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Qualitative Assessment of the Integration of HIV Services With Infant Routine Immunization Visits in Tanzania

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Abstract

Background—In 2009, a project was implemented in 8 primary health clinics throughout Tanzania to explore the feasibility of integrating pediatric HIV prevention services with routine infant immunization visits.

Methods—We conducted interviews with 64 conveniently sampled mothers of infants who had received integrated HIV and immunization services and 16 providers who delivered the integrated services to qualitatively identify benefits and challenges of the intervention midway through project implementation.

Findings—Mothers' perceived benefits of the integrated services included time savings, opportunity to learn their child's HIV status and receive HIV treatment, if necessary. Providers' perceived benefits included reaching mothers who usually would not come for only HIV testing. Mothers and providers reported similar challenges, including mothers' fear of HIV testing, poor spousal support, perceived mandatory HIV testing, poor patient flow affecting confidentiality of service delivery, heavier provider workloads, and community stigma against HIV-infected persons; the latter a more frequent theme in rural compared with urban locations.

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Interpretation—Future scale-up should ensure privacy of these integrated services received at clinics and community outreach to address stigma and perceived mandatory testing. Increasing human resources for health to address higher workloads and longer waiting times for proper patient flow is necessary in the long term.

Keywords

HIV; AIDS; immunization; integration

INTRODUCTION

HIV/AIDS is one of the leading causes of mortality globally and was responsible for 1.8 million childhood deaths in 2010.[1] Mortality rates among HIV-infected infants who do not receive treatment may be as high as 35% during the first year of life.[2] Recent studies reported HIV treatment early in life can substantially decrease mortality,[3,4] and in 2010, the World Health Organization recommended routine HIV testing of infants born to HIV-infected women and initiation of antiretroviral treatment (ART) in those found to be HIV infected.

In Tanzania, an estimated 5.7% of adults aged 17–49 years were HIV infected, accounting for 96,000 deaths in 2007.[5] By 2010, 110,000 Tanzanian children aged <15 years needed ART but only 18% were receiving them.[1] Provider-initiated HIV testing and counseling for pregnant women and early infant HIV diagnosis (EID) were introduced as part of prevention of mother-to-child HIV transmission (PMTCT) services in 2008.[6–8] When first initiated in the late 1990s, PMTCT services were offered as a standalone service in about one-third of public health facilities; in the mid-2000s, PMTCT services were integrated into antenatal care visits in these same facilities. Coverage with HIV testing of pregnant women through PMTCT services offered during antenatal care visits reached 86% by 2010.[1] However, concerns remained over the low proportion (17% in 2009) of HIV-infected children on ART and the low proportion (10% in 2009) of HIV-exposed infants (HEIs) who started cotrimoxazole prophylaxis regimen for reducing HIV-related infections within 2 months of birth.[1,9]

A strategy proposed for increasing the identification of HEIs is to offer EID during routine infant immunization visits, which occur at all public health facilities as part of a package of reproductive and child health (RCH) services.[7–10] The Tanzanian routine immunization schedule includes visits at 1, 2, 3, and 9 months of age, and 91% of all Tanzanian infants attended at least 3 immunization visits in 2010.[10] Delivery of routine vaccination services generally occurs multiple times per week across health facilities in Tanzania. Since vaccination coverage is substantially higher than EID coverage, using routine vaccination visits to both identify HEIs and follow-up with mothers of infants brought in for the vaccination visits could be a useful strategy to rapidly increase the coverage of EID.

In late 2007, the Tanzanian Ministry of Health and Social Welfare revised the national PMTCT guidelines to expand the scope of services provided by RCH facility service providers to include follow-up of HEIs during routine immunization visits. The guidelines also instructed RCH facility service providers to offer HIV testing and counseling to

mothers of unknown HIV status when bringing their child for vaccination services. In April 2009, the Tanzania Ministry of Health and Social Welfare and the US Centers for Disease Control and Prevention (CDC) began a multiyear project in 4 urban (Mbagala, Kigamboni, Nyamagana, and Buzuruga) and 4 rural (Maneromango, Chole, Hedaru, and Ndungu) clinics across 8 districts to examine operationalization of the new guidelines aimed at integrating EID into routine immunization visits. In August 2010, we conducted a retrospective quantitative review of vaccination coverage and HIV service delivery coverage and a qualitative study of mothers' and health care providers' perceptions of the integrated service. The quantitative results were presented elsewhere.[11] The following sections describe the methodology and results for the qualitative study.

METHODS

A complete description of the project methodology, including the intervention design and implementation methods can be found in Goodson et al.[11] In brief, RHC service providers asked mothers for their HIV status documentation when they brought infants for immunization visits. If they had tested HIV infected during pregnancy, these HEIs were offered EID, and initiated on cotrimoxazole prophylaxis. Infants who were HIV infected began ART. Mothers who had not been tested for HIV were offered HIV testing and counseling; mothers and infants who were infected were registered and provided HIV care. Beneficiaries were enrolled from April 2009 to March 2010.

Five months after the enrollment period ended, we conducted face-to-face interviews with mothers and health care providers directly involved in either receiving or delivering integrated services to qualitatively identify perceptions of integrating HIV services with immunization visits.

Assessment Instruments and Training

CDC and Tanzania National Institute for Medical Research (NIMR) assessment coordinators developed semi-structured guides with open-ended interview questions aimed at providers and mothers at project clinics. Basic demographic information was obtained from mothers and providers. Mothers were asked 15 open-ended questions focusing on their personal beliefs about the benefits, challenges, and acceptance of integrated services, perceptions of peer (ie, other mothers') acceptance of integrated services, and recommendations for improvement. Providers were asked similar open-ended questions, and an additional 7 questions focused on perceived challenges related to delivering integrated services and its benefits to the community.

Three trained qualitative researchers from NIMR served as interviewers; interviewers and coordinators spent 1 day reviewing methods followed by 1 day of pilot-testing the provider and mother guides at a nonproject clinic in Dar es Salaam. The guides were finalized, incorporating changes recommended during the pilot.

Data Collection

Data were collected in all 8 project clinics during August 1–17, 2010 (Table 1). At each clinic, health care providers used their registries to conveniently sample a mix of 7–10 HIV-

infected and HIV-uninfected mothers who had received integrated services during the last 6 months. A total of 64 mothers were interviewed across all clinics. Interviewers conducted face-to-face interviews with each mother in private locations near the health clinic; interviewers were blinded to the mother's HIV status and did not ask about HIV status during the interview. After the interview, providers coded the mother's HIV status and matched it to the interview number to facilitate analyses by HIV status.

At each clinic, assessment coordinators selected 2 health care providers involved in delivering integrated services and conducted face-to-face confidential interviews with them. All health care providers were employed as nurses. A total of 16 providers were interviewed across all clinics. If more than 2 providers were available, the 2 providers with the most experience delivering the integrated services were selected. All interviews were conducted in Swahili, audiotaped, transcribed, and translated into English by NIMR staff. Each interview for providers and mothers was assigned an anonymous identification number.

Human Subjects Protection

Interviewers informed each mother and provider of the assessment objectives and explained that information would be kept confidential; participants would not be identified by name when data were analyzed, and that discussions would take 30 minutes for mothers and 60 minutes for providers. Participation was voluntary and oral informed consent was obtained for those who agreed to participate. The assessment protocol was approved by the CDC Associate Director of Science Office and the Institutional Review Board at the Tanzania National Institute for Medical Research.

Data Analysis

CDC staff analyzed the English transcripts of the interviews. We used the thematic analysis approach.[12] The purpose of this approach is to condense raw text data from interviews into a brief summary format by developing themes to reflect recurrent patterns in participants' reported experiences of the intervention under investigation. We developed a coding framework based on reading and re-reading participant interview transcripts and conducted computer-aided text analysis [EZ-Text software (CDC, Atlanta, GA)] to apply these codes to interview transcripts. The process of coding and reading was dynamic as each transcript informed both the collection of further data and subsequent analysis. We then identified *themes* among the coded text segments. Themes are defined as general propositions, which emerge from participants' described experiences, which provide recurrent and unifying ideas regarding the question of interest.[13] We arranged and categorized these *themes* such that originally identified themes became *basic themes* and categories of *basic themes*, which shared larger, underlying issues were labeled as *organizing themes*, and these *organizing themes* were further categorized into larger *global themes*. Original text quotes were selected to illustrate the essence of certain themes.[14]

RESULTS

Emerging Themes

Sixty-four mothers (34 in urban clinics and 30 in rural clinics) and 16 providers were interviewed (Table 1). Thirty-two (50%) mothers were HIV infected and 32 (50%) were HIV uninfected. Nearly all mothers (62; 97%) considered their occupation to be "housewife"; 37 (58%) were Muslim and 27 (42%) Christian. Analysis of the responses revealed 7 organizing themes, which emerged from the responses: provider–patient interactions, efficiency of integrated service delivery, confidentiality of services received, HIV testing perceptions, awareness of own health and service benefits, community stigma, and family stigma. Three global themes were identified: health sector topics providing integrated services, individual-level acceptance of integrated services, and community-level topics affecting acceptance of integrated services (Table 2).

Provider–Patient Interactions

Nearly all HIV-infected and HIV-uninfected mothers across all sites expressed trust in their providers and described them as experienced, kind, and informative (Table 2). Two mothers from separate sites who were unsatisfied described their providers as unfriendly, stern, and impatient. Mothers believed having an "*informative provider*" was a good way to overcome mothers' concerns about attending integrated services. Three mothers from 1 site reported being initially hesitant to attend integrated services but described being convinced of the service's benefits when providers explained the importance of HIV testing and care for protecting infants.

Efficiency of Integrated Delivery

Close to half of mothers, the majority from rural sites, mentioned benefits of cost and time savings because fewer facility visits were required to receive both HIV care and immunizations. Across all sites, at least 1 mother described long queues for the integrated service and requested that additional providers be hired. In 3 urban sites and 1 rural site, 6 mothers requested immunization and HIV services each on separate days to shorten long waiting times. Providers also reported health visits were longer, due to the integration of HIV care. Mothers believed long queues were related to patient flow and human resource issues; in Kigamboni, mothers described how they had to queue twice (first for immunizations, then for HIV care) because there was only 1 provider to conduct both services:

> Because you will see it from immunization, there are many queues, I better start with HIV care and finish at immunization. Therefore, they have to take one after another—Mother

Mothers in 2 urban sites expressed concern that long waiting times kept peers from attending immunization visits because they needed to balance health visits with other responsibilities.

Confidentiality of Services Delivered

Multiple mothers believed providers kept information about patients' HIV status confidential and communicated HIV test results privately. However, in rural sites, mothers expressed concern that confidentiality was compromised either by the facility layout or by provider workload. One mother described how providers tried to save time by calling multiple mothers into a single room and providing HIV services in view of all present.

> Now when she will go to tell others then you will be surprised to see that everybody knows.... it is not good to call many, those are the people who go out and start spreading the news that so-and-so is taking medicine—Mother

Mothers from 3 rural sites reported that services were provided in designated rooms, which permitted waiting patients to identify which mothers received HIV care. This fear of identification was strongest in rural sites, where 1 mother reported knowing peers who stopped attending integrated services because of this fear. In another rural clinic, mothers reported most clinic patients knew one another, as village populations were small. They said other patients would probe about services received by those present, to determine who received HIV tests, so they could gossip to other community members. Providers in other rural sites believed that confidentiality was compromised, and reported witnessing patients watching one another to determine which services had been received. These providers expressed concern about community stigma affecting acceptance of integrated services.

Awareness of Own Health and Service Benefits

Nearly all mothers and providers across all sites believed integrated services were beneficial and should be scaled up. Mothers' cited benefits of integrated services included learning their own and their infant's HIV status, starting HIV treatment if needed, protecting herself and her family, and reducing HIV-related mortality. Providers' cited benefits of integrated services included identification of many HIV-infected infants, starting infected infants on treatment, and saving mothers time and money. Reaching mothers and infants who otherwise would not have received HIV care was a theme by all providers.

> So, there is a possibility for saving that child from being infected, so this makes me happy to discover it early if the children are infected or not—Provider

Providers noted that mothers' existing trust in immunization services was seen as useful for increasing uptake of services added to routine immunization visits, including HIV services. One provider explained that "mothers may fear testing at first, but they trust vaccinations and will bring the child" and immunization was a "*respected service*."

HIV Testing Perceptions and Community Stigma

In describing their own fears about HIV testing, many mothers similarly described of initially having fears of HIV testing when it was first introduced as a nonintegrated service many years ago but how the introduction of HIV testing in antenatal care services and the desire to fully protect one's infant through knowledge of HIV status helped them overcome this fear. Across all but 1 urban site, the majority of interviewed mothers of both HIV-infected and HIV-uninfected status mentioned a general community-based fear of HIV testing as a key concern with future broad acceptance of the integrated service. In all but 1

urban clinic, at least 1 mother reported knowing peers who feared HIV testing. Multiple mothers in mostly rural sites believed some peers were unwilling to bring infants for immunizations because HIV testing was included. Compounding this concern, at least 1 HIV-uninfected mother each across 4 rural and 1 urban site reported they knew peers who were worried about bringing their infant for immunizations because of the perception of mandatory HIV testing:

> They fear. They know that "if I will go to be immunized, definitely they will say that I must go there [to test]...." Today I was just outside there, I heard one lady saying "We have been told that we must give our blood..." She only wanted her baby to be immunized.... it becomes difficult [to come]—Mother

Across all 4 rural sites and 1 urban site, multiple mothers of both HIV-infected and HIV-uninfected status said the fear of HIV testing was due to community stigma and fear of death, while stigma was not or rarely mentioned by mothers at the remaining 3 urban sites. In 1 rural site, multiple mothers reported knowing peers who feared both HIV testing and integrated services:

> They fail [to attend services]. And mainly a big percent of them feel shy... They usually feel shy because of...actually they are being stigmatized by people—Mother

In 2 rural sites, multiple mothers reported that peers had concerns about HIV testing because they worried that others would identify them as receiving HIV services, and consequently they would be stigmatized by neighbors. A mother in another rural site also described HIV testing concerns linked to fear of being confirmed to be HIV infected and believing that death was imminent.

> The problem is fear... I mean they want to be discovered that they are not infected, but if they are tested and discovered to be infected it will shock them—Mother

The mothers interviewed described how this fear of imminent death could be related to lack of awareness of HIV treatment options.

Family Stigma

Another concern cited by one or more mothers in 3 sites and by multiple providers was husbands' disapproval of HIV testing and care. Providers described situations in which HIV-infected mothers had not disclosed their status to their husbands because of fear of divorce or domestic violence. Providers expressed concern about the effect this fear had on mothers' attendance at the clinic for any service:

> Therefore, when she tells her husband that she has tested...Her husband replies in harsh languages. This affects mothers' services at large...a mother thinks perhaps when she asks her husband for fare to clinic, he thinks she goes for testing: "I tell you, do not go there today." This is stigma—Health care provider

Mothers mentioned having peers who feared their husbands were unfaithful, had contracted HIV and consequently infected them. This resulted in their not wanting a test that could confirm this fear. Nearly all providers said the concerns about a husband's reaction made it difficult for some mothers to adhere to follow-up visits.

DISCUSSION

In this qualitative assessment of acceptance of integration of HIV services with immunization services, most mothers and providers wanted the integrated services to continue and identified multiple benefits and challenges experienced thus far. Mothers appreciated the perception of resource savings that came with the integrated services and highly valued the opportunity for HIV testing and treatment to protect themselves and their infants. Providers believed integration with an existing, trusted service improved uptake of HIV care and believed they were reaching infants and mothers who would not otherwise be reached with standalone HIV care. However, many mothers reported they knew peers with concerns about stigma associated with being observed receiving HIV services, poor spousal support, perception that HIV testing was involuntary, fear of imminent death if they tested HIV infected and long waiting times. Fear of HIV testing and stigma were major themes in rural locations, whereas concerns regarding long wait times and provider workloads were widespread in urban locations. Themes were similar across both HIV-uninfected and HIV-infected mothers.

These findings provide needed context to the results published in our earlier study, which examined pre and postintervention vaccination coverage rates and rates of identification of HEIs in these same 8 clinics[11] contrasted with nonintervention sites. As reported in the previous study, in urban intervention sites, the number of vaccine doses administered during the first month of life did not change and the number of vaccine doses given later in life increased by 8%–12%. However, at rural intervention sites, the number of vaccine doses given decreased by 23%–35%, depending on the vaccine; during the same period, the number vaccine doses administered at rural nonintervention sites decreased between by 4%–11%. Our qualitative findings identified that fear of HIV testing and concern about community stigma of HIV-infected persons were major themes in these rural locations and provide evidence about why vaccination coverage may have decreased in these rural intervention sites compared with the trends observed in urban intervention sites and rural nonintervention sites.

The potential negative impact on uptake of routine immunizations based on concerns raised by some interviewed mothers and providers is important to recognize. Vaccine-preventable disease control and eradication efforts have established global and regional goals relying on the achievement of specific country-level targets, including reaching and maintaining high (>90%) vaccination coverage.[15] Ensuring no adverse impact on immunization coverage when services are integrated should be an important objective for both immunization and HIV/AIDS stakeholders. Other research indicates the potential benefits of integrating EID into immunization services[16]; considering Tanzania's high immunization coverage and the need to expand EID, identifying ways to integrate services without compromising performance of either program is critical.[17]

Mothers pointed to fear of stigma as the basis for many identified challenges to integrated service delivery. Fear of discrimination is widely reported in Tanzania[18–20] and has constrained the utilization of HIV care services, including the introduction of PMTCT services. Fear of discrimination from husbands can lead to a lack of disclosure due to a

perceived threat of physical abuse or divorce.[20–22] In our assessment, comments about fear of stigmatization were noted more in rural clinics than in urban clinics, in contrast to an earlier Tanzanian study that reported no differences in fear of stigma between rural and urban locations.[23] Methods for addressing stigma vary; widespread scale-up of HIV services, similar to a scaled-up version of the intervention tested in our assessment, was suggested as 1 strategy for normalizing services to offset stigma since all people would be tested.[6,7,24]

Mothers in our assessment described how confidentiality was compromised by poor patient flow, facility structure, and treatment rooms designated for specific services that were easily identifiable. When PMTCT was initially introduced as part of antenatal care visits in Tanzania, similar concerns about patient flow and the enrollment process were seen to constrain utilization, since women were required to publicly state which services they desired and to queue twice to receive PMTCT services.[20] Implementing services in such a way detracts from the advantages of integrating HIV care with immunization visits. Alternatively, provision of all services to individual women and their infants in a single, private setting would improve confidentiality and eliminate the need to queue twice; however, resource needs would increase substantially, requiring commitments for financial investment. In our assessment, providers were generally positive about the integrated services, although they did report heavier workloads. These results are consistent with findings from other assessments of programs that added HIV services to primary health care, as well as other infant and maternal health services to routine immunization visits.[7,25] Concerns exist that increased workload could lead to shortened counseling times at HIV testing and result in a net negative impact on overall service quality.[6,12,17,26,27]

Our finding that some interviewed mothers incorrectly perceived that HIV testing was a mandatory part of the integrated services was concerning, because it may have resulted in fewer mothers bringing their infants to the clinic for vaccinations. If HIV care is to be integrated into routine maternal and child health care services, it is critical to ensure that testing is understood by all to be voluntary. The perception of opt-out versus mandatory HIV testing and the potential impact on coverage with linked services requires further investigation.[8]

Our assessment is subject to a number of limitations. Because only mothers who participated in the integrated services were included in interviews, our results do not represent the views of those mothers who did not attend or stopped attending integrated services. Many concerns mentioned by mothers were reportedly heard from peers and may be biased by their recall. Furthermore, HIV-infected women were over-represented in the selection process as compared with the HIV prevalence rate, biasing results toward their specific concerns. Our findings are not statistically representative of the populations sampled.

Significant challenges remain in implementing HIV care with routine immunization visits; however, this assessment identified important information for potential efforts to integrate HIV services with other routine health services. Evaluations are needed to ensure that integration of HIV services do not compromise routine primary health care, including the receipt of lifesaving childhood immunizations.[28]

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TABLE 1

Characteristics of Primary Health Care Clinics Visited During the Qualitative Assessment of Integration of Pediatric HIV Care Into Routine Infant Immunization Visits;Tanzania, August 2010

					No. Mothers Interviewed	
Region	**Clinic**	**Setting**	**Penta3 Doses/Month (Mean)**	**Providers Interviewed (N)**	**HIV Infected**	**HIV Uninfected**
Dar es Salaam	Site 1	Urban	175	2	4	6
	Site 2	Urban	70	2	5	3
Coast	Site 3	Rural	25	2	6	2
	Site 4	Rural	25	2	3	4
Kilimanjaro	Site 5	Rural	45	2	4	3
	Site 6	Rural	45	2	4	4
Mwanza	Site 7	Urban	115	2	3	5
	Site 8	Urban	115	2	3	5

Penta3, third dose of a pentavalent vaccine containing diphtheria, pertussis, tetanus, hepatitis B, and haemophilus influenzae type B vaccines.

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TABLE 2

Major Themes Mentioned in Interviews With Mothers of Infants Who Were Part of a Study to Integrate Pediatric HIV Care Services Into Routine Infant Immunization Visits; Tanzania, August 2010

			Urban Setting				Rural Setting			
			Region 1		Region 2		Region 3		Region 4	
			Site 1	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8
			N = 10*	N = 8*	N= 8*	N = 8*	N = 8*	N = 7*	N = 8*	N = 7
Global Theme	**Organizing Theme**	**Basic Theme**	**n (%)**	**n (%)**	**n (%)**	**n (%)**	**n (%)**	**n (%)**	**n (%)**	**n (%)**
Health sector-centric topics associated with delivering the integrated services	Provider-patient interactions	Mother's trust in providers is high	10 (100)	8 (100)	6 (75)	7 (88)	7 (88)	7 (100)	8 (100)	7 (100)
		Providers are perceived to keep HIV test results confidential	10 (100)	8 (100)	5 (63)	7 (88)	7 (88)	7 (100)	8 (100)	6 (86)
		Providers are not perceived to keep HIV test results confidential	0 (0)	0 (0)	1 (13)	0 (0)	2 (25)	0 (0)	2 (25)	0 (0)
	Efficiency of integrated delivery	Save resources with less trips to health facility	1 (10)	3 (38)	3 (38)	0 (0)	4 (50)	7 (57)	5 (63)	4 (57)
		Long wait times and issues with patients moving efficiently from service to service	2 (20)	4 (50)	1 (13)	2 (25)	2 (25)	1 (14)	1 (13)	1 (14)
		Insufficient number of workers for number of services needed to conduct	1 (10)	1 (13)	1 (13)	4 (50)	4 (50)	1 (14)	1 (13)	0 (0)
		HIV and immunization services should be conducted on separate days to save time	0 (0)	1 (13)	1 (13)	2 (25)	0 (0)	1 (14)	1 (13)	0 (0)
	Confidentiality of services received due to facility layout	Health facility layout and workload compromise confidentiality of services received	0 (0)	0 (0)	1 (13)	1 (13)	4 (50)	3 (43)	1 (13)	0 (0)
Individual-level experiences accepting the integrated services	HIV testing perceptions	Mother knows other mothers who fear HIV testing	4 (40)	4 (50)	4 (50)	2 (25)	4 (50)	5 (71)	5 (63)	5 (71)
		Belief that other mothers who fear HIV testing might not bring infants for vaccination	2 (20)	2 (25)	3 (38)	0 (0)	1 (13)	2 (29)	2 (25)	5 (71)
		HIV testing is perceived as mandatory for child to be immunized	4 (40)	0 (0)	0 (0)	0 (0)	1 (13)	1 (14)	1 (13)	2 (29)
	Awareness of own health and service benefits	Can learn about own HIV status and infant's HIV status	3 (30)	5 (63)	3 (38)	4 (50)	3 (38)	4 (57)	1 (13)	4 (57)
		Can now receive HIV treatment if necessary	2 (20)	4 (50)	3 (38)	6 (75)	1 (13)	2 (29)	4 (50)	4 (57)

			Urban Setting				Rural Setting			
			Region 1		Region 2		Region 3		Region 4	
			Site 1	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8
			N = 10*	N = 8*	N= 8*	N = 8*	N = 8*	N = 7*	N = 8*	N = 7
Global Theme	**Organizing Theme**	**Basic Theme**	**n (%)**	**n (%)**	**n (%)**	**n (%)**	**n (%)**	**n (%)**	**n (%)**	**n (%)**
Community-level topics affecting acceptance of the integrated services	Community stigma	Community-based stigma is a perceived major cause of fear of HIV testing	1 (10)	0 (0)	3 (38)	0 (0)	3 (38)	4 (57)	3 (38)	4 (57)
		Mother knows peers concerned with being recognized while receiving HIV services	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	3 (43)	1 (13)	0 (0)
		Mother is less visible to others when receiving HIV services during routine immunization service	0 (0)	0 (0)	1 (13)	0 (0)	2 (25)	0 (0)	2 (25)	0 (0)
	Family stigma	Husband disapproves of HIV testing	0 (0)	0 (0)	2 (25)	0 (0)	1 (13)	0 (0)	1 (13)	0 (0)

*Number of mothers interviewed at the selected site.