Institute *for* Healthcare Improvement

Lessons Learned from Ghana's *Project Fives Alive!*

A practical guide for designing and executing large-scale improvement initiatives

Project Fives Alive!
A Partnership of the National Catholic Health Service (NCHS)
and the Institute for Healthcare Improvement (IHI)
to reduce under-5 mortality in Ghana

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PREFACE

Why we developed this guide

STEVE BLANK, *THE FOUR STEPS TO THE EPIPHANY*

I was sitting at the annual *Project Fives Alive! (PFA!)* External Advisory Board meeting in December 2012, watching and listening to the *Fives Alive!* team as they recounted with palpable enthusiasm their experience with leaders from health care facilities, districts, and regions, and with patients and communities alike, building their understanding and use of Quality Improvement (QI) methodologies to drive tangible improvements in reducing under-5 mortality. Between the spirited evaluation discussions, the unabashed candor about what it took on the ground to make those run charts sing — and sometimes weep — I asked myself, "What is it about this project that has made it work so well?"

I hadn't been at the Institute for Healthcare Improvement (IHI) for very long, but I had been privileged to work and speak with many leaders and teams across Africa who were facing deep challenges as they worked to lead Quality Improvement projects in health care. What linked all of these projects was a clear commitment and passion from the leaders — but this did not always translate into direct and measurable improvements in processes, let alone outcomes.

I became increasingly convinced that the operational platform to drive success in QI projects was a key differentiating factor, but I wasn't clear on the granular detail — and I was sure there were additional drivers of success. I remember taking aside Nana Twum-Danso (at the time, Senior Program Officer at the Bill & Melinda Gates Foundation, but also former IHI Executive Director and the first Director of *PFA!*) during the meeting break and asking her to share with me her strategic and operational thinking when she first led *PFA!* Having known Nana in university, I was convinced that she had developed a well-articulated plan with key prioritizations on investments in the Project that had gotten it off to an early successful start.

At first, Nana, in an incredibly humble way, said she didn't think there was anything particularly strategic or special about what had been done. She told me that she genuinely believed in the ambitious aims that IHI had set forth in the Project proposal so she organized herself, her team, and their collective work in such a way that they could achieve those aims. They strived to execute the Project as planned, she said, and when they fell short they reorganized themselves (e.g., more staff, more vehicles, more time) or redesigned the Project to keep marching forward toward the ambitious aims in which they believed. She didn't see the big deal in these two things, she said; shouldn't all projects be operating like this? Why bother with "business as usual" or incremental changes when you have the opportunity, time, and money to make transformational improvements?

I posed the same question to Sodzi Sodzi-Tettey, IHI Senior Technical Director and current *PFA!* Director. Just like Nana, Sodzi brushed it off and somewhat incredulously asked me to define what was so special about *PFA!* that I kept on talking about it — the leadership, the partnership, the team, the work. The day I was leaving Accra, Nana, Sodzi, and I delved into problem-exploration mode; I remember the three of us standing outside the Oak Plaza Hotel that night — Nana and Sodzi more worried than me that I might miss my flight — discussing, sharing, debating about what these drivers of success were. The conversation was so rich that Nana actually accompanied me in the taxicab to the airport, stood with me at departure until the very last minute, just so we could have a little more time to further explore these drivers.

Nana, Sodzi, and I had many more conversations after that initial meeting. Knowing there wasn't much time left until the Project end, it was clear we had to be intentional about uncovering what these drivers were. As Steve Blank says, "There is a true and repeatable path to success, a path that eliminates or mitigates the most egregious risk and allows a company [in this case, a project] to grow in to a large, successful enterprise."

With the support of the Bill & Melinda Gates Foundation, the Institute for Healthcare Improvement decided to embark on a retrospective and prospective analysis of the critical drivers of success in QI by harnessing the experience, insights, and reflections of the *Project Fives Alive!* partnership — the National Catholic Health Service, the Ghana Health Service, and IHI. What follows in this guide is a synthesis and analysis of several interviews with many of the stakeholders who contributed to the success of *Project Fives Alive!* Our objective was to "write down," as Blank says, "the true and repeatable path to success."

We hope that you will walk away with insights and guidance that you can customize to your own efforts to integrate Quality Improvement into the system that you are supporting or leading to deliver high-impact outcomes in health.

L. Nneka Mobisson-Etuk, MD, MBA, MPH

Executive Director of African Operations,
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FOREWORD

How to use this guide

Often, people ask me how *Project Fives Alive!* "made it"? By that they mean what influenced *PFA!*'s high-functioning project team, rigorous implementation, and disciplined commitment to achieving impact at scale.

My first instinct in answering this question has always been to deflect such unwarranted attention. Though we worked hard, without doubt, hard work was by no means the sole preserve of *PFA!* With the passing years, I have traveled extensively and I have had cause to revise my reflections on some things we might have taken for granted in *PFA!* on the assumption that it was the norm. Primarily, it is not so much that others do not work hard; it is just that not all are similarly driven, possessed with that relentless focus on results.

PFA! has interacted with other well-funded projects seriously consumed by numerous activities with little or no focus on outcomes and impact. Some find our way of working "too intense," or don't worry about measuring impact because they are "just a systems strengthening project." Others have observed *PFA!*'s painstaking process of QI team composition, the implementation of the learning network, and the data-backed development of a basic package of high-impact interventions for improving various processes of under-5 care after 18 months. Their conclusion? No, this is not for us! "You guys are 'QI purists.' We don't want to implement the full suite of QI methods. We just want people to be able to take a little bit of QI and run with it."

At a national scale, we structured the work such that two Project Officers in each region in Ghana oversee an average of 60 teams, each needing site visits on a six-week cycle. Other project leaders have commented, "The way the *PFA!* guys work is not normal!" Not normal? This has made me even more appreciative of how unique *PFA!* is, and I want to express deep personal gratitude to all *PFA!* project staff — past and present — whose various and diverse contributions have brought us this far.

As *PFA!* draws to a close in December 2015, our reflections take us back to three prototype districts in three regions in 2008, followed by the scale-up to 108 districts, representing over 50% coverage. From nine prototype hospitals selected from the National Catholic Health Service (NCHS) in 2009, we successfully spread best practices for improving the quality and reliability of care for children less than five years through 202 mainly public hospitals, including the 134 hospitals in seven regions engaged during the last phase of the Project. This engagement represents 80% coverage of all public hospitals in Ghana.

The results — both from the data collected and analyzed from routine sources and from our independent evaluation teams — show varying improvements in early antenatal care, skilled delivery, postnatal care, and child survival. But, perhaps more importantly, it shows that the Quality Improvement approach, where leaders and managers create a burning platform for change, and where frontline workers are empowered to develop, test, and implement their own innovative local solutions using local data to assess the effect of these changes, actually makes a difference.

We measure our impact through the reductions in facility-based under-5 deaths, demonstrating the feasibility and scalability of the country's postnatal care policy, supporting the redesign and printing of documentation for the national referral system. We also celebrate the learning platform created for health workers and community actors — mothers, traditional birth attendants, opinion leaders, gender activists, youth leaders, and local government officials — to work collaboratively to improve the continuum of care for mothers and newborns.

We are thankful for the more than 400 managers and key staff, trained over ten weeks as Quality Improvement Coaches, who still remain available to support ongoing work in the health system. Indeed, none of our accomplishments could have been possible without the active engagement of managers and frontline workers at all levels of the Ghanaian health system who remained committed throughout the Project. The health system provided the structures and resources that readily enabled QI to assume its role as an accelerator for change.

The spectacle of empowered QI teams influencing their subsystems with locally derived innovations, frontline workers and their managers reflecting on their own local data; our exciting attempt to demystify QI of its jargon by teaching it in the local language during our innovative referral community-facility learning networks; and the powerful manner in which some community members often held local government officials accountable in our Learning Sessions, are all memories we will cherish forever.

In this guide, we look back over eight years of experience in *PFA!* and harvest lessons learned that might also be useful for others designing and executing other large-scale improvement initiatives, especially those in low-resource settings. In reviewing key aspects of the Project, we asked ourselves three key questions:

1. **What did *Project Fives Alive!* "get right"? (Key Success Factors)**
2. **What were the major challenges *Project Fives Alive!* faced? (Key Challenges)**
3. **What useful lessons does *PFA!* hold for other large-scale initiatives? (Recommendations)**

The guide is intended to be a humble, honest, and sober reflection on an eight-year journey with the aim of helping other projects learn from both our successes and our mistakes. If this guide succeeds in birthing stronger Quality Improvement projects that actually save lives, then we will also have succeeded in producing "QI purists" after our own kind!

In April 2015, seven years after the country's last Demographic Health Survey (DHS 2008), which coincided with the start of *PFA!,* Ghana again released the latest DHS results, coinciding with the end of the Project. Given the Project's overall aim to assist and accelerate Ghana's efforts to achieve MDG 4, we keenly awaited these results. The new DHS shows under-5 mortality in Ghana reducing from 80 to 60 per 1,000 live births, child mortality (children surviving to age 12 months) reducing from 31 to 19 per 1,000 live births, infant mortality reducing from 50 to 41 per 1,000 live births, and neonatal mortality reducing from 33 to 29 per 1,000 live births. We greatly rejoiced, knowing that *PFA!* has contributed, in some part, to these improvements.

Sodzi Sodzi-Tettey, MD, MPH

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BACKGROUND

Project Fives Alive! (2008-2015)

In July 2008, the Institute for Healthcare Improvement (IHI) and the National Catholic Health Service (NCHS) of Ghana launched *Project Fives Alive!* — initially, **a five-year initiative to accelerate Ghana's efforts to achieve Millennium Development Goal Four (MDG 4) of reducing under-5 mortality by two-thirds from its 1990 baseline (from 110 deaths per 1,000 live births to less than 40 deaths per 1,000 live births) by 2015.**

Supported by the Bill & Melinda Gates Foundation and partnering closely with the Ghana Health Service (GHS), *Project Fives Alive!* (*PFA!*) has worked closely with communities, frontline workers, and health system leadership to improve performance of maternal and child health programs across Ghana — first in the nation's least-resourced three northern regions (Upper East, Upper West, and Northern), and eventually scaling up across the remaining seven regions of the country in a series of four phases, or "Waves," as follows:

1. Wave One

Between July 2008 and September 2009, *PFA!* worked across the continuum of care in three innovation districts, one in each of the three northern regions.

2. Wave Two

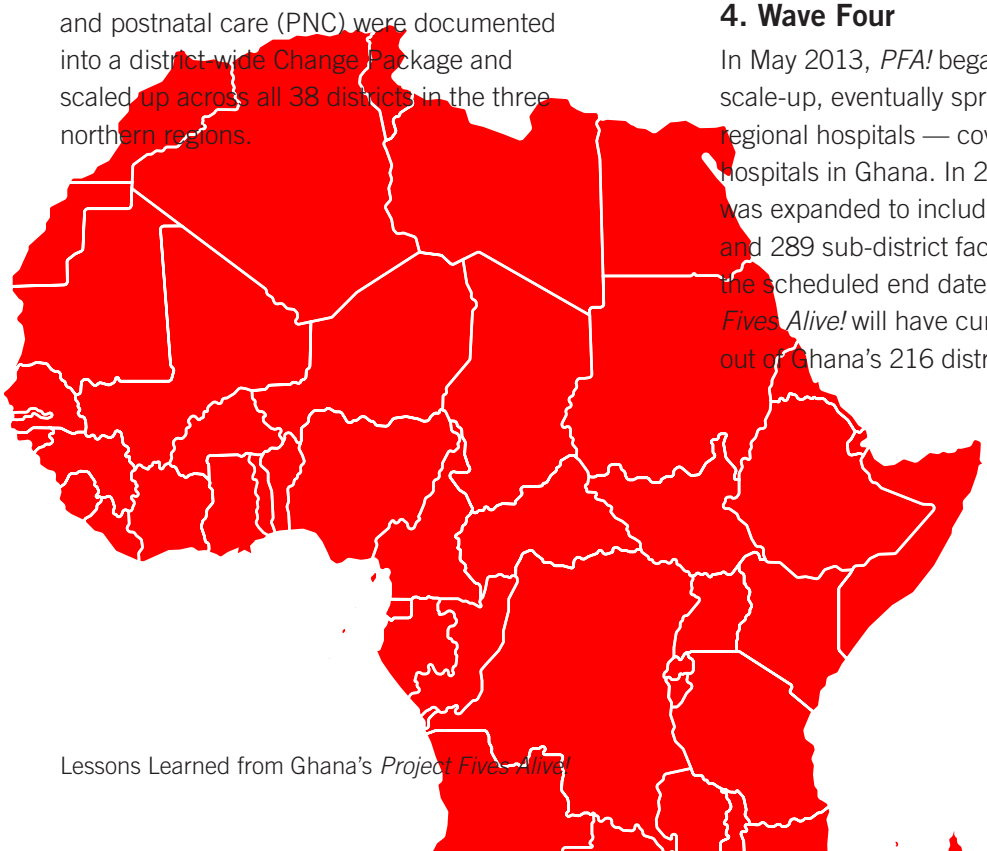
From October 2009 to March 2013, key learning on high-impact interventions for improving early antenatal care (ANC), skilled delivery (SD), and postnatal care (PNC) were documented into a district-wide Change Package and scaled up across all 38 districts in the three northern regions.

3. Wave Three

To learn about changes for improving safety and reliability of hospital-based care processes, *PFA!* created an Improvement Collaborative Network of nine NCHS hospitals in the south (from October 2009 to June 2011), leading to the development of a hospital-based Change Package that was subsequently scaled up to all NCHS hospitals, and later to all hospitals in the Project.

4. Wave Four

In May 2013, *PFA!* began the final phase of national scale-up, eventually spreading to 134 district and regional hospitals — covering 80% of public-sector hospitals in Ghana. In 2014, the improvement work was expanded to include approximately 70 districts and 289 sub-district facilities. By December 2015, the scheduled end date for the initiative, *Project Fives Alive!* will have cumulatively engaged 118 out of Ghana's 216 districts (approximately 55%).



Referral Sub-initiative

In August 2012, *PFA!* launched a focused sub-initiative to facilitate the development, testing, and implementation of innovative ways to address the challenges impeding safe, timely, and effective referrals of pregnant women and neonates from communities to health facilities and between health facilities. This sub-initiative had the distinctive feature of including community members — Traditional Birth Attendants (TBAs), Licensed Chemical Sellers, local government officials, traditional authorities (Chiefs and Queen Mothers), etc. — in sub-district improvement teams as a strategy to create an equal platform for all stakeholders. The Change Package developed from this work has been integrated into Wave 4 and is being adopted and adapted to the new local contexts as *PFA!* prepares for its conclusion in December 2015. *Project Fives Alive!* has been independently evaluated by the University of North Carolina at Chapel Hill, working in collaboration with the Institute for Statistical Social and Economic Research (ISSER) of the University of Ghana.

Testing the Effectiveness of Quality Improvement (QI) in Accelerating Results

PFA! sought to test the effectiveness of Quality Improvement (QI) as a means of accelerating the achievement of Millennium Development Goal Four (MDG 4) through supporting the nationwide implementation of the national Maternal, Newborn, and Child Health (MNCH) program of the Ghana Health Service.

PFA! was not designed to test the effectiveness of the MNCH interventions themselves. Rather, it was designed to test and scale up a fast-moving Quality Improvement program that helps local providers and system leaders use data to detect gaps in performance and test local ideas for implementing the content of Ghana's MNCH program to close those gaps.

The methodology uses a QI learning platform to test and share local ideas, and to track a simple set of performance metrics, thus enabling system leaders and frontline health care providers to use a package of the most successful change ideas to rapidly scale up the program, knowing that the changes have already been validated and field-tested in the local health systems.

Results

Highlights of the results achieved in Waves 1 through 3 (as of September 2013) across facilities in the three northern regions:

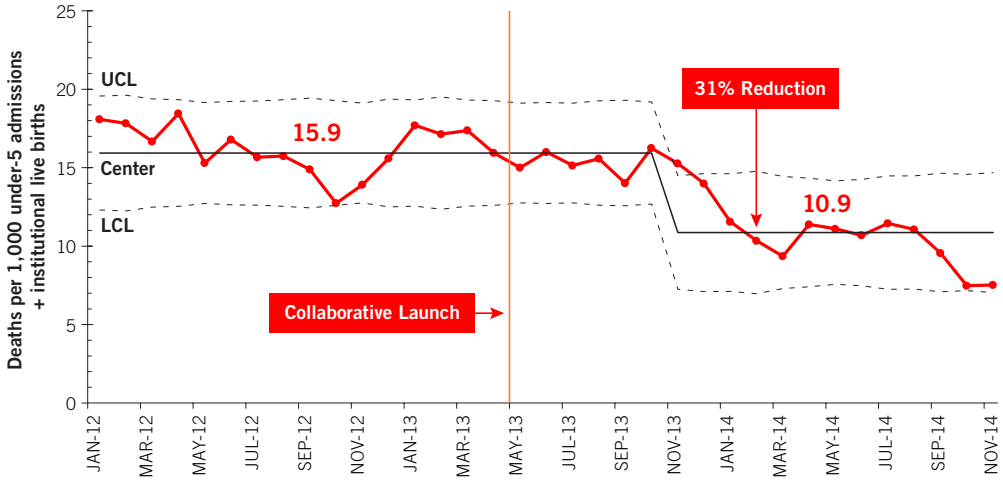
10%	increase in early antenatal care
20–30%	increase in skilled delivery*
46–80%	increase in postnatal care on days 1 and 2 of life
20–60%	increase in postnatal care on days 6 and 7 of life
32%	reduction in under-5 mortality in Upper East Region's hospitals
36.5%	reduction in under-5 mortality in Upper West Region's hospitals
39%	reduction in mortality in the 12- to 59-month age group in Northern Region's hospitals
31%	reduction in under-5 mortality in the Improvement Collaborative Network of nine NCHS hospitals
27%	reduction in under-5 mortality in all 32 NCHS hospitals

*The denominator used in Waves 1 through 3 was *deliveries conducted by trained health personnel plus deliveries by Traditional Birth Attendants (TBAs).* In Wave 4, we changed the denominator to *expected deliveries,* to align with the standard used in the Ghana Health Service.

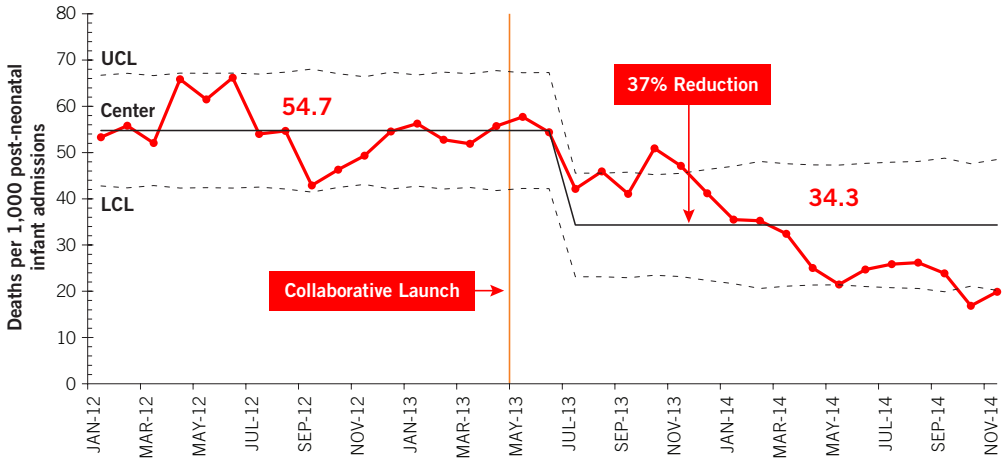
In May 2013, the improvement initiative was scaled up to 134 hospitals across seven regions in Ghana (Wave 4). Compared to the baseline prior to the launch of the Collaborative in May 2013, the intervention was associated, by November 2014, with the following changes in outcomes:

31%	reduction in under-5 mortality in 134 hospitals
37%	reduction in post-neonatal infant mortality in 134 hospitals
35%	reduction in under-5 malaria case fatality in 134 hospitals

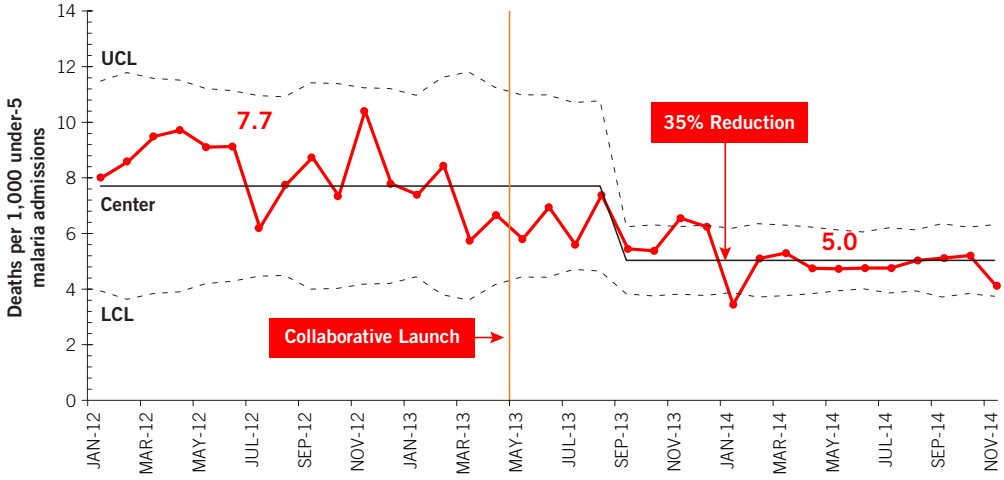
Under-5 Mortality Rate in 134 Hospitals across Seven Regions



Post-Neonatal Infant (1 to 11 Months) Mortality Rate in 134 Hospitals across Seven Regions

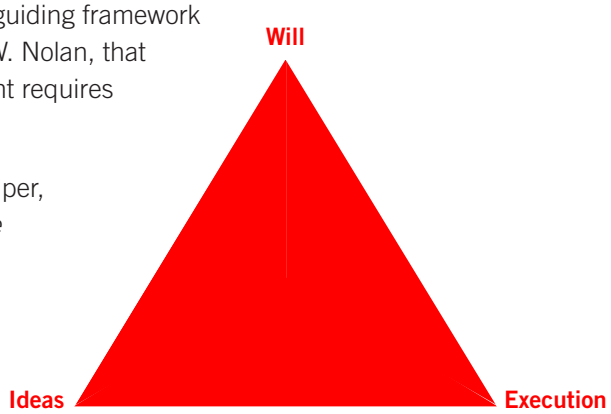


Under-5 Malaria Case Fatality Rate in 134 Hospitals across Seven Regions



Project Fives Alive! Guiding Framework: Will, Ideas, and Execution

From the very beginning, *Project Fives Alive!* used as its guiding framework the simple but powerful framing, developed by Thomas W. Nolan, that any initiative seeking to achieve system-wide improvement requires three key elements: Will, Ideas, and Execution.



Nolan's framework is described in detail in IHI's White Paper, *Execution of Strategic Improvement Initiatives to Produce System-Level Results* (Nolan TW. IHI Innovation Series white paper. Cambridge, MA: Institute for Healthcare Improvement; 2007.).

Here, in brief, is how Nolan describes each element:

1

Will

Achieving results at the system or organizational level requires will at all levels, but especially the will of top management to make a new way of working attractive and the status quo uncomfortable.

2

Ideas

The new system will require new ideas about how work gets done, how relationships are built, and how patients participate in their care. Some of these ideas may come from sources internal to the organization, while others will come from outside. Processes to scan widely within and outside of health care will be needed to find ideas robust enough to form the basis of a new system that performs at unprecedented levels.

3

Execution

No single initiative or set of unaligned projects will likely be enough to produce system-level results. Even aligned projects alone will not be sufficient. It will be necessary also to have a pervasive understanding of work as a collection of processes. The responsibility of managers and supervisors includes continual improvement of the work processes under their control towards a set of clear and shared outcomes.

Nolan's framework was not an abstract, academic notion for *PFA!* — it served as a daily guide. Throughout the Project, *PFA!* leaders used these three elements — **Will, Ideas,** and **Execution** — to assess the vitality of the Project and to keep it on track. The Project staff at all levels knew that, to be successful, *PFA!* had to be robust in all three areas. We tried to actively incorporate these three principles in all internal discussions, as well as in the work of the QI teams that were developing and testing change ideas in the health systems.

A CLOSER LOOK

1. We aligned with Ghana's national health priorities (e.g., MDGs 4 and 5).
2. We aligned with leadership and management priorities (e.g., starting in high-burden regions, hospitals, etc.).
3. We built leadership capacity at multiple levels.
4. We created data-driven feedback loops that constantly informed leadership of progress and challenges.
5. We provided leadership with both the credit for results and the accountability for addressing performance gaps.
6. We were adaptive and open to local suggestions for redesign and modifications.

1. We used Improvement Collaborative Networks (ICNs) to generate and spread successful ideas.
2. We ensured that all ideas had been reliably tested and rigorously evaluated before being dismissed, even by "experienced" team members.
3. We found that "what is needed" is often known and well documented; the innovation required for successful implementation often lies in the "how."
4. We sourced ideas from all QI team members, including those who were historically marginalized in the care team such as Health Information Officers.

1. We learned it's important at the outset to define ambitious numerical goals that are achievable primarily through system redesign rather than by working harder or adding more resources.
2. We identified a new way of working, recognizing that those facilities with good leadership and dedicated improvement teams generated better outcomes.
3. We reliably implemented planned interventions that were critical to behavior change, such as regular Learning Sessions and site visits.
4. We supported the QI teams to test and assess the effectiveness of their change ideas with local data on a predictable basis.

Learning System: Harvesting what works and what does not work

...within *PFA!*

An essential design feature of *PFA!* is a learning system to continuously harvest what works and what does not work in different settings, and to share that knowledge with an expanding network of health districts engaged in the Project.

...beyond *PFA!*

This guide is an extension of the learning system that is at the heart of *PFA!* As the Project draws to a close, here we apply the principle of "harvesting what works and what does not work" to the Project as a whole, so that other projects can learn from our experience — both our successes and our mistakes — and thereby accelerate their own efforts to design and execute large-scale initiatives to rapidly improve care and, most importantly, to save lives.

Project Design

KEY SUCCESS FACTORS

Continuously adapt the design of the Project as needed in response to learning on the ground.

A key to the success of *PFA!* is that the team was able to adapt the design of the Project in response to conditions on the ground. In fact, the concept of adaptive design was built in from the start. While the essential elements of the design were determined by the start of the Project (QI method, prototype Collaboratives, deep engagement of district staff), we assumed that there was still much to learn once we actually began the work, and that there would be iterative changes to the design in response to our experiences.

For example, the initial scope of the Project focused on causes of child mortality: diarrhea, pneumonia, and malaria. However, *PFA!* leaders rapidly adapted the Project design to focus on newborn and maternal health as soon as they got out into the communities and heard the priorities of the local health providers they had committed to help. Since *PFA!*'s goal was to reduce under-5 mortality, it was essential to focus on newborn and maternal health, because so many under-5 deaths occurred in childbirth and the first week of life. Fortunately, the funder was flexible in accommodating continuous adaptation of the Project design. For example, the funder was receptive to changes in the pace and scope of the work, as well as to extensions in the duration of the Project and corresponding adjustments in the budget. The funder was a genuine consultative partner throughout the Project.

There are always many unknowns at the start of a project; being able to adapt the design of the project based on learning in the field is a key strength. In another example of adaptive design, the initial design of the Project focused on health facility-based care; but, after work began in the facilities, it soon became clear that it was important to include community outreach and engagement as part of the work. For example, one major cause of child mortality is delay in seeking care. Effectively addressing this cause requires reaching out to and working with others outside the health facility. The most effective projects are those that are responsive to the realities on the ground and capable of adapting as more is learned and conditions change.

In addition to adapting the Project in response to a greater understanding of circumstances on the ground, *PFA!* continuously adapted its internal design in various ways, at various stages of the Project. For example, *PFA!* changed its approach to partnerships with other organizations; revised the agenda and content for Learning Sessions multiple times; extended the time allotted for certain phases of the Project; and modified the training of new hires in response to feedback.

A CLOSER LOOK

1. We adapted the Project design, shifting from a disease-specific focus (malaria, diarrhea, pneumonia) to a true systems improvement approach that was responsive to local needs. For example, if a QI team's data analysis showed that sepsis was the leading cause of newborn deaths, then adherence to the sepsis treatment protocol would be promoted, bearing in mind systems issues like training of prescribers, engaging management to address stock-out of antibiotics, etc.
2. We acknowledged the strong maternal-newborn link, leading to incorporation of improved maternal health processes (e.g., Partograph usage, training of midwives in resuscitation, etc.).
3. We actively included community members in sub-district Quality Improvement (QI) teams (e.g., mothers, Traditional Birth Attendants, opinion leaders, Licensed Chemical Sellers, private transport operators, gender activists, youth leaders, local government officials, etc.).
4. We developed a standardized curriculum for training senior and middle-level managers as Improvement Coaches at a national scale.
5. We incorporated facility-based clinical skills training into the existing QI framework as a means of addressing stagnating newborn outcomes.
6. We initially proposed to conduct site visits twice a week, but we found that it was sufficient to conduct site visits every 4-6 weeks. In Wave 2, we conducted site visits every 8-10 weeks because of limited staff but also as part of our sustainability plan and exit strategy, as the longer interval between site visits gave time for the District and Regional Change Agents to do their own site visits and practice their facilitation skills without us present.
7. We modified the design from the initially specified 12-month Collaboratives to 18-month Collaboratives because the longer timeframe suited the work better.

Form strong relationships with key stakeholders.

Another key element of the design of *Project Fives Alive!* is the partnership between the Institute for Healthcare Improvement (IHI), the National Catholic Health Service (NCHS), and the government-run Ghana Health Service (GHS). Together, NCHS and GHS provide approximately 95% of health care in the public sector. The GHS provided reach, size, staff, and infrastructure. Its status proved invaluable for acceptance of *PFA!* at local levels, for scale-up, and for sustainability at the end of the Project.

The NCHS, the second largest provider of health services in the country, had a network of hospitals and clinics that provided an ideal "scaffold" on which to build a national scale-up program that increasingly engaged the GHS. As the largest contributor to the Christian Health Association of Ghana (CHAG), NCHS was able to leverage the formal relationships between CHAG and the Ministry of Health (MoH) to incorporate the work of *PFA!* in supporting the development and testing of norms and policies for the health sector. An example of leveraging this relationship was MoH's request for *PFA!* to test the new guidelines for newborn care in the first 14 days of life. Another area where *PFA!* was particularly influential was in improving the collection, accuracy, timeliness, and reporting of routine data through the District Health Information Management System (DHIMS). In all phases of the Project, the GHS and NCHS provided key guidance on the design, implementation, and monitoring at national, regional, and district/diocesan levels.

(The **Relationships** section of this guide contains a more detailed discussion of partnerships.)

A CLOSER LOOK

1. We established a high-level Steering Committee comprising key partners that met — frequently (every two weeks) at the beginning of the Project and less often (monthly or as needed) when implementation progressed — to discuss design, decide on key operational issues, and drive implementation.
2. We established Project leadership and strengthened many informal communication channels to foster trust and harmony; for example, we held weekly "Open Channel" meetings between the Project Director and the Director of NCHS.
3. We mapped out roles, responsibilities, reporting lines, etc., through formal Memoranda of Understanding.
4. We discussed issues informally and built consensus to avert "contentious" emails quoting legal obligations of stakeholders.
5. We collaborated closely with our key partners to design and redesign the Project, which helped to ensure that the Project incorporated a wide range of lessons learned and perspectives. It also helped foster co-ownership of and commitment to the Project and its execution.
6. We found ourselves, at times, in a trap of individual and institutional attribution — everyone was thinking about it, but no one was talking about it. We learned to work through challenges together and share successes — for example, authorship of peer-reviewed publications.

Use Quality Improvement (QI) methodology in a disciplined way to drive results.

The use of Quality Improvement (QI) methodology, and the Model for Improvement in particular, was a core design element of *PFA!*, providing a structure for all activities. In line with this Model, the goal was to accelerate achievement of MDG 4, setting ambitious targets supported by a locally driven data system that informed a relentless effort to improve using local ideas.

(The **QI Capability** section of this guide contains a more detailed discussion of QI.)

A CLOSER LOOK

The Model for Improvement is a simple, yet powerful approach to accelerating rapid and significant improvements in care delivery and outcomes. It has been used very successfully by hundreds of health care organizations (and widely outside of health care) in many countries to improve different health care processes and outcomes.

SOURCE

Langley GL, Moen R, Nolan KM, Nolan TW, Norman CL, Provost LP. *The Improvement Guide: A Practical Approach to Enhancing Organizational Performance (2nd edition).* San Francisco: Jossey-Bass Publishers; 2009.

The Model focuses on three key questions that are critical in driving Quality Improvement work:

1. **What are we trying to accomplish? (Aim)**
2. **How will we know that a change is an improvement? (Measures)**
3. **What changes can we make that will result in improvement? (Change Ideas)**

The first question focuses on stating the aim of your improvement project in time-specific, measurable terms (how much, by when, for whom). The second question focuses on establishing measures that will help you determine if the specific changes you implement are actually leading to improvement. The third question focuses on identifying specific changes that, when implemented, will bring about improvement toward the desired aim.

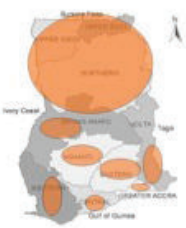
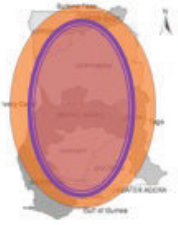
The second part of the Model for Improvement is the Plan-Do-Study-Act (PDSA) cycle, which is used to conduct rapid tests of changes on a small scale. The intention is to learn from these tests, and then apply that learning to the next cycle of testing.

Multiple PDSAs are often necessary for each change idea, to test whether or not the specific change is effective under various conditions and in various contexts before it is implemented on a larger scale. After the change idea has been successfully tested and implemented, it is only then considered ready for spread.

Scale up the Project in a series of phases, or "Waves."

PFA!'s rapid, national scale-up progressed through four distinct, clearly defined phases (or "Waves," as the Project called them). The initial phase (Wave 1) focused on 35 geographically aggregated health facilities. There, change ideas were first tested and a rudimentary package of change ideas was developed (known as the implementation "Change Package"). During subsequent phases of spread (Waves 2 through 4), this Change Package was the principal evolving implementation "how-to guide" that was introduced to subsequent facilities participating in *PFA!* The Change Package was adapted over time as new ideas and contexts were encountered.

Starting the work with small-scale, rapid-cycle testing within a limited geographic area in Wave 1 allowed *PFA!* to gain confidence in the methods and ideas, and to "sell" successful experiences to the district and regional managers as well as new clinics and hospitals that were joining the initiative. The Change Package was tested in successively larger and more diverse units, creating a well-trusted set of implementation strategies by the time the Project went to full scale in Wave 4.

	350,000	5 Million	11 Million	11 Million	22 Million
Under-5 Population	60,000	500,000	1.7 Million	1.7 Million	3.3 Million
						
NOV 2007	**JUL 2008**	**SEPT 2009**	**OCT 2009**	**AUG 2012**	**MAY 2013**
Start-up: MONTHS 1–8	**Wave 1: MONTHS 9–22**	**Wave 2: MONTHS 23–63**	**Wave 3: MONTHS 24–89**	**Wave 1R: MONTHS 58–89**	**Wave 4: MONTHS 63–89**
				Referral Project launch 41 Referral Teams	
	30	228	330	430	709
Number of Sub-Districts	25	195	222	265	544

A CLOSER LOOK

1. **We set ambitious goals collaboratively with the key stakeholders involved in implementing the Project.** This can be a long iterative process, since most public servants are used to being given annual targets to achieve that are a few percentage points above previous performance. Inviting them to contribute to the goal-setting process and encouraging them to be ambitious seemed unusual to them initially. But we were clear that this was not about setting outrageously ambitious goals for their context, but rather goals that were ambitious yet achievable if they were willing to entertain redesign of their processes and systems. This required some suspension of disbelief initially, but as they became more engaged in the improvement work, this process got easier and easier.

2. **We cast a wide net in gathering information for the contextual analysis before designing and redesigning the Project.** Pearls of wisdom may come from the most unlikely sources. Moreover, it helps to build consensus and create a greater sense of co-ownership of and commitment to the Project.

3. **We communicated to key stakeholders clearly and consistently about the Project goals, scope, and boundaries.** Consistency across the Project team members is key, especially in a distributed leadership model in which team members are expected to represent the Project and be responsible for a well-defined geographic area.

4. **We agreed on a few basic principles that are shared within the team and held ourselves accountable to them.** This helps to create and reinforce a team culture specifically about what we do and what we don't do. One important example was the principle of being open to testing new ideas and learning from them for the sake of improvement — "try not, learn not" was the quick reference. This principle helped us solve both simple problems such as scheduling vehicles or site visit frequency and more complex challenges such as adapting the content and format for Learning Sessions or adapting the design of the scale-up to meet time and budgetary constraints.

5. **"Deliver on your promises" was a simple but important element in the Project's design and implementation.** In the context of low-resource public sector settings where implementation of planned activities is often a challenge, we strove to deliver what we planned and promised to the health facilities, districts, and regions. For example, the design of our initial Improvement Collaborative Networks required site visits on a monthly basis; we planned accordingly and if we could not make it for an unforeseen reason we would alert the QI teams ahead of time and make alternative plans. This reliability was appreciated by our key stakeholders and helped us also to hold them accountable to their promises, agreements, or planned activities.

KEY CHALLENGES

Adaptive design involves complexity.

Redesigning aspects of a project takes time and effort. Consider how best to prioritize tasks, manage the timeline, and preserve focus even as you adapt the design of the project in response to real-time learning to drive toward the project's goals. Adaptive design does not in any way endorse vague, unclear, or ambiguous planning. The objectives must remain constant, as must the overall commitment to "learning while doing" and to the overall strategy. But flexibility may mean some changes in tactics. For example, in *PFA!* we shifted emphasis (e.g., a greater focus on newborn mortality); and we changed the pace of withdrawing support for regional teams (to allow more time to ensure sustainability).

In *PFA!*, a flexible approach allowed for redesign and was a key to success; however, it also made financial planning difficult. The roll-out of *PFA!* would have been smoother had design milestones matched budget milestones. The key is to gain early understanding with the funder to allow for opportunities for redesign and re-budgeting as the project staff learn more about what works and does not work in particular settings and stages of the project.

A CLOSER LOOK

1. We found it very helpful for financial planning and budgeting to be kept at pace with technical design at all stages of the Project. It is entirely possible to adapt one's design and introduce new elements without addressing the critical question of whether there is funding for this new addition or not, and which aspect of the original design should be compromised should funding be applied in this new regard. While making technical decisions, we ensured that the Finance Manager, who was recruited midway through the Project, was always present to analyze the financial implications of such decisions.

2. We needed Project leadership and officers to stay connected and build broad consensus and justification for adaptation through vigorous open discussions. Smaller team meetings were fairly easy and straightforward in the early Waves of the Project. Once *PFA!* expanded to national scale, the Project Director, Deputy Director, and Project Leads met almost monthly to review implementation progress and to build consensus on any adaptations (we called this the "Leads' Forum"). The Leads actively informed all decisions, drawing on their experiences in the field.

A CLOSER LOOK

2. **(continued)** Each Lead oversaw two regions, on average, and was responsible for a number of Project Officers. The Project Director then regularly communicated such decisions to the entire Project team through emails. A discussion could subsequently ensue over email, seeking further clarifications. The Leads subsequently had a mandate to work with their regional teams to oversee further implementation of these decisions. The entire Project team met in one location at least twice a year to assess implementation progress. Each region would have an opportunity to present on the state of implementation, using a presentation format proposed by *PFA!* leadership.
3. We applied QI methodology to improve our internal processes; for example, we reviewed data internally to convince ourselves that the adaptations we were making were serving larger Project goals.
4. Communication with the funder was a major priority. The funder needed to be fully informed that the requested flexibility in Project design was due to optimal design considerations and not due to a failure to perform to expected milestones.

Developing and maintaining partnerships is challenging.

When bringing together various stakeholders to collaborate, it's important to recognize that organizations have different internal cultures, histories, priorities, styles, and processes. In addition, an improvement project or initiative has designated start and end dates, which can differ from the longer-term goals and perspectives of the stakeholders (e.g., government agencies), for whom the work will likely continue indefinitely. These types of challenges make it more difficult to build and maintain effective partnerships.

The effort required to understand local dynamics and individuals and subgroups in partner organizations is time consuming. However, investing that time to build partnerships with key stakeholders yields significant benefits, especially for a large-scale project.

RECOMMENDATIONS

Adaptive Design

- Learn from all experience, but adapt what you have learned to local and current needs throughout the lifetime of the project (not just at the beginning).
- Be ready to challenge any assumptions that were implicit or explicit in the original project design if they don't fit with what you are learning in real time.
- In learning from established programs, seek to understand the principles upon which these programs were founded, which can be transferred and adapted to your project — rather than the specifics, which often are not.
- Challenge project staff and partners to make changes along the way, so they are not only doing their job or working on the project, but improving it and the system in which it exists.

Forming Effective Partnerships

- Thoroughly investigate, evaluate, and establish personal relationships within the health system landscape in which your team will be working.
- Building a strong foundation for partnerships requires deep knowledge and understanding of the country's history, government system, and national and local cultures. Who are the dominant players? What is the domain of each? What is needed by government agencies, by clinicians, by communities?
- Allow time for both formal and informal relationship-building opportunities.

Planning for the End of the Project

- Design the "exit strategy" of the project at the start — this needs to be a seamless transition into the system (local, regional, national) in which the improvements will be implemented, to ensure adoption and success.
- Build a sustainability plan into the design:
  - Ensure that project successes will continue once the project support has been withdrawn and that the local health system will have the capability to support the work and nourish that capability over time.
  - Sustainability should be explicitly planned with partners and stakeholders from the outset.

Sustainability

Address the following questions to ensure sustainability:

- What systems (e.g., protocols, tools, data systems) have you put in place to ensure that the performance of the processes is sustained?
- Have you equipped local partners or teams at the facilities or sub-districts to continue to undertake and support improvement work?
- Is there a monitoring plan (e.g., Quality Assurance) to ensure that the standards for performance do not slip?
- Has the health system taken on responsibility for nourishing the improvement work after the initiative ends?

THE GUIDE

Relationships

KEY SUCCESS FACTORS

Secure partnerships with key stakeholders.

As discussed in the **Project Design** section, seek to build and sustain excellent relationships with key stakeholder organizations and their leaders. Be sure to understand the roles and responsibilities of each stakeholder, how they complement each other, and how they could potentially compete with each other. Come to clear agreement on what partner institutions expect from one another, what each will contribute, and how you will jointly work to achieve the project's goals.

Establish a genuinely consultative process with partners.

Aligning the project with the local health system's priorities and existing structures builds will, enthusiasm, and ownership for the work. Every organization brings specific skills and capabilities. In working with partners, work to build a genuine broad-based coalition/partnership with the willing, while seeking to engage more reluctant partners along the way.

Trust is essential to the success of any genuine partnership. *PFA!* was a collaboration that developed out of co-creation with different stakeholders over time. Execution of the Project was also done by multiple partners at different levels of the health system. Embrace co-creation, even while maintaining clarity about the ultimate goal and different roles and responsibilities of the various partners.

Be sensitive to the feelings of staff in partner organizations, and to the situations and the political economy within which people work. Value feedback from partner organizations, health staff, communities, and the evaluation team. Crucially, use feedback and findings to improve implementation over time as an iterative process. Encourage frank discussion (and observe how local cultures make use of or avoid such frankness). One benefit of partnering with local organizations is to identify the improvement project as being "home made" — that is, created in partnership with and belonging to the people in the local context in which you are working, and not an import from afar.

Align with the priorities of the national health system and partner organizations.

It is important to align the project's overarching goals with local health system's priorities in order to secure its relevance among national, regional, district, and sub-district leaders and frontline staff. Whenever possible during actual implementation, it helps to align critical project roles with health system roles that already exist as a means of strengthening those systematic functions. For example, align work to improve data quality with the office of the Regional/District Health Information Officer; align hospital-based process improvements with Clinical Care Units; align district improvement work with existing mandates of the District Health Directorate; and engage actively with communities through relevant community opinion leaders.

A CLOSER LOOK

Operationalizing Partnerships and Establishing Trust

1. We began each Learning Session with a welcome address from regional/district health managers who situate the QI intervention firmly within their suite of work.
2. Learning Sessions were actively co-facilitated with Improvement Coaches trained by the Project, as were the design and implementation of site visits.
3. During site visits, we developed the best practice of greeting managers (regional, district, and facility) before engaging the QI team; briefing them on the focus of the site visit; and debriefing them immediately afterwards on the achievements, challenges, and next steps of the QI team.
4. We routinely co-conceptualized, co-wrote, and co-authored abstracts and peer-reviewed journal publications emanating from the QI work with frontline staff, management, and the core Project team.
5. We identified opportunities for dissemination of *PFA!* work at local and international meetings. For example, the Project sponsored numerous managers and frontline staff to attend the International Forum on Quality and Safety in Healthcare organized by the BMJ/IHI in Europe and the National Forum organized by IHI in the United States.

Structure a secure partnership with key organizations and individuals.

It is important to formalize the working relationship of all partners through a structured Memorandum of Understanding that clearly outlines roles, responsibilities, and expectations.

Where sustainability through high-level leadership buy-in is the overarching objective, constitute a Steering Committee composed of leaders with requisite technical and leadership abilities from all partner institutions. This Steering Committee will have the mandate of holding regular meetings (monthly), addressing emerging issues of design, and resolving emerging implementation challenges. Their suggestions will guide the Project Director and implementation team.

Establish an External Advisory Board of five to seven influential, available, willing, technically competent and diverse individuals, drawn from both local and international resource pools, that will meet in person once a year and, in between, be available and willing to provide their input and expertise on emerging issues.

Project newsletters that communicate human interest stories, regular Improvement Collaborative Reports which feature mainly technical content, and Regional Technical Reports (which contain more technical details for managers of implementation regions) are all communication tools that provide summary information at various stages of implementation and help to keep all partners connected to the project work.

Develop improvement capability in partner organizations.

For *PFA!*, deliberately developing QI skills within multiple levels (including leadership) of important partner organizations proved to be a key to success because it enabled true partnership in achieving the Project goals, understanding processes, and using data for improvement. It also laid the foundation for scaling up the QI approach across the health system in a more sustainable way, relying less and less on the Project staff over time.

As explained in the **QI Capability** section of this guide, some of *PFA!*'s partner organizations learned QI from *PFA!* and then applied what they had learned to improve the efficiency of processes within their own organizations. QI capability building and training should be appropriately adapted for staff and leaders in the various levels of the health system (national, senior and middle level, and frontline).

Similar to the point made earlier on aligning priorities, the various officers participating in QI capability building should be carefully selected with active guidance from health system leaders. The QI training in and of itself may be insufficient to ensure that the work expected from the training will be carried out as envisaged. To ensure better alignment between training and follow-up work, we recommended that the new or adapted scope of work for the project is clearly outlined with managers, prior to the training, and that the plan is put into effect after the training, as planned.

Engage community partners and invest in community leaders.

Many improvement projects will not succeed as "health care service delivery" projects unless they are also "community-driven" projects. For example, in the context in which *PFA!* was operating, a major contributing factor to under-5 mortality is delayed or no care-seeking, even for serious illnesses in pregnant women and young children. Therefore, improving the quality of care at the health facility was unlikely to make a big difference unless we also sufficiently engaged the community to generate the demand for the services being provided.

Collaborate with other local NGOs and academic institutions.

Starting early on, it is important to be deliberate about collaborating and coordinating with NGOs and other local and international partners — e.g., Jhpiego, UNICEF. What are common interests? How can trust be built at the highest levels? What information should be shared? Which NGOs possess content expertise in areas that complement and harmonize with yours? Similarly, early on establish relationships with local academic and research institutions. Their influence and their research programs may at some point in the future, whether directly or indirectly, help with disseminating, scaling up, and sustaining of the improved processes developed during the Project. *PFA!* relied on both local and international academics as evaluators of the Project. This combination of perspectives allowed their evaluations to be appropriately nuanced and focused on answering programmatic and policy questions that were relevant both locally and internationally. This combination of local and international evaluation perspectives is also crucial where there is a deliberate project objective of encouraging cross-learning and capacity-building.

Honestly assess and admit the limitations of your intervention and build complementary relationships with other development partners, non-governmental organizations, and state agencies that could support the implementation of a more comprehensive Change Package. For example, *PFA!* partnered with Jhpiego to provide clinical skills training within existing Quality Improvement teams.

KEY CHALLENGES

Securing partnerships with key organizations, especially the Ministry of Health, can take time.

If you are planning to sustain or scale up your intervention, you will require close collaboration with the health ministry of that country. In the case of *PFA!*, the deep ties and commitment of the MoH and the GHS were built over time. Without deep engagement and close integration of your work with the ministry at every level (e.g., district management, protocols, tools, data systems, policy, etc.), your project will not expand beyond a pilot project and will not be sustained without ongoing (indefinite) external support. Even if the Ministry of Health makes a strong and sustained commitment to the Project, governments frequently move slowly and this pace may impede your schedule for scaling up. The key to keeping government's attention and support is to show persistent value to the priorities that they care about the most. Usually that means getting excellent results, and making sure you show those results on a regular basis. It is also essential to keep government timelines and constraints in mind while maintaining focus and momentum on the overall shared goal.

Some leaders and some organizations are in the habit of relying upon crisis management. Consequently, in certain situations realistic planning may be problematic. If your team wishes to change procedures based on the findings of rapid-cycle testing and your partner organizations remain bewildered as to why you might wish to act when no crisis exists, your ability to act might be constrained. Constancy of purpose is one of the major roles that an external NGO can provide. This means that you will continue to drive forward, producing and communicating results even when the ministry is distracted by other priorities. Proving to be a reliable partner that delivers consistently will stand you in good stead over the long run. One safeguard is to make QI the "new normal" for managers to supervise their work, so that the work will not collapse when it does not receive direct attention from the government.

In many countries, the QI methodology explained in this guide is new to the health system.

Your team will be repeatedly challenged to prove itself. The best way to demonstrate the value of the QI approach is to ground discussions in results that use both data and the compelling stories that accompany these data — in the case of *PFA!*, providing regular updates on improvement in maternal and child mortality. Unless deep knowledge and practice of QI is transmitted to partners, there may be no way to sustain achievement of goals after the end of your project.

It's important to develop a decentralized leadership model.

As a project scales up and the number of local leaders affected grows accordingly, it can be difficult to maintain and nourish personal relationships with partner organizations. This is why it is crucial that, within the project and its partner institutions, everybody and anybody, including the most junior staff, who is involved in the work can reliably represent the overarching goals, strategic approach, and methods.

It is essential to have a capable finance person on staff, as a key to the project's success is to send funds at appropriate times to support various activities. Clear, well-managed budgets and timely disbursements are key to maintaining momentum on project activities and commitments to partners. Even when partners wish to align with your project, such "details" as timely payments, the timing of meetings, and the character of reporting formats may present impediments.

RECOMMENDATIONS

- Secure the support and cooperation of local elders and leaders.
- Establish a genuinely consultative process with partners.
- Align with the priorities of the national health system and partner organizations.
- Structure a secure partnership with key organizations and individuals.
- Develop improvement capability in partner organizations.
- Collaborate with other local NGOs and academic institutions.

THE GUIDE

Leadership

KEY SUCCESS FACTORS

Leaders set the pace of the project.

Every day, leaders establish the rhythm of the improvement work and nourish a sense of urgency. Keeping momentum is critical; it requires clarity on all levels about what is happening next to advance the work. It is leadership's responsibility to provide a clear vision for the work — both in terms of project goals and timeline. *PFA!* successfully maintained a sense of urgency; there was always a next phase that Project leaders planned for and communicated.

Leaders promote enthusiasm, celebrate successes, build teams, encourage harmony among team members, and listen well.

It's important that everyone on the team knows about and understands both the plans for spread and how, in the spirit of adaptive design, the plans are evolving over time. Leaders create a platform for open, ongoing conversation wherein the field experiences of all the project staff constantly feed into discussions about design, adaptation, and implementation at various levels.

Leaders maintain a relentless focus on results and data.

The *PFA!* Project Director, Project Leads, and Project Officers maintained a relentless focus on testing changes and collecting data to determine whether these changes were in fact leading to improvement. The Project Officers instilled in the health facility staff an urgency to test changes using Plan-Do-Study-Act (PDSA) cycles and collect data to see if the changes were leading to improvement. On a regular basis, Project Leads reviewed the PDSA data and teams made adjustments to their testing of changes accordingly. *PFA!* staff discussed the latest PDSA cycles across the Project team to ensure shared learning and knowledge management.

At the very outset of a project, it is critical for the project team to agree on a core set of key process and outcome measures. The exact number of indicators will vary depending on the context, but the general guidance is that the graphs or tables illustrating the indicators should fit easily on one or two pages (i.e., dashboard). Reliably collecting data over time for these key measures for each project team — and uniformly interpreting the data across all the project teams — enables project leadership to be well informed at each point in time on areas showing improvement, leading to identification of high-impact changes which can then be used to improve other underperforming areas. Focusing on data also helps leadership to guide project staff in instances where changes being tested by teams are not focusing on areas with clear performance gaps.

A CLOSER LOOK

1. We defined a core leadership team at the levels of Project Director, Deputy Director, and Project Leads appointed for functional areas (e.g., Leads for regions, Leads for Referral sub-projects, Monitoring & Evaluation Lead, etc.).

2. We established a "Leads' Forum," in which the Project Director scheduled monthly meetings to discuss progress of implementation, review data, build consensus on new strategies, and standardize implementation across the Project.

3. We held an annual nationwide Implementation Audit, as part of our efforts to maintain momentum, aimed at answering the following questions:
   - What is the extent of adoption/adaptation of the Change Package?
   - Are facility-based QI teams truly testing changes affecting the areas with the greatest performance gaps?
   - Are all the changes being tested for one key measure only, in total neglect of others?
   - How many teams have process data to explain the outcomes they are reporting on?

4. We created a system of accountability for Project Leads by having them write biannual Regional Technical Reports, which were then formally submitted to Regional Directors of Health Services. Such reports provided the following:
   - Regional breakdown of activities and performance
   - Detailed one-page summaries of each team's areas of strengths and weaknesses, showing levels of management support for QI work
   - Measurement dashboard showing data for key outcomes, processes, and team dynamics (for example, where an expanded QI team has been successfully formed)

   Project Officers and Project leadership scheduled follow-up meetings with Regional leadership to discuss these reports.

5. We held rigorous technical and mini-technical meetings:
   - At the national scale of the Project, we reduced once-frequent technical meetings to biannual occurrences at which we can learn about the work in each region, share best practices, and align efforts.
   - Project Leads subsequently hold mini-technical meetings with their own Project Officers to review team data prior to site visits and find solutions to common challenges.

Key leaders need expertise in Quality Improvement (QI) methodology.

PFA! developed the capability of leaders to understand and lead using QI methods, not just in *PFA!* itself, but also within all levels of NCHS and GHS. Leading a national Quality Improvement effort benefits immensely from passionate leadership and appreciable technical knowledge/ideas around the particular focus area for improvement. To effectively guide this work, leaders need expertise in Quality Improvement (QI) methodology and its specific methods and tools, in addition to broader leadership skills.

All *PFA!* leaders (including the Project Director, Project Leads, and Project Officers) completed IHI's Improvement Advisor Professional Development Program, IHI's flagship program. This is a ten-month program, delivered in three one-week sessions, with time in between the sessions to practice acquired skills. *PFA!* subsequently adapted the Improvement Advisor program into a contextualized, ten-week curriculum (see more in the **QI Capability** section) that was provided to a larger base of leaders and managers in the Project, NCHS, and GHS. All of these Improvement Advisor training programs build the skills of leaders in the methodology for testing changes and measuring the effects of these changes that is at the heart of QI.

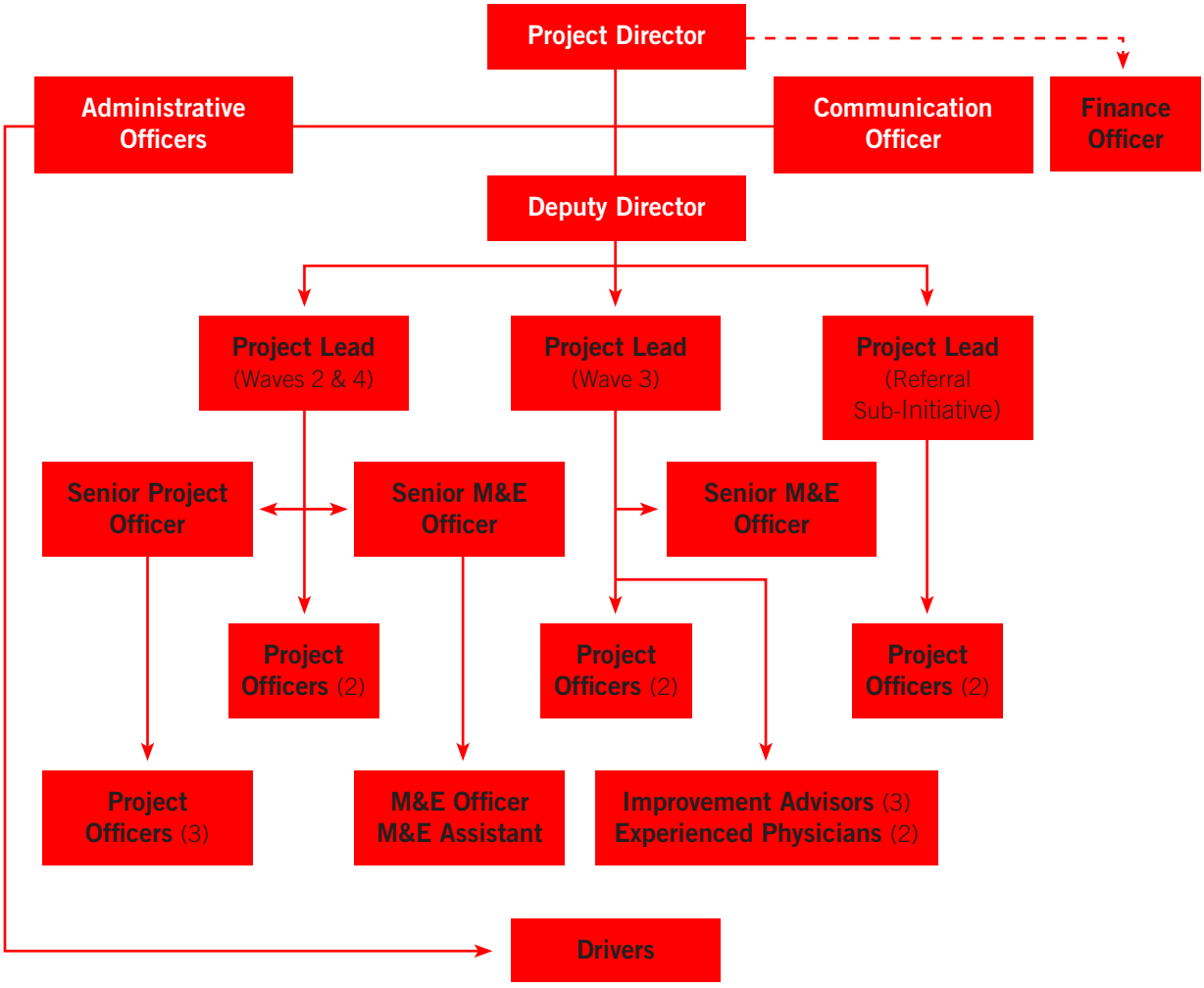
Develop new leaders from within the project.

PFA! was always on the lookout for potential leaders, starting during the hiring process. The recruitment process was therefore rigorous and based on merit. We recognized internal strengths, determined what type of leadership position each person might best occupy (e.g., data management, negotiator, team builder), and provided them with regular feedback. We also encouraged regular lateral feedback from other colleagues.

In *PFA!*, delegation and trust were a function of leadership. We offered Project Officers every opportunity to excel through presentation opportunities; if the Project Lead was asked to represent the Project at important functions, we invited Project Officers to present in partnership with the Project Lead, or sometimes alone for internal and external audiences. Developing new leaders is not only good for professional development and staff retention; it is also key to local ownership, sustainability, and spread.

Although *PFA!* was initially designed as a relatively "short" five-year project, after two cost extensions and two no-cost extensions the Project had more or less assumed the status of a permanent organization. Consequently, human resourcing issues managed by Project Officers around promotions and recognition of effort by Project staff, for example, assumed great importance. Given the high level of effectiveness exhibited by most Project staff, midway through the Project we adopted a strategy of promoting as a result of years of service; this became the standardized process. In recognition of internal Project talent, we limited high-profile internal opportunities like a vacancy in the position of Deputy Director to internal recruitment processes. For such high-level positions, an external panel was created to select the final candidate and to avert any concerns of bias that might arise.

Project Fives Alive! Organogram



This organogram captures the decentralized nature of the *PFA!* staffing structure. Under the Project Director's leadership, the Project Leads led specific phases or sub-initiatives within the Project and reported directly to the Project Director. Within each Project Lead's domain, there was one Senior Monitoring & Evaluation (M&E) Officer and 2 to 3 Project Officers reporting to them. Some Senior M&E Officers also had M&E Assistants/ Officers as additional support. Administrative, Financial, and Communication Officers all reported to the Project Director directly.

Empower people on the team.

In order to ensure that each team member felt valued, we placed high value on a culture of treating each team member with respect, seeking out their views regularly, and creating a sense of joint decision making and implementation. We avoided the situation where it was only the Project Leads who make and pass down decisions to other staff. We communicated clearly that, in a project with adaptive design, new insights from the field are crucial for enriching the design.

Teamwork does not just happen, leaders foster teamwork.

Leadership needs to create an environment in which it is safe to try new ideas, to fail, and to take chances to achieve bold goals. Support people in freely expressing their views and concerns, as that establishes a culture in which it is good to contribute ideas and insights. Banish fear. Looking to people for their views and suggestions shows respect for their intelligence, insights, and capabilities. Strive to step back and build the confidence of everyone on the team. Seek out discussion and speak with people about ideas and insights others on the team have put forward. As we often say in *PFA!*, there is no wrong idea or suggestion.

It is valuable for leaders to possess both local authority and experience within the country.

If the goal of the project is improvement on a national scale, it is an advantage to seek out a Project Director with strong technical abilities as well as a national presence. *PFA!* deliberately sought a Project Director who would live full time in country and have the local authority to lead the work. Having a leader with local authority, the relevant clinical confidence, and experience is critical.

KEY CHALLENGES

Maintaining strong, close, personal relationships becomes difficult as the project gets larger.

As the project scales up, it may become more difficult to establish strong, close, personal relationships with each of the many leaders in your own and partner organizations. By this point in the project, a leadership team should have been developed that can be assigned specific responsibilities and relationships to manage. There should be a clear line of authority that ensures that the entire initiative is organized along work focus areas, with each focus area having a smaller team with its own leader. At that level, frequent mini-technical debriefs should be encouraged. The project leadership team should then regularly meet to harvest rich insights shared at lower levels of the project that may help address emerging challenges.

RECOMMENDATIONS FOR LEADERS

Project Management

- Set the pace for the project — keep things moving along at a rapid pace, according to a clear time-line; be clear about project goals and expectations and hold people accountable for them.
- Serve as a model of what you expect from others — work hard, meet deadlines, follow up on details, set the standard for high quality in your own work, be well informed about all aspects of the project.

Communications

- Clearly communicate to your team about all aspects of the project.
- Establish a culture of open communication — invite feedback, encourage people to express their opinions without fear, welcome questions, seek consensus.
- Convene discussions often, both formally and informally, through various means (in person, phone, email).
- Be receptive and responsive to issues raised by your team.
- Be the reliable leader of a hard-working and high-performing team.

Quality Improvement and Focus on Results

- Always focus on the data — what matters is achieving the goal of saving lives (in the case of *Project Fives Alive!*), and the data will tell you if the changes you are making are leading to improvement toward this goal.
- Stay informed and updated on the data; make it clear that you, ultimately, are accountable for it.

Distributed Leadership

- Expect a lot from your staff, and appreciate them when they meet expectations.
- Always look for opportunities to develop leadership capabilities in others.

Human Resources

KEY SUCCESS FACTORS

Recruit staff based on qualifications. Promote people based on merit.

In recruiting staff for *PFA!*, we looked for people who are qualified, smart, open to feedback, hard-working, and willing to learn; who fit well with the adaptive, fluid nature of the Project; who are capable of entering into discussions and being good facilitators; and who are receptive to and curious about QI.

Notably, existing expertise in QI was not a requirement for hiring. Our expectation was that team members would develop such skills as they engaged in the Project work. Staff may have been recruited without knowing anything about QI or about the Project, with the expectation that they would grow and develop such skills and knowledge as a result of formal training, mentorship, and delegation by the Project Director.

Advanced degrees in public health, health administration, health information management; clinical degrees such as medicine, nursing, and pharmacy; as well as previous experience in community and development or other evidence of a person's dedication and commitment to advancing population health may be relevant, particularly for the technical roles.

The people you hire will on many occasions serve as representatives of the project, interacting with people from government agencies, NGOs, and communities; so, hire people who can positively influence your relationships with other organizations. Ideally, you are seeking people who are interested in becoming leaders and show potential for leadership, since a well-functioning QI project team relies on a distributed leadership model.

Invest in staff development.

PFA! made a significant investment in its staff, who were the "face of the Project" out in the field. Initially, staff received an introduction to QI through formal training (could be a few days or few weeks, depending on the role). After formal training, new staff shadowed a mentor so they could apply their newly acquired skills under supervision, with opportunities for rapid feedback, coaching, and further improvement. You might experiment to determine those who are best suited for mentoring others, and this might change as the project rolls out. Encourage peer learning and opportunities for new hires to observe what other staff are doing. The investment in training and mentoring builds confidence and capacity in local staff.

Staff spend a significant amount of time together, with ample opportunity to understand individual strengths and weaknesses of team members. Staff in *PFA!* were willing to learn and adapt, as well as to be vulnerable.

A CLOSER LOOK

Building QI Capability

In *PFA!*, we built QI capability at three levels:

1. **QI for Leaders:** High level, strategic; aimed to secure buy-in and to prevent high-leverage leaders from becoming inadvertent bottlenecks
2. **QI for Senior and Middle-Level Managers:** Similar to QI for Leaders, but deeper on technical content; aimed to provide skills necessary for managing and leading a learning Collaborative; a balanced mix of theory and practice
3. **QI for Frontline Staff:** Very practical, with minimal theory; focused on applying QI tools to contextual problems

In addition, *PFA!* used personal development forms for team members to identify areas in which they needed training (quarterly or annually), and to outline the steps they needed to achieve their personal goals. In addition, supervisors can suggest areas in which staff need to be trained based on observation of their performance. Finally, the team can challenge itself by instituting a forum for learning in which they research and share emerging practices in their fields.

Staff benefit from hands-on experience in several areas of responsibility.

Shared ownership helps increase commitment to advancing the project's goals. To a measured degree, all project staff should be able to do "everything" (whatever "everything" appropriately means for the person, place, and time) — for example, able to answer questions about what is happening in the project — and it is management's responsibility to ensure that each person is adequately prepared to support the project in this way. Each staff member should be able to see her or his own personal contribution to the larger project — even as they understand that it is the synergy of the team that makes the project successful.

Establish various platforms for sharing ideas.

Develop a variety of mechanisms (meetings, classes, newsletters, emails) for staff to interact and share learnings. Genuinely collaborative interactions among people tend to reveal the parts of specific processes that are functioning well, as well as those that are not functioning adequately, and potential pathways toward improvement. Once you have established trust and created mechanisms for sharing ideas, discussions are more likely to reveal deficits that project leaders may not have noticed. Staff debriefs were a regular occurrence in *PFA!*, and incredibly valuable.

Invite comments and insights from all stakeholders before carrying out activities.

Encourage site visits, as they benefit both trainees and facilitators. Introduce Improvement Coaches at facilities, as this is an interactive way of getting health workers interested and involved in the project. Develop leadership and community-level engagement right from the start.

A CLOSER LOOK

Human Resources Must-Haves

1. Do not prioritize or appear to prioritize technical roles and functions over prompt management of the human resourcing needs of project staff. Sometimes, this might mean appointing a dedicated, qualified person to address issues relating to prompt renewal of contracts, leave approvals, identifying and addressing professional development needs, managing logistics of Learning Sessions and site visit travel, etc.

2. Depending on the duration of a project, it may be key to clarify from the outset the criteria for conducting professional development reviews and for promotion. For example, *PFA!* created a development plan for the three years after a staff member joined the Project.

3. Plan a robust End-of-Service Benefits (ESB) package into the project set-up such that, on termination of the project, staff will be paid a lump sum as ESB. This will help address job security concerns, as these benefits will provide income for a few months as staff seek new jobs post-project.

4. Be aware of and anticipate that, initially, project-wide professional development training (e.g., Improvement Advisor training, training in monitoring and evaluation, facilitation skills, writing for publication, etc.) may be welcome and appreciated, but over time Project Officers' needs, interests, and preferences may vary and become more personalized (e.g., some Officers may now expect project funding for long-term post-graduate training).

5. It is crucial to factor in professional development training for the project's vehicle drivers, with annual training programs in Advanced Defensive Driving Skills, for example.

6. Be sensitive to drivers' concerns — for example, keeping cars reasonably fueled all the time, making adequate provisions for the payment of tolls, anticipating and respecting servicing schedules, responding promptly to emergencies, and consulting drivers when technical transportation decisions are taken (e.g., buying new cars, planning site visit routes, determining travel time and distance).

7. If possible, structure provisions for lump-sum payments in the budget so as to include other benefits like health insurance. While the initial salary may be a motivation, key additions like health insurance and other benefits may help to retain staff.

8. Define the end-game from the start of the project and plan for staff accordingly. Is the plan to absorb the highly skilled staff developed over the lifetime of the project into a permanent existing organization (e.g., a unit within the Ministry of Health)? Is the plan to terminate the project as planned and leave staff to find new jobs, as is typical of many projects? Does management plan to write new proposals and roll over key project staff into these new projects under the same or different organizations? Ask and answer these questions right from the start.

KEY CHALLENGES

Starting early on in the project, organize so as to prevent staff attrition and burnout.

Are contracts fair and reasonable? Has there been adequate determination about which staff need administrative training, technical training, or both? Training needs will depend on the specific roles and responsibilities assigned. Do people feel valued? Listened to? Respected? Is financial strain common? Are people learning skills and receiving promotions that will help secure advanced work in their future?

Consider what can be done to improve working conditions. Ask staff for input and listen, listen, listen.

Dialogue with staff and learn what you have not considered that might matter to them. For example, *PFA!* staff were initially given only a day or two to plan for travel; once staff made it clear that this was a problem, the Project made a commitment to provide greater advance notice of proposed travel dates. Another concern for staff was the lack of retirement contributions and End-of-Service Benefits, which led to little incentive to stay with the Project for the long term.

In discussion, acknowledge issues staff members might be facing. Where administrative capabilities are weak and where logistical capacities are beset by problems and delays, the staff is affected. It is the job of leadership to create an enabling environment in which the staff can do their best work. Thus, *PFA!* Project Leads took these complaints to heart and worked to resolve them to the extent possible.

Communicate regularly (in person, in emails, in letters) with staff about what is likely to happen with the project in the near future.

In *PFA!*, a central challenge related to staff retention was not how grueling the work was, but the uncertainty surrounding such matters as relocation, travel, and employment after the Project ended. Request advance notice if staff members decide to leave the project. Exit interviews provide you with important insights and information.

RECOMMENDATIONS

Recruit the right people.

- Identify people possessing a good attitude and a willingness to learn; who can analyze and interpret measurement data; who can hold in-depth conversations; and who sustain patience as they learn.
- Train rigorously.
- Match hires to mentors carefully.
- Identify people who show potential for leadership and continually challenge them to take on new responsibilities.

Ensure that all staff members feel fulfilled, and even have fun while working.

- The foundation of staff fulfillment is understanding the importance of the project's goals, as well as being able to contribute to them in meaningful ways.
- Another component of the work is enjoying the company of the people with whom you work, especially if you are required to spend a lot of time together (e.g., preparation for Learning Sessions, travel, meals, etc.).

Have regular (daily, weekly, quarterly) team debriefings.

- Regular briefings provide invaluable insights from a variety of perspectives, including from members of the team who tend to be less outspoken.
- Debriefings also create an environment in which the team members can co-own problems without judgment and co-develop solutions.

Quality Improvement (QI) Capability

KEY SUCCESS FACTORS

Set ambitious aims and clear expectations, and follow through.

A large-scale Quality Improvement initiative is, for many people, a whole new way of working. A health worker commented that what happened in *PFA!* was unlike any other project he had been a part of — for example, he didn't expect follow-up site visits to happen as announced at the Learning Sessions, and didn't anticipate the rigorous expectation that planning done to conduct small, rapid-cycle tests of change (PDSAs) at the facilities would actually be adhered to.

Because *PFA!* leaders communicated clear expectations for the initiative's goals — as well as the approach to adaptive design and problem solving, and the commitment to listening to insights from all sources — Project staff understood these to be critical elements of the Project. When early changes tested by teams yield great results, it inspires confidence in the team's own ability to solve their problems.

When an Improvement Collaborative Network (ICN) sets ambitious aims at the beginning of the journey, it helps to focus the team's attention on identifying changes that lead to measurable improvement. In practice, teams set ambitious collective aims and worked hard to generate significant improvements every 12 to 18 months; QI teams took the aim and schedule seriously, and produced accordingly. If the solution to a problem could not be found, people brainstormed and experimented until they identified a way around the impediment. For facility-based teams appearing to have hit a roadblock, an effective strategy was for a visiting Project Officer to use creativity techniques to help the team brainstorm possible solutions.

Form effective QI teams.

Determining the composition of QI teams was a joint decision of the Project and health system managers, with the aim of creating accountability among team members whose managers mandated they attend Learning Sessions. In many instances, the first PDSA test by QI teams after a Learning Session was to debrief management and secure additional support to begin to test and implement changes within their facilities. We encouraged facilities to include on QI teams health workers who were key to the process of care being improved. We recommended that each facility define a core project team that attended the in-person Learning Sessions, as well as an expanded team to engage others in the work upon return to the facilities. The idea of an expanded team was meant to encourage facility-wide adoption of the improvement initiative. It also served to address attrition realities so that there would be enough people at the facility who were knowledgeable about the Project's strategies at any given point in time.

Within the hospital learning network, *PFA!* prioritized doctors, midwives, nurses, outpatient staff, data officers, laboratory personnel, pharmacists, and others who were part of the care of mothers, children, and newborns for participation on the Project QI teams. At the sub-district level, we prioritized sub-district heads and the health posts, referring to them for team participation. In part, these decisions about QI team composition were made to align with and reinforce existing structures within the health system.

In locations where a number of facilities and districts had to be selected, we used criteria (including routine data on their performance) to select the districts and facilities that would participate in *Project Fives Alive!* (i.e., the intervention districts and facilities). Once we selected these sites, we determined their baseline performance for at least six months prior to the first Learning Session. This helped the QI teams set ambitious numerical goals for improving under-performing processes.

Teams in an Improvement Collaborative Network may start an 18-month Collaborative journey without specific change ideas, apart from the more general concepts that they intend to test in their local settings. The project's data collection systems need to be set up in such a way that it is clear which changes have led to improvement at the end of the journey. It is these high-impact changes that will be ultimately scaled up and implemented. Even then, adaptation and innovation should not end, as new teams are encouraged to adapt from the Change Package. While using Change Packages, always place a premium on reinvention, flexibility, and adaptive response. Change Packages are resources, not mandates. In *PFA!* we were constantly reminding everyone to drive toward the goal of saving lives as a way to stimulate continuous search for better and better ways to implement proven interventions.

A CLOSER LOOK

QI Team Composition

Hospital Teams

- **Core Team:** Doctor in charge of Children's ward, nurse in charge of Children's ward, midwife conducting deliveries, nurse in Out-patient Department, and health information officer (biostatistician)
- **Expanded Team:** Core team plus laboratory staff, pharmacist, management sponsor (member of management attached to the team, to help remove bottlenecks and provide resources for testing changes and to keep management connected to the change process), additional midwives and nurses

District-Level Teams

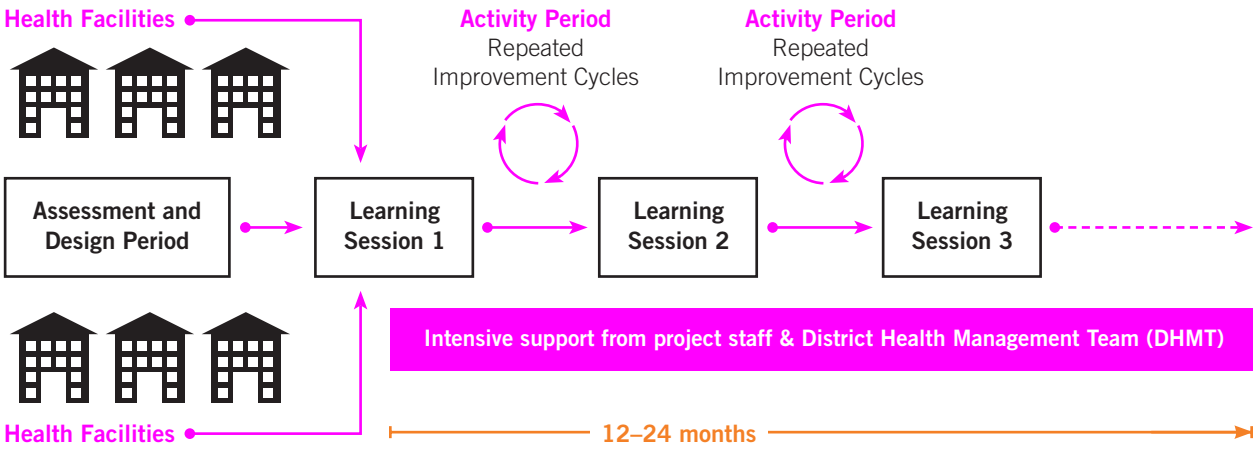
- District Director of Health Services (Head)
- District Ambulance Service's Emergency Medical Technician
- Referral Focal Person (selected from the hospital's QI team to maintain referral linkages)

Sub-District Teams

- Sub-district Head (Midwife or Physician Assistant)
- One Community Health Nurse from each surrounding CHPS (health post)
- Community Representative — e.g., community-based surveillance volunteer, representative from the social services sub-committee of local government, traditional authorities, youth activists, assemblyman (elected local government official), other opinion leaders passionate about improving maternal and child health

Use the Collaborative model as the primary means of accelerating peer-to-peer learning.

Project Fives Alive! used the Collaborative model, shown below, as the primary means of accelerating peer-to-peer learning. After an initial assessment and design period, participating health facilities send teams to a series of three face-to-face Learning Sessions over a period of 12 to 24 months. During Activity Periods in between the Learning Sessions, teams tested changes their organizations, receiving intensive support from *PFA!* staff.



Maximize the value of Learning Sessions.

PFA! used the Improvement Collaborative Network (ICN) as the primary means of accelerating peer-to-peer learning. Frontline health care providers and their managers gathered for Learning Sessions to acquire knowledge and skills; learn from peers; and make progress in testing innovative ideas. At Learning Sessions, the presentation of improvement data by QI teams from health facilities generated a lot of interest and a "can do" spirit among frontline staff, engendering a sense of ownership and accelerating the spread of successful change ideas.

From a practical standpoint, the Learning Sessions were more effective with fewer PowerPoint presentations from *PFA!* staff and more sharing of experiences, practical exercises, and data by the teams from the participating health facilities — and even from the clients/patients themselves.

The first Learning Session was used to agree on the baseline performance of the various teams involved in the Collaborative and to use various tools to diagnose underlying root causes of gaps in performance and to prioritize major contributors to each gap. These sessions entailed a lot of practical exercises and very vigorous discussions around measure definition, as it was not uncommon for teams to come for the first Learning Session with variously defined numerators and denominators for the same measure. Using the Model for Improvement, we set ambitious individual team and Collaborative-wide goals, supported teams to adopt/adapt changes from the available Change Package, and helped teams define measures for tracking the effect of the changes to be tested in their facilities using PDSA cycles.

In the first Learning Session, we aimed for each team to identify at least one high-impact change idea to improve a clearly identified primary driver influencing the desired outcome or a particular care pathway. For example, in the hospital Improvement Collaborative Network (ICN), teams were encouraged to identify and later test changes in each of the following key primary drivers of under-5 deaths identified by the Project and its stakeholders prior to the start of the Collaborative: Delayed Care Seeking, Delayed Provision of Care, or Inadequate Adherence to Treatment Protocols. Within the sub-district ICN, each team was encouraged to leave the Learning Session with at least four change ideas for improving early antenatal attendance, skilled delivery, postnatal care, and faulty referrals (danger sign recognition, initiation of referral, transport and communication, referral documentation, reception at referral point, feedback mechanisms, etc.).

By the second Learning Session, the teams were highly energized, having tested their change ideas in a real setting with some good results and/or learning along the way. Each team was given an opportunity to present its work at the Learning Session, often using the site visit that occurs prior to the Learning Session to prepare the teams for their report-outs. This preparation involves the Project Officer helping the team review data on key measures, proposing a template/format for presentation, and helping to address any questions the team might have.

A "marketplace" concept may be deployed at the second Learning Session, among other techniques, to ensure ample opportunity for harvesting best practices. Using an "all teach, all learn" format, great improvers of specific processes are expected to teach other teams how they achieved those results, and team members visit other teams with specific expertise in improving other specific care processes to learn from each other.

In addition to reviewing the Model for Improvement and the five basic tools of improvement —Root Cause Analysis, Process Mapping, Pareto Analysis, PDSAs, and run charts — **the third and fourth Learning Sessions** may include specific sessions on PDSAs for implementation and other sustainability concepts. The idea is to work with the teams to make successful changes a permanent part of their systems while holding the gains of improvement.

Conduct supportive site visits during Action Periods.

The site visits during the Action Period (AP) between Learning Sessions were even more important. Follow-up visits by Project Officers (POs) brought on-site support to teams, including both the core and expanded teams. These activities — Learning Sessions and Action Period site visits — had to be carried out in a compelling and reliable manner by Project Officers through joint planning with QI team members and health system managers; if Project Officers did not follow through in a reliable manner, facility-based QI teams and managers would lose faith and trust in the *PFA!* staff.

Prior to a site visit, the Project Officer reviewed the team's data, the PDSA planned at the last visit, and any specific challenges confronting the team. It is important to focus the site visit discussion around the team's data and the effect of the changes being tested, if any. Without this focus, the site visit loses its value and becomes a conversation with little or no useful outcome for the Project goals. The teams also receive guidance on whether or not high-impact changes are correctly targeting clear process gaps or whether teams are simply working in their areas of comfort.

Local teams conduct rapid-cycle tests of changes (PDSAs) on site.

Successful projects require a relentless focus on results and data. The approach is as simple as it is powerful: local teams test change ideas in rapid Plan-Do-Study-Act (PDSA) cycles. Collect data to see which changes are leading to improvement. Abandon those changes that are not yielding improvement and adopt or adopt those that are.

Identify and scale up high-impact changes.

Determining which change ideas were most effective in leading to improvement was an ongoing discussion that unified the Project's technical team. We made time to analyze the data carefully as well as collect additional information from QI teams before making final decisions about which changes to include in the Change Package. Sharing learning across sites was key to identifying high-impact changes, which were then scaled up across multiple settings. Even then, adaptation and innovation continued as new teams were encouraged to adapt changes from the Change Package to fit their local context.

Train staff in partner organizations in Quality Improvement.

An important component of sustainability is to also invest in training people in partner organizations in the QI methodology. This has proven key to *PFA!*'s successes. Avoid conducting training on an ad hoc basis. Wherever possible, the criteria for selecting trainees, the redesigned scope of work, and the mode of operations post-training should be clearly articulated at the highest levels of the partner organization as part of their own strategy of adopting QI. This helps to prevent underutilization of intensive training in QI. Also, after the project ends, partner organizations may then be more likely to sustain a QI approach to improving delivery of health care and achieving better outcomes. Thus, training people, engaging in staff role redefinition, and aligning with partner organizations' visions and policies becomes a path to sustaining achievements beyond the project's lifespan.

KEY CHALLENGES

Expect early skepticism about QI.

PFA! experienced enthusiastic acceptance of QI as well as some skepticism. In some instances, this skepticism came about once teams started struggling with exactly what using QI in the Project meant operationally for facility teams participating in the work. This may have arisen from the Project not having fully explained the continuous nature of QI and the sharp focus on local data to drive local improvements. The concept of the QI methodology itself being the intervention for the Project — as opposed to more "tangible" interventions like providing an incubator, a new building, etc. — proved initially difficult to grasp. This may also have been compounded by the fact that most health projects operating in Ghana at the time did not include such intense and regular follow-up. It was not until health workers had developed and tested their own change ideas and recorded early wins that their confidence in the QI methodology grew. It was then that it dawned on some teams that all we were promoting were locally owned solutions to well-diagnosed systems and process failures using quality planning tools. In effect, people were solving their own problems using a systematic approach.

In *PFA!*, while we appreciated and encouraged those who enthusiastically embraced the changes we introduced, we were also careful not to create divisions or do anything that would harden the resistance of those who were skeptical. It helps to have an understanding of what changes meant for certain people — what they might gain and what they might be giving up, how their position or "turf" might be threatened, how vulnerabilities might be exposed, or how previously established alliances might impact new developments.

During scale-up, determine how much support to continue providing to the initial project sites.

During scale-up, it is reasonable and expected that project leaders will focus on supporting new sites, yet such focus may lead to problems if initial sites feel "abandoned," lacking confidence to move forward independently. In some cases, these initial sites may experience high attrition of original QI team members, leading to insufficient capacity both to hold the gains of previous efforts or to spread the methodology to areas outside of maternal and child health. To counteract some of that sentiment, *PFA!* asked team members from the initial sites to serve as peer-to-peer instructors for teams from the scale-up sites. More importantly, the feeling of abandonment was usually an indicator that our sustainability strategies had not been fully effective or that we had not communicated sufficiently the vision of the Project to work itself out of a job once sufficient QI capability had been built in partner institutions. This phenomenon usually led to an extension of the duration of a particular Wave and revision of our sustainability strategies. Throughout the life of the Project, initial sites were always included in subsequent Waves.

RECOMMENDATIONS

Selecting Intervention Sites

- Develop a clear criteria for selecting sites — for example, baseline performance, commitment of system managers, diversity of sites, resources available to the project to work in challenging terrains, political considerations.

Forming QI teams

- Work closely with management at participating sites to select appropriate team members and to ensure that team members attend Learning Sessions knowing they are accountable to management for the project work. If possible, a management member should attend Learning Sessions.
- In selecting members for the core QI team, focus on selecting health workers that are most key to the process of care being improved.

Maximizing the Value of Learning Sessions

- Prioritize participant learning over a rush to complete the planned Learning Session agenda. Any unfinished business may be addressed during the next site visit.
- For all sessions, adopt the strategy of quick introduction to subject (theory), adequate time for group work, and adequate time for plenary presentations and discussions.
- Create a fun learning environment (with stimulating energizers, exciting exercises, role plays, marketplace formats, etc.), ensuring that all these are closely tied into the core challenges that teams are trying to improve.

Conducting Site Visits

- Prior to the site visit, review the team's data on key measures and PDSAs planned at the last site visit.
- Endeavor to engage the entire expanded QI team in order to prevent a "cult" effect in which a few core members of the QI team use the tools and strategies without sharing to get the necessary facility-wide support.
- Greet management before the team meeting, and debrief management following the site visit, with the QI team leader in attendance if possible. Whenever possible, encourage management to be a part of the team meeting.
- Complete documentation after each site visit, updating that site's changes tested, process measures collected by the team, etc., and provide prompt feedback to your Monitoring and Evaluation (M&E) Lead.
- Share best practices as you visit other sites.
- Debrief the entire site visit with project leadership who have the responsibility for incorporating new learning and insights into project design and implementation.

Building QI Capability

- Build QI capability in a formal and deliberate way, and define changing roles that merit the new capability being built to support the work of the project.
- Define training needs at a national level, senior/middle manager level, and frontline staff level, and aim to build broad and deep capacity.
- Define a cadre of staff to continue QI work after the end of the project, and work with them hand-in-hand from the very beginning — co-designing, co-facilitating, sharing logistic arrangement roles, etc.
- In selecting managers and frontline staff for capability building, aspire to align with health professionals whose routine roles align with project objectives rather than create new roles — for example, identifying Deputy Directors of Clinical Care to build capacity for hospital improvement work; Deputy Directors of Public Health for district improvement work; and Regional Health Information Officers for data Quality Improvement work.

Measurement

KEY SUCCESS FACTORS

From the start of the project, establish a commitment to measurement as part of your project's essential structure.

Measurement should permeate all aspects of the project; be the focus of numerous levels of employees; and become a language everyone on the team shares.

Measurement is at the core of multiple aspects of a project: seeing how processes improve (or fail to hold the gains) over time as a result of the changes being implemented; benchmarking and baselines; individuals and subgroups seeing their own contributions to the larger project; fostering pride of workmanship; team building; building relationships with other organizations; the publication of findings; the sustainability of the project; and the future of the population health issues your team has been focused on after your initiative itself has ended.

Establish comprehensive systems, at all levels, to measure your work.

Develop data collection tools, tracking sheets, and measures for each level (unit, hospital/health center, district, region, nation). Be more inclusive than selective when collecting data; sometimes measures change. It is, however, very important not to overburden health workers with unnecessary collection of data that is not used regularly, but collected just in case it may be needed later. If information needs are well defined at each level — project, Collaborative, team, PDSA — it will help structure the data collection systems and avoid data overload.

Make decisions based on the data.

Decisions and actions should be based on data — at all levels. *PFA!* used a defined set of performance metrics that ranged from the number of community stakeholder meetings about the importance of early antenatal care, to the number of health facilities encouraging mothers to make a postnatal care visit on day 6 or 7, to the proportion of hospitalized infants with malaria that survive.

Data help teams know if the changes they're testing are leading to improvement (and whether or not those improvements are being sustained over time); helps keep discussions about the project work focused on key topics; and adds rigor and discipline to site visits and engages site-based leadership.

Once you have established a cooperative, collegial working relationship and ownership of results among QI teams, measurement permits people engaged in the work to identify opportunities for improvement in a nonjudgmental way and, therefore, to develop thoughtful and informed responses to problems.

Create a culture driven by data and measurement for improvement.

Data shouldn't be hiding in a closet or deep in one person's laptop. It should be displayed on walls, discussed at every QI team meeting, and reviewed monthly by leaders and others working in the system. Data should be looked at over time, and there should be a sense of urgency and excitement among the staff awaiting their updates each month to see their latest performance data. For QI team members who are working closely with the data, it's important for them to share any patterns or trends (either positive or negative) observed through data analysis with other colleagues and with management in order to create a sense of shared responsibility and ownership of team successes and challenges.

Use of laptops for data analysis using Excel need not be a prerequisite for QI team work. Flipcharts for drawing and interpreting run charts at the sub-district and hospital levels were used extensively in *PFA!* It is, however, beneficial for teams to be open to engaging more highly trained biostatisticians in the data analysis work, who may insist on using laptops for data collection and analysis throughout the project.

A CLOSER LOOK

Looking at Your Own Data

When discussing the need for improvement, *PFA!* staff used the hospital's own data, displayed in run charts over time, to demonstrate gaps in performance and opportunities to improve. Prior to the Project, the hospital staff reported this data monthly, but rarely looked at the data over time. More than once, the data ignited heated discussions as many, including senior leaders, were in disbelief at what their own data showed. This is where data for decision making is critical: how can you decide if there is a problem that needs to be addressed when you don't even know your current performance, or if a change you've implemented is truly leading to improvement?

Work within the existing data system and strengthen it.

In thinking about sustainability, it's critical to use the local data collection system where possible. Process measure data on changes being tested at a lower level by QI teams may, however, need to be collected afresh. Flaws will surely exist, but it is the team's responsibility to improve the data collection system for the next users. This can be frustrating and set you back at times, but overall it's an important choice to use the existing data system.

You may, therefore, run a parallel Data Quality Improvement (DQI) intervention aimed at improving the timeliness, completeness, and accuracy of routine national data systems. It is beneficial to conduct Data Quality Improvement exercises in concert with other partners to achieve rapid national scale-up. In most cases, many of these partners already have clear budget lines for DQI, and a harmonized approach will not only prevent different partners from calling the same health information officers for similar trainings at different times, but will also streamline the central data system for common use. Finally, where project performance is being reported on using routine data, it is helpful to state the margin of error so that the performance being reported on can be interpreted accurately.

Create a culture in which people see data as their ally.

Use measurement to give people a sense of shared ownership of the project; to further the commitment to build capacity; to strengthen partnerships; and to enable realistic budgeting. In *PFA!* there was clear pride of workmanship in people seeing how data they had influenced improved over time.

Nurture a culture of using data for improvement, not for judging people.

Fear breeds discouragement, secretiveness, and distrust of QI methodology if people are afraid they will be judged or punished if their data does not reflect sufficient improvement. It may even lead to manipulation of data to hide system deficits, which is counterproductive to the improvement process.

Have teams bring data to the first Learning Session. That way, you can speak with them about baseline performance and opportunities for improvement.

PFA! found the first Learning Session frequently proved to be of great importance for how teams felt later about rapid-cycle testing and measurement, in general. Baseline measurement data collection "pre-work" before Learning Sessions often put the information officer at the forefront of some teams, which helped to empower them as non-clinician team members.

Define key process and outcomes measures at the project level, but design PDSAs at the local level.

Permit some flexibility at the local level in how the Change Package is used — for example, when entering a new geographical area, introduce a draft Change Package that includes primary drivers while permitting local teams to fill in the secondary drivers.

A CLOSER LOOK

Data for Learning, Not Judgment

The human side of change can be the most challenging component of improvement work. To help *PFA!* sites develop environments in which staff felt safe to share information they'd normally feel vulnerable sharing, we asked leaders (such as the District Director of Health Services) to address their staff and community members during the Learning Sessions to reinforce the importance of honest sharing and reporting of all data for learning and improvement.

PFA! learned that working with QI teams to appreciate their baseline performance through analysis and discussion of their own data established an environment conducive for understanding the power of local data analysis for local improvement and elicited change ideas from the teams that they were willing to test. This approach was in contrast to the typical format of didactic workshops being delivered in the Ghanaian health system at that time.

Measure continuously, not just before and after changes are implemented.

Measure continuously while testing changes to enable your team to see which changes are most effective at achieving desired results and those that aren't. In *PFA!* we tested changes with a focus on small units (e.g., districts) before applying a change to larger or more encompassing units (e.g., regions). It is extremely helpful for teams to be able to see, in the midst of testing changes, what is working and what is not working. Seeing data displayed over time (using run charts) helped teams identify and annotate where performance improved or not; and, even more importantly, they could use their data over time to predict future performance.

Work to improve data quality.

There is considerable payoff over the long term from investments in improving the quality of the system's data. Once the *PFA!* team began to work with local health information officers, the QI teams had more confidence in the quality of the data being produced. Establishing data validation teams was a massive effort that *PFA!* undertook because of a need for better quality data. Specifically, we worked with the information officers at hospitals and districts one-on-one during site visits and also together as a Collaborative to critically track data accuracy, timeliness, and completeness. A data quality protocol was produced by the Monitoring and Evaluation (M&E) team, explaining how to execute a Data Quality Strategy.

Hire an independent external evaluator.

Identify the independent evaluator early on in order to reap the maximum benefit from their work, while the project has sufficient time left to iterate its design and implementation plan.

External evaluators are so valuable for advising on your measurement system, and for examining other important elements outside the scope of the project such as cost effectiveness, disparities in outcomes, and community-level surveys revealing helpful insights on the baseline or post-assessment data. Their input is most useful if they can provide sufficiently real-time data that informs adaptive redesign as the project progresses. You may use one evaluator or a combination of evaluation organizations working in harmony to provide independent evaluation support. The choice of a local partner may be influenced by the need to continuously leverage and strengthen local capacity.

Ensure that project data requested by independent evaluators match up with the routine data already being collected by the project for monitoring purposes. This will help prevent any concerns that project staff are being distracted from their core implementation role and being drawn unduly into data collection roles for an independent evaluator contracted for the purpose.

KEY CHALLENGES

Some people are afraid of numbers (data) and of computer programs that use numbers.

For example, *PFA!* found that in some locations people had difficulty in handling data computations and in working with numerical data in Excel. Start initially with simpler data collection approaches such as using flip-charts to track data and draw run charts of data over time. Being reassuring, nonjudgmental, and patient with teams helps a great deal to ensure teams become comfortable with, and eventually skilled at, data collection.

A CLOSER LOOK

Addressing Insecurity about Dealing with Data

This challenge — varying levels of experience and comfort with data collection — surfaced even more strongly when we had community members (not just health care workers) participate in the Project.

It became evident that people had varying levels of understanding, but if each team had at least one person who could understand the data collection and analysis, then that person could serve as the point person for this work and others learned along the way.

Using available data may involve compromises.

PFA! decided to work with the data available and improve it, and that continues to look like the right decision. Yet, the available data was not a perfect match for what we wanted to measure. There were many measures at the local levels for PDSA cycles that we could not aggregate at district or regional levels because the existing health information system did not require data for such measures to be reported. The key is to agree that the project will rely on and use a small set of measures for the project as a whole, using the data that are already reported in the existing data system, and then work with local stakeholders to improve the quality of the data over time and advocate for inclusion of critical new measures in the data system as needed.

RECOMMENDATIONS

- Create a culture driven by data and measurement for improvement.
- Establish comprehensive systems, at all levels, to measure your work.
- Work within the existing data system and strengthen it.
- Hire an independent external evaluator.

Communication

KEY SUCCESS FACTORS

Develop a strategic communications plan as part of the project design.

A strategic communications plan is a key element of a large-scale project like *PFA!* All Project activities undertaken by *PFA!* are communications-related, from Learning Sessions to stakeholder management. In our experience, a clear communications plan outlining a strategy for both internal and external audiences should be part of the project design.

Establish a system to harvest and disseminate learning.

A core principle of *PFA!* is the importance of harvesting and disseminating learning, both within the Project and beyond it. Internationally, *PFA!* prioritized telling its story in a variety of settings and formats, including in the peer-reviewed literature, at key national and international conferences, and on the web. Writing, publishing, and other ways of communicating about the work provide an opportunity for reflection on what has been done and how, and what will be done in the future.

If possible, secure the support of a communications strategist and/or a professional writer to focus on your initiative.

In the latter stages of the Project, *PFA!* recruited a communications officer who assisted the Project with the following: revamping the Project's website ***(www.fivesalive.org),*** including creating a new section called "QI Resources" under "What We Do," which enables readers and frontline workers to refresh their knowledge of QI. In addition, the Project strengthened its social media presence on Facebook: *Project Fives Alive!* Ghana; Twitter: 5s_Alive; YouTube: *Project Fives Alive!* Ghana; and G+: *Project Fives Alive!* The Project also strengthened its partnership with the biggest-selling national daily newspaper in Ghana *(Daily Graphic),* leading to the publication of human interest stories written by Project staff under the banner "Countdown to 2015."

It is important for a large-scale project like *PFA!* to have a communications strategist who can push the communications portfolio forward, serve as an intermediary between the project and the media, coordinate all communications-related activities, and guide the project team in writing technical reports.

Secure the support of a writer who can make a long-term commitment to your communications efforts and who develops materials suggested, outlined, sketched, or requested by a range of people and sources in your country. Notably, the writer should be able to write in several distinct "voices" — that is, for physicians, for allied health professionals, for funders, for the public, and for specific online readerships.

In addition, Project Officers (POs) developing peer-reviewed journal articles will need support from a writer with expertise in developing articles for such publications.

Cultivate presentations at national and international conferences.

In relation to *PFA!*, see, for example:
ep50.eventpilotadmin.com/doc/clients/IHI/IHI2011/library/C4_Presentation.pdf

Create a vibrant website.

PFA!'s website and its newsletter, "Beyond Five," can be viewed at ***fivesalive.org/#***

Issue regular annual reports.

PFA!'s periodic "Improvement Collaborative Reports" are posted on the Project's website and on IHI's website. ***www.ihi.org/Engage/Initiatives/ghana/Pages/Materials.aspx***

Dissemination Within Country

The primary audience for the work is the group of immediate stakeholders of the project.

Thus, *PFA!* made it a priority to disseminate Project-level results and to support the QI teams themselves in disseminating their work at district, regional, and national review meetings and conferences. At the national scale, the Project leadership visited each region at least once a year to debrief specifically with the regional leadership. In the last two years of the Project, *PFA!* introduced Regional Technical Reports, coauthored by Project Staff and Regional Quality Advisors trained by the Project, and submitted the same reports to the Regional Directors of Health Services for their review and action.

During district and regional review meetings, the Project staff gave presentations about the work in the earlier phases of the Project. Toward the end of the Project, managers and trained Improvement Coaches in the health system jointly made such presentations. The Project also used the Annual Health Summits organized in Ghana as a representative of the Christian Health Association of Ghana (CHAG) to advocate for improved quality and reliability of care.

Seek opportunities to align the project's efforts with those of other partners.

PFA! sought many such opportunities. This resulted in our active membership in the national newborn working group, coordinated by the Ghana Health Service, which had many partners like Jhpiego, Path, UNICEF, and JICA (Japan International Cooperation Agency). As part of this group, *PFA!* was actively involved in the processes leading to the development of Ghana's Newborn Strategy and Action Plan. At the group's launch, the Project disseminated its work on the high-impact changes tested to address faulty referrals adversely affecting maternal and newborn outcomes.

PFA! also leveraged the platform of annual meetings of stakeholders working to improve newborn outcomes in Ghana to present various oral and poster presentations on the use of QI to reduce under-5 deaths in Ghana.

Finally, under sponsorship of the USAID-funded Ghana Focus Region Health Project, *PFA!* teamed up with colleagues in the Ghana Health Service to write a book on "Quality and Patient Safety in Healthcare" with simplified QI tools and methods that could be deployed at the frontline.

Publish an online newsletter.

An online newsletter is helpful, as a way of demonstrating success in and of itself, as a way of communicating facts and information, and as a way of building coherence and ownership.

PFA!'s publication, "Beyond Five," can be viewed at **fivesalive.org/#** and **fivesalive.org/beyond-five/.**

Printing hard copy versions of the newsletter was also very valuable at the local level. *PFA!* distributed the newsletters to each health facility to help share learning and motivate the health staff.

Have a vibrant presence in local media.

The Director of *PFA!* was a regular and high-visibility presence in Ghana, in the newspaper, on the radio, and in professional organizations. This opened the door to several of the Project Officers publishing pieces in the national weekly newspaper.

International Dissemination

Publishing in international peer-reviewed journals is important.

Articles in peer-reviewed journals disseminated the learnings and results from *PFA!* to a broad audience. In addition, the publication of articles in peer-reviewed journals established the credibility of the Project to an international audience. Moreover, publication was a significant professional development opportunity and challenge for Project Leads and Officers.

A CLOSER LOOK

PFA!'s Key Peer-Reviewed Publications

Twum-Danso NAY, Akanlu GB, Osafo E, et al. A nationwide quality improvement project to accelerate Ghana's progress toward Millennium Development Goal Four: Design and implementation progress. *Int J Qual Health Care.* 2012;24(6):601-611.

Twum-Danso NAY, Dasoberi IN, Amenga-Etego IA, et al. Using quality improvement methods to test and scale up a new national policy on early post-natal care in Ghana. *Health Policy Plan.* 2014 Aug 26;29(5):622-632.

Singh K, Speizer I, Handa S, et al. Impact evaluation of a quality improvement intervention on maternal and child health outcomes in Northern Ghana: Early assessment of a national scale-up project. *Int J Qual Health Care.* 2013;25(5):477-487.

KEY CHALLENGES

Communication is time consuming; overworked project staff often prioritize "doing the work" over "communicating about the work."

Communication about the work (especially developing peer-reviewed articles and speaking at international conferences) is time consuming, and your team may be quite busy just ensuring the project is executed as planned. This is why it is critical to have a dedicated communications person or team, with this scope of work as the only focus. *PFA!* didn't always have a dedicated communications person in place and suffered the consequences.

PFA! was able to carve out two one-week "writing weeks" for Project Leads during which no implementation activities took place so the team would retreat in one location to focus on writing for peer-reviewed publications. This writing week included bringing in writing experts to assist with some technical writing skills and review the journal publication process, and also freed up time for Project staff to focus only on writing without distraction.

Despite best efforts, the flow of information from the region to sub-districts may at times been either delayed or slow.

The way the bureaucracies at government agencies and partner organizations work may be a contributing factor. *PFA!* tried to find the delicate balance between facilitating communication and not playing an intermediary role, given the temporary nature of the Project.

Some local leaders of facilities, districts, and regions may request assistance with proposal writing and sourcing for funds. As community members and community groups play an important role in QI, there should be efficient ways to communicate with them, even while taking into account the general educational attainment of community members.

RECOMMENDATIONS

- **Have a robust plan for both internal and external communications.** As the project develops, both internal and external communications help build will, enthusiasm, shared ownership, recognition, and a durable framework within which the health system you are working can sustain the work over the long term.
- **Have a plan for communication with partner organizations.** It is crucial that partners learn about major new developments in the project directly from project staff and not through public venues (e.g., in the local newspaper). Someone on the project team should be responsible for notifying partner organizations about major "news" in a timely fashion.
- **Disseminate information regularly to the Ministry of Health and other key national stakeholders.** Doing so may help secure additional support while leading to better integration of your initiative into the national health system.
- **Make it a priority to tell the story of your initiative.** There is great need for disseminating information about successful projects with broader audiences, as this serves to publicize approaches that save lives and promote health in measurable ways in low- and middle-income countries. Publications and presentations enable the project team to influence people and projects around the world.

- **Find ways for the Director of your initiative to be on the stage at important meetings in low- and middle-income countries.** Speaking invitations at conferences and meetings frequently stem from peer-reviewed publication. Partners can also support the visibility and opportunities for the initiative's Director to showcase the work and strengthen relationships as a result.
- **Adapt your communications approach to the local context and culture.** For example, in Africa be mindful that the culture places a premium on listening to and seeing people. In what ways might the radio, recordings, and seeing people on videos or on television be helpful? How can such an approach be tested? Who might you survey or speak with to obtain a sense of how people in communities respond to different communication methods?
- **Use media coverage to promote the project's work and serve as a public platform for raising awareness about issues of national health.** Encourage project leaders to publish articles in local newspapers and other popular publications in the country you are working in, and to make strategic appearances on television and radio, when possible. TV and radio talk show appearances provide opportunities to promote the project's work and to call attention to deficits in population health. Communications methods of all types (including TV and radio) can be used to foster shared ownership of the work. The chance that media coverage might turn negative should be kept in mind, so develop a plan of action in the event this should occur.

Appendices

ABBREVIATIONS

ANC: antenatal care

AP: Action Period or Activity Period

CHAG: Christian Health Association of Ghana

DHIMS: District Health Information Management System

GHS: Ghana Health Service

ICN: Improvement Collaborative Network

IHI: Institute for Healthcare Improvement

Jhpiego: Johns Hopkins Program for International Education in Gynecology and Obstetrics

LS: Learning Session

MDG 4: Millennium Development Goal Four

M&E: Monitoring & Evaluation

MNCH: Maternal, Newborn and Child Health

MoH: Ministry of Health

NCHS: National Catholic Health Service

NGOs: Non-Governmental Organizations

PDSA: Plan-Do-Study-Act

PFA!: *Project Fives Alive!*

PNC: postnatal care

PO: Project Officer

QI: Quality Improvement

SD: skilled delivery

TB: Tuberculosis

UNICEF: United Nations Children's Fund

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Notes

About the Institute for Healthcare Improvement

IHI is a leading innovator in health and health care improvement worldwide. For more than 25 years, we have partnered with visionaries, leaders, and frontline practitioners around the globe to spark bold, inventive ways to improve the health of individuals and populations. Recognized as an innovator, convener, trustworthy partner, and driver of results, we are the first place to turn for expertise, help, and encouragement for anyone, anywhere who wants to change health and health care profoundly for the better. To advance our mission, IHI's work is focused in five key areas: Improvement Capability; Person- and Family-Centered Care; Patient Safety; Quality, Cost, and Value; and Triple Aim for Populations.

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