The Impact of a Community-Based Health Programme on Health-Seeking Behaviour, Knowledge, and Health Outcomes in Rural Ghana

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In attempting to address the fundamental challenges in both access and quality of care, the Nkwanta District has pioneered the implementation of a national programme to replicate the Navrongo Community Health and Family Planning Project (CHFP). As the first district in Ghana to replicate the CHFP, Nkwanta has been a leader in establishing a formal programme of scaling-up and utilization known as the Community-based Health Planning and Services (CHPS) initiative. The Nkwanta District currently has nine CHPS implementation zones in operation. To date, CHPS coverage accounts for over 37% of the district population. Results of this replication effort are already impressive, confirming the validity of the operational model developed in Navrongo and establishing the feasibility and sustainability of replication of the model with existing district resources. CHPS has thus become the primary mechanism for addressing issues of access to care and extending health care services to the periphery.

The Nkwanta Health Development Center (NHDC) was established in November, 2001 in an effort to accelerate the CHPS implementation process throughout Ghana by providing technical and operational support. It represents a CHPS demonstration centre where other district teams are trained in health development and research utilization. In this sense, scaling-up of CHPS is a significant step towards decentralization in program planning and management.

In September, 2002, Nkwanta district served as a demonstration ground for the development and testing of a monitoring and evaluation instrument for advanced CHPS districts. The multi-level CHPS impact assessment tool included a cluster questionnaire, a household questionnaire, and an individual questionnaire. The survey aimed to evaluate covariance of exposure to CHPS and change in health-seeking behavior, knowledge, and health outcomes. For the purposes of the district-level evaluation, 60 clusters were randomly selected by probability proportionate to size, with enumeration areas (E.A.s) acting as the unit of analysis or 'cluster.' Prior to cluster selection, the list of E.A.s was stratified by subdistrict to ensure geographical distribution of enumeration areas and to minimize standard error. Interviews were administered to 900 heads of household, 1064 women, and 180 community leaders, health officials, and school personnel.

Survey data were analyzed using the following four groups of communities:

1) ***NOT YET CHPS***: Areas far from a fixed health facility (≥8km away) but not currently part of the CHPS programme. This group serves as a "control" group for the CHPS groups because it consists of similarly remote, medically underserved communities.
2) ***LIMITED CHPS***: Areas that received CHPS services for 1-1.5 years but discontinued services due to lack of adequate community mobilization.

3) ***CHPS***: Areas far from a fixed health facility (≥8km away) and currently receiving CHPS services.

4) ***NEAR HEALTH SERVICES***: Areas near a clinic/health centre/hospital (<8km away) and not receiving CHPS services.

Prior to CHPS implementation, family planning usage in Nkwanta District was estimated to be less than 4% (DHS, 1998). Results from this survey indicate that current prevalence of family planning usage in the district is 8.6%. When broken down by CHPS exposure, the findings illustrate that within CHPS zones, family planning usage is 14%. While still low, family planning usage in *CHPS* areas was three times higher than in *Not Yet CHPS* areas. Similarly, individuals in *CHPS* zones were 2.2 times more likely to know of at least one method of family planning than *Not Yet CHPS* women, controlling for education level, religion, marital status, ethnicity, age, and a number of wealth indicators. ($p<.01$). Of those women who reported knowing any method of family planning, oral contraceptives and injections were the most common primary methods cited.

Findings from the 2002 Nkwanta Survey also indicate that women in *CHPS* areas were over five times more likely to have received antenatal care and four times more likely to have received postnatal care than residents in *Not Yet CHPS* areas, controlling for relevant factors such as religion, wealth, age, ethnicity, and marital status. ($p<.01$ for both indicators). Women exposed to CHPS were also 2-3 times more likely to have received antenatal and postnatal care compared to women living near medical services ($p<.05$). The practical implications of this difference are perhaps more significant than the numbers suggest. Because women living in *CHPS* zones have limited access to emergency obstetric care, screening for high-risk cases in these communities is arguably more critical than for women who have better access to medical services. Thus, the greater proportion of women in *CHPS* areas obtaining antenatal and postnatal care compared with those living in proximity to health facilities likely understates the true impact of this initiative on neonatal and maternal outcomes.

The survey results demonstrate that children living in areas exposed to the CHPS programme are 1.6 times more likely to be immunized compared to children in *Not Yet CHPS* areas ($p<.01$). In a rural, impoverished setting, the presence of a CHO is also associated with higher levels of child-health record keeping. The percentage of children with health cards is comparable in *CHPS* areas and *Near Services* areas, and both were significantly greater than the percentages of children with immunization records in *Limited CHPS* and *Not Yet CHPS* areas. Regression analysis showed that children in *CHPS* areas are over 2 times more likely to have a health card, controlling for age of mother, child's age, mother's education, birth order, sex, and household wealth indicators.($p<.01$). To be considered 'fully vaccinated', a child must receive BCG, measles, the complete polio series, and the complete DPT/Penta series by the age of 12 months. Survey results illustrate that children in *CHPS* zones are significantly more likely to be fully vaccinated relative to all other areas, controlling for age of mother, child's age, mother's education, birth order, sex, and household wealth indicators. Additionally, the percentage of children fully vaccinated by age 12 months in CHPS zones is greater than the DHS 1998 estimate for children in Ghana as a whole. Additionally, when compared to children in *Not Yet CHPS* areas, children who have a CHO

residing within their community are more likely to complete the polio and DPT/Penta series once they have received the first vaccination ($p<.05$).

In addition to assessing beliefs and practices around family planning, safe motherhood, and childhood immunization, the survey included a series of questions on HIV/AIDS prevention. Principal component analysis was used to aggregate answers to a series of 15 questions assessing HIV awareness and knowledge. Regression analysis using the principal component for HIV knowledge as the dependent variable showed that while indicators of economic status, educational attainment, ethnicity, and religion explain HIV knowledge, exposure to CHPS does not. Additionally , when asked about ways to reduce the risk of contracting HIV, only 40% of all female respondents cited condoms, suggesting that this population is at very high risk for STI and HIV/AIDS transmission. While those residing in *CHPS* zones were slightly more likely than others to mention condoms ($p<.068$), the fact that less than half of those individuals residing in *CHPS* zones did so signals the potential spread of the HIV/AIDS pandemic and calls for immediate action.

In light of this critical gap in knowledge, there is an urgent need for practical research on both how to mobilize traditional social institutions for HIV/AIDS prevention and how to assess the impact of such strategies on STI incidence. The CHPS initiative has demonstrated that the ancient and vibrant institutions of chieftaincy, lineage, social networks, women's lending groups, and market associations constitute a system of social organization that provide a powerful basis for fostering and sustaining behavioral change. While this research suggests that the CHPS initiative has likely had a positive impact on family planning, safe motherhood, and childhood immunization, the programme does not yet include an explicit HIV/AIDS prevention component. Demonstrating effective means of HIV prevention will not only contribute to scientific knowledge; it will advance national health policy and galvanize the immediate and multifaceted response that is required if Ghana is to avoid the rapid rise in infection that has plagued so many of its neighbors in recent years. In particular, CHPS strategies for community entry and volunteerism provide a framework for merging HIV/AIDS prevention activities with traditional institutions, thereby spurring ideational change, awareness, and action to prevent the spread of disease.