

THE POTENTIAL FOR INTEGRATING COMMUNITY-BASED NUTRITION AND POSTPARTUM FAMILY PLANNING:

Review of Evidence and Experience in Low-Income Settings

Helle M. Alvesson and Menno Mulder-Sibanda

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Health, Nutrition, and Population (HNP) Discussion Paper

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Health, Nutrition, and Population (HNP) Discussion Paper

The Potential for Integrating Community-Based Nutrition and Postpartum Family Planning: *Review of Evidence and Experience in Low-Income Settings*

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Abstract: The objective of this review was to study where community-based family planning and nutrition programs have been integrated, how this has been accomplished, and what the results have been. Although family planning is a nontraditional intervention in community-based nutrition programs, it can have profound effects on maternal and child health and nutrition. When family planning does not occur, short intervals between pregnancies deplete mothers' reserves of nutrients needed for pregnancy and later for breastfeeding. As a result, short birth intervals are associated with higher maternal and neonatal mortality and malnutrition rates of infants. Family planning, which promotes contraceptive use and the lactational amenorrhea method, can thus improve nutrition outcomes in both mothers and babies.

We identified a few studies on integrated services in the published literature; thus the main part of the review is built on operational research studies and unpublished smaller-scale intervention studies. However, the controlled studies that were identified indicate positive correlation between breastfeeding levels and increased contraception use. Additionally, although the design of the intervention studies did not make it possible to assess the degree to which integration had an impact, the studies did highlight factors that were key to a successful integration process. These are community engagement; multiple and frequent contact points between mothers, community volunteers, and health workers; involvement of husbands; moving implementation decisions closer to the users of the program; and assuring transparency, clarity, and simplicity in the transmission of development objectives to communities.

Keywords: Community-based nutrition, family planning, integrated services, child spacing, exclusive breastfeeding.

Disclaimer: The findings, interpretations, and conclusions expressed in the paper are entirely those of the authors, and do not represent the views of the World Bank, its Executive Directors, or the countries they represent.

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ACRONYMS AND DEFINITIONS

ANC	Antenatal care
BASICS	USAID Basics II Project (Basic Support for Institutionalizing Child Survival)
BCC	Behavior Change Communication
CBD	Community-based distributor
CBDA	Community-based distribution Agent
CBN	Community-based nutrition
CHW	Community health worker
CPR	Contraceptive prevalence rate
CSLH	Consultorio San Luis de Huechuraba
EBF	Exclusive breastfeeding
ENA	Essential Nutrition Action
ESP	Essential Services Package
EPI	Expanded Program of Immunizations
FP	Family Planning
FP-CBN	Family planning and community-based nutrition
FP-NUT	Family planning and nutrition
HC	Health center
HEP	Health Extension Program
HEW	Health extension worker
HIV	Human Immunodeficiency Virus
HSA	Health surveillance assistant
IMR	Infant mortality rate
IUD	Intrauterine device
LAM	Lactational Amenorrhea Method
MCH	Maternal and Child Health
MCH-FP	Maternal Child Health-Family Planning
MDG	Millennium Development Goals
MDM	Médecins du Monde
MOH	Ministry of Health
MMR	Maternal mortality rate
MNCH	Maternal, neonatal, and child health
NPP	National Population Policy
NNP	National Nutrition Policy
<i>Posyandu</i>	Health and Nutrition Integrated Service Center
PPFP	Postpartum Family Planning
PHC	Primary Health Care
SDM	Standard Days Method
SRH	Sexual and reproductive health
STD	Sexually transmitted disease
TFR	Total fertility rate
UNFPA	United Nations Population Fund

USAID	United States Agency for International Development
VCHW	Voluntary community health worker
WB	World Bank
WHO	World Health Organization

PART I — COMMUNITY-BASED NUTRITION AND FAMILY PLANNING:

BACKGROUND

Globally, undernutrition is attributable to more than one-third of under-five deaths (UN Inter-agency Group for Child Mortality Estimation 2012); it is also the underlying cause of 35 percent of disease in this age group (Black et al. 2008). Undernutrition encompasses stunting (low height for age), wasting (low weight for age), and micronutrient deficiencies in, for instance, vitamin A, zinc, and iron. In addition, it is an important determinant of maternal health; stunting and anemia in mothers account for 20 percent of maternal mortality. Improving maternal and child nutrition status, especially during pregnancy and throughout the first 24 months of the child's life, is an essential part of intensified efforts to reach Millennium Development Goals 1, 4, and 5. Although there have been improvements, these have not been at a pace that will allow the three goals to be reached by 2015 (UN 2012).¹

The burden of undernutrition in the short and long runs is recognized as having detrimental effects on the individual child and woman and also on economic growth at the country level (World Bank 2006). For the afflicted, it can lead to life-long impairment and to increased morbidity and mortality among infants, young children, and mothers (Black et al. 2008). It can also lead to cognitive impairment, which affects learning capabilities and schooling and by extension, productivity and lifetime earnings (Behrman, Alderman, and Hoddinott 2004; Grantham-McGregor, Fernald, and Sethuraman 1999; Horton and Ross 2003). More recent research has suggested that undernutrition in infants and in particular among low birthweight babies makes them more susceptible to non-communicable diseases (NCDs) such as diabetes later in life (Yajnik 2009).

Evidence-based methods to reduce the burden of undernutrition are well developed (Allen and Gillespie 2001; WHO 2008). Community-based nutrition (CBN) programs in low-income settings are more cost-effective than health facility-based programs because the former allows for more frequent contact with and provides more attention to women and children than health facility workers have time for (Fiedler, Villalobos, and De Mattos 2008). Furthermore, CBN programs generally reach a broader segment of the target population, such as in promotion of vitamin A supplementation and in early initiation of breastfeeding, than programs delivered at health facilities (Barros et al. 2012). Behavior change communication and individual or group counseling to promote breastfeeding and improve complementary feeding are some interventions that have had documented effect

1. The MDG 1 goal to eradicate extreme poverty and hunger with the target to halve the proportion of people suffering from hunger before 2015 is progressing slowly as indicated in the high levels of undernourishment. MDG 4 on reduced child mortality and MDG 5 on improved maternal health are also far from being reached even though progress has been made.

in multiple countries (Bhutta et al. 2008). In addition to breastfeeding and improved feeding practices, CBN programs also generally emphasize maternal care during pregnancy including ante- and postnatal care, as well as management of sick children (Mason et al. 2006). Illness reduces the dietary intake of the child and can create a vicious circle of reduced appetite, which renders the child even more vulnerable to new illness (World Bank 2006). Linkages between communities and primary health care (PHC) are therefore important to prevent maternal and child malnutrition.

The World Bank is contributing greatly to the development and scale-up of CBN programs to reduce malnutrition in low-resource settings (Ibid). Within the framework of improving efficiency of CBN programs and accelerating the results of reducing malnutrition, new program elements, such as cash transfers to vulnerable mothers with children under five, have been elaborated and successfully piloted (Cellule de Lutte Contre la Malnutrition — Institut Fondamental d’Afrique Noire Cheikh Anta Diop de Dakar 2012).

Family planning (FP) is a nontraditional intervention in CBN that demonstrably has profound effects on nutrition (USAID 2012d). Family planning and malnutrition are thus interdependent. Delayed first pregnancy and child spacing (of at least two years) can indirectly reduce malnutrition and are core targets in sexual and reproductive health (SRH) programs (World Bank 2006; 2010b). Exclusive breastfeeding leads to reduced fertility; at the same time as high parity and short birth intervals are associated with higher malnutrition of children. An analysis of Demographic and Health Surveys data from 52 countries revealed that child spacing is a very important factor for improved nutrition status of children and of some maternal morbidities (Rutstein 2008). The risk of stunting and underweight increased by 25 percent when birth intervals were between 12 and 17 months, compared to intervals of 36 to 47 months. A short interval between pregnancies depletes the mother’s reserves of nutrients necessary for pregnancy and the following breastfeeding period. Additionally, women in their first year after childbirth are one of the largest groups of women with an unmet need for contraception (Vernon 2009).

One link between nutrition and FP for women after childbirth is the promotion of exclusive breastfeeding (EBF) and the Lactational Amenorrhea Method (LAM) (USAID 2010). The promotion of EBF during the first six months of an infant’s life is a core message in CBN programs and can delay fertility if the specific conditions of LAM are met.² Concerted efforts in EBF and LAM, after six months transitioning of the mother to other forms of contraception, and also at six months transitioning the infant to complementary food, illustrate the overlapping interests of the programs. Integration of CBN and postpartum family planning is therefore a likely place to investigate new opportunities to make these programs more efficient.

2. The three criteria for LAM are (i) exclusive breastfeeding on demand day and night; (ii) no return of menses after the 56th day postpartum; and (iii) infant is less than six months old.

Against this background, the objective of this review is to study if and how FP and nutrition programs have been integrated and to examine the results. The more specific research questions are the following:

- (i) Has integration of community-based nutrition and postpartum family planning been conducted? If yes, where, and has it had an impact on either FP or nutrition?
- (ii) Are there synergies in integrating FP and nutrition?
- (iii) Are there identified barriers or facilitators to effective implementation?
- (iv) Are there best practices and lessons learned?

The focus of this review is on the integration of CBN and family planning for women after childbirth. Only to a limited extent do we include evidence related to adolescent pregnancies and childbearing or to unmarried women's need of family planning and nutrition interventions. The knowledge gaps for these equally important groups are more severe in that the evidence on how to reach married and unmarried adolescent girls with community nutrition interventions is scarce at this point. The exploration of adolescent SRH and nutrition is important, however, and this review is a first step in assessing the knowledge gap related to community nutrition and postpartum women.

The rationale for this review is achieving improved maternal and child survival. We are not reviewing ways to reach development goals for demographic targets of "population control"; to the best of our knowledge the reviewed interventions promote family planning from a rights- and choice-based SRH perspective (UNFPA 1994).

METHODS AND FRAMEWORK

A recent systematic review by USAID on the integration between maternal, neonatal, and child health (MNCH) and nutrition and family planning serves as the platform for the presentation of the current evidence base (USAID 2012d). CBN is one field that has been systematically reviewed for integration interventions. We are adhering to the selection criteria of this major USAID review, which includes published studies (1990–2012) with pre- and post-evaluation data in an intervention and control group.

Secondly, a number of operational experiences have been identified, which have not been published in peer-reviewed academic journals. We have used the "snowball method" to identify smaller-scale intervention studies or operational research studies. Interagency experts in family planning and community nutrition have been important for the identification of known and less known interventions. Thirdly, a few countries were selected for further exploration on the basis of expressed willingness to pursue integration. The countries are Ethiopia, Niger, Malawi, and Rwanda. The findings from the unpublished sources are referred to as "experience-based findings" in this review.

The term "integration" is often loosely referred to as a set of strategies that aim to bring together inputs, organization, and delivery of particular functions to increase efficiency

and user access (Dudley and Garner 2011). This review is based on a conceptual framework on integration that has been constructed to include real life problems at the country level (Atun et al. 2010a). In specific health systems there are often no clear distinctions between “integrated” and “vertical” programs. Rather there are variations of degrees of “stand-alone” or “horizontal” programs. To reflect this, this review uses the definition of integration as the extent, pattern, and rate of adoption and subsequent assimilation of health interventions into the health system (Atun et al. 2009; Atun et al. 2010a). The framework captures six elements of a health system that create a lens through which the degree of integration can be viewed: (i) governance, (ii) financing, (iii) planning, (iv) service delivery, (v) monitoring and evaluation, and (vi) demand creation. Programs are rarely fully integrated in all six elements.

In this review we have included interventions that deliver family planning and CBN strategies through the existing PHC system and also interventions that offer family planning and nutrition through alternative implementation structures. Interventions that implement only a limited number of CBN elements (but more health-related elements) are included as are interventions with a low degree of integration. The review focuses on interventions targeting postpartum women — defined as women who have been through a pregnancy and delivered a child. When interventions included mobilization of adolescents, we refer also to these activities. We have chosen this inclusive approach to learn from as many interventions as possible, given the relative paucity of interventions, particularly those with data on impact. After briefly describing medical and operational synergies between nutrition and family planning, we will in the next chapters present the evidence base for the integration of FP and nutrition, followed by country-specific experiences on integration. These local practices will form the basis of a discussion on future potential of integrating family planning and nutrition.

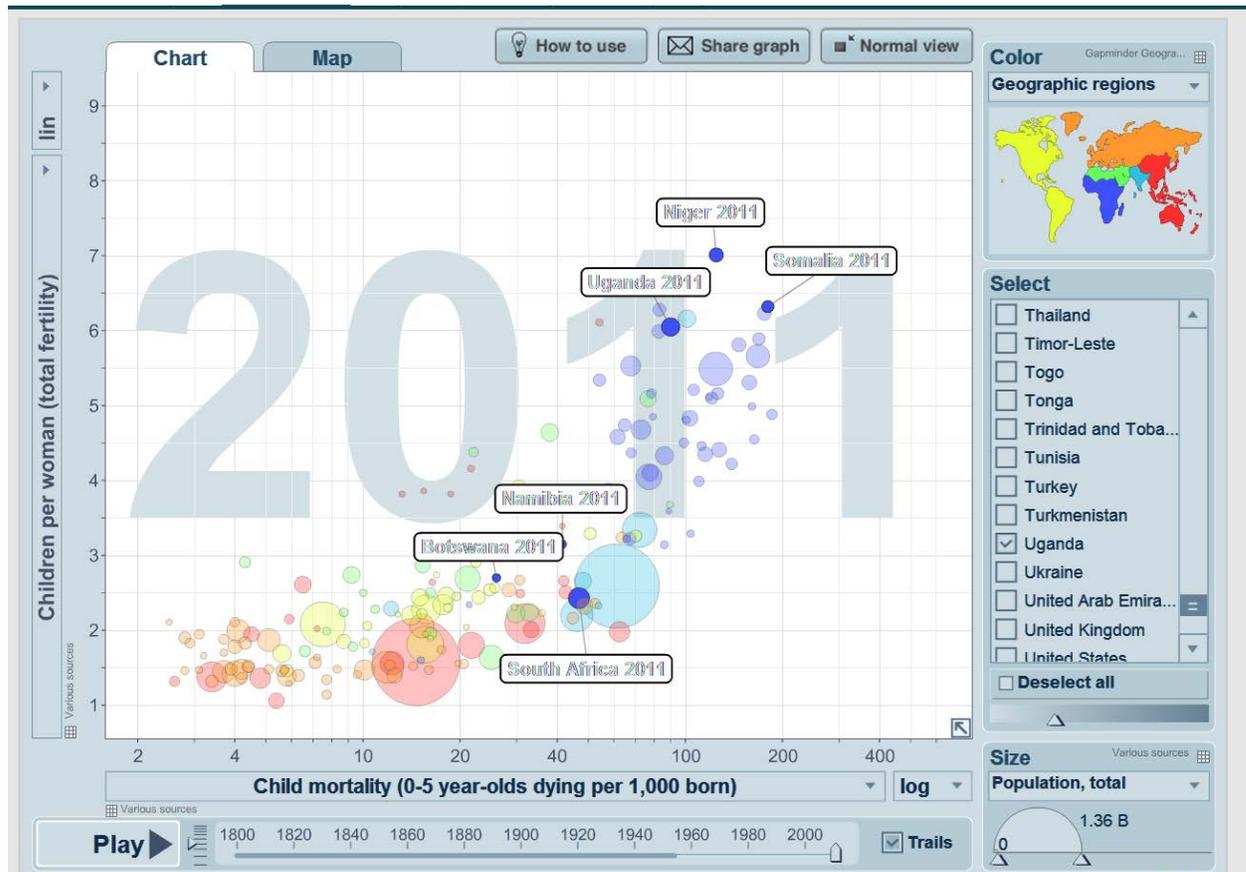
MEDICAL SYNERGIES BETWEEN CHILD NUTRITION, CHILD SURVIVAL, AND FAMILY PLANNING

High fertility is closely linked with high infant mortality rates (World Bank 2010b). The relationship between mortality and fertility is intriguing to follow over time. It indicates the importance of securing child survival at the national level (figure 1.1). Most countries in the world have first succeeded in controlling child mortality; families have thereafter successively opted for smaller family size. The availability of family planning has facilitated such achievement. After achieving under-five mortality rates of about 100 per 1,000 born, it is possible to observe declining fertility rates at the national level.³ This

3. Each bubble is a country, population is reflected in the size of the bubble, and the color marks the continent. African countries are in dark blue; East Asia in red; South Asia in turquoise; Americas in yellow. If you have internet access, copy this link www.bit.ly/101r7JF into an e-mail or blog and send the e-mail. When opening the e-mail/blog, you will be taken to the webpage of Gapminder.com, which offers free access to world statistics. If you press “play,” the historical trend of the relationship between child mortality and fertility will be illustrated. Alternatively, watch a TED talk on why population growth is best controlled through poverty reduction and child survival efforts: <http://www.ted.com/talks/view/lang/en/id/912>.

directionality does not hold true for countries like France, Bulgaria, and Bangladesh, where fertility and mortality declined simultaneously or fertility declined before mortality.

Figure 1.1 Relation between Total Fertility Level and Under-Five Child Mortality in the World



Source: Free material from Gapminder.org 2012.

Today, countries with high under-five mortality rates are also the countries with the highest total fertility rates. The African continent shows large internal differences. South Africa, Botswana, and Namibia have relatively low child mortality rates and are fast moving in the direction of smaller families (World Bank 2010b). In contrast, Niger, Uganda, and Somalia face high child mortality rates and display high fertility rates.

The abovementioned community-based FP overlaps of birth spacing, delayed first pregnancy, and promotion of LAM with the nutritional objectives of securing maternal nutrient reserves, physical readiness for birth, and EBF illustrate the close medical linkages between family planning and nutrition. Intervals of birth to new pregnancy of less than 24 months significantly increases not only the risk of malnutrition but also the risk of mortality (for the new sibling). Children conceived less than 24 months apart has a one to two times higher risk of dying within the first year of life compared to children

conceived 36 to 47 months apart (Rutstein 2008). The highest relative risk of death occurs when intervals are shorter than 12 months. Early childbearing most frequently results from child marriage (UNICEF 2012). Girls who are 15 to 19 years old account for 11 percent of all births and for 14 percent of all maternal deaths. These overlaps indicate opportunities for integrating family planning and nutrition with the goal of breaking the vicious and intergenerational cycle of malnutrition and ill-health.

OPERATIONAL AND PROGRAMMATIC SYNERGIES BETWEEN NUTRITION AND FAMILY PLANNING

Operational interfaces of family planning and nutrition are also a prerequisite to successful integration of programs. For example, the medical linkage between unsafe water, the risk of diarrhea, and reduced growth in children is well recognized, but that recognition has not produced successful linkages between implementation of improved water infrastructure and nutrition improvements. A medical justification is rarely enough to achieve integration of health programs. Below we identify potential operational opportunities for an integrated model.

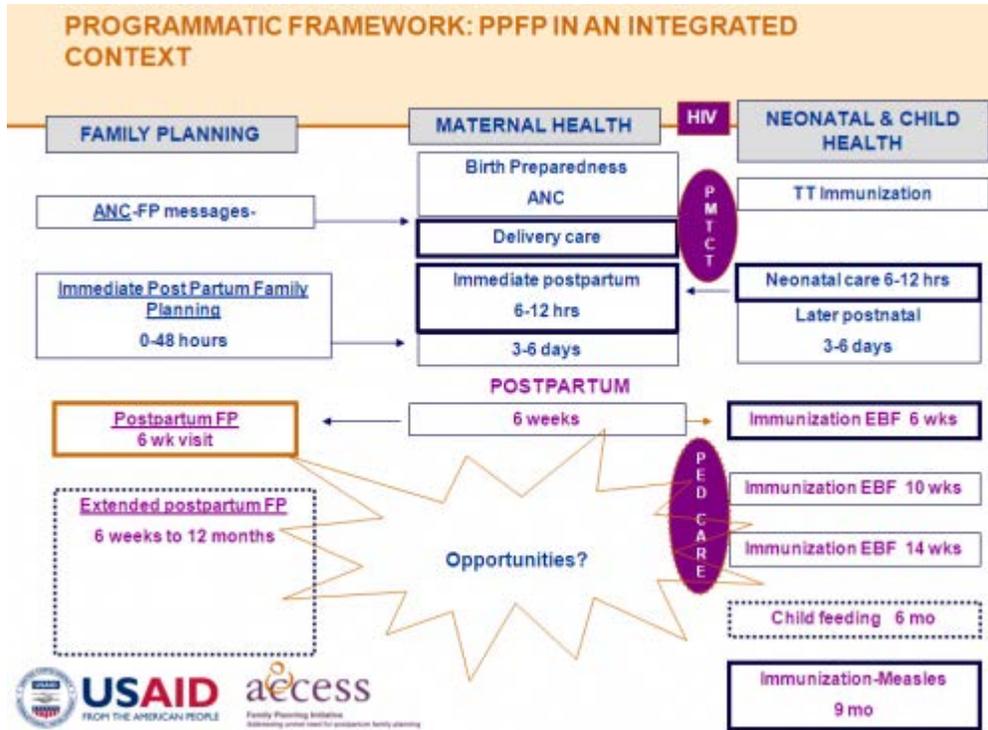
The target groups of community nutrition and family planning programs overlap to a large extent. Postpartum women are a core target group in both health challenges even though it is also important to reach married and unmarried adolescent girls. Targeting postpartum women to increase the survival of mothers and children is acknowledged as important in most global and local settings. In contrast, targeting sexually active married and unmarried teenagers with family planning programs probably implies the involvement of schools, traditional community leaders, and others who are not currently mobilized in the majority of CBN programs. Targeting teenage marriage and pregnancy is a challenge as a large discrepancy exists between global policy and local preferences. Thus, an important principle in creating demand for health programs is to involve communities in the design of program implementation (Cleland et al. 2006).

A new programmatic framework for integrating postpartum FP with nutrition and maternal and child health has been developed by USAID and collaborating partners (figure 1.2) (USAID 2012b). From pregnancy, through childbirth, and during the first two years of the life of the child, there are numerous contact points within the community or at the health facility to promote both family planning and nutrition (USAID 2012c).

There are opportunities during antenatal care (ANC), immediate maternal postpartum/newborn care, and during the first year of life of the infants, which involve integration of messages on exclusive breastfeeding, child spacing, and disease prevention. The actual messages to postpartum women vary in different mortality and fertility settings and tailoring messages in culturally and socially appropriate and relevant ways is an area that is increasingly acknowledged (Pablos-Mendez and Shademani 2006). The content of many of the messages overlap, however.

Health sector support is important for both challenges. The involvement of primary health care workers in the promotion of child feeding practices as well as in the distribution of and counseling on family planning methods in communities and in facilities is important and has synergistic potential. Family planning programs have traditionally used health facilities as the main conduit for service delivery even though commercial outlets and community-based approaches are increasingly used (Cleland et al. 2006). There is increased evidence of the effectiveness of task sharing, for instance, allowing less medically specialized providers, such as community health workers, to distribute oral contraceptives, injectables, and condoms (USAID 2012a). These initiatives have been implemented mainly in rural areas, where access to family planning services is limited and women's mobility is constrained; they illustrate the potential of working more directly with communities. In the immediate postpartum period, home visits are the most common method of delivery; three models are known: home visits by health care providers, home visits by community health workers, or home visits by community health workers with referral or health facility support (Koblinsky 2005). In community-based FP, multipurpose health workers have been found to be effective and are more easily accepted in communities — but community involvement is essential (Cleland et al. 2006; Philips, Greene, and Jackson 1999). In countries, or among segments of a population, where commercial outlets of contraceptives are a popular mode of service delivery, the choices of products available through both private and public practitioners can improve utilization and quality (Cleland et al. 2006).

Figure 1.2. USAID Programmatic Framework of Postpartum Family Planning Integration



Source: <http://archive.k4health.org/toolkits/miycn-fp/how-integrate>.

OPERATIONAL DIFFERENCES BETWEEN FAMILY PLANNING AND NUTRITION

While there are overlaps, there are also major differences between family planning and CBN programs, which could be a barrier for integration. CBN programs attempt to prevent but also to treat malnutrition through referral or community-based management. The capacity to demonstrate visible results within a few years of implementation is a major driver of success in community nutrition (National Planning Commission, Federal Ministry of Health, National Primary Health Care Development Agency; World Bank 2010). Family planning, on the other hand, is purely preventive, and results are not easily visible. Family planning is often hampered by supply problems, which are less common in community-based nutrition. Finally, family planning can be managed as a “vertical” intervention, which does not work for nutrition with its relative “horizontal” profile (Atun et al. 2010a). Yet, in the community, family planning may be in greater demand than nutrition interventions and messages on exclusive breastfeeding, for example.

Generally, family planning is more controversial than nutrition messages, and integrating family planning into nutrition programs may pose a risk for CBN. The field of nutrition is

closely connected with the sociocultural context of childbearing — the value ascribed to having children and to guaranteeing their survival. Nutrition also suggests food aid and redistribution of food, time, and resources within the family to women and children. Striving for safe motherhood is the goal of many SRH initiatives, however, this goal is linked with lingering political and social controversies of child spacing versus limiting fertility and population control as a national or global goal. The control of women's reproduction has been viewed as sensitive in many societies for more than a hundred years (Esacove and Andringa 2002), and framing family planning and family size in terms of women's rights and women's survival, is not accepted in all environments (Berer 2012). The recent pledge of the Gates Foundation to reach millions of women with voluntary family planning by 2020 (Gates Foundation 2012) and the reaction of the Catholic Church on the use of family planning methods immediately intensified the debate (CNN 2012).

SRH programs promote a lower total fertility rate (TFR) as a way to decrease maternal mortality rates (MMRs) (World Bank 2010b), while nutrition programs target only maternal malnutrition as a way to reduce maternal mortality. Another controversial area in many countries is delaying the age of first pregnancy, thus indirectly delaying the age of marriage by highlighting the medical risks of teenage pregnancies. Family planning thus must often be framed as a politically, socially, or culturally sensitive topic, a burden that the nutrition field to a large extent does not carry. Integrating FP into the CBN package could potentially mitigate controversy surrounding FP by linking FP (in particular longer birth spacing) to efforts against malnutrition.

PART II — IMPACT STUDIES ON FAMILY PLANNING AND NUTRITION INTEGRATION

In 1992, the UN Sub-Committee on Nutrition gathered a large body of scientific evidence that showed the interdependent link between demography and nutrition. There is currently a renewed interest among several development partners to redefine and reconstruct family planning programs. For example, a working group has been established along these lines, and several ongoing forums for the exchange of information on integration continue to take place (USAID-funded, Maternal and Child Health Integrated Program–led “Maternal Infant and Young Child Nutrition and Family Planning” [MIYCN-FP] Integration). As part of this trend, a systematic literature review was recently published on the evidence of integrating family planning with other health programs, including nutrition interventions (USAID 2012d). The systematic review investigated integration of FP interventions with antenatal services, postabortion care, childbirth services, postnatal care, infant/child services, and maternal and infant nutrition. A study gap was identified in the integration of FP services and maternal and infant nutrition services; only eight intervention studies were identified (for details on the review method, see annex 2). Of the eight studies, five dealt with education and counseling on FP, and three looked at contraceptive services/commodity provision. Studies from the longitudinal research station “Matlab” in Bangladesh accounted for four of the studies; an additional four countries were represented with evidence-based interventions. Even though the studies are few and heterogeneous in design and scope, and thus difficult to compare, and study designs relatively weak for the purpose of capturing intervention impact, they provide a platform for the status of FP and Nutrition (FP-NUT) integration.

BANGLADESH: MATERNAL MORTALITY REDUCTIONS IN LONGITUDINAL INTEGRATION OF HEALTH AND FAMILY PLANNING PROGRAMS

Indicator	Bangladesh
Maternal mortality ratio ⁴	240.0
Mortality rate under five	46.0
Malnutrition prevalence (underweight)	41.3
Fertility rate, total	2.2

4. The source of the country data is the MDG database for all country statistics in chapter 2 and 3 <http://datbank.worldbank.org/Data/Views/VariableSelection/SelectVariables.aspx?source=Millennium%20Development%20Goals>. The maternal mortality ration is a modeled estimate per 100,000 live births from 2010 for all countries. The mortality rate under five is per 1,000 from 2011. The malnutrition prevalence, weight for age (percentage of children under five) varies from between 2007 and 2011. The total fertility rate, births per woman, is from 2011. For presentation of trends see annex 3.

“Matlab” in Bangladesh is a demographic surveillance research station with more than twenty-five years of collection of morbidity and mortality data with several publications related to family planning and health outcomes (Chaudhuri 2008; Chowdhury et al. 2009; Fauveau et al. 1990; Hale and DaVanzo 2006; Maine et al. 1996; Rahman, DaVanzo, and Razzaque 2010; Ronsmans et al. 1997; Simmons, Balk, and Faiz 1991). Due to its longitudinal design, the station is able to produce maternal mortality rates in project and control areas. Matlab runs the Maternal Child Health-Family Planning (MCH-FP) project, which provides family planning and maternal and child health services for half the area, while the other half receives a standard government service. The project implements a limited number of nutrition activities as part of the community health program; we have chosen to include this project as it presents a rare opportunity to present longitudinal data related to community-based projects.

The actual interventions have changed since 1977 when the site was opened. The female community health workers (CHWs) provided family planning counseling and supplies of injectables, pills, and condoms free of charge; they shared information about antenatal care and danger signs indicating problems during pregnancy as well as other preventive messages on child health and nutrition. Between 1978 and 2001, female CHWs made home visits fortnightly or monthly. During the last ten years additional facility-based midwife services have been added, and home-based delivery care by CHW has been withdrawn.

Some of the most significant results demonstrate mortality reductions: Institutional deliveries increased from a few births in the 1990s to more than 30 percent in 2005 and 66 percent in 2008 in the targeted area. In the comparison area only 18 percent of women delivered at a facility in 2008. While the fertility rate fell earlier in the intervention area than the comparison area, it has dropped in both areas to about 2.5 children per woman since 2006. The child mortality rates have followed a similar pattern in both areas. The child mortality rate declined between the early 1980s and 2008 from 100 to 21 deaths per 1,000 live births compared to a drop from 120 to 36 in the comparison area.

The decline in maternal mortality was steeper in the intervention areas for all four measures of maternal mortality (ration, rate, risk, and lifetime). The maternal mortality rate (MMR) in the intervention area of 35 deaths per 100,000 women of reproductive age was 37 percent lower as compared to 56 deaths per 100,000 in the comparison area in 2005.

Matlab researchers suggested that lower MMR was caused by three factors. First, the women in the intervention area had fewer pregnancies; second, the pregnancies were less likely to end in induced abortion, miscarriage, or stillbirth. These two scenarios could be a result of higher contraceptive usage and better access to health care from community and facility-based providers. The third reason suggested by the authors for the lower rate of mortality among women whose pregnancies ended as induced abortions, miscarriage, or stillbirth may arise from the greater likelihood among women in the intervention area to use antenatal care and maternity services both at home and at facilities. Maternal

education and quality of services at referral hospitals for emergency obstetric care are however other potential causes of the decline in MMR (Chowdhury et al. 2009).

BANGLADESH: INTEGRATING BASIC HEALTH CARE AND A MICROCREDIT SCHEME

One study was identified for rural Bangladesh that took a broad perspective and integrated family planning and child immunizations with a microcredit program for poor women (Amin et al. 2001). Nutrition supplements were added in a second phase. The pilot was implemented by a nongovernmental organization (NGO). During its first phase (1992–97), the project provided door-to-door educational campaigns and delivery of nonclinical family planning methods and child immunizations by NGO staff. In addition, microcredit recipients in the communities organized group meetings to reinforce Essential Services Package (ESP) messages. From 1998 onwards the project was broadened to include the ESP that consisted of antenatal care and nutrition supplements in addition to child immunization and family planning services offered in the original pilot. The door-to-door visits were replaced with clinic-based ESP, but the network of microcredit recipients working as health volunteers continued. The study design included an intervention and control area in which household surveys were conducted in 1992, 1997, and after one year of implementation of the ESP in 1998.

The outcome of the project was positive with significant increase in contraceptive use (from 28 percent in 1992 to 53 percent in 1997), and declines in fertility (from 4.61 in 1992 to 3.66 in 1997) and child mortality (from 88 per 1,000 live births in 1992 to 62 per 1,000 in 1995–96) in intervention areas. By 1998, more women in the intervention area reported a higher level of utilization of biomedical health services (private, public, NGO) than in the control area. The NGO-driven ESP clinic was also significantly used by women in remote intervention areas. Recipients of NGO-microcredits had significantly higher contraceptive use than women who had not received microcredits (53 percent higher than non-recipients) when the data was controlled for age, living children, education, and landholding.

The factors that produced these encouraging results are, first, the availability of a well-managed, high quality health clinic with simple modern medical facilities (1.5 doctor positions and a few nurses) in addition to fifty outreach microcredit volunteers with training in midwifery, preventive health care, and other elementary health care services. Second, the link between outreach workers and poor women in intervention communities established through the microcredit initiative was very important. It was suggested that participation in the microproject positively influenced poor women's social outlook toward the well-being of their children and toward their own lives. The microcredit volunteers served as positive role models. They were initially microcredit beneficiaries themselves and were trusted as peers who had gained in health and economic status through the pilot. The positive reinforcing effects between preventive messages and poverty reduction efforts are considered relevant for other areas of Bangladesh by the researchers (Amin et al. 2001). These results indicate the potential in integrated programs

of mobilizing and supporting poor women with better access to health, nutrition, and social services.

CHILE: IMPROVED BREASTFEEDING AND CHILD GROWTH IN AN INTEGRATED PROGRAM FOR POOR MOTHERS AND CHILDREN

Indicator	Chile
Maternal mortality ratio	25.00
Mortality rate under five	8.70
Malnutrition prevalence (underweight)	0.50
Fertility rate, total	1.85

In the early 1990s Chile experienced substantial improvements in health outcomes; the focus at this time was to identify ways of improving the quality of health services. This effort included the use of NGOs to deliver services in the community as a supplement to health provision at public facilities. In an extremely poor area in Santiago Chile, an intervention consisting of education and counseling, contraceptive services, and promotion and support of breastfeeding was implemented by the NGO Consultorio San Luis de Huechuraba (CSLH) (Alvarado et al. 1999). The objective was to test the impact of this integrated approach in the community as compared to the standard public facility-based programs. The first two hundred pregnant women identified between January 1991 and March 1992 were invited to participate in the intervention by a community health worker from the CSLH. A control group was identified at the public clinic in the area with similar socioeconomic characteristics.

The women were offered integrated mother and child visits at the CSLH health center every ten days during the first month and monthly visits thereafter. Supplemental visits were offered if a mother had concerns related to the growth and development of the infant. During a regular visit, both mother and child were physically examined, and the breastfeeding pattern, contraceptive use, and growth of the child were recorded. Counseling during pregnancy and postpartum by female community health workers from the same community was an important occasion for group and individual discussion. CHWs were trained by NGO staff on pregnancy care, family planning, prevention of STD/HIV, breastfeeding, infant care, and maternal and infant nutrition. They also received training in educational, interpersonal, and counseling skills. These activities were adjusted to the age of the infant; for example, one month after delivery, women were counseled on contraceptive alternatives for lactating women. Women could join group sessions every week, but most attended sessions once a month, where topics of breastfeeding, maternal nutrition, contraception, and prevention of illness were addressed. Contraceptives, including copper IUDs, progestin-only pills, and condoms, were provided free of charge in the intervention area. LAM was promoted. In the control area at the public clinic, IUDs, samples of condoms and progestin-only pills were provided free of charge when available. Women were advised to purchase condoms and pills from a pharmacy when an IUD was not wanted.

The proportion of women exclusively breastfeeding was significantly higher in the intervention group — 74 percent of the six-month-old infants in the intervention group were exclusively breastfed against only 10 percent in the control group. The birth weights were similar in both groups; but the intervention group had significantly higher mean weight and length at six months ($p=0.03$ and $p<0.00001$, respectively) and at 12 months ($p=0.0001$ and $p<0.00001$, respectively) than the children in the control group. The risk of diarrhea during the first year of life was eleven times higher in the control group compared to the intervention group; and the proportion of infants admitted to a hospital was three times higher in the control group. In terms of results related to family planning, more than 90 percent of women in both areas opted for a contraceptive method. While the control group opted mainly for IUDs (75 percent) and progestin pills (20 percent), the variety of contraceptives used was larger in the intervention group. A low percentage of women used LAM, a few used condoms or were sterilized, and the remaining chose IUDs (37 percent) or progestin pills (46 percent). The methods were effective; only three women became pregnant during the first year postpartum.

It is suggested that some differences in results are directly related to the provision of integrated services, to services brought closer to women’s homes, and to frequency of messages. Another factor was that all contraceptives were free of charge in the intervention area at the CSLH facility, which might also have produced the broader variety in methods used. In the control area, only the IUD was free of charge. The study also included a qualitative measure of client satisfaction and found that women in the intervention area were more likely to express satisfaction with the interaction with CHW or other staff at the health facility. A positive trend was also noticed among women in the intervention group in their satisfaction with fewer illness episodes of infants as a potential result of longer breastfeeding and birth spacing.

NEPAL: HEALTH EDUCATION AT BIRTH IMPROVES FAMILY PLANNING UPTAKE SLIGHTLY

Indicator	Nepal
Maternal mortality ratio	170.00
Mortality rate under five	48.00
Malnutrition prevalence (underweight)	29.10
Fertility rate, total	2.66

Postnatal health education on infant care and postnatal family planning practices for mothers were tested in Nepal (Bolam et al. 1998). The study was designed as a randomized controlled trial, which made it possible to compare the effects of different combinations of postnatal health education sessions. A total of 540 women from two communities who had delivered at a nearby hospital were randomly allocated to four comparison groups: health education immediately after birth and three months later in their homes, at birth only, at three months only, in their homes, or none. The health education sessions were one-to-one, lasted approximately 20 minutes, and were expected to be more interactive than prescriptive. The topics discussed were infant feeding, treatment of diarrhea, recognition of and response to symptoms suggesting acute

respiratory infection in young infants, the importance of immunization, and the importance of contraception. Female health educators, midwives, and community health workers were trained to give health education. They were fluent in two local languages. Six months after delivery health educators made the final visit to the homes of the women to establish the outcome of the intervention.

The results at six months postpartum indicated very limited impact. It was found that mothers who had received health education at birth were slightly more likely to use contraception at six months after birth compared to mothers who had not received health education at birth (odds ratio 1.62). There were no other significant differences between the four groups with regard to infant feeding, infant care, or immunization. Selection of health educators with experience of delivery, who were expected to be trusted by the mothers, were expected to promote trustworthiness of the intervention. Yet, the results were limited. There was also some discussion of whether single-topic sessions would be more effective than the integrated strategy, but this will require further investigation. The study was deliberately limited to only two contacts with mothers to contain costs of the intervention; thus, health messages were most likely not saturated, which could also account for the negative results. Transfer of health information to individual women is generally seen as an important part of primary health care, and this study's lack of impact indicates the limitation of only providing health messages. Interactions within peer groups reveal the importance of household- and community-based interventions for more effective health promotion.

SUMMARY OF THE EVIDENCE ON INTEGRATION

Few studies have analyzed the integration of CBN and family planning services. The few that were identified through USAID's systematic review (USAID 2012d) did show that integration was feasible. The studies reported positive results. The intervention targeting very poor women in Chile is particularly interesting in its achievements on increased breastfeeding levels and increased contraception usage, and also in the satisfaction of the women who experienced fewer illness episodes for their infants (Alvarado et al. 1999). No study reported negative results of integration, which likely is a result of publication bias. The study design of the interventions did not make it possible to compare integrated services to the same services, delivered separately. As a result, we have no data on potential synergy effects of integration. All studies targeted women; there was no information on the role or influence of husbands, in-laws, or grandmothers on behaviors related to nutrition and family planning. As the studies provided only limited information on the process of integration and on the specific messages disseminated, replication of the interventions is difficult.

PART III — OPERATIONAL RESEARCH ON FAMILY PLANNING AND NUTRITION INTEGRATION

One of the main reasons for integrated delivery of services is to make the services easier for women to use and to access. The rationale of CBN programs is to bring preventive services closer to women to provide repeated and ongoing messages on child feeding practices to saturation. Impact studies, however, rarely include lay views of the services provided (Dudley and Garner 2011). We will therefore present country experiences with an emphasis on implementation arrangements, mobilization strategies, and responses from the users. Outcomes of the small-scale interventions and operational research studies are also presented. The information available on each intervention varies, and we have opted for an inclusive approach even though the presentation thus becomes more diversified than standardized. This chapter will mainly address three of the six elements in the framework on integration (demand creation, service delivery, and planning) and to a more limited extent, financing and governance (Atun et al. 2010b). Despite these methodological limitations, the examples provide information on promoting and inhibiting factors during the implementation of integrated programs.

NIGER

Indicator	Niger
Maternal mortality ratio	590.00
Mortality rate under five	125.00
Malnutrition prevalence (underweight)	39.90
Fertility rate, total	7.01

Niger has one of the highest rates in the world for both child and maternal mortality and for fertility, while at the same time its malnutrition levels are alarming. The contraceptive prevalence rate for modern methods is 6 percent nationally and 41 percent in the region of the capital, Niamey. UNFPA, with financial support from the EU, has taken the lead in piloting four innovative approaches in integrating community-based family planning and nutrition in different regions of Niger (2007–11). We present two of these pilots below (Souley 2011):⁵

- (i) The international NGO Médecins du Monde implemented the project “Recherche-Action-Plaidoyer” in three districts;

5. The other two pilots were the following: (i) the NGO AQUADEV implemented mobile health promotion caravans to increase awareness of nutrition-related practices and utilization of family planning. Communication on behavior change consisted of FP for two days in each community; and (ii) CARE Niger implemented a project in collaboration with local NGOs to promote community-based management of malnourished children and to promote the utilization of family planning in seventy-five communities in northern Niger.

- (ii) Helen Keller International implemented FP-CBN activities in sixty communities. “Husbands’ Schools” were piloted in three communities.

The intervention by Médecins du Monde was subcontracted to one NGO per district except for one district where no NGO was available, and local leaders and community volunteers were directly mobilized. The first phase included anthropological and epidemiological data collection to understand local practices and preferences related to family planning and nutrition and to identify determinants of nutritional problems. This formative research was applied in the second phase to the design of the intervention. Nutrition was at the outset known as a politically sensitive issue due to its association with food distribution but was also recognized as an issue of concern in the communities. Family planning was perceived as a complex issue due to a strong preference for large families and difficulties in communicating the difference between child spacing and child limitation (Médecins du Monde 2010c). The project worked around these barriers by selecting eighteen pilot villages based on an expressed willingness to participate.

The main objective of the pilot was to sensitize families (with children 6 to 36 months old, and pregnant and breastfeeding women), administrative and traditional authorities (mayors, chiefs of clans, village chiefs, and religious leaders) through behavioral change communication strategies on child feeding practices and family planning. In addition, contraceptives were distributed free of charge after a consultation at a health center. Community health workers were also offered training. Culturally tailored messages on birth spacing, exclusive breastfeeding, maternal health during pregnancy, and child feeding practices were developed based on the initial formative research. Community-based rehabilitation of moderately malnourished children 6 to 36 months was initiated. Local produce was used in the rehabilitation process — something that was not normally done in Niger (Souley 2011).

The initial research phase took longer than anticipated due to logistics, resulting in a shorter time for implementation, which made evaluation of the results less rigorous. However, the results after one year of implementation were positive (Médecins du Monde 2010a). The recommendation to use more local produce for the prevention of malnutrition and the recuperation of malnourished children was broadly accepted and feasible to implement; the great majority of recuperated children gained weight, and the number of children exclusively breastfed increased substantially. The number of women who started using modern contraceptives, especially injectables, consistently increased during the project period 2008–10 in project districts as well as in districts that were not mobilized. In the three project districts the utilization rates increased from 13.0 to 13.4 percent; from 7.2 to 14.7 percent; and from 5.0 to 16.5 percent (Médecins du Monde 2010a).

As for the mobilization process, it was found that the majority of communities and administrative leaders were in favor of the approach and of collaboration on these issues. The community-based approach of training local volunteers, who resided in the area and were socially accepted, was a strong promoting factor. The mobilization of religious

leaders was also very important in the immediate start-up of the project but also over the longer term. The majority of leaders responded positively to objectives of the project; however, opposition was encountered in a few communities, which blocked implementation. One comment from a religious leader is especially noteworthy — when asked to describe his experience with the project, he replied: [They ...] "came and made good promises because they said they would help children and women." [Afterwards ...] "They asked us to approve what they wanted, that is to say that Islam does not forbid a woman to take pills to not get pregnant quickly" (Médecins du Monde 2010b). Thus, one lesson learned was to introduce objectives of the project in more detail and with more transparency than was initially decided. The visibility of activities in the project became an important promoting factor, which reduced the initial uncertainty or skepticism of some local leaders. In some geographical areas religious leaders allowed project awareness discussions during religious services; this adaptation to local context also promoted project results. Finally, women appreciated the improved access to services on a broader spectrum of health concerns offered by local volunteers.

Husbands' Schools in Northern Niger

The intervention run by Helen Keller International was implemented in sixty villages in a northern food insecure region. The project contained many similar dimensions as the project described above, but also involved "Husbands' Schools." The mobilization of husbands was piloted in three villages with the particular purpose of strengthening the use of FP and securing the continued education of teenage girls. Husbands were initially selected as role models based on the concept of positive deviance (Bradley et al. 2009). In each participating village, husbands were initially selected if they met the following criteria: had a wife/wives using reproductive health services, were older than twenty-five years of age, and accepted that their wife/wives would attend health education group meetings. The task of husbands was to mobilize fellow men in the community to participate in the Husbands' Schools. The schools provided a forum for discussion of maternal and child health issues among men and were facilitated by the husbands initially selected with assistance from community workers and staff from Helen Keller. Awareness sessions were occasionally held during religious events and led by the husbands.

One result in the pilot villages was an increase in the number of initiatives by men to improve sanitation and hygiene in the villages. The local health centers in the intervention areas also noticed higher numbers of assisted deliveries by skilled personnel, prenatal and postnatal consultations, and use of family planning after only one year of implementation. UNFPA is planning to expand the pilot to more communities in other areas in the country and to develop more comprehensive modules on nutrition.

The main lesson from the interventions in these contexts is that the initial willingness of communities to participate is essential to success. Second, building on the positive practices already in existence in the communities was an important platform for collaboration with the communities. This bore results not only in terms of willingness to use family planning methods but also in response to other recommendations such as

practicing exclusive breastfeeding. Impact of community mobilization was found in a broader range of outcomes than improved knowledge of FP-NUT practices: there was also increased uptake of curative and preventive services (vaccination rates); improved malnutrition rates; and better acceptance of public debate on birth spacing and limitation.

INDONESIA

Indicator	Indonesia
Maternal mortality ratio	220.00
Mortality rate under five	31.80
Malnutrition prevalence (underweight)	19.60
Fertility rate, total	2.09

The *Posyandu* program (Health and Nutrition Integrated Service Center) in Indonesia is one of the early interventions in community-based integration of services established in 1984 by the government of Indonesia (Anwar et al. 2010). It is run by health volunteers and provides a package of mostly preventive services including mother and child health, family planning, nutrition, immunization, and diarrhea disease control. Once a month the center is open to the local community, and mothers with children under five are invited to come to the center for weighing, education, and disease control. The participation rates decrease significantly after the child has reached two years of age. In terms of specific nutrition-related services, the health volunteers in each center offer growth monitoring, supplemental feeding, vitamin and mineral supplementation, and nutrition education (Ibid.). The program is run by the communities, where one center serves approximately fifty children under five years of age. The center is supported by a medical doctor or midwife from the closest subdistrict clinic and by health-post volunteers in the village. The program offers family planning services and promotes the benefits of a small family. The integrated service post is the most popular form of community-based health care in Indonesia, and the number of *Posyandu* has increased gradually since the 1980s (Searo.who.int 2011).

The nutritional status of children who had a high participation rate (four to six visits during last six months) was compared to that of children with low participation rate (one to three visits) (Anwar et al. 2010). The activities at the centers had a positive impact on the high participation rate children as measured in terms of weight for age and weight for height. The more visits, the better nutritional status. The prevalence of stunting was greater in the low participation group (46.4 percent) than in the high participation group (39.5 percent). The prevalence of wasted children in the low participation group was higher (14.9 percent) than in the high participation group (8.4 percent). A similar result was found on severe wasting.

The ways in which messages on child spacing and child feeding practices were disseminated is unfortunately not available; the same is also true for advice on contraceptive use and child spacing practices for the two groups. Interestingly, the applied

framework of the centers was both the promotion of small families, as recommended by the Indonesian government, and child survival, which we have not encountered in the other interventions in this review

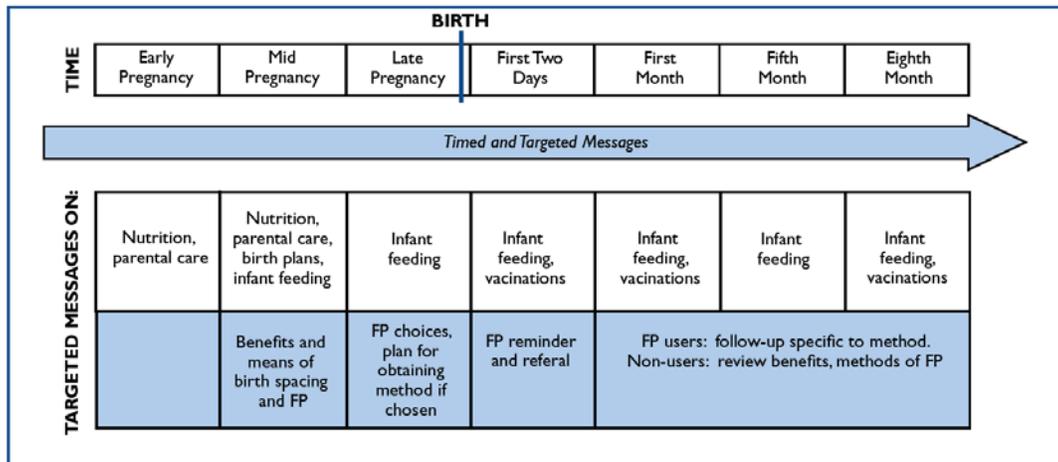
INDIA

Indicator	India
Maternal mortality ratio	200.00
Mortality rate under five	61.30
Malnutrition prevalence (underweight)	43.50
Fertility rate, total	2.59

The Integrated Child Development Services (ICDS) is a more than thirty-year-old national program initiated by the government of India (Tandon 1989). The aim of the program was to improve child health and survival through the promotion of behavior change communication (BCC) on health, nutrition, and family planning by volunteer “angandwadi” community workers. Below we present experiences from three NGOs in three different parts of India that benefited from these community health workers in strengthening child survival. The timed and targeted approach to BCC on integration of LAM and of the Standard Days Method (SDM) in existing family planning programs, maternal and child health programs, antenatal visits, labor and delivery contacts, postpartum visits, and well-baby check-ups was the focus (Georgetown University, the Institute for Reproductive 2008).

Simplified medical messages on LAM were developed to stress that the criteria for effectiveness were exclusive breastfeeding, implying that no foods or liquids other than breast milk was given to the baby, that the woman had no bleeding starting two months postpartum, and that the infant was under six months. These clarifications were important to correct the current perceptions of LAM as an ineffective postpartum contraceptive. Community health workers communicated these messages through home visits and individual counseling or during behavioral change communication sessions.

Figure 1.3. Schedule of Timed and Targeted Messages



Source: http://www.flexfund.org/resources/technical_updates/wv_india.pdf.

The interventions, involving 753 communities, were tested during 2006 and 2007 (Ibid.). World Vision implemented the project in 156 of these communities in three districts in Uttar Pradesh, India (World Vision United States and India). The project was assessed through a baseline survey in 2003 and a final evaluation in 2007. The outcomes with an important household-level behavioral component increased substantially over this period. The contraceptive prevalence rate among postpartum women increased in all three districts. In one district the rate more than doubled (from 12 to 27 percent), and in another it nearly quadrupled (from 9.0 to 33.9 percent).



Pre-and post-test of CHWs showed that one day of training on LAM was largely sufficient when supervision was offered during implementation of the project. CHWs had several opportunities to bring up child spacing during prenatal consultations, as well as during postpartum and well-child visits in the home. In practice the CHWs preferred to offer LAM counseling during postpartum visits when the mother seemed interested in discussing birth spacing. Breastfeeding was very common in the area, with many women breastfeeding the child until the age of two. The preference for breastfeeding and some knowledge about breastfeeding's potential to prevent a new pregnancy, most likely contributed to high acceptability of the messages. It had been anticipated that counseling would take 15 to 20 minutes, but in practice less time was required. In addition, users were reportedly satisfied with the utilization of LAM since it was perceived as simple and low cost, had no side effects, and required no medicine or surgery. Formal research on familiarity with the concept of LAM, exclusive breastfeeding, and other traditional birth control measures was recommended as the basis of the design of new interventions.

MALAWI

Indicator	Malawi
Maternal mortality ratio	460.00
Mortality rate under five	82.60
Malnutrition prevalence (underweight)	13.80
Fertility rate, total	5.99

Child spacing has been promoted in Malawi through MCH programs and NGO-driven projects during recent decades (USAID 2012e). One of the priorities in the Malawi National Strategic Plan for Accelerating Child Survival and Development was to revitalize the district system to sustain decreasing infant and child mortality. Later, in the National Nutrition Policy and Strategic Plan launched in 2010, the importance of reducing malnutrition was clarified (Republic of Malawi 2007). The Essential Nutrition Actions⁶ (ENAs) in nutrition programming are well reflected in the policy; they have been tested in different projects, including the USAID/BASICS-funded project “Improving Child Health in Malawi Basics III” (Anderson, Chintu, and Kapulula 2009). This project was implemented (2008–11) to strengthen delivery and maximize coverage of essential child health and nutrition interventions in eight districts. The promotion of FP was an integrated dimension of the project. The different project components were not piloted in all eight target districts, which resulted in a small sample size and constrained the evaluation.

BASICS completed an assessment of the ENA program to determine the program’s impact on nutritional status, use of health services, and male involvement. The program was implemented in thirty-one villages in two districts. A Community Mother and Father Support Group was initially established by community volunteer facilitators (trained by BASICS). Each volunteer covered eighteen to twenty households. These facilitators implemented ENA in the community through meetings for health talks and cooking demonstrations, monthly growth monitoring and promotion sessions, and home visits. The objectives were to promote optimal maternal, neonatal, and child health and nutrition practices and behavior change, including improved nutrition and the provision of family planning. In addition, Ministry of Health, health surveillance assistants (HSAs — the lowest level of paid health workers) supervised community volunteer facilitators, conducted monthly outreach clinics for children under five years with growth monitoring and promotion, and provided community case management for illness and a link for referrals to facility-based services. During outreach clinics, the HSAs, in collaboration with community volunteers, conducted health education sessions, which provided

6. The ENAs refer to a set of nutrition strategies that are expected to make a significant change in reducing undernutrition in the population; these are optimal breastfeeding, complementary feeding to breastfeeding, feeding of the sick child, women’s nutrition, control of vitamin A deficiency, control of anemia, and control of iodine deficiency disorders.

information to pregnant women with infants (0 to 6 months) and children (6 to 24 months). A similar organization was tested at health centers.

The BASICS evaluation found no significant impact on the nutritional status of children in the intervention districts. It was suggested that the program focused too heavily on growth monitoring and did not sufficiently develop growth counseling. Home visits were found to be culturally acceptable for discussions on MCH issues, including the promotion of family planning methods. A significant impact was apparent in the involvement of men in maternal and child health issues. The differences in increased male involvement to reduce the wife’s workload during pregnancy and lactation in program versus control villages were statistically significant. The effect was pronounced during pregnancy. The program also successfully engaged village chiefs to support the project.

The evaluation identified a number of gender issues of having both male and female community volunteers, which were not analyzed in detail in the evaluation. Men’s ability to provide effective counseling on breastfeeding, HIV/AIDS, and family planning was raised in the evaluation. It was identified as a topic for further study

LAO PEOPLE’S DEMOCRATIC REPUBLIC (LAO PDR)

Indicator	Lao PDR
Maternal mortality ratio	470.00
Mortality rate under five	41.90
Malnutrition prevalence (underweight)	31.60
Fertility rate, total	2.66

Since 2005, the Lao Ministry of Health (MOH) has, in collaboration with UNFPA, tested community-based mechanisms to increase physical accessibility to, and cultural acceptability for, FP services in remote geographic areas where MOH infrastructure is either very weak or nonexistent (UNFPA Lao PDR 2012). The included villages are at least one to two days’ walk from the nearest district hospital, while others are located as much as three to five days’ walk from a district hospital. Within each community, community-based distributors (CBDs) are selected and trained. The tasks of the CBDs are to visit all households in their catchment area on a monthly basis. They offer FP counseling and distribution, discuss side effects or other concerns, and follow up with the district hospital on a monthly basis concerning new supplies and follow-up training of CBDs. The FP services are free of charge, unlike other public health services that are paid primarily out-of-pocket (World Bank 2010a). The original “intervention area” covered approximately sixty communities in remote areas of five districts but was scaled up during the next few years and presently operates in about four hundred extremely remote or difficult-to-reach villages. Also of interest for this review was that during the course of the intervention, some CBDs spontaneously provided health education and support to women on other mother and child health topics.

The study includes a rigorous evaluation plan, which includes baseline and subsequently annual Demographic Family Planning and Vital Events Surveys in all communities. This surveillance makes it possible to follow key health indicators such as mortality rates and utilization of preventive health services. In late 2010, results on mortality and utilization rates were made available and will be briefly presented (UNFPA Lao PDR 2012). The number of women using a modern contraceptive method represents a contraceptive prevalence rate (CPR) of 43.1 percent. This figure is higher than for Lao PDR as a whole (40 percent). Given the existence of the National Family Planning/Birth Spacing Program over the last twenty years, the higher percentage is considered an achievement. In addition it was found that as many as 98 percent of contraceptives were provided through CBDs. The infant mortality rate (IMR) has also declined in the intervention areas. The figure is 70.4 per 1,000 live births, which is only slightly higher than Lao PDR's as a whole (63.0 per 1,000 live births) but lower than for other rural villages without roads (78.0 per 1,000 live births) (Ibid.).

Some lessons learned relate to the community-based approach. It is considered critical to the project's success that CBDs — unlike village health volunteers who wait for community members to come to them — go to the villagers. The prime criteria for selecting CBDs — they must be resident in their catchment area, fluent in the local language, commit full time to accomplish the tasks, and have a strong commitment to the work — have been very important in the success of the interventions. Additionally, CBDs are salaried workers, and, of about seventy CBDs, only one is a woman; this is due to the intensive travel required, including nights away from the home village. The CBD intervention was originally intended as a FP-outreach strategy but is evolving into an integrated service partly as a result of demand in the communities. CBDs will in the near future provide additional maternal, neonatal, and child health (MNCH) services to mothers and children in their respective areas, including distribution of micronutrients (iron to pregnant women and vitamin A to children). Other potential topics that might be included are (i) preparation of ORS solution using local household ingredients for the treatment of acute diarrhea, especially for young children, (ii) providing health education to mothers on the importance and benefits of immunizations for infants and young children, and encouraging utilization of Expanded Program of Immunizations (EPI) services at outreach clinics; and (iii) promoting exclusive breastfeeding, and dispensing advice on nutritious foods during pregnancy and the postpartum period, and for infants older than six months.

Some of the current concerns of the program are first, that CBD workers receive monthly salaries/stipends and traveling allowances that are not provided to other community health workers by the MOH; and second, that the services are free of charge, and financed by UNFPA and the World Bank, while the national Drug Revolving Fund policy requires villagers to pay nominal fees. These issues are important contextual factors in understanding and potentially transferring the intervention to other countries. The intervention is currently continuing as a jointly financed program between UNFPA, MOH

of Lao PDR, and the World Bank and will further develop the integration of reproductive health, family planning, and nutrition in a growing number of villages.

RWANDA

Indicator	Rwanda
Maternal mortality ratio	340.00
Mortality rate under five	54.10
Malnutrition prevalence (underweight)	11.70
Fertility rate, total	5.34

The following is a description of a community-based survey to inform future interventions on nutrition and family planning. The Rwandan Ministry of Health has taken important steps toward a health financing reform that would eliminate out-of-pocket payments for health care, including for family planning services. An increase in the prevalence of modern contraceptives from 10 percent in 2005 to 70 percent in 2012 is one of the objectives (Family Health International 2010). In 2010 the prevalence of married women using a modern method had increased to 45 percent (Measure DHS 2010) through concerted efforts of different health interventions. Family planning is encouraged and offered by health workers during postnatal consultations, and public health information on the national media, especially radio, has increased. The initiative focuses on government investment in keeping newborns and children alive as part of the effort to promote smaller families.

As part of making health care more accessible in rural as well as urban areas, a large pool of community health workers (CHWs) has been mobilized. It has been suggested that they provide an ideal platform for the implementation of community-based nutrition as well as other programs. However the rates of malnutrition and specifically of stunting in Rwanda have failed to improve; this indicates that CHWs need support in strengthening screening and preventing malnutrition.

A community-based survey (Family Health International 2010) was conducted to clarify the reasons for nonuse of family planning; no evidence was found that lack of knowledge of contraceptive methods or access to services were barriers to use. Rather, sociocultural issues were highlighted as affecting preferences and utilization rates. It should be noted that contraceptive prevalence was high in the study sample at 50 percent, which does not make the study representative of the country as a whole but only for the five sampled districts. It was found that nearly 90 percent of survey participants believed that having children sustained a woman's position in the family and within the community and that contraceptives should be used only after the birth of the first child. There was reportedly a greater preference toward smaller families than in the past due mainly to economic concerns about the cost of raising many children. Religious reasons for nonuse of contraceptives were not dominant. The survey revealed the importance of involving men and husbands through CHW initiatives — a finding that will inform future interventions.

Men elaborated in in-depth-interviews that CHWs were the most frequent source of information on family planning issues even though the facility staff were ascribed higher relative importance. The general finding from participating women was that without their husbands’ support it was unlikely they would be able to use contraceptives.

ETHIOPIA

Indicator	Ethiopia
Maternal mortality ratio	350.00
Mortality rate under five	77.00
Malnutrition prevalence (underweight)	29.20
Fertility rate, total	4.05

There is a renewed interest in providing integrated family planning and community-based nutrition (FP-CBN) services in Ethiopia (World Bank 2011). The government of Ethiopia adopted the National Population Policy (NPP) as early as 1993 to improve the well-being of Ethiopia’s people by harmonizing the country’s population growth rate with that of the economy. The NPP informs the targets in family planning and reproductive health strategies. The current target is to reduce the total fertility rate to 4 percent and increase the contraceptive prevalence rate to 44 percent by 2015 (Mekonnen et al. 2004). In 2008, the National Nutrition Program (NNP) was developed to implement the government’s nutrition strategy to rehabilitate malnourished children and to reduce malnutrition. The NNP is especially geared toward improving the nutrition service delivery system at the community level.

The Health Extension Program (HEP) is the flagship of Ethiopia’s primary health care system; 30,000 health extension workers (HEWs) — of whom 98 percent are female — have been trained in basic curative and preventive health care services. They provide services in the communities and are trained to manage a broad range of basic curative and preventive health care services that are offered at the health posts, which in turn are linked to health centers. The HEWs are supported by voluntary community health workers (VCHWs) elected from the community to provide quarterly Community Health Days. The VCHWs also perform monthly Growth Promotion of children under two years of age and monthly Community Conversations to regularly and continuously assess malnutrition and health status in the community. The “model families” approach is used to promote families that fulfill the package of HEP behavior changes (Medhanyie et al. 2012). Each VCHW works with approximately fifty households. Family planning is promoted first by the volunteers and thereafter provided for free to pregnant and lactating women by HEWs (pill, condom, Depo-Provera, and Implanon). IUCDs are offered at health centers where clinically trained staff are available.

Since 80 percent of current FP users receive FP services through public health outlets, there is potential for improving the services through the existing HEP/NNP platform. There are also opportunities for strengthening community nutrition elements. In a recent

study FP-CBN integration at the community and health-post levels was evaluated with a focus on the mechanisms of integration and the satisfaction of users (Sellen et al. 2012). Overall, beneficiaries and local leaders expressed satisfaction with the integrated program; they identified several positive effects of the approach. Child and maternal survival, which has always been presented as the goal of the program, was also recognized as a priority in the communities. In addition to the mobilization of local authorities and religious leaders, the importance of emphasizing existing positive practices was also mentioned.



HEWs and VCHWs observed that the program had resulted in positive intermediate outcomes (Ibid.). Visible changes in the communities in areas such as construction of latrines, use of mosquito nets, and the rising number of participants at organized activities were strong motivators for volunteers to continue their work. Health officials have reported in interviews about an improved uptake of FP services, EPI, and ANC in areas where FP has been integrated

in community-based nutrition programs. The results of a cross-sectional survey of 725 randomly selected women with under-five children in three districts of northern Ethiopia was compared to a national survey from 2005 (Medhanyie et al. 2012). It was found that HEWs contributed to improvements in women's utilization of family planning, antenatal care, and HIV testing. But there was no change between 2005 and 2009 in the proportion of women who had used health facility delivery and iodized salt. Current use of family planning methods was measured at 14.7 percent in 2005 and at 41.8 percent in 2009 (Ibid.). Women in the communities reported fewer malnourished children, improved knowledge and use of FP methods, and in particular more frequent discussions on the benefits of birth spacing (Sellen et al. 2012).

CBN activities have enhanced the uptake of FP in two main ways: (a) the goal of the program was communicated as child survival, emphasizing that healthy and well-nourished children are born with adequate space between their siblings. Child spacing was reportedly compatible with prevailing cultural models of safe motherhood (Ibid.). In contrast, before the FP-NUT integration, the SRH program focused on the national goal of limiting the total number of children in the family; and (b) CBN activities provided a platform for frequent contacts with mothers, fathers, children, and community leaders. These contact points provided opportunities to discuss why malnutrition rates were high and explain the positive outcomes of child spacing, among other issues. The public debate now included alternative ways of securing child survival.

However, the VCHWs reported several challenges in community mobilization: maternal reluctance to allow child anthropometry; continued religious concerns about FP use; husbands' resistance to FP; water shortages; slow pit latrine adoption; and abiding beliefs

on harmful practices, including early marriage of girls. A fear of sterility due to FP methods was a major reason for resistance among husbands. Promoting factors that were identified were related to the core in the community-based approach, namely (i) easy access to services; (ii) user-friendly services provided in local languages in a respectful and timely manner; (iii) responsive services in terms of advice/care/drugs or referral slip; (iv) availability of supplies; and (v) community-based selection of VCHWs and HEWs, which promoted their acceptability. The majority of HEWs are female while VCHWs are mainly male due to the literacy requirement as a selection criterion for VCHWs. There is some evidence that male VCHWs were able to improve husbands' willingness to participate; women's preference for a female VCHW was not investigated in detail.

At the national institutional level, the lack of a national strategy for FP/SRH has made effective coordination of the interventions difficult. The role of HEWs is, for example, not integrated into NNP and community-based activities. Bottlenecks in intervention areas include an increased demand to remove implants, maintain trained human resources within the health system, and secure the supply chain of FP commodities. Finally, the current program does not include an effective way of reaching unmarried youth and nonparous women.

PART IV – OPPORTUNITIES AND RISKS IN INTEGRATING FAMILY PLANNING AND NUTRITION

The first population expert we consulted for this review asked this direct question: Why would community-based nutrition seek integration with the politically and socially more sensitive and complex field of family planning? The argument was that nutrition was seen as becoming gradually repositioned on the development agenda, not only in theory but increasingly in programs around the world: Why risk an upwards trajectory? Results from evidence- and experience-based FP-Nutrition integration indicate that current integration is indeed limited in scope and mixed in result.



Long-term reductions in maternal and child mortality rates in Bangladesh's Matlab intervention areas are impressive and encouraging for others who are considering investments in integrated maternal and child health. The most positive results emerged from this longitudinal investment. The findings from the evidence-based study in Honduras were positive, but these were mainly testing facility-based integration. The remaining published studies reported mixed results or no differences between the intervention and control groups. In summary, results in the published studies indicate that FP-Nutrition integration should be strengthened, even though the scope of the implementation studies has been too limited to call FP-NUT integration evidence-based. The country-specific experiences of small-scale interventions bring a mix of results that mainly highlight the processes of implementation. They provide an entry into the contexts of operation and the specific processes of identifying feasible ways of integration. As such, they give us building blocks of information but not the full picture.

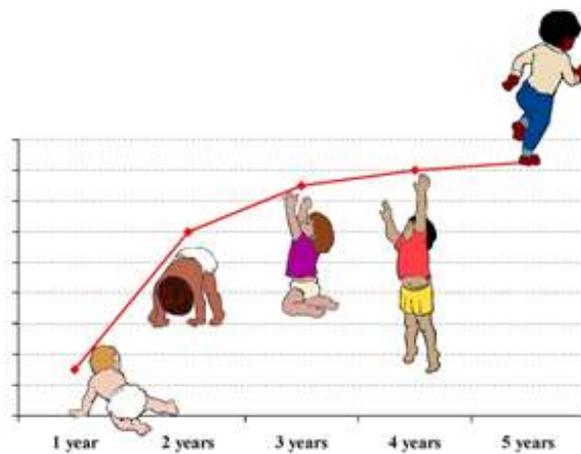
PROMOTING AND INHIBITING FACTORS IN INTEGRATION

Based on the results in identified studies and interventions, we present the factors that were discussed as promoting and inhibiting integration of community-based nutrition and family planning.

Multiple entry and contact points in the community: The core target group in the evidence- and experience-based interventions was postpartum women — which corresponds well with the programmatic choice made by USAID and its partners (see programmatic framework presented in chapter 1) (USAID 2012b). Pregnant and lactating women were targeted in all interventions. The community-based approaches were in

general effective in reaching women in their homes, in the community, and at health facilities; low participation rates were not identified as an essential problem. The Ethiopian experience of activating several contact points (home, community events, health post, health center, local religious events) with women is encouraging. The frequent and varied use of individual growth promotion counseling, community conversations, quarterly child health days, and household visits by community health workers or community volunteers all made repeated discussions on child malnutrition and birth spacing meaningful. Stakeholders were reportedly positive to these types of activities.

Figure 1.4 Growth charts to monitor infant and child growth



Source: WHO 2012.

Alternative strategies to reach teenage girls and unmarried women: Teenage girls have not been successfully mobilized through the same channels as postpartum women. In Niger it was the efforts of an NGO using a mass mobilization strategy with the help of a mobile health promotion caravan that succeeded in mobilizing youth. The public display of messages provided a more anonymous venue for accessing information about health problems and about the availability of health services. This proved an important first step for youth in rural Niger. Findings from Ethiopia and Malawi also demonstrated that teenage girls should be reached in other ways than older, married, postpartum women. Targeting women in more narrow age groups (girls and young women 15-25 years of age) is currently being implemented in Nepal as a way to reach more young women. (World Bank 2012a) Working through traditional structures to reach teenage girls with FP messages has been piloted in Malawi by the NGO Family Planning Association (Boehmova 2012). Traditional community counselors who support young girls and boys during initiation ceremonies between puberty and womanhood or manhood have been offered training to include new messages on SRH in addition to the knowledge that is normally transmitted. Integration of nutrition-related messages could be added according to the NGO, if continued close collaboration with traditional authorities is maintained. The education system is another structure through which youth can be

reached. The introduction of life skills curricula for teenagers (including advice on nutrition and reproductive health) and “hidden” policies on supporting teenage mothers to complete schooling are alternative structures.

Male involvement in FP-Nutrition integration was given higher priority than is typically the case in nutrition projects. The pilots in Niger, Lao PDR, and Ethiopia indicate that husbands became involved through comprehensive community mobilization efforts. Women in the Rwanda study also reiterated the importance of male involvement. Increased support to wives during pregnancy and participation in latrination or other environmental improvements were reported from women when husbands got involved. This output could be important for the future development of integrated programs.

Establishing male peer groups to break the gendered involvement in FP-Nutrition: Research in health care-seeking behavior during illness episodes shows an increasing trend toward gendered medical landscapes (Leach et al. 2008). Men increasingly seek care at private health outlets such as pharmacies or informal stands while women and children tend to first seek at a health post or center. The health center and in particular the ANC is increasingly experienced as a female domain in which men have a limited role. Interviews with husbands in rural Uganda on reasons for limited participation in ANC and counseling at the health center (HC) revealed that men were not involved in the care: they were not allowed in the examination room with their wives and clearly perceived the HC as a place for women’s health (Larsson et al. 2010). Community mobilization has been suggested as a more effective means to involve men during pregnancy as this may be easier than transforming HCs into male-friendly facilities. The findings in Niger and Ethiopia are therefore very encouraging. Male peer groups as in the Husbands’ School and those with designated tasks as part of community mobilization are results worth expanding to break traditional expectations that child health and nutrition is a concern only for women and mothers.

Broaden the social space from counseling to public debate: A comprehensive community mobilization approach to the provision of nutrition and family planning can initiate a public discussion on issues that are considered sensitive in local communities. The experience in Niger indicated that traditional opponents to family planning as a child limiting measure could accept child spacing as a child survival strategy. This result was, however, found only in communities that had declared their willingness to participate. The involvement of local and religious leaders was essential in broadening the social space of maternal and child health from one-to-one female counseling to public promotion in mosques or other community gathering places. Saturation of well-defined and contextualized messages is an increasingly popular method to achieve behavioral changes (World Bank 2012a).

Building on existing positive practices: Positive deviance, as a process of building on the knowledge and practices already existing among the target group, is a promising approach in the communication with women and men. It is the basis of much community-based nutrition and was also perceived as an appropriate approach when integrating

nutrition with FP messages. It is furthermore a very direct way of meeting the goals of community-based participation.

Contextualized selection of volunteers — one size did not fit all: Community involvement and the set up of concrete ways to establish collaboration between communities and implementing agencies was given much thought in the identified studies. Community volunteers were mobilized in the majority of small-scale interventions; the importance of local selection processes in several countries was mentioned. Trade-offs between volunteers' fulfillment of the formal criterion of literacy versus the preferences of the community created some dilemmas for implementers, however.

Making results visible: Visibility of results has an important mobilizing effect in communities, but results were mainly reported in relation to nutrition indicators such as exclusive breastfeeding, reduced episodes of diarrhea, and infant weight gain, for example, in the study in Chile. Visible effects after a few years of implementation are one of the strengths of well-implemented community-based nutrition projects, which are more difficult to achieve with contraceptive utilization rate increases and better child spacing. Promotion of child spacing could therefore be more effective when implemented among a broader range of maternal and child health topics (USAID 2012d).

Moving implementation decisions closer to the users: An enhanced institutional environment provides important support to community-based interventions. In the studies in Chile, Malawi, and Lao PDR, the Ministry of Health and its partners were offering integrated services free of charge, and FP commodity supplies were prioritized in the supply chain. In Lao PDR community distributors received payment. In Ethiopia there were, in contrast, some difficulties associated with the lack of policy alignment between the HEP and the National Nutrition Program, which created uncertainty about the mandate of community health workers. Moving implementation-related decisions close to the users was important in several of the interventions. Local NGO implementers were commended on their ability to establish collaborations between targeted communities and the district health offices. Closeness to beneficiaries improved the quality of feedback provided to the central level. This feedback was especially important in interventions where political willingness had to be continuously built up and maintained throughout the intervention.

Transparency, clarity, and simplicity in transmission of the development objective to communities were essential in several interventions. The medical differences between exclusive breastfeeding and LAM were simplified in health promotion messages to postpartum women in India to make LAM more attractive. This operationalization eased the technical work of community health workers and health staff. There were no reports of LAM being ineffective even though the breastfeeding intervals were relaxed. Lack of information about different objectives and methods in the Médecins du Monde pilot in Niger resulted in a backlash in a few communities. It is often difficult to control the interpretation of a project objective, which is why clarity is vital. In Niger, the projects'

experiences were that the framework of child survival was too vague, and suspicions arose that the NGO was trying to distract attention from its real agenda, which was contraceptive use. In Ethiopia it was important to make direct reference to existing cultural models on child spacing in contrast to child limiting. However, the objective of the National Nutrition Program is also population control and limiting the total fertility rate, which in the short term could be questioned from the perspective of beneficiaries. It is important to provide access to information about the potential implications of a recommended behavior change, that is, reduced total number of children, especially in settings where small families are not the preference. The experience in Niger demonstrated the risks of blurring the objectives of population control with maternal and child survival. A women-centric approach implies that women have access to all the information they need to act on options and choices.

SEQUENCED INTEGRATION

The programs in Ethiopia and Lao PDR were initiated as FP interventions; all others were initiated as nutrition or nutrition/child health programs or simultaneously as integrated programs. The project in Lao PDR started as a community-based contraceptive distribution program and, upon demand from targeted communities, was broadened to include nutrition and other preventive measures. The program in Ethiopia was initially designed to control population growth by promoting small families. The community-based nutrition program facilitated a shift to child survival through the promotion of well-nourished and healthy children who are born with adequate space between siblings.

It has been suggested that FP programs work well when integrated in broader child and reproductive health programs. Community-based postpartum care can be carried out in three different ways: home visits from professional health-care providers, home visits from community workers, and home visits from community workers with referral or health-facility support. A review of the three approaches found that all three could improve exclusive breastfeeding rates, while adoption of family planning methods was only improved through the first and the third approach (Koblinsky 2005). The implications are that it is necessary to encourage the involvement of a broad range of stakeholders and integrate FP with other programs. Integrating FP and nutrition would require an intensified collaboration with the health system to secure access to FP commodities and to skilled health workers.

Apart from this example, we have not found evidence to suggest that one type of integration is more difficult or effective than the other. There is a lack of studies that investigate this question. It is not yet possible to identify specific best practices in integrating community-based family planning and nutrition. There is well-documented medical evidence of the effectiveness of child spacing as a measure of reducing child and maternal undernutrition. But the implementation of integrated programs or projects is still limited, and it is not possible to discern solid lessons learned for use at a global level. The few comprehensive country experiences that we identified are promising, however.

Our main finding is that the way in which a relationship is established between communities and the implementing agency is essential. The identified studies thus confirmed some of the fundamental principles in community-based work, which are not specific to an integrated approach. Presenting the development objective in a clear and truthful way appears to be the most effective principle. Community involvement in the design of projects is essential for program success; it will give communities more opportunity to act on choices that are appropriate to their preferences.

Given the powerful effects of family planning on nutrition (Rutstein 2008) and possible positive effects that nutrition can have on family planning (through better adherence of LAM criteria and by promoting parents' practice of safe and healthy birth spacing), the implementation of integrated programs could be intensified. The review has documented a knowledge gap in the potentials of family planning and nutrition integration. The USAID review (USAID 2012d) was based on the rigor of the study design in which the randomized controlled trial was attributed the strongest evidence. The evidence on effectiveness and efficacy is important to disseminate, but the review missed the opportunity of presenting the rigor of implementation processes. The presentation on smaller and often unpublished studies was not conducted under the constraints of randomized controlled trials and provided more details on the implementation mechanism. Yet, the review has illustrated the lack of information on quality program implementation: How were target groups mobilized? What messages were disseminated? How was the behavior change communication package composed? Who were the messengers, and how were they perceived? To measure the potentials in integration, more information is required about how programs work; and moreover, how the integration of FP and nutrition programs work.

REVIEW LIMITATIONS

We have identified descriptions and analysis of intervention data of very varied quality and focus. In the evidence-based studies, the aim was to obtain impact comparisons between control and intervention groups on the level of impact or at intermediate outcomes. Information on mobilization processes and on beneficiaries' interpretation of project objectives was limited in these studies. In contrast, the experience-based pilots or small-scale interventions emphasized input, output, and, to a limited extent, outcome indicators while offering details on the processes of the implementation. The two types of information sources are treated as complementary for the purpose of this review. The lack of comprehensive evaluations both on process and on impact signifies a gap in knowledge and in practice of FP-Nutrition integration. Publication bias has probably influenced the types of studies included and thus the results presented. Negative results are very difficult to publish in academic journals or even among implementing agencies. We have attempted to reduce this bias through consultation with FP-Nutrition experts in specific countries and in health organizations.

PART V– CONCLUDING REMARKS

The MDG goals 1, 4, and 5 have quantified the enormous challenges remaining in many low-income countries. Innovative and effective strategies are still called for to increase the pace of improving the survival rate of women and children. Within this framework the opportunities of FP-Nutrition integration programs should be further developed. The identified studies have highlighted the building blocks of community engagement, frequent and varied contact points between mothers, volunteers, health workers, and other actors with a stake in maternal and child health.

Integration is rarely occurring in all six dimension of the health system (Atun et al. 2009). Rather, the identified interventions showed heterogeneous levels of integration across countries and interventions. Implementation of well-designed integrated programs can provide new opportunities to measure more dimensions of the effects of integration.

It is important to understand the sociocultural context of securing maternal and child survival and of local preferences for small or big families. Childbearing and child survival are essential parts of life; their social meaning impacts the decisions and practices related to birth spacing and perceived risks of illness and malnutrition. In many societies children improve women's social status, and pregnancy means good health even when conditions are difficult. Striving for safe motherhood has many dimensions that should be accommodated through openness and flexibility when offering counseling and health promotion. Many of the reviewed studies demonstrated the importance of understanding women's preferences and their rationales; they built on demand or created demand through existing positive practices in the communities. This is a promising platform for further FP-Nutrition integration.

REFERENCES

- Allen, L., and S. R. Gillespie. 2001. "What Works? A Review of the Efficacy and Effectiveness of Nutrition Interventions." ACC/SCN Nutrition Policy Paper 19 and ADB Nutrition and Development Series 5. Manila: Asian Development Bank.
- Alvarado, R., A. Zepeda, S. Rivero, N. Rico, S. Lopez, and S. Diaz. 1999. "Integrated Maternal and Infant Health Care in the Postpartum Period in a Poor Neighborhood in Santiago, Chile." *Studies in Family Planning* 30 (2): 133–41.
- Amin, R., M. St. Pierre, A. Ahmed, and R. Haq. 2001. "Integration of an Essential Services Package (ESP) in Child and Reproductive Health and Family Planning with a Micro-Credit Program for Poor Women: Experience from a Pilot Project in Rural Bangladesh." *World Development* 29 (9): 1611–21.
- Anderson, M. A., M. Chintu, and P. Kapulula. 2009. *Assessment of USAID/BASICS' Community Essential Nutrition Actions Program in Malawi*. Arlington, VA: USAID.
- Anwar, F., A. Khomsan, D. Sukandar, and E. Mudjajanto. 2010. "High Participation in the Posyandu Nutrition Program Improved Children Nutritional Status." *Nutrition Research and Practice* 4 (3).
- Atun, R., T. de Jongh, F. Secci, K. Ohiri, and O. Adeyi. 2009. *Clearing the Global Health Fog : A Systematic Review of the Evidence on Integration of Health Systems and Targeted Interventions*. World Bank Working Paper, vol. 166. <https://openknowledge.worldbank.org/handle/10986/5946>: World Bank.
- . 2010a. "Integration of Targeted Health Interventions into Health Systems: A Conceptual Framework for Analysis." [Research Support, Non-U.S. Gov't]. *Health Policy Plan* 25 (2) 104–11. doi: 10.1093/heapol/czp055.
- . 2010b. "A Systematic Review of the Evidence on Integration of Targeted Health Interventions into Health Systems." [Research Support, Non-U.S. Gov't Review]. *Health Policy Plan* 25 (1): 1–14. doi: 10.1093/heapol/czp053.
- Barros, A. J., C. Ronsmans, H. Axelson, E. Loaiza, A. D. Bertoldi, G. V. Franca, and C. G. Victora. 2012. "Equity in Maternal, Newborn, and Child Health Interventions in Countdown to 2015: A Retrospective Review of Survey Data from 54 Countries." [Comparative Study Research Support, Non-U.S. Gov't Review]. *Lancet* 379 (9822): 1225–33. doi: 10.1016/S0140-6736(12)60113-5.
- Behrman, J. R., H. Alderman, and J. Hoddinott. 2004. *Hunger and Malnutrition*. Copenhagen Consensus Challenge Paper. http://plasma-nrg.com/PDF/Hunger_and_Malnutrition.pdf: Copenhagen Consensus.

Berer, M. 2012. "Maternal Mortality or Women's Health: Time for Action." [Editorial]. *Reprod Health Matters* 20 (39): 5–10. doi: 10.1016/S0968-8080(12)39632-8.

Bhutta, Z. A., T. Ahmed, R. E. Black, S. Cousens, K. Dewey, E. Giugliani, and M. Shekar. 2008. "What Works? Interventions for Maternal and Child Undernutrition and Survival." [Research Support, Non-U.S. Gov't Review]. *Lancet* 371 (9610): 417–40. doi: 10.1016/S0140-6736(07)61693-6.

Black, R. E., L. H. Allen, Z. A. Bhutta, L. E. Caulfield, M. de Onis, M. Ezzati, and J. Rivera. 2008. "Maternal and Child Undernutrition: Global and Regional Exposures and Health Consequences." [Review]. *Lancet* 371 (9608): 243–60. doi: 10.1016/S0140-6736(07)61690-0.

Boehmova, Z. 2012. *Malawi Family Planning and Nutrition Integration Assessment*. Consultant Report. Washington, DC: World Bank.

Bolam, A., D. S. Manandhar, P. Shrestha, M. Ellis, and A. M. D. Costello. 1998. "The Effects of Postnatal Health Education for Mothers on Infant Care and Family Planning Practices in Nepal: A Randomised Controlled Trial." *British Medical Journal* 316 (7134): 805–11.

Bradley, E. H., L. A. Curry, S. Ramanadhan, L. Rowe, I. M. Nembhard, and H. M. Krumholz. 2009. "Research in Action: Using Positive Deviance to Improve Quality of Health Care." *Implementation Science* 4 (25).

Cellule de Lutte Contre la Malnutrition — Institut Fondamental d’Afrique Noire Cheikh Anta Diop de Dakar. 2012. *Evaluation de l’impact du transfert en espèces dans le cadre du projet nutrition ciblée sur l’enfant et transferts sociaux (NETS)*, Rapport final, Enquête 2 (finale): Cellule de Lutte Contre la Malnutrition, Senegal.

Chaudhuri, A. 2008. "Revisiting the Impact of a Reproductive Health Intervention on Children's Height-for-Age with Evidence from Rural Bangladesh." *Economic Development and Cultural Change* 56 (3): 619–56.

Chowdhury, M. E., A. Ahmed, N. Kalim, and M. Koblinsky. 2009. "Causes of Maternal Mortality Decline in Matlab, Bangladesh." *Journal of Health Population and Nutrition* 27 (2): 108–23.

Cleland, J., S. Bernstein, A. Ezeh, A. Faundes, A. Glasier, and J. Innis. 2006. "Family Planning: The Unfinished Agenda." [Review]. *Lancet* 368 (9549): 1810–27. doi: 10.1016/S0140-6736(06)69480-4.

CNN. 2012. "Melinda Gates: Give Women the Power to Determine Their Future." Retrieved July 9, 2012.

- Dudley, L., and P. Garner. 2011. "Strategies for Integrating Primary Health Services in Low- and Middle-Income Countries at the Point of Delivery." *Cochrane Database of Systematic Reviews* (7). Doi 10.1002/14651858.Cd003318.Pub3.
- Esacove, A. W., and K. R. Andringa. 2002. "The Process of Preventing Pregnancy: Women's Experiences and Emergency Contraception Use." *Qual Health Res* 12 (9): 1235–47.
- Family Health International. 2010. "Expanding Contraceptive Use in Rwanda." Research Triangle Park, NC: Family Health International.
- Fauveau, V., B. Wojtyniak, G. Mostafa, A. M. Sarder, and J. Chakraborty. 1990. "Perinatal-Mortality in Matlab, Bangladesh — A Community-Based Study." *International Journal of Epidemiology* 19 (3): 606–12.
- Fiedler, J. L., C. A. Villalobos, and A. C. De Mattos. 2008. "An Activity-Based Cost Analysis of the Honduras Community-Based, Integrated Child Care (AIN-C) Programme." [Research Support, Non-U.S. Gov't]. *Health Policy Plan* 23 (6): 408–27. doi: 10.1093/heapol/czn018.
- Gapminder. 2012. "Relation Total Fertility Level and Under-Five Child Mortality in the World." *Gapminder World*.
- Gates Foundation. 2012. "Family Planning. Strategy Overview." <http://www.gatesfoundation.org/global-health/Documents/family-planning-strategy.pdf>: Bill and Melinda Gates Foundation.
- Georgetown University, the Institute for Reproductive Health. 2008. *AWARENESS Project. Lactational Amenorrhea Method (LAM) Projects in India*. Washington, DC: Georgetown University and USAID.
- Grantham-McGregor, S., L. Fernald, and K. Sethuraman. 1999. "Effects of Health and Nutrition on Cognitive and Behavioural Development in Children in the First Three Years of Life." *Food and Nutrition Bulletin* 20 (1): 53–99.
- Hale, L., J. DaVanzo, A. Razzaque, and M. Rahman. 2006. "Why Are Infant and Child Mortality Rates Lower in the MCH-FP Area of Matlab, Bangladesh?" *Stud Fam Plann* 37 (4): 281–92.
- Horton, S., and J. Ross. 2003. "The Economics of Iron Deficiency." *Food Policy* 28 (1): 51–75.

Koblinsky, M. 2005. "Community-Based Postpartum Care: An Urgent Unmet Need." <http://www.k4health.org/sites/default/files/cb%20postpartum%20care.pdf>. Catalyst Consortium.

Larsson, E. C., A. Thorson, X. Nsabagasani, S. Namusoko, R. Popenoe, and A. M. Ekstrom. 2010. "Mistrust in Marriage — Reasons Why Men Do Not Accept Couple HIV Testing during Antenatal Care — A Qualitative Study in Eastern Uganda." [Research Support, Non-U.S. Gov't]. *BMC Public Health* 10 (769). doi: 10.1186/1471-2458-10-769.

Leach, M. A., J. R. Fairhead, D. Millimouno, and A. A. Diallo. 2008. "New Therapeutic Landscapes in Africa: Parental Categories and Practices in Seeking Infant Health in the Republic of Guinea." *Soc Sci Med* 66: 2157–67.

Maine, D., M. Z. Akalin, J. Chakraborty, A. deFrancisco, and M. Strong. 1996. "Why Did Maternal Mortality Decline in Matlab?" *Studies in Family Planning* 27 (4): 179–87.

Mason, J. B., D. Sanders, P. Musgrove, Soekirman, and R. Galloway. 2006 "Community Health and Nutrition Programs." In *Disease Control Priorities in Developing Countries*, 2nd edition, ed. D. T. Jamison, J. G. Breman, A. R. Measham, G. Alleyne, M. Claeson, D. B. Evans, P. Jha, A. Mills, and P. Musgrove, chapter 56. Washington, DC: World Bank.

Measure DHS. 2010. *Rwanda Demographic and Health Survey 2010 — Final Report*. <http://www.measuredhs.com/Topics/Family-Planning.cfm>.

Médecins du Monde. 2010a. "Evaluation externe du projet recherche action plaidoyer (RAP) pour une prise en charge a base communautaire des questions de nutrition et de planification familiale." Niamey, Niger: Médecins du Monde.

———. 2010b. "Evaluation externe du projet recherche action plaidoyer (RAP) pour une prise en charge a base communautaire des questions de nutrition et de planification familiale." Rapport final. Niamey, Niger: Médecins du Monde.

———. 2010c. Rapport de mission d'évaluation interne par le S2AP. Niamey, Niger: Médecins du Monde.

Medhanyie, A., M. Spigt, Y. Kifle, N. Schaay, D. Sanders, R. Blanco, and Y. Berhane. 2012. "The Role of Health Extension Workers in Improving Utilization of Maternal Health Services in Rural Areas in Ethiopia: A Cross Sectional Study." [Research Support, Non-U.S. Gov't]. *BMC Health Serv Res* 12 (352). doi: 10.1186/1472-6963-12-352.

Mekonnen, Y., S. Bradley, M. Malkin, and K. Hardee. 2004. "Country Analysis of Family Planning and HIV/AIDS: Ethiopia." Retrieved June 18, 2011, from http://pdf.usaid.gov/pdf_docs/PNADB927.pdf.

- Nigeria National Planning Commission, Federal Ministry of Health, National Primary Health Care Development Agency, and the World Bank. 2010. *Scaling Up Community-Based Maternal and Child Nutrition and Health Interventions to Enhance Productivity and Life Expectancy in Nigeria*. Washington, DC: World Bank.
- Pablos-Mendez, A., and R. Shademani. 2006. "Knowledge Translation in Global Health." *J Contin Educ Health Prof* 26 (1): 81–86. doi: 10.1002/chp.54.
- Philips, J. F., W. L. Greene, and E. F. Jackson. 1999. "Lessons from Community-Based Distribution of Family Planning in Africa." *Policy Research Working Paper* 121. New York: The Population Council.
- Rahman, M., J. DaVanzo, and A. Razzaque. 2010. "The Role of Pregnancy Outcomes in the Maternal Mortality Rates of Two Areas in Matlab, Bangladesh." *International Perspectives on Sexual and Reproductive Health* 36 (4): 170–77.
- Republic of Malawi. 2007. *National Nutrition Policy & Strategic Plan 2007–2012*. Lilongwe.
- Ronsmans, C., A. M. Vanneste, J. Chakraborty, and J. Van Ginneken. 1997. "Decline in Maternal Mortality in Matlab, Bangladesh: A Cautionary Tale." *Lancet* 350 (9094): 1810–14.
- Rutstein, S. O. 2008. *Further Evidence of the Effects of Preceding Birth Intervals on Neonatal, Infant, and Under-Five-Year Mortality and Nutritional Status in Developing Countries: Evidence from the Demographic and Health Surveys*. Calverton, MD: Macro International.
- Searo.who.int. 2011. "Revitalizing Primary Health Care. Country Experience: Indonesia." Retrieved June 22, 2011, from www.searo.who.int/LinkFiles/Conference_INO-13July.
- Sellen, D., S. Sharif, B. Tefera, and Z. Hyder. 2012. "Strengthening Family Planning with Community-Based Nutrition Interventions in Ethiopia: A Qualitative Study." *HNP Discussion Paper*. Washington DC: World Bank.
- Simmons, G. B., D. Balk, and K. K. Faiz. 1991. "Cost-Effectiveness Analysis of Family-Planning Programs in Rural Bangladesh — Evidence from Matlab." *Studies in Family Planning* 22 (2): 83–101.
- Souley, A. 2011. *Capitalisation des etudes nutrition-demographie*. Rapport Final. Niamey, Niger: UNFPA.
- Tandon, B. N. 1989. "Nutritional Interventions through Primary Health Care: Impact of the ICDS Projects in India." *Bulletin of the World Health Organization* 87 (1): 77–80.

- United Nations. 2012. The Millennium Development Goals Report 2012. <http://www.un.org/millenniumgoals/pdf/MDG%20Report%202012.pdf>; UN.
- UN Inter-agency Group for Child Mortality Estimation. (2012). Levels and Trends in Child Mortality. http://apromiserenewed.org/files/UNICEF_2012_child_mortality_for_web_0904.pdf.
- UNFPA (United Nations Population Fund). 1994. ICPD — International Conference on Population and Development. Retrieved February 26, 2013.
- UNFPA Lao PDR. 2012. *Report on the Lessons Learned from the Outreach FP Worker*. [CBD Worker & DRF/VHV]. Strategy Workshop in Thalath Vientiane: UNFPA.
- UNICEF. 2012. "Progress for Children. A Report Card on Adolescents." <http://www.unicef.org/publications>.
- USAID. 2010. "Maximizing Synergies between Maternal, Infant and Young Child Nutrition and Pregnancy Prevention." Discussion paper prepared for the Maternal, Infant and Young Child Nutrition and Family Planning Integration Technical Meeting May 14, 2010. Washington, DC: USAID. <http://www.k4health.org/toolkits/miycn-fp/maximizing>.
- . 2012a. "Evidence of Task Sharing." In *K4Health*. <http://www.k4health.org/toolkits/communitybasedfp/evidence-task-sharing>; USAID.
- . 2012b. "Maternal Infant Young Child Nutrition — Family Planning (MIYCN-FP) Integration." <http://archive.k4health.org/toolkits/miycn-fp/how-integrate>; USAID.
- . 2012c. "Maximizing Synergies between Maternal, Infant, and Young Child Nutrition and Family Planning." Technical Brief. Washington, DC: USAID.
- . 2012d. "Systematic Review of Integration between Maternal, Neonatal, and Child Health and Nutrition and Family Planning." Final Report. Washington, DC: USAID. <http://www.k4health.org/sites/default/files/Final%20Comprehensive%20Report%208%2016%2011%20clean.pdf>.
- . 2012e. "Three Successful Sub-Saharan Africa Family Planning Programs: Lessons for Meeting the MDGs." Washington, DC: USAID. <http://www.fhi360.org/resource/three-successful-sub-saharan-africa-family-planning-programs-lessons-meeting-mdgs>.
- Vernon, R. 2009. "Meeting the Family Planning Needs of Postpartum Women." *Studies in Family Planning* 40 (3): 235–45.
- WHO (World Health Organization). 2008. http://www.who.int/nutrition/topics/lancetseries_maternal_and_childundernutrition/en/.

———. 2012. <http://apps.who.int/childgrowth/en/index.html>.

World Bank. 2006. *Repositioning Nutrition as Central to Development*. Washington, DC: World Bank.

———. 2009. *Improving Effectiveness and Outcomes for the Poor in Health, Nutrition, and Population. An Evaluation of World Bank Group Support Since 1997*. Washington, DC: World Bank.

———. 2010a. *Out-of-Pocket Spending and hHealth Service Utilization in Lao P.D.R. Evidence from the Lao Expenditure and Consumption Surveys*. Washington, D.C: World Bank. <http://documents.worldbank.org/curated/en/2010/11/13264669/out-of-pocket-spending-health-service-utilization-lao-pdr-evidence-lao-expenditure-consumption-surveys>.

———. 2010b. *Better Health for Women and Families: The World Bank's Reproductive Health Action Plan. 2010-2015*. Washington, DC: World Bank. <http://siteresources.worldbank.org/INTPRH/Resources/376374-1261312056980/RHActionPlanFinalMay112010.pdf>.

———. 2011. "Integrating Family Planning with Community-Based Health and Nutrition Interventions in Ethiopia: A Brief Concept Note." Washington, DC: World Bank.

———. 2012a. *Nepal: Community Action for Nutrition Project (Sunaula Hazar Din) (P125359)*. Project Appraisal Document. Washington, DC: World Bank.

———. 2012b. The World DataBank. <http://databank.worldbank.org/Data/Views/VariableSelection/SelectVariables.aspx?source=Millennium%20Development%20Goals>.

World Vision United States and India (undated). "The Right Messages — to the Right People — at the Right Time." Washington, DC: USAID. http://www.flexfund.org/resources/technical_updates/wv_india.pdf.

Yajnik, C. S. 2009. "Imperative of Preventive Measures Addressing the Life-Cycle." *Nestle Nutr Workshop Ser Pediatr Program* 63: 177–90; discussion 190–74, 259–68. doi: 10.1159/000209981.

ANNEX 1: EVIDENCE-BASED NUTRITION INTERVENTIONS

The contributions of community-based health interventions point to a number of encouraging results leading to progress in reducing morbidity and mortality among women and children globally (World Bank 2009). Nutrition interventions based on community-activities are well anchored in evidence. Direct and indirect interventions have been implemented and scaled-up, which has made it possible to test and document them as evidence-based under global or specific contexts, for example, the promotion of exclusive breastfeeding, vitamin A fortification, and salt iodization interventions.

Table 1A.1. Evidence-based nutrition interventions

Infants and Children	
Sufficient evidence for implementation in 36 countries under study	Evidence for implementation in specific situational contexts
Promotion of breastfeeding (individual and group counseling)	Conditional cash transfer programs (with nutritional education)
Behavior change communication for improved complementary feeding	Deworming
Zinc supplementation	Iron fortification and supplementation programs; insecticide-treated bed-nets
Zinc in management of diarrhea	
Vitamin A fortification or supplementation	
Universal salt iodization	
Hand washing or hygiene interventions	
Treatment of severe acute malnutrition	

Source: www.globalnutritionseries.org.

ANNEX 2: SYSTEMATIC REVIEW OF INTEGRATION BETWEEN MATERNAL, NEONATAL, AND CHILD HEALTH AND NUTRITION AND FAMILY PLANNING

For a complete description of methods and definitions we refer to the full USAID-funded systematic review (USAID 2012d). A total of 14,658 citations were screened in the review.

It included thirty-six published papers, representing twenty-nine interventions that met the inclusion criteria for publication in a peer-reviewed journal; rigorous evaluation design that compares (i) before and after the interventions was implemented; or (ii) different models of integrating maternal, neonatal, and child health, and nutrition services and family planning services; or interventions consisting of an organizational or management strategy.

Table 2A.1. Maternal, Neonatal, and Child Health, Nutrition and Family Planning Integration Matrix

Maternal, Neonatal, Child Health, and Nutrition interventions	Family Planning interventions	
	Education and counseling	Contraceptive service/commodity provision
Antenatal services	10	4
Postabortion care	10	7
Intrapartum/childbirth services	3	2
Postnatal care	11	7
Infant/child services	16	10
Maternal and infant nutrition	5	3

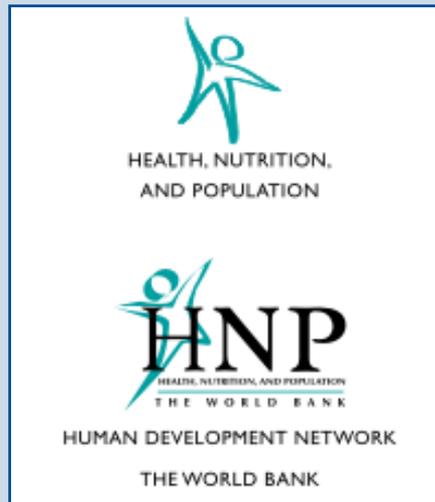
Source: USAID 2012d.

ANNEX 3: COUNTRY STATISTICS

The maternal mortality ratio is a modeled estimate per 100,000 live births from 2010 for all countries (World Bank 2012b). The mortality rate under five is per 1,000 from 2011. The most recent malnutrition prevalence, weight for age (percentage of children under five) varies from country to country (2007–11). The total fertility rate, births per woman, is from 2011.

Table 3A.1. Country statistics

Indicator	Country	2004	2005	2006	2007	2008	2009	2010	2011
Fertility rate, total (births per woman)									
	Bangladesh	2.70	2.60	2.51	2.43	2.36	2.30	2.25	2.20
	Chile	1.96	1.94	1.92	1.90	1.89	1.88	1.86	1.85
	Ethiopia	5.29	5.09	4.89	4.70	4.52	4.35	4.19	4.05
	India	2.88	2.83	2.79	2.74	2.70	2.66	2.63	2.59
	Indonesia	2.32	2.28	2.25	2.21	2.18	2.15	2.12	2.09
	Lao PDR	3.46	3.31	3.18	3.06	2.95	2.84	2.75	2.66
	Malawi	6.01	6.01	6.00	6.00	6.00	5.99	5.99	5.99
	Nepal	3.48	3.32	3.17	3.03	2.91	2.81	2.73	2.66
	Niger	7.34	7.30	7.26	7.21	7.17	7.12	7.06	7.01
	Rwanda	5.54	5.50	5.47	5.44	5.42	5.40	5.37	5.34
Malnutrition prevalence, weight for age (percentage of children under five)									
	Bangladesh	42.7	39.2	39.8	41.3	-	-	-	-
	Chile	0.6	-	0.6	0.6	0.5	-	-	-
	Ethiopia	-	34.6	-	-	-	-	-	29.2
	India	-	-	43.5	-	-	-	-	-
	Indonesia	19.7	24.4	-	19.6	-	-	-	-
	Lao PDR	-	-	31.6	-	-	-	-	-
	Malawi	-	18.4	15.5	-	-	12.1	13.8	-
	Nepal	-	-	38.8	-	-	-	-	29.1
	Niger	-	-	39.9	-	-	-	-	-
	Rwanda	-	18.0	-	-	-	-	-	11.7
Maternal mortality ratio (modeled estimate, per 100,000 live births)									
	Bangladesh	-	330	-	-	-	-	240	-
	Chile	-	26	-	-	-	-	25	-
	Ethiopia	-	510	-	-	-	-	350	-
	India	-	280	-	-	-	-	200	-
	Indonesia	-	270	-	-	-	-	220	-
	Lao PDR	-	650	-	-	-	-	470	-



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