

Integrated Delivery of Health Services During Outreach Visits: A Literature Review of Program Experience Through a Routine Immunization Lens

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Background. Outreach services are used systematically to deliver immunization and health services to individuals with insufficient access to health facilities in lower-income countries. Currently, the topic of integrated service delivery during immunization outreach lacks the attention paid to integration at fixed sites or during campaigns. This article explores integrated outreach and risks associated with service integration.

Methods. Published and gray literature in public health databases and on organization websites were reviewed, yielding 33 articles and gray literature documents for a literature review of experience integrating other services with routine immunization at outreach sessions.

Results. The current policy climate favors service integration as a strategy for increasing the equity and efficiency of important health interventions. However, integration may also present some risk to well-established and resourced interventions, such as immunization, which must be recognized as programs compete for limited resources. Experience reveals integration opportunities in planning and intersectoral coordination, training and supervision, community participation, pooled funding, and monitoring.

Conclusions. The reviewed literature indicates that successful integration of health interventions with immunization at routine outreach sessions requires well-planned and implemented steps. It also highlights the need for additional studies or feedback on planning and implementing integrated outreach services in lower-income countries.

Routine immunization services in lower-income countries are generally delivered through fixed-post sites (ie, within the health facility) and enhanced by outreach for populations living in remote areas with limited access to fixed services. Usually defined as planned, regular, and periodic single-day visits by qualified staff from a health facility to populations located 5–15 km from the facility, outreach remain a key strategy for providing services to

underserved or hard-to-reach groups. Outreach often plays an important role in systematically delivering immunization services to a large proportion of the population—in some cases reaching >50% of the target population [1]. In addition to providing routine immunizations, outreach sessions present opportunities to provide women, children, and their families with other vital interventions, such as vitamin A supplementation, deworming tablets, and insecticide-treated nets (ITNs) [2]. Although the benefits of integration may include rapid uptake of linked interventions and reduced competition for resources, risks can include overburdened staff, unequal resource allocation, and logistical difficulties [3].

The four major themes of the World Health Organization (WHO)/United Nations Children's Fund (UNICEF) Global Immunization Vision and Strategy (GIVS) (<http://www.who.int/immunization/givs/en/>) suggest that, although immunizing more people against

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more diseases is a priority, so is integrating immunization and other critical interventions. Linking immunization with other health interventions during outreach has the potential to be particularly strategic.

The design of integrated outreach services should be informed by local experience supplemented by lessons learned elsewhere. Recent literature reviews focusing on integration of immunization and other interventions have examined both campaign and routine delivery platforms [3–5]; however, consolidating the experiences of integrating other services with routine immunization during outreach sessions has received insufficient attention.

While acknowledging the larger primary healthcare movement starting in the 1970s, the purpose of this desk review was to gather information on experiences with integrated outreach services through a routine immunization lens, with the objective of exploring how the provision of current integrated outreach might be expanded and improved. We also discuss the advantages and risks associated with combined services from the perspective of the health system and of the intervention (or a component of the intervention; eg, vitamin A as part of a broader nutrition program).

METHODS

Literature Review Design and Methodology

Our literature search was complicated by the different interpretations of what constitutes outreach and varying nomenclature for the term, as countries differ in how they classify fixed/static, outreach, and mobile services. For example, a study in Nepal [6] noted that service delivery sites that were called fixed (or static) by country managers may actually be more correctly classified as outreach sessions because the country's definition for outreach includes sites where there is no working refrigerator whereas fixed services are defined as those that occur in health facilities equipped with electrical cold chain equipment. In neighboring India, health subcenters have been reclassified as outreach in some areas based on this same premise. A further complication in the literature review was the various terms used for outreach. Because simple database searches using the term "outreach" yielded few results, we used a number of variations on the term, such as "vaccination posts" (Cambodia), "satellite + EPI clinics" (Bangladesh), "pos-yandu" (Indonesia), "Village Health and Nutrition Days" (India), "mobile health brigades" (Mozambique), and "SISCa" (East Timor). This review defines outreach as single-day visits by qualified health facility staff to populations usually located 5–15 km from a fixed facility. Because our objective was to explore integrated outreach implemented with routine immunization, we deliberately excluded literature on fixed sites and campaign-style delivery platforms for integrated services such as semiannual child health days and supplemental immunization activities.

For published literature, we searched English-language public health databases (such as Popline, ELDIS, EBSCO, ProQuest

Direct, Science Direct, Population and Health InfoShare) using subject headings and keywords that included "immunization/immunisation," "outreach," "vaccination," "integrated," and "integration," as well as the variations on "outreach" previously noted. For gray literature, we searched the websites of the agencies and organizations dealing with immunization and public health, such as WHO, UNICEF, the World Bank, the United States Agency for International Development (USAID), PATH, IMMUNIZATIONbasics, and the ministry of health websites of selected countries (Afghanistan, Bangladesh, Cambodia, India, Indonesia). For organizational sites without search engines, we used Google's in-site search feature to look for expected terms. We sought further suggestions about relevant literature from TechNet (<http://www.technet21.org>), a worldwide community of immunization experts. We also contacted key informants and immunization managers working in countries that have substantial experience in implementing integrated immunization outreach who described and explained the country's programs and suggested key references (full details of published and gray literature, databases searched, and search limits are available from the authors).

The search review was first confined to documents published in the last 15 years, but because this yielded a small number of findings on the topic, we later expanded the search to include older documents. In the end, the literature search yielded 33 articles, 12 published articles and 21 gray literature documents from 1992 to 2009. Although integrated immunization outreach was not the primary focus of most of these documents, each contained information that contributed to our main findings.

Our search for relevant literature focused on what was available on the Internet. Given that many lower-income countries have not yet digitized a great deal of their health-related documents, it is likely that some useful and relevant works were missed.

RESULTS

Synthesis

Of the 33 documents included, only 9 fit the full search criteria for integration in the context of routine immunization outreach. Although we focused mostly on these 9, we used all of the documents because each covered some of the aspects under review. Table 1 below summarizes the 9 documents, and the following sections explore in detail some of the broad programmatic themes that emerged from the review—mostly on nutrition, antenatal care, vitamin A, family planning, and growth monitoring, with fewer focusing on ITNs, deworming, newborn care, and integrated management of childhood services.

Planning and Intersectoral Coordination

Planning for integrated immunization outreach services takes place at 2 levels. At the national level, health and immunization managers decide on the appropriate mix of interventions and

the operational strategies for integrating services. At lower levels, this is followed by microplanning, which focuses on site selection, frequency of outreach, health staff, finance, logistics, and engagement of communities.

The first category of planning is set in motion by current global policies in immunization, such as GIVS and the Reaching Every District (RED) strategy [7, 8] and by donors' growing encouragement to countries to pursue strategies that combine other health services with immunization. Clements et al [5] describes immunization as a logical vehicle on which to add interventions such as vitamin A and ITNs because it is one of the most successful health programs. These add-ons, in turn, can contribute to increased immunization coverage because of community appreciation for the additional interventions. WHO's Sustainable Outreach Services strategy deals largely with periodic intensifications of routine immunization [4] activities but also presents options to consider when planning integration of other interventions with immunization services for hard-to-reach populations [9].

Most of the country-specific literature presented policy decisions leading to the integration of outreach services as an accomplished fact. An exception was a retrospective evaluation from the UNICEF/Canadian International Development Agency–implemented Accelerated Child Survival Development (ACSD) program in several African countries [10] (summarized in Table 1). Several articles attempted to outline basic assumptions that should guide the process of planning for integration, which impacts how integrated outreach occurs. Acknowledging that the selection of interventions for integration into an existing program can be complex, Clements et al [5] suggests that district-level planning could be key because it can identify local barriers and customize solutions to address them. IMMUNIZATIONbasics [18] classifies options for planning integration into those related to the specific intervention and those related to the health system.

Even if policy-level decisions regarding integration and intersectoral coordination are achieved at higher levels, the ultimate success of integration of services—and integrated outreach—lies in the field. UNICEF's evaluation of its Immunization Plus program [19] found that, other than vitamin A supplementation, immunization and “plus” elements remained largely separate. (“Plus” refers to a set of essential maternal and child health interventions that include vitamin A supplementation, birth registration, growth monitoring, distribution of ITNs, etc, depending on the local health context.) Policy-level direction on integrated outreach, where present, was insufficient to guide field level planning and implementation. An example includes the failure to plan for and fine-tune logistics systems to transport bulky commodities such as ITNs to outreach sites. (The article by Hodge did not specify if this was the failure of the malaria program to provide additional transport, failure of the immunization program to accommodate bulkier commodities, or both [19].)

Training and Supervision

Limited evidence exists regarding training and supervision of health workers for provision of integrated outreach. A discussion on integrated outreach services provided under India's National Rural Health Mission program [20] highlights that health workers were not fully aware of services to be offered and lacked sufficient skills to deliver the package of additional services, such as family planning. High staff turnover in Cambodia's program providing vitamin A supplements with immunization meant that new staff poorly understood their roles and responsibilities and were often unaware of the vitamin A distribution policy and schedule [13].

Realizing the importance of providing feasible and scalable strategies for capacity building of frontline workers in delivering integrated outreach services, CARE/India's Reproductive and Child Health, Nutrition, and HIV/AIDS (RACHNA) program [16] used existing platforms, such as monthly workers' meetings, to provide ongoing training on a variety of topics, including tracking of children and family planning counseling. Training was supplemented by simple tracking and counseling job aids that assisted workers in making effective contacts with families during critical periods in pregnancy and infancy. Supervisory support was strengthened through regular analysis of program performance in monthly sector meetings and joint supervisory outreach visits by various departments and community representatives. In the 5 years from baseline to endline surveys, the proportion of children aged 12–23 months who received full primary immunization increased by about 16 percentage points.

Community Volunteers

A recurring theme in both the published and gray literature was the benefits of engaging community volunteers for mobilization and the tracking of women and children and to assist health workers to conduct integrated outreach sessions.

USAID's assessment of the Reproductive and Child Health Alliance project in Cambodia [21] identified volunteer support for integrated health outreach services as a major contributing factor to increased coverage. Two government-selected volunteers per village helped raise awareness and understanding about health needs and educated and mobilized communities. Their role was seen as critical for integrated immunization outreach, particularly when messages for several interventions were delivered simultaneously. Some of their contributions are captured in Table 3. Prominently displayed wall charts in all facilities showing the location and photos of community volunteers formally reinforced their critical role in the provision of services.

The American Red Cross's mid-term evaluation of the Integrated Child Health Project in Cambodia [22] reached a similar conclusion. Red Cross volunteers used monthly immunization outreach sessions as an opportunity to teach the value of vitamin A and local food sources. As a result, mothers in the study area displayed high levels of knowledge regarding foods rich in vitamin A.

Table 1. Summary of 9 Articles Used to Review Integrated Routine Immunization Outreach

Reference	Country or Countries	Services Integrated With Immunization	Description
World Health Organization, Regional Office for Africa [1]	Benin, Cameroon, Democratic Republic of the Congo, Ethiopia, Ghana, Madagascar, Sierra Leone, Togo, Uganda	ANC, curative care, deworming, FP, growth monitoring, ITNs, VAS	Documents the status of integrated outreach services in 9 African countries as part of the Reaching Every District approach assessment
Bryce et al [10]	Benin, Ghana, Mali, Senegal	ANC, IMCI,	Evaluates the UNICEF-CIDA-supported Accelerated Child Survival and Development Initiative to indicate whether integrated services provided during outreach and campaigns led to improved and equitable coverage for health interventions
Dubowitz et al [11]	India	ANC, nutrition	Evaluates the impact of community-based tracking and health education by community volunteers during integrated outreach sessions on nutrition and immunization coverage
Edward et al [12]	Mozambique	ANC, IMCI, nutrition	Uses survey data to describe the effects of community volunteers' and leaders' health education activities and tracking of vital statistics in increasing coverage of health services during integrated outreach sessions
Helen Keller International [13]	Cambodia	VAS	Based on the national micronutrient survey, argues that immunization outreach activities appear to be a good strategy for delivering VAS
Kurniawan [14]	Indonesia	Nutrition	Describes Indonesia's 5-table system of integrated outreach service delivery and its role in improving immunization and nutrition indicators
US Agency for International Development [15]	Mozambique	ANC, FP, growth monitoring, VAS,	Evaluates, in detail, the programmatic bottlenecks in the implementation of integrated outreach services and provides practical recommendations
CARE India [16]	India	FP, nutrition, newborn care, VAS	Uses survey data as evidence of the success of interventions such as the fixed day-fixed site approach for outreach sessions, critical home contacts by community volunteers, food supplements during outreach and working closely with government systems;
TAIS [17]	East Timor	ANC, growth monitoring and nutrition, health education, hygiene	evaluates the recruitment, implementation, and supervision of community volunteers Provides useful recommendations for strengthening their role in integrated outreach sessions

Abbreviations: ANC, antenatal care; CIDA, Canadian International Development Agency; FP, family planning; IMCI, integrated management of childhood illness; ITNs, insecticide-treated nets; TAIS, Timor Leste Asistencia Integrada Saude; UNICEF, United Nations Children's Fund; VAS, vitamin A supplementation.

Indonesia provides a long-running example of programs using community volunteers in provision of integrated outreach services. Since 1985, the core of their integrated outreach program has been the posyandu (integrated health post), which is managed by volunteers who, in the past, were married women and members of the Family Welfare Movement (PKK). Implementation of posyandu requires intersectoral collaboration between the Department of Home Affairs and the Department of Health at the subdistrict level [23]. Posyandu activities are organized around the country's 5 basic health services of nutrition, maternal and child health, family planning, immunization, and prevention of diarrhea. Recruiting volunteers, providing suitable venues, and preparing for each monthly session are the shared responsibility of

the local village community development committee, the PKK, and the village head. Programming and scheduling of sessions are coordinated by the health facility staff and the subdistrict local government head, and health facility staff provide on-the-job training and supervise the volunteers [14, 24]. Historically in Indonesia, the presence of health volunteers and an active women's organization at the village level have been credited with lowering fertility and improving child survival [25].

Impressive health and nutrition gains in outreach sessions have also been demonstrated in Mozambique and in India's Bihar state, both of which have assigned community volunteers to conduct monthly home visits at neighboring households. These volunteers provide health education for the caretaker,

Table 2. Criteria to Consider in Linking Interventions to Immunization [18]^a

Related to Intervention	Related to Health System
Similar target groups	High level political will
Similar timing/frequency	Supportive national policies
Similar logistical needs	Assured financial and logistical support
Similar acceptance by community and health staff	“Multivalent” health workers
Similar skill levels needed	Supportive PHC structures
	Clear responsibilities to monitor
	Combining interventions doesn't disrupt/over-burden

Abbreviation: PHC, Primary Health Care.

^a Source: [18].

registration of vital events, and tracking of the health status of women and children [11, 12].

Community Leadership

Strong and active participation by community leaders is cited as a significant factor for motivating communities to attend integrated outreach sessions, ensuring that sessions are held as planned, and generating sufficient local support for implementation. The American Red Cross's midterm evaluation [22] of the Integrated Child Health Project in Cambodia identified community leadership as an important factor in improving immunization and vitamin A coverage rates in outreach sites. Community leaders notified the village households and referred the mothers and their children to scheduled outreach sessions. Of the 90 village leaders interviewed, 76% stated that they had participated in the outreach session in their village in the previous month, even though it was held at the time of year that rice was being transplanted. Helen Keller International's national micronutrient survey in Cambodia [13] also found that one of the principal reasons for high vitamin A coverage among older children was the influence of the village chief, who assisted immunization outreach teams by encouraging all preschool-aged children to come for the health services.

Screening for Services

Integration of services at outreach delivery points does not automatically guarantee that all relevant services will be offered to all clients. When numerous services are offered in a crowded outreach session, it is likely that health workers will focus on those services they perceive to be of highest priority. Poor, uneducated clients with “unheard” reproductive and child health needs may, therefore, be excluded from some vital services. Optimal provision of integrated services at outreach sessions requires effective screening mechanisms, as underscored by 2 studies in Bangladesh. The first study found that about one-fourth of the children aged <2 years had missed opportunities for childhood

Table 3. Tasks and Functions Performed by Volunteers^a

Acted as key mobilizers for
Outreach visits in general
Vitamin A distribution
Immunization
Identified new tuberculosis patients
Sold contraceptives
Promoted use of home treatment for diarrhea
Provided community-level education and awareness about
HIV/AIDS
The benefits of breastfeeding
Family planning
Referred clients for
Prenatal clinic
Skilled attendance during delivery
Diagnosis of suspected tuberculosis

Abbreviation: HIV, human immunodeficiency virus.

^a Source: [21].

immunization, and two-fifths of those aged <5 years had missed opportunities for treatment for both diarrhea and acute respiratory infection [26]. The second study reported that the introduction of a short, easily understood screening tool for female clients and their children aged <5 years led to an increase in the number of additional service needs identified per 100 services requested, especially for maternal family planning and treatment of reproductive tract infections and sexually transmitted infection symptoms [27], which were often missed prior to introduction of the screening tool.

Financing

Lack of regular or adequate funding is a commonly cited reason for failure to implement outreach activities. A cost and financing assessment for Ethiopia's National Immunization Program [28] found that operational costs (primarily transport and per diem payments) for integrated outreach were consistently underfunded or not funded at all. As an example of efficient and effective use of health sector resources, the project cited in the study encouraged pooling of transport resources from donor funded vertical health programs (eg, reproductive health, integrated management of childhood illness, malaria and tuberculosis control). Examples of sharing outreach resources and logistics can also be found in Vietnam, where the better-funded malaria control programs have “hosted” immunization, vitamin A distribution, and deworming outreach sessions [29].

In Cambodia, slow government cash disbursement throughout the first half of the year resulted in stoppage of outreach services. An expedient solution was to find alternative funding during the first quarter, using UNICEF, WHO, Child Vaccine Project, and GAVI Alliance funds [30]. However, a more sustainable and innovative solution is being sought through a government contracting process. Provinces and districts prepare budgets for

outreach activities and come to agreement with the national level on targets to be reached. A funding disbursement schedule is developed based on incremental improvements in coverage and targeted services. Districts similarly develop subagreements with health facilities. For example, funds are allocated to conduct outreach services, with the final 30% payment being made on achievement of an agreed coverage target for the third dose of the diphtheria-tetanus-pertussis vaccine [31].

Contributions from local communities have also been used to cover the running costs of integrated outreach services. Benin and Guinea instituted a fee-for-treatment system to cover costs such as restocking of drugs, the operation and maintenance of the cold chain and motorcycles, and staff incentives. Attempts to lower these prices included offering a limited list of generic drugs and standardizing flow charts for diagnosis and treatment [32]. A USAID-supported CARE project in Bangladesh harnessed resources by partnering with local government institutions for covering costs for transport (boats/boat fares) to remote outreach sites during the monsoon season [33].

Monitoring and Evaluation

Despite large government and donor investments in integrated immunization outreach services, there is little corresponding investment in robust monitoring and evaluation systems that provide timely information to program managers to enable midcourse corrections. For example, the evaluation of UNICEF's ACSD program [10] found that the program's investment in evaluation was too small and too late, limiting what could be learned.

The few available monitoring and evaluation studies on integrated immunization outreach can be broadly divided into 2 categories. The first group includes studies that explore the potential outcome of individual health and nutrition interventions as a result of integrated outreach. For example, Helen Keller International's survey of immunization and vitamin A coverage in Cambodia found that vitamin A coverage was high in areas where immunization coverage was high [13] (see other examples [1, 15, 34]). Other studies attempt to describe the process of integrating immunization outreach services. Examples include Timor Leste Asistencia Integrada Saude's [17] report on East Timor's PSF (Family Health Promoter) program and Mozambique's study of its mobile brigade program [15]. Using a combination of survey and qualitative methods, these studies provided detailed comparisons of the mandated norms for implementing integrated outreach services and the realities on the ground.

CARE/India's evaluation of its RACHNA program [16] combined both perspectives by providing the survey data to show that provision of immunization with food supplements at outreach sites contributed to increases in immunization coverage. It also described the operational steps taken to achieve this integration. Monitoring results were shared at all levels of the program to enable midcourse corrections by program managers.

In order to fill a gap, the Centers for Disease Control and Prevention (CDC) [35] is currently undertaking studies to evaluate integration of routine immunization with interventions such as distribution of ITNs [34], care/referral of human immunodeficiency virus-exposed infants, provision of safe water, and family planning, with the aim of helping countries and districts determine which services to integrate onto the immunization platform and to determine the additional staff and resources needed. This supplement includes CDC studies relating to ITNs in Indonesia and to safe water. However, data on coverage and other quality indicators of integrated services are not always disaggregated by the service delivery approach (fixed, outreach, or mobile), which would allow policy makers and program managers to determine the cost-effectiveness of each approach and to address specific problems encountered [1]. An exception to this is Cambodia's integrated immunization program, which has planned a national-level monitoring strategy aimed at provision of adequate management support to provinces and districts [31]. Additionally, the revised edition of WHO Regional Office for Africa's RED Guide includes a monitoring tool that encourages countries to track disaggregated coverage based on their service delivery approach [7].

CONCLUSIONS

The current health system policy climate favors integration of services as a strategy for increasing the equity and efficiency of important health interventions. However, integration may also present some risks to well-established and resourced interventions, such as immunization. These risks must be recognized as separate health programs compete for limited resources.

In the future, practitioners may have at hand evidence that field-level integrated delivery of other health services with immunizations can be mutually beneficial to all the concerned programs. At present, however, most evidence relating to integration is confined to campaigns, held episodically and characterized by a heavy reliance on donor funding. As this review indicates, there is a shortage of evidence on how lower-income countries conduct integration of health services at regularly scheduled outreach immunization sessions, which account for a large proportion of vaccinations in many countries.

The studies discussed in this review demonstrate that successful integration of other health interventions with immunization at outreach sessions, the final point of service delivery, requires a series of carefully planned and implemented steps. These steps include selecting interventions that can be feasibly integrated at the outreach level; instituting intersectoral coordination at all program levels; exploring service funding sources; conducting joint training and supervision of health workers and program managers; ensuring the participation of community-based organizations, leaders, and volunteers; and establishing

a robust monitoring and review mechanism that provides timely information to communities, health workers, program managers, and policy makers.

This review highlights the need for more studies on experiences with planning and implementing integrated outreach immunization services in lower-income countries and the need to evaluate and document the effects of integrated outreach on both immunization and other services to ensure that it is mutually beneficial in terms of coverage, patient satisfaction, and health worker workload. Although these countries offer diverse health system contexts (and local realities lead to wide-ranging differences in program structure), carefully designed studies of experiences with integrated immunization outreach using similar evaluation methodologies would enable fruitful comparisons among countries and interventions. They would also provide overall strategic and operational guidance and highlight potential pitfalls to countries planning to integrate immunization outreach services in a systematic manner.

Notes

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