

Twinning partnership helps to accelerate the performance of district health systems towards achieving Universal Health Coverage

Mesele Damte Argaw (✉ mdamte5@gmail.com)

JSI Research and Training Institute Inc <https://orcid.org/0000-0002-9558-6619>

Binyam Fekadu Desta

JSI Research and Training Institute Inc

Mengistu Asnake Kibret

Pathfinder International

Melkamu Getu Abebe

JSI Research and Training Institute Inc

Wubishet Kebede Heyi

JSI Research and Training Institute Inc

Elias Mamo

JSI Research and Training Institute Inc

Tesfaye Gebru

JSI Research and Training Institute Inc

Chala Gela

JSI Research and Training Institute Inc

Bekele Belayhun Tefera

Pathfinder International

Temesgen Ayehu Bele

Ministry of Health, Ethiopia

Research

Keywords: Twinning Partnership, Universal Health Coverage, Transformation, Ethiopia

Posted Date: March 3rd, 2020

DOI: <https://doi.org/10.21203/rs.3.rs-15779/v1>

License: © ⓘ This work is licensed under a Creative Commons Attribution 4.0 International License. [Read Full License](#)

Abstract

Background: The twinning partnership is a formal and substantive collaboration between two districts to improve their performance in providing primary healthcare services. The 'win-win' twinning partnership pairs relatively high and low performing districts. The purpose of this formative evaluation is to use the empirically derived systems model as an analytical framework to systematically document the inputs, throughputs and outputs of the twinning partnership strategy.

Methods: This evaluation employed a case study research design and was conducted from October 2018 to September 2019, in Amhara, Oromia, Southern, Nations, Nationalities and Peoples' (SNNP) and Tigray Regions. Qualitative data was collected using interviewer-guided semi-structured interview tools. The data were transcribed verbatim, translated into English and analyzed through the theoretical framework called Bergen Model of Collaborative Functioning (BMCF). Quantitative data were extracted from Routine Health Management Information System. Results were presented using average, percentages and graphs.

Result: The result of this case study revealed that scanning the mission of the twinning partnership and focusing on a shared vision coupled with mobilizing internal and external resources were the fundamental input element for successful twinning partnership at the district level. In addition, the context of pursuing Universal Health Coverage (UHC) through achieving transformed districts can be enhanced through deploying skilled and knowledgeable leadership, defining clear roles and responsibilities for all stakeholders, forming agreed detailed action plans and effective communication that leads to additive results and synergy. The twinning partnership implementing districts benefit from the formal relationship and accelerate their performances towards meeting criteria of transformed districts in Ethiopia. At the baseline measurement stage, only two out of eight districts achieved a medium performance status; at mid-term, two districts achieved high performance status and during the end-line results out of eight twinning targeted districts, three districts fulfilled the transformation criteria, three districts were categorized as medium performers and the remaining two districts fell into the low performing districts category.

Conclusions: The implemented twinning partnership helped to accelerate the health system's performance in achieving the district transformation criteria. Therefore, scaling up the implementation of the twinning partnership strategy is recommended.

Contributions To The Literature

- Twinning partnership is widely implemented between research institutes located in high and low-income countries as a north-south or south-south relationship. However, there is limited evidence on its implementation between high and low-performing districts within a single health system in low income countries.
- Both qualitative and quantitative data collected through in-depth interviews and data extracted from routine health information system were analyzed using a theoretical framework called the Bergen Model of Collaborative Functioning. The result revealed that the input interaction among missions, internal and external resource entered in throughput led to enhancements in its implementation. In addition, clear roles and structures, communication and maintenance of activities leads to synergy.
- This study documents the acceleration of the district health system performance towards achieving Universal Health Coverage (UHC) through district transformation. The results fill gaps in scientific literature on effectiveness of locally adopted and implemented twinning partnership for future scale-up.

Introduction

Ethiopia has successfully achieved the targets set in the Millennium Development Goals (MDGs), which have been implemented for the past two decades - from 1995 to 2015. During this period, the government of Ethiopia has put in place a national health policy and several health reforms that have improved the overall performance of the health system. Government commitment, the support of development partners and community-level engagement, have contributed to the improved and remarkable health outcomes (1, 2). Some of the gains realized by 2016 include a reduction in the Maternal

Mortality Ratio (MMR) from 1400 to 351/100000 live births, and a decline in the under-five mortality rate by 67%, to 68 deaths per 1000 births (3). The current Health Sector Transformation Plan (HSTP) strategizes to maintain the country's success towards realizing Universal Health Coverage (UHC) by implementing four transformation agendas which consist of: (1) quality and equity of health services, (2) Caring, Respectful and Compassionate (CRC) health workforce, (3) information revolution, and (4) woreda transformation (3). This requires closing the gap between high and low-performing district (*woreda*) health offices and adopting and implementing innovative service delivery and management solutions (3) as one of the major obstacles to transformation is the wide variance of know-how, skills, competencies and performances within woreda health systems and/or among woredas within zone administrations and regions.

The Case

The USAID Transform: Primary Health Care project targets 360 districts in four regional states of Ethiopia. Within these project targeted regions there are: 114 primary hospitals; 1,837 health centers; and 9,538 health posts (4). Using the public sector's routine Health Management Information System (HMIS) reports, 12 maternal and child health-related service indicators were selected and collated. The selected indicators include: Early Institutional Neonatal Mortality Rate; Proportion of Surviving Infants Vaccinated for Penta-3; Proportion of People that Tested Positive for Malaria: All Ages; Proportion of People that Tested Positive for Malaria: <5yrs; Proportion of Children with Moderate Malnutrition; Proportion of Children with Severe Malnutrition; Institutional Maternal Death Rate; Proportion of Pregnant Women that Received Antenatal Care: at Least Four Visits; Proportion of Births Attended By a Skilled Health Worker; Early Postnatal Care Coverage; Proportion of Pregnant Women Tested for HIV; and Contraceptive Acceptance Rate. Finally, the top one-third quartiles are categorized as high performing districts, the middle one-third districts are categorized as medium performers and the lower one-third districts are categorized as low performing (5). Based on the above described indicators, the project began its support with the baseline composite score status of 47 (13%), 115 (32%) and 198 (55%) of targeted districts which were high, medium and low performing, respectively. By 2021, the project is committed to achieve high or medium performance status in 310 (86.1%) districts through institutionalizing innovative performance management and improvement tools (4). Furthermore, the Ministry of Health has defined a set of criteria which include District (*woreda*) Management Standards (10.0%); Model Village (30.0%); High Performing Primary Health Care Units (30%); and Financial Risk Protection through high membership and renewal coverage of the Community-based Health Insurance scheme (30%). Using the overall scores, districts which achieved greater or equal to 85.0% were considered as high performers; districts which achieved between 60% to 84.9% were medium performers and districts which achieved less than 60% were low performer districts. By the end of September 2018, out of 1081 districts, no districts achieved over 85%.

In 2017, the Ethiopian Federal Ministry of Health (FMOH), and Regional Health Bureaus (RHBs) in collaboration with the project piloted the 'Twinning Partnership Strategy' to accelerate district health system performance as a result of synergy, that is, district transformation as an outcome through working with others, which leads towards UHC(6- 11).

According to Cadée *et al.* 2016, twinning is a cross-cultural, reciprocal process where two groups of people work together to achieve joint goals (12). Similarly, twinning is defined as a formal and substantive collaboration between two organizations (6, 10). Formal means that there is a verbal or written agreement between the two organizations. Substantive means that the interaction is significant, and that it lasts for a specific period i.e., it is not a one-time interaction. Collaboration means that the two organizations work together on a specific project or to exchange information or skills (7).

Multiple studies have documented twinning partnerships between research institutes in low income countries and middle/high income countries located in Europe, North America and South Africa (11- 16). Similarly, there is ample documented evidence on prompting health behaviors through north-south partnerships (17-20).

The main purpose of this formative evaluation is using an empirically derived systems model as an analytical framework to systematically document the inputs, throughputs and outputs parameters of BMCF theoretical framework (Fig. 1), in Ethiopia, where twinning partnership strategy implemented between districts targeting UHC through achieving district transformation.

Methods

A case study design, (Yin 2014) was employed (22). The study focused on eight districts that had implemented the twinning partnership strategy for one full year. The list of districts selected for inclusion in this case study are: Machakel and Bibugn in the Amhara region; Damboya and Hadero Tunto in the SNNP region; Chelia and Elu-Gelan in the Oromia region; and Oflla and Raya Azebo in the Tigray region. This study was conducted from October 2018 to September 2019.

The study's target population were managers, healthcare workers of the district health offices, and primary healthcare units which are within the study areas. In addition, records and documents of the twinning partnership strategy activities in all eight districts were reviewed as a main source population for data extraction.

This study used purposive sampling methods. Firstly, four regional states and eight districts were selected based on their experience of implementing the twinning partnership strategy. Secondly, thirty-nine In-depth Key Informants (IKI), of which 6 were females were enrolled until data saturation was reached, as a result of redundancy of information.

Data collection guides were developed based on research objectives and questions. In addition, data extraction forms were developed based on the principles of the twinning partnership strategy implementation guidelines and district transformation criteria. The tools were piloted in two selected districts. Before developing the final data collection tools, the necessary amendments were made based on pilot test results. The data were collected using in-depth individual interviews with healthcare professionals of primary health care entities who were actively engaged in the implementation of the twinning partnership strategy. A nationally developed and endorsed self-assessment and validation tools were adapted for this study to measure the performance status of district health systems. District Management Standards were measured against 27 standards and 87 validation indicators. Model villages were measured against four standards; namely, model village, improved latrine coverage, facility delivery coverage and model school health and 28 composite validation indicators. Community-Based Health Insurance measured using coverages of households' active membership captured as new enrollment and annual renewal of household within a defined catchment population. High Performing Primary Health Care units were measured using standards of model village (28) , key performance indicators (18) and Ethiopian Health Center Reform Implementation Guidelines (81) with 237 composite validation indicators. Data on performance of district health system were abstracted from routine health management information system reports and reports of external validation teams.

The qualitative data were transcribed verbatim and translated from Amharic into English. To interpret the data, the investigators read and re-read the transcripts several times for better understanding. Emerging ideas were written, and codes were created with grouping and regrouping of codes to topics with corresponding similarities (23). In addition, the Bergen Model of Collaborative Functioning (BMcF) theoretical framework, was used as a basis for interpreting the findings (19- 21). Base line, mid-term and end line data were extracted, checked for its consistency, completeness, reliability and analyzed to track observed changes following the implementation of twinning partnership as a new initiatives. Quantitative data were analyzed using frequencies, proportions and graphs.

Ethical Considerations

This study protocol was reviewed at the JSI Research & Training Institute, Inc. Institutional Review Board (IRB). The IRB has determined that this activity is exempted from human subjects' oversight (IRB #19-31E). Support letters were sought and obtained from the Amhara, SNNP, Oromia and Tigray regional state health bureaus. Permission to conduct the study was sought from the selected health facilities and informed written consent was obtained from all study participants. All study subjects, whose age is greater or equal to 18 years, were informed that they have the right to discontinue or refuse to participate in the study at any time. The investigator has maintained the anonymity, privacy and confidentiality of the participants throughout the research process.

Results

Health workers from diverse professional backgrounds that is, health officer (14;; 35.9%) nurse (7; 17.9%) and midwife (2; 5.1). the majority 33 (84.6%) were males. The mean age with standard deviation was 28.3 ± 4.9 years. In average 7,5 years of services were tenured by the KILs (Table 1).

Table 1: Socio-demographic Characteristics of Key Informants, (N=39), September 2019

Characteristics	Number (%)
Region	
Tigray	7 (17.9)
Amhara	8 (20.5)
Oromia	10 (25.6)
SNNP	14 (35.9)
Gender	
Male	33 (84.6)
Female	6 (15.4)
Profession	
Health Officer	14 (35.9)
BSc. Nurse	7 (17.9)
Laboratory Technologist	5 (12.8)
Master's in Public Health	3 (7.7)
BA in Economics	3 (7.7)
Midwife	2 (5.1)
Health Extension Worker	2 (5.1)
Pharmacy Technician	1 (2.6)
Health Information Technologist	1 (2.6)
Environmental Health Officer	1 (2.6)
Age category	
< 25 years	10 (25.6)
26–35 years	28 (71.8)
36–45 years	0 (0.0)
46+ years	1 (2.6)
Mean= 28.3 Years ; SD = 4.9 Years; Median 8 years and range 27 Years.	
Work experience	
< 3 years	7 (17.9)
4+ years	32 (82.1)
Mean= 7.5 Years ; SD = 4.9 Years; Median 28 years and range 27 Years	

Inputs

Based on BMCF three major categories were discussed under inputs. The categories discussed below are mission, partner resources and financial resources.

In this study 'mission' means the main reason stated for the existence of the twinning partnership. A common understanding of the mission and the health system's strategic priorities enhance access to quality primary healthcare services in an equitable manner. Such systematic interventions help the Ethiopian health sector to create a resilient district health system which is responsive to the needs and demands of every individual at all places. These collective and widespread comprehensions help members of the twinning facilities to develop a shared vision that inspire partner districts and their staff, share resources, develop a culture of serving communities outside their district boundaries and grow and become stronger together while maintaining a sense of competitiveness among members. This indicates that the implementation of health sector reforms enhances the governance, capacity, quality, equity of access to primary health care services. The following verbatims describe the opinions of health workers on their understanding of the mission and shared vision of the twinning partnership strategy.

"Although we, [members of twinning partnership] live in neighboring woredas and are familiar with each other as health workers, we had never talked each other about enhancing our health services. In fact, we were reluctant to share information and as we wanted to stand out and be better performers than other health centers located in the same [name] zone. The twinning partnership approach helped us to open our eyes and broadened our horizons. More specifically, we understood that through working together, we became stronger. Hence, the partnership helped us get closer to our ultimate goal of serving the community." (004, Health Center Director, Health Officer, Oromia Region)

Some of the twinning partnership districts developed a vision or mission statement which supports the achievement of Ethiopian health system achieving UHC through increasing the coverages of transformed districts: *"...to create model primary health care units in both [name] and [name] districts."* (033, District Health Office Head, Master of Public Health, Amhara Region). *Another staff commented that their vision was "... to be a transformed district."* (001, Health Center Director, Health Officer, Oromia Region)

A health center staff also expressed his observation of the benefit of empowering health workers through a shared vision: *"Staff at our partner district were familiar with the health sector reforms. Therefore, we created a platform for our districts to organize a number of seminars for staff which assisted us in creating a shared vision."* (010, Vice head of Health Center, Health Extension worker, Oromia Region)

Another health professional commented on the impact of having shared missions and visions. *"Previously, other sector heads considered health as a well-financed sector (through development partners). However, after visiting the health centers in person, they recognized that health is an expensive service for many beneficiaries who expressed several grievances. To fulfil the minimum standards, ownership and local financing can help the health system to achieve its major goal of preventing maternal and child deaths."* (012, Reform Core Process Owner, BA in Economics, Tigray Region)

Partner resources

Narrowing the performance gaps of districts in a short time demands utilization of internal and external resources. The twinning partnership strategy was facilitated by three to four committed staff assigned from the district health office and health centers. In addition, the Zone Health Department (ZHD) assigned focal persons who liaise between the districts. In addition, focal persons were assigned for each department such as laboratory, pharmacy, health center-health post linkage, health information system, quality improvement and infection prevention in each partner district. The majority of the

respondents believed that having a dedicated partnering facility helped them to adopt innovative tools and achieve better results. One of the respondents commented by saying, *“If it wasn’t for the technical support on facilitating the preliminary discussions, partnership development, facilitating basic twinning partnership trainings, developing problem solving skills, partner districts would have continued doing things as usual.”* (021, Health Center Director, Environmental Health Officer, SNNP Region)

Financial resources

This broad category addresses the effort of twinned districts in mobilizing monetary resources. The experience sharing between medium and low performing district helps the executive and decision-making bodies understand the concept of performance management through institutionalizing minimum standards. One of the district health office staff explains, *“The experience sharing and learning tour helped the executive team understand the idea of achieving universal health coverage through district transformation and enabled them to compare our district’s achievements to that of our neighboring twin woreda, [name] district. They [executive body] committed themselves to replicate what they saw in [name] Health Center and allocated \$66,000.00 (Six-six thousand USD) for availing essential drugs, and renovation of health facilities.”* (037, District Health Office Head, BSc in Nursing, Amhara Region).

Another district health office staff had this to say about financial support they received from development partner, *“Without the financial support we received from the project, we might not be familiar with the concept of the twinning partnership which led us to develop projects and engage in the implementation of activities.”* (018, District Health Office Head, master’s in public health, SNNP Region).

Therefore, scanning health sector priorities and the establishment of missions led the participants to develop a shared vision of serving communities which motivated them to mobilize the necessary human, financial and other resources. These factors were the key elements of the inputs in the implementation of the twinning partnership strategy in Ethiopia.

Collaboration

In put interaction

The results of scanning mission, developing shared vision, mobilizing financial, human and other resources entered into in the steps of collaboration have established an inputs interaction. The majority of the respondents believed that the shared missions, shared visions, interactions with partners and allocation of financial resources had a positive effect on accelerating the performances of primary health care units and the district health system.

One of the district health office heads had this to say: *“...staff mobilization and deployment, allocation of budget for fuel, covering staff accommodation costs and sharing of resources in the twinning partnership assisted us to motivate staff and led to the achievement of our shared vision.”* (011, District Health Office Head, BSc nurse, Tigray Region).

Similarly, the head of a health center expressed, *“Our health center ran out of lab supplies for syphilis screening tests, and the ante-natal services were not complete for pregnant mothers. Similarly, our partner district reported an unusual increase in the number of malaria cases observed in health facilities, while they lack antimalaria drugs. Both of us benefited from the established relationship as we were able to share human resources and essential drugs and supplies.”* (034, Health Center Director, BSc Nurse, Amhara Region).

Leadership

The capacity of the leadership on scanning their environment, focusing on impactful interventions, exhibiting motivating and inspiring behavior and mobilizing and aligning resources were pointed out as having a positive influence on the achievement of the twinning partnership projects. A health worker affirms that, *“Assessing the needs and demands of the district health*

systems environment, mobilizing and aligning resources coupled with leaders' recognition and acknowledgement of staff cemented commitment to the twinning partnership." (017, Health Center Director, Health Officer, Tigray Region).

The majority of the respondents believed that the commitment of the assigned focal persons in planning, organizing, facilitating, implementing and monitoring the activities had a positive effect on the established partnerships. Almost all staff who were engaged in the twinning partnership were acknowledged by the top managers as having facilitated vehicles, per diem and other resources effectively which led to the successful implementation of the developed twinning projects.

Formal roles and procedures

Each level of the healthcare system maintains a set of roles and responsibilities endorsed by partners ensuring the implementation of the twinning strategy at all level of health system. The majority of the respondents highlighted that the established clear structures, roles and responsibilities of all stakeholders helped them to achieve more results. One of the district health office managers had this to say: *"The launching workshop showed us the structures, roles and responsibilities of the twinning partnership. We also defined and shared this at the district health office and health center level which was instrumental for effectively carrying out our twinning partnership planned activities."* (002, District Health Office Head, BSc Nurse, Oromia Region). Committed and willing districts and zone health departments signed a memorandum of understanding to work together for one full year.

Communication

During the implementation of the twinning partnership, projects members communicated with each other through various channels including telephone conversations, written communication, creating groups through mobile applications, and face to face communication. A health worker had this to say about improving performance of partners using telephone communication: *"We usually we use telephone communication to arrange meetings, experience sharing events and to invite experts. This helped us to maintain our friendly relationship."* (012, Health Reform Core Process Owner, BA in Economics, Tigray Region).

Another health worker describes the importance of face to face communication supplemented by written letters on sharing of drugs and supplies: *"If we are requesting drugs and supplies we used formal letters along with face-to-face communication."* (005, Head of Health Center Pharmacy Department, Pharmacy Technician, Oromia Region). The health manager explains how a mobile app was used to create groups for information sharing on performance of district health system. *"We have a telegram [app] group where we update each other on our day-to-day performances."* (028, Maternal and Child Health expert, Health Officer, SNNP Region).

Another Health Center Staff had to say "Before we engaged in twinning partnership, our communication was limited within district health teams, no means to share experience and supporting each other with similar health facilities located in other districts. We used to meet during review meeting where we share and learn experiences and success. We also do not have means to organize learning tours to other primary health care facilities. Now, our health center [name] formally communicated with twinned health center located in [name] district." (001, Health Center Director, Health Officer, Oromia Region)

Maintenance task

The basic twinning partnership training focus on our main chapters, namely, health sector priority, strategic problem solving, performance management and communication. During the implementation of the twinning partnership, the importance of clear reporting requirements and of sharing information were well addressed. One of the district health office staff had this to say: *"During the basic twinning training, participants identified the current situation, developed desired measurable results, identified obstacles and prioritized solutions. In addition, a detailed action plan on resource mobilization as well as monitoring and evaluation was prepared. These activities helped us to share basic information and performance status."* (032, District Health Office Vice Head, BSc Nurse, Amhara Region)

Another staff had explained the proper maintenance task achievement as integrated with routine health system activities: *"We organized supportive supervision, learning tours, and facilitated a number of workshop on Ethiopian Primary Health Care Alliance for Quality."* (023, Health Center Staff, Midwife, SNNP Region)

A health center staff also expressed his opinion on effective maintenance: *"The staff facilitated onsite and off-site trainings, experience sharing events, common review meetings and expert exchange platforms."* (038, Health Center Quality Improvement Officer, master's in public health, Amhara Region)

Outputs

Three major categories were discussed under outputs. First, the summary of additive results, then synergy and antagonistic results will be presented below.

Additive results

Additive results implied the implementation of health sector priority separately without considering the effect of implementing the twinning partnership. The majority twinning partnership targeted districts reported their engagement through orientation of health sector reforms, facilitated self-assessment against standards and provide routine health services. A district health office head said: *"...the health office organizes and facilitates orientation of health sector reforms."* (011, District Health Office Head, BSc nurse, Tigray Region).

Another health worker had this to say about the routine activities in their office implemented regularly: *"Every quarter, the performance management team assesses performance against the standards."* (001, Health Center Director, Health Officer, Oromia Region)

A health worker describes the additive results of the established twinning partnership saying; *"... though we had relatively higher performances than our partner low performer district within the partnership, we heard about experiences of implementing challenging interventions from our twin woreda, [name]. We also adopted the best practices and collected the list of items essential for maternal waiting homes and audio-visual job aids."* (034, Health Center Director, BSc Nurse, Amhara Region).

All twinning partnership targeted districts were rated on three occasions; namely, baseline, mid-term and end-line stages. Fig. 2. below depicts that six and two districts were categorized as low and medium performers at baseline measurement, respectively. These scores were improved at mid-term as two, two and four districts categories as high, medium and low performing districts, respectively. The end-line results revealed that out of eight districts, three fulfilled district the transformation criteria, three were categorized as medium performers and the remaining two districts despite improving the scores, fell in the low performing districts category. Both low and medium performing districts benefited from the implemented twinning partnership strategy which reinforces the argument that these achievements would have come about without the twinning partnership exercises.

Antagonistic results

Despite the additive results and synergy observed among partnering districts, there were some observed antagonistic results. During the experience sharing events as well as while conducting integrated supportive supervisions, some staff did not know the reason for the established partnership and the investment appeared to them as a waste of resources.

"While we were motivated to share our knowledge and skills to partner district staff, they perceived us as having travelled over 90 kilometers to get financial rewards form our meals and accommodation expense payouts." (032, District Health Office Vice Head, BSc Nurse, Amhara Region)

Some of health the workers pointed out that lack of transparency in decision making and lack inclusion of all departments in the established twinning partnership had a negative impact on achievements. Furthermore, they describe the demotivating

effects of lack of good governance on collaborative efforts.

"I was one of the active participants in the development of the one-year twinning project. However, it was not clear to some of us the process through which leaders and managers hand-picked staff for the experience sharing events...."." (005, Health Center Pharmacy Head, Pharmacy Technician, Oromia Region)

Discussion

The twinning partnership strategy implemented in four regional states of Ethiopia clearly demonstrates the win-win collaboration functioning between districts that fall under medium and low performance categories. The main purpose of this formative evaluation report is to demonstrate the effects of the twinning partnership on the performance of district transformation which is the main strategy to achieving UHC in Ethiopia. In addition, the research unveiled the positive and negative factors which enhance or deter the outputs of the twinning partnership (19).

Scanning the mission of the twinning partnership and primary health care entities and focusing on the health sector's top priorities in the context of district transformation was helpful to members of the twinning partnership in developing their shared vision. The shared vision helped leaders and managers to persist in achieving results beyond their districts. It also helped the district health system to identify stakeholders and define structures, roles and responsibilities. A common understanding on the purpose of the twinning partnership assisted the district health system's staff to improve their negotiation skills on convincing decision-making bodies to fulfill minimum human, material and other resources. (24, 25)

The Ethiopian health sector's strategic plan strives to achieve UHC through transforming households, villages and primary health care units (3). The most important element of district transformation is having capable health sector leaders. Visionary leaders who have the knowledge and skills of scanning, focusing, inspiring, aligning and organizing resources were identified as the essential element of implementing collaborative functioning. The training offered to staff of districts engaged in twinning partnership to understand the component of strategic problem-solving tools which includes mission and shared vision, desired measurable results, obstacles, challenge statement and priority solutions. The training also assists partners to develop a one-year twinning partnership detailed activity plan.

The piloting of the twinning partnership strategy has revealed the additive results, synergy and antagonistic results on both partner districts. The results showed that partner districts shared tools, guidelines and were able to organize regular integrated supportive supervision and review meetings. Furthermore, through implementing components of collaboration functioning, both medium performing and low performing districts closed-in on achieving universal health coverage, through addressing the root causes for all social inequalities in the availability, access, quality and burden of out of pocket payments.

The case study revealed that the twinning partnership strategy, which was adopted from WHO's twinning partnership for improvement, helps the performance of the district health system to accelerate transformation towards UHC. This finding was consistent with Bitton et al (2017) , Riggs et al (2014), Corbin et al (2012) recommendations of strengthening the primary health care as a pathway towards UHC (24, 25, 26)

Conclusions

Based on the results of the formative evaluation, the twinning partnership strategy piloted in eight districts of Ethiopia helped partner districts to accelerate their performance towards fulfilling district transformation criteria and assisted them towards achieving UHC (9). The twinning partnership strategy also helped district health systems to standardize services and build their leadership's capacity which were fundamentally important in achieving results. USAID Transform: Primary Health Care project, the Ministry of Health, Regional Health Bureaus and other development partners shall support the scale up of this innovative performance improvement tool - twinning partnership - so that UHC can be achieved during the period of the Sustainable Development Goals.

Abbreviations

BMCF : Bergen Model of Collaborative Function; CBHI: community-based health insurance; EHCRIGs : Ethiopian Health Center Reform Implementation Guidelines; FMOH: Federal Ministry of Health; MDG: Millennium Development Goal; MMR: Maternal Mortality Ratio; PHCU: PHCU; SDG : Sustainable Development Goal; SNNP: Southern Nations and Nationalities of Peoples; SPSS: Statistical Package for Social Science; UHC: Universal Health Coverage; USAID: United States Agency for International Development; WHO: World Health Organization; ZHD: zonal health department.

Declarations

Acknowledgements

This technical twinning partnership formative evaluation report is made possible by the generous support of the American people through USAID. The authors' views expressed in this technical report do not necessarily reflect the views of USAID or the United States Government. The investigators are indebted to all participants for their cooperation during data collection. The authors thank Heran Demissie for English Language edition.

Funding

Transform Primary Health Care project is a United States Agency for International Development (USAID) funded health program under cooperative agreement number of AID-663-A-17-00002. The program is implemented by a consortium of organizations which includes Pathfinder International, JSI Research and Training Institute, Inc., EnCompass, Malaria Consortium, Abt Associate Inc., and Ethiopian Midwives Association in collaboration with local Government and Non-government partners. The funder does not have any role in the design of this study, data collection, analysis and writing of the manuscript.

Availability of data and materials

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Authors' contribution

TAB: temesgen.ayehu@moh.gov.et

The authors of this manuscript are MDA, BFD, MAK, MGA, WKH, EM, TG, CG, BBT & TAB. MDA, BFD & BBT contributed the conception and design of the study. MDA MGA, WKH, EM, TG, & CG fieldwork, data cleaning, analysis and drafting the manuscript. All authors have read and approved the final document. MDA: the corresponding author submitted the manuscript for publication.

Ethics approval and consent to participate

The research protocol of was reviewed and ethical clearance was obtained from JSI Research & Training Institute, Inc (IRB #19-31E). support letters were collected from Amhara Public Health Institute (Ref No. HRTT02/137/2018, Oromia Regional State Health Bureau (Ref No. BEFO/HBTPH/1-16/296), SNNP Regional State Health Bureau (Ref No. PMG-37- 186/801) and Tigray Regional State Health Bureau (Ref No. 48/1418/12) Institution Review Boards and Research Ethics Committee. Oral and written consent was obtained from all research participants. The study had no known risk and no payment was made to participants.

Consent for publication

Not Applicable

Competing interests

The authors declare that they have no competing interests

Authors' information

MDA: Ph.D., Senior Health Systems Strengthening Advisor at USAID Transform: Primary Health Care, JSI Research & Training Institute Inc., Addis Ababa, Ethiopia.

BFD: MPH, Deputy Chief of Party at USAID Transform: Primary Health Care, JSI Research & Training Institute, Inc., Addis Ababa, Ethiopia.

MAK: MPH, Senior County Director and Chief of Party at USAID Transform: Primary Health Care, Pathfinder International, Addis Ababa, Ethiopia.

MGA: MPH, Health Systems Strengthening Officer at USAID Transform: Primary Health Care, JSI Research & Training Institute Inc., Bahir Dar, Ethiopia.

WKH: MPH, Health Systems Strengthening Officer at USAID Transform: Primary Health Care, JSI Research & Training Institute Inc., Ambo, Ethiopia

EM: MPH, Health Systems Strengthening Officer at USAID Transform: Primary Health Care, JSI Research & Training Institute Inc., Hawassa, Ethiopia

TG: MPH, Health Systems Strengthening Officer at USAID Transform: Primary Health Care, JSI Research & Training Institute Inc., Mekelle, Ethiopia

CG: MPH, Health Systems Strengthening Officer at USAID Transform: Primary Health Care, JSI Research & Training Institute Inc., Addis Ababa, Ethiopia

BBT: PhD, Research Advisor at USAID Transform: Primary Health Care, Pathfinder International, Addis Ababa, Ethiopia

TAB: MPH, Director, Federal Ministry of Health, Health Extension and Primary Health Services Directorate, Addis Ababa, Ethiopia

Conflict of interest: none declared.

References

1. Fetene N, Linnander E, Fekadu B, Alemu H, Omer H, Canavan M, Smith J, Berman P, Bradley E. The Ethiopian health extension program and variation in health systems performance: what matters?. *PloS one*. 2016 May 26;11(5):e0156438.
2. El-Saharty S, Kebede S, Olango Dubusho P, Siadat B. Ethiopia: improving health service delivery. World Bank, 2009. <https://openknowledge.worldbank.org/bitstream/handle/10986/13695/546300WP0Ethio10Box349423B01PUBLIC1.pdf?sequence=1> (Accessed on 29 Nov 2019)
3. Ethiopian Federal Ministry of Health. Health sector transformation plan (2015/16 – 2019/20). Addis Ababa: EFMOH; 2015.
4. United States Agency for International Development (USAID): Transform: Primary Health Care project. .Theory of change in practice 2017. Addis Ababa: USAID Transform: Primary Health Care; 2017a.
5. Argaw MD, Desta BF, Bele TA, Ayne AD. Improved performance of district health systems through implementing health center clinical and administrative standards in the Amhara region of Ethiopia. *BMC health services research*. 2019 Dec;19(1):127.

6. United States Agency for International Development (USAID): Transform: Primary Health Care project.. Implementation guidelines: Twinning partnership strategy to improve performance of woredas and primary health care units. Addis Ababa: USAID: Transform: Primary health care; 2017b.
7. World Health Organization. Twinning partnerships for improvement: recovery partnership preparation package: building capacity to reactivate safe essential health services and sustain health service resilience (No. WHO/HIS/SDS/2016.3). World Health Organization, Geneva; 2016.
8. World Health Organization. Partnership preparation package: a practical guide to implementing twinning partnerships: WHO twinning partnerships (No. WHO/HIS/SDS/2018.13). World Health Organization, Geneva; 2018.
9. World Health Organization. Seventy-second World Health Assembly. Report by the Director-General. Universal health coverage. Primary health care towards universal health coverage. Provisional agenda item 11.5 (A72/12), 1 April 2019. https://apps.who.int/gb/ebwha/pdf_files/WHA72/A72_12-en.pdf
10. Interagency coalition on AIDS and Development. 1999. Beyond Our Borders: A Guide to Twinning for HIV/AIDS Organizations. S.N.L.O. Calle Almedal, UNAIDS, et al., editors. Canada; 1999 ISBN: 0-662-28211-6. http://www.icadcisd.com/pdf/Twinning/Beyond_Our_Borders_Twinning_Manual.pdf. (Accessed on 29 Nov 2019)
11. Saha N, Sáha P. Twinning strategy: Is it a vehicle for sustainable organizational learning and institutional capacity development?. WSEAS Transactions on Business and Economics. 2015.
12. Cadée F, Nieuwenhuijze MJ, Lagro-Janssen AL, De Vries R. The state of the art of twinning, a concept analysis of twinning in healthcare. Globalization and health. 2016 Dec;12(1):66.
13. Busse H, Aboneh EA, Tefera G. Learning from developing countries in strengthening health systems: an evaluation of personal and professional impact among global health volunteers at Addis Ababa University's Tikur Anbessa Specialized Hospital (Ethiopia). Globalization and health. 2014 Dec;10(1):64.
14. Dean L, Njelesani J, Smith H, Bates I. Promoting sustainable research partnerships: a mixed-method evaluation of a United Kingdom–Africa capacity strengthening award scheme. Health research policy and systems. 2015 Dec;13(1):81.
15. Ndenga E, Uwizeye G, Thomson DR, Uwitonze E, Mubiligi J, Hedt-Gauthier BL, Wilkes M, Binagwaho A. Assessing the twinning model in the Rwandan Human Resources for Health Program: goal setting, satisfaction and perceived skill transfer. Globalization and health. 2016 Dec;12(1):4.
16. Matenga TF, Zulu JM, Corbin JH, Mweemba O. Contemporary issues in north–south health research partnerships: perspectives of health research stakeholders in Zambia. Health research policy and systems. 2019 Dec;17(1):7.
17. Corbin JH, Mittelmark MB, Lie GT. Mapping synergy and antagonism in North–South partnerships for health: a case study of the Tanzanian women's NGO KIWAKKUKI. Health promotion international. 2011 Dec 15;28(1):51-60.
18. Corbin JH, Jones J, Barry MM. What makes intersectoral partnerships for health promotion work? A review of the international literature. Health promotion international. 2016 Aug 8;33(1):4-26.
19. Corbin JH, Chu M, Carney J, Donnelly S, Clancy A. Understanding Collaboration: A Formative Process Evaluation of a State-Funded School-University Partnership. School-University Partnerships. 2017;10(1):35-45.
20. Katisi M, Daniel M, Mittelmark MB. Aspirations and realities in a North-South partnership for health promotion: lessons from a program to promote safe male circumcision in Botswana. Globalization and health. 2016 Dec;12(1):42.
21. Wandersman A, Goodman RM, Butterfoss FD. Understanding Coalitions and How They Operate as Organizations. In: Minkler M, editor. Community Organizing and Community Building for Health. 2nd ed. New Brunswick, N.J.:Rutgers University Press; 1997.
22. Yin, RK. Case Study Research Design and Methods (5th ed.). Thousand Oaks, CA: Sage; 2014.
23. Tesch R. Qualitative research—Analysis types and software protocols. Hampshire, UK: The Falmer Press. 1990.
24. Bitton A, Ratcliffe HL, Veillard JH, Kress DH, Barkley S, Kimball M, Secci F, Wong E, Basu L, Taylor C, Bayona J. Primary health care as a foundation for strengthening health systems in low-and middle-income countries. Journal of general internal medicine. 2017 May 1;32(5):566-71.

25. Corbin H, Mittelman MB, Lie GT. Scaling-up and rooting-down: a case study of North-South partnerships for health from Tanzania. *Global health action*. 2012 Dec 1;5(1):18369.

26. Riggs E, Block K, Warr D, Gibbs L. Working better together: new approaches for understanding the value and challenges of organizational partnerships. *Health promotion international*. 2014 Dec 1;29(4):780-93.

Figures

BERGEN MODEL OF COLLABORATIVE FUNCTIONING

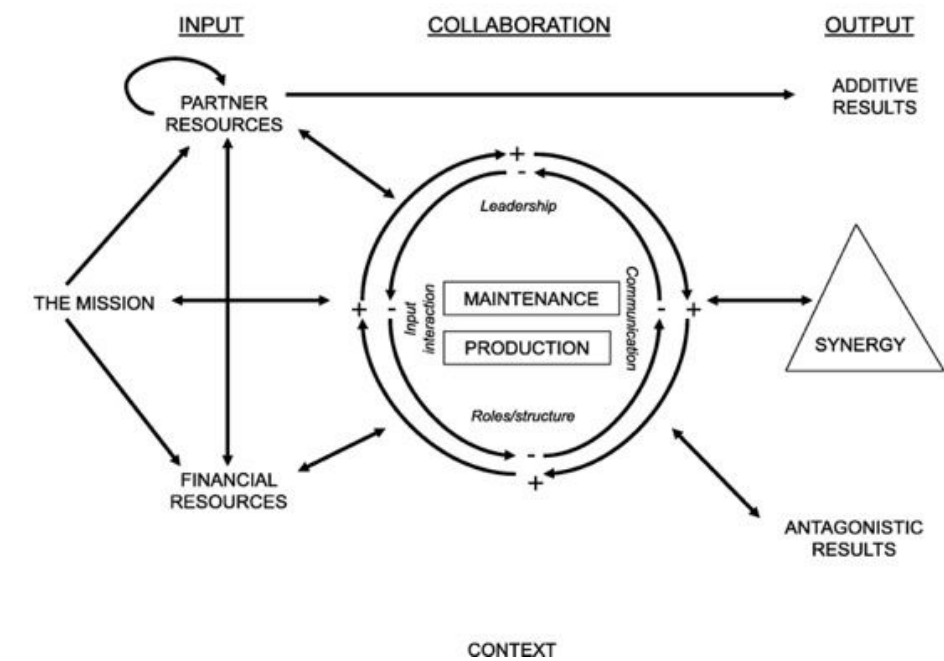


Figure 1

The Bergen Model of Collaborative Functioning (19-21) BMCF conceptual map adopted to evaluate the Twinning partnership strategy implementation in Ethiopia. The framework depicts to the relations of input, throughput and output of collaborative functioning.

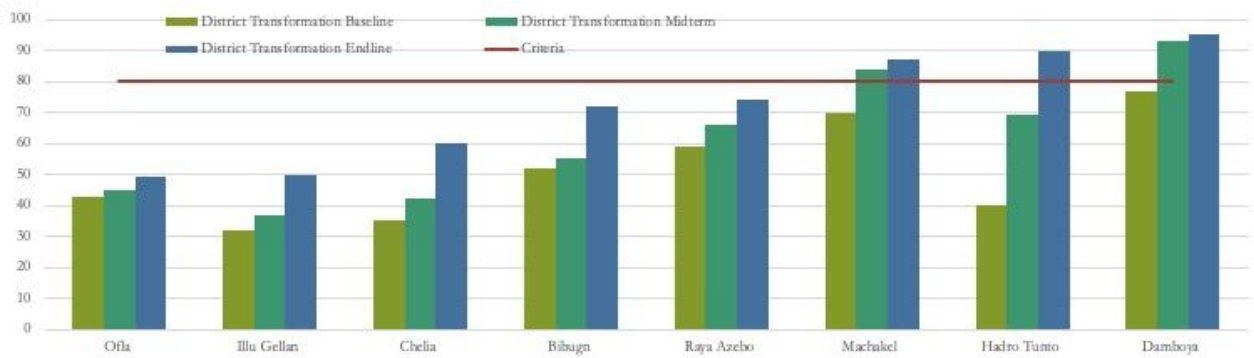


Figure 2

Baseline, Midterm and End-line measurements against district transformation criteria among partner districts, October 2018 – September 2019 The bins show the trends of improvement from baseline, to mid-term and end line measurements.