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TOWARDS QUALITY OF CARE IN CHILD HEALTH PROGRAMMES: A CHALLENGE FOR THE PARTNERSHIP IN HEALTH AND SOCIAL SCIENCES*

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Abstract—Several child health care programmes, though often well conceived, are poorly implemented at field level and focus primarily on quantitative achievements to the neglect of quality of care. This paper presents a quality of care (QOC) framework for child health programmes from the perspectives of the management system of an organization and the provider–client interface at point of service delivery. The paper subsequently describes the application of qualitative and quantitative research tools drawn from the social sciences and health sciences for planning and evaluating quality of care. An integrated and complementary use of these tools is recommended. It is suggested that minimum standards, which are region specific, be articulated for quality maintenance in child health programmes. These standards may be upgraded as quality improves. Finally, the challenges which a partnership of the health and social sciences may have to take up are discussed. These include advocacy for prioritization of QOC in child health programmes, facilitating an environment which supports quality of care, promoting inter-disciplinary action research, training students in social science research in universities and research organizations, documenting success stories.

Key words—quality of care, child health programmes, developing countries

INTRODUCTION

several developing countries of the world, maternal mortality rate (MMR), infant mortality rate (IMR) and rates of malnutrition continue to be depressingly high. About 99% of maternal deaths due to complications of pregnancy take place in developing countries. The region with the largest discrepancy between births and infant deaths is Africa, which has 20% of births and 29% of deaths. In South Asia, the corresponding figures are 4% and 61% respectively (Maine and Allman, 1990). Several child health care programmes, though often well conceived, are poorly implemented at field level and focus primarily on quantitative achievements, such as number of beneficiaries covered, and neglect the important area of quality of care. For example, programmatic research in India has revealed that maternal and child health (MCH) services suffer from several setbacks due to insufficient planning, inadequate training and supervision of manpower, lack of communication with intended beneficiaries and subsequent poor utilization of services, culturally inappropriate services and socio-economic constraints such as inferior status of women (Dutta, 1993).

Unfortunately, even at the highest policy making levels, there does not appear to be adequate recognition that a conscious effort is needed to operationally define quality of care in the context of child health programmes, its indicators and standards; and that a satisfactory level of quality cannot be automatically ensured. For example, the recently formulated National Nutrition Policy (1993) of the Government of India, articulates several important measures to improve child health, describes administrative and monitoring procedures, but does not elaborate on how quality maintenance can be ensured, nor on the role of research in this regard (Government of India, 1993).

In this paper, the evolution of the concept of quality of care (QOC) for health care systems, family planning programmes and women's health programmes is described. This is followed by an elaboration of a QOC framework for child health programmes. The importance of a partnership between the social sciences and health sciences for operationalizing a QOC framework is then highlighted, followed by suggestions of some research tools for planning and evaluating QOC. Examples from the author's research experience on process evaluation of selected child health programmes are given in the appropriate sections.

QUALITY OF CARE: EVOLUTION OF THE CONCEPT

According to Mensch, in the years following the Alma Ata conference, the concern of medical anthropologists regarding culturally appropriate

*An earlier version of this paper was presented at the Third Asia and Pacific Social Sciences and Medicine Conference (February 11–16, 1996) at Perth, Australia.

care and community involvement in primary health care laid the ground work for much of the ensuing work on quality of existing services (Mensch, 1993). Elaborating on the concept of 'continuous quality development' proposed in 1993 by the WHO Regional Office for Europe and the Danish health authorities, Racoveanu and Johansen have stated that, in essence, continuous quality development involves setting and achieving goals for quality on a continuous basis (Racoveanu and Johansen, 1995). Health care of good quality encompasses the three areas of:

- structure (organizational settings of care),
- process (skills deployed in delivery of services),
- outcome (effects of care given on health and well-being of patients).

According to the authors, medical technology impinges on all these three components and has a profound effect on continuous quality development with particular reference to utilization, appropriateness and cost-benefit of technologies.

Saturno has highlighted the importance of voluntary (as opposed to mandatory) commitment to quality, especially in situations where the state owns and provides most health care and where health personnel are salaried employees. Professionals delivering health care should be motivated and involved in qualitative assurance on a voluntary basis as a part of a clearly defined strategy (Saturno, 1995). Describing the Iberian Programme of Training and Implementation of Quality Assurance Activities in Primary Health Care, the author reports that training was the most important strategic factor for success, along with implementation of principles of planned change, including building on strengths, analyzing systems, identifying influential persons and fostering a sense of the need for quality assurance. Bruce operationalized a quality of care framework for family planning programmes and emphasized that improvement in quality of care is an important determinant of contraceptive acceptance and sustained use (Bruce, 1990).

Defining quality in terms of the way individuals are treated by the system providing services, Bruce and Jain have emphasized that client knowledge and satisfaction with the care received should not be viewed simply as bridges to continued use, but also as valued end products of conscientious management and caring service (Bruce and Jain, 1990).

Building on Bruce's family planning framework, Mensch has suggested a list of four elements for a women's health care QOC framework (Mensch, 1993):

(1) provider–woman information exchange: conveying information to women regarding diagnosis, treatment options, side effects, and listening to and understanding women;

(2) provider competence with regard to knowledge of disease and treatment;

(3) interpersonal relations: sensitive treatment of women including privacy, respectful behaviour, giving adequate time;

(4) mechanisms to encourage continuity of care: information about follow-up visits, referrals, other available services.

Child health care programmes, unfortunately, have received scant attention with regard to systematic development of a comprehensive QOC framework and its field level application. What is documented in literature are examples of process and/or impact evaluations of child health programmes.

In India, a recent process evaluation study on integrated child development services (ICDS) in the State of Gujarat (India) had a client-centred focus (Kanani and Zararia, 1996). It sought to elicit perceptions and service utilization patterns of ICDS beneficiaries, as well as beneficiaries contribution to ICDS, through the use of a mix of qualitative and participatory research methods. Data gathered from five regions in Gujarat (Fig. 1) revealed that:

- Though the ICDS is conceptualized as an integrated scheme, it was not implemented as such at field level. Selected services receive more emphasis while others are neglected.
- Utilization by intended beneficiaries depended on factors such as regular availability and accessibility of service, quality of implementation, rapport of ICDS worker with community members, perceived benefit of service by people.
- In ICDS centres where the field functionaries were motivated and gave 'good' quality care as perceived by the people, the beneficiaries tended to use the services. Further, in such centres, the community, especially local NGOs, did contribute to ICDS in varying degrees, by way of voluntary time, labour or space, or materials to run the centre. Poor management and inadequate administrative support by government authorities were key factors obstructing quality of care. These included lack of skill-based and hands-on training, acute shortage of basic materials to run ICDS centres, cursory supervision, mechanical monitoring with little attention to quality of service and overburdened field functionary who had virtually no access to transport facilities.

From the study, the importance of developing the 'human resource' in ICDS, the functionaries at all levels, became evident.

An investigation was carried out on the management of national nutrition programmes within the primary health care (PHC) system in the State of Madhya Pradesh, India (Kanani and Khanna, 1995). It was evident from the extensive interview and observation data that low priority given to any component of the PHC programme adversely affected the quality of its implementation. For example, one-year long observations of the nurses and medical officers at the PHC centres in urban and rural areas revealed that functionaries at all levels devoted a major portion of their time in planning and implementation of the family planning and immunization programmes, as they considered these more important than other programmes including anemia control and vitamin A deficiency control programmes. Material and financial resources, monitoring and supervision, and community contacts were all geared towards family planning and immunization.

Poor quality implementation of nutrition programmes was reflected in irregular and inadequate supplies of vitamin A and iron, poor record maintenance, infrequent supervision and training. Not surprisingly, there was a high prevalence of vitamin A deficiency (Bitot's spots) and anemia (Hb levels) in preschool children and pregnant women in the study areas. The authors stated that unless strong advocacy efforts are made to convince policy makers of the importance of controlling maternal and child undernutrition, it is unlikely that the quality of national nutrition programme will improve.

From the foregoing it is evident that a quality of care framework for child health programmes in developing countries is needed, which will help focus attention on this issue and provide some direction towards this end. This paper elaborates on such a framework in the subsequent sections. The QOC framework is client-centred and focuses on process and outcome indicators which are likely to reflect QOC. Finally, a list of qualitative and quantitative research tools is suggested to help design and evaluate QOC in child health programmes.

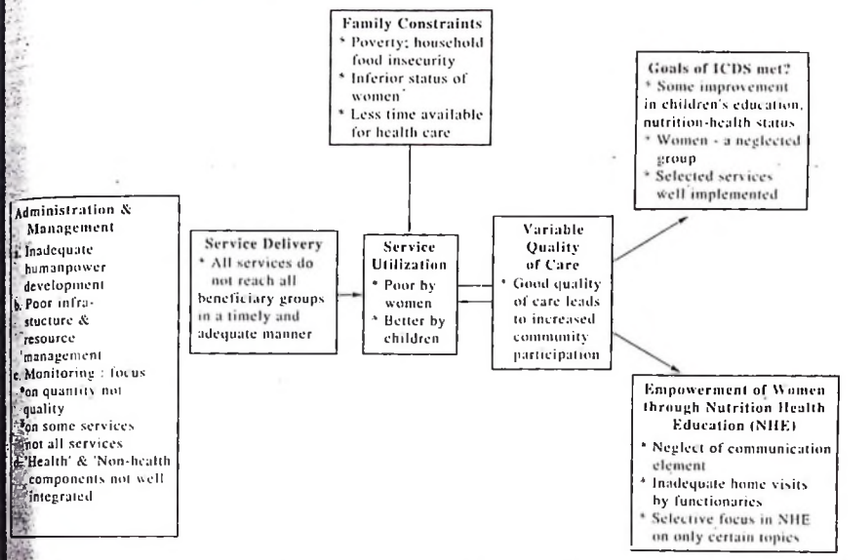

Fig. 1. Current status of ICDS in Gujarat: a snapshot picture of the findings of a social assessment study (Kanani and Zararia, 1996)

THE QUALITY OF CARE FRAMEWORK FOR CHILD HEALTH PROGRAMMES

In the context of caring for the health of children, QOC may be viewed from two perspectives*:

(1) The overall services and management system of an organization;

(2) The point of service delivery, that is, the provider–client interaction and outcome.

Tables 1 and 2 present the components of a suggested QOC framework for child health programmes, and indicators which will help measure these components.

COMPONENTS AND INDICATORS OF QOC FROM AN OVERALL PROGRAMME PERSPECTIVE

Client's needs

Meeting client needs in a culturally appropriate manner is imperative to ensure utilization of services by child caregivers. Service providers also

*Adapted from a session conducted by the author as part of a training workshop organized by Women's Health Advocacy Cell of the Women's Studies Research Centre (WSRC), Baroda, entitled, Action Linked Research for Women's Health, April 1994.

Table 1. The components and indicators of quality of care (QOC) in child health programmes: programme perspective

Components	Illustrative indicators
Client needs (a) Services meet client needs in a timely manner (a need fulfilled too late is a need unfulfilled); (b) Services respond to the changing needs of clients	• Proportion of needs met by the child health programme and to what extent in particular, felt needs expressed by clients • Change in services over time
Services are culturally appropriate, seek to reduce gender bias against girls	• Relative extent of focus on girl child in the services • Rates of utilization of services for girls and boys • Gender disaggregated research data and outcome indicators
Services focus on the marginalized and socio-economically deprived sections of the population	• Proportion of beneficiaries belonging to deprived groups according to social and economic criteria defined according to regional situation
There is balance between short-term and long-term goals of the services	• In the child health programme, list services which meet (a) Short-term goals (e.g. oral rehydration therapy for diarrhoea management) (b) Long-term goals (e.g. environmental sanitation improvement)
Money, humanpower and material resources are efficiently managed with a focus on human resource development	• Training of health functionaries: extent of focus on QOC • Essential supplies: (a) Good quality, (b) Adequate, (c) Timely • Monitoring and supervision: (a) Inclusion of QOC indicators in the management information system (records, reports, meetings), (b) Focus of supervision on the quality of care provided by field functionaries to clients • Financial resources: (a) Adequate, (b) Need based allocation
There is adequate coverage of children and adolescents (0–18 years) and mothers, i.e. (a) All 'severely affected'* and 'at risk'* children are provided the 'complete package'* of services, (b) All children (below 3 years of age) are provided a minimum package of services, (c) Mothers or other caregivers are covered through mass media and interpersonal communication	• Proportion of eligible children, adolescents and child caregivers covered with 80–100% of specified services, that is, (a) Severely affected, (b) At risk, (c) Children below 3 years of age, (d) Mothers/Other caregivers • Improvement in knowledge and skills of caregivers regarding child health and nutrition
There exists a mechanism for health service provider–client partnership	• Community level health committees for child health programmes—their structure and function • Cost sharing – proportion of total cost met (in cash or kind) by community for child health programmes • Specific use of participatory approaches and techniques by health functionaries for programme planning, implementation and evaluation
There is reduction in childhood mortality, morbidity and malnutrition, especially in girls	• Reduction in: (a) Infant Mortality Rate and Under Five Mortality Rate, (b) Proportion of children in grade I–II and grade III malnutrition, (c) Number and duration of episodes of critical childhood illnesses (e.g. diarrhoea, upper respiratory tract infection, malaria), (d) Reduction in micronutrient malnutrition (iron, vitamin A and iodine) and improvement in growth in school children and adolescents

need to respond to client needs in a *timely* manner; often services take so long to materialize that they become irrelevant. Examples abound in the literature of research conducted under short-term projects whose findings rarely find their way to timely and sustainable programmes. On the other hand, building quality takes time; a hurriedly implemented programme may in fact be counter productive. A balanced approach, wherein services are reasonably timely without sacrifice of minimal quality standards, is called for.

Three years ago, a team from our department was involved in a process evaluation of the mid-day meal (MDM) programme in Baroda on the invitation of the government officials who wanted a qualitative improvement in the programme (Kanani, 1994). The participatory evaluation of the programme, which primarily used qualitative research tools such as observations, preference ranking and focus group discussions, yielded several valuable and feasible recommendations, a few of which were immediately implemented. An example is the change brought about in the food items in the cyclic menu to cater to the likes and dislikes of children. Several recommendations emerged from expressed needs of the parents of children participating in the school feeding programme.

Child health services should have in-built flexibility to respond to the changing needs of clients over time. In particular, they should actively seek to reduce gender bias against girls as regards child feeding, health care and education. We have recently conducted a nutrition education programme for school girls in which we found that merely communicating health and nutrition messages was not enough, as the girls were not participating and expressing their needs (Agarwal and Kanani, 1994). The focus group discussions (FGDs) revealed that they had a poor sense of self-worth and considered their brothers to be more important

Table 2. Quality of care at point of service delivery in child health programmes

Components	Illustrative indicators
Appropriateness of the physical infrastructure to deliver good quality care	• Space is adequate to permit child and caregiver to be comfortable • Environment is clean • Facilities and supplies (essential drugs, vaccines, nutrient supplements) are adequate
Client–Provider Interaction	• Empathy and complete attention of provider towards clients • Technical competence of providers regarding diagnosis, training, referral and education of clients
Follow-up care	• Number of home visits by service providers especially for care of 'high risk' clients • Return visits by clients for follow-up care

themselves. Hence there was evidently a need increase self-esteem among girls and sensitize rents to the special needs of their daughters. onsequently, sessions were designed to increase lf-confidence and participation of girls; simulaneously our interaction with their parents also as deliberately increased. These self-esteem develment sessions greatly enhanced receptivity and olvement of girls in the nutrition-education sesns.

Acceptance of the programme by the truly needy oups, especially in a multi-ethnic society as in dia, is crucial for its success. The process evalution study of ICDS in Gujarat (Kanani and raria, 1996) revealed that in order to gain accepce from both the higher caste and lower caste eficiaries, some child development project offis (project in-charge) ensured that one of the pair grassroot level functionaries (Anganwadi worker d helper) was from the higher caste and the other s from the lower caste.

From the point of view of clients, child health ogrammes are likely to be achieving good quality e if clients express that their needs are met, they rn to avail themselves of services, or bring ers to the programme. Also, a positive feedback m child caregivers, indicating that they are more ble and confident of promoting the health of ir children and that they have noticed a visible provement in the health or nutritional status of children, is also an indicator of quality of care m the perspective of meeting client needs.

nce between short-term and long-term goals

hild health programmes in developing countries e to resolve conflicts arising from ground reali- in the field: conflicts between gaining acceptance ommunity members by meeting their immediate s and the long-term goals of a programme. For ple, a mother may want her child to obtain k relief from symptoms of diarrhoea and may really be willing to spare time for health edu- on aimed at improving personal and environal hygiene practices. Sometimes, health service viders themselves are pre-occupied with short- goals to the neglect of the more important long-term ones, perhaps because they give visible returns and are less difficult to achieve. Thus, oral rehydration therapy for diarrhoea management may take up considerable resources of the health system and scant attention may be paid towards measures to improve health and hygiene behaviours of child caregivers.

This was evident in a study we conducted on the ICDS programme in urban Baroda to assess the quality of field level implementation of selected ICDS services using the observation method together with semi-structured interviews (Kanani and Patel, 1994). The Anganwadi workers were more concerned about the number of children weighed monthly than with educating mothers about their children's growth and feeding practices. Similarly, short-term programmes, such as immunization and food supplementation to severely malnourished children, received more emphasis than nutrition health education to mothers, because these were the ones in focus in the supervision, monitoring and evaluation system.

Effective management of services

It is essential that human, financial and material resources are efficiently managed in child health programmes with particular focus on empowering the health service providers at all levels. Empowerment of mothers and other child caregivers can take place to the extent that health service providers themselves are empowered. Empowerment in this context is viewed as a continuous process in which knowledge and skills of health care providers are enhanced, attitudes are changed and administrative support is provided for delivering good quality care. Quality of care should be the focus in all aspects of management such as training, logistics of supplies, monitoring and supervision. Equally important, adequate financial resources should be available to make it possible to deliver good quality care. This was highlighted at a state level workshop on alternative strategies for improving woman and child nutrition in the State of Gujarat in India (Kanani and Saiyed, 1995) which particularly emphasized the need to focus on 'software' (human resource development) *vis-à-vis*

Table 3. Qualitative and quantitative research methods for planning and evaluating QOC in child health programmes

Indicators of Quality of Care	Suggested methods from the health sciences and social sciences
Client needs are understood and met	• Key informant interviews with clients and service providers • Free listing of needs as expressed by clients • Proportion of planned needs met by the child health programme: semi-structured interviews and focus group discussions (FGDs)
Services are culturally appropriate; reduce gender bias against girls	• FGDs in community • Matrix ranking of services • Analysis of difference: access to care for girls and boys, e.g., gender discrimination through role plays • Direct observations of health service providers and child caregivers • Scrutiny of the routine recording system for gender disaggregated service delivery and service utilization data
Services focus on marginalized sections of the population	• Direct observations of clients receiving services • FGDs with deprived population groups • Review of records for service delivery and use data
Services meet (a) short-term goals (b) long-term goals	• FGDs with service providers • Direct observations of service implementation • Review of secondary data: monthly reports
Efficient management of humanpower financial and material resources	• Scrutiny of training curriculum for focus on QOC • Semi-structured interviews with trainers and recent trainees • Direct observations of meetings and supervisory visits • Spot observations, FGDs and in-depth interviews of field functionaries • Review of secondary data: scrutiny of management information system (records, reports and circulars) for indicators of QOC • Budget: allocation of funds for good quality care • Case studies of 'well managed' and 'poorly managed' centres
Adequate coverage of children, adolescents, and child caregivers	• Surveys through structured interviews with health service providers and clients: proportion of eligible beneficiaries receiving above 80% of specified services • Direct observations of delivery of services • Scrutiny of records and monthly reports • FGDs with and direct observations of child caregivers to assess childcare knowledge and skills
Existence of health service provider-client partnership	• Key informant interviews with representatives of community level committees and health service providers at all levels • Direct observations of functionaries of above committees • FGDs with clients and health service providers
Reduction in mortality, morbidity and malnutrition in children and adolescents	• Epidemiological survey • Analysis of secondary data, e.g. growth charts/case papers at health centres, schools • Gender based analysis of impact data • Case studies of families with children below 3 years of age in 'poor health' and 'good health'

'hardware' (physical infrastructure). For example, it was suggested that training of health functionaries should be field-based and related to operational aspects of their job functions, with two-way mechanisms between the trainers and the trainees in order to make the training more relevant.

Coverage

Though considerable variability exists in coverage data available in child health programmes, records maintained by functionaries usually contain information regarding the number and percentage of eligible beneficiaries receiving various services. However, the important question is: are priority groups covered, and if so, by which services and to what extent? In the Indore (Madya Pradesh) study referred to earlier (Kanani and Khanna, 1995), we observed that with respect to iron supplementation of children and women, functionaries focused on registering new beneficiaries to show achievement of targets and not on completion of the course of 100 tablets for a given number of beneficiaries. Compliance of beneficiaries in terms of tablets consumed by beneficiaries was rarely monitored. Further, the problem with supplies was more to do with disproportionate allocation to various centres rather than shortage per se.

Another issue concerning 'eligible beneficiaries' is the need to expand the definition of 'vulnerable groups' to cover school children and adolescents as well, and not restrict our efforts only to preschool children. Malnutrition and chronic morbidity is widespread in this group as several of our studies have indicated (Kanani, 1996). A majority of disadvantaged adolescent girls suffer from undernutrition (>80%) and anemia (>60%). Further, with the looming threat of HIV and AIDS, this group becomes particularly important in child health programmes for reproductive health education, counselling and services, and for preparation for a healthy family life.

Health service provider–client partnership

If mechanisms are developed to ensure that health service providers and community representatives are partners in child health programmes, there is likely to be greater accountability of health functionaries towards their clients and increased chances of good quality care. Such a partnership can play a central role in empowering child caregivers with essential knowledge and skills to improve health

and nutrition of children. It can guard against imposition of limited, vertical programmes which have little relevance to the socio-economic situation of the region.

Reduction in childhood mortality, morbidity and malnutrition

If the above components indicative of good quality care are assured, one may expect favourable outcomes in terms of decrease in infant mortality and under-five mortality rates, morbidity and malnutrition among children. However, in an environment of socio-economic deprivation, even reasonably well implemented services may not succeed in achieving these outcomes. Thus, as is often said, programmes for child health have to move beyond the health sector and build bridges with other sectors, especially education.

Voluntary organizations in India have recorded impressive gains in reduction of child mortality and malnutrition as evidenced in the 'Anubhav' series of reports (the Ford Foundation, 1987–1988). These documented experiences have highlighted features of the NGO sector which contribute to quality of care such as integrating health care activities with other development programmes for better health impact and to fulfill felt needs of people, recruiting and training local women and men as community health workers or change agents, rationalization of health workers' workload and assigning manageable field areas to them, close monitoring and supervision, participatory management, collaboration with government and academic institutions, and flexibility in programme design and implementation.

QOC AT THE POINT OF SERVICE DELIVERY

Central to good quality care is the health service provider–client interaction at the point of service delivery. This has been mentioned in the QOC frameworks for women's health programmes and for family planning programmes referred to earlier. Measures which can facilitate such interaction include appropriateness of physical infrastructure so as to make parents and children feel comfortable, personal attributes of the health service providers such as empathy, support, listening attentively, as well as the technical competence of the health service providers. Equally important is quality of follow-up care or referral services provided by the programme.

Application of research tools from the social sciences and health sciences for planning and evaluating quality of care in child health programmes

For the purpose of this paper, social science research represents the predominantly qualitative and ethnological paradigm of research, while health science research represents the predominantly quantitative and epidemiological paradigm of research; though it is realized that there is much overlap between these two paradigms, and that one may often include elements of the other. An integrated approach, which synthesizes research tools from both the social sciences and the health sciences, not only yields maximal, usable data at less cost, it is also a pragmatic approach. After all, social change in communities and behavioural change in individuals are important goals of most health care programmes.

In the context of child health programmes, such a partnership between the health sciences and social sciences is even more crucial as there is considerable divergence in conceptual orientation between traditional or modernizing communities on one hand, and 'health experts' or health care providers on the other, with regard to desirable child feeding and health care practices.

Further, when used in a complementary fashion, quantitative methods help determine estimates of phenomena like childhood diseases, prevalence and rates of health care service utilization, while qualitative methods yield a better understanding of cultural perceptions regarding child care, feeding practices and childhood illnesses; and the social determinants of treatment-seeking behaviour among child care givers in households.

For ensuring quality of care (QOC) in child health programmes, a blend of research methods in the social sciences and health sciences is critical. Table 3 describes the potential use of specific methods to gather qualitative and quantitative data for the QOC indicators presented earlier in Tables 1 and 2. The qualitative and quantitative methods suggested are only illustrative of what is possible and are by no means exhaustive, or the most desirable methods. The final basket of methods for a given program should be region specific, and should evolve over time.

STANDARDS FOR QOC

As Mensch has stated, the first step in improving QOC is an articulation of minimum standards that are acceptable and affordable (Mensch, 1993). 'Gold standards' might be impractical to achieve, given the severe constraints on health services in developing countries. Further, health services are likely to be at different levels in terms of years of implementation, reach and variety of services provided. Hence, policy makers must clearly articulate at least the minimum acceptable standards that services will adhere to, which should include all elements of care: interpersonal, informational and clinical.

Secondly, standards should be region or programme specific, depending on the existing level of quality in the programme. Also, standards should evolve and become more stringent so that QOC is upgraded over the years.

THE CHALLENGE

In our journey towards quality of care for child health, what are the challenges we have to address? It appears that the health science–social science partnership will need to commit itself to the following.

- Advocate for prioritization of QOC in child health services among policy makers among both the government and non-government sectors. Approaches will have to be found to address the issue of lack of conviction and commitment in these sectors for setting up and enforcing QOC standards for child health care.
- Facilitate the creation of a supportive environment and adequate infrastructure in the health system which promotes good quality care. In our process evaluations of national programmes such as ICDS and nutrient supplementation programmes referred to earlier (Kanani and Khanna, 1995; Kanani and Zararia, 1996), we have observed that often, functionaries are well aware of the lacunae in field level implementation of programmes. Yet they do not have either the motivation or the knowledge and skills to bring about a qualitative improvement in their functioning because the health care system does not support such efforts.
- Forge links between the disciplines of the health sciences and social sciences for promoting QOC. For example, interdisciplinary action research can be carried out by the health science–social science partnership for testing the feasibility and cost of operationalizing the QOC framework presented in this paper. This framework will need to be modified to suit regional conditions.
- Train students in universities and research institutions so that personnel, who have an orientation to both socio-cultural and bio-medical dimensions of health, are available to manage programmes for children and adolescents.
- Document and disseminate success stories. There is already available a considerable body of anecdotal evidence and rich experience in organizations who have provided quality care to children and their families in deprived communities. These success stories need to be shared with others such as the 'Anubhav' series of Ford Foundation and voluntary health association of India. Unfortunately, in resource poor situations, many organizations do not consider it necessary to spare precious time or money to document and disseminate success stories, especially the 'process'. Creating this need and making available the necessary resources is a major challenge.

To conclude, UNICEF has stated: "the great challenge of the years ahead is to ensure that any family taking a child to a clinic or health centre anywhere in the developing world will find a health worker who can examine and diagnose, make a decision on appropriate treatment, give basic drugs for the most common problems, refer the child to hospital if needed, and offer the right advice about how to prevent and manage illness in the home" (UNICEF, 1996).

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CHILDHOOD CONDITIONS THAT PREDICT SURVIVAL TO ADVANCED AGES AMONG AFRICAN–AMERICANS

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Abstract—This paper investigates the social and economic circumstances of childhood that predict the probability of survival to age 85 among African–Americans. It uses a unique study design in which survivors are linked to their records in U.S. Censuses of 1900 and 1910. A control group of age and race-matched children is drawn from Public Use Samples for these censuses. It concludes that the factors most predictive of survival are farm background, having literate parents, and living in a two-parent household. Results support the interpretation that death risks are positively correlated over the life cycle. © 1998 Elsevier Science Ltd. All rights reserved

Key words—cohort mortality, longevity, African–Americans, socio-economic factors, geographic factors, oldest old

INTRODUCTION

udies of social and economic differentials in mortality typically relate circumstances at one moment time to contemporary mortality risks. Literally ndreds of studies that date back more than a century show that, with rare exception, socially and nomically disadvantaged groups suffer elevated s of death (Williams, 1990; Feinstein, 1993). ch results are hardly surprising. Healthiness and gevity are nearly universal goals, and groups h more economic and social resources are better pped to achieve these goals.

Recently, studies have begun to investigate the relationship between social and economic features of dhood and adult health and mortality. viduals and cohorts exposed to disadvantaged mstances in childhood are typically found to rience increased levels of morbidity, disability, mortality when they are older adults (see Elo Preston, 1992 and Mosley and Gray, 1993 for ews).

frican–Americans are sometimes said to represent an exception to the prevailing positive correlation among death risks across different stages of Recorded death rates among African–ericans have "crossed over" those of white ericans throughout the twentieth century. espite much higher mortality at younger ages, an–Americans have had lower recorded death than whites beginning at some age between 70 85 (Elo and Preston, 1994). A common explation of this crossover is that only the hardiest s have survived to older ages; the weeding out of more vulnerable members of a cohort has resulted in an unusually healthy group of older blacks whose robustness is manifest in unusually low death rates. An alternative explanation is that data on older blacks are flawed by age misreporting and that correction of these inaccuracies would eliminate the crossover (Preston *et al.*, 1996).

This paper investigates the association between social and economic conditions in childhood and the probability of surviving to age 85 among African–Americans. It uses a unique case-control approach in which blacks who survived to age 85+ in 1985 are traced to their records from the censuses of 1900 or 1910, when they were children. They are then matched to a set of black children enumerated at the same age and census in order to identify childhood characteristics predictive of survival to age 85. Special attention is paid to whether factors associated with higher levels of child mortality are positively or negatively associated with survival to age 85.

RELATIONS AMONG DEATH PROBABILITIES ACROSS THE LIFE CYCLE

Will children who have been exposed to harsher health environments in childhood be more or less likely to survive from childhood to advanced ages? There are at least four mechanisms linking childhood conditions with adult mortality that would suggest an answer to this question. They fall conveniently into the typology shown in Table 1. Two mechanisms would suggest that harsher health conditions in childhood would be associated with higher adult mortality and two with lower. Within each direction of influence, one mechanism is direct,

or for correspondence.