medRxiv preprint doi: https://doi.org/10.1101/2023.03.06.23286634; this version posted March 9, 2023. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

Influences on policy-formulation, decision-making, organisation and management for maternal, newborn and child health in Bangladesh, Ethiopia, Malawi and Uganda: the roles and legitimacy of a multi-country network

Authors: Kohenour Akter[1], Yusra Ribhi Shawar[2,3], Anene Tesfa[4], Callie Daniels-Howell[5], Gloria Seruwagi[6], Agnes Kyamulabi[6], Albert Dube[7], Geremew Gonfa[4], Kasonde Mwaba[5], QCN Evaluation Group, Mary Kinney[8], Mike English[9], Jeremy Shiffman[2,3], Nehla Djellouli[5], Tim Colbourn[5]

Affiliation(s)

[1] Perinatal Care Project, Diabetic Association of Bangladesh, Dhaka, Bangladesh.

[2] Bloomberg School of Public Health, John Hopkins University, Baltimore, USA

[3] Paul H. Nitze School of Advanced International Studies, John Hopkins University, Washington D.C., USA

[4] Ethiopian Public Health Institute, Addis Ababa, Ethiopia.

[5] Institute for Global Health, University College London, London, UK.

[6] School of Public Health, Makerere University, Kampala, Uganda.

[7] Parent And Child Health Initiative PACHI, Lilongwe, Malawi.

[8] School of Public Health, University of the Western Cape, Cape Town, South Africa.

[9] Centre for Tropical Medicine and Global Health, University of Oxford, Oxford, UK.

* Corresponding author: Tim Colbourn, Institute for Global Health, University College London, London, UK, email: t.colbourn@ucl.ac.uk and, Kohenour Akter, Perinatal Care Project, Diabetic Association of Bangladesh, Dhaka, Bangladesh, email: mary05kh@gmail.com

NOTE: This preprint reports new research that has not been certified by peer review and should not be used to guide clinical practice.

medRxiv preprint doi: https://doi.org/10.1101/2023.03.06.23286634; this version posted March 9, 2023. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

Abstract

The Network for Improving Quality of Care for Maternal, Newborn and Child Health (QCN) is intended to facilitate learning, action, leadership and accountability for improving quality of care in member countries. This requires legitimacy—a network's right to exert power within national contexts. This is reflected, for example, in a government's buy-in and perceived ownership of the work of the network.

During 2019– 2022 we conducted iterative rounds of stakeholder interviews, observations of meetings, document review, and hospital observations in Bangladesh, Ethiopia, Malawi, Uganda and at the global level. We developed a framework drawing on three frameworks: Tallberg and Zurn which conceptualizes legitimacy of international organisations dependent on their features, the legitimation process and beliefs of audiences; Nasiritousi and Faber, which looks at legitimacy in terms of problem, purpose, procedure, and performance of institutions; Sanderink and Nasiritousi, to characterize networks in terms of political, normative and cognitive interactions. We used thematic analysis to characterize, compare and contrast institutional interactions in a cross-case synthesis to determine salient features.

Political and normative interactions were favourable within and between countries and at global level since collective decisions, collaborative efforts, and commitment to QCN goals were observed at all levels. Sharing resources and common principles were not common between network countries, indicating limits of the network. Cognitive interactions—those related to information sharing and transfer of ideas— were more challenging, with the bi-directional transfer, synthesis and harmonization of concepts and methods, being largely absent among and within countries. These may be required for increasing government ownership of QCN work, the embeddedness of the network, and its legitimacy.

While we find evidence supporting the legitimacy of QCN from the perspective of country governments, further work and time are required for governments to own and embed the work of QCN in routine care.

medRxiv preprint doi: https://doi.org/10.1101/2023.03.06.23286634; this version posted March 9, 2023. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

Keywords: legitimacy, ownership, embeddedness, power, institutional interaction, quality of care network (QCN).

Introduction

The Network for Improving Quality of Care for Maternal, Newborn and Child Health (QCN) [1] was created to reduce maternal, newborn and child health morbidity and mortality by improving quality of care. QCN was intended to facilitate learning, action, leadership and accountability for improving quality of care in member countries [2].

For the network to work as intended the government of each member country must buy into the idea and spend time and resources on network activities and coordination [2]. Each member country therefore must recognise the legitimacy of the network and take sufficient ownership of the required policy and management activities. In this paper, legitimacy is understood as 'the right to exert power'[3]. This right can be understood both in a normative and empirical sense. The former, from the perspective of democratic theory questions if an actor has a right to exert power, i.e., is it representative of constituent interests and/or historically effective in meeting those interests? The latter examines an actor's perceived right to exert power from the perspective of a particular actor. Previous work on international organisations, primarily from the perspective of the public, indicates that social trust, democratic organisation, and how these are influenced by prior communication and beliefs compatible with the mission and values of the initiative are likely to foster legitimacy, and the absence of these make an initiative or actors less likely to be seen as legitimate [4-7]. Work on the legitimacy of organisations from the perspective of expert stakeholders found an organisations performance, their purpose and procedure to all drive legitimacy [8]. These factors, and especially

medRxiv preprint doi: https://doi.org/10.1101/2023.03.06.23286634; this version posted March 9, 2023. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

performance, explained perceptions of effectiveness and confidence in organisations as well [8], aligning with the findings on the role of trust, democracy, and communication and belief in increasing legitimacy.

In this paper, we examine QCN's legitimacy in advancing policy and improving services—from the perspective of QCN country teams and in particular the national governments departments that led them— across four of the involved countries: Bangladesh, Ethiopia, Malawi, and Uganda. Specifically, we investigate QCN's legitimacy by analysing the nature of the interactions across global, national, and local network actors engaged in QCN. Consequent to QCN's legitimacy we also investigate the ownership and direction of strategies adopted in each country, and how embedded the work of the network is in the health system (routine care) of each country [9]. We consider the context of each country in our investigations.

This paper on network legitimacy and ownership is part of a series of papers evaluating the QCN and complements our papers on network emergence [10] and network effectiveness [11] [additional file: 2-page summary explaining collection of QCN papers]. Following the emergence of the network at global and national levels [10] this paper looks at interactions between the institutions involved in each country, and the global level, which is key to understanding network effectiveness, as well as specific aspects of the work of the network such as innovation, sharing and learning [12] and our stakeholder network analysis [13], looking at interactions between QCN actors from a quantitative perspective. Understanding the factors shaping legitimacy of QCN is important both for understanding the emergence and effectiveness of QCN, and for the success of future multilateral international efforts that bring governments and multiple stakeholders together to improve health systems and quality of care, and for work on other initiatives more broadly.

Methods

QCN emerged during 2017-2019, involving 11 countries, and was disrupted by the COVID-19 pandemic [10]. Our study was carried out at national and local levels in Bangladesh, Ethiopia, Malawi and Uganda as well as

medRxiv preprint doi: https://doi.org/10.1101/2023.03.06.23286634; this version posted March 9, 2023. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

94 at the global level of QCN. We chose these four countries as case studies as they represent a range of
95 maternal, newborn and child health contexts and prior histories with quality improvement efforts. Our study
96 is qualitative research, and involved, over three years (2019-2022) an iterative series of interviews of key
97 stakeholders, observations of meetings at local and national levels, document review and hospital
98 observations. The iterative nature of our work, which included follow-up interviews of many respondents
99 over several years during the evolution of QCN, with accordingly iteratively revised interview topic guides,
100 enabled us to investigate how institutional interactions and consequent legitimacy and embeddedness of the
101 network changed over time, up until 2022. The COVID-19 pandemic also disrupted our research, though like
102 QCN itself, some work, such as interviews, moved online [14]. Please see supplementary material [common
103 methods document] for details of all data collection methods and how this study is linked to the wider
104 evaluation of the QCN we undertook. Here we focus on the framework and theories we use and our analytical
105 methods for this paper.

106

107 *Legitimacy frameworks*

108 To guide our analysis, we developed a framework (Figure 1) drawing on three relevant frameworks. First that
109 by Tallberg and Zurn [4] which conceptualizes legitimacy of international organisations as being dependent
110 on their features (authority, procedure, performance), the legitimation process (intensity, tone, narrative),
111 and legitimacy beliefs of audiences (constituents and observers). Second, by Nasiritousi and Faber [8], which
112 looks at legitimacy in terms of the focus of institutions on a problem, looking at purpose, procedure, and
113 performance of institutions. We use this to consider how the history of work on quality improvement in each
114 country by the institutions involved in QCN relates to observed legitimacy, ownership and embeddedness of
115 QCN in the country. Third, a framework developed by Sanderink and Nasiritousi [15] to characterize networks
116 in terms of perceived institutional interactions. This divides institutional interactions into political, normative,
117 cognitive, behavioural and 'impact level' interactions. We focused on three of these interactions, political,

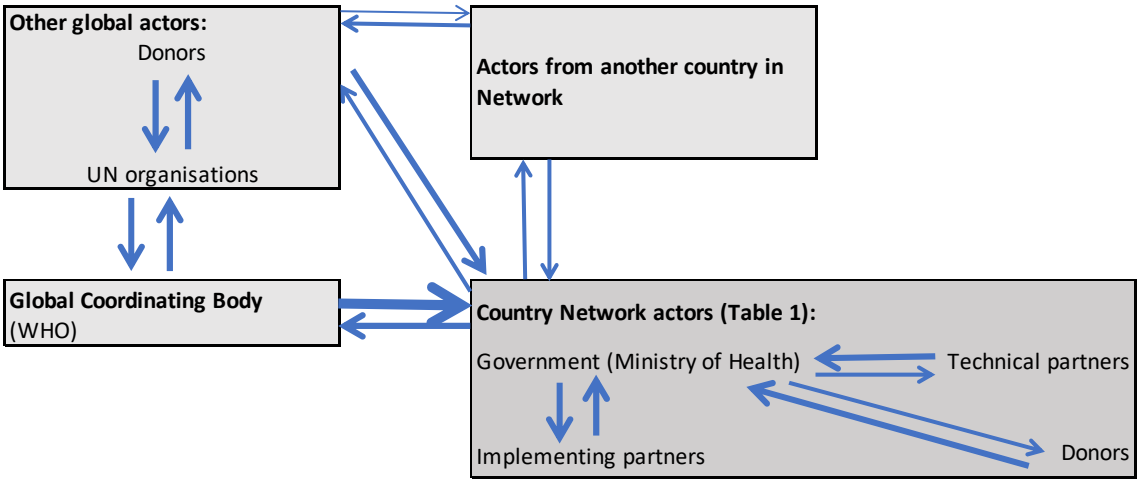
medRxiv preprint doi: https://doi.org/10.1101/2023.03.06.23286634; this version posted March 9, 2023. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

118 normative and cognitive (Figure 1) to investigate the legitimacy and ownership of the work of the network in
119 each case study country, looking at the extent to which different organisations involved in the network work
120 together across these three dimensions. Political interactions are those related to joint decision making and
121 collaboration; normative interactions are those related to shared principles, norms and commitments; and
122 cognitive interactions are those related to information sharing and transfer of ideas [15]. We do not focus on
123 behavioural or impact level interactions as behavioural change and impact are difficult to measure and are
124 concerned with network effectiveness, the subject of another of our papers [11].
125
126 Institutional interactions may also be shaped by power relations between institutions, which may be
127 dependent on the capacity of each institution [16, 17], e.g., institutions with greater capacity have more
128 power to form policies and influence decisions and ways of working of other organisations. In our
129 examination of interactions between institutions we also consider the nature of institutional agency and
130 power in relation to structure, by considering distribution of financial and economic resources, organisational
131 culture and ways of working, alignment of goals between actors, leverage via other agreements and
132 influences and political stability (Figure 1).
133
134 We consider the history of quality improvement efforts in each country in relation to the formation of the
135 network and wider context of maternal, newborn and child health programmes in detail in supplementary
136 material common to all papers in our QCN evaluation series [common country context document]. In this
137 paper we extract the most relevant aspects of this background information explaining the role of institutions
138 involved in QCN at the beginning of our results section and follow with the results of our analysis of
139 institutional interactions, legitimacy and ownership of the work of the network described above.
140

medRxiv preprint doi: https://doi.org/10.1101/2023.03.06.23286634; this version posted March 9, 2023. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

Fig 1. Framework describing drivers of legitimacy and ownership of the work of Quality of Care Network (QCN) from the perspective of national governments leading the work of QCN

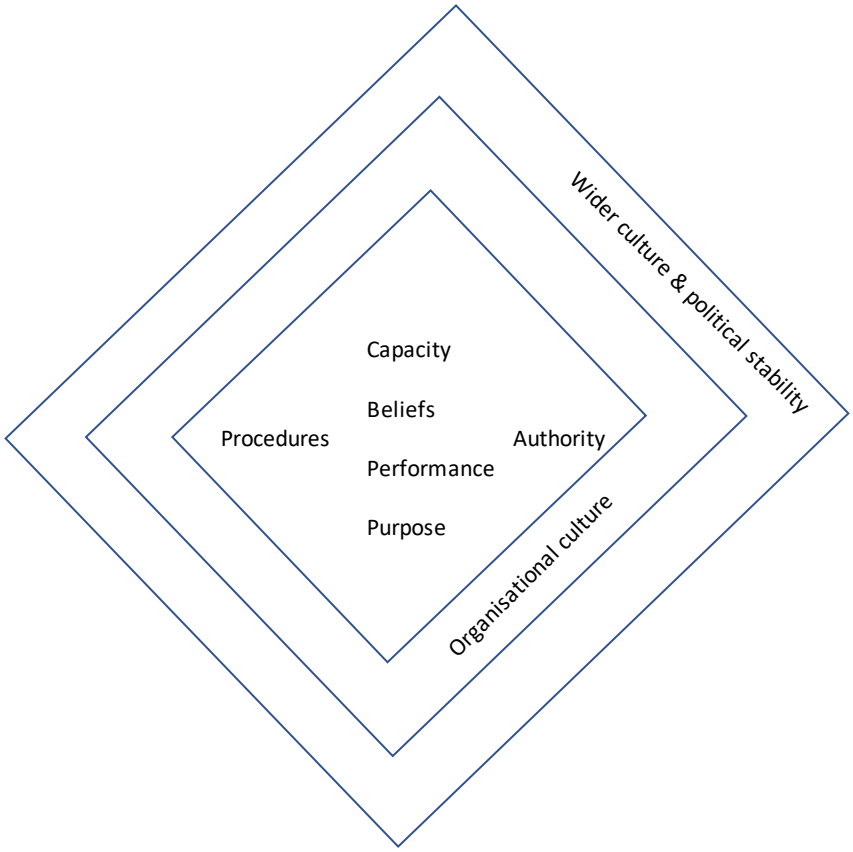
medRxiv preprint doi: https://doi.org/10.1101/2023.03.06.23286634; this version posted March 9, 2023. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.



Arrows represent Institutional Interactions, including: **Sanderink & Nasiritousi [5]**
Political Interactions
Normative Interactions
Cognitive Interactions

Extent of influence of each body and actor (width of arrow) will depend on:
- Capacity [see Wu et al, ref XX, Paper 6, ref XX] e.g. Human resources available in country to draft policy and programmes, organise activties, analyse and evaluate processes and outcomes
- Alignment of goals between actors (**beliefs**, organisational **purpose**)
- Leverage (**authority**) via other agreements and influences, and **procedures**
- Organisational culture and wider cultures
- Political stability
- **Performance** of organisations

Nasiritousi & Faber [6] **Tallberg & Zurn [Ref X}**



medRxiv preprint doi: https://doi.org/10.1101/2023.03.06.23286634; this version posted March 9, 2023. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

Analysis

We used thematic analysis [18] of interview transcripts and process tracing [19] using interview data, review of key documents and observations of meetings to characterise political, normative and cognitive interactions between institutions involved in QCN in each country. We compared and contrasted these interactions in a cross-case synthesis to determine salient features of these institutional interactions in order to evaluate the legitimacy of the network and ownership and embeddedness of the work of the network in each country, and which contextual factors they depend on, to answer our research question.

Ethics

Ethical approval was received from University College London Research Ethics Committee (ref: 3433/003); BADAS Ethical Review Committee (ref: BADAS-ERC/EC/19/00274), Ethiopian Public Health Institute Institutional Review Board (ref: EPHI-IRB-240-2020), National Health Sciences Research Committee in Malawi (ref: 19/03/2264) and Makerere University Institutional Review Board (ref: Protocol 869). The conduct of the evaluation was based on clear ethical standards which assured confidentiality, privacy, anonymity and informed consent. All respondents provided verbal or written informed consent. All respondents were informed of: (i) the purpose of the evaluation; (ii) their right to refuse to participate; and (iii) that their possible decision not to participate would not be held against them or affect their status in the network.

Results

In examining QCN's legitimacy, we first summarize key contextual information concerning the roles of each network partner institution in each of the country cases; further details on QCN's emergence in each of the countries, as well as their histories concerning quality improvement and MNCH initiatives are provided in

medRxiv preprint doi: https://doi.org/10.1101/2023.03.06.23286634; this version posted March 9, 2023. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

166 Shawar *et al* [10] and the supplementary material [common country context document]. We then discuss the
167 political, normative and cognitive interactions between involved actors.

168

169 *Bangladesh*

170 Bangladesh's work on and government commitment to quality improvement long pre-dates the
171 establishment of QCN. In terms of government commitment, the Quality Improvement Secretariat (QIS),
172 established by the Ministry of Health and Family Welfare (MoH&FW) in January 2015, supports quality
173 improvement (QI) initiatives across the country and strengthens and coordinates QI activities in the public
174 and private health sector. QCN was integrated into QIS. In addition to QIS, there were several development
175 partners that have long worked on quality improvement in the country, including WHO, UNICEF, USAID and
176 Save the Children. UNICEF worked in partnership with the Bill and Melinda Gates Foundation and the Ministry
177 of Health (MoH) since 2015 to demonstrate a model of quality of care to scale up at national level via its Every
178 Mother, Every Newborn (EMEN) pilot project in Kurigram (one of the northern districts in Bangladesh) [20].
179 Save the Children is a key implementer of USAID's Mamoni Maternal, newborn and child health strengthening
180 project (MNCSP), a flagship activity to support the Bangladeshi Maternal and Newborn Health program,
181 started in 2018 [21]. These actors collectively engaged in the establishment and implementation of QCN
182 activities. Other actors, that did not appear to interact directly with QCN but contributed to QI
183 implementation processes included UNFPA, the National Institute for Preventative and Social Medicine
184 (NIPSOM) and district-level Civil Surgeons. NIPSOM is a government academic institution invited by UNICEF
185 to play the role of national learning hub. NIPSOM was also working as implementing partner with UNICEF's
186 support, and participated to train and coach facility health workers. URC from the global level also worked to
187 train and coach health workers, especially during the initial stages of QCN, and sometimes via online sessions.
188 The Civil Surgeon is the district head in health and implementing partners run the projects informing him of
189 every detail. UNFPA works on Maternal and Perinatal Death Surveillance and Response (MPDSR) at the

medRxiv preprint doi: https://doi.org/10.1101/2023.03.06.23286634; this version posted March 9, 2023. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

national level along with other partners, but not part of QCN activities. Relevant departments of the Directorate General of Health Service (DGHS) and Directorate General of Family Planning (DGFPA), also get involved by two partner organizations.

Ethiopia

Ethiopia also had a history of MNCH and quality improvement initiatives prior to the introduction of QCN [2]. For example, in 2015, the government introduced the Health Sector Transformation Plan (HTSP), which sought to improve maternal and child health services. In 2016, the National Healthcare Quality Strategy (NHQS) was launched, followed by the establishment of quality units at federal, regional, district and facility levels. The country also had experience with similar network initiatives, including the Ethiopian Hospitals Alliance for Quality (EHAQ), initiated by MoH in 2012 [22]. In 2016, QCN was placed in the MoH, which played a leadership role in coordinating and providing technical support, coaching and mentoring for quality improvement activities. It established a technical working group (TWG) consisting of representatives of different partners and prepared a national roadmap called LALI (Leadership, Accountability, Learning, Implementation, alternatively used to LALA) [23] and identified learning facilities. QCN eventually became a country-led program, mainly coordinated by the MoH, with institutions, including international donors, and NGOs either funding or providing technical support at national level (for example WHO, UNICEF, USAID and UNFPA) or implementing the program at the facility level (these include IHI, Transform Primary Health Care Unit (Transform PHCU), Transform Health in Developing Regions (Transform HDR), CHAI, and WHO). WHO played a vital role in initiating, directing and coordinating the implementation together with MoH. WHO also provided technical and financial support for some of the local facilities, up until 2021 when WHO ceased their QCN activities in Ethiopia. It also served as a link to the WHO headquarters and the QCN at the global level. UNICEF and UNFPA play the role of financial partners.

medRxiv preprint doi: https://doi.org/10.1101/2023.03.06.23286634; this version posted March 9, 2023. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

Malawi

In Malawi, QCN built on previous government and partner efforts to reduce maternal and newborn mortality as part of the MDGs/SDGs, as well as efforts towards achieving universal health coverage (UHC) and work done on HIV to trying to reduce mother-to-child transmission [24]. In November 2016, the government established the Quality Management Directorate (QMD) within the Ministry of Health, where QCN was placed. QMD aimed to contribute to improve health and client satisfaction via provision of quality health services and to drive the national agenda to improve quality and equity in the health sector in Malawi. After introducing the QCN to the MoH, the WHO assisted the Ministry in gathering key stakeholders, which formed a coordinating body (TWG) in charge of planning the implementation of QCN in the country. Other key stakeholders at the national level include the Reproductive Health Directorate (RHD) of the MoH, UNICEF, UNFPA and GIZ. RHD was a technical partner and worked with QMD in supporting and coordinating network efforts though they were less visible in QCN efforts over time. GIZ and UNICEF were playing the roles of implementation, technical and funding partners and also supported other community-based organizations (e.g. Society of Medical Doctors (SMD) and MaiKhanda) directly to implement QoC activities. UNFPA was providing technical assistance to develop policies and strategies, providing funding to RHD and QMD, and playing the role of an implementing partner. Other stakeholders who also played substantial roles at the national level include PACHA, NEST 360, ONSE, and Cowater where PACHA was playing both the role of technical and implementing partner and other organizations were working in implementation. JHPIEGO, CHAI, Save the Children and EGPAF assisted to review the roadmap.

Uganda

medRxiv preprint doi: https://doi.org/10.1101/2023.03.06.23286634; this version posted March 9, 2023. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

235 QCN in Uganda built upon a long history of QI initiatives that remain ongoing, particularly those focused on
236 HIV, reproductive health, and malaria. Previous QI initiatives in Uganda were Yellow Star and using the 5S's
237 (sort, set, shine, standardize, and sustain) approach in HIV, TB and malaria, which established QI teams at
238 each level of the health system as well as specific standards, indicators and databases. Uganda's commitment
239 to improving MNCH was exhibited in its 2013 RMNCAH Sharpened Plan for Uganda, a national RMNCAH
240 policy which set out to address existing bottlenecks to reduce MNC morbidity and mortality [25]; the updated
241 plan in 2021, sought to especially focus on quality of care.
242
243 QCN was originally co-led by the government's Quality Assurance Department and MCH department. QCN
244 only began to_flourish in 2019 after the renaming of the Quality Assurance Department to the Standards
245 Compliance Accreditation Patient Protection (SCAPP) department under the Directorate of Governance and
246 Regulation, and assigning it sole oversight and appointing a focal person for QCN, who brought more partners
247 and funding on board. In this new arrangement, SCAPP would still work with the other departments but took
248 responsibility for Network activities. In line with the country's decentralised health system regional quality
249 improvement teams (QIT) were established, which aimed to lead and support district and health facility
250 QITs. Several implementing partners played crucial roles in QCN in Uganda. The WHO introduced the QCN
251 to the MoH and helped gather key stakeholders to form a TWG. Other key stakeholders in the country at the
252 national level, included USAID, UNICEF, UNFPA. USAID worked through their partner organisations in Uganda:
253 URC (previously) through Applying Science to Strengthen and Improve Systems (ASSIST) RHITES (North for
254 Acholi region and East central for Busoga region), RHITES-Southwest/EGPAF, Save the Children and FHI
255 (specifically under the MNCH/N activity). UNICEF and UNFPA also supported other organisations (CBOs) to
256 directly implement QoC activities, e.g., AVSI and IntraHealth. Over the course of 2021, UNFPA increased its
257 involvement with QCN and decided to formally enter the network rather than mirror its work independently.
258 Other stakeholders who also played substantial roles at the national level were the Makerere University

medRxiv preprint doi: https://doi.org/10.1101/2023.03.06.23286634; this version posted March 9, 2023. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

School of Public Health as the designated learning partner on the Network, CHAI, JHPIEGO, and Ugandan professional associations including the Ugandan Paediatric Association and the Uganda Private Midwives Association. Another stakeholder playing a large role in the QCN in Uganda indirectly, was the World Bank through its GFF, which funded MOH's URMCHIP project, though it was not a direct QCN partner. Most involved partners requested to join the network themselves and were already Ministry partners on SRMNCAH issues.

QCN Legitimacy Within and Across Countries

QCN's legitimacy is understood to be comprised of several types of interactions: political, normative, and cognitive. We first present our findings on political interactions, then normative interactions, and finally cognitive interactions, bearing in mind how the extent of the institutional interactions will depend on the capacity, beliefs, performance, purpose, procedures and authority of each organisation, it's wider organisational culture, and wider culture and political stability of the country (Figure 1). The presence (X) or absence (blank) of these types of interactions between the major institutions mentioned above, is summarized in Table 1, both for institutions within each country, and from the country to other countries in the network or the global level. All of these interactions drive (Figure 1) and reflect legitimacy of the QCN in each country, whilst for government ownership and embeddedness of the QCN in each country we are specifically interested in sharing of resources and transfer of concepts from the national level to other network countries or the global level of the network.

medRxiv preprint doi: https://doi.org/10.1101/2023.03.06.23286634; this version posted March 9, 2023. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

279 **Table 1: Types of institutional interactions observed in case study countries**

Interaction type	Bangladesh		Ethiopia		Malawi		Uganda	
	Within country	Bangladesh to^ other network countries or Global level	Within country	Ethiopia to^ other network countries or Global level	Within country	Malawi to^ other network countries or Global level	Within country	Uganda to^ other network countries or Global level
Political interactions								
- Collective decisions	X	X	X	X	X	X	X	X
- Collaborative efforts	X	X	X	X	X	X	X	X
- Resource Sharing^	X		X		X		X	
Normative interactions								
- Shared commitments	X	X		X		X	X	
- Shared norms	X	X					X	
- Common principles	X	X		X		X	X	X
Cognitive interactions								
- Exchange of information	X	X	X		X	X	X	
- Transfer of concepts and methods^								

280 ^For our analysis of government ownership and embeddedness of the QCN in each country we are specifically interested

281 in sharing of resources and transfer of concepts from the national level to other network countries or the global level of

282 the network

283

medRxiv preprint doi: https://doi.org/10.1101/2023.03.06.23286634; this version posted March 9, 2023. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

Political Interaction

The political institutional interactions we examined included those related to collective decisions, collaborative efforts, and resource sharing among key network partners across local, national and global levels. Political interactions between QCN institutions appeared strong in all four case study countries.

Collective Decisions

Collective decisions, evidenced by a Memorandum of Understanding (MoU) or joint statement for example, should be artifacts of any multi-stakeholder network [15] and both bolster and reflect legitimacy of the network. Collective decisions were observed at the global level as the network emerged, where all partners had an agreement with the WHO-based QCN secretariat regarding the formation of the network. This suggests QCN legitimacy is linked to legitimacy of the WHO.

At the national level, partners of all case countries working for QCN implementation, including those in the private sector, have contracts or longstanding bilateral arrangements with the MoH and with each other. The prior performance of partner organisations in each country –their history of contributing to quality improvement efforts– influenced their contribution to collective decisions.

Implementing partners in each country usually co-produced knowledge, guidance and gave statements on key issues with the MoH but were keen for the MoH to be seen as taking the lead and were in support roles of the ministry's strategic and operational direction.

> *"In new districts, at first we have one to one interaction with leadership where we give some overview. After that, we organized an inception meeting, all of the leaders attended that meeting, and through that process, we make them oriented as well as engaged with our activities."* (Technical and Implementing Partner – National level – Bangladesh Round 3)

medRxiv preprint doi: https://doi.org/10.1101/2023.03.06.23286634; this version posted March 9, 2023. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

In Bangladesh, QIS and other partner organizations attended the follow-up meeting with WHO QCN secretariat together and sent a narrative report and working plan to the WHO QCN secretariat, which was a good example of joint work. Another example of a collective decision was observed in Ethiopia in identifying partners and selecting learning sites by MoH and WHO in country, at the initial stage of QCN.

Autonomous decision-making persists along with coordination and collective decisions. For instance, in Uganda, partners took the autonomous decision during the selection of sites for scaling up. Bangladesh also experienced independent decision-making (e.g. selecting scaling up areas) and influence on MoH (e.g. joining the network, running capacity building activities by NIPSOM) in decision-making by the partners. The partners in Malawi also seem to have a lot of autonomy concerning decisions of which activities they will support and where. Similarly, Ethiopia also has the experience of autonomous decision-making on site selection since the selection of facilities was made based on partners existing support or pre-existing support by another project.

Collaborative efforts

Collaborative efforts include co-organizing events, co-coordinating activities, or co-authoring publications. Partners across global, national and local levels, and especially key national level partners in all four case study countries displayed strong collaborations. Cohesive participation in developing the forthcoming National Health Quality Strategy (NHQS) by all key partners at the national level in Bangladesh was observed for instance, though USAID was steering the strategy and communicating with different directorates as well as the WHO global network.

Developing QCN roadmaps in Ethiopia, Malawi and Uganda were the result of collaboration between QCN partners and in Uganda, this collaboration at the national level increased after MoH's leadership transition

medRxiv preprint doi: https://doi.org/10.1101/2023.03.06.23286634; this version posted March 9, 2023. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

which also made clear roles and responsibilities of the different units. Many respondents expressed their realization of the importance and benefit of QCN setting-up opportunities for collaboration.

Co-organizing different events, workshops and training were common across all study countries though the events were led by different partners depending on the topics. For example, in Bangladesh, national events were mostly led by government; they led in agenda setting and decision-making, and development partners supported technically and/or financially, so they could push the government to organize such types of collaborative events. Such financial and technical support to proceedings provided development partners authority to strategically influence QCN, though, as in Bangladesh, government often set the agenda and made the decisions on what was implemented and by which organizations. This was not always the case though. Two perspectives were observed regarding funding and decision-making in Malawi - influence of development partners in implementation and conditional funding, which is experienced through UNICEF, and reliance on partners for direction.

> *".....we are hoping that partners like UNICEF, GIZ would come and say; 'okay, what will be our direction?' This is because other than WHO, we need to engage other partners"* (Government - National level - Malawi Round 3)

Sharing resources

At the global level, BMGF and USAID were the primary funding partners. BMGF primarily supported through funding the WHO-based QCN secretariat and UNICEF for national implementation. Later, BMGF did not fund network activities beyond the global secretariat which shrunk the implementation activities in UNICEF funded countries and spaces though they overcame this quickly through alternative funds. For instance, in Bangladesh, BMGF was the primary funder for the Kurigram project, while they also worked in 5-6 other districts with funding from Global Affairs Canada and the UN Emergency Fund for the Rohingya in Cox's

medRxiv preprint doi: https://doi.org/10.1101/2023.03.06.23286634; this version posted March 9, 2023. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

Bazaar. USAID funded QI efforts in-country via the MoMENTUM award, a global initiative covering 30 countries including Bangladesh and Malawi (but not Ethiopia as MoMENTUM award was not running there and Uganda because of their own system) that will continue some of the QCN activities after QCN funding stops in 2022-2023 [26], with funding going directly to implementing partners rather than MoHs. Involvement of most funding partners in all four case countries was either via the continuation of previous QI efforts or MNCH activities, or via alignment with QCN activities (e.g., Mamoni project in Bangladesh). QI was also incorporated into pre-existing work, for example, World Bank/GFF supported funding for QI activities in Uganda, but they didn't really align themselves with QCN activities.

Funding or sharing resources at the national and local levels is catalytic. In addition to receiving direct budget support from donors, it was common for partners in all four case study countries to mobilise their own resources, though the amount of resources varied across countries. Since there was no specific budget for QCN in Ethiopia, partners were using their own budgets earmarked for other similar QI activities to prepare learning sessions and support facilities. Big partners like USAID, UNICEF, WHO, Save the Children also provided human resources support through providing direct funding to the government or through implementing partners or by themselves at the national and/or facility level in all countries.

> *"We provided funding to the government directly to hire additional human resources like officers for/located at the regional hospitals"*. (Technical and Implementing partner – National level - Uganda Round 1)

Except human resources support, partners also provided logistics and financial support and additionally, in some cases, support in the reconstruction and renovation of different facilities for MNH services across our four case countries. Pooling resources depended on necessity and on the ministry's request and/or facility manager's request. For example, in Ethiopia, rather than focusing solely on quality, all activities were

medRxiv preprint doi: https://doi.org/10.1101/2023.03.06.23286634; this version posted March 9, 2023. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

379 considered such as project design, implementation planning, and so on and when a need developed, such as
380 when the government requests assistance or when gaps exist, donors such as UNICEF helped to fill those
381 gaps, either in kind or cash. In Bangladesh and Malawi, partners also directly provided resources (e.g.,
382 equipment) to learning sites. In Uganda, partners pool their resources at the national level for QCN activities
383 but previous funding experiences and prevailing implementing partner working arrangements with MOH,
384 including tight timelines and targets, led funders to prefer directly funding their own QI initiatives whilst
385 ensuring alignment and reporting to MOH priorities.
386
387 Domestic resources have been used for QCN activities in Ethiopia and Bangladesh in MoH or development
388 partner's initiatives. In Ethiopia, MoH eventually shared some budget with the regions. However, having
389 financial autonomy, some of the regions used the money for other purposes. On the other hand, one partner
390 in Bangladesh succeeded to convince the National Institute of Local Government (NILG) to properly utilize
391 their budget for MNH. Our meeting observation and interview showed that Save the Children succeeded to
392 do it by engaging NLGI's in different events, like, advocacy meetings, establishing functional linkage between
393 health and family planning departments and NLGIs, engaging them in data-driven decentralized planning and
394 regular communication and follow-up. This helped to develop ownership by local government and
395 contributed to sustainability. Such type of devolved funding was not observed in Malawi or Uganda. This
396 suggests that the organizational and political culture of the MoH –their willingness to allow devolution or
397 flexibility of funding– influences allocation of resources for QCN activities and reflects the extent to which
398 the local level of QCN implementation was seen as legitimate by governments in each country.
399
400 However, our interviews and observations indicate that resource allocation was not sufficient in most
401 facilities to run QCN activities smoothly. In Uganda, there was a common theme that the global level of QCN
402 did not consider the physical constraints or level of rapid resourcing needed from the government to be able

medRxiv preprint doi: https://doi.org/10.1101/2023.03.06.23286634; this version posted March 9, 2023. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

403 to achieve the goals and meet the standards, particularly around experience of care. A similar claim regarding
404 organizational and structural capacity, came from respondents in Bangladesh.

405

406 ## Normative Interaction

407 The commitment, norms and principles of all QCN actors of all countries overlapped with national goals and
408 were consistent with previous works that have been discussed in the background section. However, all
409 agreed that network activities gave them more impetus to act and be accountable at global level. All the
410 actors sought synergy though they didn't always experience synergy in terms of joint working on
411 implementation and achievement of goals.

412

413 The governments of participating countries were leading the QCN through their commitment for improving
414 quality of care and adaptation of the Network's strategic objectives to their country contexts through growing
415 the partnership with the different organizations. All case study countries also adopted and adapted the QoC
416 standards considering their own country context, led by MoH or the responsible department of MoH [11].
417 Each country had exposure to QI activities through partners and mostly previous partners were working on
418 network implementation. This was supposed to be beneficial, but this was not always the case. For instance,
419 in Uganda, new coordination of actors was required as initial lack of clear coordination led to many
420 participants reporting a lack of awareness or sense of cohesion. While participants at the national level were
421 aware of and unified behind the QCN's goals, there was often a sense that each actor was continuing to
422 operate in its predetermined silo at sub-national level. Another challenge in design for Uganda's in-country
423 approach was that facility-level stakeholders, especially frontline workers were not fully oriented to the QCN
424 separately; but rather some network activities were mainstreamed into other existing standard operating
425 procedures, practice guidance or QI initiatives implemented by other implementing partners. A lack of a
426 standardized implementation plan, including a clear set of timed targets, made it difficult to ensure alignment

medRxiv preprint doi: https://doi.org/10.1101/2023.03.06.23286634; this version posted March 9, 2023. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

and cohesion around QI at all levels of the network in Uganda. One MoH participant reflected that having clear, time-bound and measurable commitments would have increased motivation and momentum by encouraging accountability. However, this situation was not static: our last round of data indicated better coordination and leadership from the centre.

Ethiopia experienced similar challenges throughout the entire implementation period. At the start of QCN, most of the actors in Ethiopia perceived network activities as WHO's work until the MoH announced it was their flagship initiative. In Ethiopia there was some disconnect between the federal and regional levels. The federal level and regional level blamed each other. The regional level complained that the central (federal) level didn't share anything or give clear direction, nor assign them with responsibilities properly, and that made them see the work as the federal level's project. On the contrary, the federal government was complaining about the regional level's lack of commitment whilst the regional level associated this with lack of capacity. In addition, regional level informants also mentioned they had a minimal sense of ownership.

> "…..*the MoH announced the QCN program in their own; they simply ask us to send them one or two participants in a meeting*." (Government-Regional level-Ethiopia Round 1)

In the initial phases of QCN emergence, lack of coordination was also observed between the quality improvement and MCH departments of MOH. However, this was to improve later after a clear allocation of roles and responsibilities was undertaken. Lack of clear direction to the sub-national level was observed as a reason for slow inception of activities at local level in Malawi. Less concentration and poor political commitment of central level gradually made the RHD less active. Besides this, involvement of numerous partners, and persistence of discrepancies between the partners' and local objectives, created difficulties to coordinate and consolidate various efforts.

medRxiv preprint doi: https://doi.org/10.1101/2023.03.06.23286634; this version posted March 9, 2023. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

Evidence showed that implementation activities in Bangladesh were mostly 'DP [Development Partner] centric' despite the government chairing the QCN. Like the other three case study countries, awareness was mostly at central level, and the network was not known to most of the sub-national level actors who perceived the activities as partner's work. This perception was, however, transformed progressively though not entirely, through meetings, workshops, and training organized by implementing partners, and when health workers at facilities started to comprehend the benefits.

The above findings indicate that the beliefs of network actors about the purpose of QCN influence its legitimacy. This is exemplified at the local level, where the network was less well known by many health workers, and consequently had less authority.

Cognitive Interaction

It was expected in the network that all pathfinder countries will be willing to transparently share data within the network, have a desire to learn and develop, and that the international actors and countries will join to learn from one another. Good synergy was expected, but rarely materialized beyond sharing information through implementing-partner-led efforts. This may be due to lack of government capacity to assemble, manage, analyse and share information and adapt programming quickly in response, organizational cultures unused to such dynamic network-dependent decision-making, or both. Overall, the lack of transfer of ideas and concepts between institutions and countries involved in QCN illustrated limits to the network, and the embedding of QCN work in government health systems.

Exchange of information

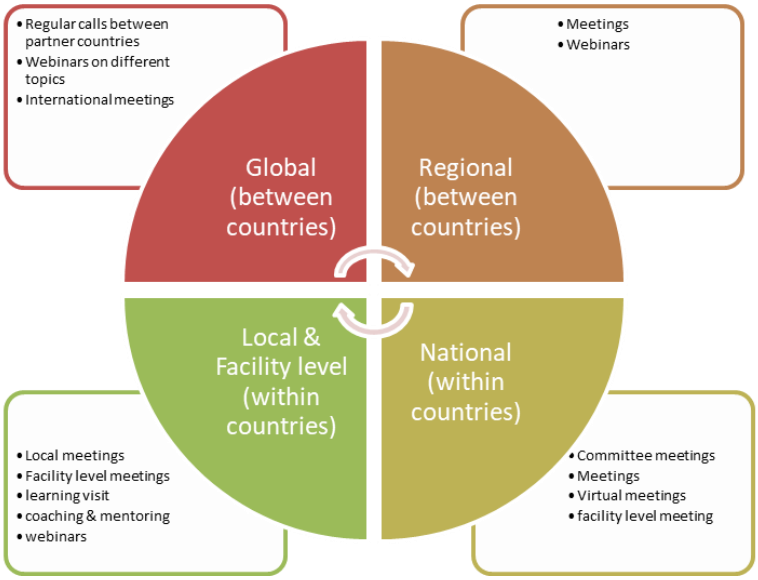
Learning and sharing occurred between and within countries and at various levels: global, regional, national, sub-national, district, sub-district and facility level. Here, sub-national, district, and sub-district levels are

medRxiv preprint doi: https://doi.org/10.1101/2023.03.06.23286634; this version posted March 9, 2023. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

identified as local level (Figure 2). To continue the learning within country, district level learning networks were established in Bangladesh (in 2020) and Ethiopia (in 2019) [2]. A national level learning hub was also established in Bangladesh. QCN had a learning platform at global level and other methods of learning and sharing included: i) regular calls between partner countries and the QCN Technical Working Group (TWG) where countries share implementation progress and challenges, ii) a topical webinar series co-organized with partners, with a focus on sharing national level experience and know-how, and iii) in-person global level meetings where all global partners and network countries send delegations of eight to ten people [12].

medRxiv preprint doi: https://doi.org/10.1101/2023.03.06.23286634; this version posted March 9, 2023. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

484 **Figure 2 QCN learning and sharing methods at global, regional, national and local levels**



485

486

487 Exchange of information between countries was executed by all case study countries through regular calls
488 and international meetings. From Bangladesh, TWG representatives attend the meetings. The QCN
489 secretariat usually communicated with the focal person of development partners, and they coordinated and
490 joined meetings along with the MoH. The MoH and development partners then shared updates on
491 implementation activities in country with the QCN secretariat. In Uganda, the Ministry of Health and the
492 WHO country office had weekly calls with the QCN global leadership and participate in network meetings,
493 and their interaction increased and improved over our study period.

494

495 Of our four case study countries, Bangladesh and Malawi participated and shared experiences in different
496 webinars initiated by the WHO QCN secretariat. MoH of Ethiopia and Uganda were initially reluctant to share
497 at the global level though they agreed subsequently. In Bangladesh, development partners mostly
498 coordinated it and included participants from local level also identified by them, with the consensus of the

medRxiv preprint doi: https://doi.org/10.1101/2023.03.06.23286634; this version posted March 9, 2023. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

MoH. However, the webinars were mostly "DP centric" as government stakeholders hardly attended. A national respondent in Bangladesh noted:

> *"Yeah! It's good but the government people don't have the time to attend/participate in this meeting. They don't want to talk, understand on this issue. So I think these are DP centric."*
> (Technical and Donor partner-National level-Bangladesh Round 4)

Though the learning platform is appreciated by most stakeholders, global participants mostly benefited and few stakeholders at national or local level attended.

All the partners including MoH, attended the global meetings, held during 2017–2019 before the COVID-19 pandemic, and shared experiences [12]. Key development partners of Bangladesh also attended other global or regional meetings and webinars to share their methods, experiences and learning. Uganda also shared with neighbouring countries at the initial stage of QCN in their country.

Information exchange within countries was experienced by all countries in diverse ways and at both national and local levels. However, these meetings are mostly initiated and financed by implementing or technical partners, and dependent on their support. For example, facility level meetings in Malawi were initiated and financed by implementing partners, so stopped functioning for lack of resources when partners stopped supporting them. Shortage of budget and mistrust between the ministry and the regions affected regional level meetings in Ethiopia. In all four countries, the MoH also conducted national level sharing and learning meetings including large collaborative learning sessions, and implementing partners undertook district collaborative learning sessions and facility-based learning visits to learning facilities within and between districts.

medRxiv preprint doi: https://doi.org/10.1101/2023.03.06.23286634; this version posted March 9, 2023. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

QCN was structured in Bangladesh and Malawi using already established national, subnational and facility level committees. Many of these were inactive though and started to be functional (mostly at the facility level) due to support and continuous focus by implementing partners.

Transfer of concepts and methods

Some respondents talked about adapting lessons from Bangladesh by other countries, though there was no evidence of transfer of concepts or methods by the study sites, i.e., neither the case study countries adopted learning from other countries nor other countries adopted learning from these countries.

Within countries, no one discussed implementation or adaptation of learning from other partner's quality improvement methods; rather all the partners' implemented QCN activities following their own approaches, and often in separate geographical silos. In Uganda, different partners operated in different regions and used different specific tools dictated by their different funding mechanisms. In Malawi, partners continued to support the kind of activities they had been doing before the launch of the QCN, working in similar areas. In Ethiopia, all partners used their own approaches, for example, one partner provided coaching every month, and another provided district-based coaching every quarter. Another one went to the districts from the center.

> "*Partners have their own interests; they all have different approaches that they follow. For example, we say learning collaborative should be prepared in three months. Some do it within six months. Some conduct coaching every month, the others do it quarterly. Therefore, it lacks uniformity.*" (Government - National level - Ethiopia Round 1)

The two key partners in Bangladesh were following two different approaches. However, at the initial stage of the study, one stakeholder of one development partner (UNICEF), mentioned about a cross learning process, where they have learned 5s-CQI-TQM from the other partner (Save the Children)'s previous planned

medRxiv preprint doi: https://doi.org/10.1101/2023.03.06.23286634; this version posted March 9, 2023. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

piloting area which was originally implemented by JICA Bangladesh. Similarly, the USAID team visited Kurigram as Kurigram was already established as a model district. A national respondent from Bangladesh noted:

> "*Many [stakeholders] from different districts came to Kurigram including the whole USAID team.....they visited Kurigram before they started the Project. They observed the measurement system including other good system*" (Technical, Implementing and Donor partner - National level - Bangladesh Round 1)

However, as our study progressed, no stakeholder talked about this type of visiting or learning. This may be due to a lack of embedding of such cross-learning in organizational cultures of institutions involved in QCN including the units of government ministries of health leading QCN in each country. Political instability, e.g., in Ethiopia, and the COVID-19 pandemic –in all countries– may also have contributed to QCN being unable to achieve significant cross-learning.

Discussion

We found political interactions to be good in all four case study countries supporting the legitimacy of QCN. In particular, collective actions and collaborative efforts were present both within countries and between countries, and between countries and the global level (Table 1). Resource sharing between QCN stakeholder institutions was also found within all four case study countries, though not between countries. Nonetheless, the dependency on development partners and donors for resources limits the reach and depth of the network when their support is withdrawn and may also impinge on government authority to lead QCN-related work. In Bangladesh, the situation may be different as the next operational plan for quality should come with a separate government budget. Normative interactions including shared commitments and

medRxiv preprint doi: https://doi.org/10.1101/2023.03.06.23286634; this version posted March 9, 2023. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

norms, and common principles were also observed in each of the case study countries, apart from shared commitments in Ethiopia, where there was some tension between the central (federal) and regional levels. Normative interactions extended between network countries and between network countries and the global level as shared commitment to achieving the goals of QCN and commitment to the WHO quality of care standards used by QCN. This built on shared commitments to global goals on maternal, newborn and child health over the last two decades and the legitimacy of WHO as a co-ordinating, technical and normative body driving, underpinning, and representing the global maternal, newborn and child health agenda.

In terms of cognitive interactions there was exchange of information within countries and between them, though bi-directional transfer of concepts and methods was more challenging and was generally absent within countries and between countries. Implementing partners typically implemented activities separately – using different concepts and methods, and in different geographical areas. This indicated the limits of government ownership of the QCN work and embeddedness of the network in that governments were not able to direct the work of the network to be cohesive. Specific activities were often determined by partners, differently in different areas dependent on which partner was operating where. Methods and concepts were not harmonised or synthesised and programmes of work often remained disparate and unconnected, despite the collaborative nature of the network and shared commitments indicated by the positive political and normative interactions. This lack of harmonisation and bi-directional transfer of concepts and methods may reflect lack of institutional capacity for this, or organisational culture not adapting to such new, networked, ways of operating. In many cases previous quality improvement efforts in the country, or district, and the partners that implemented them, shaped the specific work on quality for QCN.

Leadership at multiple levels to motivate individuals and to drive systems and policy and coordinate partner actions was identified by respondents as one of the core themes to drive the network [16]. QCN was

medRxiv preprint doi: https://doi.org/10.1101/2023.03.06.23286634; this version posted March 9, 2023. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

593 frequently said to align well with government policy and to promote partner alignment across all network
594 countries [16]. The leadership of QCN purposively identified and engaged NGOs that work on quality of care
595 in each country, and globally. Having access to adequate physical resources, financing health care, and
596 managing disruptive events all emerged as key drivers to network functionality [16].

597

598 Though the network aimed to link actors at facility level together and to those at district, regional and
599 national level, the periphery of the network was found to be weaker, have less power, and be less networked
600 [13] and coordinated than the central level. Our stakeholder network analysis found QCN to be a multi-hub
601 network with less connections between actors at the periphery, and most connections between the centre
602 and the periphery [13]. We also found the online learning platform to be predominantly used by global
603 stakeholders rather than those at the periphery of QCN [12] though those at district and facility levels were
604 occasionally involved in collaborative learning sessions and learning visits. Actors at the periphery have
605 limited power to change or improve local systems that are dependent on the central level (e.g., provision of
606 human resources, procurement). The network did facilitate sharing of resources between partners and
607 providers at local level though in some cases. However, state (MoH) actors at local and national levels lacked
608 power to coordinate or pool such inputs. Together, these finding suggest that whilst the network was strong
609 at global and national levels and useful for advocacy and sustaining the policy-profile of QCN objectives it did
610 not often extend to influence day to day changes in practice at facility level. Organisational culture, and
611 beliefs of network actors about the purpose of QCN may also have influenced its legitimacy, and consequent
612 reach, at the local level.

613

614 We found the presence or absence of political, normative and cognitive interactions and resultant relatively
615 high legitimacy of QCN and relatively low ownership and embeddedness of the work by governments to be
616 similar across Bangladesh, Ethiopia, Malawi and Uganda. There were a few notable differences though

medRxiv preprint doi: https://doi.org/10.1101/2023.03.06.23286634; this version posted March 9, 2023. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

including history of quality improvement in maternal, newborn and child health [10], different roles of different partners, and learning and sharing at the sub-national level. For example, the MoH in Ethiopia played an apparently leading role to run QCN activities and took the full leadership role since 2021 when WHO in country shrunk their activities in Ethiopia. Learning and sharing at sub-national level was experienced in Bangladesh more frequently than the other three countries.

Prior work has looked at legitimacy of agenda setting and prioritising specific issues in global health, for example, non-communicable diseases [27]. Prior work has also looked at legitimacy of specific organisations working in global health, for example the World Health Organisation [28, 29], or Bill and Melinda Gates Foundation [30], and has looked at the power relations involved [3]. In this study we examine the legitimacy of an implementation-focused network (QCN). Drawing on prior work described in our methods section [4, 8, 15, 17], we developed a framework to look at network legitimacy in terms of political, normative, and cognitive interactions between institutions involved in the network and determinants of the presence and strength of such interactions. We hope this framework may be useful in characterising the legitimacy of other implementation focused networks and the institutional interactions involved. The related concept of alignment may also be useful to consider going forwards as it has much in common with the concept of legitimacy. As described in a scoping review by Lundmark and colleagues [31], alignment has both structural (aligned plans and organisational structures) and social (cognitive, emotional and behaviour alignment of actors) dimensions and can be thought of as the process of creating a fit between inner and outer contexts of a system. Strategies to improve alignment include those pertaining to design and preparation, contextualisation, communication, motivation and evaluation of implementation efforts [31]. QCN has had some success so far in most of these areas [11, 26].

medRxiv preprint doi: https://doi.org/10.1101/2023.03.06.23286634; this version posted March 9, 2023. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

Recent work to develop a common understanding of networks of care reflects our findings by highlighting the importance of agreement, purposeful arrangements, buy-in and trusting relationships as enabling factors [32]. When assessing the results of applying their framework to consider the effectiveness of multi-stakeholder partnerships for renewable energy, Sanderink and Nasiritousi found that sharing of procedural information and coordination mechanisms were most fruitful, though care was needed to ensure such interactions didn't harm the autonomy or efficiency of multi-stakeholder partnerships [15]. Our separate investigation of the effectiveness of QCN [11], and investigation of the legitimacy and embeddedness of QCN in this paper, reflects this: we found leadership and coordination aspects of QCN to be particularly strong and effective [11], whilst in this paper we find government autonomy is needed to embed and sustain the work of QCN to improve quality of care.

Key strengths of our study are the longitudinal iterative nature of the data collection over three years, the inclusion of four diverse case study countries and the global level of QCN, triangulation and synthesis of information between multiple methods including interviews, observations and document review, and use of recently developed frameworks that specifically consider drivers of legitimacy and different types of institutional interactions necessary for legitimacy and ownership of the work of QCN by country governments. Our study is therefore robust, though key limitations remain. Not all instances of absence of a particular type of interaction, e.g., absence of sharing resources between countries, was stated or corroborated by a wide range of respondents. Therefore, our findings, whilst likely to be broadly true, may lack some precision. We did not find large differences in perceived legitimacy and government ownership of QCN work between our four case study countries despite large divergence in both the extent to which QCN emerged in each of them [10] and in how effective QCN was in each of them [11]. It may be that the relatively high legitimacy and low ownership of the work of QCN that we found across Bangladesh, Ethiopia, Malawi

medRxiv preprint doi: https://doi.org/10.1101/2023.03.06.23286634; this version posted March 9, 2023. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

and Uganda is common to the other seven countries in QCN, or it may be that other countries had lower or higher legitimacy or ownership from the perspectives of their governments.

The findings from this paper are useful as context for our assessments of the effectiveness of the network in delivering interventions and changing processes of care [11] and in understanding how it operates [33]. Further research looking at legitimacy and ownership of the work of QCN, and networks of care more broadly [32], at district, health facility and community levels within countries will be useful to deepen understanding of what drives networks and how best to embed their work into routine systems and sustain them.

Conclusion

We found QCN legitimacy to be supported by shared commitments, norms and principles, developed from a long history of commitments to maternal, newborn and child health held in common, collective decision making, and collaborative activities. Encouraging pooling of resources and empowering peripheral levels may increase perceived legitimacy, and reach, or the network. Further work is required to develop government ownership of the work of QCN and embed it into routine systems. Enabling governments to synthesise and harmonise often diverse methods and approaches to quality improvement brought by different partner organisations, often working in different geographical areas, may be the key to this. Via such work governments may be able to embed processes to ensure higher quality of care for mothers, newborns and children across national, district and local health systems.

medRxiv preprint doi: https://doi.org/10.1101/2023.03.06.23286634; this version posted March 9, 2023. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

Acknowledgement

We thank all respondents and stakeholders for their time and contributions toward making this work possible. The QCN Evaluation Group is: Nehla Djellouli, Kasonde Mwaba, Callie Daniels-Howell, Tim Colbourn (UCL Institute for Global Health, UK), Kohenour Akter, Fatama Khatun, Mithun Sarker, Abdul Kuddus, Kishwar Azad (BADAS-PCP Bangladesh), Kondwani Mwandira, Albert Dube, Gladson Monjeza, Rachel Magaleta, Zabvuta Moffolo, Charles Makwenda (Parent and Child Health Initiative, Malawi), Mary Kinney, Fidele Mukinda (independent researchers, South Africa), Mike English (Oxford University), Yusra Shawar, Will Payne, Jeremy Shiffman (Johns Hopkins University, USA), Kathy Lubowa, Agnes Kyamulabi, Hilda Namakula, Gloria Seruwagi (Makerere University, Uganda), Anene Tesfa, Asebe Amenu, Theodros Getachew, Geremew Gonfa (Ethiopia Public Health Institute, Ethiopia), Seble Abreham, Tanya Marchant (LSHTM, UK)

medRxiv preprint doi: https://doi.org/10.1101/2023.03.06.23286634; this version posted March 9, 2023. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

References

1. The Network for Improving Quality of Care for Maternal Newborn and Child Health. Quality, Equity, Dignity. A Network for Improving Quality of Care for Maternal, Newborn and Child Health (see http://www.qualityofcarenetwork.org/ (accessed 21 Dec 2022) for details) 2022.

2. World Health Organization. The Network For Improving Quality of Care for Maternal, Newborn, and Child Health. Evolution, Implementation and Progress. 2017-2020 Report. Geneva: WHO, 2021.

3. Shiffman J. Global Health as a Field of Power Relations: A Response to Recent Commentaries. International journal of health policy and management. 2015;4(7):497-9. doi: 10.15171/ijhpm.2015.104. PubMed PMID: 26188819.

4. Tallberg J, Zürn M. The legitimacy and legitimation of international organizations: introduction and framework. The Review of International Organizations. 2019;14(4):581-606. doi: 10.1007/s11558-018-9330-7.

5. Dellmuth LM, Tallberg J. Why national and international legitimacy beliefs are linked: Social trust as an antecedent factor. The Review of International Organizations. 2020;15(2):311-37. doi: 10.1007/s11558-018-9339-y.

6. Rocabert J, Schimmelfennig F, Crasnic L, Winzen T. The rise of international parliamentary institutions: Purpose and legitimation. The Review of International Organizations. 2019;14(4):607-31. doi: 10.1007/s11558-018-9326-3.

7. Hooghe L, Lenz T, Marks G. Contested world order: The delegitimation of international governance. The Review of International Organizations. 2019;14(4):731-43. doi: 10.1007/s11558-018-9334-3.

medRxiv preprint doi: https://doi.org/10.1101/2023.03.06.23286634; this version posted March 9, 2023. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

718 8. Nasiritousi N, Faber H. Legitimacy under institutional complexity: Mapping stakeholder
719 perceptions of legitimate institutions and their sources of legitimacy in global renewable energy
720 governance. Review of International Studies. 2021;47(3):377-98. Epub 2020/12/14. doi:
721 10.1017/S0260210520000431.
722 9. Vanyoro KP, Hawkins K, Greenall M, Parry H, Keeru L. Local ownership of health policy and
723 systems research in low-income and middle-income countries: a missing element in the uptake
724 debate. BMJ global health. 2019;4(4):e001523. doi: 10.1136/bmjgh-2019-001523.
725 10. Shawar Y, Djellouli N, Shiffman J, Akter K, Kinney MV, Mwaba K, et al. Factors Shaping
726 Network Emergence: A Cross-Country Comparison of Quality of Care Networks in Bangladesh,
727 Ethiopia, Malawi & Uganda. (under review). 2023.
728 11. Djellouli N, Shawar YR, Mwaba K, Akter K, Seruwagi G, Tufa AA, et al. Effectiveness of a multi-
729 country implementation-focused network on quality of care: delivery of interventions and processes
730 for improved maternal, newborn and child health outcomes PLOS Global Public Health. 2023;(under
731 review).
732 12. Mwandira K, Lemma S, Akter K, Tufa AA, Kyambulani A, Nakkide C, et al. Do Networks
733 facilitate innovation, learning and sharing? An evaluation of the Quality-of-Care Network (QCN) in
734 Bangladesh, Ethiopia, Malawi, and Uganda. PLOS Global Public Health. 2023;(under review).
735 13. Mukinda FK, Djellouli N, Akter K, Sarker M, Tufa AA, Mwandira K, et al. Individual and
736 organisational interactions, learning and information sharing in a multi-country implementation-
737 focused quality of care network for maternal, newborn and child health: a stakeholder network
738 analysis. PLOS Global Public Health. 2023;(under review).

medRxiv preprint doi: https://doi.org/10.1101/2023.03.06.23286634; this version posted March 9, 2023. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

14. Seruwagi G, Mwaba K, Tesfa A, Dube A, Mwandira K, Akter K, et al. How to evaluate a multi-country implementation-focused network: lessons from the Quality of Care Network (QCN) evaluation PLOS Global Public Health. 2023;(under review).

15. Sanderink L, Nasiritousi N. How institutional interactions can strengthen effectiveness: The case of multi-stakeholder partnerships for renewable energy. Energy Policy. 2020;141:111447. doi: https://doi.org/10.1016/j.enpol.2020.111447.

16. Tesfa A, Nakidde C, Akter K, Khatun F, Mwandira K, Lemma S, et al. Individual, organisational and system capacities, and the functioning of a multi-country implementation-focused network for maternal, newborn and child health: Bangladesh, Ethiopia, Malawi, and Uganda. PLOS Global Public Health. 2022;(under review).

17. Wu X, Ramesh M, Howlett M. Policy capacity: A conceptual framework for understanding policy competences and capabilities. Policy and Society. 2015;34(3):165-71. doi: https://doi.org/10.1016/j.polsoc.2015.09.001.

18. Braun V, Clarke V. Using thematic analysis in psychology. Qualitative Research in Psychology. 2006;3(2):77-101. doi: 10.1191/1478088706qp063oa.

19. Collier D. Understanding process tracing. PS Polit Sci Polit. 2011;44:823-30.

20. Billah SM, Chowdhury MAK, Khan ANS, Karim F, Hassan A, Zaka N, et al. Quality of care during childbirth at public health facilities in Bangladesh: a cross-sectional study using WHO/UNICEF 'Every Mother Every Newborn (EMEN)' standards. BMJ Open Qual. 2019;8(3):e000596. Epub 2019/09/17. doi: 10.1136/bmjoq-2018-000596. PubMed PMID: 31523736; PubMed Central PMCID: PMCPMC6711449.

medRxiv preprint doi: https://doi.org/10.1101/2023.03.06.23286634; this version posted March 9, 2023. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

760 21. USAID. USAID's MaMoni Manternal and Newborn Care Strengthening Project. Newsletter
761 Volume 1 Issue 1 https://mamoni.info/ViewKnowladge?id=1020 (accessed 9th Sep 2022). 2019.
762 22. Linnander E, McNatt Z, Sipsma H, Tatek D, Abebe Y, Endeshaw A, et al. Use of a national
763 collaborative to improve hospital quality in a low-income setting. International Health.
764 2016;8(2):148-53. doi: 10.1093/inthealth/ihv074.
765 23. Federal Democratic Republic of Ethiopia Ministry of Health. National MNH Quality of Care
766 Roadmap (2017/18-2019/2020). International Institute for Primary Health Care, Ethiopia. Addis
767 Ababa: MOH; 2017. Available from: http://repository.iifphc.org/handle/123456789/738?show=full.
768 2017.
769 24. Sinunu MA, Schouten EJ, Wadonda-Kabondo N, Kajawo E, Eliya M, Moyo K, et al. Evaluating
770 the Impact of Prevention of Mother-to-Child Transmission of HIV in Malawi through Immunization
771 Clinic-Based Surveillance. PLoS One. 2014;9(6):e100741. doi: 10.1371/journal.pone.0100741.
772 25. The Republic of Uganda. 2013. Ministry of Health, A Promise Renewed. Reproductive,
773 Maternal, Newborn and Child Health Sharpened Plan for Uganda.
774 26. Abreham SL, Daniels-Howell C, Tufa AA, Sarker M, Akter K, Nakkide C, et al. Opportunities to
775 sustain a multi-country quality of care network: lessons on the actions of four countries Bangladesh,
776 Ethiopia, Malawi, and Uganda. PLOS Global Public Health. 2023;(under review).
777 27. Jönsson K. Legitimation Challenges in Global Health Governance: The Case of Non-
778 Communicable Diseases. Globalizations. 2014;11(3):301-14. doi: 10.1080/14747731.2013.876174.
779 28. Ruger JP. International institutional legitimacy and the World Health Organization. Journal
780 of Epidemiology and Community Health. 2014;68(8):697. doi: 10.1136/jech-2013-203272.

medRxiv preprint doi: https://doi.org/10.1101/2023.03.06.23286634; this version posted March 9, 2023. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

781 29. Yang H. Contesting Legitimacy of Global Governance Institutions: The Case of the World
782 Health Organization During the Coronavirus Pandemic. International Studies Review.
783 2021;23(4):1813-34. doi: 10.1093/isr/viab047.
784 30. Harman S. The Bill and Melinda Gates Foundation and Legitimacy in Global Health
785 Governance. Global Governance: A Review of Multilateralism and International Organizations.
786 2016;22(3):349-68. doi: https://doi.org/10.1163/19426720-02203004.
787 31. Lundmark R, Hasson H, Richter A, Khachatryan E, Åkesson A, Eriksson L. Alignment in
788 implementation of evidence-based interventions: a scoping review. Implementation Science.
789 2021;16(1):93. doi: 10.1186/s13012-021-01160-w.
790 32. Carmone AE, Kalaris K, Leydon N, Sirivansanti N, Smith JM, Storey A, et al. Developing a
791 Common Understanding of Networks of Care through a Scoping Study. Health Systems & Reform.
792 2020;6(2):e1810921. doi: 10.1080/23288604.2020.1810921.
793 33. Dube A, Akter K, Khatun F, Abreham SL, Monjeza G, Seruwagi G, et al. Developing a theory
794 of change to improve the functioning of The Network for Improving Quality of Care for Maternal,
795 Newborn and Child Health. (in preparation). 2023.

796

797

798

799

800

801

medRxiv preprint doi: https://doi.org/10.1101/2023.03.06.23286634; this version posted March 9, 2023. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

Figure captions

Fig 1. Framework describing drivers of legitimacy and ownership of the work of Quality of Care Network (QCN) from the perspective of national governments leading the work of QCN

Fig 2. QCN learning and sharing methods at global, regional, national and local levels

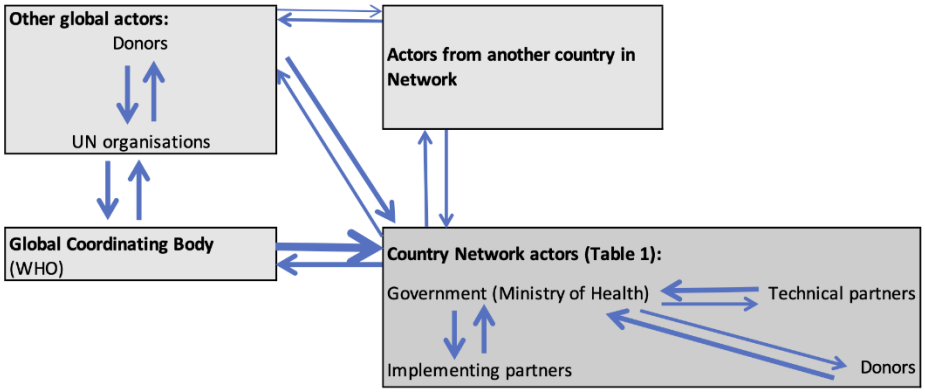
Supporting Information

S1_Text. PLOS GLOBAL HEALTH QCN Evaluation Collection 2-page summary.

S2_Text. QCN papers common methods section.

S3_Text. QCN papers common country context

medRxiv preprint doi: https://doi.org/10.1101/2023.03.06.23286634; this version posted March 9, 2023. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

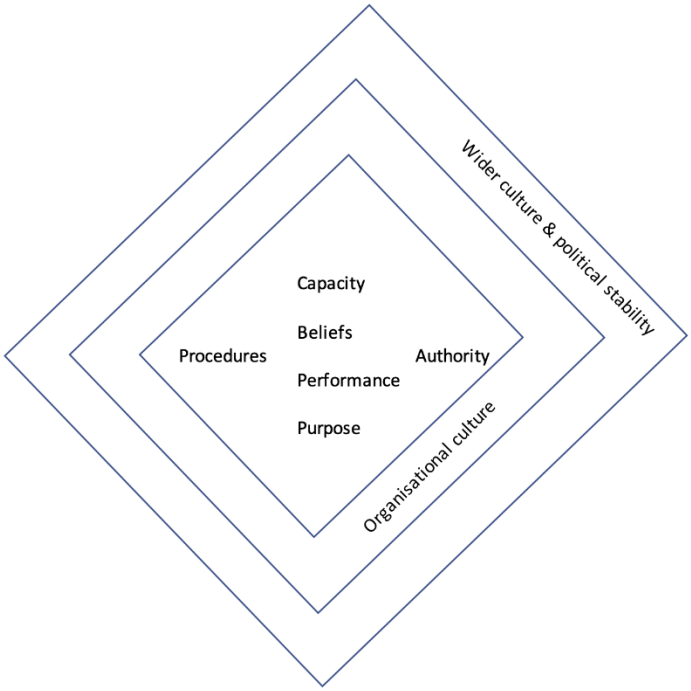


Arrows represent Institutional Interactions, including: Sanderink & Nasiritousi [5]
Political Interactions
Normative Interactions
Cognitive Interactions

Extent of influence of each body and actor (width of arrow) will depend on:
- Capacity [see Wu et al, ref XX, Paper 6, ref XX] e.g. Human resources available in country to draft policy and programmes, organise activties, analyse and evaluate processes and outcomes
- Alignment of goals between actors (**beliefs**, organisational purpose)
- Leverage (**authority**) via other agreements and influences, and procedures
- Organisational culture and wider cultures
- Political stability
- Performance of organisations

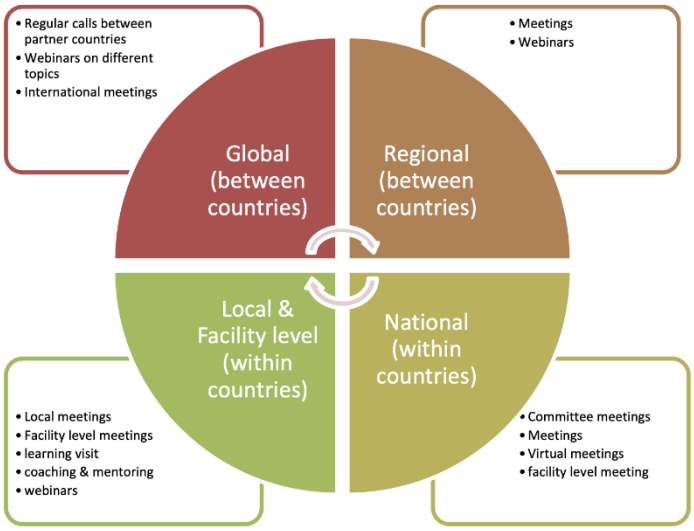
Nasiritousi & Faber [6]

Tallberg & Zurn [Ref X}



medRxiv preprint doi: https://doi.org/10.1101/2023.03.06.23286634; this version posted March 9, 2023. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

Paper 2



812