

**Title: Catalysing multimorbidity research in Low and Middle Income Countries through a “community of practice” approach: An India –Brazil-UK Initiative**

**Countries Involved: India (PI), Brazil (Co PI) and UK (Co PI)**

**Seed Fund activity:** Networking and Capacity building

**Duration:** 18 months

**Total Budget:** £142,594 GBP (RC contribution is £120380 GBP)

**Aim**

To build a *community of practice* for multimorbidity research in India and Brazil by creating a tiered network of academics, researchers, policy makers and clinicians with expertise in multimorbidity research – with a particular focus on primary care. The network will be tasked with building capacity in India and Brazil through collaborative educational, training and research programmes.

**Objectives**

1. Foster global collaboration (strengthen south–south collaboration) in the field of LMIC-specific multimorbidity by establishing a collaborative platform between India, UK and Brazil
2. Set up a multi-level network, drawing from the research, practice and policy community within India and Brazil.
3. Generate evidence to inform advocacy with network members to recognise the importance of multimorbidity as a health care challenge
4. Build capacity among key stakeholders (academics, researchers, policy makers and clinicians) to understand multimorbidity and undertake research collaboratively into the epidemiology and impact of multimorbidity
5. Create a ‘community of practice’, focused on multimorbidity and emphasising roles for primary care, built around existing systems in university teaching hospitals, multimorbidity programmes and research institutions in both the countries
6. Develop a curricular framework for multimorbidity capacity building

**Outputs**

Early in the life of this project we will produce:

- a research paper describing the available evidence on burden of multimorbidity across LMIC
- a scoping review paper on the capacity building models on multimorbidity
- policy brief on the burden and impact outcomes of multimorbidity in India and Brazil
- a White Paper on the need for bringing multimorbidity into research, policy and practice agenda

**Short term:**

- A virtual research network on multimorbidity between India, UK and Brazil.
- Multi-disciplinary group of researchers in multimorbidity in India and Brazil
- Training curriculum for multimorbidity within a capacity building framework
- Template for creating ‘community of practice’ in multimorbidity in low resource settings

**Long term:**

- Inclusion of multimorbidity as a new research theme, with an agenda set for the next five years which aims to build capacity and output in this area in India and Brazil.
  - Developing a consortium for multimorbidity research program within apex council for medical research in both the countries
- Plans for a future grant
- Using our *community of practice*, we plan to apply for substantial funding for work which will demonstrate how to develop, implement and evaluate patient-focused integrated system of care, taking account of the complexities of multimorbidity in India and Brazil, and based in primary care practice.
  - This will also provide an adaptable model for other similar settings to increase recognition of multimorbidity and provide effective strategies for people with multimorbidity through improved assessment and management.

## **Project Description**

### **Importance:**

Multimorbidity is an important health care issue, particularly in primary care or general practice settings (1). It complicates diagnosis and therapy with poorer health outcomes, increased health service utilization and health care expenditure (2). Multimorbidity is of paramount importance in low and middle income countries like India and Brazil where primary care forms the core of the public health care delivery system (3-4). Our first ever study on multimorbidity in India has found that one third of patients attending primary care have multimorbidity (5). Since primary care is the first and most frequent contact point for majority of the population in LMIC, it is important that we strengthen these settings for managing multimorbidity. However, till date, limited efforts have addressed this issue in India and Brazil, as revealed by our own systematic review (6).

Delivering continuous and coordinated care specific for these individuals necessitates functional amalgamation between primary-secondary care and program–practice towards a horizontally integrated care model for patients with multimorbidity under the umbrella of primary care. Our own study has found that there is fragmented care, poor primary –secondary care interface and physician-patient interaction. Further, physicians expressed their limitations in managing multimorbidity (7). Another study found that the inter-professional education is non-existent in current health professional education while multimorbidity requires a patient centred care approach encompassing multi-professional care (8). With universal health coverage (UHC) being in the realm of reality in LMIC, it is essential that multimorbidity care models are integrated to this new paradigm. We are well placed to address this knowledge gap with our previous experience of multimorbidity research in primary care in India and Brazil. Further our partner in UK is a leading international group on primary care multimorbidity (9). We would harness their expertise and experience and mutually enrich our own capability to promote, articulate and prioritize multimorbidity research in India and Brazil.

To achieve this, we plan to adopt a community of practice approach. A Community of Practice is defined as “groups of people who share a concern, a common set of problems, or a passion about a topic and who deepen their knowledge and expertise in this area by interacting on an ongoing basis.” Communities of Practice, are internationally recognised ways of getting evidence into practice. Our project aims to leverage on existing structures and networks to create a community of practice as an enabling platform to catalyse context-specific research on multimorbidity (10).

### **Proposed strategy:**

This networking and capacity building project to create an enabling platform for research around multimorbidity would be led by Indian PI and co led by UK and Brazil investigators. Our transcontinental network builds upon the previous collaboration between Indian PI with PIs of UK and Brazil. The underpinning strategy entails, mutually enriching collaboration and shared learning on multimorbidity between India and Brazil, further strengthened by the experiential inputs from UK faculty. This network will be tasked with building capacity in India and Brazil through collaborative educational, training and research programmes. The mentoring support from the UK experts who have developed a system of practice and research on primary care multimorbidity is pivotal throughout. Both the global South teams would jointly synthesize available evidence on the burden of multimorbidity in Low and Middle Income Countries (LMIC) with special focus on India and Brazil, undertake a scoping review of various capacity building strategies for multimorbidity globally, critically assess those, and identify the applicability for LMIC and design a curricular framework. They would additionally learn from UK practice and collaboratively identify the implementable components for their own settings and further adapt it through expert consultation. The teams would together discuss, deliberate and arrive on consensus as to how the challenges of multimorbidity should be addressed in respective countries and collaboratively develop a networking, advocacy and coalition building plan so as to promote inclusion of multimorbidity in the national and regional research and policy agenda. While working together they learn from each other – health systems, health care context, resources available, constraints and iteratively decide the detailed activities (core and complementary) to set up a “community of practice” for multimorbidity appropriate for their own settings by leveraging on the existing structures and bringing in synergy across these systems. We plan to adopt multiple strategies i.e. stakeholder mapping and engagement, coalition building, advocacy, agenda setting. Each team works on networking, partnerships, engaging with identified stakeholders and strengthening research

capacity by training and forming multi-disciplinary team around primary care thus developing a sustainable cohesive “community of practice” for multimorbidity in their respective countries. We believe that these communities of practice would act as catalysts for multifaceted research leading to a policy-practice-academia ecosystem to improve patient outcomes in multimorbidity in both India and Brazil with potential high impact and scalability and thus paving path for broader South Asia -South America network on multimorbidity.

### **Networking Activities**

We would adopt both vertical (international-regional) and horizontal (practice-research-academics-program) networking, within countries (India and Brazil) and region. At the country level we aim to bring together all stakeholders working on multimorbidity including representatives of central or federal government (Health Services, Health Research, Public Health Departments, National Health Programs, Public Health and Medical Research Organizations) comprising policy makers, health planners and administrators; researchers, health care professionals, academia, public health managers as well as civil societies, professional bodies, patient advocacy groups and development sector to one platform to reach at a shared understanding of multimorbidity. Using this network, we plan to appraise the key stakeholders of the importance of multimorbidity as a public health challenge in national context, the need for research and allocation of commensurate funding and stimulate policy thinking and health planning around the issue of multimorbidity.

Since health in India and Brazil is predominately a state responsibility (and most health policies are made at the state level), we will engage strongly at this level in our network building; we will recruit state level representatives, directors of public health, nursing, health services and medical education, heads of university teaching hospitals and district head system heads. We will establish a provincial/state level steering group for India and Brazil consisting of the above mentioned stakeholders. This steering group would provide the directives for partnership building and facilitate constituting a community of practice at the regional level.

At the regional level we intend to build coalition among the university teaching hospital (medical college), secondary care/specialist care, primary care or general practice public health managers. We plan to increase their capacity to recognize the problem of multimorbidity, appreciate the role of each discipline and sector and thus collaboratively work to identify research needed, design appropriate actions, complement each other to respond to the health care needs of multimorbidity within local practice and build synergy to establish a “community of practice” to act as catalyst for promoting multimorbidity research.

### Joint Evidence Synthesis of available evidence on burden of multimorbidity in LMIC

We will do a joint systematic review on the magnitude, epidemiology and impact of multimorbidity in LMIC, with special focus on India and Brazil and share these findings with the national network as a policy brief to highlight the implication of multimorbidity in respective countries. Further this would also help in identifying the researchers who have contributed to multimorbidity research in India and Brazil and be invited to join the network at either national or regional level.

### Stakeholder Mapping and Engagement

We have already identified key stakeholders in prior and would include more through the stakeholder mapping at national to regional level. We plan for a national level dissemination workshop in India to share the capacity building experiences and the research priorities identified by the “community of practice” in each country which will also be attended by Brazil and UK Co PI. We would invite the Ministry of Health (both India and Brazil), National Health Mission, Govt. funding agencies - Department of Health Research, International Health Division and NCD Division of ICMR, India DBT Wellcome Alliance, World Health Organization, Media, Philanthropic Organizations and Corporate Social Sectors. Further this would also impress upon the program and policy audience to reconfigure primary care to address multimorbidity and horizontal integration between currently vertical chronic diseases programs.

### **Capacity Building Activities**

Following a visit of the investigators from Brazil and India to the University of Edinburgh, UK to build their capacity, we would produce a framework that includes all the salient principles of multimorbidity

yet is simple enough to be useful at different stages of training and across different health disciplines. The following activities are planned for this:

**Co-Development of a Multimorbidity Training Framework and Content:** We will use an iterative approach consisting of following steps to co-create and co-deliver the training.

**Scoping of curricula available for multimorbidity trainings:**

We would do a joint scoping review of available curricular frameworks or educational interventions, training or resources (books/ guidelines/ manuals/ e-learning.) for capacity building on multimorbidity and summarize the potentially implementable educational interventions and extract core concepts of multimorbidity that need to be integrated through routine practice and research. The PI had developed a six-component comorbidity education framework (11) that can be built upon to integrate multimorbidity concepts and seek guidance from the book “ABC of multimorbidity” edited by the UK Co PI (9, 12) as well as the findings of our two recent studies exploring the physicians’ and patients’ challenges in managing multimorbidity and the situational analysis of inter-professional education in the context of multimorbidity in India (7-8).

**Expert Consultations:** The draft curriculum and content would be presented before groups of domain experts and revised to achieve consensus. **Pre testing and Adaptation:** The training content would be pretested with a group of in service trainees of public health / physician’s at the two co-applicant institutes (Kalinga Institute of Medical Sciences and Public Health Foundation of India) and finalised. The developed content would then be translated and pretested in Brazil.

**Identifying Training Participants:** The members of the community of practice – Faculty (medicine, psychiatrist, public health) of University Teaching Hospitals, specialists of the district hospital primary care team (Physician, Nurse, Allied Health), NCD program managers will be identified as participants of the trainings.

**Capacity Building Workshops:** We plan to conduct three workshops of 3 to 5-day duration at six weeks’ interval. Workshops on Basics and epidemiology of multimorbidity, Research methods in multimorbidity and priority setting. These workshops would follow the techniques of group discussion, brainstorming, critical thinking and appraisal using case studies, vignettes, critical reading materials, clinical guidelines, our own publications and experience sharing. At the end of these workshops the participants would be able to understand the epidemiology of multimorbidity, recognize the current challenge of multimorbidity and assess its impact on the patients (physical and psychological), physicians and health care system. They would be able to critically assess the evidence available and limitations of guidelines when treating patients with multimorbidity and identify what actions and research are needed to improve outcomes for people with multimorbidity.

**Sustainability Plan**

One of the key attributes for sustainability of this network is - it builds on existing structures and leverages the existing platforms by bringing in synergy. The network will become self-sustainable through collaborative research grants and local institutional support beyond the seed grant phase. In India, the network activities will be sustained through support from the Indian council of Medical Research. The capacity building activities will be integrated into the institutional activities, to be carried out by the network members of the responsible institute after the seed grant is over. In India, the PI’s institute will carry forward the leadership role by carrying out regular multimorbidity research capacity building activities at its institutes.

**Impact**

This network will enable the creation of a multi-disciplinary cohort of clinicians, researchers and academics with expertise in multimorbidity, who will in turn be ambassadors and change agents to disseminate this in their domains. This cohesively developed community of practice would be a platform for planning and implementation of prioritized research through the establishment of unified goal to improve health outcomes for patients living with multimorbidity.

This will, ultimately, strengthen the capacity for primary care in India, Brazil and other LMIC to address multimorbidity, which is critical for attainment of universal health coverage. The partnerships will also provide a template for other low and middle income countries to initiate research into multimorbidity

in the future. This will also lead to increased multimorbidity literacy amongst our stakeholders and provide a pragmatic and replicable model for capacity building in the domain through a network on multimorbidity in other LMICs.

### **Outcome measures**

The primary outcome includes establishment of a Global South –South Network for capacity building on multimorbidity. Establishing a multimorbidity unit at the apex medical research organizations of the respective countries with country-specific calls for proposals under their aegis is a key component of our network deliverables. Ultimately, we aim to constitute a research community for planning and implementation of prioritised research through the establishment of a national and LMIC multimorbidity research consortium. We will document the process, including the challenges faced and how these are resolved, for sharing experiences with stakeholders for scale up within India, and for replication in other South Asian countries and later across LMICs. We will leverage on the existing collaborations of our UK university with other LMICs and the Indian / Brazilian Councils' International Health Divisions to achieve further impact. We intend to organise seminars/symposia in forthcoming conferences where we can showcase our model of building a *community of practice* by building on existing networks.

### **Way forward**

Building on the network developed by the seed grant, we will conduct a research priority setting exercise to identify contextual gaps in knowledge and need for research in multimorbidity. Based on this, we will develop and undertake primary multi-centric research across demographic, socio-economic and geographical strata in LMICs. This will be a valuable addition to the LMIC-specific multimorbidity research landscape and also lead to better equity in assessment of multimorbidity between high income settings and LMICs. This will be in addition to multiple longitudinal studies at the rural demographic and health surveillance site being established by the host institute. We believe that, each country's community of practice established through the project would lead the multimorbidity research within respective countries and later pave the path for expanding to larger South Asian- South American Network for multimorbidity research and be a template in fostering global south-south collaboration.

### **Appropriateness of capacity building & support for early career researchers**

The project will make a substantial contribution to building research capacity in India and Brazil in relation to multimorbidity, and will help fill an existing gap in knowledge and clinical practice related to multimorbidity as an entity - especially in primary care. Health care providers influenced by our work will be better equipped to appreciate and manage multimorbidity in their practice, while also increasing participation in research in the domain. The model will provide a template for replication in other regions of India, Brazil, South Asia, South America and other LMICs. The PI and experts from UK are ideally placed to guide young investigators in our network on various facets of multimorbidity research. Additionally, we have adopted a programme of support and guidance to two junior researchers (with backgrounds in clinical epidemiology and health systems research) from the host institute who will be engaged as co-investigators. Two more project staff will gain skills through their engagement in the activities of the project. One Ph.D. in Public Health (specific for the field of multimorbidity), will have access to all of the training opportunities of the project. Further the PI's institute runs a MPH (Masters in Public Health) course where we plan to introduce an elective on multimorbidity for these students using the prepared training content.

### **Research Team**

This proposal has been developed jointly between Principal investigators from India, Brazil and the UK, who have led multimorbidity research in their own countries. The Indian PI has taken a leading role in the proposal - defining the objectives, and designing strategies and methods. The PI, Dr Sanghamitra Pati has a strong background in multimorbidity research with special focus on primary care. She undertook the first ever study of Multimorbidity in India under Wellcome Trust – PHFI Capacity Building Grant. As the head of the regional institution of the Indian Council of Medical Research (ICMR), she is strategically placed to effectively spearhead the proposed project as well as to advocate for a larger national agenda. Prof Stewart Mercer from University of Edinburgh, who has

world class expertise in the epidemiology and clinical management of multimorbidity in primary care settings and Prof David Weller who is an acknowledged international researcher in patient outcome assessment, with experience in primary care studies in LMICs, will provide the intellectual and scientific leadership. Prof. Bruno Pereira Nunes has extensively worked on multimorbidity in Brazil especially from equity perspective. Dr Sandro Rodrigues Batista, with a specialisation in primary healthcare, aging and multimorbidity, and having worked as an adjunct Secretary and a health manager at Brazil, will provide expertise on healthcare delivery. Dr. Pranab Mahapatra, an experienced Primary care psychiatrist will focus on mental health dimensions of multimorbidity and patient oriented qualitative research. Dr Sandipana Pati, with her geriatric health, and family medicine experience and being the head of the health professional training division at PHFI, can support the capacity building components. Dr Jaya Singh Kshatri, a clinical epidemiologist and Dr Srikanta Kanungo, a Health Systems and Health Equity specialist are two young scientists who would build their capacity throughout this project by learning while doing. Further, the complementary strengths and the diversity of the teams would be instrumental to ease out the multidimensional complexities normally perceived by individual disciplines while addressing multimorbidity.

**Feasibility statement:** Our network builds on previous collaborations which would expedite partnerships and ease consensus building process. The Indian PI and the Brazil PI have previously worked on two publications based on secondary data analysis of multimorbidity in Brazil. Our experience and expertise of multimorbidity, and prior functional relationship with key stakeholders within our own countries would facilitate the smooth completion of the project with maximised impact. Since our strategy does not involve any new creation of settings or structures, but rather entails harmonising the current structures and systems to align towards a unified goal of “community of practice” for multimorbidity, we are confident of the feasibility of this project within the given time period.

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