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Health Systems Integration of Sexual and Reproductive Health and HIV Services in Sub-Saharan Africa: A Scoping Study

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Objective: Both sexual and reproductive health (SRH) services and HIV programs in sub-Saharan Africa are typically delivered vertically, operating parallel to national health systems. The objective of this study was to map the evidence on national and international strategies for integration of SRH and HIV services in sub-Saharan Africa and to develop a research agenda for future health systems integration.

Methods: We examined the literature on national and international strategies to integrate SRH and HIV services using a scoping study methodology. Current policy frameworks, national HIV strategies and research, and gray literature on integration were mapped. Five countries in sub-Saharan Africa with experience of integrating SRH and HIV services were purposively sampled for detailed thematic analysis, according to the health systems functions of governance, policy and planning, financing, health workforce organization, service organization, and monitoring and evaluation.

Results: The major international health policies and donor guidance now support integration. Most integration research has focused on linkages of SRH and HIV front-line services. Yet, the common problems with implementation are related to delayed or incomplete integration of higher level health systems functions: lack of coordinated leadership and unified national integration policies; separate financing streams for SRH and HIV services and inadequate health worker training, supervision and retention.

Conclusions: Rigorous health systems research on the integration of SRH and HIV services is urgently needed. Priority research areas

include integration impact, performance, and economic evaluation to inform the planning, financing, and coordination of integrated service delivery.

Key Words: reproductive health services, HIV, health systems research, maternal health services, integration, linkage

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INTRODUCTION

Both sexual and reproductive health (SRH) services and HIV programs in sub-Saharan Africa are typically delivered vertically, operating parallel to national health systems.^{1–3} The Glion Call to Action in 2004, resulting from a World Health Organization (WHO) and United Nations Population Fund (UNFPA) consultation, called for increased linkages between SRH and HIV services to improve access to contraceptive methods and prevent HIV infection in women and children.^{4,5} Since then, there has been an international policy shift by bilateral and multilateral development agencies and donors in support of integrating SRH and HIV services.^{6–10} Most countries in sub-Saharan Africa report that integration of SRH and HIV service delivery is occurring to some extent¹¹ and several countries, including Kenya, Ethiopia, Botswana and South Africa, prioritize integration in their national HIV strategic plans.^{12–15}

Several arguments have been made for increased integration of SRH and HIV services. Foremost, the separate delivery of SRH and HIV services is thought to be an important reason why the reproductive health needs of women living with HIV (WLWH) remain unmet, while at the same time implying missed opportunities to link these women to HIV treatment and care programs.^{16–18} Two systematic reviews conclude that integrating SRH and HIV services in health care facilities can increase the uptake of contraception, condom use, HIV testing, and antiretroviral prophylaxis of vertical transmission in sub-Saharan Africa.^{19,20} The importance of addressing the SRH needs of WLWH taking antiretroviral treatment (ART) will only increase as millions of these women begin and remain on ART throughout their reproductive lives as a consequence of new treatment guidelines that recommend earlier ART initiation and the implementation of Option B+, whereby all pregnant and breastfeeding women start lifelong ART.^{10,21,22}

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Second, it is plausible that SRH and HIV services integration leads to improved health outcomes and patient satisfaction. Studies from Kenya demonstrated that integrated SRH and HIV services delivery can improve quality of care and patient satisfaction,^{23,24} although other studies failed to show clear impacts of integrated services on patient experience and HIV-related stigma compared with stand-alone services.^{18,25,26} Finally, integration is commonly thought to increase the cost-effectiveness of both SRH and HIV service delivery,^{27,28} because it can increase the efficiency of health systems functions that can support the delivery of both services, such as management systems, supply chains, and monitoring and evaluation.^{29–31}

Different categories of health systems functions relevant to health service integration have been described: stewardship and governance, planning, financing, service delivery, demand generation, and monitoring and evaluation.^{32,33} As international development agencies, donors, and national governments in sub-Saharan Africa are committing to integration of SRH and HIV services, empirical evidence that integration improves health and health systems outcomes remains inconclusive.^{19,20} Implementing large, and perhaps costly, integration programs poses potential risks for health systems performance that need to be better understood. The integration of front-line service delivery may remain ineffective without linking and coordinating other health systems functions, such as management structures, policies, financing mechanisms, supply chain, and health worker training. Yet, there are very few primary studies and no systematic reviews on the implementation and impact of SRH/HIV services integration, beyond front-line service delivery.

This scoping study seeks to address this gap in the literature by examining the implementation of SRH/HIV services integration in sub-Saharan Africa across all health systems functions, beyond front-line service delivery activities. We develop a conceptual framework to analyze current national strategies and progress in five countries in sub-Saharan Africa (Kenya, Nigeria, Tanzania, Rwanda, and Mozambique). We further examine the current evidence, challenges, and promising practices related to SRH/HIV services integration. Finally, we identify recommendations for future health systems research and practice.

METHODS

Scoping studies are an approach to synthesizing evidence relating to a research concern when either high-quality studies are scarce or the research concern is complex. Both of these two conditions are met in this case. Scoping studies can provide a foundation for setting a research agenda and to guide questions for future systematic reviews.^{34–37} Our study includes the three typical components of a scoping study³⁴: (1) a “conceptual map” to explore the existing terminology and conceptual frameworks relating to health service integration, (2) a “policy map” to identify important documents from international and professional bodies and national governments, and (3) a “literature map” to describe the scope, content, and gaps in the evidence based on both the research

and nonresearch literature (see **Supplemental Digital Content**, <http://links.lww.com/QAI/A580>). We limit the review of the literature to publications describing evidence on SRH/HIV services integration in sub-Saharan Africa.

Thematic Analysis of Data From five Countries

As a component of the literature map, five countries in sub-Saharan Africa with experience of integrating SRH and HIV services—Kenya, Nigeria, Tanzania, Rwanda, and Mozambique—were purposively sampled for detailed thematic analysis to identify key characteristics of the integration process. Health systems interventions are highly heterogeneous and multiple contextual factors (eg, disease prevalence, budgetary constraints, and health workforce training) influence their effect; therefore, it is challenging to evaluate their causal impact on outcomes.^{38–40} Thematic analysis and generalization offers an approach to examining complex health systems interventions in different contexts to derive insights and future research questions.^{40–43} In the purposeful selection of cases for analysis, we included countries with (1) high HIV prevalence, (2) several years of experience of integrating SRH/HIV services, and (3) different approaches to integration planning and implementation. The selection of countries was limited by the availability of sufficient data to compare and contrast national strategies. Information was extracted and synthesized according to the initial themes identified from the conceptual map developed in the first part of this scoping study. After the literature mapping and case study analysis, these themes were revised to inform a new conceptual framework to structure the presentation and synthesis of the evidence on national strategies to integrate SRH and HIV services.⁴⁰

RESULTS

Conceptual Map

Key Definitions

There is no universally agreed definition of integration. Here, we use a definition that specifically refers to health systems functions: “a variety of managerial or operational changes to health systems to bring together inputs, delivery, management, and organization of particular service functions.”^{20,29} As described by Church and Mayhew,²⁵ Atun et al,³² and Shigayeva et al,³³ most health services, rather than being integrated or nonintegrated or horizontal or vertical, are integrated to varying extents on “a continuum of integration” ranging from simple referral systems to fully integrated services in a single facility. In developing a conceptual framework, the existing framework of Atun et al and Shigayeva et al of six health systems functions relevant to services integration—*stewardship and governance, planning, financing, service delivery, demand generation, and monitoring and evaluation*—provided the preliminary themes for coding of the country case studies.^{32,33} This categorization was re-examined iteratively and revised (<http://links.lww.com/QAI/A580>) during subsequent rounds of thematic analysis of the literature.

Modes and Models of Integration

Integration can be implemented at several levels of the health system: integration of front-line service delivery, such as training midwives to provide ART and integration of higher health systems functions, such as integrating national SRH and HIV budgets.¹⁰ From the literature, we discerned three modes of integration of service delivery: *unidirectional integration of SRH services into HIV*, such as provision of contraceptives in HIV counseling and testing, *unidirectional integration of HIV services into SRH*, such as HIV treatment with antenatal care and postpartum services, and *bidirectional integration*. Three models of integrated service delivery were documented in the literature: one-stop shop (single provider), referral-based (same facility), and referral-based (different facility).⁴⁴⁻⁴⁷ Although the three categories above offer a simple approach to classify service delivery models, in practice, models of integration are inherently complex and varied. Not only is there a continuum of integration for service delivery models, but we also found that the integration of higher health systems functions ranges from fully integrated to vertical, stand-alone management, financial or political structures.

Policy and Framework Map

The emerging policy consensus and the technical guidance in support of SRH/HIV services integration is described in Table 1. After the 1994 International Conference on Population and Development,⁴⁸ there was increasing recognition of the intersections between SRH and HIV among women and children, as expressed in WHO's four prongs of PMTCT in 2002.⁴⁹ Despite this early policy support for SRH/HIV services integration, technical and financial assistance to support national integration was initially lacking.⁵⁹ Bilateral and multilateral development agencies – such as the Joint United Nations Programme on HIV/AIDS (UNAIDS), UK Department for International Development (DFID), WHO, World Bank, United Nations Children's Fund, and UNFPA—now champion the integration of SRH and HIV services.^{6-10,55,56,58,60} Of particular note are the recent policy shifts by the Global Fund to Fight AIDS, Tuberculosis and Malaria (2008) and The United States President's Emergency Fund For AIDS Relief (PEPFAR) (2009), the largest sources of financing for HIV treatment and prevention, to provide funding, guidance documents, and technical assistance for integrated programs.^{52-54,57,61}

In 2011, PEPFAR developed their first policy guidance for maternal, neonatal and child health and HIV services integration.¹⁰ After the updated 2010 WHO guidelines for PMTCT and infant feeding, which extended ART eligibility and duration for women and children,^{62,63} PEPFAR's guidance aimed to scale up prevention of vertical transmission by identifying a package of integrated services and recommending steps for their implementation.¹⁰ Both UNAIDS' and WHO's 2011–2015 health sector strategies for HIV listed service integration, including SRH/HIV services integration, as one of the four strategic directions for the HIV sector.^{6,56} The Inter-Agency Working Group for SRH and HIV/AIDS Linkages, a joint initiative of 19 organizations convened by

TABLE 1. Policy Map of Key International Strategies Supporting Integration of SRH and HIV Services

Year	Commitment
1994	International Conference on Population and Development, Cairo: Advocated for the provision of integrated SRH and HIV services by all governments and called for increased investments in SRH services ⁴⁸
2002	WHO: Four-pronged strategy for PMTCT, including prevention of HIV among women and preventing unplanned pregnancies. Emphasized the need for integrating HIV services with family planning services ⁴⁹
2004	Glion Call to Action: Called for increased linkages between family planning, sexual health education, and PMTCT; increased allocation of funds; and improved coordination between donors to rectify the funding shortfall for reproductive health commodities ^{4,5}
2005–2008	G8 commitment to universal access to HIV treatment, testing, and prevention by 2010 ^{50,51}
2008–2010	Global Fund: Encouraged the integration of maternal and child health in its programming for HIV, TB, and malaria and made dual-track financing for both government and non-government recipients available to support community-based integrated programs ^{52,53}
2009	IPPF/WHO/UNFPA/UNAIDS/UCSF: Systematic review of integrated programs with multiple recommendations for SRH and HIV linkages at “policy, systems and service levels,” including the integration of HCT, PMTCT, and ART with SRH services ⁴⁶
2009	PEPFAR Five-Year Plan 2009: Supported expanded integration of HIV prevention, support, and treatment with FP and SRH services, including prevention of gender-based violence. Health systems strengthening is an explicit strategic goal within PEPFAR's plan ⁵⁴
2011	WHO Global health sector strategy HIV/AIDS 2011–2015: Listed strengthening “linkages and synergies” between HIV and other health services as the second of four strategic directions; aimed to “leverage broader health outcomes through HIV responses” ⁶ UNAIDS Global Plan towards the elimination of new HIV infections among children by 2015 and keeping their mothers alive: emphasized integration of SRH and HIV services as a priority to improve maternal and child health outcomes ⁵⁵ UNAIDS 2011–2015 Strategy: Core theme of integrating HIV and SRH services to improve efficiency and improve prevention efforts, promote links to antenatal care, and achieve full access to contraception, particularly for young people ⁵⁶
2012–2016	Global Fund: Planned to “maximize the impact of Global Fund investments on improving the health of mothers and children,” through funding “synergistic MNCH interventions in high-burden countries” (Strategic Action 1.4) ⁵⁷
2014	UNICEF and Global Fund Memorandum of Understanding: Outlined five steps to align investments in HIV and MNCH commodities, support national governments to review and revise national integration strategies, provide assistance for procurement and financing of MNCH supplies, and develop joint monitoring and evaluation tools ⁵⁸

SRH, sexual and reproductive health; PMTCT, prevention of mother-to-child transmission of HIV; PEPFAR, The United States President's Emergency Fund For AIDS Relief; Global Fund, Global Fund to Fight AIDS, Tuberculosis and Malaria; TB, tuberculosis; FP, family planning; HCT, HIV counseling and testing; ART, antiretroviral treatment; IPPF, International Planned Parenthood Federation; MNCH, maternal, newborn and child health; TB, tuberculosis; UCSF, University of California, San Francisco; UNAIDS, Joint United Nations Programme on HIV/AIDS; UNICEF, United Nations Children's Fund.

UNFPA, WHO, and the International Planned Parenthood Federation (IPPF), developed a set of tools and frameworks to provide technical support to policymakers.⁶⁴ Since its publication in 2009, the Group's Rapid Assessment Tool has been used in 25 African countries, including Rwanda, Nigeria, and Tanzania, to evaluate the progress on SRH/HIV services integration and guide priority setting.^{64,65}

Literature Map: Scope of Current Evidence

Most information regarding health systems integration was found in the gray literature: government strategies and guidelines or development partner or donor evaluations. Our search identified multiple studies of services integration in individual facilities or regions but very few peer-reviewed national evaluations of SRH/HIV services integration.^{66–69} As identified by previous systematic reviews, there was a lack of studies that compared models of integration or examined their impact at scale on health outcomes, costs, and efficiency.^{19,20,28,46,70,71}

Progress Towards SRH/HIV Services Integration

Several reviews examined progress on SRH/HIV services integration before 2010.^{19,20,25,28,29,59,72–74} The scale-up of integrated services, most often combining contraception or sexually transmitted infection (STI) clinical services with HIV prevention, was slow and inadequate. Commonly, integration of higher health systems functions to support front-line service delivery was incomplete.^{21,25,59,72} A lack of communication and coordination between different program staff, and underrepresentation of SRH stakeholders in national HIV planning processes, such as Global Fund coordination meetings, hindered the development of integrated national policies and plans.^{21,59,75} At this time, international donors, like PEPFAR and the Global Fund, gave little attention to SRH and HIV service integration in their policy documents.¹⁶ Financing streams for SRH and HIV services remained separate in many countries and disparate, with donor funding for HIV increasing, whereas funding for reproductive health commodities fell.⁷⁴ This led to difficulties with integrating supply chains; therefore, although HIV supply chains were relatively reliable, commodity stockouts of contraceptives and drugs to treat STIs challenged integrated service delivery.^{21,46,59} Multiple national policies and guidelines for separate components of reproductive health and HIV services and unclear operational strategies, as well as lack of training and supervision, impeded implementation by health care workers charged with providing integrated care.⁷⁴ Similarly, lack of regulations and health worker training to support task shifting or physician resistance to task shifting, meant that nurses could not provide certain activities of integrated care, such as PMTCT or STI treatment.^{21,74}

Even when there was a commitment to integration in national health policies, significant service gaps were reported with mismatches between the services clinics claimed to provide and those available to clients, particularly regarding HIV counseling and testing integrated in antenatal care or STI

services.^{72,76} Incomplete staff training, staff shortages, excessive workload, and attrition were barriers to providing integrated services.^{72,76}

Since 2010, the policy context has changed considerably with increased financial and technical support for integration, as described above (Table 1).^{6,10,44,46,52,53,56,57,65} The main sources of information on health systems reform to support recent SRH/HIV service integration are found in the gray literature, which reports improved national coordination and planning, more consistent health sector integration strategies, and an increase in technical assistance and donor support for integration (Table 1). Most peer-reviewed primary studies evaluated the impact of integration at the health facility level and, as yet, there is limited primary research on changes in health outcomes after national integration programs.^{20,71} Large-scale integration projects are underway in Kenya, Botswana, Lesotho, Malawi, Namibia, Swaziland, Zambia, and Zimbabwe through a UNFPA/UNAIDS project and the Integra Initiative, although their impact on outcomes has not yet been reported.^{77–79} Given the lack of peer-reviewed literature and systematic reviews after 2010, we used case studies of particular countries to describe how governments in Kenya, Nigeria, Tanzania, Rwanda, and Mozambique initiated and are currently implementing the integration process.

Key Challenges and Lessons for Integration From Country Case Studies

Table 2 summarizes the integration strategies in Kenya, Nigeria, Tanzania, Rwanda, and Mozambique according to the most recent government policies and reports.^{80–91} Tanzania, Mozambique, and Rwanda have been relatively politically stable during the period of implementation, whereas Kenya and Nigeria have experienced political unrest and regional violence. All countries received high levels of donor assistance for health, including HIV and SRH,^{92–94} but the extent of integration of SRH and HIV financing streams varied by country (Table 2). All five countries prioritized integration of SRH and HIV services in their national health strategic plans and included a comprehensive range of SRH and HIV services. In four countries, integration strategies have been developed and implemented by the ministries of health in collaboration with development partners, including individual pilot clinics, regional programs (Nigeria and Mozambique), and national programs (Kenya and Rwanda).^{61,67,92,93,95,96} In all five countries, the mode of integration was bidirectional, combining SRH and HIV services in a single facility, requiring health workers trained in both disciplines or robust referral mechanisms within the same facilities. Both one-stop shop and referral-based models of integration were reported in all countries with the exception of Mozambique, which only integrated services in one-stop shops. Few studies evaluated or compared models of integration in these countries. Advantages of one-stop shops compared with referral-based services in Kenyan studies were increased uptake of more effective contraception and HIV testing, as well as increased patient and health worker convenience and satisfaction.^{97,98} Drawbacks of the one-stop shop model were insufficient clinic space and increased staff workload and waiting times.⁹⁷ A Nigerian study

TABLE 2. SRH and HIV Integration Strategies in five Sub-Saharan African Countries

	Governance	Levels of Service Integration				Planned Mode of Integration
		T	S	P	C	
Kenya	National—MOH	✓	✓	✓	✓	Bidirectional
Nigeria	National—FMOH and GHAIN	✓	✓	✓	✓	Bidirectional
Tanzania	National—MOH in some districts NGO—single site programs	✓	✓	✓	†	Bidirectional
Rwanda	National and at all administrative levels	✓	✓	✓	✓	Bidirectional
Mozambique	Mixed: MOH and global health initiative MOH and NGO-led programs in certain provinces	—	†	†	†	Bidirectional Previously unidirectional: HIV into primary health care

	Components to Be Integrated*						Model of Service Delivery	National Policy for Integration	Integration of Financing	
	HIV Components			SRH Components					Streams	Sources
	PMTCT	ART	HCT	STI	FP	ANC				
Kenya	✓	✓	✓	✓	✓	✓	One-stop shop and referral-based	Yes, 2009 and 2013	Yes	80,81
Nigeria	✓	✓	✓	✓	✓	✓	One-stop shop and referral-based	Yes, 2005 and 2010	Some	82
Tanzania	✓	✓	✓	✓	✓	✓	Varies by program	Multiple policies that are inconsistent, 2013	No	83–85
Rwanda	✓	✓	✓	✓	✓	✓	One-stop shop and referral-based	Yes, 2003 and 2009	Yes	86–88
Mozambique	✓	✓	✓	✓	✓	✓	One-stop shop	Yes, 2010 and 2012	Some	89–91

*According to most recent national strategy; other components of services may also have been integrated in individual programs.

†In certain regions only.

ANC, antenatal care; ART, antiretroviral treatment; C, community-based health care; FMOH, Federal Ministry of Health; FP, family planning; GHAIN, Global HIV/AIDS Initiative Nigeria (partnership with USAID); HCT, HIV counseling and testing; MOH, Ministry of Health; NGO, nongovernmental organization; PMTCT, prevention of mother-to-child transmission; P, primary health care; S, secondary health care; STI, sexually transmitted infections treatment; T, tertiary health care.

reported that referral-based models may be easier to implement than one-stop shop models, because fewer changes to the organization of services were needed to establish this model.⁹⁹

Based on the literature, key programmatic, policy, and financing challenges in these countries are summarized in Table 3 and described in detail in the **Supplemental Digital Content** (see <http://links.lww.com/QAI/A580>) according to the health systems functions we identified, based on Atun et al and Shigayeva et al.^{32,33} Common challenges were a lack of unified leadership on SRH/HIV integration policy at the national level (Tanzania and Kenya)^{68,95} and regional levels (Mozambique, Kenya, and Tanzania).^{72,74,89} In Kenya and Tanzania, there were multiple and sometimes inconsistent national integration policies from different government departments and a lack of operational strategies for implementation.^{68,75,76,95} Nonintegrated financing streams and supply chains initially led to shortage of funds for SRH commodities and stockouts of both SRH and HIV commodities in Nigeria, Rwanda, Kenya, and Tanzania.^{74,76,95,100–102} Shortages of health workers and inadequate training, supervision, and retention to support integrated service delivery were common problems in all five countries.^{67,76,95,100} Monitoring and evaluation systems for integrated services were generally weak in all countries,^{83,99} limited by a lack of nationally agreed SRH/HIV indicators,^{59,61,76} with multiple reporting

tools and reporting pathways creating additional workload for health workers.^{68,73,103}

DISCUSSION

Recommendations and Priorities for Research

The integration of SRH and HIV services is widely supported by international and national health policies, and there is evidence that it can improve effectiveness and efficiency. However, the experiences of five countries we reviewed in this scoping study demonstrate that integration needs to be carefully planned in relation to health systems functions. Based on current technical guidance and the scientific literature on integration, we propose several recommendations for implementing integration of SRH and HIV services (Table 3) and identify several priority areas for future health systems research to address the gaps identified by this scoping study (Table 4).

One important difficulty in such research is that different national contexts and the long time frames of health reform introduce multiple factors that can modify integration impact. Successful integration approaches in one setting may therefore not have the same success elsewhere and may need to be adapted carefully to other contexts.³⁸ The combination of

TABLE 3. Lessons Learned From Integration Efforts in Kenya, Nigeria, Tanzania, Rwanda, and Mozambique—Challenges and Recommendations for the Integration of HIV and SRH Services

Challenges	Recommendations
Governance	
Multiple ministries and departments managed SRH/HIV services leading to duplication of effort and competing policies ^{68,95}	Integrate national, regional, and local governance structures to support integrated service delivery, such as Integration Technical Working Groups, to coordinate integration, including all relevant partners and expert panels ^{10,65,92,96}
Lack of supervision and sensitization at district and community level meant providers could not effectively scale-up integration ^{72,76,95}	Develop and maintain systems for program accountability ¹⁰
Nonintegrated governance structures led to separate planning processes at the district level ⁶⁸	Dedicate focal staff for integration at each facility level, supported by outreach mentoring teams ^{99,106}
	Develop a supervision strategy for implementing staff ^{94,100}
Policy and planning	
Multiple national policies and guidelines undermined integrated national strategy and planning ^{68,76,81,95}	Review and revise national policies to and harmonize strategy timelines before integration ⁴⁴
Lack of operational guidance or framework and definition of services was a barrier to implementation and developing M&E systems ⁹⁵	Define the minimum package of SRH/HIV services and specify the health facility levels to be integrated ^{10,107}
Limited dissemination of new policies and guidelines negatively affected service delivery ^{66,72,95}	Create a partnership framework to define development partners' roles in achieving national integration objectives ^{10,87}
	Develop a strategic plan for dissemination of policy, guidelines, and a clear implementation strategy ⁶⁵
Financing	
Separate sources of funding for SRH and HIV services and lack of coordination between donors and governments led to inadequate funds for integrated services ^{10,46,61,66,68,70,78}	Develop detailed costing studies for integration activities ^{28,106}
Restrictions on use of donor funds and low levels of government funding for SRH commodities contributed to stockouts and shortages of contraceptives and STI treatment ^{61,66,68,95,106}	Review funding mechanisms for integration, including new GFATM, UNICEF and UNFPA initiatives ^{58,61}
	Consider interim funding mechanisms to support training and scale-up of integration ^{67,78,90}
	Modify regulations and treatment guidelines to allow task shifting and the delivery of simple standardized ART by nonphysicians ^{67,96,108–110}
Health workforce organization	
Integration created additional workload for health workers ^{76,95,106}	Review the national context and preexisting staff shortages before introducing implementation ^{65,76}
Shortage of health workers and high turnover, burnout, and attrition of staff caused gaps in integrated service provision ^{85,95,106}	Incorporate integration guidelines into pre-service training curricula for health professionals ⁴⁵
Inadequate or incomplete training, particularly in contraception, meant health workers did not feel able to provide integrated services ^{72,76,95}	Develop and disseminate tools for health workers to provide integrated care ⁹⁵
Lack of job aids and locally available guidelines were a barrier to training and service delivery ⁵⁹	
Service organization	
Inadequate referral and counter-referral systems contributed to loss to follow-up ^{45,85,95,101,107}	Strengthen and standardize referral systems between facilities, including non-governmental providers, and develop mechanisms for tracking patients ^{99,102}
Lack of physical space for new services limited ability for providers to integrate services ^{67,95}	Develop integrated financing streams and supply chains to coordinate the procurement of HIV and SRH commodities ¹⁰
Separate supply chains resulted in completely separate procurement and distribution pathways for SRH and HIV commodities ⁹⁵	Map the physical space available for integrated services and earmark budgets for facility renovation ⁶⁵
	Consider community sensitization and mass media campaigns to generate demand ^{187,93}

TABLE 3. (Continued) Lessons Learned From Integration Efforts in Kenya, Nigeria, Tanzania, Rwanda, and Mozambique—Challenges and Recommendations for the Integration of HIV and SRH Services

Challenges	Recommendations
Monitoring and evaluation	
Lack of integrated SRH/HIV indicators meant M&E structures remained separate ^{61,83,99}	Aim to reduce duplication in M&E tools and reporting systems using existing tools as much as possible for integrated systems ^{10,99,111}
M&E systems were generally weak, particularly for SRH services ^{45,83}	Include supervision and training in national and regional M&E strategies ^{10,99,111}
Multiple reporting forms and pathways created additional workload for staff ^{72,103}	Consider including quality improvement indicators and instruction in M&E training ¹¹²

ART, antiretroviral treatment; GFATM, Global Fund to Fight AIDS, Tuberculosis and Malaria; M&E, monitoring and evaluation; SRH, sexual and reproductive health; UNFPA, United Nations Population Fund; UNICEF, United Nations Children’s Fund.

impact and performance evaluation can ensure that pathways to intervention impact are understood in rich detail and improve our ability to generalize findings.^{39,104,105} The research and evaluation questions we suggest here (Table 4) are focused on generating evidence on the current status and progress of SRH/HIV service integration, the effects of integration on SRH and HIV service delivery and efficiency, and best practices in the integration of higher health systems functions.

Governance

We found little evidence on the challenges relating to integration of governance structures, no reports of accountability systems, and little recent discussion of the regulatory and legal reforms necessary to facilitate integration. It would be valuable if future evaluations investigated which governance structures are necessary to support health systems integration, and how integration of governance structures affected service delivery.

Policy and Planning

Given the delays in developing and disseminating unified national integration policies, future performance evaluations might investigate stakeholders’ understanding, knowledge, attitudes, and practice related to current national policies and guidelines. Recent global policy shifts favoring SRH/HIV service integration by major donors (Table 1) and new collaborations between bilateral donors to jointly fund contraceptives and HIV commodities^{44,54,58,60} provide opportunities to improve and integrate procurement and financing of SRH and HIV commodities and services. The impact of these alternative policies on the scale-up of service integration warrants rigorous investigation.

Financing

It has been said that “integration costs before it pays.”¹¹³ At a time when resources for HIV treatment risk being constrained and ART is being scaled up, there is a real concern that expensive national integration efforts could present a barrier to the expansion of existing ART programs.¹¹⁴ There is a lack of data on the national and regional costs of scaling-up integration, cost-effectiveness beyond the service delivery level, and the budgetary impact of integration.^{27,28} Emerging evidence suggests that integrated care can be cost-effective and lead to economies

of scale at the service delivery level.^{27,28,30,31} Questions remain concerning whether integrating higher health systems functions creates further efficiency gains or cost savings at the national health systems level. The impact of performing additional tasks on health worker efficiency (economies of scope) and workload also needs consideration in future cost-effectiveness analyses³¹ and predicted changes in demand for services.¹¹⁵ Also, how might integrating financing mechanisms affect future budgetary allocations for SRH/HIV services? Budgetary impact analysis can be used to determine whether integration is affordable and its potential impact on service use, considering the national context (HIV prevalence and unmet need for treatment), planned ART scale-up, and projected financing flows for SRH and HIV services. Finally, SRH/HIV services integration is claimed to reduce patients’ costs,⁴⁴ but more data are needed on the impact of integration on costs borne by patients and how these differ between service delivery models.²⁸

Health Workforce Organization

Multiple workforce-related challenges were reported in these five countries and the wider literature, demonstrating the importance of health workers as the means of successful service integration. In view of the challenges that health worker shortages and attrition posed to integrated service delivery in the countries discussed here, it will be crucial to investigate the impact of integration on workload, satisfaction, attrition, and absenteeism among health professionals.¹¹⁶ Operations research centered on the health workforce will be useful to quantify the staff costs, additional recruitment, and training requirements of implementing integration nationally from tertiary to community level facilities.¹¹⁷

Service Organization

Most integrated HIV and SRH services studies examined “vertical integrated programs” managed by nongovernmental organizations or research institutions.^{59,71} Additional research to establish optimal models of integration (eg, referral-based vs. one-stop shops and bidirectional vs. unidirectional) in the context of national health systems is needed, in particular regarding coverage, utilization, quality of care, health outcomes, and cost-effectiveness. Programmatic research is currently underway through large-scale *Integra* studies in specific regional sites, that is, provinces of Kenya and Swaziland,

TABLE 4. Health Systems Research and Evaluation Questions to Address the Evidence Gaps for SRH and HIV Services Integration

	Impact Evaluation	Performance Evaluation
Governance		
Which specific governance strategies support the implementation of integrated SRH and HIV services?	✓	
To what extent and at which levels of the health systems have governance structures been integrated?		✓
How are key stakeholders including civil society and service users included in the governance of SRH and HIV service integration?		✓
Are regulatory changes required to support the process of SRH/HIV services integration?		✓
Policy and planning		
What are the relevant stakeholders' understanding of and perspectives on SRH/HIV services integration?		✓
To what extent are SRH and HIV-related policies, national laws, operational plans, and guidelines integrated? What is the effectiveness and impact of policy linkages?		✓
Are national policies on SRH/HIV services integration consistent with national priorities and translated into operational guidelines?		✓
How do donor guidelines favoring SRH/HIV services integration affect the scale-up of SRH/HIV services integration?	✓	
Financing		
Is integration of SRH and HIV service provision cost-effective (specifically the costs of integrating broader health systems functions, such as governance, financing, policy and planning, and monitoring and evaluation)?	✓	
What is the impact of combined donor funding for SRH and HIV services and commodities on resource allocation for SRH and HIV services?	✓	
Does integrated care affect the direct and indirect health costs borne by patients?	✓	
How do integrated financing streams affect budgetary allocations for components of SRH and HIV services?		✓
Health workforce organization		
Does integrated care impact health professional satisfaction, attrition, and absenteeism?	✓	
To what extent have health workers been trained and are providing both SRH and HIV service provision?		✓
What is the impact of task shifting on the provision of integrated SRH and HIV services?	✓	
Service organization		
Are one-stop shops more effective and/or efficient than referral-based models?	✓	
What is the impact of integration on subsequent service utilization and demand for SRH/HIV services?	✓	
Does integration increase the availability of SRH and HIV services?	✓	
How do integrated supply chains affect procurement and supply for SRH and HIV commodities?	✓	✓
What is the impact of integration on quality of services?	✓	✓
Monitoring and evaluation		
To what extent have M&E data collection tools and processes been integrated nationally, regionally and locally?		✓
What is the impact of integrated SRH and HIV reporting systems on reporting of SRH indicators?		✓
M&E, monitoring and evaluation; SRH, sexual and reproductive health.		

which will compare the benefits and costs of a range of SRH/HIV services integration models.^{77,79} National empirical data are yet to emerge because integrated monitoring and evaluation systems are only now being developed.^{77,79,106}

PEPFAR's new quality strategy may be a useful framework to support standard setting and evaluate quality assurance and improvement.¹¹² The national context, including target population, the quality of existing services, infrastructure, capacity

for extra health worker training, and the availability of human resources and funding, will influence the nature and extent of service integration.

Monitoring and Evaluation

There is little information on the national or regional impact of integration on HIV and SRH outcomes. National integrated monitoring and evaluation systems and integration indicators are currently being piloted in Kenya.^{77,79} These integrated data sets may provide an opportunity to improve the limited evidence based on SRH outcomes for HIV-affected pregnancies in sub-Saharan Africa, particularly uptake, adherence and retention of women and children in HIV care and treatment.¹¹¹

Limitations of This Study

This study has several limitations. First, evaluation of the impact of integration on health outcomes was beyond the scope of this study, and we focused primarily on implementation of integration rather than on integration impacts on health. Second, our conclusions here are drawn from a wide variety of policy and research literature, most of which is not peer-reviewed. Although the use of a wide range of literature of varying scientific rigor is customary for scoping studies, evidence based on such diverse sources and without formal quality assessment can only lead to suggestive rather than decisive recommendations for policy and practice. Third, as our policy map shows, national and international policy environments supporting SRH/HIV services integration have changed markedly over the last decade. Some lessons from early integration efforts from the five case studies may be less relevant for sub-Saharan African countries currently planning integration initiatives.

CONCLUSIONS

In the context of continuing integration of SRH and HIV services in national health systems in sub-Saharan Africa, this scoping study outlines salient lessons and challenges of integration from five countries in sub-Saharan Africa and recommendations for practice, which could inform local and national decisions on how to design and operationalize integration of health systems functions. Integration of SRH and HIV services is proposed as a means to improve service performance and reduce costs and is being widely adopted as national policy in sub-Saharan Africa, supported by international development partners, making research and evaluation on integration an urgent priority. Most integration research has focused on linkages of SRH and HIV front-line services. Yet, most of the common problems with implementation are related to delayed or incomplete integration of higher level health systems functions: lack of coordinated leadership for integration; absence of appropriate regulation and unified national policies and operational frameworks; distinct and disparate financing streams for SRH and HIV services and commodities; and inadequate health worker training, supervision, and retention. Efforts to integrate SRH and HIV services have the potential to lead to long-term cost savings and improved health outcomes but will likely require

earmarked investment of capital and human resources for effective execution, clear national policies and implementation guidelines, and consistent leadership. Further country-level operational research on the six integration functions described here—governance, policy and planning, financing, health workforce organization, service organization, and monitoring and evaluation—is needed to inform the planning, costing, and coordination of the integration of SRH/HIV services in sub-Saharan Africa.

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