Formation of Quality of Care Network in India: Challenges and Way Forward

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India contributes to the largest pool of the global neonatal and under-five mortalities. The current healthcare delivery services have a scope for improvement in terms of the quality of care at the point of delivery. In this era of resource constraints across the low- and middle-income countries (LMIC), quality improvement techniques can be a game changer to positively address the common bottlenecks of health service delivery and increase community participation. Globally, networks of quality of care and collaboratives have demonstrated significant impact in improving processes of care and the quality of services delivered to the end user. The Nationwide quality of care network (NQOCN) is a self-sustaining network of quality improvement teams, which have cohesively led the spread and adoption of simple quality improvement strategies across the Indian subcontinent. The current perspective apprises the reader about NQOCN, its relevance and impact in current times.

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India contributes to the largest chunk of the global neonatal, under-five and maternal mortality [1]. The number of physicians/1000 population in India is 0.7 and the number of midwives, nurses and doctors/10,000 population is 24.4, which is very close to the critical threshold of 23/10,000 population as reported by WHO [2]. Despite tremendous expansion in the infrastructure of the healthcare facilities in India, there is an inadequacy of human resources with only 53% neonatal units having an appropriate number of physicians and less than half having a requisite number of nurses [3,4].

The National Child Health Review in 2017 has revealed an unmet need for quality improvement (QI) across our neonatal care units [5]. SNCU Quality of Care Index (SQCI) is a composite index consisting of seven indices that are used to assess the optimal utilization of services, identify gaps in skills/clinical practices and to track survival/mortality indexes. The SQCI grades facilities as good, satisfactory and unsatisfactory based on the range of composite index values. A national SQCI score of 60% indicates the scope for improvement across our healthcare settings. Major gaps identified in this survey were related to hospitalization of low birthweight neonates and rational antibiotic usage [5].

Quality improvement is an approach to improvement of service systems and processes through the routine use of health and program data to meet patient and program needs [6]. Implementation of Quality improvement ensures optimal utilization of existing resources and infrastructure [7]. It brings the much needed transformation in the organization culture and attitude of healthcare providers paving the way for quality assurance [7]. India is a part of the global Quality Equity and Dignity network to which 8 other countries are signatories [8]. In sync with the WHO regional agenda for QI in 2016 [9], a self-sustaining network of facilities implementing Quality Improvement methods for improvement of care, was formed in 2017. This was subsequently named as the Nationwide Quality of Care Network (NQOCN).

EXISTING QUALITY NETWORKS/COLLABORATIVES

Quality networks/collaboratives have been used by many countries to accelerate the quality improvement in health service delivery. This is used to bridge the gap between the expected and observed outcome of health service delivery [10]. Quality networks are a group of sites using a common protocol for data collection and risk adjustment to facilitate benchmarking and collaboration, these tend to go on for years. while quality improvement collaboratives are a group of sites working on the same specific improvement aim, using a formal method to manage change, who share their progress and learning with each other; these are usually time-limited [10].

Details of few large networks/collaboratives are given in *Web Table* **I** [11-13]. It has long been debated whether these collaboratives actually lead to improvement in health care. There is an overwhelming evidence of a "moderately positive effect", which have been evaluated in a systematic review [11]. A more recent systematic review has reported an improvement for one or more of the study's primary effect measures in 83% of the studies. It was observed in this review that collaboratives reporting success generally addressed relatively straightforward aspects of care, had a strong evidence-base and noted a clear evidence-practice gap in an accepted clinical pathway or guideline [14].

NEED FOR QUALITY OF CARE NETWORKS IN INDIA

Various evidence-based guidelines have been developed by professional bodies (*e.g.*, Indian Academy of Pediatrics, Federation of Obstetrics and Gynaecological Societies of India) in India. As reported worldwide, there is a wide variation in the compliance to such guidelines at the point of care [15]. This directly impacts the level of the quality of care delivered to the end user. Incorporation of simple quality improvement techniques in day-to-day patient care and clinical processes has a potential to improve existing processes of care, thereby improving compliance to treatment guidelines [16,17]. As per the QED network and WHO SEARO declaration, there is an urgent need to develop local capacity in institutions to further the cause of quality improvement. A need for supporting institutions to develop their own skills to initiate and sustain QI projects has also been identified [9].

As no formal quality of care network existed in the Indian subcontinent, a platform for all like-minded teams to work using a common methodology of quality improvement to achieve process improvements was felt. This platform was envisaged to have a potential to improve care and compliance to standard treatment guidelines and processes of care. This led to the formation of NQOCN in 2017. The network teams used point of care quality improvement techniques to disseminate the knowledge of QI skills across the network [18].

NATIONWIDE QUALITY OF CARE NETWORK

Quality improvement is a successful method to achieve quality assurance and it ensures the quality assurance remains relevant in improving the patient outcomes. At Kalawati Saran Children's Hospital (KSCH), a QI project to reduce admission hypothermia led to a significant reduction in the moderate hypothermia rate and eliminated severe hypothermia. This project also led to reduction in the all-cause mortality from 4.2 to 2.6

neonatal deaths per week [19]. Encouraged by these results, the QI team at KSCH with the technical assistance of United Sates Agency for International Development Applying Science to Strengthen and Improve Systems (USAID ASSIST) disseminated the QI methodology to teams across India by organizing multiple 2-day structured learning sessions. All caders of healthcare workers got a chance to contribute to this improvement process. This created a pool of 78 networked teams across India (NQOCN), which were trained in quality improvement. Out of these, 24 sites have completed their first QI project.

The NQOCN is a network of teams of doctors, nurses, paramedics, medical students (post-graduates and under-graduates), health management professionals, public health specialists and epidemiologists, sharing a common platform and working on quality improvement projects. It comprises of teams from both public and private academic institutions, and professional organizations. Its formation has been catalyzed by the Quality Improvement Cell at the Kalawati Saran Children's Hospital, Lady Hardinge Medical College, New Delhi. It started functioning in October 2016 and was formalized in August 2017 as NQOCN. It is currently present in nine Indian states (UP, Delhi, Haryana, Madhya Pradesh, Maharashtra, Karnataka, Tamil Nadu, Kerala, Meghalaya). It caters to a combined delivery load of around 1,50,000 deliveries / year. It is a voluntary, flat hierarchy, not-for-profit registered organization. It has been formed with a primary objective of linking all stakeholders to provide a system of delivering quality of care. It provides basic QI trainings, training for coaches and mentors, mentoring courses, monthly quality improvement meetings for cross learning. Both onsite and offsite mentoring and sharing of experiences are facilitated. These activities can help an individual/institution in achieving their quality improvement goals. The organization has a pool of trained QI mentors and coaches who assist teams across India in taking forward their QI projects. NQOCN serves as a learning platform empowering teams in their quest for QI-related knowledge and coaching support.

NQOCN in the state of Meghalaya along with the state National Health Mission (NHM) in 2016 identified the bottlenecks in neonatal healthcare delivery across district neonatal facilities [20]. In January 2017, NQOCN implemented QI strategies in three out of five SNCUs of the state. QI strategies were successfully used in these SNCUs. The results pertained to improved early breastfeeding rates, early skin-to-skin contact during birth and increasing kangaroo mother care duration. The above results are sustained for close to a year in these facilities. NQOCN also networked eight SNCUs of Tamil

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KEY MESSAGES

- Informal QI Networks can play an important role in complimenting the formal networks of Quality of Care.

- Attaching value to work and exposing teams to a practical method to improve clinical processes helps them to work cohesively.

- Identifying and reconnecting with the local champions, providing them the environment to learn and spread this learning is of prime importance.

- Quality improvement is problem-solving not fault-finding.

Nadu (TN) at the invitation of the NHM TN in March 2017 and conducted offsite mentoring of networked teams. A pre-service workshop has been formulated for undergraduate nursing and medical students. This has led to the formation of a group 'Be the Change' for integration of QI strategies in the existing undergraduate medical and nursing curricula.

LEARNING ACROSS THE NETWORK

The network focussed on learning, as the QI methodology was new to the participants and as the teams moved ahead with their projects they required coaching and support to overcome hurdles. It facilitated the interaction of teams to learn from each other. This created a 'cumulative learning' model. It has been recognised that this is an important manner of learning across the QI collaboratives world over [21]. Learning is from peers through onsite and offsite coaching. The network extensively employed offsite coaching using telephone calls and mobile application based chats with teams in Meghalaya, and has demonstrated a reduction in cost of coaching by 67% using virtual coaching techniques [22]. The network has been invited by WHO Global Learning Lab and Quality Equity and Dignity Network to conduct webinars for international audience [23,24].

Challenges: The organization has identified few major challenges: (*a*) keeping alive the interest of teams in quality improvement: (*b*) adding value to the work; (*c*) developing perseverance in teams to sustain quality improvement initiatives; (*d*) arranging resources for the network; and (*e*) maintaining connectedness amongst the network constituents.

NQOCN plans to overcome these challenges by recognizing and handholding potential leaders, organizing skill-updating sessions, and utilizing internet- and web-based platforms to facilitate communications between teams and mentors. It is also advocating success stories to potential partners and network teams for developing future collaborations.

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WEB TABLE I MAJOR QUALITY IMPROVEMENT COLLABORATIVES AND NETWORKS

Quality Improvement network/colloborative	Country (year)	Objectives
International Society for Quality in Healthcare (ISQua)	Italy (1985)	To inspire and drive improvement in the quality and safety of healthcare worldwide through education and knowledge sharing, external evaluation, supporting health systems and connecting people through global networks
Vermont Oxford Network [11]	UK (1988)	Improve the quality and safety of medical care for newborn infants and their families through a coordinated program of research, education, and quality improvement projects .
Institute for Healthcare Improvement (IHI) [12]	USA(1991), now in multiple countries.	Everyone has the best care and health possible.Improve health and health care worldwide.
Australian Society for Quality (AuSQ)	Australia	Provide organisations and individuals pathways to achieve operational excellence through developing skills and capability in continuous improvement and facilitating professional networking.
AAP Quality Improvement Innovation Networks (QuIIN) (*a*) Value in Inpatient Paediatrics (VIP) Network and (*b*) Practice Improvement Network (PIN).	USA (2005)	Multiple national Paediatric quality improvement networks, Recruit and engage practicing paediatricians who are AAP members, have experience or interest in quality improvement.
Quality, Equity, Dignity network (QED) [13]	WHO and UNICEF (2017)	Reduce maternal and newborn mortalityin health facilities in target country districts by 50% over five years and to halve intra-partum stillbirths; Improve experience of care.
Nationwide Quality of Care Network (NQOCN)	India (2017)	To link all stakeholders to provide a system of delivering effective quality of care.To enable health workers to learn and use quality improvement methods.To facilitate cross learning and experience sharing.To encourage community participation in quality improvement process. To partner with other likeminded institutions in furthering the cause of QI in South Asia.