

### 3) What successful characteristics ensure sustainability of a program?

The evaluated existing programs ranged in varying forms of technology: radio and print, visual media, and mobile systems.

**Evaluation:** A project based on visual media and supported by printed resources demonstrates the greatest feasibility to spread education on child nutrition in developing countries. Visual media and printed materials can be distributed most efficiently based on resource availability and flexibility in content translation for various languages and cultures. Mobile-based education may prove more difficult to establish due to increased time and resources needed to integrate a complex system, nonetheless it has the most capacity for large-scale efforts. Mobile technology has great potential to bridge the gap in remote health services, and visual media can be an appropriate and attainable first step moving forward.

**Going Forward:** In order to truly evaluate and create a successful program, a pilot study to assess the strengths and weaknesses of a small-scale technological intervention in a resource-limited area would be essential. Ultimately, a further developed project could stand as a fundamental model to be replicated in developing regions around the world.

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#### **The role of integration in achieving an AIDS-free generation: Best practices from a comprehensive review of the peer-reviewed and gray literature**

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**Background:** The global health community has recently turned its attention toward integration of health programs as an innovation to optimize resources and achieve greater impact. However, knowledge of the impact of and best practices for such integrated programming is limited. To fill these gaps, we conducted a scan of the peer-reviewed and gray literature of programs integrating HIV services with family planning (FP), maternal and child health (MCH), malaria, nutrition, tuberculosis (TB), and/or water, sanitation, and hygiene services.

**Methods:** We searched three databases for evaluations of HIV-integrated programs in lower- and middle-income countries published since 2010: (1) PubMed for systematic reviews and meta-analyses, (2) USAID Development Experience Clearinghouse for project evaluations, and (3) Google Scholar for highly cited articles.

**Findings:** We reviewed 291 peer-reviewed articles and 68 program evaluations. From the peer-reviewed literature, we identified several approaches with demonstrated impact on HIV and other health outcomes, including: opt-out, provider-initiated testing and counseling (PITC) for HIV within FP and MCH services; administration of malaria prophylactic treatment in co-endemic areas and prioritization of pregnant women; integration of ART directly into antenatal clinics; vitamin A or beta-carotene supplementation for pregnant women and children with HIV; PITC, care, and preventive therapy for TB within HIV settings as well as PITC of

HIV at TB clinics; and supporting exclusive breastfeeding. The program evaluations, while lacking implementation details, revealed several lessons and recurring themes including: the need for long-term funding cycles and a focus on health systems strengthening to guarantee successful integration results; the importance of investing in robust study designs and M&E systems to attribute effects; and the use of wrap-around services to enhance retention in care. Commonly used integrated approaches included services coordination at the facility level, community mobilization, behavior change communication, social marketing, public-private partnerships, and male involvement.

**Interpretation:** It is time to integrate services intelligently by taking evidence-based interventions with demonstrated impact on HIV and other health services to scale; failure to do so denies the synergies of integrated programming. Donors and programs should invest in impact evaluations and documentation of implementation details to facilitate replication and adaptation of innovative integrated approaches.

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#### **Innovating health systems monitoring and evaluation in low- and middle-income countries: Lessons for knowledge translation**

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**Background:** To achieve sustainable and resilient health systems, examining existing health systems performance built upon the best available evidence and a strong information system is vital. However, many low- and middle-income countries still lack the needed capacity to develop a responsive and robust monitoring and evaluation mechanism. To address this, this study investigates on available assessment technologies and innovations, data visualization tools, and other monitoring and evaluation mechanisms that countries can use despite limited resources. This study provides baseline information on these assessment and visualization technologies and innovations that are targeted for LMICs.

**Methods:** Online databases from 2000 to present were searched systematically for innovative monitoring and evaluation mechanisms. Published studies, reports, including grey literature relevant on the topic were identified through a systematic search using the following strategies: first, to identify peer-reviewed publications, online databases such as PubMed, EMBASE, PsycInfo and the WHO GIFT and IRIS tools were searched, including their reference lists using designated MeSH terms. Second, select government and non-government organizations and research institutions were contacted to collect further information. For each technology and innovation applied for monitoring and evaluation and knowledge translation, we parsed the assessment and visualization tools to identify similarities between them, which we catalogued into a framework comprising the assessment domains and visualization requirements.