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GHI Principle Paper on Integration in the Health Sector

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GLOBAL HEALTH INITIATIVE

CONTENT

PREFACE 1

INFORMATION SOURCES 1

INTRODUCTION 1

OVERVIEW 2

DEFINITION 3

FIVE FACTORS TO CONSIDER ABOUT INTEGRATION..... 3

RECENT EMPIRICAL EVIDENCE AND FURTHER INQUIRY ABOUT THE VALUE OF INTEGRATION..... 9

INTEGRATION SCOPING TOOL 13

MONITORING AND MEASURING INTEGRATION PROGRESS..... 18

FUTURE DIRECTIONS 22

REFERENCES..... 24

ADDITIONAL READING 26

Annex A..... 27

Annex B..... 29

PREFACE

The purpose of this paper is to share information, experiences, ideas, resources, and challenges with U.S. Government (USG) country teams to help them better apply this principle in their programming across global health accounts and to expand the knowledge base for how this principle can advance a country's health goals. The paper is intended as a "living document," which will be revised periodically based on emerging research and insights reported by USG field staff on integration successes and challenges in different settings under different circumstances. The paper is not formal guidance, a policy directive, a strategy, a user's manual, or a blueprint.

INFORMATION SOURCES

The information and ideas in this paper are drawn from two USG-sponsored Cochrane Reviews, a cursory review of the peer-reviewed and grey literature on integration, anecdotal reports from the field, and comments and contributions on earlier versions of this paper from USG reviewers from multiple agencies (HHS/CDC, USAID, OGAC), and external stakeholders.

INTRODUCTION

The idea of integration in the health sector is not new; it traces its roots, in part, to the aspirations of the Primary Health Care (PHC) movement and Selective PHC that fueled the Child Survival Revolution of the 1980s. Today's constrained budget environments in both industrialized and non-industrialized countries, concerns about health care costs, the drive to achieve the Millennium Development Goals (MDGs) by 2015, continuing deficiencies and fragmentation in health system functioning, and various other factors have stimulated renewed interest in the topic. Increasing impact through strategic coordination and integration is one of the core principles of the Global Health Strategy (GHI). The underlying assumption for this principle, as stated in the GHI strategy document, is that coordinating and integrating the delivery of health interventions is essential for achieving sustained improvements in health (USG, 2011).

Coordination and integration are related, yet different processes. *Coordination* refers to USG interagency or “whole-of-government” efforts to optimize US development assistance for health. Coordination encompasses not only how USG agencies work with one another, but also how the USG engages with partner countries and other bilateral, multilateral, and external partners to maximize effective donor assistance within the spirit of the Paris Declaration on Aid Effectiveness and in harmony with country priorities. Effective coordination has the potential to enhance efforts to improve integration in the health sector.

The goals of *integration* are to address holistically the different but often related health and development needs of client populations, significantly improve health outcomes in the most efficient way, and achieve sustainable development impact through efficient and interoperable health policies, programs and organizations, support systems, services, and health promoting behaviors¹. This is a multi-faceted landscape with multiple processes and outcomes. Furthermore, the potential benefits of integration must be weighed against the costs. Finally, new knowledge continues to emerge about integration’s effects. Clearly, integration is a complex topic; consequently, this paper will focus on integration alone.

The integration of health sector activities with activities in other sectors—such as water and sanitation, education, food security, agriculture, economic growth, microfinance, and democracy and governance—can potentially achieve high-yield gains for health. Although integration across sectors is critically important to achieve and sustain both health and development aims, this paper will not address cross-sector integration.

OVERVIEW

The paper begins with the presentation of a working definition of integration (approved by the USG and WHO) and the introduction of a comprehensive classification system for integration that will be followed throughout the paper. It continues with a description of five key factors to consider about integration—country ownership, the benefits and costs, the need for local adaptation, examples of implementation feasibility, and several challenges. The next section provides a brief overview of recent empirical evidence about the value of integration and specific topics for further inquiry, which can inform local program design and implementation decision-making. An illustrative *Integration Scoping Tool* that can be used in any country-based exercise that examines the current status of integration is then presented. The tool can be used

¹ In this context, interoperable refers to the ability of these component parts of a health system to operate successfully together.

with governments and other stakeholders to identify opportunities to strengthen integration in a way that makes sense technically, economically, and contextually. The paper concludes with some simple steps for USG country teams to consider when monitoring and measuring integration progress.

DEFINITION

Integration has been defined as *“the organization, coordination, and management of multiple activities and resources to ensure the delivery of more efficient and coherent services in relation to cost, output, impact, and use (acceptability).”* (WHO HIV, FP/RH, MNCH Technical Working Group, March 2011). From the client’s perspective, this means that *“People get the care they need, when they need it, in ways that are user-friendly and that achieve the desired results and provide value for money.”* (Waddington and Egger, 2008).

One potentially useful, comprehensive classification of integration includes activities in the policy, program/organization, system support, service provision, and health behavior arenas. Integration in any of these domains can occur in the public and private sector, and at different levels of the health system: central, regional, district, community, facility, and household. Integration can occur to different degrees: fully (e.g., a full merger of programs), partially (linkage or coordination among programs), or not at all (Atun et al., 2010); similarly, integration has been characterized by the degree or intensity of coordination, collaboration, or consolidation that occurs (Grepin and Reich, 2008). Concrete examples of the multidimensionality of integration—from packages of essential services intended for particular population groups, to coordinated delivery points that offer multiple services, to ensuring continuity of care over time, to integration of policies and procedures—are provided in subsequent sections of the paper.

FIVE FACTORS TO CONSIDER ABOUT INTEGRATION

Summary

- Country ownership of integration policies and processes is essential.
- Integration entails both benefits and costs.
- Integration requires local adaptation.
- Integration is feasible.
- Integration is challenging.

1 Country ownership of integration policies and processes is essential.

If integration is being considered, stakeholders will need to first consider the extent to which this principle is clearly articulated in national strategies and plans. Is the public sector working with private stakeholders as co-stewards of the integration process? Do policies and operational plans clearly describe the functioning of integrated services? Are there plans for modifying the health management information system to capture and monitor the results of integration?

Recognizing the role of all levels of the health system in integration processes within decentralized health systems, stakeholders should also ensure that provincial and district health teams are involved in planning, implementing, and monitoring integration efforts, and engaging the community. Aligning donor funding streams to support a government-led integration effort will be critical to supporting an effective, integrated system. These and other issues are further explored later in the paper in the presentation of the *Integration Scoping Tool*.

Decisions about integration should take into consideration a country's history with integration, as well as local budget and resource constraints (Briggs and Garner, 2006). For relevant perspectives on country ownership, see the *GHI Principle Paper on Health System Strengthening* and the *GHI Principle Paper on Country Ownership*.

2 Integration entails both benefits and costs.

Continuing deficiencies in many health systems, including service delivery fragmentation and duplication, low quality and continuity of care, and client dissatisfaction with care have given rise to increased interest in the promise of integration (Briggs and Garner, 2006; Shigayeva et al., 2010; Kerber et al., 2007). Integration, however, is a means to an end, not an end in itself. The various ends or benefits of integration—both theoretical and empirical—that are commonly cited in the literature are as follows (Shigayeva et al, 2010; Brickley et al., 2011; Kennedy et al, 2011; WHO/USAID, 2009; Wallace et al., 2009; Briggs and Garner, 2006):

- Expanded access to and coverage of services per client contact
- Increased use of services and improved behavioral outcomes
- Decreased costs per visit or per service, and increased cost-effectiveness
- More timely and improved quality and continuity of services delivered, resulting in better patient care

- More family-centered care responsive to multiple client needs leading to greater provider and client satisfaction with services
- More efficient use of existing resources by reducing fragmentation and duplication
- Greater programmatic impact on population health and improved equity
- Increased sustainability of effects through improved health system strengthening

What are the costs against which these benefits must be weighed? Integration may place additional demands on the health system, which may increase the costs necessary to ensure system readiness, particularly in the short-term. For example, health workers may need more support to prepare for and respond to an uptake in client demand for integrated service delivery. Additional financing and other investments may be needed to ensure facility preparedness; to revise and successfully apply new procedures for innovative management of key resources, client information, and new technologies; and to enhance referral and patient flow systems (Sharan et al., 2010).

There may be resistance to integration if the views of potential and actual service users regarding the accessibility and acceptability of integrated services (Briggs and Garner, 2006) are ignored. Consequently, more time and resources may need to be invested in formative assessments of client opinions and monitoring of client satisfaction. The adoption of integrated approaches may be accompanied by high transaction costs stemming from a need for better coordination, collaboration, and problem-solving among different actors and across different organizations, particularly at the beginning of such efforts. The challenge is to identify, through local stakeholder consultation (always) and operational research (when possible), where and when the advantages of integration clearly outweigh the disadvantages in the local context.

3 Integration requires local adaptation.

There is no universally applicable model of integration. Integration will vary from one country to another based on the purpose, complexity, speed, and extent, among other factors, of the intended effort to integrate (Atun et al., 2010). Opportunities for integration must make sense technically, economically, and contextually—reflecting local cultural, health system, epidemiology, program, and political variation, the indigenous understanding of what it entails, as well as the changing needs of health care consumers throughout the lifecycle of care.

Integrated service delivery, for example, can make a substantial contribution to maximizing public health impact. However, the integration of prevention of mother-to-child transmission (PMTCT), family planning (FP), and maternal, neonatal, and child health (MNCH) services will differ according to the varying epidemiologic, socio-cultural, and health system conditions

within and between different countries. Epidemiologic and health surveillance data can help inform the planning process to identify essential population-based health issues (e.g., high morbidity or mortality rates associated with specific diseases or other health conditions) and to determine the priority interventions for possible integration that hold the greatest potential for optimal impact relative to specific target populations.

4 Integration is feasible.

The USG has substantial experience in integrating activities within and across the aforementioned domains. In the twenty-seven approved GHI country strategies there are many examples of increased attention to and investment in integration at all levels of health systems within the context of health systems strengthening. For example, in the service delivery domain, integration is occurring successfully in many countries at the lowest levels of health care, where a few health workers deliver a range of public health and clinical services from the same delivery point. An example from Bangladesh of the impact of integrated family planning and maternal/neonatal/child health services on mortality is described in Annex A.

Family planning, MNCH, HIV, and more recently neglected tropical disease policies, services, and support strategies are often integrated in many USG-supported countries, to different degrees, and with different effects (Boxes 1, 2, 3) (Brickley et al., 2011; Kennedy et al., 2011; Wallace et al., 2012; Hoetz et al., 2011). Although the examples of integration provided below address one domain alone—service provision—they presuppose some degree of effective integration processes at one or more higher levels in the system, as will be addressed later in the paper. Additional summaries of FP-MNCH integration activities in multiple program areas (family planning and antenatal care, post-abortion care, immunization, and nutrition), in both community- and clinic-based settings, are available in a recent technical consultation report².

5 Integration is challenging.

Defining what to integrate and deciding how to integrate should be based on the host government's review of where the benefits of integration outweigh the costs. It also should reflect its vision and plan for public health service delivery for the country. Compatibility and sequencing are two important technical factors to consider when designing integrated programs. They are relevant to both relatively simple integration programs (e.g., integrating

² FP-MNCH-Nutrition Integration Technical Consultation, Conference Report, March 30, 2011, available at http://www.esdproj.org/site/DocServer/FP-MNCH-Nutrition_Integration_Conference_Report_7.12.11_.pdf?docID=416.

Box 1: ART and ANC integration in Zambia

Two models of ART provision in public sector ANC clinics in Lusaka, Zambia were studied: active referral from ANC clinics to ART clinics vs. integration of ART provision into ANC clinics. The integration strategy doubled the percentage of treatment-eligible women initiating ART during pregnancy compared to the strategy of active referral to the ART clinic (32.9% vs. 14.4%; AOR 2.01; 95% C.I 1.27-3.34.) The researchers concluded that the provision of ART in ANC is feasible in resource-limited settings, although it may require greater investment in laboratory capacity, drugs, and adequately trained staff. To improve retention, the researchers planned to keep women in the integrated clinic until weaning, at approximately 6 months postpartum. Source: Killiam, AIDS 2010;24(1):85-91.

Box 2: HIV and Family Planning in Kenya

In high HIV prevalence areas, family planning provider-initiated testing and counseling is feasible, acceptable, increases access and use of HIV testing, and, importantly, does not adversely affect the quality of FP consultation. In 23 health facilities in Central Province of Kenya, FP providers were trained in HIV infection prevention counseling and in offering HIV testing and counseling (referred or tested by the FP provider). Clients requesting an HIV test increased from 1 to 26%, one-third, had not been previously tested. Source: Liambila, et.al., AIDS 2009;23(SUPPL. 1):S115-S121.

Box 3: Immunization and other primary care services in Africa

During the last decade, routine immunization services were integrated with infant malaria treatment, HIV services, infant hearing screening, growth monitoring, vitamin A, deworming, family planning, health education, bednet distribution, and other services in Ghana, Mozambique, Tanzania, Gabon, Kenya, Malawi, Zimbabwe, South Africa, Nigeria, and Zambia, among other African countries. When reported, linked intervention coverage increased, though not to the level of the corresponding immunization coverage in all cases. Ensuring proper planning and awareness of compatibility of service delivery requirements were found to be important factors for addressing operational challenges of integration. Future research needs to address the costs of integration, the benefits of integration relative to vertical delivery platforms, and the impact of integration on all integrated services (Wallace et al., 2012).

immunization and Vitamin A distribution programs) and more complex types (e.g., integrating a range of family planning, HIV, and maternal and neonatal health services into facility and community-based programs of service provision).

To ensure compatibility, attention should be paid to appropriate matching of activities based on program objectives and target populations; health worker predispositions, experience, commitment, and skill requirements; and logistical needs, costs, supply, and information requirements (Wallace et al., 2009). Furthermore, services need to be linked around the same time and place. For example, the administration of infant PMTCT ARVs—within 72 hours—is not

compatible with the administration of many immunizations, most of which are given in the weeks after birth.

Sequencing is another important technical consideration. When is the opportune time in the life cycle to integrate services? What are the most propitious ante-natal, intra-partum, and post-partum opportunities for integration affecting the health of mothers, neonates, and children? If building an integration effort upon an antenatal care or facility birth platform of service provision, or on an immunization program, are these programs sufficiently robust with adequate levels of coverage (Wallace et al., 2012, 2009; Kerber et al., 2007)? Should interim models of integration be pursued pending increased system capacity to adopt more robust delivery models? These are key design challenges that each country must consider in light of local circumstances.

Overcoming technical challenges to integration is necessary, but often not sufficient. Integration may not initially prove to be advantageous for everyone with a stake in the integration process, including clients, providers, and the government. For example, Wallace and colleagues report that in a linked bednet-deworming-measles campaign, “helminth-control managers were concerned that a focus on drug distribution alone would jeopardize their comprehensive approach of improved sanitation, health education, and drug distribution, all of which were needed to reduce helminth carriage.” (Wallace et al., 2009). Integration can further strain the weaker components of health systems where they exist by, for example, overloading health workers who already have high volume workloads to the point of crowding out other existing valuable health services or health-related activities.

Freedman has recently described the “clash” between the “checkered and halting history of implementation efforts in the maternal health field” with the “can-do style of a well-resourced HIV implementation machine.” (Freedman, 2011). Adopting an organizational systems perspective, the author raises important practical and potentially contested issues about how best to integrate maternal health and HIV services. Clearly, integration requires political will and skill, as well as technical know-how. The transaction costs incurred by governments when undertaking integration initiatives can be reduced when donors reach consensus on a common course of action.

Potential resistance from intended beneficiaries, public and private providers, governments, and/or civil society needs to be anticipated and addressed. Selected factors that inhibit and promote successful integration of service delivery that have been identified by systematic reviews (Kennedy et al., 2011; Brickley et al., 2011; Wallace et al., 2009), critical analyses (Shigayeva et al., 2010), and informal technical reporting from the field, are summarized in

Boxes 4 and 5. GHI encourages country teams to document and disseminate how they have attenuated risks, overcome challenges, or facilitated successful integration.

RECENT EMPIRICAL EVIDENCE AND FURTHER INQUIRY ABOUT THE VALUE OF INTEGRATION

Summary

- Recent empirical evidence about the effects of integrating programs in the health sector is promising.
- Further inquiry and more rigorous research designs are needed to guide programs.

A recent rigorous analysis of the health and economic development effects of a long-term USG investment in an integrated family planning and maternal, neonatal, and child health program in Bangladesh found that women in the program area had, on average, 1.5 fewer children, a higher body mass index, a longer interval between second and third births (nine months longer), and better immunized children (more likely to be vaccinated against diphtheria, pertussis, tetanus, measles and polio) (Joshi and Shultz, 2007; Gribble and Voss, 2009).

USAID recently commissioned a Cochrane Review on the integration of FP-MNCH-Nutrition-HIV services, and with CDC and PEPFAR convened a meeting to consider the strength of the evidence and the implications for policy and programming (Kennedy et al., 2011). USAID also commissioned a Cochrane Review on the integration of FP-MNCH-Nutrition services and convened a similar meeting (Brickley et al., 2011). Both reviews organize and present the available evidence on coverage, service quality, costs, effectiveness, and impact of four to six different models or combinations of integrated services. Both reviews had similar findings.

The main conclusion of the FP-MNCH-Nutrition-HIV review was that integrating these services was feasible across a variety of integration models, settings, and target populations. Most studies reported that integration had a positive impact on reported outcomes (Annex B); however, several studies also reported mixed effects or no effect. Only one study reported negative outcomes as a result of providing integrated services, although this could be the result of the positive bias of the published literature.

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several studies also reported mixed effects or no effect. No studies reported negative outcomes resulting from integration, although this could be the result of the positive bias of the published literature.

Although these Cochrane Reviews and other systematic reviews (Briggs and Garner, 2006) have demonstrated that integration of primary services in middle- and low-income countries is feasible and can produce positive effects, more evidence of these effects is needed (Brickley et al., 2011; Kennedy et al., 2011; Shigayeva et al., 2010; Briggs and Garner, 2006) and more rigorous studies of integrated service delivery are required to guide programs. A USG inter-agency *Concept Paper on Integration and Coordination* identified the need for a “stronger analytical base for the costs, benefits and best practices of integration” (USG, 2009). Finally, further support is needed for efficacy and effectiveness research that use designs that compare alternative models of integration, including no integration (Briggs and Garner, 2006; Kennedy et al., 2011; Brickley et al., 2011).

According to Kerber and colleagues, service packages that have been introduced into facility and community settings have been done so primarily based on “logistical convenience, donor directives, organization expertise, or specific lines of scientific inquiry, rather than because of a specific service-delivery approach, biological or behavioral synergies, or cost-effectiveness.” (Kerber et al., 2007). For example, there is now an emerging consensus among health professionals about when certain packages of services can be optimally delivered in the life cycle of various beneficiaries (Figure 1)³. Kerber and colleagues point out that little is known, however, about how to adapt, deliver, and integrate these packages in different health systems (Kerber et al., 2007).

Unintentional integration occurs frequently at decentralized levels of health systems because of inadequate staffing, among other reasons. Although such *de facto* integration is usually assumed to be of poor quality, local innovations occur in response to such realities, which should not be summarily dismissed without further inquiry. Finally, there is limited empirical evidence of the benefits and costs associated with integration of policies, programs, health system support strategies, and healthy behaviors in the home (Atun et al., 2010).

³ Figure 1, albeit robust, does not include all possible points of integration. For example, to reduce missed opportunities, family planning counseling, referral, or services could be added to every cell.

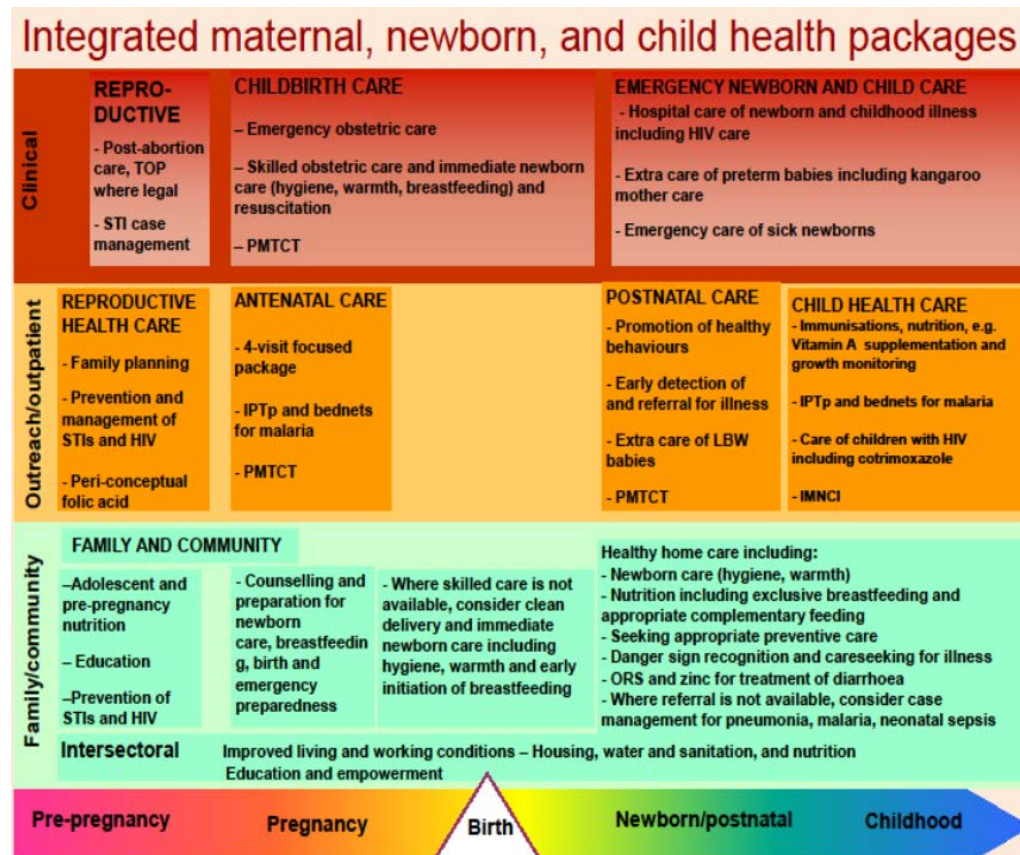
Box 4: Factors that may inhibit service integration

Element	Factor
Demand side	<ul style="list-style-type: none"> • Gender norms and traditional practices that create barriers to accessing and using integrated services (e.g., women needing permission from male head of household to access integrated services, or minors needing parental permission to access services) • Fear of an increased risk of a breach of confidentiality, or stigma, or incompetence of providers associated with integrated services • Limited physical and/or effective access to services • Potential for additional waiting times due to poor patient flow or other factors or user fees associated with a package of integrated services • Possibility that low-level risk for one service masks the need for the other services • Fear by women living with HIV that providers will not be supportive of their pregnancy • Potential for dissatisfaction with integrated services or lack of responsiveness to clients
Supply side	<ul style="list-style-type: none"> • Fear that front-line workers, particularly those serving in villages and communities, will become overburdened and overloaded with tasks that may have little impact and yet take “extra” time to carry out • Staff delivering new services for which they may not have received adequate training, often due to insufficient time and budget, may resist providing care, or provide it poorly • Inadequate community support for providers attempting to provide integrated services • Potential unwillingness of providers to change current practices or engage clients in discussion about topics from linked services with which they are less familiar (e.g., discussion about sexuality) • Potential that providers perceive linked services as uncompensated additional work • Cost of commodities and/or perception that the full complement of commodities and supplies needed to provide integrated care are or will not be available • Higher staff turnover associated with increased workload and lack of adequate supervision and mentorship required for a new delivery model • Inadequate integration skills (e.g., Are HIV-trained staff sufficiently competent to provide reproductive health services and vice versa?) • Lack of coordination among and between public and private providers • Increased consulting time per client reduces opportunities to increase client volume
Stakeholders	<ul style="list-style-type: none"> • Concern that stand-alone, non-integrated services may be ignored • Dissatisfaction with the level of collaboration among implementing partners • Resistance because of actual or perceived lack of and/or control over financial resources for integration • Resistance because of donor-imposed conditions associated with financing for integrated services • Inadequate involvement of provincial and district level authorities in decision-making • Perception that integration of certain services is unnecessary and even at odds with the country’s needs and/or traditional cultural practices and norms • Lapses in program intensity and insufficient time and attention from leadership • Poor integration of data management systems and other logistical challenges • Unequal allocation of resources among the different services being integrated • Real or perceived difficulty of tracking health outcomes resulting from integrated as opposed to stand-alone services

Box 5: Factors that may promote service integration

Element	Facilitating factors
Demand side	<ul style="list-style-type: none"> • Avoids inconvenience of crowded clinics (e.g. ART) and multiple visits • Involvement of men and male endorsement of integrated services (e.g., family planning) • Adequate counseling rooms and effective management of client loads (e.g., men attending facilities with lower client loads and more counseling rooms were more likely to receive contraceptive counseling and methods) • High quality, client-centered education and counseling with emphasis on quality of care • Potential to neutralize stigma through mainstreaming of services • Community mobilization and referral for early identification and treatment
Supply side	<ul style="list-style-type: none"> • Staff personality, experience, ownership (e.g., involvement in decision making), initiative and interest, willingness to visit households • Strong rapport between providers and clients • Substantial opportunities for additional provider training, continuing education, and supervision, and potential transferability of training to different domains • Involvement of traditional health workers • Sufficient equipment • Availability of essential medicines, commodities, and other technologies • Adequate financial support for integrated services • Incremental cost of integration of FP was modest and quality of both integrated services improved • Relatively simple and inexpensive interventions added to existing services • Integrated electronic patient record systems and notes across services • Using a single set of patient notes • New clinic policy to reschedule missed appointment promptly • Scheduling changes, moving exam rooms, reallocation of existing staff time • Higher frequency of follow-up • Availability of and accessibility to a high-quality static health clinic (for community-based interventions) • Decentralization of health services • Integrating HIV services into well-established programs improves trust and reduces fear of stigmatization
Stakeholders	<ul style="list-style-type: none"> • Stakeholder support and interest in integration, including country-level support • Active involvement of community leaders

Figure 1



Source: Adapted from Kerber KJ et al. (2007). Continuum of care for maternal, newborn and child health: from slogan to service delivery. *Lancet*, 370: 1358-69.

INTEGRATION SCOPING TOOL

Summary

- To what extent is a supportive *policy* environment in place to foster integration?
- To what extent are *programs* being consolidated to achieve better outcomes at lower cost?
- To what extent are *health system support strategies* being managed to support integrated service delivery and healthy behaviors in the home?
- To what extent have *services* been integrated to expand access, improve quality, lower costs, and respond to client needs?
- To what extent are families adopting *healthy behaviors* to safeguard their well-being and improve their quality of life?

The *Integration Scoping Tool* (Tables 1-4) that follows is illustrative and exploratory; it can be used in any “scoping exercise” that seeks to understand better the nature and extent of integration efforts in any country. The tool should not be viewed as normative guidance about whether to integrate (i.e., country readiness) or how to achieve successful integration in any given country. Many factors, such as the five discussed earlier in the paper (country ownership, benefits/costs, potential for adaptation, feasibility, and operational challenges), must be considered. Furthermore, not all elements in the tool are relevant or appropriate for all settings. For example, integrated service delivery for pregnant women and mothers and children less than two years of age may be the most strategic and meaningful focus for policy makers and programmers in many countries. Moreover, the correlation among many of the integration elements and better health outcomes remains undetermined.

The *Tool* comprises three elements:

- An overarching question for each of five functional domains (policy, program/organization, system support strategies, services, and health promoting behaviors)
- A series of features or characteristics for each functional domain
- A determination of the extent to which the function is present: fully, partially, or not at all

The content of the tool was drawn from a cursory review of the peer-reviewed and grey literature on integration. As such, many of the elements in the tool are generic; specification and adaptation to local conditions is required to make the tool meaningful and useful. The tool is best used in a consultative group setting with multiple participants who bring different perspectives and experiences to the exercise. Important participants include representatives from civil society, the private sector, the public sector, and the donor community. Good coordination, planning, and facilitation will be necessary to ensure all stakeholders have adequate voice in any such exercise. The *Tool* recognizes that integration can occur at different levels within the national health system as well as across these levels.

Finally, the *Tool* is just a starting point for thinking about the scope of integration and for discussing the policy and programmatic implications for countries. Many more tools and approaches are needed to adequately inform the discussion, including cost-benefit and cost-efficiency studies, as well as operational research protocols intended to investigate questions as they sharpen. It would be useful to document to what extent and how those involved in the scoping exercise further defined the elements in the tool and applied the elements in the decision-making process, and any changes country teams would recommend to improve the utility of the tool.

Table 1. Integration Scoping Tool: Policy and Programs

Domain	Integration element	Degree*
To what extent is a <u>supportive policy environment</u> in place to foster integration?	<ul style="list-style-type: none"> • A set of essential public health priorities and the relationships among them articulated in national strategies and plans 	Fully, partially, not at all
	<ul style="list-style-type: none"> • Integration-friendly laws, regulations, technical guidelines, protocols and plans adopted 	Fully, partially, not at all
	<ul style="list-style-type: none"> • Government is an active steward of the health sector (e.g., leading coordination of a sector-wide approach, if relevant) 	Fully, partially, not at all
	<ul style="list-style-type: none"> • A comprehensive M&E platform adopted 	Fully, partially, not at all
	<ul style="list-style-type: none"> • Funds budgeted, allocated, expended and accounted for in a way that supports integration (e.g., national health accounting is being implemented) 	Fully, partially, not at all
	<ul style="list-style-type: none"> • Key stakeholders, including policy makers, senior managers, staff, community and donors support integration. 	Fully, partially, not at all
	<ul style="list-style-type: none"> • Decentralization of health services implemented in a way that reinforces integration across functions 	Fully, partially, not at all
To what extent are <u>programs</u> being consolidated to achieve better outcomes at lower cost?	<ul style="list-style-type: none"> • For interventions with overlapping populations, consolidated management and administration of multiple programs adopted 	Fully, partially, not at all
	<ul style="list-style-type: none"> • Resources shared or pooled across different topical disease-specific programs 	Fully, partially, not at all
	<ul style="list-style-type: none"> • Disease control program staff consolidated across core management functions 	Fully, partially, not at all

**To be defined locally to include, for example, geographic and/or population coverage.*

Table 2. Integration Scoping Tool: Health System Support Strategies

Domain	Integration element	Degree
To what extent are <u>health system support strategies</u> being managed to support integrated service delivery and health promoting behavior in the home?	<ul style="list-style-type: none"> Integrated disease surveillance and response network adopted 	Fully, partially, not at all
	<ul style="list-style-type: none"> Integrated laboratory network adopted 	Fully, partially, not at all
	<ul style="list-style-type: none"> An inter-operable information system for managing data collection, analysis and use for decision-making, supervision, monitoring and evaluation adopted 	Fully, partially, not at all
	<ul style="list-style-type: none"> An inter-operable system for managing the selection, procurement, distribution and use of pharmaceuticals, commodities and other medical technologies adopted 	Fully, partially, not at all
	<ul style="list-style-type: none"> An inter-operable system for managing human resources for health, including non-traditional service providers⁴ adopted 	Fully, partially, not at all
	<ul style="list-style-type: none"> A comprehensive approach to ensuring quality of care across service delivery units adopted 	Fully, partially, not at all
	<ul style="list-style-type: none"> Complementary approaches to promoting behavior change at facility, community & household levels adopted 	Fully, partially, not at all
	<ul style="list-style-type: none"> Integrated public health communication strategy adopted 	Fully, partially, not at all
	<ul style="list-style-type: none"> Communities support integration through activities to ensure a continuum of care and oversight of integrated services provided by facilities & CHWs 	Fully, partially, not at all

⁴ # of HWs who can provide multiple services, a national HR plan, recruitment, retention, staff mix, pre-service training, in-service training, coaching and mentoring, supervision, task-shifting, safe work environment, HRIS

Table 3. Integration Scoping Tool: Health Services

Domain	Integration element	Degree
<p>To what extent <u>have facility-based services</u> been integrated to expand access, improve quality, lower costs and respond to client needs?</p>	<ul style="list-style-type: none"> • Health services integrated <u>between</u> facilities (e.g., cross-referral from co-located clinics, such as FP&HIV) • Health services integrated (i.e. basic, limited, essential packages of care) <u>within</u> facilities to address different client needs, for <ul style="list-style-type: none"> ✚ <i>single beneficiaries</i> (e.g., people living with HIV/AIDS, or newborns, or sick children, or pregnant women, or HIV+ pregnant women, or women of child-bearing age) ✚ <i>multiple beneficiaries</i> (e.g., (1) mothers and children; (2) women of reproductive age, children, and pregnant women; (3) newborns, infants, children, HIV exposed infants, and HIV+ infants; (4) families—all genders, ages, treatment categories) 	<p>Fully, partially, not at all</p> <p>Fully, partially, not at all</p> <p>Fully, partially, not at all</p>
<p>To what extent <u>have community-based and other services</u> been integrated to expand access, improve quality, lower costs and respond to client needs? (cont.)</p>	<ul style="list-style-type: none"> • Home-based care testing and counseling for multiple services adopted • Community-based service delivery that offers a continuum of integrated services between the community and facilities adopted • Integrated delivery campaigns and child health & nutrition days for mothers and children adopted • Different models of integrated service delivery adopted <ul style="list-style-type: none"> ✚ Same site/same provider (lower levels) ✚ Same site/different provider/facilitated referral • Integrated service delivery guidelines, manuals, job aids present on site 	<p>Fully, partially, not at all</p> <p>Fully, partially, not at all</p> <p>Fully, partially, not at all</p> <p>Fully, partially, not at all</p> <p>Fully, partially, not at all</p> <p>Fully, partially, not at all</p>

Table 4. Integration Scoping Tool: Healthy Behaviors

To what extent are families adopting healthy behaviors to safeguard their well-being and improve their quality of life?	<u>Care seeking</u>	
	• Families are seeking care for a constellation of curative problems	Fully, partially, not at all
	• Families are seeking multiple preventive services	Fully, partially, not at all
	<u>Care in the home</u>	
	• Families have adopted a combination of healthy behaviors in the home. For example:	
	✚ Dual use of condoms for prevention of sexually transmitted infections and pregnancy	Fully, partially, not at all
	✚ Family planning, post-partum care, and PMTCT prevention by HIV positive individuals	Fully, partially, not at all
✚ DOTS and ART adherence	Fully, partially, not at all	
✚ Safe water use, diarrhea prevention and ORT use	Fully, partially, not at all	
✚ Feeding practices, micronutrient supplementation, de-worming, bednet use, early childhood development, and treatment of ARI and other childhood illnesses	Fully, partially, not at all	

MONITORING AND MEASURING INTEGRATION PROGRESS

Summary

- To measure integration progress, begin with a “logic” model of what you expect to achieve.
- From among the many variables in your logic model, define a limited, manageable number of indicators to track progress.
- Develop a simple measurement plan.
- Implement the plan.
- Modify the program based on periodic reviews of progress.

The USG can help advance understanding of the benefits and costs of integration by working with partners to monitor and evaluate integration efforts.

- ❖ ***To measure progress toward integration, begin with a “logic” model of what you expect to achieve.***

A logic or causal model specifies the network of operational variables and their causal connections in a program (Naimoli et al., 2009). A logic model usually comprises a mixture of input, activity, output, outcome, and impact variables. An example of an integration logic model, from Mozambique, is presented in Figure 2.

- ❖ ***From among the many variables in your logic model, define a limited, manageable number of “indicators” to track progress***

Indicators are measures or signaling devices that describe how well an integration effort or program is achieving its desired outcome. Indicators are usually quantitative measures, but may also be qualitative. Although there are no consensus metrics to measure progress toward integration that apply equally in all regions or countries, indicators of success sensitive to local investments need to be developed and monitored locally.

Depending on the complexity of the program, consideration should be given to having a few indicators for each domain described in the *Integration Scoping Tool* (e.g., changes in policies, strategies or regulatory frameworks that support integration; changes in system functions, such as human resources, that support integrated service delivery; changes in service access, coverage, quality and use, including client satisfaction, associated with integrated services; and cost-effectiveness of integration). The *Tool’s* integration elements may help stimulate thinking about relevant indicators that can be adapted to local circumstances. Some additional potential indicators about integrated services that also may prove useful are included in Box 6.

Complex programs may lend themselves to formulations of indices or composite measures of integration. Decisions about appropriate weighting of the individual measures would need to be made locally, based on local circumstances, experiences, and priorities. There are many possible indicators from which to choose, but only a few should be selected. The selected indicators should (1) represent the most basic and important dimensions of your program, (2) provide the amount of information needed to make reasonably confident management decisions, and (3) be able to be calculated from data that can be collected and analyzed at a reasonable cost, mostly with available program resources (USAID, 1996). When choosing indicators, additional criteria to keep in mind are as follows:

- Is the indicator a true and accurate measure of integration? (validity)

- Can the indicator be measured consistently and dependably across administrative units within country and over time? (reliability)
- Does the indicator have the ability to detect change within a reasonable time period and as a result of successful program implementation?
- Does the indicator have the ability to produce data that can be easily interpreted?
- Is the indicator useful in guiding program change?

❖ ***Develop a simple measurement plan.***

A plan for tracking progress should include the following elements:

- A narrative definition of the indicator
- Explicit descriptions of numerators and denominators, as appropriate
- A planned level of achievement, or target, including an estimate of when the achievement is to be obtained
- Data sources
- Frequency of data collection
- Responsibilities for data collection, analysis and use
- A budget

❖ ***Implement the plan***

A *pilot test* of the selected measures in a limited geographic area can provide valuable information and insights into the feasibility of the plan and the appropriateness of the indicators prior to implementation on a larger scale. Tracking progress toward desired outcomes should not be unduly burdensome for implementers. Whenever possible, available data from indigenous information systems should be relied upon and opportunities to coordinate data collection activities with on-going data collection activities, surveys, or studies funded by others through other means should be pursued. Every effort should be made to track progress prospectively; experience has shown that trying to reconstruct program implementation is an onerous task plagued with biases.

Box 6: Illustrative topics for indicator development

Parameters	Topics for indicator development*
<i>Efficiency</i>	<ul style="list-style-type: none"> • Mutual benefits accruing to all the integrated services/interventions • Savings in patient time and money • Cost-effective use of existing resources • Competition among programs for resources • Duplication, economies of scale
<i>Access</i>	<ul style="list-style-type: none"> • Physical and effective availability of services for the population • Stigma traditionally attached to non-integrated services • Geographic coverage of health services • Cost of extending geographic or population coverage of health services
<i>Quality</i>	<ul style="list-style-type: none"> • Continuity of care for clients with multiple needs • Timely diagnosis • Correct treatment • Appropriate follow-up of clients • Client satisfaction with care • Health worker morale
<i>Effectiveness</i>	<ul style="list-style-type: none"> • Use of efficacious, integrated services • Missed opportunities at key high-volume contact points • Performance of “platform” high-performing services relative to performance of services to which they have been linked without making the former worse off • Behavior change in health facilities • Behavior change in the community and the home
<i>Impact</i>	<ul style="list-style-type: none"> • Morbidity and mortality • Protection of the population from financial risk • Responsiveness to client needs
<i>Sustainability</i>	<ul style="list-style-type: none"> • Sustainability of the achievements of discrete, vertical programs • Contribution of integrated services to overall health system performance
<i>Equity</i>	<ul style="list-style-type: none"> • Equity of services for men, women, adolescents and other populations in hard-to-reach and/or marginalized communities compared to that for some groups in accessible populations
<i>Unintended consequences</i>	<ul style="list-style-type: none"> • Harm avoidance (e.g. poorly planned, badly executed integration of TB/HIV activities can increase risk of exposure, transmission of TB to highly susceptible individuals.

**Explicit definitions, change parameters, targets, and numerators and denominators should be formulated at local level. Furthermore, some of these topics may be more difficult than others to measure, and may not meet all the afore-mentioned criteria for indicator development. Local decisions and adaptations will be necessary.*

❖ ***Modify the integration program based on periodic reviews of progress***

The primary rationale for the collection of these data is to use them to improve program management, including the identification of implementation bottlenecks that could be investigated through timely operational research. Examples of some possible research topics are included in Box 7. Periodic reviews should be incorporated into the existing cycle of national reviews of progress toward meeting national health and development priorities.

Box 7. Ten potential operational research topics on integration

1. The impact of co-morbidities of mothers and infants on health status
2. Level of effort/intensity required to conduct integrated activities
3. Quality of integrated activities
4. Incremental cost/benefit of integration over single, vertical activities
5. Impact of task shifting and the enhanced role of community health workers in an integrated system on worker satisfaction and health outcomes
6. User satisfaction with integrated programs
7. Robust documentation of how integration works in practice and the degree of progress toward integration
8. Documentation of “failed” integration programs
9. Documentation of the intended and unintended effects of integration, both positive and negative
10. Understanding health care seeking and home-based health care practices for a constellation of problems

FUTURE DIRECTIONS

Drawing upon two Cochrane Reviews, other peer-reviewed and grey literature, and anecdotal reports from the field, this paper presents some initial ideas, additional resources, and a tool to assist USG country teams in their decision making about integration in the health sector. It is evident from these different sources of information that the topic of integration is fostering a heightened level of reflection, engagement, problem-solving, experimentation, and documentation by governments, academicians, donors, and public health practitioners.

As more information becomes available and our collective knowledge expands, it will become increasingly important for the USG to develop and sustain a knowledge management function

that ensures broad dissemination of new learning as well as opportunities for practitioners and researchers to gather occasionally to discuss the practical implications of this learning for policies and programs in the field. GHI senior leadership welcomes suggestions from country field teams on how it might best organize and support such a function to add value to field operations.

Several other key directions emerge from this rapid review of the state of the art. Although some evidence exists, more work remains to confirm the feasibility of integration and to demonstrate that the advantages and benefits of integration outweigh its risks and costs. USG country teams should consider embedding the monitoring of important processes and the evaluation of outputs and outcomes into programming for integration, and adequately supporting this work with the necessary budget and manpower, perhaps by leveraging funds from other partners with similar interests. Well-managed M&E strategies will uncover bottlenecks to implementation. Operational research topics, such as those identified in Box 7, can suggest ways to overcome these bottlenecks and can improve policy making and programming. Some prospective, long-term impact and cost analyses of integration will probably be necessary to convince governments and other stakeholders of the added value of integration.

The paper also makes the case for a comprehensive research agenda that includes evaluation of the relative advantages of different models of policy, program, and service integration. One tangible outcome of such an agenda would be an increased number of more rigorous studies, the findings from which should be routinely published in the peer-reviewed literature. Considering current budget constraints, some creative thinking is in order for how the USG can make a substantial contribution to building a sound evidence base for integration.

Finally, the relevance and utility of this document for field operations can only be as good as the quality of information provided on how, when, where, and under what conditions it has been used, and with what results. GHI senior leadership encourages USG country teams to share their experiences on the utility of this document and to recommend how it can be improved to ensure its relevance to field operations. The paper will be revised occasionally to reflect learning in the field.

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Annex A

The Impact of Integrated FP-MNCH Services on Mortality in Bangladesh

Since the mid 1960s, USAID has supported a Demographic Surveillance System in Matlab, Bangladesh. USAID analyses of the high quality Matlab data demonstrate the impact of quality, integrated FP-MNCH services on maternal, newborn, infant and child mortality in Bangladesh, compared to standard government services.

Findings are based on analysis of a sample of over 215,000 married women of reproductive age over a thirty year period.

Figure 1 outlines the FP-MNCH services that are available in the FP-MNCH Area and the Comparison Area. In the FP-MNCH area:

- FP services have been available since 1977.
- Child survival interventions were added in 1978.
- Safe motherhood interventions were added in 1987, with an emphasis on institutional deliveries since 1991.
- Newborn care has been introduced recently.

	Figure 1	
FP-MNCH Services	FP-MNCH Area	Comparison Area
Contraceptive supplies	Sub-centers run by nurses or midwives (supervised by medical officers)	Community clinics run by paramedics
ANC services	Comprehensive ANC from sub-centers	Basic ANC
Skilled birth attendants at facilities <ul style="list-style-type: none"> • Newborn care • Post-abortion care 	24/7 basis <ul style="list-style-type: none"> • Yes • Yes 	Not available <ul style="list-style-type: none"> • None • None
Referral linkage to comprehensive EmOC	Yes	No
Supervision of providers	Systematic supervision is practiced	Weak supervision
Client follow-up	Strong mechanism	None or weak

Family planning prevents maternal and child deaths by: reducing the number of times a women or girl is exposed to pregnancy; and by preventing high risk pregnancies – short interval, high parity and advanced and young maternal age pregnancies. High risk pregnancies are strongly associated with increased risk of maternal, newborn, and infant mortality and morbidity.

Impact of FP-MNCH Services on Maternal Mortality

- The maternal mortality rate (number of maternal deaths/100,000 women) in the FP-MNCH integrated area is 38 percent lower than in the comparison area (35 vs. 56). Analysis found that there were fewer pregnancies in the FP-MNCH area than in the Comparison Area.

Impact of FP-MNCH Services on Newborn, Infant and Child Mortality

- Newborn, infant and child mortality rates were significantly lower in the FP-MNCH Area than in the Comparison Area for all measures of mortality (newborn, infant, child) and for nearly all sub-periods of time (1982-2002).

Impact of FP-MNCH Services on Non-live Birth Outcomes

- Analyses also found a strong association between short intervals and the risk of non-live birth outcomes (induced abortion, miscarriage and stillbirth), as well as an association between non-live birth outcomes and the risk of maternal mortality. Short intervals were less common in the FP-MNCH Area than in the Comparison Area for nearly all periods of time. The FP-MNCH Area had relatively fewer pregnancies that ended non-live births than the Comparison Area, and a relatively lower mortality rate among women whose pregnancy ended in a non-live birth outcome.
- Overall, for both areas, the 13 percent of pregnancies that ended in abortion, miscarriage, or stillbirth accounted for 47 percent of the maternal deaths. Stillbirths, the highest risk outcome, representing only 3 percent of all pregnancy outcomes, accounted for 31 percent of maternal deaths.

Impact of FP-MNCH Services on Other High Risk Pregnancies

- High parity (4-7 and 8+) was less likely and average parity was significantly lower in the FP-MNCH Area than in the Comparison Area for all periods of time.
- The percentage of births occurring at maternal age 35+ was lower in the FP-MNCH Area than in the Comparison Area for almost all periods of time. Fewer pregnancies were terminated in the FP-MNCH area.

Conclusions

Lower maternal and newborn, infant, and child mortality in the FP-MNCH Area is due to the Area's lower pregnancy rate, higher quality of services for pregnancies ending in live birth, lower proportion of and lower mortality rate among pregnancies ending in non-live birth outcomes, and fewer high risk pregnancies.

Sources: USAID funded analyses: *Reproductive Patterns and their Association with Maternal, Newborn, and Child Health in Matlab, Bangladesh*, Presentation at Healthy Timing and Spacing of Pregnancy Community of Practice Meeting, J. DaVanzo and M Rahman, May 3, 2011; J DaVanzo *et al*, *Effects of interpregnancy interval and outcome of the preceding pregnancy on pregnancy outcomes in Matlab, Bangladesh*, BJOG, Vol. 14, 6 July 2007; L Hale *et al*, *Why are infant and child mortality rates lower in the MCH-FP Area of Matlab, Bangladesh?* *Studies in Family Planning*, Vol 37, Number 4, December 2006; M Rahman *et al*, *The role of pregnancy outcomes in the maternal mortality rates of two areas in Matlab, Bangladesh*, *International Perspectives on Sexual and Reproductive Health*, Vol 36, Number 4, December, 2011.

Annex B

Cochrane Reviews on Integration of Health Services

-Key Findings-

To compile and assess the evidence that would help policy makers, public health workers, and clinicians in their decision making about integration, USAID commissioned two Cochrane Reviews of the scientific literature to evaluate the effectiveness of (1) integrating MNCH, FP and Nutrition services, and (2) integrating HIV/AIDS services with MNCH, FP and Nutrition services. Other goals of the review were to identify factors that promote and inhibit program effectiveness, and to identify "lessons learned" from the experiences of integrated programs.

The key research questions of both reviews were as follows:

- What are the key integration models evaluated in the literature?
- What are the key outcomes from these integration approaches?
- What is the rigor of the evaluation study designs?
- What types of integration are effective in what context?
- Do integrated services increase or improve service coverage, cost, quality, use, effectiveness, and health?
- What are the best practices, processes, and tools that lead to effective, integrated services?
- What are the barriers to effective integration?
- What are the evidence/research and program gaps? What more do we need to know?
- How can future policies and programs be strengthened?

Key findings of the FP-MNCH-Nutrition Review

After screening over 14,000 studies, a total of 36 peer-reviewed articles met the rigorous inclusion criteria for the review, and they reported on 29 distinct interventions. Ten were conducted in Sub-Saharan Africa; nine in South Asia; three in Latin America; two in East Asia; and one each in Russia, Syria, Italy, the U.S., and Australia.

Seven studies used a randomized control trial (RCT) design. The average rigor score of the RCTs was 6.3 out of nine (range: 5-8). Most studies used less rigorous designs, such as pre-post or cross-sectional with a comparison group. The average rigor score of these studies was 1.9 (range: 1-6).

Coverage. Of the four studies that reported vaccination coverage as an outcome, only one demonstrated an improvement in vaccination coverage as a result of the integrated intervention. The remaining three interventions had either mixed or no effect on vaccination coverage. One of these four studies also reported a different coverage outcome (availability of a private doctor or a government health center), and it found an increase in coverage as a result of the intervention. No studies reported that coverage decreased as a result of the intervention.

Quality of care. A total of 15 studies reported on quality of care as an outcome. Quality was measured using a variety of methods, such as client satisfaction measures, quality index scores, and proportion of clients receiving certain types of support and information. Eleven of the 15 studies reporting quality outcomes found that the integration intervention improved quality, while the remaining four studies

found that the integration intervention improved quality, while the remaining four studies found either mixed or no effect on quality. No studies reported that quality decreased as a result of the intervention. *Use of MNCH, Nutrition and FP services.* Twelve studies reported use of MNCH-N and FP services. This category included use of antenatal care, post-abortion care and family planning services (though not necessarily use of a contraceptive method); infant follow-up visits; immunizations administered; and visits to clinics. All but one study found that use of MNCHN and FP services increased as a result of the integrated intervention; the remaining study found that use of MNCHN and FP services did not change. No studies reported that use of MNCHN and FP services decreased as a result of the intervention.

Cost and cost-effectiveness. Only four studies reported either absolute cost or cost-effectiveness, and all four studies demonstrated either a decrease in cost or an improvement in cost-effectiveness as a result of the intervention. Two studies found that cost per visit or per service decreased after an integrated intervention had been implemented. The other two studies also showed increased cost-effectiveness, although upfront costs were higher for the integration intervention.

Effectiveness. Measures of effectiveness included health and behavioral outcomes. The most commonly reported behavioral outcome was family planning use. Of 26 studies reporting this outcome, 19 found an increase in family planning use as a result of the integrated intervention, whereas seven found a mixed or no effect. The most commonly reported health outcome was subsequent pregnancy. Of ten studies reporting this outcome, four found a decrease in pregnancy as a result of the integrated intervention, whereas six found a mixed or no effect. Only four of the ten studies specifically measured unplanned pregnancies; two found a decrease and two found a mixed or no effect. Results were similar for other health and behavioral outcomes, with some studies finding a positive effect and others finding a mixed or no effect. No studies reported negative outcomes for any health or behavioral outcomes.

The main conclusion of the Review was that integrating MNCH, Nutrition and FP services was feasible. Across the variety of integration models, settings, and target populations, most studies reported that integration had a positive impact on reported outcomes; however, many studies also reported mixed effects or no effect on some outcomes. No studies reported negative outcomes as a result of providing integrated services, although this could be the result of publication bias (i.e., studies are more likely to be published if they have positive results).

The Review also presented evidence on the following integration models: antenatal care and family planning services; post-abortion care and family planning services; intrapartum care and family planning services; postnatal care and family planning services; infant/child services and family planning services; and maternal and infant nutrition and family planning services.

Key findings of the FP-MNCH-HIV-Nutrition Review

The methodological rigor of the study designs was assessed on a 9-point scale. In general, the rigor of the study designs was low, with an average rigor score of 2.7 out of 9 (range 1-7). There were no randomized trials and only one cluster randomized trial (a step-wedge design). Most studies used less rigorous designs such as cross-sectional, serial cross-sectional, pre-post, or non-randomized trial designs⁵

⁵ Of the more than 10,000 citations that were identified and screened for inclusion, most did not meet inclusion criteria for the review. A total of 20 peer-reviewed articles representing 19 interventions were included from the

The main conclusion of the FP-MNCH-Nutrition-HIV services Review was that integrating these services was feasible across a variety of integration models, settings, and target populations. Most studies reported that integration had a positive impact on reported outcomes; however, several studies also reported mixed effects or no effect. Only one study reported negative outcomes as a result of providing integrated services, although this could be the result of the positive bias of the published literature.

Health outcomes. Only a few studies reported on change in health outcomes, specifically pregnancy and recovery from malnutrition related to integrated services, and all showed improvements in these outcomes. Two studies that reported pregnancy outcomes found the number of pregnancies decreased after integrated FP-HIV services were introduced. No studies reported on mortality, or HIV or STI incidence.

Behavioral outcomes. The most commonly reported behavioral outcome was contraceptive uptake and use. All seven studies that reported on contraceptive use showed positive results. Two studies reported on ART initiation; both showed positive results. One study showed an increased proportion of treatment-eligible women initiating ART during pregnancy after integration although there was no effect on 90-day retention rates. The other study showed reduced time to treatment initiation. Five studies examined HIV testing uptake; four found positive effects and one showed mixed/no effects because the differences in the effect sizes were small and the significance of the difference was not reported. No studies reported on bed net use.

Process outcomes. The impact of integration on quality of HIV or MNCHN services was generally positive, with most studies (5 of 7) showing improvements on a variety of diverse measures of quality. One study showed mixed effects and one study had a potentially negative effect of integration on quality. Of the 6 studies that reported on uptake or coverage of HIV or MNCHN services, five showed a positive effect, and one showed mixed/no effect because there was no statistically significant difference in client volume between groups. The one study that reported a potentially negative effect of integration was Simba 2010, which showed that average staff workload was higher in clinics that provided both reproductive and child health (RCH) services and PMTCT services compared to those that provided RCH services alone; however, the significance of this difference was not reported and there was a wide range in staff workload across clinics. No studies reported on the cost or cost-effectiveness, stigma, or women's empowerment of providing integrated services.

electronic database and journal hand searches, which were coded in the review. An additional 22 unpublished reports representing 14 interventions were identified for summarizing from the unpublished program reports.