery in special huts with a source of heat, etc. It is also true, however, that other birth rituals are at best harmless and on occasions dangerous.

"Professionalization" of the delivery process began in the late nineteenth and early twentieth centuries. The importance of antenatal care emerged with the recognition of risk factors such as pre-eclampsia and anaemia, and the desire for an aseptic environment and more specialized care gradually moved deliveries away from the home or village to the clinic or hospital. While enhancing the technological aspects of delivery and making it easier for the professional health worker, this began the long process of removing many of the personal and familial aspects of childbirth. Only in recent years has the important concept of family bonding, with its sociocultural implications, been "rediscovered" and reintroduced in developed countries. It is to be hoped that this aspect of the uncomplicated delivery can be maintained where it is still common, while other improvements are introduced.
Family planning is another aspect of maternal care with a long cultural history. The health benefits of family planning, though not necessarily explicitly recognized, have been implicitly acknowledged in many societies. For instance, sexual abstinence after pregnancy, combined with breast-feeding, has served to lengthen the time between pregnancies in many countries, even when not directly identified with the goal of limiting fertility. In other areas, however, breast-feeding has declined as a result of greater involvement of women in the workforce, and this has led to an increase in fertility. It is important to counteract this latter trend by encouragement of breast-feeding and by development of culturally acceptable methods of birth control.

Equally important, though sometimes less apparent, is the development by traditional societies of their own child-rearing and feeding practices. The types of food used and the timing of feeding during weaning have had a profound impact on infant health. Infections caused by poor hygiene and unclean water have been
Integrating MCH services with primary health care

major causes of infant mortality. Only in the past half-century, with the development of modern medicines, especially antibiotics and vaccines, has child care improved dramatically.

Current patterns

In the more recent history of maternal and child health services, the impact of technological development and increased health manpower has been considerable. The recognition and treatment of diarrhoeal diseases, the identification of risk factors in both pregnancy and childhood, improved nutritional programmes with appropriate food supplementation, better delivery techniques, and more sophisticated referral options are all part of the improving picture.

Because of their relatively long history, antenatal services are often the best-established clinic-based maternal health programmes, although persuading pregnant women to attend early and regularly can be something of a challenge. Problems routinely monitored in clinics include anaemia and pre-eclampsia. Iron tablets and multivitamins are often used, when in stock, and tetanus toxoid immunization is given in areas where neonatal tetanus is common. However, the difficulty of detecting complications and providing specialized care when required remains a major problem at the primary health care level.

GOOD CHILD CARE BEGINS DURING PREGNANCY

In primary care programmes, the nurses or midwives who provide antenatal care in the clinics often handle deliveries as well. Because of this, they may already know the mothers and be acquainted with their medical and obstetric histories. Some women do not attend antenatal clinics, yet come to the health centre or hospital for deliveries. Others attend antenatal clinics but, for one reason or another, are delivered at home under the care of a traditional birth attendant or family member. Improved delivery techniques, both in the home and in health facilities, are still a goal. Failure to make timely referrals in difficult cases is a major barrier to reducing maternal and perinatal mortality in many countries.

Family planning services are another part of maternal and child health care. In some countries they are well organized; in others, where both cultural and organizational barriers have limited their expansion, they are nonexistent or merely a weak adjunct to other services. Occasionally, a separate administration, either within or
distinct from the ministry of health, has been developed to promote family planning; while this may help services to get started more quickly, it has made it difficult to integrate family planning into maternal and child health services. A further problem is that of the political implications and confusion in social policy associated with attempts to reconcile the needs of individual couples with national growth. Some people have questioned the wisdom of limiting increases in their country's population, and this has occasionally left health workers uncertain of how actively they should promote family planning. In other parts of the world, family planning has been culturally acceptable and actively promoted for a number of years. It is generally felt that the best approach is to let family planning become a fully integrated and accepted part of primary health care, through which the health aspects of family size and child-spacing can best be dealt with. Only by keeping family planning a health issue can health workers effectively promote the best plans for mother and child.

**CHILD-SPACING IS A HEALTH ISSUE**

The last of the established features of maternal and child health services is child care, typically provided in the form of clinics for the under-fives. These clinics usually cover health education, growth monitoring, nutritional evaluation, immunizations, oral rehydration, and the treatment of simple diseases. The services provided have done much to lower infant mortality in many countries, although there are still shortcomings in the care and follow-up of complicated cases. They have traditionally been separate from antenatal care and other services for women, and in some countries this has reduced their effectiveness and coverage.

**Primary health care**

The concept of primary health care and its components has been refined in the past decade. To understand the central role it plays in health care, it is essential to look at its historical evolution.

**History of health services**

For centuries, health care was based primarily on a one-to-one relationship between a health practitioner of some type and an ailing patient. This usually resulted in some type of "treatment" or instruction that was believed to be beneficial to the patient. While knowledge and techniques are now vastly superior, this basic
relationship is still at the core of most health systems. Its efficacy depends on health workers having the knowledge, skills and resources required to help someone with a particular problem.

The advent of modern epidemiology allowed a better understanding of disease and disease transmission, and more effective measures to protect or improve public health became possible. These measures often centred on water and sanitation projects and were most successful in controlling many communicable diseases. New types of health worker (e.g. sanitarians) appeared on the scene, who were concerned with community projects rather than individual patients. This development was the beginning of modern public health. The new programmes were usually developed and administered separately from clinical health services, and it was initially felt that there was little need for the two spheres of activity to interrelate to any significant extent.

Continued advances in medicine have now led to personal preventive practices being considered an integral part of effective health care. Many diseases can best be prevented by activities or procedures practised or initiated at the level of the individual, such as immunization or healthier nutritional habits. Even in areas such as the safety of water supplies, which are traditionally the concern of the community, supplementary efforts of a personal kind may be required. In recognition of this, health care systems have increasingly integrated curative and personal preventive activities in order to achieve better results.

| PRIMARY HEALTH CARE INTEGRATES CURATIVE AND PREVENTIVE SERVICES |

The training and orientation of health workers through the years have followed the same pattern of development. The need to relieve pain and suffering and the relative immediacy of results have oriented most health workers towards the treatment of disease or the practice of curative medicine. This is particularly true of the past 50 years during which modern medicine has had a record of greater success than before. Long-term projects, such as preventive and educational activities, often have less immediate impact, but are equally important and effective in improving the health of the community.

As health care has become more sophisticated, a greater diversity has been required in the workforce. This has resulted in the development of different types of health discipline, as well as several
levels of training within each discipline. It has become important to define with some care the relationships, both vertical and horizontal, between the different types of health worker concerned. Their morale and effectiveness are significantly influenced by their perceived status and the fairness with which they are treated.

The technological advances of modern medicine are well known. The fact that so few of them are available to most of the world is less appreciated. Social inequities, socioeconomic barriers, lack of logistic support, the difficulty of maintaining a trained workforce, and various other factors combine to reduce considerably the benefits of twentieth-century medicine in many areas of the world. Equally unfortunate are the attempts made to introduce inappropriate technology into the health care system. The "inappropriateness" of the technology may be due to a lack of the technical and staffing infrastructure needed to support it, or to the fact that its level of sophistication is too high for the circumstances in which it is being used. This results in a waste of financial and other resources, and in frustration for those involved. The concept of appropriate technology points the way towards more workable approaches.

Principles of primary health care

Increasing pressure for social justice and the growing acceptance of health care as a right of all people are causing radical changes in health care systems. As much a political statement as a health plan, primary health care rests on the three fundamental pillars of *equity for all*, *community involvement*, and *intersectoral coordination*.

The concept of health for all by the year 2000 was forcefully expressed by the World Health Assembly in 1977. The Alma-Ata Conference endorsed it in 1978 and decided that primary health care should be the principal means employed to realize it. The Conference emphasized that this meant appropriate health care, not second-rate care, which should cover at least the following:

- education concerning prevailing health problems and methods of preventing and controlling them
- promotion of food supply and proper nutrition
- adequate supply of safe water and basic sanitation
- maternal and child health, including family planning
- immunization against the major infectious diseases
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- prevention and control of locally endemic diseases
- appropriate treatment of common diseases and injuries
- provision of essential drugs.

Equity in health care

Primary health care is particularly concerned with ensuring that essential care is available to all. A variety of political and socioeconomic forces have traditionally encouraged a concentration of health resources in the larger cities, leaving rural populations with little organized care. Other inequities exist in health care allocation, notably between rich and poor urban areas, between certain population groups, and between the sexes. To redress these inequities, specific measures for the more even-handed distribution of resources will be necessary. To some extent, these will involve the preferential allocation of resources to underserved areas—a task that may be feasible with new resources but comparatively difficult with established ones.

| EQUITY IN HEALTH CARE REQUIRES REDISTRIBUTION OF RESOURCES |

The unit cost of primary health care, i.e. the cost per person of a specific intervention, is small, but the tremendous expansion that will be required to cover underserved areas will call for significantly increased input from government and community resources. Effective primary health care demands centralized support and political commitment from the top levels of government. While the utilization of community resources is important, inherent inequities in the amounts of these resources should not be allowed to influence the quality of the care provided. In other words, poorer communities will need preferential help if the cycle of poverty and poor health is to be broken.

Most governments have now accepted the above requirements and committed themselves to providing health care for all their people. This commitment has been incorporated in the definition of primary health care. Because of the enormous increase in health units that will be needed and the underdeveloped nature of the areas they will serve, primary health care will have to be relatively simple in most countries and rely heavily on community resources, though even this will not make it any easier to provide. Nevertheless, the basic goal of making health care available to everybody must be realized.
Community involvement

Another basic principle of primary health care is community involvement. Close contact between health services and the community is essential and should be a two-way process. Health workers and the services they provide must remain responsive to the perceived and real health needs of the people they serve. Similarly, the community must understand the objectives and constraints of the health system and seek ways of making its task easier and increasing its effectiveness. In solving some of the sociocultural and economic problems that are so important to good health, community leaders can be particularly valuable in mobilizing resources and assisting health workers to understand needs and take appropriate action.

MEMBERS OF THE COMMUNITY ARE AN INVALUABLE HEALTH RESOURCE

It is important to make a distinction between genuine community involvement and mere passive participation. In true involvement, the community can be influential in such areas as the setting of priorities, the selection and dismissal of health staff, the organization of clinics and services, including opening hours, and the kinds of technology that are appropriate. In no situation is there any substitute for open dialogue and trust. Various community organizations and social networks, such as village development committees, young people’s, women’s, religious, or family associations or clubs, can serve as the mechanism for participation. Properly utilized, the community usually constitutes the most valuable resource available for improving health.

Intersectoral coordination

The third pillar of primary health care is intersectoral coordination. As health services have grown more diversified, and awareness of the impact on health of other sectors, such as agriculture, education, and transport, has increased, it has become clear that such coordination is of vital importance.

INTERSECTORAL COORDINATION IS A MUST IN PRIMARY HEALTH CARE

Development is such a complex process that it is difficult for any particular aspect, like education or health, to make much headway
without reference to others. There are many examples of this, such as agricultural policies that have given cash crops preference over food crops and thus led to increased malnutrition. Even within the health field, it is important for programmes in such areas as water and sanitation, clinical services, and development of the workforce to proceed in a coordinated fashion. Because of the need for frequent dialogue between the different people involved, an intersectoral committee can be extremely helpful in this connection. Such a committee could include representatives of the following sectors and groups:

- water/sanitation
- education
- agriculture
- transport/communication
- unions/employee groups
- religious groups
- women’s groups
- social clubs
- local politicians
- local employers/merchants.

ENCOURAGE ADULT LITERACY

One particular aspect of development—the literacy of women—deserves special mention because of its influence on maternal and child welfare and primary health care. Women who are able to read and understand about health and development are open to new ideas for protecting their own health and that of their families. As a result they may change their ways of preparing food, their attitudes towards pregnancy, childbirth and contraception, and their sanitary practices and working habits. Health workers may accordingly want to encourage literacy programmes.
Barriers to change

It is part of human nature for people to seek to maintain what they know and feel comfortable with. Consequently everybody resists change to some degree, and those with relatively little exposure to new ideas through reading and other forms of communication tend to resist change more than others. This must be accepted as a normal response and not viewed primarily as being negative or as a conscious attempt to stop progress. People often advance a number of reasons for clinging to old and comfortable ways and solicit support from others in their resistance to change. Their objections must be dealt with patiently.

ANALYSIS OF BARRIERS TO CHANGE HELPS IDENTIFY SOLUTIONS

The social or group process used to resist change can also be used to endorse it. By carefully obtaining the understanding and support of one or several group leaders, it is possible to initiate the process of acceptance. Credit should be given to those with new ideas or
suggestions, thus securing their involvement. The importance of people's attitudes towards learning something new cannot be over-emphasized as a factor in their ability to understand a new plan or develop a new skill.

Resistance to change can involve many different kinds of barrier:

- **Cultural** barriers may exist if a change appears, consciously or unconsciously, to challenge existing beliefs or patterns.

- **Technological** barriers may arise if people do not feel comfortable with sophisticated machines or procedures.

- **Professional** barriers may colour the way in which different health workers view a programme and be instrumental in determining whether or not they feel it is an improvement.

- **Social** barriers are often difficult to identify, but may be the basis of a firm resistance to some proposed change.

- **Bureaucratic** barriers may arise because of petty jealousies, power struggles, or simply lack of proper preparation.

- **Political** barriers may exist if change seems to threaten the political structure or the people in power. Small issues can greatly influence the support a person is prepared to lend.

- **Financial** barriers are often more difficult to overcome, but even they contain a human element that makes them more or less surmountable, depending on the attitudes of those involved.

In short, barriers can usually be identified and explained. Once this is understood, the series of steps or explanations that can initiate acceptance of change often becomes clear. While administrative forces can often overcome barriers and impose change, their intervention is seldom desirable because of the long-term resentment and misunderstanding it creates. Problem-solving should thus be considered as an organizational challenge and art rather than a matter of quashing personal resistance or insubordination.
Chapter 3
OVERVIEW OF PROGRAMME-RELATED ISSUES

The current trend towards a coordinated health care system based on widespread primary health care raises a number of important questions. In some cases the answers are not yet very clear, while in others approaches that seem very promising have been developed.

The incorporation of maternal and child health services into primary health care requires a consideration of these questions. Countries differ widely in their current primary health care services, including their maternal and child health programmes. In attempting to unify these services, it is important to clarify the relationship between primary health care and maternal and child health care and to understand its implications.

Putting integration in place

The evolution of health systems has often led to the creation of a multiplicity of parallel structures for different health services. Every time a new technique or approach was developed for dealing with a particular disease or health problem, another department or administrative structure was formed. This was thought necessary to give the new programme adequate status and momentum. However, when a programme has been functioning for several years, those in charge of it come to regard it as their own preserve. They often have specialized training in their particular field and want to keep the department separate from the rest of the system. It then becomes very difficult to integrate that department into a comprehensive health care system, resulting in duplication and inefficiency in staff training, supervision, and logistic support. It also imposes a burden on members of the community who have to visit several clinics for different services.

INTEGRATING PROGRAMMES REQUIRES TACT AND PATIENCE

Many governments now recognize that, while all their programmes are important parts of health care, they can be provided more efficiently in an integrated system (see Fig. 3). At the local level, primary health care becomes the logical core or basis of all personal
health services. Where a strong infrastructure exists for one or several single-purpose programmes, it can be expanded to encompass all the others. This will often take considerable persuasion, high-level backing and patience with health workers who must try to readjust their thinking. These different services will often have had to compete with each other for supplies, transport and political support, and it will take time for them to unite. Some staff retraining and possibly reassignment will be needed as different service patterns are developed. Supervisors need to remain patient but firm as the changes are made. Many countries now bear witness to the increase in efficiency and in convenience for patients that comes with integration.

**Static versus mobile health units**

In planning for access to health services, particularly for widely scattered rural populations, the question arises of whether to use mobile or fixed health facilities. Because each has its advantages and disadvantages, it is important to consider the available options.

Mobile health services may consist of anything from a self-contained clinic unit installed on a truck and having its own power supply, laboratory, and even surgery, to a single person distributing dapsone tablets from his or her bicycle. A typical mobile unit consists of
a team of 3–5 people who travel by road to a specified location where they hold a clinic under a tree or in a school, church, or village centre. They usually bring consumable supplies, like medicines or vaccines, with them. Sometimes they may be on the road for several days or even weeks, though usually they return home each night. This system enables them to provide most components of primary health care quite adequately.

There are, however, several significant disadvantages inherent in mobile units. Perhaps the worst is the expense of purchasing the vehicle and the continuing cost of maintaining it and buying petrol. Many donor agencies assist in purchasing mobile units, but they generally do not provide the ultimately higher recurrent costs of maintenance and petrol. Petrol prices have sometimes risen to a level that has forced many mobile teams to stop functioning. Another disadvantage is the unproductive time spent travelling. Many staff do not like to be away from home, especially overnight, and do not stay in mobile work for long. Finally, because of its mobile nature, the health team is often not available in a particular area when an acute medical need arises. As a rule, these observations do not apply to village health workers who in a sense are “mobile” when doing home-visiting. Their type of travel is very valuable, and is discussed below.

Against these disadvantages can be set the advantages of extending coverage into areas that are otherwise without clinics, the ease of changing locations, and the ability to contact many people rapidly for specific purposes, e.g. immunization.

If appropriately located, static or fixed facilities are generally more cost-effective than mobile units, and can make a greater impact on the community. Because the staff usually live locally, they become part of the community and are not only familiar with its needs but also readily available in emergencies. The general goals of integrated primary health care are usually served better and more cost-effectively by small fixed health units than by mobile teams. However, mobile units are an effective way of starting a clinic and finding out where it can best serve the people. When a catchment area has been established, a permanent facility can be built or obtained and a health worker transferred to it.

**SMALL STATIC UNITS CAN BE MORE COST-EFFECTIVE THAN MOBILE UNITS**

Mention should be made of another system sometimes found, which is that based on periodic visits to established small health units by
a mobile team from a district or regional centre. Because the mobile team usually has more medicines, vaccines, and training, they often overshadow the local staff who may even choose the time of the visit to take a day off. Whenever this situation arises, the mobile team should support the local staff and encourage them to assist with services and learn appropriate techniques. It will eventually become more cost-effective to provide basic equipment and supplies to the local staff, upgrade their skills, and have them offer all the different services so that the mobile team will no longer have to come.

**Expanded coverage**

There are three basic ways of expanding health services: by starting new facilities or programmes; by offering additional services from existing facilities; and by utilizing nongovernmental organizations more effectively in primary health care. Whatever the approach, a more effective use of community and family members will often be necessary. In most countries, all three approaches will be necessary in order to achieve the goal of health for all.

As regards existing clinical services, a common pattern is for outpatient clinics to be held in one part of the building while maternal and child health care is provided in another part, or both types of service may be provided in the same facility, but at different times. Because mothers often do not understand or accept the importance of preventive services, such as antenatal care or immunization, they may use the outpatient services but not the maternal and child health services. Mothers and children often seek curative care at a facility where preventive services are also being offered, but have never been to the maternal and child health clinic for immunizations or other preventive care.

Another common pattern is for outpatient services to be held every day, but for maternal and child health services such as antenatal care, family planning, or immunization to be offered just once a week or once a month. This may be because of staffing limitations or dependence on a mobile team, or for some other reason. Thus it frequently happens that mothers who have walked 5–10 km because their children are sick are told to come back another day for their antenatal visit or their children’s immunization. While some of them will return as instructed, many will not, because they do not place the same value on preventive services as they do on obtaining medicine for an illness.

These and similar patterns provide an opportunity for a significant and cost-effective expansion of primary health care services. In
many cases, the basic goal should be to provide integrated primary health care and maternal and child health clinics on a daily basis in every health facility. This may require additional staff, but it should be remembered that a large weekly workload can become much more manageable if spread evenly over five days of the week. The primary advantage of daily services is that every mother who comes to the clinic, for whatever reason, is strongly encouraged to take advantage of the preventive services available that day. Ways of organizing the clinic to ensure this are discussed later. Additional equipment and supplies may be needed, as well as smaller-dose vials of vaccine.

AIM AT DAILY PRIMARY HEALTH CARE CLINICS THAT INCLUDE MATERNAL AND CHILD HEALTH SERVICES

The question of whether static or mobile units should be used has already been discussed. The mobile unit is at a particular disadvantage in providing daily services, since it cannot be at each station every day; this is a further argument in favour of fixed health units, which can be staffed daily and thus made easier for patients to use.

Coordination of the health services provided by various nongovernmental agencies and even by private practitioners would also result in improved coverage. Voluntary agency or government staff frequently travel long distances to supervise and supply their own programmes, passing close by other health units on the way. With coordination, all health units could benefit from the scarce resources and consultative advice available.

In most countries, it will also be necessary to construct new facilities, and it is important to design them to fit in with the new pattern of primary health care and locate them where they can be of maximum use. Population trends, growth patterns, and available transport are important considerations in locating new facilities. It is always wise to obtain a community’s views on such issues. Matters like the actual construction and design of facilities are beyond the scope of this publication, but are covered elsewhere.¹

Utilization of the workforce

A comprehensive approach to primary health care implies some changes in the training of health workers and the relationships between them. The health systems in many countries have developed somewhat "vertically", with an administrative structure clear to the top supporting single-purpose programmes in areas like family planning, leprosy control, etc. With a view to better care of patients and more efficient utilization of staff, these programmes are now becoming part of primary health care. Obviously, some workers may need additional skills to enable them to assist in new areas. Basic training curricula should be reviewed to determine how every health worker can acquire multipurpose skills to enhance his or her usefulness in a comprehensive system. All workers need to develop problem-solving skills based on the risk approach described on pages 27–28.

Administrative patterns may also need to be changed if an integrated programme is to be fully implemented with proper support for each subject area. A typical pattern to avoid is the integration of health services at the bottom, but not at the top, which may result in efforts by different administrative structures to supervise and direct the same group of primary health care workers. Several different kinds of report may be demanded, and health workers may be expected to carry out overlapping activities. Because the actual providers of services—the primary health care workers—are usually among the busiest people in the health system, this administrative competition for their loyalty and services must be avoided. A good system has technical integration at the top and operational integration at the bottom. Administrators need to see their job as supporting the work of those below them and making it easier.

ORGANIZE FOR TECHNICAL INTEGRATION AT THE TOP AND OPERATIONAL INTEGRATION AT THE BOTTOM

It is difficult to generalize about the different types of health worker and which type should be doing what. The aim must be to offer an integrated service that utilizes its staff efficiently. To accomplish this, health workers should be willing and able to perform several different kinds of function, depending on the needs of any particular day. There is, of course, a limit to how versatile each worker can become since that depends on the training time and skill available. A skill will be lost if it is not used often enough. Most of the skills needed at the primary health care level are sufficiently straightforward to be taught, when appropriate, to new or additional staff. Necessary nonclinical tasks, like filling out reports and cleaning and
maintaining equipment, should be assigned to specific persons who are adequately trained. It is important to help health workers decide which are their primary tasks and which are their secondary or support tasks.

One of the issues confronting many health care systems is that of relations with traditional healers and traditional birth attendants. Both these groups may have skills and influence in the community that can be useful. There is a wide range of traditional birth attendants, from older women who assist with one or two deliveries a year within their own families to village matriarchs who are more active in midwifery and serve a larger population, and it is useful to develop a working relationship with them. Sometimes additional training and/or equipment can make them valuable members of the health team. When that is not possible, they should at least be encouraged to refer difficult cases to the clinic and ask for help when they need it.

**Appropriate technology**

The concept of "appropriate technology" specifically responds to the technological differences that exist in the world and the problems they create. While technology has much to offer developing countries, most of it has been developed in and for countries with comparatively sophisticated support systems and an adequate supply of trained personnel. As a result, most technological advances are difficult to apply and, in particular, to maintain in developing countries. Because many of the inventive forces in the world are motivated by the potential for profit existing in the developed countries, inequity in this area is liable to continue.

Nevertheless, a careful choice of appropriate technology, along with modifications for developing countries, has much to offer health care in the form of equipment and facilities. Considerable material on the design of health facilities is available and should be reviewed when new facilities are projected. It is also important to keep local cultural patterns and preferences in mind when planning patient-flow in a clinic. Such matters as the need for privacy, the layout of waiting areas, the height of counters and work areas, and the need for cross-ventilation may have cultural significance.

| SELECT EQUIPMENT CAREFULLY FOR ECONOMY AND RELIABILITY |

Equally important to primary health care is the equipment used, and the first principle must be to obtain equipment of proven reliability.
that can be serviced locally. A major problem can occur when donors in externally funded projects insist on providing their own makes and models of equipment. The failure of a small part that cannot be repaired or replaced has frequently meant that a useful piece of equipment is left idle. A second principle is to train a specific staff member to be responsible for the cleaning and maintenance of the more sophisticated equipment. The principle of “Everybody’s responsibility is nobody’s responsibility” often applies in a busy clinic, and items like scales, refrigerators, etc. should therefore have particular persons assigned to them. It is often useful to translate instructions into the local language or dialect and hold special training sessions on the use and maintenance of equipment.

The basic equipment for primary health care clinics, including maternal and child health services, comprises: a refrigerator, scales (for weighing infants, children, and mothers), a sphygmo- manometer, a sterilizer, a stethoscope, a fetoscope, and syringes and needles. In addition some means of transporting vaccines in cold-storage conditions will be necessary. There are various types of scales to choose from, the 25-kg hanging scale being the most popular for weighing children, though useless for weighing newborns and infants. The most delicate and expensive item is the refrigerator, which is necessary for storing vaccines locally so that immunizations can be offered daily. Occasionally a local shop or home may have a refrigerator where vaccines can be stored temporarily, though this is less desirable than having one in the clinic. Many primary health care units will be in places where there is no electricity, so that reliance may have to be placed on refrigerators powered by kerosene or gas (propane) for example. Spare parts should be budgeted for and obtained ahead of time. Where the right types of equipment have been obtained and there is pride in their maintenance, reliability is more or less assured.

ASSIGN RESPONSIBILITY FOR THE MAINTENANCE OF EQUIPMENT

Another area in which the concept of appropriate technology is applicable is that of treatment with medicine and herbs. Many countries have now confirmed the medicinal value of certain traditional remedies and these can be an economical alternative to commercially produced medicaments. Care is needed in incorporating traditional medicines into treatment regimens, and some education for both health care workers and patients will be needed. Nevertheless, their use in various situations is worth exploring.
Support services

Administrative understanding and support, at both national and intermediate levels, are necessary in order to strengthen primary health care. Unclear directions from administrators and mandates for action without sufficient resources can be major headaches for local health workers. For maintaining realistic contact with local workers and issues, there is no substitute for administrative field trips to visit individual clinics and review the health work there. In the context of a clinic’s routine and limited resources, the interpretation and application of administrative directives can differ considerably from what was originally intended.

A particular problem arises where supervisors press for more activities or programmes than a clinic’s staff can handle. The inability to handle extra tasks may be due to inadequate staffing or lack of time, equipment, or other resources. In this situation, it is useful to formulate a clear set of priorities, based not just on principles but on practical, everyday considerations. What basic services must always be maintained? How should scarce resources be utilized in the most cost-effective way? It is useful to discuss these questions thoroughly so that local staff will be able to take appropriate action themselves, when the need arises.

Another common problem for primary health care workers is irregular provision of the supplies needed to maintain basic services. These may include medicines, vaccines, clinic cards, kerosene for the refrigerator, funds for buying petrol, petty cash for repairs to equipment, or simple consumable supplies like pens and paper. Sometimes the problem is one of a national shortage of supplies or an inadequate budget, but often it arises from distribution difficulties. The lack of middle-level management skills, which is at the root of these difficulties, is now recognized as a major barrier to the improvement of health services in many countries. It arises partly from inadequate training, planning, and management and partly from laxity and lack of pride in maintaining a well-run organization. Development depends in part on overcoming the routine acceptance by both people and health staff of chronic shortages and inefficiencies. While such an attitude may be partly cultural, it does have a significant impact on health care and results in increased sickness and death.

In developing countries, commitment to primary health care implies the widespread use of health auxiliaries and members of the community, whose education has usually been limited and who may have little knowledge of health matters. While they can provide valuable services with a considerable degree of understanding and
skill, there are some problems and issues they should not be expected to solve by themselves. The ideal way of supporting these frontline health workers and improving their skills is through supervision and patient referral. In many cases, they may themselves be supervising and teaching others with even less health knowledge.

**USE SUPERVISION TIME TO EDUCATE STAFF MEMBERS**

A supervisor has several different parts to play in this situation: motivator, organizer, disciplinarian, problem-solver, and consultant. In general, supervisors should be one or two training levels above those they supervise. Ideally, they will also have had similar work experience in the past and will therefore be able to understand the issues that arise. The art of successful supervision lies in gaining the trust of those supervised and showing fairness and compassion in dealing with them. Supportive rather than punitive attitudes are important. Each health worker, regardless of training level, should be encouraged to apply his or her own creative skills to solving problems and improving health services. Suggestions or new ideas should never be ridiculed or made light of, and complaints should be adequately discussed.

**GOOD SUPERVISORS ARE FAIR, FIRM, AND FLEXIBLE**

When making major organizational changes, such as the integration of programme components into primary health care, supervisors will often need to be personally involved. This is a good time for the in-service education of the staff and for reviewing existing skills and procedures. Analysing clinic records with the staff and reviewing samples of clinic cards are useful means of evaluating and upgrading health services.

**ORGANIZE REGULAR CONTINUING EDUCATION PROGRAMMES**

All primary health care facilities will need to refer certain types of patients to the next higher level of care. Together with the staff who evaluate and treat the referred patient, the supervisor should monitor the referral patterns, making this a learning experience whenever possible by sharing diagnostic and treatment results with those referring the patient. Referral involves locally derived criteria
of need and of the absorptive capacity of referral services. Thus, depending on the particular circumstances, neither too few nor too many patients should be referred. Criteria that provide specific guidelines on which patients to refer should be established. It should be remembered that the person who has to decide on referral is the one least equipped to make a complicated medical diagnosis, namely the community health worker. It is also important to recognize that the patient or the patient's family may have strong opinions about referral and that these must be dealt with. In many countries, self-referral by patients is more frequent than actual medical referral.

Another important aspect of primary health care from the standpoint of support is coordination with other sectors of development. Agriculture, education, water and power, transport and communications are just a few of the areas that influence people's health. A number of organizations may be involved in their programmes besides the government, including private business, religious groups, women's organizations, service clubs, etc. Health workers should seek to have their views taken into account in developmental activities in the different areas concerned. It is also appropriate to draw the attention of the other groups to the various barriers to improved health encountered by health workers and to seek their help in overcoming them.

Finally, the people themselves constitute an important part of the support services. Though often overlooked when needing help, they can be encouraged to play an active role in the maintenance of supplies and even in supervision and referral. They may, for example, be entrusted with picking up and transporting medicine or other consumables, storing vaccines in local refrigerators, and repairing or maintaining equipment. Their role in supervision and referral will usually require more education and involve more collaboration with local bodies. It may range from assistance in transporting patients or staff to the actual monitoring of health service quality and population coverage, disease surveillance, financial guidance and the coordination of community projects. The main thing is for the health staff to invest time in helping people feel that the health services are their project, for their benefit. An invaluable ingredient for success is the shared sense of ownership and pride in the health programme, generated when people understand it and contribute to it in even a minor way.

Cost-effectiveness

Cost-effectiveness, as applied to health care, is assessed by comparing the cost of different health programmes in relation to
Integrating MCH services with primary health care

their impact on health. Precise figures on the subject are difficult to produce, especially in developing countries. It is nevertheless useful to analyse programmes from the point of view of cost-effectiveness, even if the supporting documentation is considered weak. It is also useful to consider cost-effectiveness from the people’s point of view: how much, in their own eyes, do they gain from different types of health service in relation to the time, money, discomfort or inconvenience involved?

Within primary health care, the question that must be asked is how the best use can be made of all available resources, including the health system, other sectors, the community and families, in order to produce the maximum effect on public health. It is generally found that preventive measures, such as immunization or improved nutrition, are among the most cost-effective of all health measures. Sometimes, however, people have difficulty in understanding and accepting long-term objectives, and it may accordingly be necessary to make preventive measures a standard feature of the more generally accepted services, such as outpatient treatment.

| INTEGRATION OF STAFF AND SERVICES CONTRIBUTES TO COST-EFFECTIVENESS |

Staffing is the most expensive item in the majority of health care systems, and an area in which the principles of cost-effectiveness should be most rigorously applied. What kind of personnel can most effectively provide the desired service? Is there enough work to keep them busy? Has the right balance been found for each staff member between being sufficiently versatile to cover several functions and yet skilled enough to be effective?

The basic procedure in primary health care is to integrate at least the eight essential components of health care into a functional unit. The appropriate services must then be made available to the people in a way that is efficient and acceptable to them. In most countries this calls for multipurpose health staff with both the skills and confidence to carry out antenatal checks, perform immunizations, evaluate children’s growth, provide health education, encourage family planning, and manage illnesses. Most of these skills should be taught in formal training programmes, but some will need to be strengthened on the job. In many cases, some of the essential services will be provided outside the traditional health care system.

The cost-effectiveness principle also applies to construction materials for health facilities, to the design and equipment of these
facilities, and especially to consumable supplies. More expensive medicines are used when the cheaper ones are out of stock. Vaccines are wasted when smaller-dose vials are out of stock, or, which is perhaps even worse, a child may be refused immunization and told to come back another day when, it is hoped, better attendance will mean that the rest of the vial will not be wasted. Even a lack of clinic cards, leading either to a refusal to accept new patients or to the use of home-made substitutes, is a waste of time for staff and patients alike.

The risk approach

Over the past few years, the epidemiological concepts of relative and attributable risk have been adapted and applied to the priority problems of primary health care. This approach seeks to quantify various health or social conditions that are associated with an increased risk of disease and death. "Attributable risk" is the increased risk of disease presented by a particular condition or problem. In other words, some of the risk of malnutrition is attributable to measles or other infections, some to poor kinds of food, some to cooking habits, some to absence of a parent, etc. Obviously some attributable risks are more significant than others. The early identification of mothers or children with a high risk profile permits corrective measures to be implemented more efficiently and effectively. This increased emphasis on helping people in whom difficulty is anticipated has been described as "something for all, but more for those in need—in proportion to that need".

While some risk characteristics are universal, such as low birth-weight with its effect on infant morbidity and mortality, others are of particular significance in specific areas. For this reason, it is important for each country or area to identify its own set of risk factors for each of the different stages of life. Risk factors include not only traditional health parameters but also such indirect influences as poverty or absence of a parent, possible exposure to harmful substances in the environment, and social and geographical barriers to access to health services. Some of these may be community or family factors, while others may apply only to individuals.

While a great many factors may be associated with an increased risk of disease, it is important not to single out too many or health

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workers will tire of monitoring them and their usefulness will be lost. Only those factors that are felt to be of sufficient importance to require special attention should be singled out. Identifying a risk factor that does not affect the way a patient is dealt with is of little practical importance.

**IDENTIFY RISK FACTORS THAT INFLUENCE PATIENT CARE**

Part of the process of establishing risk factors consists of deciding how to deal with each type. Should the patient come to the clinic more frequently, be referred to the next level of care immediately, or be given extra medicine or food, or would some other approach be best? To make the risk approach work, health workers must not only recognize the value of identifying a risk factor, but also know what action to take afterwards and be able to take it. Progressive referral, often known as “triage”, passes a patient at risk to the next higher level of health care for more complete evaluation. If this is not sufficient, the patient may be passed on again to an even higher level. It is important not to abuse or overload the referral system, or to fail to use it when in doubt. Those receiving referral patients can provide an educational feedback in the form of notes and comments on their findings. Alternatively, if the frequency and impact of the risk factor are great enough, it may be more cost-effective to transfer the technology and skill needed to handle it to a lower level in the system. Increasing workers’ skills to enable them to deal with certain categories of delivery would be an example of this.

It is important to identify ways in which the community can help correct risk factors. Workers in other sectors, such as agriculture or education, may also be able to provide information or assistance that will permit specific factors to be corrected.

**Health systems research**

Research has too often been viewed as a sophisticated process, carried out by “others”, that has relatively little immediate significance for health care. Health systems research within primary health care, however, involves all health workers in evaluation, problem-solving and searching for improved methodologies. This does not have to be a complicated process requiring statistical or epidemiological support. The identification and handling of risk factors, just mentioned, provide an excellent example of health systems research that can be carried out at the local level.
As a health systems researcher, every health worker should take an interest in disease patterns, the utilization of services by the public, demographic trends, and similar factors. Individual clinic reports are an ideal basis for plotting trends, noting seasonal differences, or detecting an outbreak of disease at an early stage. Research at this level can often be translated into immediate action with significant results. This type of approach has been termed "learning by doing", which is a good motto for primary health care.

EVERY HEALTH WORKER IS AN EPIDEMIOLOGICAL RESEARCHER

Mortality monitoring is a particularly important type of research. Whenever a death occurs in the community, the health staff should make a special investigation. What was the specific and underlying cause of death? Was the case handled appropriately? Were there any gaps in services that contributed to the death and that can and should be remedied? Answering these questions can provide valuable information and an understanding of both the natural course of disease and the role of the health services. Such an evaluation may best be carried out with the help of a supervisor.

Health systems research can also be very useful at an intermediate or national level. Specific questions demanding answers can often be determined in advance, which should ensure more helpful results. Concern about health workers spending time and resources on data-gathering must be weighed against the expected outcome of the research project. Elaborate statistical models requiring sophisticated analysis are not usually necessary for basic results to be useful and for questions to be answered. On the other hand, research planning should not be biased to provide only the answers expected and/or desired.

Relations with the community

There is considerable discussion at present about community involvement in development, including health programmes. While there is widespread acceptance of such involvement as a principle, exactly what it means and how to implement it are not very clear. The need for two-way communication has been mentioned—the community needs to understand and have an influence on health activities, and health workers need to understand the community's needs and resources. A true partnership should be formed, with "ownership" of health activities shared by both sides. Responsibility
for many non-technical aspects of maternal and child health and primary health care can be transferred to the community, notably:

- growth monitoring
- distribution of packets of oral rehydration salts
- distribution of family planning supplies
- ensuring compliance with immunization requirements.

When dealing with communities, it is important to be aware of several basic principles. Not surprisingly, most communities are not homogeneous, so that there will be many different opinions about what is best. Simply giving out information will not change beliefs or behaviour very rapidly. Some community leaders may at times have difficulty in separating their own personal interests from what is best for the community. Any type of developmental change creates new questions and relationships, and it is important to show sympathy and support for community leaders, and to remember the pressures they often face.

BUILD ON COMMUNITY RESOURCES

These points are worth recognizing and, considering human nature, are hardly surprising. This does not lessen the need for relating to the community or its value as a resource. The women in a community can play a particularly important part in health care. Their services in this area are often underutilized, even though they are the most concerned section of the community as regards health issues. As pointed out in a recent WHO publication, women already provide most of the informal health care in a community and frequently share their knowledge and experience with other women.\(^1\) They also tend to have stronger community roots than men, many of whom will have joined the mobile labour force. Finally, they will naturally be active already in several different sectors as well as health, including those of water, sanitation, and food production and preparation.

The very poor constitute a sector of the community with considerable needs but little influence. Their lowly status in the community,

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Fig. 4. Mobilize community resources to increase involvement

Fig. 5. Search out the very poor for special attention
often combined with their own lack of self-esteem, severely limits their access to community resources. They passively accept their lot, believing they have no choice, and maintain a survival mentality.

THE VERY POOR NEED SPECIAL ATTENTION

To sum up, communities need and are entitled to become involved in their own health care. The possibility of improving health lies less in technological advances than in what people can do for themselves. Women in particular represent a valuable resource in both formal and informal health care. Informal or personal care should be recognized as constituting a large and valuable part of a health care system and efforts should be made to strengthen it through education. Everything possible should be done to include the disenfranchised poor in this process.

Finances

Certainly one of the biggest barriers to the expansion of primary health care services is shortage of money. Ways of dealing with this problem, discussed elsewhere in this publication, include integration of services, intersectoral coordination, collaboration between government and private agencies, maintenance of regular supplies, maximization of health workers' skills, and utilization of volunteers and other community resources.

BE CREATIVE IN SOLVING FINANCIAL PROBLEMS

Many donor agencies are willing to collaborate in the development of combined maternal and child health/primary health care services, notably by helping to purchase equipment or build clinics. This type of assistance is important, but ultimately far less expensive than meeting recurrent operating costs. In expanding services, it is thus vital to ensure that provision is made for supplies and personnel. Some donor agencies have also been very helpful in providing support for certain components of primary health care in the form of vaccines, contraceptives, food supplements, etc. These resources should be used carefully within primary health care services and not allowed to dominate or distort other parts of the overall programme.

As the beneficiaries of health care, the people themselves must have ultimate responsibility for the financial maintenance of primary
health care services. This is often achieved by the political process whereby government support for health care is provided through taxes and other revenue. When this process is ineffective or unfeasible, many villages seek other ways of supporting primary health care. These may include purchasing, or arranging for, their own supplies, supporting a health worker from village resources, constructing their own clinic or finding the appropriate space for it, or providing volunteers to assist in health care activities. It is important to encourage villagers to assume responsibility for their own welfare and to adopt an innovative approach in solving their problems. They may wish to charge themselves fees, or form a cooperative to raise money through business or other enterprises.

Finally, political pressure is often necessary to redirect existing government expenditure towards health. Aggressive promotion of health needs should be accompanied by a rationale based on the expected political and developmental benefits. Members of the community can often assist in this.
It will require both horizontal and vertical integration for health coverage to be significantly expanded in a cost-effective manner. Commitment to such expansion is clearly part of the health-for-all mandate, and the issues involved in achieving it have been discussed. Primary health care, including maternal and child health services, is the essential factor, and integrated services that are responsive to the community's needs and economical in terms of staff time and resources must be provided on a daily basis.

Another important goal is the early identification of children and mothers who are at risk for different illnesses. Properly trained staff with basic equipment and supplies are capable of detecting certain health problems at a stage when they can still be solved. Such increased support for those with particular needs is in itself a manifestation of the concern and caring that each health team and its community are encouraged to demonstrate. Expanded coverage with a high standard of care will ensure the equity that is a fundamental aim of primary health care.

The integration of maternal and child health within primary health care will require close coordination of the efforts of those providing health care. The tasks to be carried out by the different members of the health team will vary from country to country and will depend on the number of staff available and their training. A functional task analysis can facilitate the assignment of activities among staff-members and make the most of their individual skills and interests.

**At community level**

Health workers have traditionally concentrated their energies on providing medical services at the local clinic. Long queues of patients and overloaded work schedules have prevented most of them from thinking beyond the needs of those who come to the clinic. However, there is now a growing awareness that one of the greatest unused resources for health care is the community itself. People are interested in their own health and development and usually have some good ideas on ways to improve health care.

People in a community naturally tend to see issues or problems from their own perspective. This may mean that problems and projects
will be contemplated or undertaken without considering which government departments or sectors would be involved or where the funds would come from. Often a problem involves more than one sector—for example water and health, or health and agriculture.

HEALTH STAFF ARE RESPONSIBLE FOR ALL COMMUNITY MEMBERS, NOT JUST THOSE ATTENDING CLINICS

It is important for health personnel to support and participate in community projects. For example, they can help identify the causes of health problems and suggest improvements. In particular, the health staff should consider the entire community, and not just the people who come to the clinic, as their responsibility. Only by considering the nutritional status, water systems, immunization levels, and other factors affecting the health of the entire community can they trace problems before they become serious. By seeking solutions to problems while they are still minor, or before an epidemic starts, it is possible not only to help prevent suffering but also to reduce the clinic’s potential workload.

Community health workers

The lowest-level health workers are known by a variety of titles in different countries—primary health workers, peripheral health workers, health aides, and many others—usually in a local language. Health workers in some countries are employed, whereas in others they are volunteers who may receive some compensation from their community. Their formal training is usually minimal, and they are chosen because of their respected position or potential influence in the village. Depending upon the local situation and their responsibilities, they may be men or women, young or old, and may see community health work as their entire career or simply as a service they may provide for just a few years.

What makes community health workers particularly valuable is the fact that they personally know all the families in their area. They should make regular home visits to each family, normally once a month, to keep in touch with them and to learn of any new problems they may be able to help with. When a problem is brought to light, the community health worker should know what resources are needed to deal with it and be able to make them available to the family concerned.

Because of their knowledge of local circumstances, community health workers are extremely important members of the health team.
Integrating MCH services with primary health care

It is imperative for the clinic staff to understand their role and to lend them full support. Many of the traditional functions of a maternal and child health clinic can be carried out by community health workers working alongside members of the community. These functions include distributing contraceptives or packets of oral rehydration salts, monitoring children’s growth, immunizations and illnesses (and recording them on their home-based cards), providing health education and performing first aid.

COMMUNITY HEALTH WORKERS ARE THE CORNERSTONES OF PRIMARY HEALTH CARE

The degree of responsibility of community health workers will vary widely by country and even within countries. Trained health staff working at higher levels should consider them as their “eyes” and “ears” in the community and seek ways of improving their skill, understanding and prestige. When clinic staff go into the community to provide mobile health services, it is important for them to take community health workers with them, to improve the skills of the latter and to benefit from the information they can provide about specific problems.

Home-visiting

For many villagers, community health workers represent the first point of contact with the health care system. In addition to receiving families in need of help, community health workers also carry out regular or special home visits. Experience has demonstrated the total interrelatedness of different parts of people’s lives; in caring for the “whole” person or “whole” family, a number of things besides traditional health problems become important:

- What are the social relationships of the person or the family in the village, at school, with relatives, or at home?

- What is the family’s financial situation, and are they prepared for unexpected problems?

- What about the family’s housing, water, and sanitation—both the actual facilities and how they are used by each family member?

- What are the sources of the family’s income and/or food?

- Is their income secure?

- Are there disciplinary problems with the children?
Planning integration

Fig. 6. Home-visiting is an important part of primary health care

All these questions and many more are of direct relevance to a family’s health in the broadest sense and to the success of its members in following improved health practices. This type of information can be understood only by someone who personally knows the family fairly well and can regularly spend time with them as a friend interested in their welfare. This is a role for which community health workers are ideally fitted and one that permits them to identify risk factors before they cause significant problems. A friendly relationship is also extremely important when helping a family to deal with a problem or change a health practice.

CHOOSE COMMUNITY HEALTH WORKERS WHO UNDERSTAND PEOPLE

Home-visiting is an important supplement to health care and a special kind of person is needed to do it well. It is usually best for community health workers to have a regular visiting schedule that families get used to and that ensures that no one is neglected. Clearly
some families need more help and should be visited more frequently and for longer than others. These families may not themselves recognize their special needs or request more help, but sensitive health workers can usually find ways of overcoming these barriers. Sometimes a health worker at a clinic identifies a problem requiring special help and sends a message to the community health worker to follow it up. In such a case, enough information should be provided to ensure that the community health worker knows exactly what is expected of him or her. It is often useful for the community health worker actually to attend the clinic with a family in order to provide additional information and perhaps develop a follow-up plan in conjunction with the staff of the clinic. The plan could include arranging for special food supplements or medicines to be brought to a sick child, checking up on the healing of a wound, monitoring blood pressure or blood sugar, following up other health problems, and performing any other task required to assist the family in restoring their well-being. The need for close working relationships between the community health workers and the staff of the clinic, both before and after identification of a problem, cannot be overemphasized. Through their home visits, community health workers provide a bridge to health.

Assessing community risk factors

The principles of risk factor identification, already discussed with reference to individual mothers and children, can be applied to an entire community. Health workers should periodically ask the question “What kind of care is the community receiving in relation to its needs?”, rather than the more usual “What health services am I providing?” To answer the first question, it is necessary to know both the actual and the felt needs of the people, the proportion of these needs that is being taken care of, and the means by which this is being done. Only a part of the current health problems will be presented at the clinic, since some people will fail to attend, perhaps because they do not feel it can deal with their particular problem, or because they find the distance or cost too much, or for some other reason. Community health workers are an important source of information on additional needs that are not being met.

There are many ways of gathering this information, but one of the best is through a community survey. People’s clinic cards, kept at home, can be very useful for ascertaining, among other things, the percentage of children who attend the clinic, how regularly they do so, their immunization status, their weight and growth problems, and whether a woman is using a family planning method or is currently pregnant. The entry of the current weight of a number of children on a single growth card (see Fig. 7) will provide feedback on
Fig. 7. Growth chart used in weight-for-age survey of village children

Name: Kikaka Village
Birth weight: kg

Reasons for special care:
Survey: May 1989
Done by: A. Kasa, P. Chanko

WEIGHT
1st YEAR
2nd YEAR
3rd YEAR
4th YEAR
5th YEAR

AGE IN MONTHS
Kilograms (kg)
the clinic's services and an educational opportunity when appropriate, perhaps during a regular home visit by the community health worker.

**USE COMMUNITY SURVEYS TO EVALUATE TRENDS**

A community survey may also be useful when dealing with a particular problem like a contaminated water supply, a measles outbreak, or increasing malnutrition. The key issues involved should be identified, as the focus of investigation. It is important to write down the results of any community assessment, together with observations and interpretations, so that a record can be kept for the future as well as for immediate action.

**Community development committees**

It is valuable to have a regular dialogue with community leaders about health-related problems and opportunities. Regular meetings permit key people to affirm their support and express their concerns, while enabling health workers to receive some feedback and increase community awareness of potential health problems. This dialogue will make it easier to call on community resources when a particular project is undertaken.

The establishment of a community development committee can be initiated by the health staff, by concerned community leaders, by a religious group, or by others. It is important to select each member carefully to ensure that the committee is well balanced and represents the community as a whole. Because health and other aspects of development are closely interdependent, it is also useful to have representatives of other sectors such as agriculture, water, or education, on the committee. Depending on the local political system, the committee may be chaired by a politician, a prominent community leader, or some acceptable government or religious worker.

The frequency of meetings, the topics to be discussed, and the actual administrative power of the committee will vary widely from country to country. It is probably best for the committee to meet at least every three months so that members maintain contact and can engage in useful discussions. The chairman must be capable of ensuring that the discussions are not dominated by particularly powerful people or groups and that the committee continues to be representative of the community as a whole. Helping the community develop a sense of pride in and control of its own resources and destiny is an important responsibility of the committee.
ENCOURAGE COMMUNITY LEADERS TO ADDRESS HEALTH PROBLEMS

Education and self-care

Individuals and families, as well as committees, are usually willing to take more responsibility for their own health and interested in doing so. They should be encouraged in this, and provided with appropriate and helpful information. It is important never to accept the idea that too much information is dangerous, but rather to invest time in helping people understand issues and make correct decisions. Community health workers are the ideal people to educate families about new ideas or programmes, notably by helping to fill in and interpret home-based records and by explaining the causes of disease and the principles of treatment.

EDUCATED SELF-CARE IS PART OF PRIMARY HEALTH CARE

Educating mothers about simple kinds of treatment they can carry out in the home is an important part of self-care. Lowering a child’s

Fig. 8. Educate mothers about simple treatments they can carry out at home
Integrating MCH services with primary health care

temperature, maintaining hydration or, if necessary, giving oral rehydration, and making balanced meals are all important health measures. Learning to use simple medicines like aspirin at home, without coming to the clinic, can be helpful. An understanding of basic hygiene and the way bacteria and viruses spread is also important. Time spent in educating people on these matters is an investment in their future health and makes it possible for clinics to have a more selective workload.

At health centre level

The health centre offers a clinical base from which health staff can provide primary health care and support community health workers. It may be a small clinic with a staff of one or two in an isolated group of villages, or a bustling urban health centre serving hundreds of patients daily. The basic concepts of primary health care can be applied in all settings where health services are offered.

Clinical services

To accomplish the objectives of primary health care, well-run clinics with efficient patient services will be required. Equipment must be kept in working order and a good supply system set up and maintained. Individual projects throughout the world have shown such efficiency to be possible, even in the most difficult situations.

The general coordination of primary health care services is centred on the clinic. This does not mean that only clinic staff are involved, or that all components of primary health care are provided only in clinics. Families and individual community members should feel responsible for a clinic’s effectiveness. Community health workers form a very important social and service link with the community. The clinic serves as an organizational base for health activities in the community, whose members should consider it as their own health facility. Each of the components of primary maternal and child health care is presented below, followed by a discussion of how its integration can be effected.

Antenatal care

The principle of special health care for pregnant women is now quite well established in most countries. The usual aim is to see each woman at least once in early pregnancy in order to advise her on ways of achieving a safe and healthy pregnancy, and to identify any pre-existing factors that could increase risks to her or her infant. As pregnancy progresses, closer monitoring is valuable in order to
ensure early identification of risk factors that emerge during the pregnancy and to detect possible complications.

ENCOURAGE EARLY ANTENATAL CARE

During the last month of pregnancy even closer supervision is required to identify complications or risks to the fetus that might respond to timely and skilled intervention. The number and frequency of contacts in the middle and late stages of pregnancy will depend on prevailing circumstances and the availability of resources.

There are two groups of antenatal risk factors:

- those associated with the woman’s medical, obstetrical, and social history or circumstances;
- those arising during the antenatal period.

When risk factors are detected, they may indicate the need for action directed at the woman herself, such as:

- specific treatment;
- more frequent visits to the clinic for monitoring; or
- referral to a hospital for more complete evaluation or for delivery.

Other risk factors such as unavailability of antenatal care, insufficient food supplies, poor sanitation practices, etc. may raise questions about health policy or the need for community action.

The specific risk factors of the antenatal period should be considered in terms of the situation in each country or even each local area. The "cut-off" points for each factor need to be locally determined according to its prevalence and the availability of resources. The relative significance or risk to health attached to each factor should also be considered in determining its priority and cut-off level. Because the establishment of these risk factors is frequently entrusted to auxiliaries who are limited in their training and ability to interpret findings, the risk factor criteria themselves, as well as recommended action, need to be clearly spelled out. Table 1 gives examples of locally determined risk factors during the antenatal period.
Table 1. Risk factors during pregnancy (rural East Africa)

<table>
<thead>
<tr>
<th>Medical and obstetrical history</th>
<th>Antenatal period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age below 15 or over 35</td>
<td>Haemoglobin &lt;8.5 g/100 ml</td>
</tr>
<tr>
<td>Limp, or leg affected by poliomyelitis</td>
<td>Blood pressure &gt;140/90</td>
</tr>
<tr>
<td>More than 8 pregnancies</td>
<td>Oedema &gt;2+</td>
</tr>
<tr>
<td>Short stature (&lt;150 cm)</td>
<td>Albuminuria 2+</td>
</tr>
<tr>
<td>Previous miscarriage or</td>
<td>Breech presentation</td>
</tr>
<tr>
<td>stillbirth</td>
<td>Twins</td>
</tr>
<tr>
<td>Pregnancy interval &lt;1 yr</td>
<td>Vaginal bleeding</td>
</tr>
<tr>
<td></td>
<td>Endemic malaria</td>
</tr>
<tr>
<td></td>
<td>Poor weight gain</td>
</tr>
</tbody>
</table>

Once specific risk factors and cut-off points have been established, the course of action to be taken by the clinic staff can be specified in each case. Screening for problems without provision for appropriate follow-up puts both staff and patient in an awkward position and is often worse than not screening at all. In other words, it is unwise to spend time detecting problems for which there is no solution or recommended course of action. It is also inappropriate to set cut-off points for referral such that the next level of facility is flooded with too many patients. Staff in each area should carefully establish which risk factors to be concerned about and what their cut-off points should be.

**SELECT RISK FACTORS BY FREQUENCY OF OCCURRENCE AND ABILITY TO DEAL WITH THEM**

The staff providing antenatal services at the clinic generally consists of one or more nurse/midwives and several helpers. Given adequate instruction and supervision, community health workers with 3–12 months’ training can adequately carry out a number of tasks in antenatal clinics. They can also do valuable follow-up work in the community. Activities such as registration, weighing, and checking medical histories for risk factors should be entrusted to auxiliary personnel so as to leave the more highly trained staff free for the medical tasks only they can perform.

As in all health services, women will attend an antenatal clinic more consistently if they have been adequately educated about its value and receive tangible benefits from attending. Iron tablets, vitamins, antimalaria drugs, tetanus toxoid immunization as appropriate, and a regularly updated antenatal card showing the progress of pregnancy are all valuable inducements to attend. A well-designed
Planning integration

clinic card (see pages 61–64) will record the changes in health status during pregnancy and offer recommendations on delivery and family planning. Data on specific risk factors, such as acceptable upper limits of blood pressure or albuminuria, or the lowest acceptable level of haemoglobin, should be printed on the card, with clear instructions on how to proceed when these are recorded. The card should be kept by the woman at her home and be available at the time of delivery, whether this takes place at home, in the clinic, or in hospital.

Preparation for breast-feeding and plans for contraception following delivery should both be discussed during the antenatal period, especially during a first pregnancy or if a woman has had previous problems in these areas. The value of breast-feeding and of delaying the next pregnancy is so great that these subjects deserve extra time. It is highly desirable to include husbands in the discussions, particularly when the topic is contraception.

Deliveries

Good antenatal care is important in avoiding complications during labour and delivery. It can also encourage a woman for whom a complicated delivery is anticipated to go to a hospital, where it can best be handled. In most developing countries, however, the majority of deliveries will continue to take place within the primary health care system, either at home, or in clinics or health centres. As long as adequate light and warmth are available, and those in whom complications are expected have already been referred to a hospital, the site of the delivery is usually less important than the steps taken to ensure cleanliness and the observance of an orderly procedure throughout delivery. Although often difficult, it is always good practice to have established referral criteria and plans formulated to deal with unforeseen complications.

The essential minimum requirements for a safe delivery are the “three cleans”: clean hands, a clean delivery surface, and the clean tying and cutting of the cord. Essential supplies are clean cloths for drying and wrapping the baby, and a sterile instrument for cutting the cord after it has been tied. The position of the woman during labour and delivery, the timing of the tying and cutting of the cord, and the immediate putting of the child to the breast are important components of a safe delivery. The procedures commonly employed in developed countries are not always appropriate. At higher levels of care, use may be made of vacuum forceps apparatus, medications, suturing, and devices for resuscitating and warming the infant.
The delivery process will always be an important part of maternal and child health care. As a single event, the timing of which is generally unplanned, it cannot be fitted into an organized schedule. The fact that staff may have to leave the clinic to attend a delivery should be borne in mind, and arrangements made to prevent this from significantly interfering with other maternal and child health services and discouraging mothers from attending. If a home delivery is expected, it is important to prepare the place of delivery and supplies in advance and see that the trained staff are alerted to situation.

Care of newborns and children

Services for children have become a large and important part of all health care systems, not only because of children’s unique vulnerability but also because of the valuable methods now available for protecting their health. The care of the newborn, whether at home or in a health centre or hospital, has four essential features:

- resuscitation, if necessary
- temperature control
- feeding
- prevention of infection.

The physiological needs of the newborn are related to the change from a totally dependent intrauterine existence to one in which the infant must suddenly regulate its own temperature, breathe on its own, and obtain nutrients by mouth. Some of the practices that have evolved in both traditional and modern care of the newborn are not physiologically sound and may be dangerous. A newborn baby must be kept warm, dry, and out of draughts, and should be put to the breast immediately after birth, both to encourage uterine contraction in the mother during the third stage of labour and to obtain the immunological and physiological benefits of colostrum.

Small babies, whether premature or full-term but of low birth weight, are best cared for in supervised facilities until they can breathe without difficulty and maintain their body temperature on their own. The referral of these infants, notably those weighing
less than 2000 g, is best arranged before delivery, which may be possible if it appears before labour, or just as labour is commencing, that the baby is likely to be underweight. When transferring newly delivered infants of low birth weight, great care must be taken to see that they are not subjected to too low or too high a temperature. The thermal control of the newborn is best achieved by immediately drying the baby and wrapping it in clean dry cloths. The vernix caseosa on the skin protects against infection and should be left intact: there is no need to bath the infant immediately.

**KEEP NEWBORN BABIES WARM AND DRY**

One of the basic principles of good child care is to monitor children's growth and development periodically. This is usually done by means of weight-for-age charts, also known as "growth charts" or "road-to-health charts". Other development records are also occasionally used, including height-for-age, weight-for-height, arm circumference and skinfold thickness, but weight-for-age is one of the best criteria and one of the easiest to obtain. Each child's weight is plotted on his or her own card and in this way any weight loss or
Integrating MCH services with primary health care

failure to gain weight over several months can quickly be registered and the cause and appropriate remedy sought. These cards are usually kept by the mother at her home. Other publications deal extensively with the use of these cards, which are strongly recommended for any health system caring for children. Their use is discussed on pages 61–64.

**FAILURE TO FOLLOW A NORMAL GROWTH CURVE IS AN IMPORTANT RISK FACTOR**

The concept of risk factors is now being applied to children, and the card is the best means of reminding health workers to be watchful for them. Important risk factors in children include poor social and environmental conditions (for example, a very poor family or a missing parent), inadequate immunization, a current infection, and poor nutrition. The most important risk factors should be established for each country or area, and health workers taught to check for them routinely in the clinics. The more it is possible to anticipate health problems, the quicker and easier will be their prevention or treatment. Table 2 gives examples of locally determined risk factors in one country, divided into those present at birth and those starting later in childhood.

<table>
<thead>
<tr>
<th>Table 2. Risk factors in children (rural East Africa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>From birth</td>
</tr>
<tr>
<td>Birth weight &lt; 2 kg</td>
</tr>
<tr>
<td>Multiple birth (e.g. twin)</td>
</tr>
<tr>
<td>Death of 2 or more siblings</td>
</tr>
<tr>
<td>Birth order fifth or later</td>
</tr>
<tr>
<td>Birth interval &lt; 18 months</td>
</tr>
<tr>
<td>From childhood</td>
</tr>
<tr>
<td>Weaning process</td>
</tr>
<tr>
<td>No weight gain for 3 months</td>
</tr>
<tr>
<td>Weight loss</td>
</tr>
<tr>
<td>Absent parent</td>
</tr>
<tr>
<td>Recent measles</td>
</tr>
<tr>
<td>Malnourished sibling</td>
</tr>
</tbody>
</table>

**Diarrhoea**

Malnutrition and infectious diseases remain the major health problems of children in developing countries, although immunization, oral rehydration, and antibiotics have been helpful in dealing with infections. Attempts are now being made to promote a much wider use of oral rehydration for the treatment of diarrhoea and dehydration. This important new tool in primary health care ought to become available in all communities and clinics. In most cases of diarrhoea, early oral rehydration is the treatment of choice, rather than treatment with antibiotics. Community health workers should
be trained to detect dehydration and to use oral rehydration salts, with which they should be regularly supplied. It is also an important part of treating diarrhoea to continue to feed children during and following an episode. Malnutrition and infections, particularly diarrhoea, are closely related and each contributes significantly to the other. Thus it is of the highest importance to assess and maintain, and subsequently improve, a child’s nutritional status during the episode of diarrhoea.

**PROMOTE EARLY ORAL REHYDRATION AS AN IMPORTANT PART OF HEALTH CARE**

A long-term improvement in nutrition is often more difficult to achieve and child clinics have become major focal points for nutritional evaluation and education, distribution of food supplements where indicated and monitoring of growth. A child’s nutritional status may be the result of family poverty or it can be caused by mismanagement or ignorance. When a child is found to have a nutritional problem, some time must be devoted to studying the family dynamics and helping the mother and the father to find the solution. Severely malnourished children are not only more prone to illness and death while they are small, but are also less likely to be as productive as other people when they grow up.

**Malaria**

In highly endemic areas, at least during the transmission season, all young children with fever should be treated immediately for malaria, since malaria infection is often superimposed on other diseases. Early treatment is especially critical in infants. It is essential to give an effective course of treatment in all cases, particularly for children. An effective course of chloroquine, for example, is a total of 25 mg/kg of body weight given in divided doses over three days.

Mortality from malaria is often very high, notably in the first few years of life, in non-immune immigrants to an endemic area, and in pregnant women, and it is for this reason that high priority should be given to prompt and effective treatment whenever malaria is suspected to be the cause of fever. Community health workers must be trained to refer patients to a higher level of health care for confirmation of malaria infection and for treatment with an alternative drug where appropriate. This is particularly important for severe cases and whenever treatment fails, especially in areas where there is known to be drug resistance.
Integrating MCH services with primary health care

Pregnant women in malarial areas should be given antimalarial drugs for chemoprophylaxis. Regular administration of safe and effective drugs will prevent life-threatening attacks of acute malaria and will protect the fetus from the consequences of maternal fever, anaemia and placental dysfunction. Contact with mothers should also be used to promote the use of mosquito nets, either untreated or treated with permethrin or deltamethrin, to protect themselves, their children and other family members from being bitten.

**Immunization**

The development of vaccines has had a major impact on maternal and child health care, and the immunization of mothers and children is now one of the most important facets of a maternal and child health care service. At present, the types of immunization provided vary from country to country; diphtheria, pertussis and tetanus (DPT), BCG, poliomyelitis and measles vaccines are those most commonly given to children, while tetanus toxoid is the one most frequently given to pregnant women. Once it has been accepted in a culture, immunization is one of the most easily performed and effective services provided at clinics. However, the maintenance of an adequate cold chain for distributing heat-sensitive vaccines, such as measles and poliomyelitis vaccines, continues to present a major technological problem. Immunization records are generally maintained on a child’s growth card or on the mother’s antenatal card and should become part of each person’s permanent health record.

**NEVER MISS AN OPPORTUNITY TO IMMUNIZE**

It is desirable for immunization facilities to be available every day, so that no child who comes to a clinic is missed out. With rare exceptions, illness in a child should not be considered a contra-indication to receiving an appropriate immunization. Children who

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Dose</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCG</td>
<td>0.05 ml (0.1 ml after</td>
<td>Birth or any time after</td>
</tr>
<tr>
<td></td>
<td>1 year of age)</td>
<td></td>
</tr>
<tr>
<td>Poliomyelitis</td>
<td>2 drops per dose</td>
<td>At birth and at</td>
</tr>
<tr>
<td>(oral vaccine)</td>
<td></td>
<td>6, 10, and 14 weeks</td>
</tr>
<tr>
<td>DPT</td>
<td>0.5 ml</td>
<td>At 6, 10, and 14 weeks</td>
</tr>
<tr>
<td>Measles</td>
<td>0.5 ml</td>
<td>At 9 months or soon after</td>
</tr>
</tbody>
</table>
have not received all the recommended doses of each vaccine remain a major problem, and special efforts should be made to complete each immunization series within the recommended age period. The immunization schedules given in Tables 3 and 4 are recommended by WHO, but some governments have found it necessary to make small changes to them. Because doses may vary with the manufacturer, the instructions on the label of the vaccine should always be checked.

Vaccines should be given:

- before the child is in danger from the disease (i.e. as early as possible during the first year of life)
- after the child has lost the immunity gained from the mother (maternal antibodies can prevent a vaccine from working)
- any time after the recommended age if the child fails to come for immunization at the correct age.

Family planning

The idea of family planning, i.e. deciding in advance the number of children to have, is a relatively new one. Throughout most of history, the number of children a family produced, and even pregnancy itself, were considered to be more a matter of fate or the “will of God” than something that was planned. While some cultures had already evolved ways of spacing births, improved contraceptive techniques have significantly changed couples’ options for controlling pregnancy.

There can be no question that the frequency of pregnancies, together with the total number of children in a family, have direct
implications for health and are matters on which health workers must be able to give instruction and advice. It takes time to convince parents in certain countries that most of their children can survive to adulthood and to change cultural beliefs about the prestige and value of a large family. In labour-intensive societies, each child represents additional help, and therefore income, or a higher output. In many countries, it has seemed best for health workers to concentrate their energies on helping parents “space” the births of their children at adequate intervals so that child and mother can enjoy the most favourable conditions for health and development. The promotion of child-spacing is not directly concerned with the question of limiting the total number of children; rather, it emphasizes the health aspects of pregnancy and infancy, and encourages the use of contraception to ensure that births occur 2–3 years apart. This gives babies the best chance of a healthy start in life and protects the mother’s health.

ENCOURAGE A TWO- TO THREE-YEAR INTERVAL BETWEEN BIRTHS

Two groups of women merit special attention. First of all, there are the adolescents, some of whom are not yet married. Because of the
high risks involved, not only for the women concerned but also for their children, whose growth and development are threatened, a special effort to limit pregnancies in this group is indicated. The second high-risk group consists of multiparous women who have had five or more pregnancies. Each subsequent pregnancy places an additional health burden on the mother, brings another “at risk” child into the family, and further depletes the family’s resources. Community health workers should make a special effort to educate these two groups about the effects of pregnancy and encourage appropriate contraceptive methods.

It is appropriate and important for child-spacing services to be made an integral part of maternal and child health care. It is usually best to integrate them into services already provided by the clinic, such as antenatal care and child care. This provides the mother with some confidentiality where necessary and enables family planning services to enjoy the same acceptance as the rest of the clinic. During pregnancy, women should have the opportunity to learn about various aspects of contraception and to discuss and understand them properly.

The best approach to contraception varies widely in different cultural, socioeconomic, and religious settings. Most modern contraceptive methods have acceptable success rates so the question is not so much one of deciding which method is best but one of encouraging each woman to use some method. Breast-feeding itself continues to be an important aid in contraception. Educationally disadvantaged parents are often those most strongly bound by tradition, and it is important to be patient and spend extra time with them to help them understand the issues involved. It is particularly important when discussing this very sensitive and personal subject for health workers not to be patronizing or over-aggressive in their efforts to help.

As health care improves and more children survive, the resources of families and countries need to be protected so that adequate nutrition, health care, education, and work opportunities are available to all. For instance, those countries with annual national growth rates of 2.5% must double their number of health workers, hospital beds, school places, etc. approximately every 25 years just to keep abreast of the population increase. It is this situation that has prompted many national health planners to designate population growth the biggest challenge facing their health care systems. Health workers can help meet this challenge through a sensitive and balanced approach to family planning.
Simple treatments

Treatment of disease is probably the most widely accepted component of primary health care and the one most in demand. Relief of pain, discomfort or worry is a powerful motivating force, and today's medicines have proved their effectiveness often enough to convince most people of their value. It has been shown that a small selection of medicines (10–15 in all) will suffice to treat 80–90% of all illnesses seen at a primary health care clinic. However, maintaining adequate supplies of even these essential drugs can be difficult, and primary health care workers often find themselves having to substitute less effective medicines, or perhaps just pain relievers, for those indicated. Most patients believe that their trip to the clinic has been in vain if they are not given any medicine, so there is considerable pressure on the health worker to provide some.

A further complication is that the time and facilities available for making an adequate diagnosis are limited. It has been shown, for instance, that in some African countries the average medical assistant has just three minutes per patient, during which time he or she must take a history, perform whatever physical examination is needed, make a diagnosis and decide on treatment. It is thus no surprise that each patient receives an average of 2.2 different medicines. Typically, the assistant has neither the time nor the equipment and reagents needed to perform many laboratory examinations.

These difficult but all-too-real characteristics of outpatient care need to be considered in the training of the health workers concerned. Ways of reducing pressures on their time are also important, for example, having readily available and complete clinic records, assistance when needed, prepackaged medicines, and adequate working space. While time for patient education seems impossible to secure in many cases, adequate explanations of different symptoms and diseases can go a long way towards improving health and even reducing the patient load. The development of an internal "triage" or referral system is also indicated, so that those with more advanced clinical skills look after the more difficult cases only, while minor problems are dealt with by others.

Health education

EVERY HEALTH WORKER IS A HEALTH EDUCATOR

Health education has been extensively promoted, yet is often considered as a "soft" service to be provided only when there is
nothing more important to do. Part of the problem is that the educational process has been viewed too narrowly, for example in terms of lectures or demonstrations given to groups waiting at the clinic, not as something embracing all the ways in which people learn. The information that is best remembered is that provided by the answers given to specific questions in the course of patient care. All health workers are health educators and should always seek to share their knowledge at every opportunity, whether at a work-station in the clinic, in the village, or elsewhere. There should be no attempt to force people into learning according to a set plan; it is far better to find out what they want to know and provide appropriate answers to their questions. Members of the community should be used to pass on key educational points to others.

It is very important for health education material to be clearly understandable in the context of local culture. In many cases, people will not be used to pictorial diagrams and may have difficulty in understanding the broad concepts being taught. Fancy posters or pretty colours are often less effective than locally produced materials that are easily understood and have local significance.

THE BEST HEALTH EDUCATION IS A GOOD ANSWER TO A REAL QUESTION

Clinic organization

Clinic stations and flow patterns

Patient-flow is the progress of patients through the different work-stations in a clinic. Well-designed flow patterns allow for efficient performance at each station and keep all staff members working at a similar pace. Because different patients spend different amounts of time at each station, it is best to allow for a short queue at every station rather than only one at the clinic entrance. This reduces the waiting time for patients and ensures that each staff member is kept busy.

In integrated maternal and child health/primary health care services, the typical work-stations deal with registration, weighing, examination and advice, immunization, and dispensing. This arrangement separates activities that can be performed by relatively untrained persons, e.g. registration and weighing, from those for which some
degree of clinical skill is needed, e.g. examination and advice. Activities at each type of station are reviewed below.

- The registration station

Each patient attending is recorded on a tally sheet according to type, under such headings as “antenatal”, “family planning”, “child over one year”, etc. The clinic card is checked or, if it is a patient’s first visit to the clinic (e.g. in the case of a newborn baby), a new card is issued. The typical register in which every patient’s name is written down, along with his or her address, diagnosis, and treatment, is probably not useful as it is seldom referred to afterwards. It saves time, and is more useful, to use a tally or 5-nought system (see page 68) to record numbers and types of patients, leaving it to other staff to record the diagnosis later. Work at the registration station does not require any clinical skill, and almost anyone can be trained to do it effectively.

- The weighing station

At this station there should be scales both for adults and for children. The weight of each pregnant woman is recorded on her antenatal card. Each child is weighed, and the weight recorded on his or her growth card. The 25-kg hanging scale has been found to

Fig. 11. Use weighing trousers and a hanging scale for rapid measurement of weight
be sturdy and very useful where a large number of children have to be weighed. Each child has to put on a special pair of trousers, which is then hung from the scale by a long band on the top (see Fig. 11). In busy clinics enough of these trousers should be provided so that they can be passed back down the line of waiting mothers, who can then have them slipped on over their children’s clothes by the time they reach the head of the queue. In this way, each child can be quickly hung on the scale and the weight read and recorded. This system is unsuitable for weighing small infants, who should be weighed on a beam scale. Some training is necessary in order to understand growth cards and fill them in correctly. The weighing station can also be used for checking the blood pressure of pregnant women or hypertensive patients and recording it on the record cards. The station’s activities do not demand staff with significant medical skills.

**ASSIGN NON-MEDICAL TASKS TO NON-MEDICAL STAFF**

- **The examination and advice station**

  This station is the heart of the clinic and is usually manned by the most highly trained staff member, who also supervises the other stations indirectly. Patients should arrive at this station with a correctly completed clinic card giving their past medical history and, for children and pregnant women, their current weight. Many of the children and pregnant women will be briefly screened for risk factors, and questions will be dealt with. More time will have to be spent on those who are sick, in order to make diagnoses and plan appropriate treatment. If more than one staff member with clinical skills is available, this station can be divided into two or three sections. One may deal with routine visits for antenatal or child care, and another with the more seriously ill patients, who will take up more time. It is, however, important to avoid having a completely separate outpatient queue for sick people that bypasses the other stations. This will save time for the staff member dealing with clinical matters and ensure that other services, such as weighing and immunization, are provided to all patients for whom they are indicated, even though they may have come for other reasons. If laboratory tests are ordered, the staff member concerned should deal with the patients next in line while awaiting the results.

- **The immunization station**

  This is where all immunizations are carried out, whether of children, pregnant women, or people attending during special
immunization programmes. If the person at the examination and advice station has identified any contraindications to a patient's immunization, this should be indicated on the relevant card. Routine illnesses, including infections, are generally not a sufficient reason for withholding an immunization. A quick glance at the growth or antenatal card will tell which immunizations, if any, are due on a particular day. The immunization station should be located close to the refrigerator so that vaccines can be kept cold even during clinic hours. The staff member at this station should have had special training in the various types of vaccination and also in immunization schedules, appropriate timing, and contraindications. Because immunization techniques are relatively simple, a reliable clinic assistant can be taught to work at this station, thus saving on a nurse’s or medical assistant’s time. As the attendance patterns at each clinic become familiar, it will be possible to ensure that the right amounts of vaccine are prepared so that wastage is minimized.

- The dispensing station

The last station in the clinic is that where medicines are distributed. In small clinics, it may be easier for the person at the

Fig. 12. Prepackaging of medicines saves time at the dispensing station
examination and advice station to perform this task, but in busy clinics he or she should prescribe the required medicine on the clinic card and the person at the dispensing station can issue it. Many clinics have found it worth while to prepackage the most commonly prescribed medicines in marked envelopes with standard instructions written on them. This eases congestion at the dispensing station and provides time for preparing more complex prescriptions or helping patients understand how to take their medicine. Getting patients to take their medicine in the prescribed manner is difficult in all countries, and special efforts should be made to encourage compliance. Food supplements for those who need them, vitamins, folic acid, iron tablets, and other routine medicines are also given out at the dispensing station and recorded on the clinic cards for mothers and/or children.

**ARRANGE PATIENT-FLOW TO INCREASE STAFF EFFICIENCY**

- Flow patterns

Most of a clinic's activities can be fitted into these five stations, though some modifications may be necessary to cater for special needs or types of staff. The system outlined in Fig. 13 is typical of larger clinics. In small clinics with fewer staff, stations can be combined as shown in Fig. 14.

![Fig. 13. Patient-flow through a large clinic with at least six staff members](image)

![Fig. 14. Patient-flow through a small clinic with three staff members](image)
Modifications of these patterns are appropriate where the design of the building is unusual, special clinic services are offered, or the time required at a particular station is not adjusted to the workload at the other stations. The most important consideration is to distribute the clinic’s activities evenly, so as to ensure the most efficient use of each staff member’s time and skills.

**Staff utilization**

The need to place staff where they can most effectively be used in the clinic has already been mentioned. Several other issues are also important. At times it may be possible to use volunteers from the community for various tasks at the clinic. Some of the less technical activities like registration, weighing, and even dispensing can be performed by volunteers who have been given some special on-the-job training.

It is always helpful to carry out occasional checks on each staff member’s activities. This is usually the responsibility of the clinic’s director, located at the examination and advice station, or
occasionally of a visiting supervisor. The work of staff members may be evaluated by direct observation at the work-station, although the findings may not be altogether reliable, since people are always more careful when they know they are being watched. However, it is also possible to check the results of their work, e.g. how the registration sheet is filled out, how weights are recorded, etc. Occasionally, it is helpful to check patients leaving the clinic to see whether everything has been done and recorded in the right way.

EVALUATE STAFF REGULARLY AND FAIRLY

Regular staff meetings should be held to review activities, make plans, and build up staff morale. Dissatisfaction and staff rivalries and complaints are usually obvious, and bringing them up for discussion in staff meetings may help to clarify matters and settle any problems. Rotation of some staff between different stations may relieve boredom, improve morale, and help everyone to understand all aspects of the clinic. It is also important to encourage all staff members to consider themselves as educators, sharing as much knowledge as they can.

Clinic cards

Frequent reference has been made to the use of clinic cards. Those most commonly in use are growth cards for children under 5 years of age, antenatal cards, and family planning cards. Many clinics also have a simple card for curative services to older children, men, and women other than those who are pregnant.

To make the use of clinic cards more efficient, several basic principles should be borne in mind. The first is to use home-based record systems. Because of limited means of communication and transport, it is very difficult in most developing countries to share medical records between different health facilities. As a result, the clinic record card may not be available when a patient is hospitalized, or the antenatal card may be at the clinic when a woman is having her baby in a hospital.

These problems, plus the fact that many clinics find it difficult to maintain a good filing system for cards, have led to the idea of each patient keeping his or her own clinic card at home. If mothers are told of the cards' importance for future care, and are provided with sturdy plastic envelopes to keep them in, they usually look after them carefully and bring them along to the clinic at each visit. Some clinics also keep a duplicate of each card, but the cost and time
involved in filling out two cards are generally not warranted where people have been properly informed. Keeping the cards at home also allows fathers to see the records and follow their children’s growth, for example. When village surveys are carried out, the cards can be produced and analysed for various evaluative purposes. Most importantly, perhaps, the cards can go with patients to whatever health facility they use, so that any health worker can examine them and find all the appropriate data recorded in one place. When community health workers make home visits, they are encouraged to review the cards and make additional annotations if necessary. They are the ideal people to answer any questions the family may have about the cards, to record further relevant information on individual cards, and to remind mothers of the importance of keeping the cards safe.

HOME-BASED RECORD SYSTEMS ARE BEST

A second basic principle is to keep clinic cards simple and integrated. Children should have all their clinical records entered on the same cards as their weight and immunization records. When evaluating a child’s growth and development, for instance, it is frustrating to be unable to check whether a recent case of measles or pneumonia
Fig. 17. Clinic card showing effect of measles on growth
corresponds to a flattened area on his or her growth curve (see Fig. 17). The objection that the cards will fill up too quickly if they are used for information on diagnosis and treatment can be countered by clipping or stapling blank continuation cards inside the regular antenatal, growth, or family planning cards. Community health workers, clinic staff, and even hospital doctors should be encouraged to use the cards as the principal record for important details of people's health status.

The development and printing of the cards is usually done at national level. Many donor agencies have helped to make them available, and children's health cards in particular are now in use in most countries of the world. Antenatal cards, especially those indicating accepted risk factors, are less common, and efforts should be made to standardize them within countries and make them more widely available. Family planning and other special-purpose cards are in use in some areas. It is helpful for all cards to indicate the presence of important risk factors so that both health workers and family members are constantly reminded of them.

USE CLINIC CARDS TO MONITOR RISK FACTORS

Vaccines

Specific immunization plans and schedules have generally been established in each country. Integrated maternal and child health/primary health care clinics operating on a daily basis are faced with a number of problems, the largest of which is the cost of vaccines. The main expense in vaccine production is not the vaccines themselves but their containers and packaging; thus large vials, each containing 25–100 doses, are the most cost-effective. When vaccines are freeze-dried, as in the case of BCG and measles vaccines, they cannot be saved for more than a few hours after being reconstituted. This has often resulted in clinic staff being reluctant to immunize children when only a few present themselves at the clinic, because they do not want to "waste" the doses that would be left over from a large vial.

As already indicated, however, one of the most cost-effective ways of extending primary health care is to have all components of the clinic available every day so that mothers are not asked to come back at a later date. This means having vaccines in vials small enough to be used for just one or two children who may never come to the clinic again. It is usually better to waste some doses and know that several more children have been protected, than to keep saving the vaccines...
for a large attendance that may never take place. Liquid vaccines
(for example diphtheria, pertussis and tetanus (DPT), and
poliomyelitis) can be used for several days out of large vials without
spoiling, and therefore these do not present a problem.

AIM AT GIVING IMMUNIZATIONS EVERY DAY

The other major problem with vaccines is ensuring that they are still
viable when they come to be used. This requires an efficient cold
chain, i.e. a system of maintaining vaccines in cold storage during
transport from the place of manufacture to the country of use, and
then down through the region, district, and clinic to the individuals
to be vaccinated. The special equipment required is described on
pages 75 and 76, but the importance of maintaining a good cold
chain cannot be overemphasized. There is nothing more discourag-
ing to mothers or more damaging to a clinic’s reputation than for
children who have been immunized against measles, for instance, to
get the disease later. This has happened all too frequently because
someone failed to maintain a particular link in the cold chain.

Individual vaccination records are usually kept on children’s growth
cards and, for tetanus toxoid, on mothers’ antenatal cards. It is also
important to record the total number of doses of each vaccine given
at a clinic, plus the number of vials used. This can easily be done on
a tally sheet similar to that used in registration (see pages 68–69).
This information will be incorporated in the clinic’s monthly re-
port.

Referral system

As already observed, it is useless to identify patients “at risk” unless
plans for dealing with them exist. This often means referral to
a health facility at a higher level. It is usually the clinic director who
makes the final decision on whether to refer a patient, after
considering all the issues involved. The referral option is an
important part of primary health care and should not be abused.
Because they are anxious to control their own patient intake, some
hospital clinics will not accept patients from rural areas who come
without a specific referral note.

Referral “downward” to the local health centre or community
health worker is also appropriate. It may be indicated in the case of
a patient who has previously been referred to a hospital and is now
ready for discharge or follow-up care. At other times, the patient’s
needs can best be catered for by a community-based health worker.
It is important for adequate instructions to be sent with each patient so that referral "upward" or "downward" is effective. These instructions can also be of an educational kind and helpful for future referrals.

Risk factors may also be dealt with by giving the patient special and more frequent attention in the clinic itself. Special medicines, food supplements, extended counselling sessions, and home visits can all be useful when trying to solve particular problems. "Internal" referral of this kind and referral to other health units are both part of good care for those with special needs.

The difficulty of transporting a patient to another health facility is often a major barrier to referral. A useful technique in some countries has been the flag system: whenever a health centre has a patient needing transport, a flag is put at the roadside, obliging any passing government vehicle to stop and pick the patient up. Other vehicles often carry patients under the flag system.

Information, monitoring, and evaluation

An efficient and accurate system for collecting and evaluating data, whether from the community or from the clinic, is an important part of primary health care. This process should remain simple and not consume too much time. Only data that are directly useful to the local community, clinic staff, or district or national health authorities should be collected. Many of the data currently reported in different parts of the world are the product of traditional record-keeping, but are never actually used in any type of evaluation or planning. To avoid this wastage of effort, national authorities should periodically ask themselves exactly how they plan to use the data being collected. If there is no strong need for the information, the time and money spent recording it should be put to better use.

Community information

Community health workers should keep records of their activities and any problems they may learn of. For this, they may use the reporting forms described below or special forms of their own. In particular, they should record the supplies they distribute, such as packets of oral rehydration salts or family planning supplies, the children they weigh or assess, and any notable health or social
problems they identify. Their records should be reviewed by the staff of the clinic and incorporated in the clinic's overall report. It is very important for the staff to ask regularly for these records and to use the data, so that the community health workers will be encouraged to continue keeping them. Sometimes, other sources of community information, such as teachers, social groups or community leaders, may prove useful. Data of this kind, obtained directly from the community, may be the best means of assessing what is occurring in the community. It is important not to let records of the services provided at the clinic for those who attend take the place of community records of services received and actual needs observed.

**Reporting forms**

The task of entering in a register the names of all patients coming to the clinic, together with identifying data, diagnosis and treatments for each of them, is laborious and usually unrewarding. Because of lack of time and limited expertise in diagnosis and treatment, information recorded in this way tends to be brief and nonspecific. Most often, it is not used again, except perhaps to calculate the total attendance at the clinic.

A simpler, more efficient recording method is the 5-nought or tally system. The categories of information that should be collected are printed on a sheet, together with columns of "00000"s to be crossed out for each person, diagnosis or activity in a given category. An "X" can be put at the end of each day's record in smaller clinics, and the form can then be used for a number of days. A larger clinic may use one or more forms at each station every day. If all clinic activities are printed on the back and front of individual report sheets, each sheet can be used in one station until the relevant sections are full, then passed on to other stations. Note that there may be several entries for each child, for example under "attendance", "diseases" and "immunizations". A child with several diseases or requiring several immunizations may be entered several times in the same category. Thus, only the attendance section shows the number of children attending, while the other sections show the workload of the clinic regardless of the number of children seen.

**USE A SIMPLE TALLY SYSTEM FOR CLINIC RECORDS**

At the end of each day, the totals for each category should be transferred to a monthly report form that has sections for each day and category. Fig. 18 and Fig. 19 show a typical tally sheet and
**Fig. 18. Sample tally sheet for maternal and child health clinic**

<table>
<thead>
<tr>
<th>MCH CLINIC REPORT—CHILDREN'S RECORD</th>
<th>Date 6-13 Nov 1981</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leader: B. Kinaki</td>
<td>Clinic: Kibolo/Masawa Dist...</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>New attendances</th>
<th>Repeat attendances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birth-5 months</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total 17</td>
</tr>
<tr>
<td>0000 0000 0000</td>
<td>0000 0000 0000 0000</td>
</tr>
<tr>
<td>0000 0000 0000</td>
<td>0000 0000 0000 0000</td>
</tr>
<tr>
<td>44</td>
<td></td>
</tr>
<tr>
<td>6 months-4 years</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total 36</td>
</tr>
<tr>
<td>0000 0000 0000</td>
<td>0000 0000 0000 0000</td>
</tr>
<tr>
<td>0000 0000 0000</td>
<td>0000 0000 0000 0000</td>
</tr>
<tr>
<td>36</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total new attendances 25</th>
<th>Total repeat attendances 50</th>
</tr>
</thead>
<tbody>
<tr>
<td>DISEASES/COMPICATIONS</td>
<td>Totals</td>
</tr>
<tr>
<td>Underweight (60-80%)</td>
<td>24</td>
</tr>
<tr>
<td>0000 0000 0000 0000 0000</td>
<td>0000 0000 0000 0000 0000</td>
</tr>
<tr>
<td>0000 0000 0000 0000 0000</td>
<td>0000 0000 0000 0000 0000</td>
</tr>
<tr>
<td>Kwashiorkor</td>
<td>6</td>
</tr>
<tr>
<td>0000 0000 0000 0000 0000</td>
<td>0000 0000 0000 0000 0000</td>
</tr>
<tr>
<td>Marasmus</td>
<td>4</td>
</tr>
<tr>
<td>0000 0000 0000 0000 0000</td>
<td>0000 0000 0000 0000 0000</td>
</tr>
<tr>
<td>Severe anaemia</td>
<td>11</td>
</tr>
<tr>
<td>0000 0000 0000 0000 0000</td>
<td>0000 0000 0000 0000 0000</td>
</tr>
<tr>
<td>Measles</td>
<td>8</td>
</tr>
<tr>
<td>0000 0000 0000 0000 0000</td>
<td>0000 0000 0000 0000 0000</td>
</tr>
<tr>
<td>Scabies</td>
<td>32</td>
</tr>
<tr>
<td>0000 0000 0000 0000 0000</td>
<td>0000 0000 0000 0000 0000</td>
</tr>
<tr>
<td>Other diseases requiring referral</td>
<td>18</td>
</tr>
<tr>
<td>0000 0000 0000 0000 0000</td>
<td>0000 0000 0000 0000 0000</td>
</tr>
<tr>
<td>IMMUNIZATIONS</td>
<td>BCG</td>
</tr>
<tr>
<td>--------------</td>
<td>-----</td>
</tr>
<tr>
<td>DPT</td>
<td>00000 00000 00000</td>
</tr>
<tr>
<td>Polio</td>
<td>00000 00000 00000</td>
</tr>
<tr>
<td>Measles</td>
<td>00000 00000 00000</td>
</tr>
<tr>
<td>Tetanus toxoid</td>
<td>00000 00000 00000</td>
</tr>
</tbody>
</table>

Health education: ☑️ Given: topic(s): clean water, nutrition
Not given: reasons.
### Integrating MCH services with primary health care

#### Table: Mother-child health clinics — Total attendance

<table>
<thead>
<tr>
<th>Month</th>
<th>Clinic</th>
<th>District</th>
<th>Re-visit</th>
<th>Total for the month</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Table: Family planning — Mothers

<table>
<thead>
<tr>
<th>Re-visit</th>
<th>First visit</th>
<th>Other methods</th>
<th>Intrauterine device</th>
<th>Other complications</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Table: Other difficult diseases

<table>
<thead>
<tr>
<th>Mothers</th>
<th>Other difficult diseases</th>
<th>Complications of pregnancy</th>
<th>Complications of delivery</th>
<th>Other methods</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Table: Diseases of children

<table>
<thead>
<tr>
<th>Children</th>
<th>Diseases of children</th>
<th>Total attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Table: 28 weeks & over

<table>
<thead>
<tr>
<th>Attendance</th>
<th>Mothers</th>
<th>First visit</th>
<th>Re-visit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Table: Under 6 months

<table>
<thead>
<tr>
<th>Name of Leader</th>
<th>Clinic dates</th>
<th>Total for the month</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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70
a typical monthly report form, respectively. The monthly report forms are used to register daily attendance at the clinic, the figures being totalled at the bottom. The totals are then transmitted to the next higher level of supervision, where the same form can be used to record monthly totals for the different clinics reporting. Similar summations can be performed right up to national level.

To make reporting even more efficient, it is helpful to relate the data collected on the clinic cards to the report forms. Many of the risk factors that have been established can also be looked at as “indicator diseases” which show the level of different health problems in the community. Such childhood problems as low weight, measles, diarrhoea, and scabies may be usefully recorded as an indication of underlying problems (see Table 5). While many other diseases (or symptoms) could be used, it is best to select a few that are common and relatively easy to diagnose and use those to indicate the relative frequency of similar, related diseases. Fig. 18 shows how indicator diseases have been used on a clinic’s tally sheet as a primary record of disease types and their frequency.

<table>
<thead>
<tr>
<th>Indicator disease/symptom</th>
<th>Underlying issue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underweight</td>
<td>Nutrition levels</td>
</tr>
<tr>
<td>Measles</td>
<td>Immunization levels</td>
</tr>
<tr>
<td>Diarrhoea</td>
<td>Sanitation</td>
</tr>
<tr>
<td>Scabies</td>
<td>Cleanliness</td>
</tr>
</tbody>
</table>

All diagnoses would, of course, be recorded on a mother’s or child’s individual clinic card, but unless a disease was on the report form as an indicator disease it would not be reported centrally. Attendance at the clinic and the services received, such as immunizations, would also be recorded on the tally sheet. The monthly summary sheet shown in Fig. 19 includes some indicator diseases that affect women who are pregnant or using a contraceptive method.

Analysis of programme performance

While supervisors and other health administrators will look at local clinic data in the light of general trends and plans, it is appropriate and important for local health workers to carry out analyses of their own data. This activity is a particularly good example of “learning by doing” and constitutes basic epidemiological research. By comparing monthly summaries, charts can be made showing
seasonal variations in clinic attendance, the frequency of different diseases, and similar data. The impact of the rainy and dry seasons, or the result of community improvements like a new well or better sanitation, can be shown. The relation of immunization coverage to the incidence of specific diseases is also a subject of some interest. Figs 21 and 22 show how a local clinic could chart some of these subjects, both for their own interest and as aids in planning future activities. It is important to use community data from health workers or others to help in such analyses.

When more experience has been gained in this type of analysis, the staff at local clinics can use their own data for predicting trends and planning their work accordingly. They may even want to try some
new approaches and see how their data are affected. Predictive analyses can be enjoyable and very useful when scheduling staff leave or dealing with other matters in which the clinic's expected workload is an important consideration.
Maintaining supplies

Maintenance of adequate consumable supplies is one of the biggest problems confronting primary health care clinics. Knowledge of usage patterns and of when to order different items can help to keep supplies adequate. The report form can be useful in monitoring supply levels and also in indicating how the supplies are used. By being familiar with the monthly attendance patterns and able to predict regular fluctuations in the clinic’s activities, it is possible to avoid having an excess of some supplies or, even worse, running out of others. If a clinic always has supplies for part of each month and then is out of stock for the rest of the month, people grow to know this pattern and come to the clinic at times when they can expect to receive something. The resultant workload is neither efficient nor effective, and attempts should be made to spread limited supplies over the entire month.

Equipment

Basic equipment

The equipment necessary for the operation of a daily primary health care clinic incorporating maternal and child health care is listed below:

- refrigerator for storing vaccines and medicines
- scales for weighing pregnant women
- scales for weighing children
- syringes and needles for immunizations and injections
- basic items for managing labour and delivery
- source of warmth for newborn babies
- sterilizer
- stethoscope
- fetoscope
- sphygmomanometer
- thermometer.
Some of these items may not be regularly available at a clinic but are brought when a mobile team comes round. However, this is a temporary measure, and to be able to provide daily maternal and child health services each clinic will need its own equipment.

Usually the most expensive item will be the refrigerator, and other sources of cold storage, such as a local shop or home, may be used if necessary. All equipment eventually wears out, and a programme of planned replacement should therefore be organized as soon as the initial commitment to primary health care is made.

**ESTABLISH A PLAN FOR MAINTAINING EQUIPMENT**

**Maintenance**

Most of the equipment listed is relatively easy to maintain, even in tropical areas. The weighing-scales will need to be checked and recalibrated periodically. The refrigerator is both the most expensive and the most delicate item: non-electric refrigerators in particular will need special maintenance to keep them in regular running order. It is helpful to have a high–low thermometer or heat-sensitive material to indicate whether a refrigerator is functioning properly.

Fig. 23. Regular maintenance of equipment is essential
Power failures may be frequent, and it is important to know whether or not the vaccines stored in the refrigerator have been spoiled. If a specific person is assigned to the job of maintaining equipment, confusion over responsibilities should not arise.

**Cold chain**

One of the biggest challenges to rural health care is the maintenance of a cold chain for vaccine distribution. This task requires a strong administrative commitment at all levels of the health system and should be entrusted to people who take pride in their work and can be relied on to keep vaccines consistently cold. Special transport boxes with insulation and “cold dogs” can be purchased or made locally. The effectiveness of these should be checked with thermometers under various conditions, so that travel schedules can be planned accordingly. Colour-coded diluents and other agents that indicate when vaccines have been overheated are available and can be very useful. Spoiled vaccines are not just a waste of money, but may have significant repercussions on health if children are given them unwittingly and so remain at risk of the diseases against which they are supposed to be immunized. Other publications give specific details on how to develop and maintain the cold chain (see reading list on page 85).

**ALWAYS BE CAREFUL TO MAINTAIN AN UNBROKEN COLD CHAIN**

**Local transport**

Most health workers experience major difficulties in maintaining transport facilities, which may be needed, for example, for mobile clinics, supervision, distribution of supplies, or emergency use. Sometimes the health staff have one or more vehicles that are controlled and used exclusively by them, while in other situations they share their vehicles with other departments or activities. Even when they have their own vehicles, difficulties often arise from conflicting interests or over such matters as maintenance and petrol allowances.

There is no easy solution to the transport problem. Trying to spread the limited budget over the entire year, restricting unnecessary travel, utilizing public transport when feasible, and organizing trips so as to combine effectively the maximum number of duties are all important measures. It is vital to maintain basic health services even
when major transport problems arise. Sometimes this will require improvised solutions and personal inconvenience, but it is a commitment that health workers should be prepared to make.

**At district level**

In most countries, there are one or two organizational levels between the village and national levels. It is at these district or provincial levels that supervision, supplies, and logistic support are provided for primary health care. There, too, major development projects may be implemented and the work of several different departments coordinated. Many community health activities have failed because of lack of support at these intermediate levels. Decentralization from the national level, which includes the delegation of authority and resources, is essential for a support system to function effectively.

**Supervision of primary health care**

Supervisory personnel must take their responsibilities in primary health care seriously if services are to be efficient and effective. Because the primary health staff in most countries have limited training, supervision and consultation are critical in maintaining both staff morale and quality of service. The direct lines of responsibility need to be clearly defined, so that all staff know what they have to do, how to relate to others on their team, and how they will be evaluated. Supervisors need to be consistent in their attitudes and support so that they do not create uncertainty at lower levels.

For supervisors to function effectively, they must have regular personal contact with those they supervise. This should take the form of exchanges of views and consultations at least once a month and may be combined with other activities, such as distributing supplies or bringing a referral patient back home. Occasionally a clinic director may come to the district headquarters and talk with his or her supervisor, but this is no substitute for the supervisor going in person to the clinic or community to observe activities at first hand and deal with any matters of concern. When making field visits, it is often useful for the supervisor actually to take part in clinic activities, to see patients with the clinic staff, and to observe the patient-flow and the way in which the cards and reports are completed.

<table>
<thead>
<tr>
<th>GOOD SUPERVISION REQUIRES REGULAR FIELD VISITS</th>
</tr>
</thead>
</table>

At another level, there is supervision of community health workers by clinic staff, which is equally important for the maintenance of
morale and efficiency. Because community health workers often work from their own homes, there may not be any facilities to visit. It is then helpful to accompany them on their rounds, perhaps visiting several families with known problems. When undertaken in a supportive manner, this type of supervision increases both the knowledge and the prestige of the worker concerned.

One of the things that do most damage to health services is irregular provision of supplies. Lack of medicines, clinic cards, or fuel, or any other shortage that interferes with routine services, results in wasted time and damaged confidence as well as poor health care. When supplies are limited, district hospital staff may feel it is more important to protect their own supplies than those of the primary health care services. In this situation it is important for primary health care to have a strong advocate in its supervisor so that an equitable solution can be reached. This also applies in the case of petrol allowances and the use of vehicles, and in other areas competing for limited equipment and supplies.
The monitoring and evaluation of primary health care services form an important part of supervision. They need to follow a routine that is known to everybody and be carried out in a way that is perceived as fair. Excellent opportunities for evaluating the services provided are afforded by regular report forms, verbal discussions, reviews of supply orders and the monitoring of patient referrals. Effective supervisors learn to correct tactfully and gently and build up the confidence of their workers and their commitment to providing care. Opportunities to inform and teach health staff of all kinds should be sought and readily taken.

**PROVIDE REGULAR IN-SERVICE EDUCATION TO PRIMARY HEALTH CARE STAFF**

The provision of continuing or in-service education is most important in primary health care. Because of the limited basic education of most primary health workers and the shortage of suitable books or journals to learn from, the risk of mental stagnation is great. Organized training sessions for health workers are most effective as social and morale-building occasions as well as being a valuable means of improving specific knowledge and skills. On some occasions it is better to train the various members of the health team together, perhaps at their own facilities or at the district level. At other times it is better to train the different categories of personnel, for example medical assistants or midwives, separately. Careful planning, perhaps with provision for advanced assignments or written material to study, can improve the effectiveness of the training. The sharing of experience among health staff can also be an important aid to learning. If it is made clear to the staff that their supervisors and their organization are interested in improving their skills, this can do much to compensate for other frustrations and problems. The on-site supervision of the clinic’s activities is another important form of in-service education.

**Intersectoral relationships**

At the intermediate level of government, it is very important for health-related problems and projects to be coordinated with other aspects of development. The close relationships between such factors as nutrition and agriculture, water and basic sanitation, and education and health practices mean that the activities of workers in these different areas are interdependent. They also mean that it is difficult for one area of development to move significantly ahead of other areas.
Usually some type of intersectoral committee is already in existence. Occasionally there is none, or it is oriented towards other functions. While health workers should be supportive and even protective of their own programmes, they should also recognize the value of working with other sectors and encourage such cooperation wherever it is lacking.

Cooperation with nongovernmental providers of health care can also improve the quantity and quality of primary health care services. Voluntary agencies, including the various religious and mission organizations, occupational health services, and private practitioners, are all often involved in primary health care. Some people receive care from more than one such group and may accordingly be confused by conflicting advice or different systems. All health care providers should be encouraged to follow standardized procedures in such matters as immunization, clinic cards, and the treatment of common ailments. Sharing supervisory functions at remote clinics and encouraging all providers to attend continuing education courses are other ways of promoting uniformity of services and cooperation.
COORDINATE THE SERVICES OF ALL PROVIDERS OF PRIMARY HEALTH CARE

At national level

Those working in health at the national level have responsibility for determining the broad direction of health services within a country. They establish procedures, curricula, and relationships between different categories of health personnel, and usually coordinate the distribution of supplies and budgetary allocations to different components of the health system. Because they usually live and work in proximity to large hospitals and relatively sophisticated medical services, it is often difficult for them to keep the needs of primary health care workers squarely in mind. However, without committed and effective national leadership, health for all in a country can never be achieved.

Ministry of health

The concerns about supervision and logistic support observed at the district level also exist at the national level, but in this case it is national supervisors who are helping and evaluating district or provincial supervisors. It is nevertheless important that the national supervisory personnel should visit actual primary health care sites so that they remain aware of the real problems at the local level. Only on-site visits can show how primary care procedures—use of clinic cards, immunization plans, antenatal care, etc.—are being implemented. In addition to these local visits, monthly reports need to be reviewed and occasionally discussed with the local supervisors. Consistency and accuracy in reporting are required.

The flow of consumable supplies is largely dependent on national planning and efficiency. Negotiations with suppliers and budgetary allocations are usually made on an annual basis, requiring projections of need for the year. This process demands a high level of commitment and planning since it sets the example for the entire country. Nothing is more demoralizing to staff and patients than frequent shortages of supplies. A system of regular distribution, combined with regular reports of the services provided, is necessary. It is important not to fall into the common trap of giving more supplies to the health units that have more assertive workers, better telephone services, or closer transport links.

The task of reorienting a country’s entire health service to the objectives of health for all can seem a daunting one. A useful way to
start is to establish pilot or demonstration areas where experience in this new approach to health care can be gained. The staffing and equipment goals, as set for the whole nation, can be implemented 5–10 years ahead of time in selected communities or districts, and the experience thus gained used in extending the programme to other areas. If this is done, it is important not to pick the most favourable areas to start in, but rather to have a balance of urban and rural, more and less developed areas, so that the widest range of problems can be encountered and solutions to them worked out. Results should be shared with other areas before the demonstration project has been completed. As soon as a new technique or approach proves useful, it should be shared with other clinics or districts.

USE DEMONSTRATION AREAS TO DEVELOP PRIMARY HEALTH CARE PLANS

In order to achieve these objectives in the most effective way, it is generally advisable to have a primary health care unit within the ministry of health. This unit would be responsible for coordinating various aspects of the national primary health care programme, including training, supervision, distribution of supplies, monitoring, and evaluation. It is also often useful to have a primary health care advisory group made up of experienced representatives of the relevant government departments, the universities, nongovernmental organizations and professional bodies. Such a group can provide valuable guidance on the implementation of the programme and on handling the problems involved.

Training activities

The ministry of health and related organizations are usually responsible for establishing and maintaining the curricula for different categories of health worker and for working out the relationships between these categories together with an appropriate upgrading system. To achieve primary health care on a national scale, all health workers, from the specialized physician to the minimally trained auxiliary, must understand their roles and participate. The established committees and/or licensing bodies should review existing curricula, bearing in mind the job expectations of each group, so that the best and most appropriate training can be given. Some groups will need training in the actual provision of primary health care in the country’s health units, while others will need to be trained as supervisors and consultants.
REVIEW TRAINING CURRICULA FOR APPROPRIATENESS TO PRIMARY HEALTH CARE

It is unreasonable to provide health auxiliaries with basic training only and expect them to remain motivated and knowledgeable over a period of years. This is why a system of continuing education is so helpful and necessary. Courses lasting from a few hours to several days may be offered by individual schools or organized at district or even national level. New techniques, procedures, equipment and plans can all be presented. Experience has shown that courses of this type, in which each health worker can take part every one or two years, are a highly cost-effective way of improving health services.

Nongovernmental bodies

As already mentioned, a variety of other bodies are usually involved in providing primary health care in most countries; these may include voluntary organizations, religious groups, service clubs, women’s clubs, occupational health bodies, and groups of private practitioners. To make the best use of a country’s health resources, these bodies should be assisted in providing the service or function with which they are particularly concerned, within an overall health plan. Most governments have learned to respect the particular objectives and concerns of nongovernmental bodies, while familiarizing them with the country’s health needs and the part they can play in meeting them. Cooperation may include the sharing of supervisory responsibilities, joint supply and distribution systems, and standardized clinic cards and treatment procedures. It may take several years to overcome the common barriers to cooperation with these bodies, but it can be done.
The current worldwide objective of health for all by the year 2000 can best be achieved through a strong emphasis on primary health care based on equity, a new and closer relationship between the health worker and the community, and coordination between all sectors of development. The health care system must itself become more integrated and efficient, with maternal and child health care incorporated in primary health care, and village-level workers providing the final link to homes and people.

The integration of maternal and child health within primary health care opens the way to wider health coverage, a more efficient utilization of personnel, and greater cost-effectiveness. The provision of integrated primary health care services on a daily basis depends on appropriate technology and logistic support; all health workers should engage in health systems research in order to evaluate their services. The early identification of risk factors, followed by appropriate measures, should do much to improve health care. The community itself constitutes the greatest untapped resource for strengthening the health system. Closer working relationships are desirable between the primary health care services and nongovernmental bodies with an interest in health.


## Annex

**Areas of concern in maternal and child health/family planning: implications for integration with primary health care**

<table>
<thead>
<tr>
<th>MCH/FP area of concern</th>
<th>Biological and behavioural development affecting</th>
<th>Appropriate technology relevant to vulnerability</th>
<th>Linkage to other elements of MCH/FP</th>
<th>Level at which care is required</th>
<th>Contribution of intersectoral action</th>
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<tbody>
<tr>
<td>Maternal health</td>
<td>Pre-pregnancy</td>
<td>Child health interventions, including immunizations, control of diarrhoea and other infections</td>
<td>Family planning care</td>
<td>Family, community, health centre, risk identification and referral</td>
<td>Role and status of women, equity in access to health care, nutrition and education</td>
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<td>consequences of childhood health and nutrition of women (height, weight, anaemia, pelvic size/shape)</td>
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<td>Pregnancy</td>
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<td>- risk identification</td>
<td>Home based maternal record</td>
<td>Child’s health record</td>
<td>Family, community, health centre</td>
<td>Transportation for referral</td>
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<td>- age</td>
<td>Family planning, monitoring and treatment of hypertensive disorders of pregnancy</td>
<td>Family life, sex education of children and adolescents</td>
<td>Family, community, health centre, referral to district hospital</td>
<td>Women’s education, legal age for marriage</td>
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<td></td>
<td>- anaemia</td>
<td>Screening, treatment with iron and folic acid</td>
<td>Prolonged breastfeeding and family planning care</td>
<td>Family, community, health centre</td>
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<td>Neonatal health</td>
<td>Family, community, health centre</td>
<td>Maternity benefits; control of work environment; maternity legislation</td>
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<td>Neonatal health</td>
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<td>Susceptibility to anoxia and asphyxia</td>
<td>Antenatal care</td>
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<td>Prevention/treatment of hypertensive disorders of pregnancy, maternal anaemia and infection</td>
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<td>Referral to district hospital</td>
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<td>Initiation and establishment of breast-feeding</td>
<td>Health centre; referral to district hospital</td>
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<td>At all levels</td>
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<td>Role and status of women; women’s work burden; female literacy; cultural accessibility to health and social services</td>
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<td>MCH/FP area of concern</td>
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<td>Poor thermal control of the newborn</td>
<td>Immediate drying and wrapping after birth; breast-feeding and skin-to-skin contact</td>
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<td>At all levels</td>
<td>Transportation; communications; social support systems; maternity legislation</td>
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<td>Poor resistance to infection</td>
<td>Breast-feeding and skin-to-skin contact</td>
<td>Maternal tetanus toxoid immunization</td>
<td>BCG and polio immunization at birth</td>
<td>Childhood immunization</td>
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<td>Eye prophylaxis/treatment</td>
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<td>Perinatal transmission of infections</td>
<td>Screening/treatment of syphilis; hepatitis; immunization if appropriate</td>
<td>Immunization – measles, polio, DPT</td>
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<td>Infant mortality</td>
<td>Waning passive immunity from mother</td>
<td>Breast-feeding</td>
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<td>Poor resistance to infection:</td>
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<td>– fluid and electrolyte loss during diarrhoea</td>
<td>Oral rehydration therapy</td>
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<td>Safe and accessible water, female literacy, income-generating activity</td>
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<td>Low birth weight</td>
<td>First referral level for control and management of serious childhood disease</td>
<td>Transportation and communications</td>
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<td>Intrauterine &quot;nutrition&quot; affected by:</td>
<td>Prevention, including equity for girls in nutrition and health care; family planning</td>
<td>Existing systems at community, first contact and referral level; risk identification and referral</td>
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<td>- uterine size and blood supply</td>
<td>Treat anaemia</td>
<td>Role and status of women; women's work burden; female literacy; cultural accessibility to health and social services</td>
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<td>- nutrient-carrying capacity of blood</td>
<td>Food supplementation and rest</td>
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<td>- maternal energy balance</td>
<td>Counselling and health education</td>
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<td>- smoking and substance abuse</td>
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<td>- high energy needs for growth</td>
<td>Continued breast feeding; growth monitoring and appropriate action; energy-dense foods and frequent feeding</td>
<td>Social support systems, e.g. day care, women's organizations</td>
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<td>Fluid/body size need</td>
<td>Frequent feeding</td>
<td>Family, community</td>
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<td>Psychosocial development:</td>
<td>Psychomotor stimulation</td>
<td>Water and sanitation</td>
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<td>- exploration of environment</td>
<td>Environment controls (hygiene, toxic substances, etc.)</td>
<td>Female literacy</td>
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<td>- increasing mobility</td>
<td>Physical protection from stairs, fires, etc.</td>
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<td>Narrow respiratory tract and high respiratory rate</td>
<td>Immunizations; humid environment; antibiotics</td>
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<td>Neonatal physiology:</td>
<td>Peri¬atal control</td>
<td>Skin-to-skin contact or warming devices</td>
<td>Prevention of low birth weight, maternal nutrition</td>
<td>Community and first referral level</td>
<td>Transportation and communications; social support systems; maternity legislation</td>
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<td></td>
<td>High energy needs</td>
<td>Breast-feeding, breast milk by cup, dropper or gavage</td>
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<td>First and second referral levels</td>
<td>Transportation and communications</td>
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<td>Immature respiratory function if premature</td>
<td>Humidity, oxygen, warmth</td>
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<td>Organ systems not fully mature if premature</td>
<td>Avoid heavy solute load on kidneys</td>
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<tr>
<td>Nutrition</td>
<td>High energy needs of infant</td>
<td>Breast-feeding on demand, energy-dense foods, frequent feeding</td>
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<td>Family, community, first referral</td>
<td>Role and status of women; women's work burden; female literacy; cultural accessibility to health and social services</td>
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<td>Energy demands of illness</td>
<td>Continued breast-feeding, feed other foods</td>
<td>Oral rehydration; environmental sanitation</td>
<td>Family, community, health centre</td>
<td>Role and status of women; women's work burden; female literacy; cultural accessibility to health and social services</td>
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<td>Phases of accelerated growth</td>
<td>Measles immunization; control of acute respiratory infections</td>
<td>Childhood immunization</td>
<td>Income-generating activity; food production and policies; infant food marketing</td>
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<td>Poor resistance to infection</td>
<td>Energy dense foods; frequent feeding</td>
<td>Psychosocial stimulation and development</td>
<td>Family, community, health centre</td>
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<td>Fluid volume/body size</td>
<td>Clean water, food; environmental hygiene; personal hygiene; breast-feeding</td>
<td>Oral rehydration therapy; breast-feeding</td>
<td>Family and community</td>
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<td>Immunizable diseases</td>
<td>Passive immunity (IgG) globulins</td>
<td>Timing of BCG and polio immunization; DPT, measles and additional polio according to norms; hepatitis as indicated; maintenance of cold-chain</td>
<td>Supervised delivery care; Existing systems at community, first contact and referral levels; cold-chain management and support</td>
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<td>Interference with primary immune response</td>
<td>Unwanted pregnancy</td>
<td>Knowledge of and access to family planning information, services and supplies</td>
<td>Community, first contact and referral levels</td>
<td>Role, status and education of women; cultural accessibility to health and social services</td>
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<td>MCH/FP area of concern</td>
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<td>Age at first pregnancy</td>
<td>Family life and sex education</td>
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<td>Spacing of pregnancies</td>
<td>Postpartum family planning, including breast-feeding</td>
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<td>Number of pregnancies</td>
<td>As above – family planning</td>
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<td>Age at last pregnancy</td>
<td>As above – family planning</td>
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<td>Community groups, family, schools</td>
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<td>Transportation and communications; local production or importation of supplies; social and political support</td>
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