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**DEVELOPING THE NAVRONGO PROJECT WITH
COMMUNITY-BASED STRATEGIC PLANNING**

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Abstract

In 1994 the Navrongo Health Research Centre launched a three-village pilot of community health services in three rural paramount chieftaincies of Kassena-Nankana District. This pilot was designed to reorient the health service system to the needs of communities. Two basic strategies were developed in this trial: i) A scheme for redeploying Community Health Nurses to village resident clinics, and equipping them to visit compounds in 90-day outreach cycles; and ii) a scheme for involving traditional leaders, networks, and volunteer mechanisms that is collectively referred to as the *Zurugelu Approach*. This report documents steps in developing the operational details of these two approaches, lessons learned, and implications for the strategic design of a large scale factorial experiment to be launched in 1995. A one-year consultative process has been completed in which communities were exposed to a program of health and family planning services, involved in the process of operational evaluation, and consulted in the process of planning a new service system.

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Developing the Navrongo Project with Community-based Strategic Planning

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When solving community health problems requires major programmatic changes, it is appropriate to scale operations down to essential elements, pilot operations on a small scale, and determine the optimal elements required for the new system. In 1994, the Navrongo Health Research Centre (NHRC) used this approach to develop a community health care program for Kassena-Nankana District, a severely health deprived and impoverished locality of Ghana's Upper East Region.¹ A new community health service system, devised in close conjunction with a program of sociological and anthropological research, will be tested in a long-term factorial experiment designed to assess the fertility and mortality impact of service intervention (Binka et al. 1995). Micro-piloting the operational plans for the Navrongo experiment was designed to adapt new program strategies to the social setting. By freeing the study team of the management challenges of running a large-scale service operation, the pilot program facilitated dialogue with the communities served, ensuring that strategic planning could respond to community preferences, needs, and realities. By using the micro-pilot approach, project staff could "learn by doing," in the tradition of strategic planning.² This paper reports on findings from one year of this activity, collectively comprising "Phase I" of a two-phased factorial experiment of the demographic impact of a program of family planning and primary health care services.³

¹ The NHRC has been constituted by the Ministry of Health to research the causes of high fertility and mortality in rural northern Ghana. The NHRC aims to apply state-of-the-art demographic and epidemiological research methods to the study of the critical health and development problems of rural West Africa. Advanced scientific research initiatives are developed in the context of a traditional societal setting, prevalent infectious disease, high mortality, and high fertility.

² The term "strategic planning" applies to an approach to developing human service systems that emphasizes adaptive development of organizational structures and functions (Paul 1987, 1988). This approach has been used extensively by planners of community development programs (Korten 1980, 1984).

³ The two-phased design of the Navrongo experiment is reviewed in Binka et al. 1995 and Nazzar et al. 1995.

The Navrongo experiment, formally known as the Community Health and Family Planning Project (CHFP), is being launched in response to internal MOH reviews of its primary health care and family planning programs.⁴ Past efforts to improve the coverage and cost effectiveness of the health care system have focused on means of moving services from clinical locations to more accessible village services points. In 1982, a volunteer program was launched by the Ministry of Health (MOH), known as the Village Health Worker (VHW) scheme. This program has been revised by various initiatives designed to improve the health service outreach program. In recent years, the VHW scheme has been closely linked with the UNICEF-sponsored Bamako Initiative.⁵ Although the Bamako approach improves the accessibility of health services, abates client costs, and reduces reliance on fixed clinical facilities (Adjei et al. 1995), volunteer schemes are difficult for communities to sustain, because turnover is high, morale among volunteers is low, and administrative and technical backstopping for the scheme is deficient (Aygepong and Marfo 1992). Recent MOH policy statements have questioned the feasibility of volunteer schemes, some appraisals have recommended termination of the VHW program, and planning documents appeal for research on this strategy (MOH 1994).

Official concern has also been directed to family planning achievements of the primary health care program. Early efforts to expand the accessibility of family planning focused on the role of midwives, and means of building upon their credibility as reproductive care providers to introduce family planning.⁶ An evaluation of this program showed that the mean annual

⁴ The 1993 Annual Report of the Ministry of Health Maternal and Child Health and Family Planning Technical Coordination and Research Division notes the critical need to improve community health service coverage in Ghana's northern regions. Clinic utilization rates are low and outreach programs are functioning poorly because funds are lacking for equipment, spare parts and fuel. Roads are often impassible and outreach work routines are unplanned. Communities, under-served by over-staffed clinical programs, rely instead on traditional medicine for most ambulatory health care needs. Even programs which have received considerable emphasis, such as the Expanded Programme in Immunization (EPI) have fallen short of their objectives (MOH 1993, pp. 3-4; 33-37; see also Sai 1986).

⁵ Various terms have been applied to the village volunteer worker concept: Village Health Workers, Community Health Workers, Community Clinic Attendants, and possibly other terms. Each term applies to community recruited personnel who are unpaid volunteers with access to subsidized primary health care drugs. Under the Bamako scheme, proceeds from the sale and distribution of drugs finance the stipend of workers and the replenishment of supplies (Marfo 1993, Senah 1994, Adjei et al. 1995).

⁶ McNamara et al. 1992, Ghana Registered Midwives Association 1990.

caseload per mid-wife was only 95 clients.⁷ By the 1980s, attention turned to means of adding a CBD component this clinical family planning program by considering the possibility that Traditional Birth Attendants (TBA) could serve as community based family planning service providers.⁸ A large, national TBA-based CBD program was launched after feasibility studies showed that TBA were agreeable to adding family planning to their activities. Subsequent research has shown, however, that TBA family planning caseloads remain exceedingly low.⁹ Other nonclinical schemes have been tried, most notably contraceptive distribution projects of the Planned Parenthood Association of Ghana (PPAG) and a corresponding effort to establish social marketing of contraceptives (Social Marketing for Change 1993). Although commercial sales of the social marketing program have been steadily rising, the family planning performance of MOH-sponsored volunteer schemes has been disappointing. Efforts to bridge the gap between demand for services and availability with community based distribution (CBD) have expanded coverage considerably without achieving anticipated levels of impact.¹⁰ The volume of family planning service delivery per distributor remains low.¹¹

The CHFP is addressed to the need for practical field guidance on how to respond to such problems. Formal experiments in family planning are much needed in Africa, where rapid population growth detracts from development and the demographic role of the supply-side is unknown.¹² The project has been conceptualized as a two-phase initiative in which "Phase I"

⁷ McNamara et al. 1992.

⁸ The Danfa project is reviewed in Ampofo et al. 1966.

⁹ According to a report by McGinn et al. (1990), "TBAs...were not promoting or providing adequate primary health care (PHC) services such as immunization, weighing, weaning, ORT, or family planning." The pilot project evaluated in this report was nonetheless scaled up into a national program. In general, TBAs have not been effective family planning service providers in Ghana (Eades et al. 1993).

¹⁰ Notable increases have been registered in family planning use in urban areas of Southern Ghana, but survey research shows that demand for family planning exceeds levels of use in most regions of the country, and use is particularly low in the northern regions (See Ghana Statistical Service 1994).

¹¹ As yet, no study has demonstrated that CBD, family planning clinical accessibility, or use of health auxiliary workers such as traditional birth attendants (TBAs) has an impact on contraceptive use in Ghana. Experimental studies of the demographic role of family planning have not been conducted in the sub-Saharan Africa region (Phillips and Greene 1993).

¹² Sai 1984.

will develop a culturally appropriate system of service delivery and "Phase II" will test that system in a controlled experimental study.¹³ Of particular relevance to the "Phase I" effort is research showing that health and family planning strategies are sociologically inappropriate.¹⁴ "Phase I" aims to determine what an appropriate system represents. Two general sets of resources are the subject of investigation: i) The MOH bureaucracy has staff, facilities, equipment, and resources that are inefficiently deployed. "Phase I" was deployed to review these resources, redirect activities to primary health care needs at the village level, and clarify how remaining resource constraints impede effective action; ii) The traditional communities of Ghana have social structures, networks, communication systems, and other institutions that govern daily life and structure social discourse. "Phase I" has reviewed these social resources to clarify ways in which traditional institutions can be marshaled to improve health care delivery.¹⁵ In 1994, three villages were selected in Kassena-Nankana District for a micro-pilot trial of primary health care services. The Ministry of Health District Health Management Team (DHMT) and a team of social scientists were directed to develop a new service system in the three villages, taking care to tailor approaches used to local conditions and needs, while developing the service system that will be tested in Phase II.

¹³ The Navrongo Project has been fielded to address questions about the demographic role of family planning services in a social setting that several observers have characterized as fundamentally pronatalist (Caldwell and Caldwell 1987, 1988, 1990a; Caldwell et al. 1992; Frank 1987 and 1988).

¹⁴ The Ministry of Health conducted a series of studies that are summarized in a report of The Ministry of Health, Health Research Unit (1992) entitled "Conception and Misconceptions: Community Views of Family Planning." Results show that mass media campaigns are promoting family planning in ways that many rural people find offensive. When focus group respondents are invited to discuss family planning promotional themes, they emphasize their primary concern for health care and the survival of their children. Interpersonal communication is preferred over mass media, and respondents report on exactly what family planning methods do so that rumors are dispelled. Finally, women and their husbands want a scheme for the distribution of contraceptives that addresses widespread concerns about confidentiality. This report was the subject of a more specific series of studies of community concerns about family planning service delivery, entitled, respectively, i) "First make sure our children won't die: An appraisal of community potential to support family planning services in Bolgatanga District," ii) "Won't it cause infertility?: An appraisal of community potential to support family planning services in Berekum District," iii) "The ability to keep secrets: An appraisal of community potential to support family planning services in Dangbe West District" (Ministry of Health 1991a, 1991b, 1991c).

¹⁵ The concept of community participation is often proposed without clarification of what this means in practice. The Navrongo Project is designed to provide insights into the operational design of community participation (Askew 1989, Devereux 1993, Wilt 1988).

This report documents key findings from the “Phase I” three village trial. First, we present a chronology of a nine-step process of systems development and the response of the communities served. Next, we review elements of success in the micro-pilot and implications for operational planning. Third, we review research about constraints on success of the program. Constraints on reproductive change have been previously studied, but the micro-pilot provides a basis for returning to this issue in the context of reduced accessibility costs and other barriers to adoption. Having solved most of the operational problems that family planning programs can feasibly address in a short period, why are many women not yet adopting? On the other hand, some women adopt family planning. What explains contraceptive innovation in a traditional African society? The paper concludes with a review of implications of this experience for the Navrongo experiment and national policy.

THE STRATEGIC PLANNING PROCESS

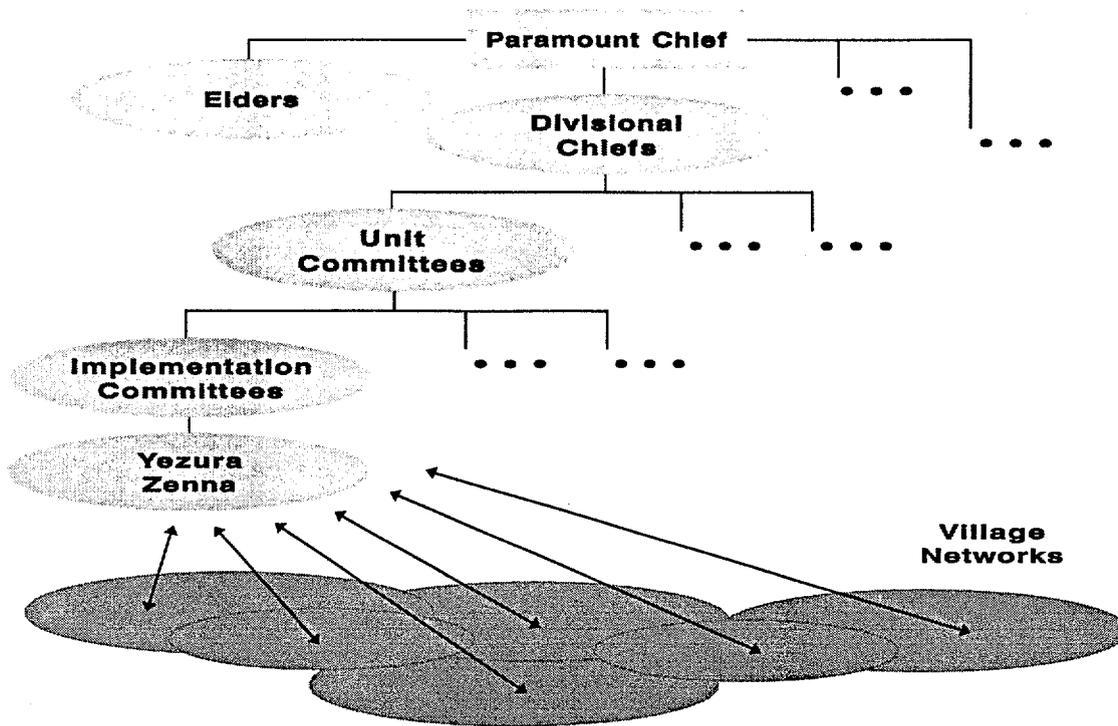
At the start of the micro-pilot, little was known about appropriate ways to relate to communities and involve traditional leaders. A series of eight steps were taken, each leading to subsequent actions and plans:

1. Community Diagnosis

Community organization. An aim of the project is to organize community health services in ways that reflect the traditional organization of the communities to be served. An early focus of the pilot was assessing how communities undertake activities that require collective action. Figure 1 diagrams the traditional system of village governance that applies throughout the study area. At the top of the hierarchy are Paramount Chiefs, of which there are 10 in the district. Each Paramount Chief is elected for life by a Council of Elders. Each elder is a male head of a lineage group, and a group of elders serves as a panel of advisors to the Paramount Chief. The position of elder is inherited, and despite the age connotation of “elder,” a young man can inherit this position if he is the eldest surviving son of an elder.

Paramountcies are comprised of 10 to 15 lineages located in contiguous areas. The term “village” is applied to clusters of sedentary lineages, each of which has a village head, known

Figure 1 The Zurugelu System



as a “Divisional Chief.”¹⁶ Apart from the Divisional Chief, villages have no set leadership system. Divisional chiefs may have a council of advisors, but these are typically groups with weak sociological or political roles in village governance. Divisional Chiefs are nonetheless quite influential as members of the Paramount Chief’s governing council. The Divisional Chiefs are elected for life through the custom of queuing.¹⁷ Candidates must be members of a royal lineage. Similarly, Paramount Chiefs are elected from a Paramouncy lineage.

The convening of the chiefs and elders is termed a *Pwa-tigsim* [Kassim] or *Narima-tigiso* [Nankam]. When they meet, they discuss development issues, disputes, local problems, and other local government matters. Decisions are made by consensus when possible, but hand votes are often taken on matters that do not achieve unanimity.

¹⁶ Divisional Chiefs are also referred to as “Sectional Heads” or “Sub-Chiefs.”

¹⁷ “Queuing” is a traditional form of public balloting in which individual voters queue behind their candidate in a public meeting. The longest queue wins the election.

Unit Committees are sub-units of sections. Unit Committees are elected for fixed terms and coordinate traditional networks that are formed among farmers, women, youths, and other peer networks. Peer networks are rather complex, with overlapping membership and purposes. Each network has an elected head. In the case of "youth cooperatives," the heads are termed *bia-pe*. Although, youth groups tend to be comprised of younger men, peer networks are formed and maintained as informal networks that are sustained through one's adult life. Networks tend to be quite open to any individual who may wish to join, and membership is unrelated to lineage, serving to share the responsibilities of planting, harvesting, and cooperative labor. Women form networks of groups for trading, price-fixing, and cooperative lending. A Unit Committee exerts influence by soliciting participation of networks in activities that are sanctioned or requested by the chiefs and elders.

Unit Committees are constituted for specific community interests, such as water development, agricultural extension, and health. Although the specific focus of these committees may be related to some government program or new idea, the concept is well established and traditional. To get things done, Unit Committees constitute a specific Implementation Committee among interested villagers. Their actions are coordinated by Unit Committees, sanctioned by Divisional Chiefs, and legitimized by the Council of Chiefs and Elders. This structure for traditional government exists throughout the District.

Mobilizing this traditional system of task leadership was launched by requesting the Paramount Chief and his council of chiefs and elders to constitute an Implementation Committee for health. This was termed a *Yezura Nakwa* [YN] (Kassim) or *Imasa Kima* [IK] (Nankam). In the tradition of this locality, both men and women participate in Implementation Committees. Thus, for the purpose of cells of the experiment where volunteerism is tested, YN are constituted in equal numbers of men and women. Once constituted, YN are approached with questions about how volunteerism could best be developed in pilot communities.

The socio-demographic situation. In addition to assessing the structure of communities, it has been necessary to examine the role of social institutions in influencing reproductive behavior. The social-demography of the area is more typical of the Sahelian region than of Ghana's southern region. Kassena-Nankana society remains traditional, agrarian, and dispersed, with only Navrongo town providing trade links with the outside world. Nearly all precipitation

is concentrated in a four-month period, severely constraining agricultural productivity and subjecting the population to seasonal adversity and food shortages. Nearly all families reside in traditional extended family compounds. Although some exposure to outside ideas and influences arises from trade and migration, the district remains isolated, rural, and remote. Traditional religions predominate, and traditional forms of village government and social organization persist.

About three-quarters of all women ages 15-49 in Kassena-Nankana District are married and nearly a third of all currently married women are in polygynous unions. Most of the population, are Kassim or Nankam speakers, languages that provide only fragmentary communication links to Ghana's southern cultures, restricting exposure of the population to outside ideas more generally. Female literacy is only 12 percent, further isolating women from the outside world. Various cultural traditions restrict the autonomy of women and impede the introduction of new ideas and technologies (Adongo et al. 1995). Focus group discussions reveal that multiple actors must be involved in a woman's decision to adopt contraception, an obligation that confronts contracepting women with considerable risk of embarrassment and ostracism. Levels of knowledge about individual contraceptive methods are low, ever use is very low, and current use of methods is rare.

Low contraceptive use levels are due, in part, to high child mortality in the locality. Traditional fertility practices reduce natural fertility substantially; the total fertility rate is six in the study area. However, mortality is high: The infant mortality rate exceeds 150, under-five mortality exceeds 30 percent. A woman seeking to be assured of two surviving sons must therefore have many children to be assured that two sons will survive. The desire for sons is rooted in lineage customs, labor, and agricultural practices that enhance the economic value of children and other inter-related pronatalist rites, customs, and beliefs.¹⁸

Individual respondents often state preferences and intentions that are consistent with family planning practice. For example, 30 percent of currently married women state that they

¹⁸ The role of family structure, marriage customs, and polygyny in structuring high fertility has been noted in reference to other African societies (Fapohunda and Todaro 1988; Goody 1973,1990; Caldwell and Caldwell 1990a, 1990b; Lesthaeghe 1989).

intend to use a method within a year; an additional 14 percent intend to use a method in the distant future (Debpuur et al. 1994). In focus group sessions, both men and women express interest in family planning, indicating that some demand exists despite pronatalist traditions.¹⁹

To explore the issue of what to do to respond to this demand, we pursued a process of dialogue with community leaders in the three pilot villages. A series of discussions was undertaken with opinion leaders, chiefs and elders of the community to discuss poor MOH (MOH) service coverage and possible ways to improve operations.²⁰ Discussions focused on leader's perception of the health service system, reasons for poor utilization, and their experience with programs that they feel have worked. Three themes were prominent in these exchanges:

First, traditional leaders welcome MOH interest in expanding their role in health promotion and recommend mechanisms for reaching communities. We are advised to pursue approaches that resemble political campaigns or other occasions requiring community action. On such occasions, the Paramount Chief assembles elders, lineage heads, and explains the need for collective action. This meeting schedules a *durbar*—an open community gathering designed to inform communities of a program of action and to solicit open discussion of reactions, opinions, and questions.²¹ Men are ambivalent about contraception, and many are openly opposed to the concept, but the appropriate response is to get family planning in the open and

¹⁹ It is clear, nonetheless, that this demand relates more prominently to child spacing than to fertility limitation (Caldwell and Caldwell 1981). Family planning adoptoin may substitute for other ferility regulation behavior (Bledsoe et al. 1994, Caldwell 1979).

²⁰ These discussions were also directed to two regionally influential paramount chiefs who serve paramoncies in Navrongo town and the village of Chaina. According to these leaders, no district level health or human service representative had ever solicited chieftaincy opinion about how to organize health or family planning services in the locality. Politicians routinely turn to chiefs for support and participation, but civil service officials approach chiefs to seek their compliance and concurrence with operations rather than their participation in the design of programs.

²¹ The dictates of tradition obligate chiefs and elders of the Kassim and Nankam people to convene *durbars* whenever decisions must be taken about matters of collective interest to the community. A *durbar* is an open gathering, called by the Paramount Chief, and attended by elders and all key members of the community. Generally *durbars* are planned for market days, are attended by several hundred men and women, and are accompanied by considerable pageantry, drumming, and dancing. In practice, *durbars* occur infrequently—three or four times a year for special occasions, but they are not difficult to organize if chiefs and elders have reason to convene one.

align the program with the chiefs and elders—stressing the wisdom of male support for family planning, and the collective nature of program.

Second, traditional leaders requested the MOH to construct clinics in their villages. Since no funds existed for the requested construction, a compromise was reached in which leaders were promised the resident clinical support of Community Health Nurses (CHN) if communities donated land and constructed a traditional structure to serve as her home and community clinic.²² From this discussion, the concept of a Community Health Compound (CHC) was eventually developed where a CHN has a walled dwelling area, with a courtyard and separate room for clinical consultation. Steps in site selection, construction, and community promotion were subsequently managed by chiefs and elders. In this manner, community involvement was secured in the difficult procedural task of relocating CHN to village settings.

Finally, health concerns were the subject of intense discussion. If family planning is to succeed in this setting, that success will arise from linking services to health outreach. We are advised to design health care delivery for care services to every doorstep, and to build credibility for the health outreach scheme as the first priority. Once credible health services are conveniently available at every doorstep, family planning can be offered without incurring opposition from men. Establishing credibility is not simply a matter of delivery technology, however. Health services, the role of workers, the goals of the program—the total system, must be openly presented at *durbars*, publicly debated, and openly endorsed by the traditional leadership system.

2. Service System Diagnosis

In response to the challenge imposed by social, economic, and ecological constraints noted above, a series of meetings were conducted with MOH staff to review the outreach system, and identify key operational problems that staff recognized as constraints on the effective delivery of primary health care delivery. This review focused on the dilemma represented by extensive

²² The CHN is a paramedic who receives two years of certificate training in maternal and child health and family planning service. This cadre is comprised entirely of women, and was originally constituted as a program of outreach services. However, CHN have been assigned to subdistrict level facilities where they lack resources for travel and community work.

MOH investment in clinical service roles, yet poor utilization of clinical services despite prevalent morbidity, high childhood mortality, and low rates of contraceptive prevalence. Collective opinion was sought about what could be done to mobilize MOH field resources to address the need for a more active primary health care program. Although it was obvious from the outset that major procedural change was needed, the process of dialogue was designed to involve staff most affected by change to contribute their views and participate in the strategic planning process from the outset. As expected, CHN recommended ways to improve outreach. Although none proposed the scheme that was ultimately developed, this process of dialogue enriched the range of options available, and dissipated opposition to change that would inevitably arise in the absence of dialogue.

In addition to the system review, Step 2 involved a situation analysis, modeled on a national study of fixed service delivery points. The aim of this study was to determine baseline clinical conditions, needs for system improvement, and clarification of the extent to which the existing system is meeting the needs of the population served. The five primary health care service delivery points (SDP) of the district were visited. This included one Maternal and Child Health (MCH) clinic located in Navrongo town, the district hospital, three rural Health Centers. The aim of this assessment was to provide comprehensive information on the availability, functioning, and quality of family planning services in the Kassena-Nankana District so that needed improvements and expansion could be planned and implemented.²³ The review inventoried family planning/MCH equipment and commodities and supplies, as well as educational and promotional material for family planning. The staffing pattern of the service delivery points was also reviewed, and the training of service providers for family planning technologies was assessed. The management information system (MIS) system was examined, as well as reported service statistics, the supervisory system, and service costs to clients.

Findings of the review lead to the following conclusions about the clinical situation in the study district:

²³ The review used instruments developed for a 1993 national situation analysis study (Ghana Statistical Service 1994, 1995).

First, the level of utilization of fixed facilities is very low. The Kassena-Nankana District has three health centers in the following sites: Chiana, Kandiga and Paga. Two additional clinical facilities are available in Navrongo town: An MCH clinic and a hospital. Clinical locations are far removed from most settlements in the district, a problem that is exacerbated by the total absence of a public transportation system for towns other than Navrongo, where two clinics are located.

Second, although clinics are inaccessible to the population, each of the facility provides basic health and family planning services on a daily basis. Stocks of commodities are on hand for most primary health care needs. Some essential equipment is lacking, but anyone seeking basic primary health care, and willing to pay modest fees for services, can obtain care. The state of health facilities reviewed in this study are nonetheless cause for concern: All clinics lacked the basic equipment and materials that are required for family planning services and reproductive health care, such as microscopes, examination tables, flashlights, sterilizers, non-disposable gloves, and thermometers. Facilities were in general disrepair, requiring lighting, roofing, paint, plumbing fittings and general maintenance.

Third, there is a need for a complete clinical training course, not only for new modalities that may be offered, but also for the existing service regimen. Workers are trained for dispensing pills and administering barrier methods, but the readiness to provide other methods is seriously deficient. This represents a problem because survey data and focus group discussions indicate that demand for family planning is largely for injectable contraception. Of the 32 clinical staff members directly or indirectly responsible for family planning care, 21 were interviewed. Of these, twelve reported receiving any training in the clinical aspects of family planning, and only four reported training in the use of communication materials. Nine providers reported that they knew how to insert and remove IUDs, ten said they have received training in providing injectables, and one claimed to have technical knowledge of Norplant® implants insertion and removal. Only two service providers in the district are trained to offer female sterilization and none have training in vasectomy techniques. Only one nurse reported that she had received training in family planning service delivery within the past three years. Eleven staff had received practical training in family planning service delivery more than three years

before. Only one provider thought he had received adequate training to deliver appropriate family planning services.

Staff were asked which methods they had actually provided in the three months prior to the interview. Not surprisingly, staff were more likely to have provided resupply methods (requiring more frequent contact with SDPs) than clinical methods. Pills and condoms were provided by all the staff interviewed. Female sterilization was offered in the hospital by two of the providers. IUDs were inserted by 3 staff in 2 clinics. Norplant® and male sterilization were not cited at all.

The clinical review showed that service delivery is oriented to nonclinical modalities, but the work system was strictly clinic based. Services were under-utilized, in any case. Three sets of recommendations emerged from the situation analysis: First, the quality of staff training and facilities was found to be so poor that service quality may explain the poor utilization of service delivery points. Even if outreach services are successfully developed, clinics must be upgraded to provide adequate backstopping for referral. In response to this finding, all relevant health staff will receive initial training in primary health care and reproductive health services and periodically throughout the intervention period they will receive refresher training. Second, plans to redeploy CHNs will not adversely impact on clinical services; clinical staff are idle and under-utilized. Third, plans to add NORPLANT to the service regimen must be undertaken in the context of upgrading the quality of services more generally. Technical training in all aspects of the conventional primary health care program should be undertaken before new services are added to the regimen of care.

Whatever efforts may be undertaken to develop clinical services, it seems unlikely that care at fixed service points will meet the primary health care needs of rural communities. From the standpoint of communities served, clinics are remote either because transportation does not exist or its cost is prohibitive. Even if travel can be afforded, the quality of services is so poor that justifying any expenditure on care at MOH facilities must be difficult or impossible. Given the constraints on the mobility of women, and other factors impeding contraceptive use, it is little wonder that the present system provides little family planning care to the population of Kassena-Nankana District.

3. Preliminary Strategic Planning

Our review of the social and operational situations provided clear indications of ways in which services can be developed in Kassena-Nankana District. Much remained to be determined about community reactions to family planning, but a tentative plan was developed in response to the conclusions reached in Steps 1 and 2, above. First, a technical training plan was developed. Next, a plan was drafted for redeploying CHNs to village locations. Finally, a research and monitoring plan was developed so that each activity would be the subject of careful review and appraisal.

The central conclusion that emerged from diagnostic research was the need for a systems perspective on developing village-based care. Evidence that the setting was a context for launching family planning was equally compelling as evidence that the program would have to be correspondingly strong. An outreach worker acting alone in a village will almost certainly fail: She will be a source of embarrassment to her clients at best, and if she is too active in promoting family planning, she will be the subject of derision, rejection, and scorn. Primary workers confronting such challenges require extraordinary support from the program—support that enables them to address various elements of the problems they face, while providing them with the basis for extending services according to their clients' needs.

Although details of the plan were the subject of trial and development over time, elements of this community-based support system could be designed in advance and refined as the micro-pilot progressed. This involved, respectively, developing five domains of system support for service operations at the periphery: technical support, supervisory support, peer support, community support and political support.

Technical support. When workers in the study area were interviewed about factors that hamper their work, the most common issue raised was the conviction that effort will be fruitless. Equipment for travel is inadequate, fuel is lacking, referral services are not functioning, services sought by the community are not included in the work regimen, and so forth. Logistics planning was undertaken to insure that efforts to promote services will be supported with requisite transportation, fuel, and supplies. Management information systems were developed to provide workers with the information that they require to sustain normal work routines (Nazzar et al. 1994).

Supervisory support. At an early stage in the pilot, supervisory systems were revised to accommodate the system of household coverage and outreach services. In the new system, supervisors would be required to provide support services for CHN, solving problems that arise and providing them with backstopping on demand. More than simply supervising, a “bottom-up perspective” was required, and this required strategic planning for supervisory training, emphasizing problem identification, problem solving, and resource mobilization.

Peer support. Peer support refers to the need to make workers aware of mutual problems, and the importance of working together on potential solutions. When CHN are interviewed about their reactions to being assigned to village locations they express concerns about isolation, fear of rejection by the community, and vulnerability to pressures of various sorts. It is clear from these discussions that frequent meetings are needed involving CHN in sharing their mutual experiences.

Community support. In the past, MOH services were detached from the community. Establishing support for the program among chiefs and lineage heads was a necessity for any program that posts workers to traditional communities. The concept of community support, however, extends beyond liaison to leaders, to include promotional activities in *durbars* designed to build CHN credibility in the community.

Political support. From the outset of project activities, effort has been directed to building the political credibility of the program. Political officials are invited to public gatherings and promotional activities. The aim is to establish to all parties concerned that activities are being undertaken with the support of all traditional leaders, technical representatives of the MOH, and political representatives in local government.

Preliminary planning, in summary, was directed to building a system of support for concerted action at the periphery. Many of the operational details of this support system were developed gradually in the course of the micro-pilot. From the outset, however, preliminary plans were put in place to respond to worker concerns about isolation, lack of support, and risk. Since demand for family planning is weak, and traditional social support for fertility regulation is fragile at best, operational planning was required that strengthened social support for the new role that outreach workers were being assigned to.

4. Micro-pilot Implementation of Technical Training

Although all MOH personnel in Kassena-Nankana District have been trained to provide basic health and family planning services, few CHN had actual field experience in visiting compounds to generate interest in the services. It was therefore apparent that worker retraining was needed, i) to provide a retraining on technical issues to be address, and ii) to emphasize the new model for services proposed for the Navrongo area. A training syllabus was designed to reorient CHN for the micro pilot, and to serve as a prototype syllabus for eventual use in training all CHN in the district.

A key feature of the training has been practical on-the-job experiential training, offered in short and intense sessions that solve problems arising. In this way, resolving problems experienced by one CHN upgrades technical capacities of the team as a whole.

5. Implementing MIS and Supervision

The MOH has implemented a program of MIS with the aim of providing administrators with basic performance indicators of the program. Reorienting the service delivery system to village-based operations required a corresponding reorientation of MIS. MIS data are rarely, if ever, used by the DHMT for routine operational management. The MIS design extracted information from workers, without assisting them with their work routines—undermining morale and generating data of little use to central managers. In the Navrongo system, a new approach to MIS has been developed that embraces a "workers perspective" in systems design. Worker-oriented MIS develops teamwork and cohesion in a manner that provides workers at all levels with information that enhances their capacity to function on the job and fosters teamwork on the basis of shared information.

A new MIS approach was needed because the logic of organizing active outreach services is dramatically different from extracting information from fixed locations. Simple-to-use management information is required that assists primary workers to plan their work regimen, organize their family planning encounters, and deal with a range of health service and non-family planning issues that are important to their role in the community.

For the Navrongo project, MIS was designed by assessing the minimal data requirements of primary workers, their supervisors, and the DHMT. Workers need to know if coverage

objectives are being achieved, if the population served is responding to services, and if basic support functions for the field operations are functioning smoothly. In particular, it is important to know if logistics and supply operations are adequately supporting field operations, and if particular problems are arising that hamper operations. This requires careful attention to a "bottom-up" communication scheme that provides mechanisms for workers to meet, assemble narrative reports on progress and problems, and communicate these problems to senior officers.

Outreach in Navrongo is designed to reach every compound in the study area every 90 days with basic health and family planning services. The 90-day regimen is the most intensive frequency of contact that is possible given the existing worker density for CHN assigned to the study area. The work routine calls for a monthly "zonal meeting" of eight CHN in an area and a quarterly meeting to summarize progress. The purpose of these meetings is to exchange information on problems and progress, with quantitative and narrative MIS data serving as the basis discussion.

The primary structured data resource for MIS is a CHN register that is arrayed by mothers and children (rows) with columns for each round, and space provided for each visit round where simple codes are entered for the reproductive, family planning, and health status of mothers, and immunization and health service indicators for their under-five children. In developing this register, the NHRC aimed to design a system that could function well in the absence of computers: Handheld registers can be prepared manually by CHN by printing a blank register in notebook format, and manually completing the pages on the first round of household visitation. In the NHRC system, however, all requisite information for the register is contained in the Navrongo Demographic Surveillance System.²⁴ Information required for the register are names and ages of women of reproductive age and their children. Other information that is helpful to CHN can be compiled in subsequent rounds of compound visitation: Tetanus vaccination data for mothers, EPI status data for children, numbers of pregnancies, live births, number of children who have died, date of last live birth, survival status of last live birth.

At zonal meetings, each worker summarizes the key issues arising in the current round of activity. Emphasis is placed on narrative reporting and problem solving. Meetings lead to

²⁴

The Navrongo Demographic Surveillance System is reviewed by Binka et al. 1995.

a supervisors report summarizing key issues raised and actions required by the DHMT. Reference is also made to the CHN registers and current tallies of the number of compounds covered and women encountered, special problems addressed, and unresolved problems arising. Particular attention is accorded to barriers in sustaining the planned coverage regimen, diplomatic problems requiring intervention, and special follow-up needs of men requiring the attention of male supervisory staff.

Each worker completes a tally sheet reporting contraceptive users at the beginning of the work cycle, new acceptors in the round, drop-outs, and the balance of current users at the end of the round. Basic reproductive health problems are tallied along with child morbidity indicators and vaccination coverage information. A simple spreadsheet program has been devised for a supervisor to use a portable computer to enter data, and present results for workers to compare with groups of workers. The summarization of aggregate data includes a visual graph showing time trends, and a picture of where each cluster stands in relation to district-wide tallies.

The CHFP has instituted a program of regularizing *darbars* and incorporating informational speeches and health promotional activities in the course of proceedings. Sessions are open to question and answer dialogue with the community about health and family planning issues, and this typically leads to a lively exchange of information, ideas, and concerns. *Darbars* have proved to be an efficient mechanism for reaching large numbers of people with messages, enlisting the support of community leaders in the health and family planning program, and in gauging community reaction to the CHFP.

Project supervisory staff are involved in *darbars* as note takers, and assigned the task of monitoring issues that require DHMT attention. Each session is organized to precede quarterly DHMT meetings so that *darbar* reports can be reviewed along with quantitative MIS. In this way, community problems are communicated to the health management system, discussed in quarterly problem solving meetings, and used to set priorities and allocate health resources.²⁵

²⁵ One recent *darbar* in a pilot village alerted the DHMT to the onset of a cerebral-spinal meningitis epidemic. A program of prophylaxis was organized for compounds where deaths had occurred; followed by an immunization campaign in the stricken village. Responding to this crisis demonstrated to the community the importance of their *darbar* as a health dialogue mechanism, and enhanced the credibility of the family planning scheme that has subsequently been implemented in the locality.

MIS in Navrongo balances quantitative information with narrative data. Narrative reports have been particularly crucial to involving the community in MIS. Traditional village communication and governance systems revolve around *durbars*. By convening regular *durbars* to focus on program issues, this valuable cultural institution has been used to strengthen management and enrich the MIS data resources of the project. Community complaints, problems, and reactions to the project are documented at *durbars*, abstracted for the use of managers, and used in DHMT meetings to develop appropriate responses to community concerns.

6. Implementing the “Bureaucratic Dimension”

A key purpose of the project is to mobilize the outreach system of the MOH bureaucracy. This involves posting CHN to village locations and changing their roles to Community Health Officers (CHO) to emphasize their new identity. Implementing CHO community-based services involves approaching the Paramount Chief and his elders about the proposed service system and clarifying community tasks and responsibilities required before the project can be launched. Communities are requested to construct a CHC for the use of the CHO.²⁶ Attempts to address the accommodation problem with a donated room in an existing dwelling unit have not worked; each CHO requires a separate CHC that resembles a traditional compound, but stands apart as a separate dwelling area. Discussions with the community indicate that the nurses personal quarters should be separate from the service delivery point, which can be readily achieved by building a small courtyard with a dwelling area and clinic area joined by an oval shaped wall with an entrance on the side.

Fostering community action in CHC construction requires a *durbar* for explaining the construction, soliciting assistance, and celebrating the MOH’s decision to post a CHO to the village in question. Construction is simple and rapid, but delays can be problematic if work must be done during planting or harvest seasons when labor is in short supply.

²⁶ The design of the CHC has evolved over the course of the pilot. At present, the CHC is a separate dwelling unit constructed in the fashion of a traditional compound with local materials and labor. A living area and a clinical area are joined in an oval area by a common wall and separated by an interior courtyard. This layout ensures that visitors will not have to pass through other dwelling units to reach the CHC and gives the CHO an element of privacy.

After the CHC has been constructed, the CHO is oriented to the community and a *durbar* is scheduled to celebrate the launching of services. The event is designed to build understanding about the role of the CHO and community commitment to her presence. Health and family planning is discussed, but the main objective has been to put into place the elements of supervisory, community, and political support for the outreach team.

Interviews of CHO revealed a number of important ways in which the program impacted on their lives, and implications of the new outreach for operational policy. First, to make the scheme successful, the CHO must achieve a careful balance of being separate from the community and yet being close to community members and responsive to their health and family planning needs. Successful CHO are both busy interacting with the community, and socially isolated. Their social isolation permits them to function effectively as trusted outsiders, but social isolation combined with long work hours and difficult work conditions makes the CHO role challenging. All CHO experienced problems with loneliness and a sense of hardship associated with their new roles. The management system was required to respond to this by intensifying supervisory encounters and peer worker encounters in a program that we term "peer support." Social interaction among members of the CHO team is crucial to their morale and effective functioning.

The problem of social isolation was compounded by the isolation of CHO from their families. Some of the husbands complained about the new CHO roles, leading CHO to develop concerns about their marriage, worry about their children, and concern about their domestic responsibilities. By separating CHO from their families, seemingly minor personal expenses were points of concern, leading to friction with spouses. Separate dwelling units required new investment in cooking facilities, linens, and other household items that are expensive in rural Ghana. Problems that affect rural women more generally were particularly problematic to CHO, who must work long hours with little time available for marketing, cooking, or fetching water. Perhaps because of the physical hardship imposed by their duties and continuous exposure to illness, all CHO experience more than their usual frequency of personal illness. Health care for CHO has been a significant component of supervisory support.

Some system of community support for such time consuming chores would be helpful to CHO, but this has yet to be resolved by the project. Social interaction between senior MOH

staff and the husbands of CHO has been extremely helpful. This must be pursued with caution, as the DHMT must retain authority to assign workers' village locations, even if husbands object. However, recognition for husbands roles and contribution to the scheme lends support to CHO. Simple social occasions, award ceremonies, community recognition, and other types of social support recognize families for the sacrifice that they are making, and provide added encouragement to women who are undertaking the CHO village service role.

Despite this sense of personal hardship, morale of CHO remained surprising high throughout the micro-pilot period, due largely to their sense that communities were seriously in need of care and appreciative of their presence. All experienced major health care service crises in the course of the study period, and all CHO in the pilot developed a sense of pride in reaching a large caseload of patients, many of whom were seriously ill. All CHO believe that they have made a difference in community health behavior. Focus group responses suggest that communities concur with this appraisal and are sincerely grateful for the CHO program. The image of the MOH as an institution has been transformed from that of a distant bureaucracy to a program that people see as their own. Women are particularly appreciative of efforts of the program to reach husbands with information on health and family planning issues, thereby building their self-esteem and sense of autonomy to take actions that are appropriate for their own health or the health of their children. Focus group respondents comment on the hard work that CHO commit to their job and express appreciation for DHMT efforts to inform the community, for the first time, what the MOH is doing for them and how services are being delivered.

The central contribution of the CHO scheme is the capacity of the MOH to deliver a credible package of services to women in the privacy of their homes. Men could not do this; open meetings or outreach clinics cannot achieve this; no other approach could be suggested by communities that would substitute for personal exchanges between a trusted female paramedic and married women in their homes. This dependence on house-to-house encounters represents a major strategic burden on the program, because home visits, at 90-day intervals, are fewer than women feel is optimal. Given the geography of the locality and the low density of MOH staff for this activity, it is not possible to accelerate the pace of outreach. It is evident, nonetheless, that the project could achieve more in the initial stages if the intensity of household visitation cycles could be increased.

Several specific recommendations emerge from exchanges with pilot project CHOs: First, distribution of contraception to individuals is less effective than a gradual approach that emphasizes begins with contacts to the extended family about health, with particular attention to the health information needs of compound heads and their wives, followed by a dialogue with husbands about family planning, followed by exchanges with women about the health concerns and family planning needs. Effective CHO thus begin outreach encounters by building their credibility with the compound power structure—husbands, compound heads, and elders, while at the same time being a trusted confidant of individual women. Building rapport in this fashion often take several outreach visits before the stage is set for family planning.

Second, an important element of establishing trust with clients is establishing a work routine that people know about and understand. A woman will reflect on the possibility of adopting family planning more seriously if she has confidence that she will be visited again in the future by someone who remembers what they have discussed. MIS is appropriately designed to provide simple information for guiding exchanges, and reminding CHO of issues that arose in past encounters. For this reason, a population register system is much more effective for MIS than a loose paper or service regimen system.

Third, every effort must be made to understand the difficulties that CHO face with the daily problems of cooking, marketing, and maintaining the CHC. Similarly, the MOH must be sensitive to the disruption that this scheme represents for CHO personal lives. Consideration may be given to rotation schemes, pairing CHO, or other mechanisms for rotating CHO in and out of community-based living arrangements. All such considerations have cost implications, and could not be tested in the current trial. However, providing intensive peer support systems for social interaction among CHO is crucial to the success of the program. Frequent staff meetings, training sessions, and supervisory visits are possible with existing DHMT resources. Organizing intensive interaction with CHO groups has been more important in the village based scheme than it has been in the past when all staff were based in clinics.

Fourth, husbands of CHO are important to the success of the scheme. No bureaucracy can defer completely to spouses, families, or other individuals when staff are deployed. However, simple dialogue with husbands, social occasions for families, or community recognition to CHO families can contribute greatly to CHO morale and program success.

Fifth, assigning CHO to village locations creates new technical challenges. By intensifying CHO service delivery activities, the need for continuous training is enhanced.

Sixth, assigning CHO to village locations creates family expenses and other personal needs that could threaten the long-term viability of the program. Special allowances or awards might offset the effects of personal hardship. While it could be argued that such allowances cannot be afforded by the MOH, the overall cost effectiveness of field allowances may outweigh such concerns. A single CHO equipped with a motorbike, basic training, and backup is a far more productive means of providing primary health care than building, staffing, and equipping a "Level B" clinic.

Seventh, although CHO are trained and equipped to visit compounds in outreach rounds, a surprisingly large number of villagers visit CHO in their CHC to solicit information and services. This had implications for the optimal design of CHO living arrangements. It is necessary to provide independent housing for CHO in the communities.²⁷

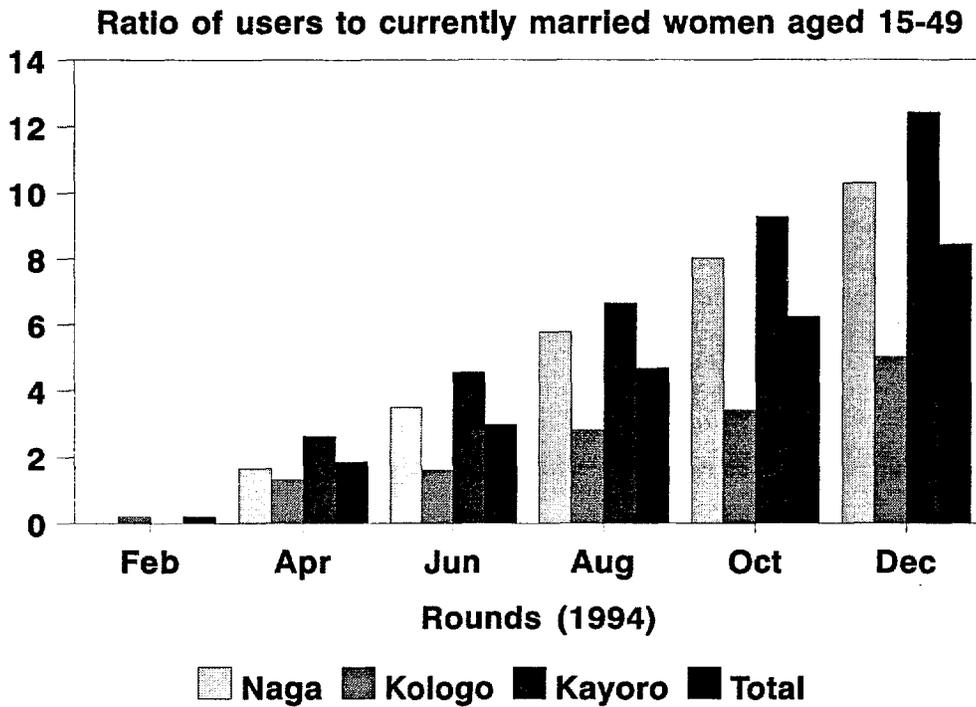
The impact of the CHO initiative. The micro-pilot has been designed to develop strategies rather than to test their impact. Work routines and supervisory systems were under development, and the system of care at the beginning of the pilot study does not fully reflect the system that will be tested in Phase II. It is nonetheless useful to examine community reactions to the scheme, and monitor results reported from the MIS.

Preliminary results from CHO reports are diagramed in Figure 2.²⁸ As the Figure shows, all three pilot CHOs have reported consistent increases over time. Only 2 out of 2,851 women

²⁷ Various alternative living arrangements were tested. For example, one nurse was chosen for the micro-pilot because she is the wife of a Paramount Chief. In our view, her special status in the community, and the legitimacy afforded by her residence in the Chief's compound, would ensure her success as a community nurse. Somewhat to our surprise, her participation in the program was hampered by her status, however. Women and husbands were reluctant to approach the nurse in her compound, out of concern that their presence would generate rumors about their family planning practice. A more successful approach is to isolate the nurse from key compounds, and to develop legitimacy for the program through close collaboration with chief and communication with elites. Building a house in an existing compound is also problematic, because prospective users are concerned about privacy and residents are concerned about patients "bringing sickness to their midst."

²⁸ The bar chart in Figure 2 is based on the ratio of contraceptive current users to the total Navrongo Demographic Surveillance System (NDSS) population of women ages 15 to 49 at the beginning of the Phase I trial. Since the population is changing with time, the reported figures are preliminary, and are subject to revision. They are nonetheless illustrative of trends over time and relative trends. MIS software that records and updates the eligible population over time will be available for Phase II (See Nazzar et al. 1994). Since the eligible population will be lower than the total population, we anticipate MIS based contraceptive prevalence estimates to be somewhat higher than the NDSS estimates. Survey research indicates that 72 percent of all women ages 15-49 are currently married.

Figure 2 Trends in contraceptive prevalence over five rounds of the Phase I trial February-December, 1994



aged 15 to 49 were contraceptive users at the start of the micro-pilot (0.1 percent); 173 were current users at the end of round five (6.1 percent). Various lessons emerge from the CHO service component of the trial:

First, all but four of the pilot study round five users are injectable clients. Since pills, condoms, and foam are all provided by the CHO, it is obvious that household distribution of the injectable method DMPA fulfills a demand for injectable contraception that was not met in the past by the clinical service program. The Navrongo project is the first community-based injectable service project in Africa. Although it is early to come to firm conclusions about choice behavior, the apparent popularity of injectable contraception suggests that significant demand for family planning might be met by village based DMPA services.²⁹ This issue merits careful monitoring in the Phase II trial.

²⁹ DMPA is the acronym for the drug depot-medroxy progesterone acetate, often referred to by its trade name "Depo-Provera."

Second, there are marked differentials in the trends reported by village. This is shown in Figure 2 by an end of pilot prevalence in Kayoro village of 9 percent versus 3 percent in Kologo.

The observed differential is contrary to pre-trial expectations. Kologo was selected as a pilot village because the CHO is the wife of the Paramount Chief. Her social status, and the enthusiastic support of her husband for the trial, was viewed as contributing social support for the initiative that was lacking in other communities. Naga and Kayoro were seemingly less favorable settings, where communities are isolated from Navrongo town and the degree of social support for the program was unknown. Indeed, the initial adopters in the trial were Kologo residents, but the upward trend soon stagnated; the family planning trend, though modest, was more pronounced in the other villages. Supervisory reports indicate that worker effort, job commitment, and other standard performance indicators are equivalent across areas. That is, the CHO in Kologo appears to be an excellent worker. In-depth interviews and field investigations show that the social position of the Kologo CHO has been more of a liability than a resource. Visitors to her compound must brave the scrutiny of her large extended family and kin. Fearing rumors and embarrassment, potential users stay away, preferring to be visited at home. But Kologo has a population that is double that of Kayoro, so that CHO compound visits were less frequent in Kologo. The combination of low contact rates and low CHC attendance produced the lower contraceptive acceptance in Kologo. Comparative interviews about this dynamic suggest that villagers want a CHO whom they can trust to keep secrets. They value the respect that CHOs extend to their chiefs and elders; they assign considerable importance to close liaison between the CHO and the community; but they also value an element of social distance between service providers and the community. A socially wired CHO is potentially threatening to a couple who view family planning acceptance as something that is socially risky; a wise and trusted outsider is a safer source of information and service.

Third, it is clear that efforts to contact clients in their homes contributed directly to project results. The mobility of women is severely constrained by economic and social factors; dependence on the outreach system is great. If means could be found to increase the contact rate, acceptance rates would be higher. Other factors are also important determinants of contraceptive use, but this implication of the trial has been noted and merits further

investigation. Women indicate a profound reluctance to pursue family planning services provided in group settings, but means of increasing service exposure merit investigation and trial.³⁰

Finally, male involvement is crucial to success in this setting. An unanticipated finding from the micro-pilot is the willingness of men to discuss family planning with CHO, who are women. Women can serve quite effectively as information providers to men, so long as strict secrecy about the contraceptive decisions of wives is maintained at all times. A recurrent theme in focus group sessions is the general acceptance of the role of CHO, even among men who express concerns about family planning. This acceptance of the CHO, however, does little to obviate the need for a more general strategy for reaching men. This, we believe, will be the contribution of the *Zurugelu Dimension*. We turn next, to a discussion of this component of the program.

7. Developing Volunteerism: Zurugelu and the Yezura Zenna (YZ) Service Delivery Scheme

For nearly two decades, the MOH has had policies promoting programs for providing services in village locations through volunteer workers. This scheme, known as the Village Health Worker (VHW) program has become controversial within the Ministry in recent years and is currently under review.³¹ In the course of Phase I, a new type of volunteer scheme was developed that addresses problems with the VHW approach.

The Navrongo volunteer workers are known in the local idiom as *Yezura Zenna (YZ)*, a term connoting a person who is in charge of the wellbeing of the community. This new approach was developed by discussing the VHW scheme with community leaders, eliciting their

³⁰ For example Indonesian village-based well baby clinics have provided an important means of improving vaccination coverage, providing ambulatory care for children, and extending the coverage of reproductive health care services for mothers. Kassena-Nankana women express reticence about the provision of contraceptives in *durbars*, but outreach clinics on the Indonesia model might be a feasible mechanism for providing family planning services to women.

³¹ Although this program was originally justified as a means of marshaling traditional village support for health service delivery, the VHW scheme has not worked well. The MOH has therefore consigned priority to research on the appropriate design of community health services (Ministry of Health 1994).

opinion on why the VHW scheme failed, and developing a consensus on new directions for mobilizing volunteer support. YZ are young men and women who are recruited by YN on the basis of their commitment to community work. They are viewed as members of the community who can be trusted to keep secrets, carry out work of the YN, and maintain commitments. The YZ are the sole service providers for the *Zurugelu system* and provide a key link between YN and the traditional system of government, the Unit Committees, and networks.

The YZ new concept differs from that of the VHW in several important respects. These are summarized in Table 1:

First, YZ are closely linked with existing traditional groups rather than independent drug salesmen serving individuals. YZ have been recruited by YN from the ranks of existing traditional network leaders. In the tradition of the Kassena-Nankana people, networks are formed from peer groups to provide cooperative labor at times of planting and harvesting, joint action for community work, and other activities requiring collective opinion or effort. Political leaders typically vie for the attention and support of traditional networks, since their leaders are effective in mobilizing collective opinion and political action. Not all YZ will be selected from such groups; the process of selection will be informed by the existence of such groups and the need for the program to effectively relate to traditional networks.

Attention has been directed to developing mechanisms for insuring accountability. In the past, VHW functioned in the manner of an unpaid employee of the MOH, nominally reporting to the MOH, but in fact accountable to no one. YZ are community workers with terms of reference to health communities formed in ways that cover traditional social groups and ensure the participation of all social elements. A poorly performing YZ will be noticed by the YN and be replaced if needed. A YZ facing problems can count on the YN or MOH staff to provide support.

We recognize a need for two streams of supervision—one from the community assuring that work is actually done, and one from the Ministry, insuring that the appropriate types of health and family planning services are provided and that technical competence of the YZ is maintained at a high level. In the VHW system, no attention was directed to supervision; VHW could work for years and never undergo a supervisory visit.

Table 1 A comparison of program characteristics of the former Village Health Worker Scheme and the proposed *Yezura Zenna* Approach

<i>Program characteristic</i>	Village Health Worker Scheme	<i>Yezura Zenna</i> Approach
<i>Recruitment</i>	MOH in consultation with Chiefs	<i>Yezura Nakwa</i> in consultation with Chiefs and MOH
<i>Accountability</i>	None specified	<i>Yezura Nakwa</i>
<i>Technical supervision</i>	None specified	CHO
<i>Administrative supervision</i>	None	<i>Yezura Nakwa</i> in consultation with CHO & Chiefs
<i>Compensation</i>	Profit from drug sales	Bicycle use; community recognition; <i>Yezura Nakwa</i> based compensation
<i>Task and Service Regimen</i>	Sales of essential drugs only	Essential drug dispensing; health education; family planning education and CBD; health liaison
<i>Training</i>	Two week initial training, village-based, once only	One week initial training, continuous follow-up training (one day every two weeks)
<i>Task development:</i>	None	Step by step incremental development of service regimen
<i>Gender mix</i>	Men only	Men and Women
<i>Mobility</i>	None	Bicycle and spare parts provided
<i>MIS</i>	None	Registers with symbols and checklists
<i>Institutional link</i>	DHMT (Bureaucratic system)	Traditional leadership system (<i>Zurugelu</i> system)
<i>Coverage</i>	Services on demand; individual client oriented	Active outreach; group and network focused

Neither VHW nor YZ are paid workers, but explicit attention has been directed to securing sufficient compensation for YZ. First, since compounds are dispersed, no worker can

be productive without some form of transportation. Bicycles are provided to YZ. This represents a major incentive to join the program. Second, community recognition is extended to YZ at every opportunity. Prestige and recognition represent a form of compensation. Third, the scheme for pricing, cost recovery, and compensation is set by the YN, with allowance made for disbursements to YZ. In the VHW scheme, drugs were peddled, and all resupply links were commercial and commercially motivated. In the YZ approach, the MOH provides drugs at cost, and YZ are not allowed to dispense commercial drugs. What is made available is linked to training programs, insuring safety and quality.

As Table 1 notes, the YZ service delivery role is somewhat broader than the VHW service approach. In order to intensify the active outreach process, YZ workers are recruited and trained in primary health care service and referral, to include selected aspects of reproductive health and family planning. The YZ workers are selected by the traditional village leaders from the community where they work. Their role involves treatment of minor ailments, ambulatory care for certain illnesses such as malaria, and diarrheal disease rehydration therapy. YZ also refer clients to the CHO/CHNs and/or clinics, and contraceptive resupply (condoms and pills). YZ will also be crucial to providing information and education within villages and compounds, and organizing *durbars* and other community meetings. The VHW focused on what they could sell, often branching out into harmful drugs or antibiotics that were misused.

Finally, YZ are monitored by CHO, activities are linked to community institutions, and services are coordinated by the MOH in a manner that places them in the center of a system of care and makes them accountable to the community.

8. Assessing Community Reactions to the *Zurugelu* System

A series of focus group studies have been conducted to assess community reactions to the *Zurugelu* approach. At this early stage, the activities of the YZ are the only recognized element of the approach, although *durbars* and other activities sometimes acknowledged. *Durbars*, meetings with chiefs and elders, and committees are not regarded as something that is new. The YZ, however, is a new concept that has been the subject of considerable dialogue with communities served.

To the typical focus group respondent, the YZ is a volunteer who rides around on a bicycle and cures sick people; the VHW, on the other hand is remembered as a peddler who gave injections for a fee. The YZ, unlike the VHW, has a role that is recognized as linked with the CHO. The YZs are appreciated for their role in improving the accessibility of low cost essential drugs. It is clear that this status could be readily abused if the wrong drugs, such as antibiotics, were available to the YZs, or if inadequate training were provided for the drugs on hand. For this reason, the project has instituted strict controls over essential drugs, and careful monitoring of the YN function in drug distribution. Men and women apparently share the view that the YZ role is appropriately a "man's job," based on the traditional view that women's mobility is restricted and that the permission that women require to travel would constrain their role as YZ.

Given such gender stereotypes, there is reason to be concerned about the dynamic between CHO and YZ, and the possibility that YZ may refuse to defer to CHO advice and opinion. Thus far, however, YZ work well with CHO, and acknowledge that CHO have superior training and a permanent position within the MOH that merits respect in the community. From the standpoint of villagers, the relative roles and lines of referral are well established, with the CHO a more trained and technically sophisticated paramedic. All YZ consult frequently with CHO and solicit their advice on health service matters. The CHO, in turn, perceives the YZ as a respected member of the community, and consult with them about community relations. Where both CHO and YZ are functioning, a working partnership has developed concerning male roles in family planning, promotional activities directed to male networks, and other issues concerning village diplomacy that men are positioned in society to address. CHO have thus learned to view their relationship with YZ as complementary. As yet, no evidence exists that this complement contributes to program effectiveness, but experience gained in the micro-pilot suggests that this result is to be anticipated.

Ongoing observation and discussion is focused on the family planning role of YZ. CHO, we have found, succeed because they are trusted outsiders. YZ have been chosen carefully to ensure that trust represents an important criterion in their selection. We do not yet know, however, if their social connections will be a resource or a liability in the promotion of family planning.

The characteristics of the YZ approach are compared with the VHW scheme. It should be obvious from this comparison why the VHW scheme failed—accountability, supervision, and commitment to the community were not developed. YZ are integrated into the traditional community decisionmaking system and yet are functionally linked to the MOH through technical supervision of the CHO, MIS, and routine monitoring of the flow of pharmaceuticals.

VHW were trained and equipped once, and given proceeds from an initial sale of drugs to purchase commercially available replenishment supplies. This approach had the effect of authorizing untrained and unsupervised traders to peddle and drugs that they could buy, including prescription pharmaceuticals, such as antibiotics. YZ using this approach will be detected, discredited, and replaced by the YN. This village-based supervisory system, we believe, will eliminate problems associated with the previous VHW approach.

THE OPERATIONAL DESIGN

What have we concluded about services in course of the three-village trial? How can the MOH mobilize its bureaucratic machinery for effective health service delivery? What are the mechanisms and procedures for ensuring that the community will effectively contribute to the organization of community health care? What are the prospects that both bureaucratic and community resources can be marshaled for care?

Findings from the micro-pilot indicate operational changes in the system that are required in all treatment cells. These are shown in Table 2. Column 2 lists characteristics of the existing system, Column 3 cites needed changes that are indicated by the pilot project experience.

First, the orientation and resources of the MOH should be redirected from the focus on clinics to a focus on community needs. Achieving this requires moving basic paramedical employees, CHN, out of their fixed location, and reorienting them to community-based work as a renamed worker, the CHO. CHO require support (peer support, community support, supervisory support, technical support and political support). Reorienting services is not simply a matter of ordering CHN to move to the village. In planning this operational change, it has been useful to employ “open systems” approaches in which the merits of the new scheme are weighed on the basis of community opinion rather than what we know about the MOH as an

Table 2 Strategies for Community-based family planning services in the existing program and the proposed Navrongo system

<i>Program characteristic</i>	<i>Existing CBD program</i>	<i>Proposed Navrongo system</i>
<i>Overall objective</i>	Improve contraceptive SDP accessibility	Develop community health care through traditional community organization
<i>Developmental approach</i>	Develop service components, issue national directives, implement scheme from the top down—closed systems approach	Open systems approach: Adapt approach to social situation, modify pilot in response to lessons, scale-up
<i>Organizational model</i>	Categorical programs coordinated by DHMT	Integrated primary health care system coordinated at the village level
<i>Community management model</i>	None	Village committee appointed to manage resources, solve problems, recruit and manage volunteers
<i>Staffing at the periphery</i>	No resident MOH staff, volunteers recruited by the community as "trusted insiders"	Resident CHO assigned as "trusted outsider. Volunteer YZ selected and managed by the community as "trusted insider"
<i>Paid workers</i>	CHN	CHO
<i>Volunteer workers</i>	VHW, no supervisor	YZ, CHO monitored, YN supervised, TBA (CHO supervised)
<i>Volunteer compensation</i>	Profits from sales of commercial drugs	Community compensation from revolving fund
<i>Scope of services in village locations:</i>	Limited, family focused	Broad, primary health care oriented
<i>Child health services</i>	EPI, malaria treatment, CDD	EPI, malaria treatment, CDD, ARI
<i>Reproductive health services</i>	Family planning in village locations: TBA (pills, condoms); VHW (condoms, foam tablets)	Family planning in village locations: CHO (DMPA, pills, condoms, foam tablets); TBA (pills, condoms, foam tablets); YZ (pills, condoms, foam tablets)
<i>Family planning services</i>	IUD, tubal ligation (district hospital)	IUD, tubal ligation (district hospital), NORPLANT®, IUD (Level B)
<i>Training</i>	Episodic, modality oriented	Continuous, flexible, "worker centered"
<i>Supervision</i>	Cadre specific, categorical, top down	Areal based, systematic, peer and community led
<i>Logistics:</i>		
<i>Supplies</i>	Modality centered; supply push	Community centered; demand pull
<i>Transportation</i>	4-wheel drive vehicle (for a group of CHN), none for volunteers	4-wheel drive vehicle for supervisors only, motorbike for CHO, bicycles for YZ
<i>MIS</i>	Top down, event centered, extraction oriented	Area centered, worker support oriented
<i>Level A facility</i>	None	Community provided, community maintained
<i>Outreach model</i>	Clinic-based workers conduct outreach clinics at prearranged village locations; work routines assign roles to CHN or TBA or VHW as individuals who work alone; individual oriented	Village-based paramedics provide clinical services at home plus house-to-house visitation on preannounced schedule. Work plans developed for villages, work teams, and community networks, group oriented
<i>Financing/pricing</i>	Cost recovery, prices fixed by MOH locally	Revolving fund, community managed, pricing decentralized
<i>Targets</i>	Central; demographic	Community specific, operational
<i>Community involvement</i>	Community approached at beginning of scheme	Continuous community management through Chieftancy system, YN committees, and YZ action. Periodic community communication through <i>durbars</i> , Chieftancy system, or <i>Bia Pe</i> .

organization or of ways in which outreach services have worked elsewhere.³² This approach to organizational design is suited to situations where demand for family planning is fragile and the role of service programs is unknown.

Second, it is appropriate to orient the outreach program to health care, with family planning as a component in a package rather than a stand alone activity. Efforts to develop community based family planning in Ghana have promoted family planning as something that is separate and distinct from other community health services; village-based health care schemes have lacked family planning components. It has been important to begin this initiative by building the credibility of village community-based workers, an activity that is possible only if a package of basic health services is the central focus of community promotional activities and the key aim of the program. Although health services are in demand, outreach design is premised on the assumption that travel for health care is not possible for most rural households. Having designed health outreach in this manner, accessible family planning care is socially and administratively feasible.

Third, the organizational model emphasizes the link between community action and community institutions. The MOH service outreach scheme has functioned as a bureaucracy that stands apart from the community that it serves. On occasion, village leaders may be informed of health activity, but meaningful collaboration has been lacking. The pilot demonstrates ways in which the gap between bureaucracy and community can be bridged. Villages have a system of governance, leadership, and volunteerism that can directly support MOH organizational efforts.

Fourth, the systems of staffing, volunteerism, and compensation developed in Phase I of the experimental project differ from the existing program. In the VHW scheme, there was no link between the volunteer and the MOH outreach clinic workers. In the new system, CHO and YZ function as a team, with CHO outreach directed to providing technical support and backup to the YZ. This supervision is needed, in part because unsupervised VHW sold any commercial

³² In Zimbabwe, paid outreach workers provide family planning services in rural communities, an approach that has been highly successful in that setting (Zinanga 1990; Zimbabwe National Family Planning Council 1990). If this approach were to be used in Kassena-Nankana communities, it would fail because health services are so important to the credibility of outreach personnel. This conclusion is based on focus group research on appropriate strategies for family planning services.

drug that they could obtain, including antibiotics. A system of MOH logistics ensures that all drugs provided are safe for YZ distribution; CHO supervision ensures needed referral links; a YN-managed revolving fund ensures that modest compensation will be available to workers involved. While the MOH plays an important support role, logistics, MIS, and other elements of the system are oriented to the community. Stocks, for example, are maintained by the YN and resupplied on a “demand pull” basis. Outreach is conducted in close coordination with the community, so that CHO visitation rounds are known in advance by chiefs and elders, occurring in predictable cycles. The coverage scheme is thus community oriented; targets are assigned as community coverage objectives rather than as demographic or modality distribution objectives.

Taken together, the operational changes noted in Table 2 reorient MOH services from their current focus on facilities, modalities, and diseases to a renewed focus on people, their needs, and priorities. This program will undoubtedly require further revision and development, but the basic objectives of proposed experimental health program will retain this focus on the communities served.

CONCLUSIONS AND IMPLICATIONS

The Phase I micro-pilot has developed the dimensions of a forthcoming factorial experiment. In summarizing the achievements of the “Phase I” micro-pilot, it is appropriate to reconsider the dimensions of the original design. The cells of the experiment are diagramed in Figure 3 with new components that have been developed for trial in “Phase II:”

The Bureaucratic Dimension. “The Bureaucratic Dimension” refers to the aim to deploy MOH staff more effectively and efficiently at the periphery. We have tested this redeployment and developed the administrative machinery for achieving this on a large scale. This required new training procedures, supervisory methods, MIS, and other components of a management system for community operations that have not previously been developed by the MOH. Moreover, until this trial was conducted, little was known about how traditional communities would react to doorstep family planning services, how to promote those services in culturally acceptable ways, and whether the scheme would have any impact whatsoever, given the social obstacles to this program. On the basis of this trial, we conclude that it is feasible to

reorient the MOH to village-based health and family planning services, but that careful attention is needed to developing support systems for this initiative. The core staff for this activity are the CHO, shown in Figure 3.³³ CHO are assigned to CHC that villagers construct for CHO residence and clinical work. CHO visit compounds, provide a range of services, and respond to needs as they arise. Preliminary results suggest that the scheme works: Both family planning use and health seeking behavior have changed in the pilot villages.

The Zurugelu Dimension. The Zurugelu dimension of the experiment refers to the goal of developing a program for volunteer effort and community involvement. The Kassena-Nankana people have a highly developed system of traditional government that includes mechanisms for leadership, delegation of tasks, committee participation, and collective action. We have clarified the basic elements of this system, constituted a health program, and launched pilot activities in two micro-pilot villages. Although it is too early to determine if the scheme will have an impact on health or family planning behavior, the approach is well received in the communities served and volunteer effort is being sustained.

Three overall conclusions emerge from this experience:

First, the fact that social constraints to reproductive change exist does not mean that family planning will fail; rather, strategic consideration of constraints has been useful information for designing what will work. Results nonetheless suggest that these barriers can be overcome by extending technical and organizational support to village leaders for developing health action committees; by designing information and outreach activities for men; by offering family planning services to women in ways that respect their concerns about privacy and confidentiality; and by promoting health services that are targeted on the major sources of morbidity among women and children. Although preliminary evidence from the pilot suggests that effects may be modest in the early years of this initiative, it is clear some demand for family planning exists, and mobilizing this demand with supply-side approaches is feasible. Not all family planning strategies are suitable for this setting, however. In a high mortality

³³ After reviewing terminology in village focus groups, we concluded that Community Health Nurses (CHN) should be renamed "Community Health Officers" (CHO) so that the promotion of the program could draw a distinction between the new outreach program and CHN activities in the past.

Figure 3 Cells in the experimental design with new elements^a

<p><i>Bureaucratic</i> dimension:</p> <p>MOH services are offered through...</p>	<p>The <i>Zurugelu</i> dimension:</p> <p>Village traditional organizations will be...</p> <p>... Involved through liaison only (Passive)</p> <p>... Providing services and supervising operations (Active)</p>	
<p>...Fixed service points only</p>	<p>Clinic only (Usual MOH services)</p> <p>New element: Upgraded clinical training</p> <p>IV</p>	<p>Clinic operations plus village management of health committees, networks, and volunteers</p> <p>New elements: <i>Yezura Nakwa</i>, <i>Yezura Zenna</i> & training system for YZ; supervisory role for CHO</p> <p>I</p>
<p>...CHN outreach and community-based clinics</p>	<p>Doorstep CHN services</p> <p>New elements: MIS, supervisory system</p> <p>II</p>	<p>Clinic operations plus village management of health committees, networks, and volunteers + Doorstep CHN services</p> <p>New element: Coordination scheme for CHO outreach and <i>Zurugelu</i> system</p> <p>III</p>

^a Cell V, not shown in Figure 3, is a comparison area with no interventions, located in a contiguous district.

environment, it is appropriate to address the demand for family planning by meeting the need for health care more generally.

Second, having reached the conclusion that supply-side services can work if a health service approach is embraced does not mean that all approaches to community health care will automatically succeed. For example, simply reassigning clinical workers to village locations would most certainly fail; a support system for community health services is required that involves actions on the part of community leaders and the MOH bureaucracy that promote worker credibility and prestige. The elements of that support system are not in place, the rigors of village work and living will be so costly to workers, monetarily, socially, and psychologically, that sustained effort in village work will be undermined. The elements of that support system include community endorsement by chiefs and elders, technical support from the MOH, and political backing. In a demand constrained setting, extraordinary attention must be directed to developing the appropriate system of supply.

Finally, community involvement in outreach services is feasible in a traditional social setting if the full vitality of community institutions can be tapped. In the *Zurugelu System*, it has been possible to develop volunteerism within existing social institutions. If the *Zurugelu System* works, success will arise not because the scheme is innovative or new, but because the organization of the scheme is familiar and old.

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