MOMENTUM
Routine Immunization Transformation and Equity

Improving Health Workers' Immunization Performance

Using behavior integration to improve routine immunization services and the client experience in Western Kenya

Calvin Ochiambo/MOMENTUM Routine Immunization Transformation and Equity

MOMENTUM Routine Immunization Transformation and Equity (the project) applies best practices and explores innovations to increase equitable immunization coverage in USAID-supported countries. The project is USAID's flagship technical assistance mechanism for immunization in over 20 countries around the world. It builds countries' capacity to identify and overcome barriers to reaching zero-dose and underimmunized children and older populations with life-saving vaccines and other integrated health services, including rebuilding immunization systems adversely affected by the pandemic. It also supports COVID-19 vaccine rollout across countries with a wide range of circumstances and needs.

Introduction

Immunization is one of the most effective and cost-effective health interventions available. The World Health Organization (WHO) estimates that childhood vaccines save 2–3 million lives every year. Immunization is so important that it is considered a human right. Globally, most families and communities understand the value of immunization and want their children to be vaccinated.

Despite great progress over the past 30 years, millions of children are not getting this life-saving intervention. Immunization rates have stagnated, and in the first year of the COVID-19 pandemic, coverage actually dropped. WHO and UNICEF (2023) estimate that each year, 21 million infants do not receive the full course of six basic vaccines, and that 14.5 million of these do not receive even one dose of diphtheria-tetanus-pertussis (DTP) vaccine. These "zero-dose" children are less likely than their fully vaccinated peers to live to the age of five years and are more likely to suffer from debilitating disease.

Systemic problems including health worker (HW) performance issues contribute to the high numbers of un- and under-immunized children, especially in sub-Saharan Africa. (Albers 2022, Bangura 2020, Favin 2012, Rainey 2011).

This brief is intended for immunization program managers, implementers, and partners at multiple levels and presents a human-centered, behavior-focused methodology used in two counties in Kenya to improve HW performance on routine immunization. The work is in progress; the final report will summarize outcomes and learning.

Persistent Challenges to Routine Immunization

Kenya's overall high immunization coverage can hide inequities among subcounties. According to the 2022 Kenya Demographic and Health Survey, 27 percent of subcounties have vaccination coverage below 80 percent for the third

dose of DTP-containing vaccine. The six-year global USAID-funded MOMENTUM Routine Immunization Transformation and Equity project (the project) applies best practices and explores innovations to overcome entrenched obstacles to immunization and increase equitable immunization coverage. It is working in Homa Bay and Vihiga counties in the western part of Kenya, where many un- and under-immunized children live.

Poor staff attitudes and practices were most frequently reported in focus groups with caregivers in Western Kenya as reasons they do not vaccinate their children (Agócs 2021). Persistent challenges in Homa Bay include limited access to services; inadequate knowledge and skills among HWs due to infrequent training and supervision; and poor community linkages that compromise tracking children who miss appointments. Caregivers also cited HW lateness; lack of vaccines; poor communication; and no warning about adverse events following immunizations as reasons for non- or incomplete vaccination (Wanga 2018). Even in Nairobi, the capital, vaccine stockouts and inconvenient hours for working caregivers prevent children from getting fully vaccinated (Muathe 2020).

New Challenges to Routine Immunization

Immunization programs are also becoming increasingly complex, with additional vaccines given throughout life,

Calvin Odhiambo/MOMENTUM Routine Immunization Transformation and Equity

> **Changing people's behavior requires understanding what they are doing and why, and what they might be willing to do and why—and closing the gap between the two.**

and global immunization goals call for increased equity by reaching those historically underserved. In addition to HWs needing to administer vaccines correctly and accurately report doses given, people skills, problem-solving, time management, and use of data for decision-making are required to ensure high-quality immunization services and a client experience that encourages schedule completion.

Highly proficient and motivated HWs are crucial to reaching and sustaining global and national immunization goals and their benefits accrued to society. As measles and polio outbreaks around the world continue to demonstrate, no one is safe from vaccine-preventable diseases until everyone is safe.

A Methodology for Improving Performance

In Kenya, the project turned to behavior integration, an approach demonstrated to improve and sustain program outcomes, to overcome entrenched obstacles to better HW performance on immunization. Behavior integration is a way to put people and their behaviors at the center of change efforts. By leveraging social and behavior change approaches, human-centered design, best practice design expertise, and systems strengthening insights, behavior integration focuses on what people must do to adopt a behavior, and identifies interventions that link clearly to critical factors (barriers and motivators) that affect it.

This focus allowed the project to identify key behaviors that would improve outcomes and to design activities to enable adoption of those behaviors. Learning and adaptation are integral to the process. Changing people's behavior requires understanding what they are doing and why, and what they might be willing to do and why—and closing the gap between the two. For optimum HW behavior change, systemic elements including human resource (HR) management policies and practices, immunization policies, accountability, financing, infrastructure, health information systems, communication, commodity availability, and behavior enabling technologies must also be addressed.

The methodology is based on the idea that selecting interventions that use appropriate supporting actors to leverage or overcome critical factors (motivators and barriers, respectively) will lead to adoption of priority behaviors. Adoption of these behaviors will lead to attainment of the program goal.

The activity described here seeks to identify and implement changes that can be made and sustained locally in the context of larger efforts toward systemic change that could improve HW performance. The activity follows the eight-step process described below, with two counties providing an example that other counties within Kenya and beyond can adapt and implement.

Step 1: Identify goal

Our goal was improved HW performance and leadership in reducing zero-dose and under-immunization. Everything in the process supports its attainment. Further, we want changes to last beyond this or any project or activity, and recognize the value of HW leadership in immunization.

Step 2: Analyze impediments to goal achievement

The activity team brainstormed, based on experience, impediments to this goal, then conducted a desk review to validate and add to those findings. Impediments fell into several categories: staffing shortages; inadequate or mis-matched capacity; inadequate or harsh supervision; lack of appreciation; inadequate tools and information; lack of autonomy; and psychosocial problems.

Step 3: Prioritize behaviors to overcome impediments to the goal

For each impediment, the activity team brainstormed who must do what to overcome it. Table 1 provides examples of what the brainstorm produced.

The potential behaviors were then scrutinized to assess:

- Whether it is actually a behavior.
- Whether doing it would result in achieving the goal.

Table 1. Impediments and Potential Behaviors to Overcome Them

Goal: Improved HW performance and leadership in reducing zero-dose and under-immunization	
Impediment	**Illustrative actions proposed as behaviors to overcome the impediment**
Staffing shortages	• District health managers/officers reallocate staff as needed • Subnational HR manager monitors staffing • Managers seek budget to hire staff
Inadequate or mis-matched capacity (skills, attitudes, knowledge)	• Supervisors provide or ensure continuous learning • Clinic managers provide feedback, encouragement, and skills-building • HWs share with co-workers what they learn in trainings
Inadequate or harsh supervision	• District health management team implements quarterly calls with HWs to get input and feedback • Managers supervise supportively
Lack of appreciation	• District health management teams regularly recognize HWs and facility achievements • Policymakers institute HW retention strategies, including career pathways
Inadequate tools, information, and means to do the job	• MOH funds health system adequately • HWs report vaccine usage monthly • Logistics managers submit timely, accurate supply forecasts including vaccines
Lack of autonomy	• Managers respect HW skills and experience • HWs seek autonomy in their work
Psychosocial problems (highlighted during the COVID-19 pandemic but persisting)	• HWs seek psychosocial support • Facility managers provide safe space for discussing concerns

- The extent to which it is practiced (no need to work on things people are already doing well and consistently).
- The extent to which it is a priority for the county's immunization program.
- The extent to which it is sufficiently changeable with the time and resources available.
- The extent to which it is within the organization's manageable interests.

The activity team chose 12 priority behaviors that were later vetted with HWs and managers in Kenya, recognizing that each actor has his/her own role. Priority behaviors are those that: 1) have the most potential to directly or indirectly improve HW performance; and 2) have low uptake in the Kenyan context. These behaviors are presented from the perspective of the person who is expected to adopt them (the primary actor).
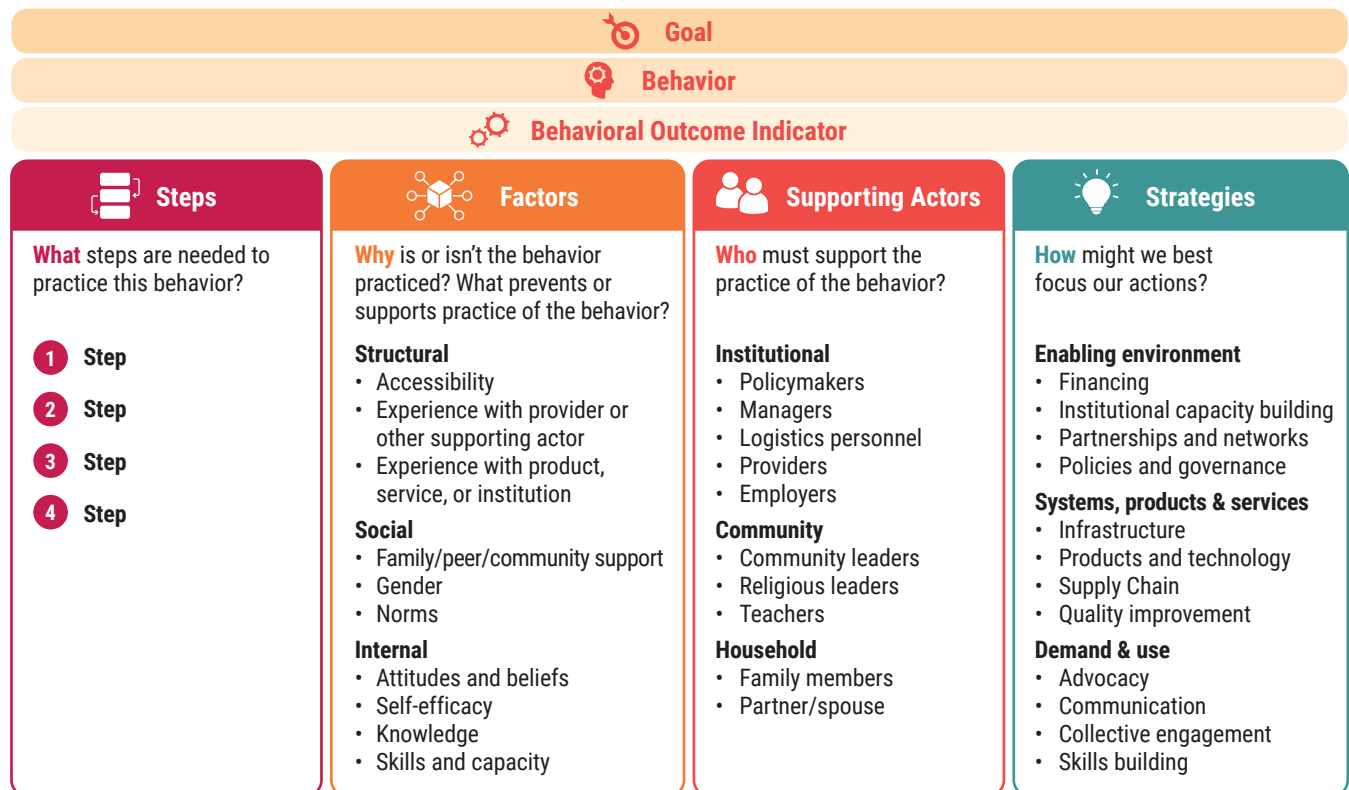
Step 4: Analyze the behaviors, creating pathways to change

Analyzing behaviors is the process through which one:

1. Delineates the steps needed to practice the priority behavior.
2. Determines factors that can prevent (barriers) or support (motivators) the practice of this behavior—why the behavior is or is not practiced.

3. Highlights key supporting actors and their actions needed for the primary actor to practice the behavior.
4. Delineates strategies to involve the supporting actors and leverage motivators or overcome barriers.

This analysis results in logical pathways to change, represented as behavior profiles, the elements of which are shown in Figure 2. Figure 3 shows a logical pathway—possible strategies and supporting actor actions to overcome a barrier to the desired behavior—from one of the behavior profiles.

We reviewed the literature on each behavior to identify factors affecting it and supporting actors to enable its uptake. We followed this with qualitative research in Homa Bay and Vihiga to fill gaps and better reflect the situation in both counties.

Primary and secondary research identified barriers, motivators, supporting actors, and potential strategies for encouraging uptake of HW, facility manager, and county and subcounty health manager behaviors needed to improve HW performance in immunization and the client experience.

Figure 2. Elements of a Behavior Profile

Goal

Behavior

Behavioral Outcome Indicator

Steps	Factors	Supporting Actors	Strategies
What steps are needed to practice this behavior?	**Why** is or isn't the behavior practiced? What prevents or supports practice of the behavior?	**Who** must support the practice of the behavior?	**How** might we best focus our actions?
1 Step 2 Step 3 Step 4 Step	**Structural** • Accessibility • Experience with provider or other supporting actor • Experience with product, service, or institution **Social** • Family/peer/community support • Gender • Norms **Internal** • Attitudes and beliefs • Self-efficacy • Knowledge • Skills and capacity	**Institutional** • Policymakers • Managers • Logistics personnel • Providers • Employers **Community** • Community leaders • Religious leaders • Teachers **Household** • Family members • Partner/spouse	**Enabling environment** • Financing • Institutional capacity building • Partnerships and networks • Policies and governance **Systems, products & services** • Infrastructure • Products and technology • Supply Chain • Quality improvement **Demand & use** • Advocacy • Communication • Collective engagement • Skills building

The research included interviews with 33 health managers and HWs in four subcounties (two per county) and two small group discussions (one per county) with a total of 10 nurses. Respondents were recruited from the two county health teams where the project is working. The county health teams, in collaboration with the project, each selected one high-performing and one low-performing subcounty for participation, as well as two facilities in each of those subcounties. Respondent selection was purposive, since the potential pool of respondents was limited by virtue of their positions and the locations selected.
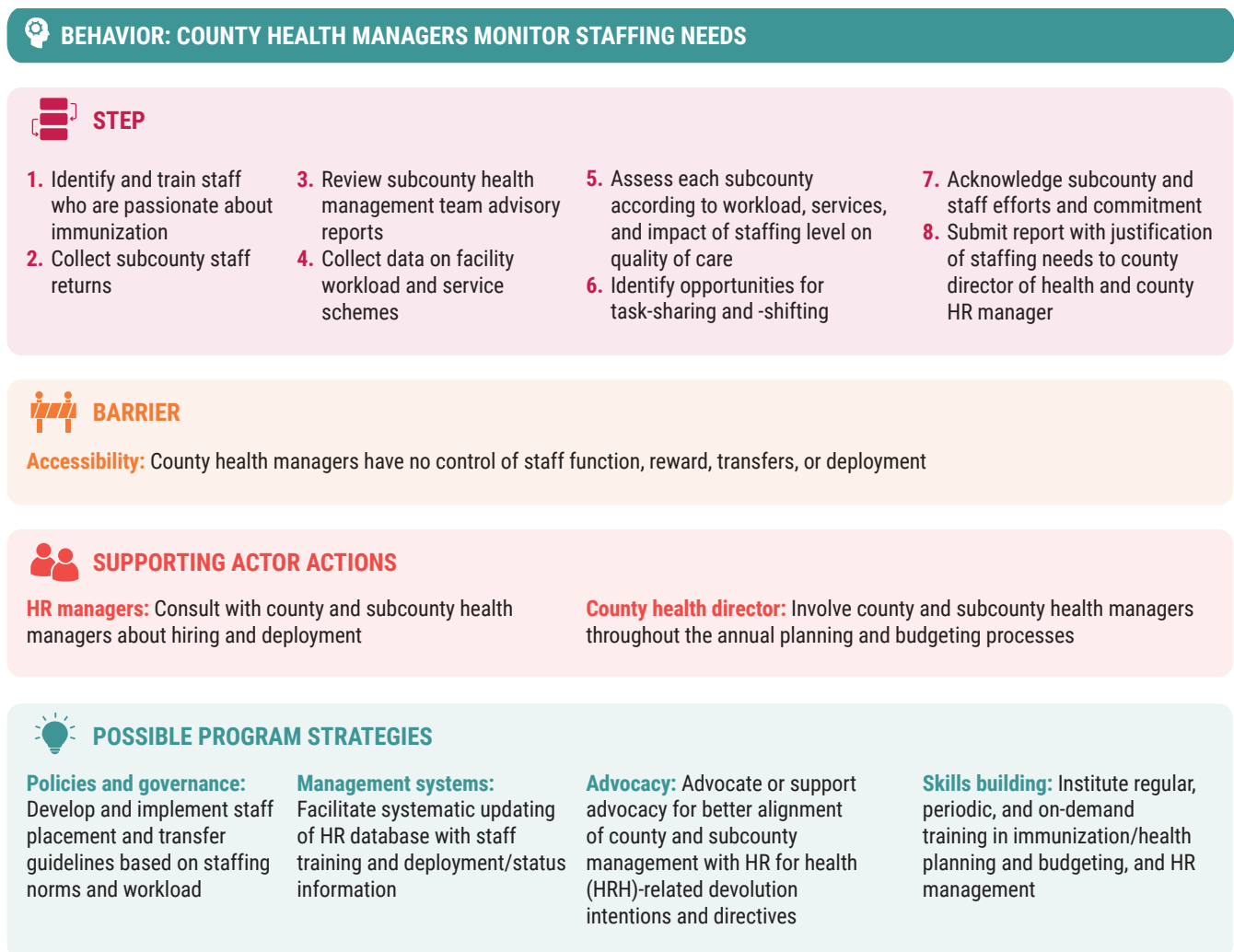
We looked for reasons why our primary actors (HWs, facility in-charges, and county and subcounty health managers) do or don't, can or can't practice the needed behaviors. We also captured suggestions for supporting actor actions (people and their actions needed to help or put in place things that make it possible for the primary actors to adopt the desired behaviors), what is working well, and other possible solutions/interventions. Based on the primary research, we modified some behaviors (e.g., adjusted staffing behaviors to be more realistic and divided the service behavior in two, with one focused on service experience) and otherwise updated the behavior profiles.

Selected Research Findings
Critical factors are those that are frequently reported, are essential to overcome (barriers) or leverage (motivators), and

Figure 3. Example of a Logical Pathway to Change

BEHAVIOR: COUNTY HEALTH MANAGERS MONITOR STAFFING NEEDS

STEP

1. Identify and train staff who are passionate about immunization
2. Collect subcounty staff returns
3. Review subcounty health management team advisory reports
4. Collect data on facility workload and service schemes
5. Assess each subcounty according to workload, services, and impact of staffing level on quality of care
6. Identify opportunities for task-sharing and -shifting
7. Acknowledge subcounty and staff efforts and commitment
8. Submit report with justification of staffing needs to county director of health and county HR manager

BARRIER

Accessibility: County health managers have no control of staff function, reward, transfers, or deployment

SUPPORTING ACTOR ACTIONS

HR managers: Consult with county and subcounty health managers about hiring and deployment

County health director: Involve county and subcounty health managers throughout the annual planning and budgeting processes

POSSIBLE PROGRAM STRATEGIES

Policies and governance: Develop and implement staff placement and transfer guidelines based on staffing norms and workload

Management systems: Facilitate systematic updating of HR database with staff training and deployment/status information

Advocacy: Advocate or support advocacy for better alignment of county and subcounty management with HR for health (HRH)-related devolution intentions and directives

Skills building: Institute regular, periodic, and on-demand training in immunization/health planning and budgeting, and HR management

can be affected with available resources. Examples of barriers and motivators for each of the behaviors are shown in Table 2. Click on a behavior to see the full profile.

What respondents said worked well and motivates them is summarized in Figures 4 and 5.

Step 5: Using a co-creation process, validate the behaviors and profiles

The goal of the co-creation workshops was to identify and detail ways to facilitate adoption of behaviors needed to improve HW immunization performance. Participants included HWs and facility in-charges; subcounty health managers such as medical officers of health, public health

Table 2. Examples of Critical Factors for Each Desired Behavior

HWs	**Deliver quality immunization services** • Being charged to use outreach venues (B) • Inadequate resources and infrastructure, including funding, staff, electricity (B) • Limited knowledge and skills due to ineffective training methodologies (B)	**Deliver a positive immunization experience** • Little attention to interpersonal care in training, so insensitive to client needs (B) • No time to be nice given heavy workload and inadequate resources (B) • Feel undervalued and ill-treated themselves (B)	**Initiate independent problem solving** • Lack training in problem-solving techniques (B) • No time to spend on "extra" activities (B) • No support from supervisors for such activities (B)	**Use community feedback** • No system of collaboration with the community (B) • Lack funds to attend community dialogue days (B) • Lack community dialogue skills (B)
Facility in-charges	**Conduct staff achievement roundtables** • Never received positive recognition themselves (B) • Lack time and staff (B) • Lack skills to set up the needed processes (B)	**Provide continuous medical education** • No time: understaffed, too many competing tasks and activities (B) • Believing they shouldn't be responsible for CME (B) • Lack teaching skills and training materials (B)		
Subcounty health managers	**Conduct supportive supervision and mentorship** • Inadequate resources, (funding, logistics, staff) (B) • Lack training in supportive supervision and mentorship (B) • Availability of user-friendly supportive supervision tools (M)	**Assess staff deployment to health facilities** • Political interference with HRH management functions (B) • Misalignment between planning and budgeting within health sector (B) • Lack skills to assess staff deployment (B)	**Review achievements** • Lack structured feedback mechanisms (B) • Busy schedules and competing priorities (B) • Availability of data and the evidence base (M)	**Facilitate HW access to psychosocial support** • Stigma (B) • Lack skills to address mental health needs (B) • Lack formal mechanism for handling psychosocial challenges (B)
County health managers	**Mobilize resources** • Lack tools to track expenses against budget (B) • Insufficient capacity to create an evidence-based investment case (B) • Strategic planning is the norm (M)	**Monitor staffing needs** • Non-implementation of collaborative HRH processes envisioned under devolution (B) • Ability to influence staff deployment/transfers (M) • Staff training makes task sharing feasible (M)		

B=Barrier   M=Motivator

nurses (responsible for immunization), and community health strategy focal persons; and county health managers including the immunization program coordinators, HR and finance managers, health records and information officers, and county health directors. Project staff facilitated a two-day workshop per county in May, 2024 with support from county health managers.

After an overview of behavior-focused programming, participants reviewed and refined the behaviors and profiles. For example, both counties dropped the behavior "health facility managers monitor staffing needs" because most already do it. In some cases, barriers or motivators were added, deleted, or revised, and the same happened with steps, supporting actor actions, and strategies (interventions).

Figure 4. What Improved Performance, by Role

"

When asked, "What has worked well in their jobs?"

Vaccinators said:
- Strong support and relationship with community
- Support from supervisors and donors
- Offering immunization services daily
- Capacity building opportunities (i.e. continuous medical education)

Cross-cutting:
- Teamwork!
- Supportive systems/work environment
- Coordination and collaboration
- Monitoring and evaluation of indicators
- Availability of commodities and staff

Health Managers said:
- Partnership with NGOs in skills development (i.e. public relations to improve interactions with community)
- Political goodwill
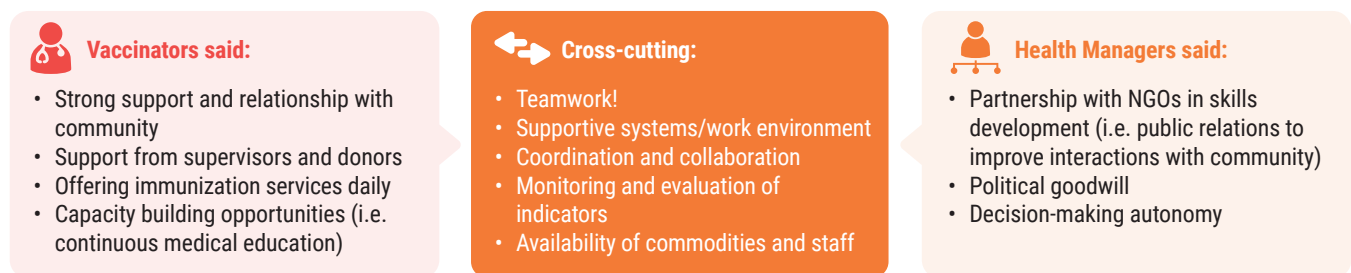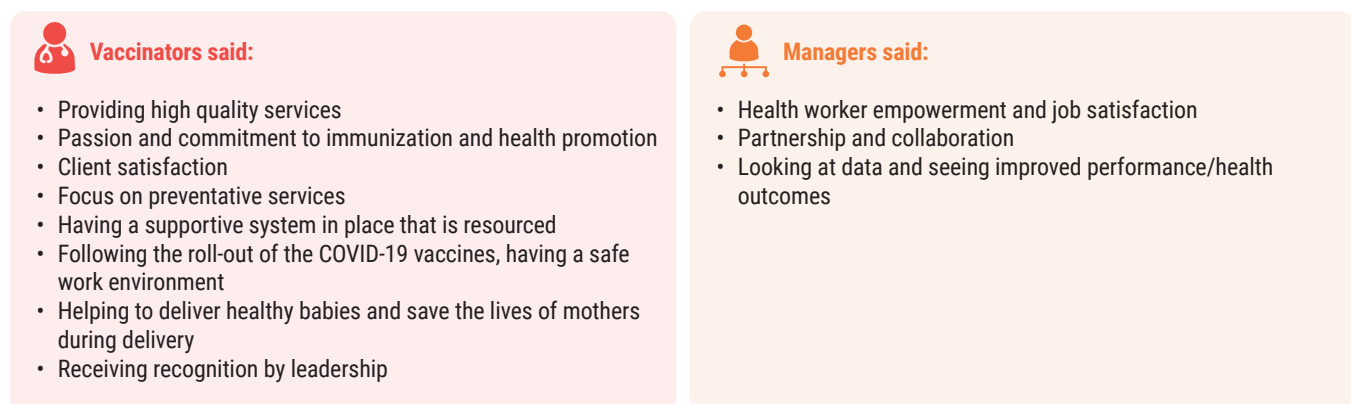- Decision-making autonomy

Figure 5. What Respondents Value Most in Their Work, by Role

"

When asked, "What do you value most in your work? What motivates you to do your best?"

Vaccinators said:
- Providing high quality services
- Passion and commitment to immunization and health promotion
- Client satisfaction
- Focus on preventative services
- Having a supportive system in place that is resourced
- Following the roll-out of the COVID-19 vaccines, having a safe work environment
- Helping to deliver healthy babies and save the lives of mothers during delivery
- Receiving recognition by leadership

Managers said:
- Health worker empowerment and job satisfaction
- Partnership and collaboration
- Looking at data and seeing improved performance/health outcomes

Step 6: Prioritize solutions

Workshop participants formed small groups according to role (HW, facility manager, etc.) to look across a subset of behaviors to identify and prioritize solutions and:

- Focus on locally feasible interventions most likely to enable the priority behaviors.
- Prioritize solutions based on feasibility, sustainability, likely outcome, and strategic fit.
- Strongly consider strategies that can impact multiple factors across multiple behaviors (synergy).

After the small groups presented their work, the full group agreed on which solutions to take forward, resulting in draft action plans (excerpted in Table 3) and indicators.

Step 7: Implement and monitor action plans

To increase the potential for sustainability, the counties decided to include many of the agreed activities in their annual work plans (developed shortly after the co-creation workshops). County, subcounty, and facility teams are implementing elements of the action plans (e.g., establishing an award system, making changes to performance review meetings). The project is adapting a previously implemented HW immunization mentoring program and collaborating with the counties to monitor and improve the client experience to encourage timely completion of childhood immunization schedules.

Step 8: Monitor progress toward behavior change and adapt interventions as needed

Each priority behavior has an outcome indicator that will be used to assess behavior change about a year after the co-creation workshops. A few additional indicators will help us measure progress and the extent to which planned activities are being implemented. The project will maintain contact with county and subcounty health managers and facility immunization staff to monitor progress and assist as needed.

Calvin Odhiambo/MOMENTUM Routine Immunization Transformation and Equity

KEY INSIGHTS TO DATE

- Recognition of the need for more immunization funding and more and better-trained staff was universal, but workshop participants identified at least some things they could do with current resources. Spending even more time than we did on "thinking outside of the box" might have resulted in additional small but important solutions on the pathway to greater and longer-term change.
- HWs' reliance almost exclusively on community health assistants to convey information (rather than leaving the facility to talk with communities themselves) creates

Table 3. Examples of Activities Included in County Action Plans

Homa Bay	Vihiga
To build capacity for quality immunization services:	**To link and collaborate with the community:**
• Create award and recognition model. • Conduct HW and community health promoter meeting at the facility. • Assess service quality using quality assessment tool • Conduct regular supportive supervision to identify immunization quality gaps and strengths.	• Conduct community dialogues. • Conduct routine immunization action days. • Operationalize community health promoter performance monitoring chart.

social distance that compromises follow-up of children and caregivers' willingness to return for services.

- Behavior integration supported a process for identifying behaviors, steps composing the behaviors, barriers, facilitators, supporting actors, and targeted interventions. Built-in flexibility and emphasis on local ownership of behaviors and solutions is expected to foster sustainability, as is partnership between the county, subcounty, and frontline HWs.
- Developing a behavior-led strategy was new to and useful for workshop participants, in particular focusing on their own behaviors: many arrived expecting to focus on caregiver behaviors. The process helped them see how their behavior affects immunization uptake and completion.
- It was important for HWs to determine which behaviors they want to work on rather than having it determined for them. They also appreciated acknowledgement of the range of obstacles to good performance and the shared responsibility for overcoming them.
- The co-creation workshops required a lot from participants. Management at each level embraced the process and the paradigm shift needed to improve the service experience for both HWs and caregivers.
- As noted, improved HW performance requires behavior change at multiple levels. The co-creation workshops demonstrated how HW behaviors depend heavily on management action. What managers at every level do affects what those under them can do. For example, subcounty and facility managers showing support,

providing growth opportunities, and acknowledging performance rather than focusing almost solely on problems and corrective action can positively impact HW performance.

NEXT STEPS
The final year of this activity will focus on learning from implementation and sharing the process and findings with Kenyan health authorities at national and subnational level, program participants (e.g., health workers), and national, regional, and international audiences as appropriate. Learning will take place via regular monitoring and periodic pause and reflect sessions that also bring to the fore needed adaptation and new ideas.

CONCLUSION
Obstacles to improving client experience and overall HW performance on immunization are longstanding. Given the right encouragement, opportunity, and behavior-focused approaches, local actors can imagine and experiment with new, practical, locally sustainable ideas to overcome these obstacles. Behavior integration and co-creation can help ensure the needed focus on behaviors, learning from implementation, and adaptation based on what is learned.

For information about how to implement this methodology, please contact momentumri@jsi.com.

References

Agócs, Mary et al. (2021). Reasons why children miss vaccinations in Western Kenya; a step in a five-point plan to improve routine immunization. *Vaccine*, 39(34), 4895-4902.

Albers, A. N., Thaker, J., & Newcomer, S. R. (2022). Barriers to and facilitators of early childhood immunization in rural areas of the United States: A systematic review. Preventive Medicine Reports, 101804.

Bangura, Joseph Benjamin et al.. (2020). Barriers to childhood immunization in sub-Saharan Africa: A systematic review. *BMC public health*, 20(1108), 1-15

Favin, Michael et al. (2012) Why children are not vaccinated: A review of the grey literature. *International Health*. 4(4), 229-238.

KNBS and ICF. 2023. Kenya Demographic and Health Survey 2022: Volume 1. Nairobi, Kenya, and Rockville, Maryland, USA: KNBS and ICF.

Muathe, E. C., Kamau, M., & Rajula, E. (2020). Exploring strategies to improve adherence to immunization schedule: a study among children attending Maternal and Child Health Clinic at Kenyatta National Hospital, Nairobi, Kenya. *International Journal of Pediatrics*, 2020.

Rainey, Jeanette J. et al. (2011). Reasons related to non-vaccination and under-vaccination of children in low and middle income countries: findings from a systematic review of the published literature, 1999–2009. *Vaccine*, 29(46), 8215-8221.

Wanga, I. (2018). Predictors of utilization of vaccination services among caregivers of children ages less 1 year in Asego Sub-County, Homa Bay County (Doctoral dissertation, Maseno University).

World Health Organization (2024). Progress and Challenges with Achieving Universal Immunization Coverage.

@USAID_MOMENTUM   @USAIDMOMENTUM   USAID MOMENTUM   USAID MOMENTUM