Health Systems Research Initiative - Call 1 Foundation Grant		
Project title		
Stakeholder monitoring to improve quality of MNH care in public and private sector facilities following a district health systems approach		
Grant holder	**Institute**	**Grant reference**
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Summary

Improving the quality of care is emphasized in maternal and neonatal health (MNH) to enhance efficacy and effectiveness of interventions. However, there is neither any globally accepted definition, nor any standardized tool to monitor quality of care in MNH. Bangladesh is on-track in achieving the targets for Millennium Development Goal 4 & 5 with low institutional delivery rate (29%), the majority (18%) of which takes place in for-profit private sector facilities. Poor quality of care in public facilities compels pregnant women to use private facilities which may lead to catastrophic health expenditure. Users may perceive services from private sector facilities to be superior to services from public facilities due to incentive mechanism. The unregulated private sector is growing fast in the country and there are reports of overcharging and unnecessary caesarean sections in the private facilities. Dual practice is common among public sector providers and referral from public to private for financial benefit is not uncommon. Governance is weak to oversee the pluralistic health system where the private sector is increasingly contributing in the health care delivery. Innovative systems' approach needed for better integration of private sector inputs to maximize their contribution in achieving the national public health goals.

Audit and feedback has demonstrated its feasibility and effectiveness in improving providers performances in clinical settings in high-income countries. Several global programs such as JHPIEGO (Johns Hopkins Program for International Education in Gynecology and Obstetrics) and AMDD (Averting Maternal Death and Disability) of the Columbia University have developed tools to monitor and improve quality of MNH care. In this study we plan to review the existing audit and quality improvement tools to adapt them in Bangladesh to test its feasibility, acceptability and effectiveness in improving quality of MNH care following a district health systems approach. The study will be conducted in a medium performing district of Bangladesh following a mixed method, pretest-post-test research design .The tools developed, will be contextualized through multiple stakeholders consultations

	and finalized after pretesting in a hypothetical field outside the study district. A baseline study will be conducted for needs assessment and benchmarking the quality indicators in public and private sector hospitals for future evaluations. Baseline study will include SWOT and Stakeholders Analysis to understand the context and building broader alliance to facilitate the implementation of the designed interventions. District Quality Assurance (QA) Team will be formed involving key stakeholders in the district, including the users. Developed monitoring and feedback tool will include key quality indicators covering structure, process and outcome dimensions of quality of care and will be implemented through joint quarterly visit of all public and private facilities by the district QA team members. Feedback will be given every 6 monthly through workshops and periodic quality monitoring reports. Process documentation will be the key method for evaluation. Qualitative Key Informants Interviews with explore the enabling and constraining factors impacting both implementation and making changes in quality of MNH care. The quantitative pre and post intervention surveys will be the other methods for assessing the change in quality of care (both technical and perceived) due to introduction of stakeholders' monitoring and feedback. A costing exercise will measure the cost of interventions to inform policy for scale-up and sustainability. Study outcome will be communicated to target audience using multiple channels such as journal articles, conference abstracts, policy briefs and newspaper articles. An implementation research protocol will be developed to inform policy for future scale-up nationwide to impact maternal and neonatal health outcomes.

Health Systems Research Initiative - Call 1 Foundation Grant		
Project title		
Strengthening health system promotion of maternal and child health through medical travel		
Grant holder	**Institute**	**Grant reference**
Dr Johanna Hanefeld	London School of Hygiene and Trop Medicine	MR/M002160/1

Co-Investigators

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Summary

This 12 month grant focuses on strengthening health system promotion of maternal and child health through medical travel. It concentrates on South Africa and the effect on resident population of patients traveling to South Africa for treatment from neighbouring countries. It is a collaboration between the University of Cape Town and the London School of Hygiene and Tropical Medicine.

The main objective is to identify how to assess and influence the effect of medical travel on the health system and maternal and child health in South Africa. There are three linked specific objectives.
1) To understand how inbound medical travel affects the maternal and child health of the resident South African population.
2) To identify and analyse current agreements between South Africa and neighbouring countries which govern and affect patients traveling.
3) To establish and review what kind of indicators and data are available at national and sub-national level to monitor health systems impact of medical travel on MCH.

Research employs quantitative and qualitative methods. To assess effects on resident South African MCH, it examines indicators and experiences of health workers, patients and other actors in areas where health facilities are seeing a large number of medical travellers coming in and compare these with areas and facilities who do not. These will be identified through initial key informant interviews. Interviews will be in five communities/facilities where large numbers of medical travellers are received and five where there are not. Quantitative work will evaluate usefulness of core indicators for MCH and health systems access which are publicly accessible. Research will include the analysis of agreements governing medical travel between South Africa and neighbouring countries to identify policy recommendations on how such governance arrangements can best support health systems' promotion of maternal and child health.

	Findings, including reflection on methods, will inform a larger comparative research proposal with researchers in India and Thailand.

Health Systems Research Initiative - Call 1 Foundation Grant		
Project title		
District Health Management and Public Service Delivery: Evidence from India's Flagship Health Programme		
Grant holder	**Institute**	**Grant reference**
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Co-Investigators

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Summary

There is now a strong body of evidence of what interventions are most effective in improving health in low- and middle-income countries but little is known about how to ensure widespread coverage in the population. Weak public service delivery has long been regarded as the key obstacle, particularly in countries with the greatest gaps in service coverage. Nowhere is the issue more salient than India, where the state has struggled to deliver basic public services to its population, despite the presence of elite national institutions and a highly educated top brass of civil servants. One reason for the current status quo is possibly poor managerial quality in the civil service, yet there is almost a complete absence of evidence linking practices in civil service organisations to effective service delivery and outcomes.

The research aims to study the relationship between the management practices civil servants in district health offices operate under and the delivery of health services in Madhya Pradesh, India. We examine this question in the context of the National Rural Health Mission (NRHM), India's flagship health programme. Three phases of work are envisaged. The first phase (9 months) builds on previous research in economics to develop a tool that will ultimately provide a quantitative measure of managerial quality in our particular setting. The development of the tool will rely on qualitative methods of research to get perspectives from key informants on what dimensions of management are most important for staff productivity, as well as to provide a rich understanding of the bureaucracy in place. The second phase (3 months) involves the collection of management data from health bureaucrats in the 45 districts of Madhya Pradesh. The primary method of data collection will be phone interviews, in which interviewers score districts across a number of different dimensions of management. These will be complemented with face-to-face interviews in a subset of districts for the purposes of validation. In the third phase (6 months), the management practices data will be linked to household and health facility data from the District Level Health Survey to examine whether managerial quality is linked to better implementation of the

	NRHM and higher coverage of maternal and child health services. The research has the potential to improve health outcomes by informing government policy on ways to ensure more effective health service delivery. It will lead to greater understanding of management practices in India's civil service and ultimately better implementation of key government health programmes.

Health Systems Research Initiative - Call 1 Foundation Grant		
Project title		
Determinants of medical equipment performance to improve management capacity within health system in Viet Nam		
Grant holder	**Institute**	**Grant reference**
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Co-Investigators

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Summary

1 – Background:
Medical equipment is one of the major contributors to the rapid progress of healthcare and the improvement of public health services. The constant increase in the variety and complexity of available health technologies require good management capacity to allocate the resources efficiently. The review of the World Bank's global $1.5 billion investment in medical devices showed that there are cases where 30% of the more sophisticated equipment stock was unused and the rest had 25-35% downtime. A root cause turned out to be ineffective management including planning, acquisition and subsequent operations . In the context of limited public health care funding, ensuring resources for medical equipment and infrastructure is challenging for Vietnam. There is no official data by Vietnam Ministry of Health (MOH) on total budget for medical equipment investment, maintenance and effectiveness throughout the health system. There are international guidelines and recommendations by WHO, especially for developing countries, on how to organize the management according to the equipment life-cycle . How well Vietnam equipment management practice follow the recommended guidelines and how WHO guidelines and recommendations can apply in Vietnam are basic questions to be investigated. The research will thus address one important, but often neglected, building block of the Vietnamese health system; Technologies, with particular focus on finding determinants of medical equipment performance to improve management effectiveness via education and training intervention.

2 - Rationale:
In Viet Nam, as in many other countries of a similar income level, health technology management is not well-developed. There is no sound evidence on the effectiveness of the health technologies. According to a recent report, the percentage of medical equipment in good use condition ranges from 20% to 50% of total medical equipment in use in hospitals at all levels. In addition, the percentage of equipment being maintained drops to 30% in central and provincial level hospitals, and even

	to 10% in district level hospitals . The education of e.g. public health experts and/or clinical engineers in Health Technology Management is not systematically taking place in Vietnam. However, Department of Medical Equipment Management at the Hanoi School of Public Health (HSPH), the only of its kind among all health related universities in Vietnam, is responding to the importance of this area and is eager to identify priority areas to be addressed in the curriculum of master of hospital management and continuous training for health professional training program. Access to functioning and safe medical equipment at the point-of-care is key for providing health care services to the population. Typically technology "intensive" services profit more from an improved technology infrastructure. In this sense, everybody using health care services will eventually benefit from the system change. 3 – Importance: There is no current data or studies of similar systematics or scope. In the area of health systems and policies, there is thus a great interest in obtaining such reference data. The research is proposed specifically in Vietnam because of its development level - the health care expenditure on health technology in relation to the presence of appropriate management practices and education is particularly poor, i.e. there is great potential for improvement. 4 – Research: Impact At all stages of the research, relevant stakeholders and policy-makers will be involved closely. The results of the research will on one hand inform the MOH in the development of policies and actions on the other hand allow the HSPH in curriculum development and on design further research.

Health Systems Research Initiative - Call 1 Foundation Grant		
Project title		
Engaging Partners in Childbirth for Prevention of Mother-To-Child Transmission of HIV (EPiC-pMTCT): preliminary work for a randomised controlled trial		
Grant holder	**Institute**	**Grant reference**
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Summary

HIV is a major public health problem, and a major route of transmission is Mother-To-Child Transmission (MTCT) which accounts for about 10% of the national HIV burden in African countries. Prevention of this mode of transmission (pMTCT) is a key element in global HIV prevention and the World Health Organisation has recommended that pMTCT of HIV infection should be prioritized in sub-Saharan Africa.

Evidence-based interventions to reduce MTCT are available in many maternity units in Africa, but their uptake is poor. The barriers to uptake are closely linked with the role of the male partners in perinatal care of the woman. It is known that men are the primary decision makers in many African countries where pMTCT is offered. Studies show that women are more likely to (a) undergo HIV testing, (b) disclose their HIV status to their husband, (c) adhere to treatment during pregnancy (d) deliver in a pMTCT facility and, (e) comply with infant feeding recommendations if their partners are engaged in the pMTCT programme. While male participation has a potentially positive impact on the uptake of pMTCT interventions, initiatives to prevent mother-to-child HIV transmission in sub-Saharan Africa have focused overwhelmingly on women, to the unintended exclusion of their male partners. The actual impact of male involvement is unknown, as there is a lack of quantitative data on the benefits and effectiveness of male partner engagement. A recent Cochrane meta-analysis found only one eligible study that assessed the effectiveness of male involvement in improving women's uptake of pMTCT services, and that study only focused on one part of the perinatal pMTCT cascade. While male involvement holds promise for improving uptake of pMTCT interventions, further rigorous evaluation and implementation research is needed.

Efforts in this direction must, however, begin by addressing conceptual and methodological issues in the study and implementation of male partner involvement in pMTCT. A uniform definition of male participation in pMTCT programmes does not exist, and there are no standardized measures or reliable indicators of male involvement. Also

	needed is a reconceptualisation of the role of men in pMTCT. It has been argued that to maximize the health outcomes of pMTCT programs, men should not be seen as simply "facilitating factors" that enable women to access health-care services, but be recognized as a constituent part of reproductive health policy and practice. Also, efforts to include male partners in HIV prevention for women have focused primarily on engaging men to support their female partners in adopting a prevention strategy, without also offering broader consideration for men's own health needs or of a social agenda aimed at promoting greater sex equality. In a future study we propose to undertake a randomised controlled trial to assess a multi-component family-centred intervention. The hypothesis for the trial is that implementation of the intervention would result in improved uptake of pMTCT programmes in the intervention arm compared with the control arm. Before embarking on the trial, we propose to undertake development work (the current study) that will devise a programme of engagement of partners (i.e. the multi-component EPiC-pMTCT intervention) based on evidence in the literature and qualitative data from this study, and also assess the feasibility of conducting the cluster randomised controlled trial. The results from this development work will also inform the selection of centres that will participate in the proposed trial if it is deemed feasible. The outputs from this research will comprise a synthesis of the evidence on barriers to male engagement in pMTCT, an analysis of the perspectives of men, women, health professionals and policy makers on male engagement, an intervention package, and a report on the feasibility of collecting the data required for the trial.

Health Systems Research Initiative - Call 1 Foundation Grant		
Project title		
Improving neonatal health in remote rural areas in China and Vietnam		
Grant holder	**Institute**	**Grant reference**
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Summary

Newborn (first 4 weeks of life) health remains a significant problem in China and Vietnam, especially in rural areas where they are 3 to 4 times more likely to die than in more developed areas. Most newborns can be treated with cost-effective interventions at facility and community levels, which do not require high-level training or costly equipment. Achieving high coverage of these interventions in the poorest areas could reduce neonatal deaths by at least 70%. While NH practice guidelines exist in China and Vietnam at national and local levels to guide on appropriate care and treatment, a major problem is ineffective implementation of the guidelines. This development study will assess the feasibility of using a participatory problem-solving intervention with local health managers to improve NH guideline implementation. If feasible, it will inform the design of a full-scale study to evaluate the effectiveness of the intervention. In the full-scale study, the research team would support local health managers through problem-solving and planning workshops, mentoring and capacity development to (1) assess the effectiveness of current guidelines; (2) identify barriers to improved implementation relating to service delivery (e.g. workforce issues, transport, equipment and supplies) and service demand (limited by remote access and traditional beliefs); (3) develop feasible strategies within current resource constraints e.g. re-organising services and the workforce, and using suitable community engagement models to stimulate demand for improved services; and 4) develop appropriate methods to monitor impact and unintended consequences.

To assess the intervention's feasibility in remote, rural China and Vietnam the development study must address 4 questions:

1. What are the current health service management practices and the degree of freedom for decision-making at different systems levels for improving NH outcomes?
2. What are the opportunities for developing or strengthening community actions to support improved NH outcomes?
3. What is the potential for monitoring NH outcomes and measuring cost-effectiveness of interventions at different health systems levels?

Professor Xiaoli Wang Peking University Health Science Centre	4. What is the feasibility for local managers to use a participatory problem-solving intervention to implement existing practice guidelines for improving NH outcomes covering community, primary and referral levels and what would be the best vehicle for the intervention? We plan to conduct desk-based reviews of NH practice guidelines, challenges of monitoring NH impact in remote areas and NH intervention cost-effectiveness, before holding a 2-day workshop in Beijing to refine our field work plan and data collection tools and conduct 3 national key informant interviews (KIIs). We will then collect data in Guizhou, China using 4 methods: (i) KIIs: community level representatives, local health service managers, frontline health workers and provincial level policy makers and senior health officials; (ii) focus group discussions: recent mothers and community members; (iii) document review of community action agreements and provincial/national policies and plans; (iv) observation of health management information systems (HMIS) and accounting systems. A smaller research team will repeat this data collection protocol in Tay Nguyen, Vietnam, before analysing the two country datasets. This will inform the design the full-scale study and facilitate stakeholder engagement. We will produce 3 outputs on monitoring NH services in remote areas; practicalities of monitoring NH in remote China and Vietnam; and national policy space and local decision making freedom to improve NH services. Three levels of stakeholders will benefit: local (health service managers and staff), national (policy makers in China's MCH centres and Vietnam's NH technical working group) and international (e.g. Unicef, WHO, PMNCH and implementation science groups like WHO-led Implementation Research Platform).

Health Systems Research Initiative - Call 1 Foundation Grant		
Project title		
Taking treatment of chronic lifelong conditions to scale: applying the positive deviance approach to health programme management		
Grant holder	**Institute**	**Grant reference**
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Co-Investigators

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Summary

In sub-Saharan Africa, and in South Africa in particular, there are significant numbers of people living with HIV/AIDS. Increasingly, there are growing numbers of people who are also living with non-communicable disease such as diabetes and heart disease. Although HIV is infectious and diseases like diabetes are not, they share similarities in that they require lifelong management to ensure health. HIV treatment requires a consistent regimen of antiretroviral therapy (ART), while diabetes may require a change in diet as well as regular medication. For policy makers planning health care in South Africa, it is a big challenge to make sure that the state health system has a cost-effective plan to keep these people on treatment and accessing care throughout their lifetime. Although the South African government has made ART available free of charge, recent studies have indicated that many with HIV stop taking the drugs over time. This problem has worsened as the programme has expanded. This is dangerous for their health and is also worrying from a public health standpoint as it could lead to strains of the disease that are resistant to ART as well as increasing the chance of them passing the virus on. Significantly, some clinics dispensing ART have much higher rates of people continuing to pick up their treatment. This study aims to fill knowledge gaps about the factors that influence whether people stay in care, focusing on the ART programme in the Western Cape Province of South Africa. The results of the research will help us work with policy makers in the Department of Health and leaders of community-based organisations to design a larger project that will involve implementing a country-wide programme to achieve more continuous care for people with chronic lifelong conditions.

The study will involve researchers from different disciplines who are trained in medicine, the analysis of health systems and policies, social anthropology, public health and pharmacy. We will adopt a method that analyses existing numerical data monitoring how regularly people are collecting the ART drugs at clinics, and other HIV-related data. This will be used to identify which health facilities are performing better than

	others in terms of keeping people on treatment and engaged in their clinical care. We will focus our work on facilities serving poor populations who are socially marginalised. We will then go on to do more in-depth research in a few facilities which we have assessed as "good performers" and "bad performers" respectively. We will look in more detail at the information about HIV care and also look at indicators of whether people with diabetes are staying in care, using diabetes as an example for non-communicable disease. We will also collect information by observing practices in clinics, and interviewing staff and patients. Interviews will be conducted with decision-makers in the provincial and national Departments of Health. We will investigate the reasons for differences in performance and identify constraints to positive performance. We suspect that the facilities that are managing to keep patients in care, have more innovative organisational practices and have in addition forged partnerships with community-based organisations. This can then help to better support people to take part in managing their chronic illness themselves as well. Such "self-management" is an important factor in poorer settings where the health system cannot provide intensive support from health professionals. We will identify generic factors that are helping to keep people on ART in care and that, if adopted more generally, could contribute to improving care for other chronic conditions also. We will have a workshop with the Department of Health and other stakeholders to discuss how the lessons learned can improve the programmes for chronic disease at national level. This will assist in the design of a bigger intervention and a further research proposal.

Health Systems Research Initiative - Call 1 Foundation Grant		
Project title		
Enhanced integration of primary and secondary health systems and patient empowerment through improved continuity of patient care and clinical handover		
Grant holder	**Institute**	**Grant reference**
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Summary

Effective integration of care between community (primary) and hospital care (secondary) health services is essential for a patient whose needs extend beyond the initial episode, and more care is required by the next level of health provider. This may include referral to a hospital if a primary care doctor cannot manage the condition or the continuation of medication and check-ups in the primary care after a hospital admission. The crucial stage is communication of patient-specific information from one caregiver to another or to the patient and family, for the purpose of ensuing patient care continuity and safety, termed clinical handover. A review of evidence in the high-income countries showed that the consequences of ineffective handover led to incorrect treatment, delays in medical diagnosis, life-threatening adverse events, patient complaints, increased health care expenditure, increased length of stay, increased re-admissions, and other impacts on health systems. Although we have not been able to find similar data for LMIC, experience and discussions with partners and experts indicate that the rate of adverse events and other unwanted outcomes due to poor handover are even greater in LMICs due to huge gaps in integration of health providers. It is likely therefore, that considerable scope exists to improve practice in a way that is cost-effective and potentially even cost releasing. These may be adapted from methods that have been successfully implemented in high-income countries (e.g. check-lists, patient held records). There is a global focus from the WHO on health systems development, critical for a better response to challenges of emergencies, infectious and other diseases. The rise in elderly populations and deteriorating lifestyle behaviours (e.g. smoking rates) in LMICs have increased the burden of heart related, diabetes and other long term diseases. Due to their need for on-going care, these are particularly adversely affected by poor integration between primary and secondary care.

Thus the main drivers for our proposal are evidence for the following:

	-clinical handover processes are at the core of patient safety and consequences of inadequate clinical handover result in poor patient outcome and high cost to the health system - Clinical handover is a global priority identified by the WHO Patient Safety Programme. There is need and interest in many LMICs to improve integration between-levels of health care, but little evidence to guide local decision makers in how to identify and overcome barriers to improved practice - initial interventions can be culturally and politically acceptable, affordable and sustainable, but that such interventions have not been systematically explored, tested or implemented. The objectives of this one year project (part of a extensive five-year programme) are: 1) describe existing situation in terms of policies, training, activities, and culture for clinical handover between primary and secondary care during referrals and discharge 2) identify barriers and facilitators (health care system and patient related) for improving clinical handover 3) develop options for intervention 4) build health systems research capacity. These will be achieved through a range of complex research methods that would involve all stakeholders from policy makers to patients. The immediate benefits of this phase will be for the hospital and community health care practitioners and policy makers who will be able to use the findings to start addressing some of the affordable solutions identified, researchers who will learn health system assessment techniques novel to them, and ultimately the patients who will receive a better seamless health care through the development and implementation of interventions. The follow-on intervention study is hoped to roll out into long-term programmes that could dramatically improve integration of primary and hospital care services.

Health Systems Research Initiative - Call 1 Foundation Grant		
Project title		
How do local participatory governance reforms influence equitable access to health services? The role of Panchayati Raj Institutions in Kerala, India		
Grant holder	**Institute**	**Grant reference**
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Co-Investigators

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Summary

The Public Health Foundation of India, the London School of Hygiene & Tropical Medicine and the National Health Systems Resource Centre (NHSRC) of the Ministry of Health & Family Welfare, Government of India will come together to explore how local participatory governance (LPG) reforms influence equitable access to health services. LPG of social sectors (such as health or education) entails decentralised planning and oversight of services, undertaken through participatory and deliberative processes involving local communities and stakeholders. The salutary impact of LPG on health access is widely acknowledged, however the actual pathways of such change are not well researched, and the role of context in influencing these pathways also remains poorly understood.

This research aims to address these gaps in the knowledge, using the case study of Panchayati Raj Institution (PRI) reforms in Kerala state, India. In India, LPG is synonymous with PRIs - locally elected bodies operating at village, sub-district and district levels with financial and administrative powers over social services including health care. Kerala is an example of extensively implemented PRI reform, and hence offers a best-practices scenario for clear identification of contexts and pathways of influence.

Our conceptual model is informed by global evidence suggesting that LPG reforms have influences on multiple governance arenas, including politics, civil society and public administration. Resultant improvements in political accountability, community empowerment and health system responsiveness can act synergistically to enhance equitable access to health care. These broad putative pathways of influence provide a basic framework for more detailed empirical investigation.

Specific objectives:
1. Explicate the pathways through which institutions of local participatory governance (LPG) influence access to health care

	for the poor and vulnerable, through a case study of the Panchayati Raj Institution (PRI) local governance system in Kerala state, India 2. Understand the policy context of implementation of Kerala's PRI reforms for LPG in health care 3. Explore and strengthen the application of innovative Health Policy & Systems Research (HPSR) approaches in exploring LPG and its influence on equitable access to health care across different low & middle-income country (LMIC) settings. The study will engage innovative HPSR approaches drawing on the social sciences, including realist enquiry and actor-focused approaches to policy implementation. Qualitative methodology, including in-depth interviews and focus groups conducted in four districts, will help access the lived experiences of involved policy actors (representing PRI committees, service users, civil society and health systems). Data will be analyzed using the "framework" approach for policy research developed by the UK National Centre for Social Research, combining pre-determined and emerging themes. Data collection strategies will be revised iteratively as the study progresses, an approach that will be fundamental to innovating with HPSR methods. Towards the end of the study, we will convene a workshop to share preliminary findings and develop a larger proposal. The larger proposal will examine the role of LPG mechanisms in facilitating greater access to services in several Indian states and countries in sub-Saharan Africa. The study emerges from needs expressed by policymakers in India, for deeper understanding of how to support LPG for health, and will fulfill that need. The integral role of NHSRC in the study will facilitate policy uptake of findings. The findings will support accountability and greater citizen participation in decisions that affect them - and ultimately greater access to healthcare for marginalized people, across LMIC settings. The study will also contribute to conceptual innovation and methods in the field of HPSR, and help strengthen UK-India research collaborations.

Health Systems Research Initiative - Call 1 Foundation Grant		
Project title		
Developing an innovative primary health care system for pastoralist community		
Grant holder	**Institute**	**Grant reference**
Dr Hailay Teklehaimanot	Ctr for Nat Health Dev Ethiopia (CNHDE)	MR/M006050/1

Co-Investigators

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Professor Berhanu Erko
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Summary

Pastoralists in Ethiopia constitute about 15% of the over 86 million people. Although pastoralists are socio-economically important segment of the population, they are subjected to harsh environment and extreme poverty with poor infrastructure and social services. As a result pastoralists have poor health status with high infant, child and maternal deaths. Cognizant of the challenges and socioeconomic importance, there have been continental and national efforts to improve the livelihoods of pastoral people. Ethiopia introduced a community-based Health Extension Program (HEP) in the pastoral areas to address the poor health status and achieve equitable health outcomes. The HEP model, which was originally designed and piloted in 2004 for adaption to the context of the agrarian sedentary population, was introduced into pastoral areas with minor adjustments on human resource taking into account the cultural context, language and scarcity of high-school graduates.

Although there has been a significant improvement in the performance of the health system in the country, the impact has been less successful in the pastoral areas demonstrating that the adaptation of the HEP model to pastoral areas was not based on adequate consideration to the local context. We propose to follow the following steps to develop an appropriate public health interventions for pastoral settings: 1) description of the local context including existing health systems; 2) selection of potential interventions; 3) testing interventions (feasibility, acceptability and efficacy); 4) formulation of appropriate public health intervention; 5) implementation at a scale; and 6) monitoring effectiveness and adequacy.

The purpose of this 'development grants' proposal is to address the first two steps, which will be used to develop a well-informed research project (moving forward through the steps) for submission to the 'full-scale research project grants'. We aim to describe the morbidity patterns, characterize the context and identify health determinants, and address the question as to what are the most appropriate interventions for

	pastoral areas. We will describe the wider context and barriers to service delivery to inform the design of strategies that ensure acceptability and service utilization addressing the question as to how to most effectively delivery health interventions building on existing structures. We will also explore existing venues that are potentially adaptable for service delivery in the pastoralist setting and address the question as to how to most effectively delivery health interventions using existing social events and services. The study will be conducted in Borona zone, Oromia region. It will involve documentation and analysis of contextual factors and existing health services. The research will employ basic epidemiological study based on health facility records and registers, and community level surveys. Behavioral and social processes that put the pastoralist community at high risk will be described through qualitative study. Process evaluation will be conducted through case-study approach to thoroughly examine the underlying context at various levels of implementation and stakeholders using key informant interviews and Community Focus Group Discussions. The designing process of potential health interventions will involve community participation, adoption of innovative and adaptive approaches, and consider cultural sensitivity. The study will contribute to achieving equitable health outcomes and the MDGs in Ethiopia and beyond, and to ensure the widest use of the research findings, we aim to establish a collaborative partnership involving policymakers and relevant stakeholders. Results of the research will be communicated through presentations in national and international conferences, publications, the Internet, and mass media.

Health Systems Research Initiative - Call 1 Full Grant		
Project title		
Strengthening South Africa's health system through integrating treatment for mental illness into chronic disease care (Project MIND)		
Grant holder	**Institute**	**Grant reference**
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Summary

Integrating mental health care into primary health care services could reduce the impact of both chronic communicable and non-communicable diseases (NCDs). Like many low- and middle-income countries (LMICs), South Africa (SA) faces the challenge of how to reduce the high prevalence and impact of communicable diseases and NCDs, including mental disorders where limited services are available. Mental disorders are important to address among patients with chronic diseases as these problems are associated with poor adherence to treatment, more rapid disease progression and treatment failure. As treatment failure increases the use of health services and health service costs, chronic disease care in LMICs must be expanded to include mental health care. The integrated delivery of mental health services and chronic disease care has been shown to not only improve access to mental health care but also the mental health of patients living with a chronic disease.

Yet, limited knowledge of how mental health care can be integrated into chronic disease services in ways that are acceptable to patients and providers and feasible to implement with few resources has delayed the integration of services in SA. The provision of integrated mental health and chronic disease services has also been delayed by questions about whether services should be vertically or horizontally integrated. Vertically integrated services are delivered at the same location, but mental health and chronic disease services are provided by separate cadres of health workers. Horizontally integrated services are delivered at the same location by the same staff are responsible for mental health and chronic disease care. The goal of this project is to answer these questions by assessing current capacity and barriers to integrating mental health services into chronic disease care and by comparing the effectiveness and cost-effectiveness of a vertically and horizontally integrated model of service integration among patients receiving treatment for HIV or diabetes and who are at risk for treatment failure in Cape Town, SA. Through this project we hope to identify a feasible, acceptable and effective model for integrating mental health

	services into chronic disease care that is applicable to other LMICs. Findings from this study are likely to be highly relevant for use in other LMICs given similarities between the burden of disease, treatment populations, and treatment systems in SA and other LMICs. The study will comprise two phases. In the first phase, we will conduct in-depth interviews with a range of healthcare providers in HIV and diabetes services to assess barriers to integration and the feasibility and acceptability of our proposed models of service integration (Aim 1). Findings from this phase will be used to adapt our evidence-based mental health service package for optimal integration into chronic disease services. In phase two, a clustered randomised controlled trial will be conducted. We will select 24 HIV and 24 diabetes clinics to randomise to a vertically integrated arm, horizontally integrated arm, or treatment as usual (no integration). We will recruit 25 patients at risk for treatment failure from each of these clinics (total 1200 patients). After study enrollment, a baseline assessment will be completed by a fieldworker. Participants recruited from clinics randomised to either the vertically integrated or horizontally integrated arm will then receive their intervention sessions. All participants, irrespective of their intervention arm, will be tracked for 6- and 12-month follow-up interviews. At these interviews, fieldworkers blinded to their intervention arm will re-administer the baseline assessment and biological specimens will be collected to assess for chronic disease outcomes. Findings from this phase will be used to evaluate the relative effectiveness and cost-effectiveness of our proposed models of service integration (Aims 2-3).

Health Systems Research Initiative - Call 1 Full Grant		
Project title		
Learning from health systems strengthening in maternal and newborn health (MNH) in China to inform accelerated progress for saving lives in Africa		
Grant holder	**Institute**	**Grant reference**
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Summary

Globally, 289,000 women die each year due to complications of pregnancy and childbirth, and 2.9 million babies do not survive the first month of life. Sub-Saharan Africa - with only one tenth of the world's population - carries the greatest burden and there is little evidence of progress. Several strategies have been identified to accelerate progress in reducing maternal and newborn mortality, including increasing the number of health workers and upgrade specific skills for care at birth and exploring ways to attract health workers to rural areas, but how to implement these measures at large scale in sub-Saharan Africa remains uncertain.

Sub-Saharan Africa can learn important lessons from China's progress in maternal and newborn health (MNH), in particular in terms of the process and the "how". Over the last twenty years, China's newborn and maternal mortality rate fell dramatically. The reasons for this success are multiple, but China's strategic investments in health systems strengthening have no doubt contributed, particularly in terms of building a strong midwifery workforce, encouraging women to give birth in hospital and making delivery care mostly free. Regional disparities in access to MNH care persist, but even the poorest regions, - which face geographical barriers not dissimilar to sub-Saharan Africa - have made substantial progress. The mortality difference between China and sub-Saharan Africa at national level is about 3-fold for newborn mortality and ten-fold for maternal mortality; and the current urban-rural maternal and newborn survival gap in China is about 3-fold. So evaluation of China's learning could serve to both accelerate progress for closing China's urban-rural gap and to the increasing momentum for change in Africa.

The aim of this project is to use China's experience in MNH to answer a number of questions that are critical to understanding how similar progress can be achieved in sub-Saharan Africa, including:

1. Do existing health systems indicators discriminate among areas with high and low maternal and newborn mortality? Can

	thresholds be set (e.g. density of providers per 1000 population) below which mortality cannot decline? 2. What is the appropriate midwifery workforce, and how is it best deployed, to equitably deliver essential MNH interventions at scale and quality, and what resources and systems (financial, training, governance, supervision, etc.) need to be in place to achieve universal access to these interventions? 3. How do existing structures and processes enable successful referral from the community to facilities offering obstetric care? 4. What changes in the health financing system, including introduction of new insurance schemes, pooling arrangements, and provider payment mechanisms, have reduced financial barriers, thereby supporting the expansion of coverage of essential MNH services? 5. What lessons from China can be transferred to Tanzania? We will answer the above questions through a number of studies. First, we will use China's unique and extensive routine data systems to examine the relationship between health systems inputs and maternal and newborn mortality across all counties. Second, we will collect data in eight counties in China's poorest Western provinces to provide an in depth understanding of the relationship between MNH inputs that are more difficult to capture through routine data sources, including the mix and levels of the midwifery workforce, referrals and levels and allocation of health care financing, and selected service coverage and outcome indicators. Third, we will examine whether the successful MNH strategies deployed in China can be implemented in Tanzania and whether the effectiveness would remain the same given Tanzania's different health and socio-economic context.

Health Systems Research Initiative - Call 1 Full Grant		
Project title		
Investigating the determinants of health worker performance in Senegal		
Grant holder	**Institute**	**Grant reference**
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Summary

Training, motivating and retaining professional health workers is crucial for the improvement of health outcomes, especially in low and middle-income countries where poor health worker performance has been recognised as one of the key obstacles to achieving better health outcomes. To improve staff motivation and performance, many donors and governments have recently supported the introduction of Performance-Based Financing (PBF) mechanisms, which link part of the health workers' remuneration to performance targets. While promising results have shown that these programmes can improve utilisation of health services and some health outcomes, it is still unclear what specific effects they have on the motivation and behaviours of health workers. Yet it is key to understand better how PBF works for health workers, and in particular whether all aspects of health workers' performance have improved or whether PBF can induce some undesired effects, e.g. a reduction in time spent with each patient.

The aim of the proposed research is to generate new knowledge and understanding of how PBF programmes work and influence health workers' performance. The proposed research takes advantage of a quasi-experimental study introduced by the World Bank in four of the poorest and most rural regions of Senegal in 2014. The project will collect a rich set of primary data in control and PBF facilities to answer several critical questions.

The research will first undertake some interviews to assess whether the extent to which what was planned in the PBF scheme is actually what is happening in practice. This will help understand exactly the nature of the intervention being implemented. The research will then undertake a large survey, collecting information in control and PBF facilities on the working environment and characteristics, behaviours and performance of health care workers. The aim is to determine the effects of PBF, by comparing the performance and behaviours of health workers with and without PBF incentives. Specifically, the survey will explore whether PBF improves the

	productivity, quality of care provided and attitude towards patients. The data collected will also help determine whether the time and effort spent on each patient increase and on non-incentivised activities decrease as a result of the PBF. Finally, with the information collected, we will be able to identify mechanisms through which the performance of health workers changes.

Health Systems Research Initiative - Call 1 Full Grant		
Project title		
Determinants of effectiveness of a novel community health workers programme in improving maternal and child health in Nigeria		
Grant holder	**Institute**	**Grant reference**
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Summary

Improved mother and child health (MCH) continues to be an issue of international priority, particularly for sub-Saharan African countries. Evidence suggests that schemes involving Community Health Worker (CHWs) can be effective in improving the health of mothers and children. Although such schemes are implemented in some developing countries such as Bangladesh, to guide further developments, much better understanding is needed on what makes CHW programmes successful and under what circumstances.

In Nigeria, despite significant improvements, mother and child health remains an issue of concern, particularly in rural areas where most vulnerable groups live. In 2012, the Federal Government of Nigeria established the Subsidy Reinvestment and Empowerment Programme (SURE-P) to invest the revenue from fuel subsidy reduction into a social security programme to improve lives of most vulnerable populations.

One SURE-P component, implemented in selected facilities in each State, focuses on maternal and child health (SURE-P/MCH). The idea is that recruitment of CHWs, combined with infrastructure development, and improved availability of supplies and medicines, will improve access to quality health services, and ultimately, improve mother and child health. Since December 2012, Conditional Cash Transfers (CCT) have also been added at selected sites ('SURE-P/MCH+CCT'). These incentive payments to pregnant mothers are linked to use of health services at different stages: e.g. for antenatal care visits and facility deliveries.

The AIM of this project is to inform strengthening and scaling up of community health worker (CHW) programmes. This will be achieved by investigating two implementations (i.e. with and without conditional cash transfers) of a Nigerian CHW programme, to understand what factors, under what conditions, promote equitable access to quality services, and improve maternal and child health outcomes. We will do so by:

	1.Developing an in-depth understanding of the context and the process of implementation of the interventions, including relations between health workforce and infrastructure and supplies; 2.Identifying, assessing and comparing the intervention outputs (e.g. skills and practices of CHWs and efficiency of primary health care facilities) and outcomes (e.g. equitable access to quality MCH services and attainment of MCH outcome targets); 3.Developing an empirically-based and theoretically-grounded model of complex relations between the people involved, context, implementation process, outputs and outcomes of the interventions; 4.Developing transferable best practices for scalability (expansion within a broadly similar context) and generalizability (expansion to different contexts) of the interventions. This five-year research and development project will be implemented in two States in Nigeria - Niger State in the North and Anambra State in the South, which were selected in consultation with the Federal MOH and SURE-P national programme officer. Selecting two states from different parts of the country will provide an opportunity for different contextual factors that affect the implementation and outcome from the programme to be better elucidated and ensure that the findings are generalisable to the entire country. Within each State we will select three Local Government Areas (LGAs) clusters: one with SURE-P/MCH, one with SURE-P/MCH+CCT and one with no intervention. In each State the two interventions will be assessed against each other and against the comparison (i.e. no implementation) site. We will work closely with local, State and Federal policymakers and practitioners, to generate answers that can be used to inform their policy decisions. We expect that better understanding of performance of the CHW programme in Nigeria will inform further strengthening of the existing programme, its replication within Nigeria, and other similar countries considering the implementation of CHW.

Health Systems Research Initiative - Call 1 Full Grant		
Project title		
Health Services that Deliver: Improving Care for Sick Newborns (HSD-N)		
Grant holder	**Institute**	**Grant reference**
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Summary

In 2009, there were 42,000 newborn deaths and they accounted for 40% of all deaths among children under 5 Kenya. This high neonatal mortality is a major reason why Kenya is not succeeding in its battle to reduce child deaths in line with stated targets. Recognising this, the Ministry of Health has started to focus on improving newborn (and maternal) health with strategies aimed at communities and small clinics. However, sick or vulnerable newborns will often require inpatient care in referral facilities from skilled workers with access to basic technologies. Interventions typically delivered at this level include, for example, fluids or feeds for those unable to suck or oxygen for respiratory support. Such interventions require carers to perform the same, time-consuming tasks multiple times per day for many days. Shortage of skilled health workers often means these services are inadequately delivered, potentially delaying or preventing recovery.

We are planning research that will establish: the potential burden of severe neonatal illness; what existing infrastructure and human resource capacity is available supporting access for this population; utilisation of these services; and the quality of existing nursing care services. We will do this focusing on Nairobi's population of 5 million, many of whom are very poor. With a focus on universal coverage and neonatal care meeting agreed standards, this work will provide the basis for estimating the gap between available and needed services (Gap 1) and the quality gap between existing and desired services (Gap 2). In partnership with important stakeholders, we will explore how a low-income country might best tackle health workforce challenges to close these gaps and improve provision of essential nursing care to all sick newborn babies in an affordable and efficient way. This ultimate aim of research is driven by the fact that salary costs are a major proportion of total health care costs. One option will therefore be to explore alternatives to employing professional nurses if necessary interventions can be effectively provided by other groups under the supervision of professionals - an approach known as task-shifting.

	Although task-shifting sounds a simple solution, it may not always be. Failure to consider national regulations, the opinions of important professionals, managers or parents may lead to the approach being rejected or failing. Taking account of the local situation may be particularly important when those being cared for are sick, newborn babies and when day to day care has traditionally been given by professional, even specialist nurses. First, therefore, we will define with the major groups what forms of care should be available to all, learn what regulations exist on providing care, and consider the concerns of major groups with respect to task-shifting. We will examine carefully all the things that nurses have to do in a range of different facilities, explore with experts which tasks may be simple enough for others to do, and examine whether there is time to do all the essential care tasks. We will estimate how much need there is for neonatal nursing care in Nairobi and the gap between what is available and what is needed. Using all these data we will explore how many new staff might be needed to improve the delivery of essential care for all newborns in need. We will also undertake preliminary work to explore the costs of meeting this need using extra professional nurses or if tasks were shifted to other, lower cost staff. Possible roles for lower cost staff will be informed by work examining what tasks to shift and how they might fit within existing patterns of providing care. All this work will be conducted with the major decision makers in health, health professionals and parents to develop options sensitive to local conditions. Based on this body of work we aim to develop a task-shifting approach that can be tested in Kenya in the future.

Health Systems Research Initiative - Call 2 Foundation Grant		
Project title		
Developing innovative approaches to improve treatment provision for childhood infection in peri-urban settings: A pilot study in accredited drug shops		
Grant holder	**Institute**	**Grant reference**
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Summary

Pneumonia, malaria and diarrhoea are major causes of death in African children under 5 years of age, yet if diagnosis and treatment are available the majority of these deaths can be prevented. Children with these diseases should be seen and treated within 24 hours of becoming ill but affordable diagnosis and treatment are often not available close to home. Patients who do seek help often do so from retailers who sell medicines but do not provide diagnosis. In these situations, many children with serious diseases either receive the wrong treatment or the severity of their illness goes unrecognised. A simple solution, called integrated Community Case Management (iCCM), has shown encouraging results in improving diagnosis and treatment of these diseases when it is used by community health workers (volunteers who provide health services) in rural areas.

The iCCM strategy has not been tested in urban areas, but this is increasingly important because the population of African cities is expanding. Generally, this urban expansion is unplanned so living conditions and sanitation are poor, placing children at increased risk of disease. Providing better services through retail outlets is one possible way to ensure access to affordable basic health services. However, this is subject to some debate on whether retailers can provide health services of acceptable quality and price.

We plan to conduct a study in order to develop a community-based mechanism to deliver iCCM services that is suitable for urban areas. The study will be conducted in unplanned urban areas surrounding the Ugandan city of Kampala. This site was chosen because it has many features of rapidly expanding cities: low socioeconomic status, unplanned housing, poor sanitation, poor provision of clean water and limited access to health services.

During the study, we shall consult with local stakeholders (local communities, drug shop vendors, health staff and national authorities) to explore which of two alternative strategies to improve access to health care in urban areas

	would be most feasible and acceptable to the local population and national health authorities. In these two strategies, either community health worker volunteers (CHWs) or drug shop vendors would be trained by the Ministry of Health to diagnose and treat three key childhood diseases: pneumonia, malaria and diarrhoea, and to refer patients with severe or unknown illness to local health centres. A key aim of the study is to identify the most suitable way to supervise and support community volunteers and drug shop vendors, how to integrate them into the local health system, and how to assure the quality of the services they provide. We shall also conduct a small pilot study in 10 drug shops to measure the accuracy of diagnosis and quality of service provided after training. Drug shop vendors will be asked to record details of patients they see, including the symptoms, diagnosis and what actions were taken. This will be backed up by other methods of assessment by health professionals to assess whether the drug vendor used the iCCM guidelines and prescribed drugs correctly. The research team will also observe what happens when a sick child is treated in a drug shop, and carry out interviews to learn what providers, patients and local leaders thought of the treatments received in trained drug shops, and to explore the benefits and costs of the new approach to patients and drug shop vendors. We shall also measure how much it costs the Ministry of Health to support this approach. The data collected will be used to inform the development of a new intervention strategy to improve access to treatment for children living in unplanned urban areas, which will be tested in future studies.

Health Systems Research Initiative - Call 2 Foundation Grant		
Project title		
Mentoring and measurement for better maternal and newborn survival: developing an intervention to put accountability into practice in Tanzania		
Grant holder	**Institute**	**Grant reference**
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Summary

Illness and death in pregnancy and childbirth are a major health problems in many low-income countries. In sub-Saharan Africa every year 179 000 women and over one million babies die around the time of childbirth. Maternal mortality ratios are high at 500 per 100 000 livebirths and newborn mortality at 30 per 1000: in Tanzania for every 200 babies born, one woman dies in childbirth and six babies do not survive the first four weeks of life. The most common cause of maternal death is severe bleeding, which can happen quickly just after the baby is born. Other common causes of death are related to hypertension and infection, including sepsis, malaria, HIV and anaemia. Many babies die because childbirth care is poor or because the mother has an infection in pregnancy which means the baby is premature, which means born too soon.

Simple, low-cost ways to tackle these issues are available, and most are affordable even in low-resource settings. However, many women and children simply do not get the interventions they need, particularly during labour, childbirth, and the first few hours of the baby's life. For example, a woman with a life-threatening complication might not find a skilled health care worker to deliver the baby because trained health staff are either absent or busy with other work. Vital equipment might have broken down and be unrepaired, and drugs and supplies may be out of stock. There may be no mechanism to ensure that equipment, drugs and supplies are always available and weak leadership might lead to a culture of frustration or resignation among health staff.

Maternal and perinatal deaths reviews have helped to reduce maternal deaths in the United Kingdom. Death reviews and other quality improvement approaches can stimulate changes in management and support structures so that equipment, supplies and drugs together with skilled professionals are always available for women in need. For more than a decade, the World Health Organization has promoted the use of death reviews to reduce maternal mortality. In Tanzania, however, death reviews are not done systematically or at scale. They are

	often based on deaths in hospital, while most maternal deaths occur in the community. And reviews often conclude that the woman herself was to blame rather than identifying areas for improvement under the control of the health staff which can be followed up to see whether the change results in improvement. In order to improve quality of care, a review system needs skills including mentoring, communication, analysis and intersectoral collaboration. The new WHO approach of "maternal death surveillance and response" aims to address these weaknesses and emphasizes 1) death surveillance at the community level, 2) analysis of trends, causes, risk factors and underlying causes of deaths and 3) the use of data to adapt local and national strategies. Careful adaptation and a link to mentoring is needed to develop a sustainable surveillance and response approach in Tanzania that is both embedded in the health system and designed for subsequent implementation on a national scale. We will support the Tanzanian government in preparing, supporting and piloting an adapted and scalable maternal and perinatal death surveillance and response approach based on mentoring and measurement. Our work will include synthesising evidence on direct causes and underlying factors for maternal and newborn deaths, and developing a way to find out about, and act on, all maternal and newborn deaths.

Health Systems Research Initiative - Call 2 Foundation Grant		
Project title		
Community health volunteers as mediators of accessible and responsive community health systems: lessons from the Health Development Army in Ethiopia		
Grant holder	**Institute**	**Grant reference**
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Summary

Many low (and some middle) income countries face critical shortages of health workers. Governments have sought to compensate by mobilising community health workers (CHW), who can often be trained and deployed quicker than traditional health workers and can take over some of their roles. Their presumed advantages include a good understanding of their communities (particularly of remote, marginalised, and hard to reach populations) and greater community involvement and accountability. While there is some evidence that their introduction can be successful, less is known of how they are perceived, the challenges they face, how the health system can maximise their potential and, if shown to be effective, how they can be scaled up and linked most effectively to formal primary health care (PHC) structures.

Ethiopia offers a unique opportunity to understand the role of the CHWs and their potential to both fill skills gaps and develop a model of accessible and responsive PHC. The needs are huge, reflecting historical under-investment in training, exacerbated by migration of health professionals. The problem is compounded by the need to reach out to remote areas in a large, complex, and multiethnic society with urban and rural, settled and nomadic populations, all with low service utilisation. However, what makes Ethiopia different from many similar countries is its commitment to community-led PHC, with a high priority placed on improved access to essential services, and the creation of two distinct but, at least in theory, complementary types of community health workers. The first comprise the Health Extension Workers (HEW), a flagship national programme initiated in 2003, comprising individuals who have been given basic training to work in their own communities providing basic health services. The programme has attracted international interest but its success in facilitating access to PHC has been moderate. The second group, initiated in 2010-11, comprises volunteers in the Health Development Army (HDA), who act as agents and mobilisers to bridge the gaps between front line services (often perceived as inaccessible) and communities, cultivating trust and

	supporting participatory health systems. The HDA works across sectors reflecting a paradigm of PHC that addresses the broader social determinants of health. We seek to know whether, when faced with scarce resources, community health volunteers can make a meaningful contribution to better health and, if so, under what conditions, and how can their contribution be optimised. Our objectives include exploring what the different types of community health workers actually do, their relationship (in terms of trust, power and knowledge) with their local communities, the barriers to them doing more, both in terms of scope and quality of practice, and what they might do with appropriate support. To answer these questions, we will first develop an analytical framework in which access is seen as a social process, and then fill it in as far as possible with data and information from policy documents. This will be used to refine the study design and develop appropriate tools to collect qualitative data. The research will give voice (including via video diaries) to the different types of CHWs, the communities they serve, and the policy makers on whose decisions they depend. The project will generate timely, policy-relevant information, identifying bottlenecks to improving access to key services and promoting partnerships with communities, as well as developing plans for a subsequent evaluation of the HDA, working in partnership with health authorities at all levels. Although focused on Ethiopia, the findings will be relevant to those planning CHWs initiatives in resource-poor settings elsewhere.

Health Systems Research Initiative - Call 2 Foundation Grant		
Project title		
Whole System Change in South Africa: Understanding the experience of health system transformation in the Western Cape province (WholeSyst-SA)		
Grant holder	**Institute**	**Grant reference**
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Summary

Twenty years after the ending of apartheid the time is ripe to evaluate South African experience of health system transformation. Much was promised and many changes have been introduced - but how much has been achieved, especially for the most vulnerable and previously disadvantaged groups? What factors have enabled or constrained change across the public health system, nationally recognised as the leading edge of efforts to improve the health and well-being of vulnerable groups? What lessons does past experience hold for continuing efforts to improve health care and health? What issues need to be tracked over time to generate the evidence needed to support future policy and managerial decision-making?

This proposed grant intends to address these questions. It is jointly submitted by a team of public health system policy-makers/managers and researchers based in the Western Cape (WC) province. As South Africa is a quasi-federal state, the WC provincial government has the constitutional responsibility for ensuring an effective health system for its population. It also has a reputation for having been relatively effective in sustaining implementation of such change over the last 20 years. Examining the particular experience of one province, in comparison with wider national experience, will allow in-depth investigation of South African health system transformation. The project will consider not only what changes have been implemented, with what achievements and challenges, but also what set of political, leadership, organisational and other factors have supported or limited the implementation of change. From this analysis it will seek to identify the pathways to change underpinning health system development in the province. The project team's combination of experience and expertise will support this in-depth investigation.

Better understanding of what the province has achieved and how, set against the national context, will offer insights of relevance across the country, as well as internationally. It will also, more specifically, contribute to generating the evidence base needed to support future policy and management

	decision-making, by supporting provincial health system monitoring and evaluation activities and identifying related, larger scale research needs.

Health Systems Research Initiative - Call 2 Foundation Grant		
Project title		
Guideline Adherence in Slums Project - Template-based documentation and decision support for primary healthcare clinics in the private sector		
Grant holder	**Institute**	**Grant reference**
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Co-Investigators

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Summary

With large numbers of people in slums seeking care through the private sector, it is important to develop tools to help providers in these clinics improve the quality of their services. For example, documenting the need for an antibiotic helps reduce the number of cases of unnecessary antibiotic prescriptions.

Clinical practice guidelines (CPGs) are tools developed to help doctors and nurses give evidence-based care. These are however not easy to use in a patient-facing scenario (e.g. a doctor looking through a manual when the patient is seated in front of him/her). They also need to be tweaked to be relevant to the local context (e.g. is the first line drug available or affordable?). For CPGs to be relevant in low-resource settings it is important to address multiple, if not all, barriers to using guidelines, but in a manner that does not strain limited resources.

Our intervention involves working with clinical care providers and developing templates (think checklist) that can be used while they are seeing the patient. The templates take the form of rubber stamps that can be printed into the paper case sheet (e.g. if a woman presents with increased frequency of urination, the clinician stamps the Urinary Tract Infection template into her case sheet). This template is both a guide to what questions to ask the patient and how to manage UTIs. Other illnesses get other templates, but a set of 6-8 templates covers the majority of patients walking into primary care clinics.

Importantly these templates are easy to digitise and analyse. They are in the form of a multiple choice exam paper where bubbles need to be shaded. A cell phone image of a filled-in template can quickly give us data on how the case was managed without revealing patient identity. Being rubber stamps we avoid the need to keep track of multiple printed sheets of paper. We also avoid wastage when guidelines change because changing the rubber engraving on the stamp is simple and cheap.

	We now have a tool to easily monitor the clinician's work, check for quality, and work with them if there are reasons to deviate from the guidelines by during regular feedback sessions. The intervention is being used in two slum clinics in Nairobi with great initial responses. We now want to study this intervention in a set of 10 different private sector clinics in Nairobi's slums. We would like to test if this intervention is: a) Usable - different clinics have different priorities and attitudes and we need to be sure that the intervention poses no big challenges b) Effective - does the intervention actually improve clinical practice (e.g. by reducing unnecessary antibiotic prescription)? c) Sustainable - how much does it cost for us to support these clinics with tools and feedback? Can the clinics afford to pay us for this service? d) Scalable - is there a realistic chance for us to roll this intervention out at national (or even provincial) level? If successful the intervention has the potential to change how healthcare is delivered in low-resource settings. More and more people are seeking care in the private sector, but very few regulations, services and tools exist to ensure that care in the private sector is of high quality. We hope to make a significant impact in the quality of care that is delivered to the poor.

Health Systems Research Initiative - Call 2 Foundation Grant		
Project title		
Development and evaluation of system dynamics methods to engage with policy makers on the prevention and control of diabetes in a middle income region		
Grant holder	**Institute**	**Grant reference**
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Professor Ian Hambleton
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Summary

Diabetes is a serious and growing problem globally. Evidence suggests diabetes disproportionately affects people in low- and middle-income countries, where 80% of people with diabetes live, both in terms of numbers of people affected as well as outcomes and deaths. Diabetes affects between 10 and 20% of the adult population in the Caribbean region with deaths due to diabetes estimated to be 35% higher than in the neighbouring United States. Not only are prevalence and mortality a large burden but also rates of complications such as lower-limb amputation are also high. Much of the high burden of diabetes can be attributed to major risk factors such as physical inactivity and obesity. Health systems with limited resources in these developing countries are struggling to meet the growing epidemic.

There is a strong political will in the region to tackle diabetes and other non-communicable diseases (NCDs). In 2007, the Heads of Government of the Caribbean Community put forth the Port of Spain Declaration (POSD) on NCDs, definitively challenging the high burden of these diseases in the region and pledging action through policies to strengthen prevention and treatment. This laid the groundwork for a global political movement to recognise NCDs on the public health agenda culminating in the United Nations High Level (UNHLM) meeting on NCDs in September 2011. Both the POSD and UNHLM strongly emphasise the importance of policy measures for reducing NCD risk factors and put forth policies and targets.

However, evidence on how to achieve a reduction in overweight/obesity and physical inactivity and subsequently reducing NCDs at the population level is scarce, particularly in developing countries. While the risk factors and determinants of NCDs like diabetes are well studied and established, research has not been able to conclusively demonstrate real-world interventions that can reduce their popburden or change the course of the epidemic.

	Systems science, which combines multiple factors and complex interrelationships, may offer a solution to evaluating and testing policies for diabetes reduction. It does this by explicitly taking into account system behaviour that is non-linear and complex, with feedback loops and time delays. Within systems science, system dynamics modelling is a methodology incorporating input from experts and stakeholders and combining that with quantitative research evidence to produce a map of a system with the ability to simulate outcomes by changing parameters. The approach has been used effectively in a wide variety of fields including engineering, agriculture, energy planning, business dynamics, and health including diabetes. However, few models have been developed for use in middle-income countries. This study will be the first to explicitly develop a model for diabetes in developing countries, drawing from work successfully conducted by the Centers for Disease Control in the United States and their model for diabetes. The study will apply the rigorous qualitative methods required by interviewing stakeholders, experts and policy makers in the region as well as gathering evidence from research published on risk factors, outcomes, and health system performance for diabetes in the Caribbean. The study will use the developed model to engage stakeholders and policy makers in time for the on going evaluation of the POSD as a tool for effective policy planning. It will also evaluate the utility of this method in the region in engaging policy makers to think in terms of systems and with long time horizons. The results of this development study will be used to build a larger model incorporating economics and costs, which can then be adapted and used in other low- and middle-income countries.

Health Systems Research Initiative - Call 2 Foundation Grant		
Project title		
Feasibility Study: Effectiveness of Public Health System (Programmes/Policies) in Combating Severe Population Health Crisis in Ukraine		
Grant holder	**Institute**	**Grant reference**
Professor Stephen Peckham	University of Kent	MR/N005473/1

Co-Investigators

Dr Ganna Vakhitova
Kyiv School of Economics

Dr Olena Nizalova
University of Kent

Summary

Ukraine is a middle-income country within the WHO European region which has long faced significant population health crisis exacerbated by growing health inequalities within the country (rural/urban, male/female divide). It is one of the five countries in the region with the lowest life expectancy (11 years less than the EU average) and more than 10 years life expectancy gap between males and females. The health care and public health systems in the country remained virtually unchanged since independence in 1992 becoming completely inadequate to deal with the current challenges of growing epidemics of Non-Communicable Diseases and TB/HIV/AIDs epidemic.

Supported by the people of Ukraine, current government shows serious intentions to reform the country and use evidence in decision-making. Yet, given the dire state of the population health and political and economic difficulties, they are likely to opt out for a quick introduction of ready-made examples from other countries leaving the fundamental analysis of what does/did and does/did not work in a Ukrainian context for the future. Yet, we believe that evaluating past programmes/policies, as well as setting up the stage for the evaluation of future interventions would be crucial in designing reforms ensuring improvement of population health. Past experience of public health programmes/policies in Ukrainian context should not be wasted and in the full-scale study we would like to evalute such programmes/ policies to inform the development of effective PH system and facilitate its implementation.

To do this, we will first undertake a development study. This study will focus on the following things: (i) exploring the evolution of the public health programmes/policies at the national level and mapping their actual implementation across regions and over time, assessing their history, context, design and logic, (ii) assessing the availability and quality of the quantitative and qualitative data, (iii) assessing the potential for additional quantitative and qualitative data collection to enhance the possibilities for the evaluation of future public

	health programmes/policies, and (iv) reflect on the barriers to use evidence in health-related policy making in Ukraine. This will allow us to select the programmes/polcies deemed evaluable to narrow down the focus of the full-scale study and refine the methodological approaches, provide recommendations as to the routine data collection to improve its quality, and introduce emerging public health community to the evidence based decision making.

Health Systems Research Initiative - Call 2 Foundation Grant		
Project title		
Supportive supervision of mid level health workers in rural Nepal for improved job satisfaction, motivation and quality of care.		
Grant holder	**Institute**	**Grant reference**
Dr Joanna Morrison	University College London	MR/N00552X/1

Co-Investigators

Dr Sushil Baral
Health Research and Social Development

Summary

Many low-income countries are suffering from shortages of health workers in rural areas. To expand access to health care, mid level health workers with up to three years training are being expected to complete tasks that higher cadres of health worker would usually undertake. Yet these cadres are largely ignored at a policy level. To enable these health workers to fulfill their potential and provide good quality care, they need to be adequately supported and supervised. Research suggests that health workers may respond better to supervision if their supervisor is aware of their emotional needs, and they build trust through listening, empathy and responding to their individual concerns (Cummings et al. 2010).

This development grant will enable us to develop supportive supervision interventions for mid level health workers in rural Nepal, which will then be implemented through existing systems and evaluated in subsequent research. We will conduct a review of the literature using a realist methodology to understand for whom and in what circumstances interventions work. This will inform the development of supportive supervision interventions in Nepal. We will collect data from policy makers, programme implementers, managers, and health workers to describe existing systems, their weaknesses and collate the learning from national pilot interventions. This information will be discussed in a working group of government and non government participants who will meet regularly. This will help us to develop feasible interventions that have a broad level of support. A health economist will then model intervention costs. Interventions will be presented, debated and prioritised in a workshop with participants from the district and central level. On finalising interventions, a methodology will be designed to evaluate and understand the effect of these interventions, with input from experts and the working group. Funding sources will be identified to implement the interventions and research the effect of a supportive supervision intervention for mid level health workers in rural Nepal. We will disseminate our learning from this process through international peer

	reviewed publications, briefing papers, conferences and social media.

Health Systems Research Initiative - Call 2 Foundation Grant		
Project title		
Verbal Autopsy with Participatory Action Research (VA-PAR): Developing a people-centred health systems research methodology		
Grant holder	**Institute**	**Grant reference**
Dr Lucia D'Ambruoso	University of Aberdeen	MR/N005597/1

Co-Investigators

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Summary

Recent estimates suggest that two-thirds of the world's deaths pass unrecorded. This situation seriously limits the ability of health systems to respond to the needs of vulnerable and excluded populations. Developing methods to reliably understand why people die in populations with weak health systems is therefore an important strategy for saving lives.

Registering medical cause of death has long been considered essential for public health. Despite increasing globalisation, in many resource-poor countries, universal registration of vital events remains lacking and uncertain estimates provide an inadequate basis for policy and planning. In addition, the social inequalities and social contexts play an important role in shaping health for disadvantaged groups. Even with the data available, insufficient attention is paid to the root causes of mortality in resource poor settings.

Considering these factors, there is an urgent need to improve health information about and for marginalised populations to inform public health responses. The proposed research will develop an extension to an established method called Verbal Autopsy (VA). VA is used to measure the levels and causes of death in populations where large numbers die outside health facilities or without registration. The development will help local health systems to assess their own health situations, identify priorities and develop action plans for positive health change.

We will do this through three phases of work.
- Firstly, we will develop improved ways to classify causes of death by combing information on medical causes with data on the circumstances of deaths (seeking and using care at the time of death). In settings where health services are under-funded, weak and fragmented, these can often play a crucial role. The classifications will also be developed in consultation with local health planners to be of practical use.
- Secondly, we will develop an additional method to gain the views of local communities on long-standing health challenges. This will allow us to further understand how social, economic

	and health systems issues influence availability, accessibility, acceptability, and quality of care. The method may also help foster social inclusion in health. - In the final phase, we will consult with higher levels of the health system about the method. This will help develop how we use the extended cause of death classifications combined with community knowledge. The aim here is to explore how the method could be used in an ongoing fashion to connect health surveillance to service organisation in an inclusive process. This approach encourages sustainable health gains. Data, poverty and inequality exist in complex co-dependency: less data exist on the health of the poor than the rich, raising important questions about the relationship between material and data poverty. In settings where health systems are fragile and under-resourced, where new burdens of disease are rapidly emerging, and where large and diverse populations are excluded from access to health care, innovative approaches that connect the registration of vital events to health care systems in a people-centred approach are needed. The approach employs a bottom up philosophy connecting with population data at source. In the longer term, it is envisaged that the method will contribute to more rigorous health data at population level in an inclusive process that can affect sustainable health gains through better data and improved capacity for evaluation. The work will be conducted in an research centre in rural South Africa established for over 20 years. The extent of data available and the richness of experience in health research allows us to develop a method with partners who enact a broader commitment to registration of all individuals within a population.

Health Systems Research Initiative - Call 2 Foundation Grant		
Project title		
Exploring the potential of Open Source solutions to deliver Clean, Clear Information for Health Service Improvement		
Grant holder	**Institute**	**Grant reference**
Dr Christopher Paton	University of Oxford	MR/N005600/1

Co-Investigators

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Summary

Electronic Health Records (EHR) systems are computer systems used by hospitals and clinics to record medical information about patients. They include information about patients' symptoms, medical diagnoses, treatment, operations, blood tests, x-ray results and how they are progressing.

Although EHR systems have been used in hospitals in high-income countries for many years now, in low-resource countries such as Kenya, they are just beginning to be used at scale. This proposal is the result of the the research team in Kenya being asked by the Kenyan Ministry of Health (MoH) and the World Health Organisation (WHO, Kenya office) to explore how EHR systems could be used, not just to help doctors and hospital workers in managing their patients, but to also re-use the information that is collected for improving health services more widely. The information needed to improve care locally and across the health system needs to be clean and clear if it is to be used effectively to make the right decisions in the same way that drinking water needs to be clean and clear to be safe to drink.

The aim of this proposal is to allow us to develop the partnerships (both academic and institutional) and knowledge necessary to create a new large programme of research around the development and use of clean, clear information contained in EHR systems for improving health.

To achieve this aim, the first part of this proposal will find out which EHR systems are currently in use in Kenya, why they have been implemented, whether they are meeting expectations of users, whether they contain the kind of information that would be useful to improve care and whether they adhere to best practice international standards for safe and effective use.

We will then investigate how a particular open-source EHR system called OpenMRS is being used in Machakos County in Kenya. This system is used in lots of HIV clinics across Africa

	(and the rest of the world) but is not usually used in more general forms of care or in hospitals. A recent project supported by the Kenyan MoH and WHO is attempting to implement OpenMRS widely in Machakos County but early experience suggests challenges and we aim to find out what lessons can be learned to support the further introduction of EHR systems in Kenya and how best to gain advantage from the open source (voluntary) community that can help develop and improve these not-for-profit systems. Finally, we will look at what kind of information from EHR systems could be useful enough to incentivise hospital and county administrators to invest in implementing and sustaining EHR systems that include the ability to collect medical information as well as the kind of financial information that is commonly the first priority for these kinds of system. Once we know what kind of EHR systems are in use and the type of data they are collecting, how EHR systems are currently being implemented, and what kind of data is of use to policy-makers, administrators and health workers, we can identify the specific objectives of our planned larger programme of research. This new programme will aim to ensure that EHRs in developing countries such as Kenya are implemented efficiently and effectively with minimal disruption to healthcare workers but that will also enable the re-use of clean, clear information throughout the health care system to foster improvements in health.

Health Systems Research Initiative - Call 2 Full Grant		
Project title		
Understanding and enhancing approaches to quality improvement in small and medium sized private facilities in sub-Saharan Africa		
Grant holder	**Institute**	**Grant reference**
Professor Catherine Goodman	London School of Hygiene and Tropical Medicine	MR/N015061/1

Co-Investigators

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Summary

The private sector is a major and growing source of treatment in low- and middle-income countries (LMIC), but there is considerable concern about the safety and quality of care. Recent years have seen fast growth in small and medium sized private clinics, but their regulation is often poor, and relatively little is known about the effectiveness of interventions to improve the quality of care they provide. This project aims to address this evidence gap.

The research takes place in the context of an innovative intervention developed by the international NGO PharmAccess that extends the benefits of clinical standards and stepwise certification to small and medium-sized facilities in LMIC, using standards developed with international accreditation bodies. The PharmAccess model seeks to improve the quality of care that facilities provide as well as to shape the broader healthcare and finance markets and policy environment. There are several components to the model. Health facilities are assessed on a set of "SafeCare" structural quality standards, trained on quality improvement and business skills, and assisted in the development of a quality and business improvement plan. They receive regular mentoring visits and are also connected with the PharmAccess Medical Credit Fund, a social investment fund which facilitates access to bank loans to finance implementation of the plan. The aim is to create a series of virtuous circles, with improvements in SafeCare assessment scores signalling improved quality of care to individual and institutional purchasers, thus increasing demand for health services; and improved business performance ensuring further access to credit, and the sustainability of quality gains. The research will begin with an analysis of secondary data collected routinely by PharmAccess in Tanzania and Kenya to date to examine changes in the SafeCare assessment scores over time and factors associated with these changes. We will then undertake a randomised controlled trial to evaluate prospectively the impact on quality of care of the roll out of the PharmAccess model to additional private for-profit and faith-based facilities in Tanzania. The trial will assess the effects of the intervention on the quality of

	care received by patients through comparison of 120 intervention and 120 control facilities after 2 years of implementation. These data will also be used to assess the relationship between SafeCare assessment scores (which measure availability of inputs such as infrastructure, technology and standard operating procedures) and measures of technical and perceived quality of patient care (which concern the interaction between caregivers and patients). Technical quality will be measured through standardised patients (covert actors) and clinical vignettes (overt role-playing), with perceived quality measured through patient interviews. In addition, in-depth interviews will be conducted in 30 intervention facilities and with 8 implementing staff in Tanzania to assess the perceived benefits and costs of participating in the PharmAccess model, and factors affecting quality improvement and business performance. Finally, 30 national level key informants will be interviewed to explore how the PharmAccess model shapes the market for healthcare and healthcare finance, and the policy environment in both Tanzania and Kenya. The results are expected to make an important contribution to the evidence base on improving private sector care and to the literature on measuring process quality of patient care. The findings will be of substantial benefit to national and international policy makers and programme managers who are interested in private sector healthcare and health systems strengthening more generally, with important implications for all organisations within the health system that require adherence to quality standards (eg, social health insurance programmes, social franchising programmes, regulatory agencies).

Health Systems Research Initiative - Call 2 Full Grant		
Project title		
Building resilient health systems: lessons from international, national and local emergency responses to the Ebola epidemic in Sierra Leone.		
Grant holder	**Institute**	**Grant reference**
Professor Susannah Mayhew	London School of Hygiene and Tropical Medicine	MR/N015754/1

Co-Investigators

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Dr Melissa Parker
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Summary

The response to the Ebola virus has exposed major weaknesses in the health systems of the affected countries. In part this is because of institutional weaknesses at national and district level but the behaviour of global actors in the response has also attracted criticism. The situation has been particularly acute in Sierra Leone as many progressive reforms such as Free Health Care and other governance initiatives may have been undermined by the epidemic and the nature of the response.

To date, the evidence on the impact of international Ebola-response assistance in Sierra Leone, and the way it has enabled or hampered local responses, is almost non-existent. For example, it is not known how, why and in what ways local health systems were used, or not used; and it is not at all clear whether international assistance has strengthened local health systems, or weakened them by building parallel structures and bypassing local institutions and relationships. The longer term implications of this kind of assistance, especially beyond the immediate crisis, are thus unclear.

Documenting and understanding how and why national and international endeavours to care for the sick and interrupt the transmission of Ebola struggled to produce expected results, is paramount for improving future responses and ensuring health systems are not weakened by future emergencies.

Our study will explore a range of factors including: the extent to which responses were informed by local concerns and perceptions of emergency-response systems; whether external interventions sought to work within or with local systems (and whether this resulted in the building of parallel response structures); whether external interventions ultimately weakened and made the health system less resilient by, for example, taking locally qualified staff away from public sector systems or by diverting resources from other ongoing health requirements (including routine maternal and child health and common preventable diseases).

	Specifically, we ask the following research questions: In what ways has the international Ebola-response affected Sierra Leone's health system and its ability to withstand future shocks? How can international, national and local emergency response mechanisms be utilised to build a resilient health system in Sierra Leone, and what lessons emerge? We bring together several different disciplinary and thematic perspectives, including health systems/systems strengthening, policy and implementation science; disaster risk reduction/emergency preparedness; and the anthropology of global health and medical humanitarianism. Explicitly bringing together these often separate bodies of learning will enable us to more fully and effectively answer our principal research questions, identify transferable lessons and contribute to generating substantive health systems research evidence relating to what promotes resilient health systems. Specific benefits of the project will include: * Identification of characteristics of resilient health systems that need to underpin health systems strengthening efforts, in Sierra Leone and other similar settings, and how these can be incorporated in national health systems development. * Identifying the key issues influencing village level responses to Ebola and reflecting on the implications of these issues for understanding and building more resilient health systems. * Suggestions for revising the existing guidelines for emergency responses, including those of the WHO drawing on the experiences of the recent Ebola epidemic in Sierra Leone.

Health Systems Research Initiative - Call 2 Full Grant		
Project title		
Implementing comprehensive, integrated, community-based health care for vulnerable communities in South Africa: An evidence-informed model		
Grant holder	**Institute**	**Grant reference**
Professor Jane Goudge	University of the Witwatersrand	MR/N015908/1

Co-Investigators

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Private Address

Summary

In low and middle income countries across the world many poor communities have little access to health care. Providing health care is a challenge as the available national resources for health care is limited. People in these communities suffer from infectious diseases such as TB and HIV and from long term health conditions such as diabetes and high blood pressure. In poor communities many people with these conditions do not know they have them. Even if aware of their health condition, people may be unable to access the right treatment. Community Health Workers (CHWs) are local people trained to visit households in their community to identify people who are unwell, help them gain access to health care and support them in treatment. Existing CHW programmes have been successful in tackling infectious disease, as well as improving maternal and child health, but programmes usually focus on a limited range of health problems and do not cater for people with multiple problems. This project will design and evaluate a comprehensive integrated CHW programme that aims to identify and support the treatment of all types of ill health experienced in poor communities.

Research has demonstrated that CHW programmes are successful if there is good programme design, management, integration with the health system, and a good 'fit' with the community. However, there is insufficient evidence on how to operationalise these attributes for a successful comprehensive, integrated CHW service. Policy makers and service providers want to know how many CHWs are needed and at what cost, how are they best supervised, what is the best balance in terms of training, scope of work and household coverage, and how can they remain responsive to their community yet integrated with the health system? We aim to identify the key features of an evidence-informed CHW service model and the lessons for scale up.

South Africa is a middle income country with poor communities who have limited access to health care. The national Government is committed to strengthening primary

	care through the provision of community-based care by CHWs for these communities. The project will be undertaken in Sedibeng District, Gauteng Province of South Africa. Our collaborator, the District manager, is currently piloting three designs of comprehensive, integrated CHW programme, with different CHW-to-household ratios and different levels of access to supervision for the CHWs. Our objectives are to: 1) observe and interview existing CHW teams to understand how they work, and undertake a community survey to assess coverage, 2) using what we learn, in consultation with local, provincial and national stakeholders and international experts, to design an evidence informed CHW model then, 3) implement the model in two communities, 4) assess the impact by undertaking a survey of the community before and 15 months after implementation, as well as observation and interviews, and 5) to inform policy, implementation and practice. The project results will inform the national roll out of these programmes by the South Africa Department of Health. By providing sufficient detail about the intervention, its context and evaluation, we expect governments internationally to be able to assess the applicability of the evidence-informed CHW model for their contexts and any adaptations needed. This will inform the use of resources for the provision of health care for poor communities, and the channeling of donor resources from high income country governments and other donor organisations, to maximise health benefit for poor communities.

Health Systems Research Initiative - Call 2 Full Grant		
Project title		
Performance-based contracting for hospitals: a mixed methods analysis of impacts on patient outcomes, equity and efficiency in a middle income country		
Grant holder	**Institute**	**Grant reference**
Dr Walid Ammar	American University of Beirut	MR/N015916/1

Co-Investigators

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Professor Maria Emmelin
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Summary

The Ministry of Public Health (MoPH) is the largest insurer for hospitalizations in Lebanon, covering 52% of citizens and about 240,000 hospital admissions annually. Typical patients are those who are unable to afford health insurance, are unemployed or self-employed, are older than 64 years, or have a chronic disease (e.g. diabetes, hypertension, cancer). To provide these services, the MoPH contacts with 135 public and private hospitals.

Since 2001 the reimbursement rate paid to hospitals by the ministry was determined by the results of a hospital accreditation process. However, over the past several years evidence has accumulated that this was not an effective way to manage the relationship between the MoPH and hospitals. Importantly, the ministry has imperfect information on the performance of hospitals. In 2014 the MoPH began a transition away from the accreditation-only contracting system, and towards one based on performance, including patient outcomes.

The main purpose of this research is to develop a performance-based contracting (PBC) system between the MoPH and hospitals in Lebanon, and evaluate its impact on patients and the health system. Such contracting means that the ministry would reward hospitals that perform better by paying them a higher base rate per patient. We will investigate what factors may affect hospital performance and how hospitals responded to this intervention.

There has been much work on PBC in health services over the past two decades. However the evidence to support its benefit to patients and cost-effectiveness presents mixed results. One of the main reasons for this is the limited number of strongly designed studies. Recent evidence from England and the United States has also found that positive effects such as reduced readmissions and mortality may be limited to the short-term, and underlined the importance of PBC measurement, context and design. In low/middle-income countries (LMIC) evidence is still more limited, though PBC

	holds much promise as it may have larger impact on health outcomes given the potential to improve. However this also means it may have larger unintended or negative consequences, and should be designed with great care and close monitoring of impact. In designing PBC, it is important to determine how performance will be measured and how we would evaluate its impact. In our research, at the patient level we will look at changes in patient readmissions for specific conditions, which could indicate inadequate treatment, hospital-acquired infections, or other causes. We will also look at the proportion of patients admitted to each hospital in terms of their age and presence of chronic diseases, as some hospitals may 'cherry-pick' and avoid patients with more complex conditions. We will also develop a patient satisfaction questionnaire, and use it to measure the satisfaction of patients that would be representative of the hospital they were treated at. At the health system/hospital level we will look at the utilization and cost of different services, as well as how complex are the cases being admitted to each hospital (case-mix). We will compare the results for these performance indicators before and after implementation of PBC, and investigate any changes. We will also interview a sample of hospital managers to understand how hospitals responded to PBC and what changes they may have made to affect their performance, such as better application of clinical guidelines, increased training or incentives to the health workforce. We will actively share our research findings with stakeholders and the public through various channels including developing knowledge translation materials and events such as seminars and policy roundtables. The knowledge gained will be used to inform future PBC development in Lebanon and similar initiatives in LMICs.

Health Systems Research Initiative - Call 2 Full Grant		
Project title		
Optimizing health systems to improve delivery of decentralized care for patients with drug resistant tuberculosis		
Grant holder	**Institute**	**Grant reference**
Professor Mark Nicol	University of Cape Town	MR/N015924/1

Co-Investigators

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Summary

Tuberculosis is a disease of the poor and remains a significant cause of disease and death globally. Our failure to effectively control the TB epidemic has resulted in the emergence of TB bacteria that have become resistant to the main drugs we use in treatment. These drug-resistant bacteria (DR-TB) can then be transmitted to others. In some settings DR-TB has now reached epidemic levels. While treatment is available, it's lengthy, complicated, expensive, and results in poor patient outcomes.

South Africa has a high burden of DR-TB, with more than 26,000 cases reported in 2013. Data suggest that a third of these patients do not have access to appropriate treatment, with only 40% cure for the rest. Fortunately, there are some recent advances that could assist in combatting the DR-TB epidemic. A rapid diagnostic test for DR-TB has been marketed and has now been rolled out across South Africa. This test (Xpert) has increased the number of patients identified and reduced the delay in receiving the diagnostic result. In addition, a new drug for treating DR-TB has just been registered in South Africa. Bedaquiline has the potential to dramatically improve the effectiveness of DR-TB treatment.

However, DR-TB diagnosis and treatment needs to be delivered in the context of the existing health system, the characteristics of which are likely to influence the impact of new interventions. In order to increase access to DR-TB treatment, South Africa moved to a policy of decentralized treatment provision in 2011, i.e., providing DR-TB treatment at lower levels of the health system, with less reliance on hospital treatment. This policy has been variably implemented across different provinces, health districts and settings (i.e., rural versus urban) in South Africa.

In order to maximize the benefit of new interventions, we aim to assess health system factors that enhance or undermine the delivery of treatment for DR-TB, specifically in regard to decentralization of care. We aim to determine what works and why it works, across different settings. Health system factors

	include such things as: the allocation of appropriate (number and training) human resources, financing at appropriate levels, organizational management, efficient communication and referral systems, sufficient inpatient capacity and access to other services needed for the care of DR-TB patients. These health system factors determine whether individuals with DR-TB disease access care, how long this takes, the quality of care they access, whether they transmit their infection to others and finally whether they have a successful treatment outcome or not. Ultimately, our findings will be used to identify feasible and effective strategies to improve decentralized care for patients with DR-TB in South Africa and other similar settings.

Health Systems Research Initiative - Call 2 Full Grant		
Project title		
Integrating places of worship (PoWs) into the primary care pathway to prevent and control non-communicable diseases (NCDs) in the Caribbean		
Grant holder	**Institute**	**Grant reference**
Professor Seeromanie Harding	King's College London	MR/N015959/1

Co-Investigators

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Summary

The Caribbean has the highest proportion of people suffering from chronic diseases such as diabetes, cancers, stroke and heart disease in the Americas. As in other parts of the world, this is a consequence of ageing populations, urbanisation, lifestyle changes resulting from globalisation such as unhealthy diets, lack of exercise, use of alcohol and cigarettes, and other social influences. The effects of these factors on health are worse in poor communities. Health systems in poorer countries in the Caribbean face challenges in preventing chronic diseases and meeting the needs of those affected. Our approach considers how to enhance health services taking into account the wider social and cultural context in which people live. It will use the strengths and assets of communities to promote health and reach the poorest in a cost effective and sustainable way.

Religion plays an important role in the Caribbean with almost everyone attending a place of worship such as a church, mandir or mosque, at least once a month. Many studies have shown that places of worship can be used successfully to promote healthy lifestyles. However these programmes are often discontinued after the research is completed. In collaboration with national and international agencies including Ministries of Health, Inter-Religious Organizations, the Healthy Caribbean Coalition, the Caribbean Public Health Agency, and the Pan American Health Organization, we will plan and implement an intervention which uses health advocates recruited from places of worship to promote health and lifestyle changes and support the management of chronic diseases. The health advocates will be linked into local primary health care centres and supervised by nurses to ensure that when needed, early referrals are made and patients are followed up in the community. By evaluating the intervention as it is implemented in real time, we will examine whether and how this approach will improve the prevention and early detection of chronic diseases as well as support the care and treatment of those already affected.

	The study will take place in three of the less wealthy Caribbean Commonwealth countries which face challenges in providing quality health care: Guyana, Jamaica and Dominica. Each of these have different social and cultural features so we will be able to compare the results and develop solutions that have relevance to the entire region. We will focus on poor rural and urban areas where the need is greatest. We will work with the Ministries of Health, nurses and doctors in regional and local health care centres and hospitals, religious leaders and congregations. The Ministry of Health will train members of the congregations to be health advocates. They will be taught to conduct simple tests such as measuring blood pressure and weight, encourage people to take medications as prescribed and attend clinic appointments, inform people about welfare benefits and help with applications, and support a healthier, more active lifestyle, such as providing exercise or healthy cooking sessions. Health advocates will be supervised and monitored by nurses at local health centres who will be trained in this new role. We will conduct continual evaluation to look at if and how the intervention is working to address the needs of the community, especially the most vulnerable. If the research is successful, we will develop a tool kit for the Caribbean providing guidelines on how health systems and communities can work together to combat chronic diseases through the engagement of places of worship and other community-based organisations. Changing the health system in this way will reach more people than through traditional health care by providing easily accessible and regular health advice and support in the heart of local communities. It will result in significant social and economic benefits by reducing health care costs for chronic diseases and preventing disability and premature death.

Health Systems Research Initiative - Call 2 Full Grant		
Project title		
Technology-EnaSystem-Integratedbled Model of Care Aiming to Improve the Health of Stroke Patients in Resource-Poor Settings in China		
Grant holder	**Institute**	**Grant reference**
Professor Lijing Yan	Duke Kunshan University	MR/N015967/1

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Summary

Stroke affects 62 million people worldwide and is a leading cause of death in low- and middle-income countries such as China. This serious condition has a high chance of recurrence and is also highly debilitating, leaving many survivors disabled. In family-oriented societies where significant health expenditure is out-of-pocket, a stroke constitutes a major life event that dramatically changes the life not only of the stroke survivors but also of the family caregivers.

In addition, for the large number of stroke patients living in rural areas, the care they receive is inadequate and far below evidence-based standards. To rely on specialists to provide such services is not only unrealistic but also unsustainable. Yet healthcare workers and family caregivers, who live in the same communities as the patients, lack the necessary knowledge, training and tools to provide high-quality care.

To address these problems, we have designed a model of care to train village doctors and family caregivers, equipping them with innovative digital health technology such as smartphone applications and text messaging. After training, they can deliver evidence-based care to the patients in their villages and families to improve their health status.

Based on nearly ten years of previous studies, we will first update, optimise and integrate the training products and component for the model. We will then roll out the intervention in 50 villages in Nanhe County in Hebei Province located in the stroke belt in China. We plan to train 5 physicians and 5 nurses in secondary healthcare facilities, who will in turn train 25 village doctors and 625 family caregivers, to provide services to 625 patients.

The model described and tested in this study has the potential to provide an example based on training, new technology and sharing of tasks by different players in the healthcare systems, to build up the capacities of many healthcare workers and caregivers in a scalable way, and to improve the health of stroke patients.

Health Systems Research Initiative - Call 3 Foundation Grant		
Project title		
Creating responsive health systems: improving the use of feedback from service users in quality assurance and human resource management in Bangladesh		
Grant holder	**Institute**	**Grant reference**
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Summary

This project aims to improve the responsiveness of the health system in Bangladesh. This addresses an issue of high interest to the country's policymakers.

Effective interaction and engagement between the health service users and practitioners and policymakers is an important attribute of responsive health systems. Central to this concept is the opportunity for users to provide feedback on their experiences engaging with the health system, and vitally the ability of the health system to respond to users' suggestions.

This project focuses on Bangladesh, a low income Asian country where the Ministry of Health and Family Welfare (MOHFW) is implementing a program allowing service users to send feedback via SMS texts. The texts from the whole country are aggregated in a web portal, which is monitored by the MOHFW staff, who are then expected to follow up each issue with both a sender and local authorities. Service users can also provide feedback directly to health management committees at Upazila level, and through suggestion boxes in each health facility. However, it is unclear how issues received directly at the Upazila level are followed-up and by whom.

The AIM of this project is to assist the policymakers in designing a comprehensive health systems intervention to make Bangladesh's health system more responsive. Specific project OBJECTIVES are to work closely with national and local decision-makers to:

1. Develop an in-depth understanding of the nature and contents of, and key reasons for, feedback received from health service users at Upazila level;
2. Analyse the processes of collecting and responding to service users' feedback at Upazila level, as well as the key contextual facilitators and constraints influencing these processes;
3. Assess the approach to, and processes of, service quality assurance and human resource management, focusing

	specifically on the use of feedback from service users at Upazila level; 4. Using results of objectives 1-3, develop a comprehensive health systems intervention to improve the use of feedback from service users in quality assurance and human resource management processes at Upazila level. This 18-months project will analyse the national-level user feedback data and collect more detailed qualitative information in one district in Bangladesh. Within the district, we will focus on two Upazila Health Complexes (UHC) which, being the first level referral services from the primary health care, are the backbone of the health system. We will implement a multi-method health systems research using realist evaluation. Qualitative and quantitative data will be collected using combinations of: 1) in-depth interviews with purposefully-identified service users and gender and age-specific focus groups with communities to explore their knowledge of and use of feedback systems; 2) in-depth interviews to explore views of purposefully-selected service providers and managers at the UHC about the user feedback systems; 3) analysis of country-level secondary data on user feedback from the government web portal, to understand types of issues, their location and gender and age of users who initiated issues; 4) non-participant observation of: feedback environment in the district, health management committee meetings and UHC routine quality assurance and staff management practices; 5) review of key documents (e.g. feedback to users and actions taken, meeting minutes, quality assurance guidelines, staff performance appraisal and supervision records). Throughout the project, we will work closely with decision-makers, to facilitate the shared understanding, adoption of results into policy and practice and achieving its highest impact. Project results will be communicated widely through policy briefs, presentations at management meetings, development of newsletters and press-releases, to ensure their uptake in policy and practice in Bangladesh and wider.

Health Systems Research Initiative - Call 3 Foundation Grant		
Project title		
Examining health system performance for indigenous people in the Peruvian Amazon through the lens of tuberculosis control.		
Grant holder	**Institute**	**Grant reference**
Professor David Moore	London School of Hygiene and Tropical Medicine	MR/P004172/1

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Summary

This project will investigate and identify the key features required by the Peruvian health system to provide high-quality health services to vulnerable populations. In order to do this, we will focus on one particularly vulnerable group: Indigenous People from the Amazon who suffer disproportionately from several health problems including tuberculosis (TB). The Project will focus on the barriers, enablers and facilitators of delivering context appropriate, feasible and culturally respectful services to detect, diagnose and treat TB among one particular indigenous group: the Ashaninkas from the Central Amazon of Peru, located in the región of Junin.

Ashaninkas are the largest Peruvian Amazonian IP group, and have a higher prevalence of TB compared with other urban areas in Peru. Most health care policies in Peru, including TB policies have been designed with an urban approach making such policies inappropriate and ineffective in rural areas such as the Amazon.

This Project aims to address the limitations of current health system delivery strategies in rural areas through the study of TB health policies and implementation practices in the Peruvian Amazon. Through interviews with different stakeholders such as indigenous TB patients, community leaders, representatives of indigenous organizations, regional and national health care officials we aim to identify the constraints in service delivery for vulnerable groups and the opportunity to make feasible changes. We will focus on cross-cutting systemic issues to provide high quality health care. Through a systematic analysis of the data collected and one workshop with each type of stakehodler we aim to develop using a participatory approach, a comprehensive package of scalable interventions in order to improve the quality of care delivered by the NTP to Peruvian Amazonian communities and other vulnerable groups.

Health Systems Research Initiative - Call 3 Foundation Grant		
Project title		
Social, behavioural and economic drivers of inappropriate antibiotic use by informal private healthcare providers in rural India.		
Grant holder	**Institute**	**Grant reference**
Dr Meenakshi Gautham	London School of Hygiene and Tropical Medicine	MR/P004512/1

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Summary

Antibiotics play a life-saving role in reducing mortality and morbidity due to communicable diseases like tuberculosis, typhoid, pneumonia and gastroenteritis. However, the overuse of antibiotics in populations can lead to the disease causing bacteria becoming drug resistant over time. For example, high levels of resistance have been found in gastroenteritis causing bacteria to antibiotics like ampicillin (52.3% - 84.6%), cotrimoxazole (45.5% - 65%), and cephalexin (15.9% - 59.7%) across five sites in India and South Africa. This antimicrobial resistance (AMR) is a global threat because it can reverse the advances made in combating life threatening infections and increase the costs of treatment and hospital stays for the sick, making newer antibiotics even more inaccessible to the poorest and most vulnerable.

One major reason for the overuse of antibiotics in humans is antibiotic over-dispensing and over-prescribing by health care providers. This is a big challenge in low and middle income countries where health systems are weak, regulatory frameworks for health workers and the pharmaceutical industry either do not exist or are weakly enforced, and the majority of poor and rural populations rely on informally trained and unlicenced providers who use antibiotics excessively and inappropriately in their treatments. These informal providers or IPs may constitute from 50% to 96% of all providers in LMICs, including in India, but there is very little in-depth knowledge of the factors that influence their inappropriate antibiotic use and what interventions can feasibly and effectively arrest this inappropriate use. Evidence from the formal sector suggests that antibiotic use is influenced by socio-cultural, behavioural and economic factors. However the precise nature of these factors and how they interact has not been explored in the case of IPs.

In this field study we propose to study a cross section of IPs, and the drivers of their antibiotic use in the state of West Bengal in India. Since IPs lack a clear legal status, few government programmes are willing to engage with them, but the West Bengal government has decided to train and harness

	more than 100,000 IPs as village health workers, from early 2016. We are therefore locating this timely study in West Bengal. We will explore provider related factors and also the perceptions of communities and various government stakeholders. This will be done through 200 structured and 30 in-depth interviews and observations of IP practices in two socio-economically different districts (Birbhum and South24 Parganas), accompanied by focus groups discussions with community members and key informant interviews with government, pharmaceutical and formal medical sector stakeholders. We will use these findings to conceptualise interventions to reduce antibiotic use among IPs and seek feedback from study participants on the feasibility and effectiveness of these interventions. The study will be implemented by the London School of Hygiene and Tropical Medicine in collaboration with the Liver Foundation, a non-governmental organisation in West Bengal that has worked with IPs since 2007 and has championed the harnessing of IPs with the state government. We will use the final study outcomes to develop a proposal with the state government to implement and evaluate these interventions in the future, possibly starting in mid to late 2017.

Health Systems Research Initiative - Call 3 Foundation Grant		
Project title		
Citizen-Led Accountability: Applying systems thinking to understand and strengthen health system responsiveness to marginalized communities		
Grant holder	**Institute**	**Grant reference**
Professor Anna-Karin Hurtig	Umea University	MR/P004555/2

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Summary

In many low and middle income countries, the full enjoyment of the right to health is inhibited by deficiencies in the health system, including inadequate infrastructure, human resources, and medicines and equipment. Citizen-led accountability initiatives have the potential to foster bottom up responses. They can contribute to strengthening health systems by mobilizing marginalized communities with limited access to quality health care and supporting their engagement with state authorities to demand accountability. Over the last decade, numerous examples have shown that these initiatives have been effective in making the health sector, and other public sectors, more responsive and accountable. However, understanding of the complex pathways through which citizen-led accountability initiatives lead to positive change remains limited. Their function depends on building networks of relationships that connect citizens in collective action, and engage them in dynamic interactions with state authorities. Adaptation to political and social context is also critical. Innovative methodological approaches are needed to understand how these network-generating processes function and how they can be enhanced to improve health system responsiveness to marginalized communities. The proposed research will address this challenge by applying a systems thinking approach. The science of systems thinking offers valuable tools for understanding and strengthening complex change processes. This project will employ the systems thinking tool called Social Network Analysis to study how networks of marginalized citizens work together and interact with authorities to demand health system accountability.

The research will be carried out in two phases with indigenous communities participating in a well-established citizen-led accountability initiative in rural Guatemala. Citizen networks in these communities are actively working to monitor health system deficiencies, participate in local health decision-making spaces, communicate their needs to state authorities, and form alliances to advocate for structural improvements. In the first phase, social network analysis will be applied in these communities to provide insight into: 1. patterns of

	communication and support within the citizen networks that carry out these activities, and 2. patterns of interaction between citizens and state authorities at different levels and the responses they receive. Following in the systems thinking approach, this knowledge will be applied to strengthen the citizen networks in the second phase. In this phase, participants from the first phase will interpret: 1. how the patterns identified influence their capacity to meet their goals, and 2. how their network is influenced by local political and social context. Participants will draw on these insights to identify strategic actions to strengthen their networks' effectiveness in mobilizing their communities and communicating with authorities. The knowledge produced by this project will be directly relevant for strengthening citizen-led action for health system accountability to marginalized communities in Guatemala. Understanding of the influence of network qualities on citizen-led initiatives' capacity to meet their goals will be more broadly relevant to development agencies and practitioners working to support the mobilization of bottom up pressure for accountability. The development of an applied Social Network Analysis tool through this project will also offer a valuable resource for researchers to gain insights into the function of citizen networks in other settings, and identify broader patterns in their interactions that contribute to strengthen health system responsiveness.

Health Systems Research Initiative - Call 3 Foundation Grant		
Project title		
Whole systems care for post-stroke management in older adults: exploring the options for integration of health and social care systems in China		
Grant holder	**Institute**	**Grant reference**
Dr Karina Kielmann	Queen Margaret University Edinburgh	MR/P005195/1

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Summary

As a result of social and economic change over the past few decades, a number of low- and middle-income countries have rapidly ageing populations who are more vulnerable to long-term health conditions. To date, there has been little exploration of how the experiences of high-income countries that have developed models of integrated health and social care might inform strategies in low- and middle-income countries with growing numbers of older adults. This development grant seeks to build evidence towards development of a stroke care system for older adults in Guangdong Province, China. China's population is rapidly ageing, and approximately half of adults over 60 are living with chronic diseases. High blood pressure is the main risk factor for stroke which is leading cause of death and disability in the country. Family structures, levels of social support, and access to health insurance for older adults have changed due to the 'one-child policy', internal migration, and health reforms since the late 90's. Older adults in rural and urban settings have different levels of health awareness and support and seek health care differently, but overall, the care they receive is inconsistent and patchy. This project focuses on stroke care to explore how health and social systems are working to enable or hinder continuity of care for older adults with chronic disease conditions. First, we aim to distil the lessons learned from the international literature on stroke systems of care for older adults and examine their applicability in the Chinese health systems context. Second, we will conduct field research involving data collection with older adults, lay caregivers, and professional health and social care providers in an urban and a rural prefecture of Guangdong Province (Guangzhou and Meizhou respectively) to document experiences, patterns of care-seeking, and perceived needs for chronic disease management. A specific focus on stroke patients' journeys through recovery and rehabilitation will allow us to identify how the systems currently work, and to what extent they hinder or facilitate integrated care. Third, we will examine and summarise the data collected in the form of a model that illustrates how health and social care systems currently respond and interact to meet the needs of older

	patients who are recovering from a stroke. Finally, we will disseminate results through a participatory workshop that includes key individuals from health and social care institutions in order to discuss and make recommendations regarding the potential strategies that can integrate elements of current health and social care systems to improve the care of older stroke patients. This work will inform the development of a larger proposal that can implement and evaluate one or more of the strategies identified to support development of a stroke care system in China.

Health Systems Research Initiative - Call 3 Full Grant		
Project title		
Making health financing work for the poor: An evaluation of equity in health systems financing in Indonesia		
Grant holder	**Institute**	**Grant reference**
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Summary

Concerns about the poor and most vulnerable not getting adequate access to quality health care are widespread in low and middle income countries (LMICs) and have led to an intense advocacy for universal health coverage (UHC) in the last 5 years. Effective implementation of UHC requires equity in health care, defined as payment for health services according to capacity to pay and the receipt of benefits according to need. Indonesia has in recent years embarked on a programme to achieve UHC through a national health insurance scheme (Jaminan Kesehatan Nasional - JKN). However, with coverage currently at 65% and the 2019 goal for full coverage fast approaching, a second wave of JKN reforms are being planned to bolster Indonesia's progress.

The primary aim of this study is to prospectively evaluate the combined effects of a second phase (2017-2019) of JKN-reforms in Indonesia and provide an overall assessment of progress toward the achievement to UHC. The reforms are designed to address factors currently hindering the effective implementation of the national health insurance scheme and in turn the pursuit of UHC by 2019. Over the next 3 years the government will be initiating and strengthening a number of important reforms ranging from re-structuring provider payment schemes through to socialization campaigns to raise awareness of the scheme and its benefits. Strategies for increasing fiscal space for health through increasing tobacco tax and the phasing out of subsidies on fuel are also proposed. Understanding the equity impact of these reforms and how they may (or may not) be facilitating progress towards UHC is of considerable interest to the government of Indonesia.

The study will take a 'whole of system' approach by integrating both the public and the increasingly important private sector of the Indonesian health care system. Using a before and after design, the impact of these UHC reforms will be measured according to three key outcomes: (i) the progressivity of the health care financing system (ii) the pro-poorness of the health care delivery system and (iii) self-reported health outcomes across socioeconomic groups. The quantitative tools

	of financing and benefit incidence analysis will be used to assess who pays and who benefits from health care spending at baseline (2017) and 2 years into implementation (end 2019). The study will bring together an international research team consisting of those with substantial experience of evaluating UHC-reforms in Africa and the Asia-Pacific and those with an in-depth understanding of the Indonesian health care system. Qualitative studies to document the context pre and post UHC reforms, and the process of implementing UHC reforms will also be undertaken. Stakeholder analysis will be used to support the translation of priority financing reforms identified through the evaluation into viable policy proposals. The study will advance methods in this field by testing different indicators and indexes of 'need', against which the appropriateness of the distribution of benefits from using health services can be assessed. The study will also advance knowledge through a better understanding of the contribution of the private sector to meeting the needs of the poor and in turn, inform through the stakeholder analysis, ongoing discussions about effective engagement with private sector to strengthen progress towards UHC. The over-arching goal of this study is to strengthen the healthcare system of Indonesia through more equitable and sustainable health financing policies. As the fourth most highly populated country in the world, with a total population of around 255 million people, the implications of this study's findings for the design of a universal health system will be far-reaching.

Health Systems Research Initiative - Call 3 Full Grant		
Project title		
Understanding the Impact of Innovations in the Regulation of Kenya's health facilities		
Grant holder	**Institute**	**Grant reference**
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Summary

Health systems in low and middle income countries (LMIC) are increasingly pluralistic, involving a wide mix of public, not-for-profit and for-profit providers. Regulation should be a key foundation of the Government's stewardship role of these heterogeneous facilities, but performance of this function is generally weak, with serious consequence for patient safety and quality of care.

There has been little evaluation of strategies to strengthen regulation in LMIC, a notable exception being the Kenya Patient Safety Impact Evaluation (KePSIE), a collaboration between the Kenyan Ministry of Health and the World Bank. This randomised controlled trial is assessing the impact of a set of innovative regulatory interventions in public and private facilities in 3 Kenyan counties. These comprise the use of the Joint Health Inspections Checklist (JHIC), which synthesises the areas covered by all the regulatory Boards and Councils; increased inspection frequency; risk-based inspections where warnings, sanctions and time to re-inspection depend on inspection scores; and display of regulatory results outside facilities.

The KePSIE trial will provide a rigorous quantitative assessment of these regulatory strategies. However, such regulatory interventions are highly complex, requiring behaviour change by regulatory managers, front line inspection staff, health facilities, and clients. To understand the effectiveness of the intervention and why aspects do (or do not) work it is therefore essential to investigate the mechanisms and processes involved, the degree to which they are implemented effectively, and the reasons for the level of implementation observed. Other important dimensions include legitimacy, potential for corruption and regulatory costs. We will therefore conduct a companion study to enhance our understanding of the effectiveness of these regulatory innovations, and to consider their wider implications for the creation of a cost-effective, sustainable and equitable regulatory system.

	The research will begin with a review of key documents and records related to regulatory implementation, with the review updated periodically during the study. We will also systematically collate media articles from Kenyan newspapers and relevant social media concerning health facility regulation. Following a period of familiarisation with regulation by shadowing inspectors on their regular duties, we will undertake a set of in-depth interviews (IDIs) with a wide range of stakeholders including national regulators, county and sub-county managers, inspectors, facility owners/ staff, and Community Health Committee members. IDIs will cover their perceptions and experiences of regulatory implementation under the current regulatory system and the KePSIE regulatory innovations; their views on the legitimacy of regulatory systems, in terms of fairness and acceptability; perceptions of corruption; and perceptions of community views on facility regulation. We will also conduct patient exit interviews to assess community member understanding of the regulatory scores displayed outside facilities. Finally, we will assess the incremental costs of the KePSIE interventions compared to those of the current regulatory system, from the perspectives of both the regulating agencies and the health facilities. The results are expected to make an important contribution to the limited evidence base on regulation and regulatory reform. The findings will be of substantial benefit to those concerned with regulatory reform and the improvement of quality and safety more generally in Kenya and other LMIC settings.

Health Systems Research Initiative - Call 3 Full Grant		
Project title		
Assessing policy implementation and health systems impacts of Option B+ in three African countries to inform the delivery of Universal Test and Treat.		
Grant holder	**Institute**	**Grant reference**
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Summary

In 2013, the World Health Organisation (WHO) recommended initiation of lifelong antiretroviral therapy (ART) for all HIV-positive pregnant women, regardless of disease stage, in order to minimise transmission risks to their index offspring and offspring of later pregnancies. HIV-exposed infants should receive antiretroviral (ARV) prophylaxis, be tested and receive ART if HIV-positive. In 2015, WHO extended their guidance to recommend immediate ART initiation for all adults diagnosed with HIV (universal Test and Treat (UTT)), following evidence from randomised control trials demonstrating that it reduced sexual transmission and provided individual health benefits for HIV-positive adults.

Although few sub-Saharan African countries have introduced UTT policies, many have rolled out Option B+, despite ongoing debates over its cost-effectiveness and health systems impacts, particularly in settings with weak infrastructure. Despite its potential to eliminate HIV in infants and improve maternal health, some argue that poor delivery could lead to resources being channelled away from adult HIV services, detrimentally affecting their quality and health outcomes.

There is widespread agreement that research is needed to understand how Option B+ has been implemented in different settings and its corresponding impacts on health systems. Furthermore, there is a key window of opportunity to use the evidence generated by such research to assess how best to prepare these health systems for further expansion of ART services as UTT policies are rolled out.

Our study will take place in three HIV community cohort (HCC) sites in rural Malawi, Tanzania and South Africa, representing early, mid-term and late adopters of Option B+ in 2011, 2013 and 2015 respectively, and where UTT policies were being drafted in 2016, in order to answer 4 key research questions: 1) What are the Option B+ policy implementation gaps in each setting and how do the actors, policy content, context and processes explain these gaps?

	2) Have underlying economic and epidemiological assumptions in economic evaluations that demonstrated the anticipated cost-effectiveness of Option B+ been met in each site? 3) What are the health systems impacts of Option B+ in each setting? 4) What strategies can be developed with policymakers to ensure that health systems are ready for effective delivery of UTT? We will use a comparative, longitudinal approach with mixed methods that include secondary analysis of existing policy reviews, health facility survey data and routine HIV clinic data linked to HCC data. We will also collect new data through an updated review of national HIV policies, a further round of facility surveys, key informant interviews with policymakers and programmers, in-depth interviews with health workers and PMTCT service users, and costing estimates. We will draw on existing frameworks to identify gaps in Option B+ implementation and to explore the policy processes and contexts underlying them. We will then assess whether the costs of implementing Option B+ in purposively sampled health facilities correspond with pre-implementation estimates, and whether epidemiological parameters used for economic evaluations prior to Option B+ implementation align with local estimates derived from the HCC. We will also adapt existing indicators to assess the impacts of Option B+ on governance, financing, service delivery, workforce, information, medical supplies, and use qualitative and HCC data to consider impacts on health systems processes commonly defined as those relating to access, quality and coverage. Using our findings, we will work with key stakeholders to develop tools to assess health systems readiness for UTT, and to monitor health systems impacts through its implementation. The research questions and methods were developed in collaboration with policymakers to support the uptake of the findings into UTT policies in each country and beyond.

Health Systems Research Initiative - Call 3 Full Grant		
Project title		
Strengthening health system delivery and quality: Mechanisms and Effects of Performance Based Financing in the Sub-Saharan context		
Grant holder	**Institute**	**Grant reference**
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Summary

Health care providers can be paid in a variety of ways. They can be given an annual budget for agreeing to provide a service or be paid on the basis of the size of the population covered. Payment according to achievement of specific standards or patient outcomes has been widely applied in the health sector. Such schemes are called Performance Based Financing. These schemes aim to focus health workers and their managers on specific outcomes and to change the way they behave to improve the quality of health care services and population health. Over 40 low and middle-income countries are currently implementing performance based financing schemes in the health sector. However, to date the focus of researchers and practitioners has been mainly on assessing the short term impact of performance based financing schemes on the performance targets. We understand little about how performance based financing affects health workers and the organisations they work in and how this translates into improvements in service delivery and health outcomes. We also do not know if the effects are sustained over time. The design of performance based financing schemes also varies from place to place and we have limited understanding of the factors that influence this variation nor how this affects the way performance based financing is implemented and its subsequent results. Most evaluations collect data specifically for each project, which limits the range of health outcomes that are considered and makes it difficult to compare across studies.

This research project will engage stakeholders involved in running performance based financing schemes and evaluating them in two countries: Mozambique and Zimbabwe. We will work together to clarify how performance based financing has been conceptualised and implemented in each setting. We will also identify how performance based financing is expected to affect health workers and their work environment to bring about better care, and what elements of performance based financing are most critical. We will use national level data on health system inputs to examine the effects of performance based financing on the health system over time. We will use

	data from household Demographic and Health Surveys to examine the effects on health outcomes and on the delivery of services that were not targeted by performance based financing. Finally we will seek to understand how performance based financing brings about changes to service delivery by identifying how and which changes in health system inputs are related to improvements in care delivery. We will also examine how the effects of performance based financing vary according to population and health facility characteristics. Performance based financing is sometimes accompanied by separate efforts to increase access to care and we will examine if this matters. Finally, we will look across the two countries to examine if the way in which the performance based financing scheme is designed affects the results. The project will support knowledge sharing and learning across institutions in the United Kingdom, Mozambique, Zimbabwe and the wider Sub-Saharan African region.

Health Systems Research Initiative - Call 3 Full Grant		
Project title		
Impact of Rapid Expansion of the Estratégia de Saúde da Familia in Rio de Janeiro: Mixed Methods Evaluation		
Grant holder	**Institute**	**Grant reference**
Professor Christopher Joseph Millett	Imperial College London	MR/P014593/1

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Summary

The United Nations has recently set a target for countries to provide comprehensive healthcare at low cost to all citizens. While this is a welcome development, there are concerns that strengthening Primary Health Care (PHC) is not prioritised enough within national and international plans to achieve this. These concerns are grounded in knowledge that health systems with stronger PHC tend to have greater population reach, can respond better to local health needs, and provide a comprehensive set of benefits at lower cost. One potential reason for the lack of priority given to PHC is that most previous research in this area has been conducted in North America and Europe.

Brazil has invested in PHC over the last 20 years through the Estrategia Saude da Familia (ESF). The focus of the ESF is to re-orientate the Brazilian health system to PHC through the delivery of community based health care by multidisciplinary teams. The ESF is much less developed in large cities than rural areas, with poor populations living in favelas (urban slums) being especially underserved. ESF coverage was low (7% in 2008) in Rio de Janeiro until recently, but this has increased substantially since 2011(to 50% in June 2016) reflectings political ambition to achieve universal coverage in the city. The impact of ESF expansion in Rio de Janeiro on health outcomes and costs has important implications for how health systems in large cities in Brazil and internationally should be developed.

Our project will be conducted by a multi-disciplinary team of researchers and policy makers from Brazil, UK and USA, including doctors, health planners, mathematical modellers, and social scientists. It involves quantitative analyses of a unique database that has linked information from patients' medical records (both primary care and hospitalisation records), data on eligibility for state welfare benefits, and deaths in the city. This component of the project will examine whether public investment in ESF in Rio de Janeiro has produced better health outcomes, including a lower likelihood of being admitted to hospital for chronic conditions and a

Dr Valeria Saraceni Municipality of City of Rio de Janeiro	lower risk of death during infancy. It will examine whether individuals dually enrolled in the ESF and a major conditional cash transfer programme derive health benefits above those obtained from each programme in isolation. The project will also explore whether certain groups of patients, including from different race/ethnic groups, benefit more from the ESF than others. We will observe practices in health clinics and undertake interviews with health managers, clinicians, and patients to understand success in the implementation process and barriers to programme expansion. We will undertake mathematical modelling to estimate the potential benefits from further expansion of the programme in the city and whether comparable benefits may accrue if the ESF is expanded in other major Brazilian cities. Our project aims to influence the development of PHC in Rio de Janeiro, other large cities in Brazil, and internationally by generating and actively disseminating timely evidence to policy-makers especially in a period of economical crisis. We will achieve this by including policy-makers and programme implementers from Rio de Janeiro in our research team. We will jointly host dissemination events with the Pan American Health Association in Rio de Janeiro and Brasilia with policy-makers from cities across Brazil to share the findings in order to inform policy development in the country and internationally. Our evaluation will provide important information to other countries seeking to achieve UHC in major urban areas and large cities, such as Colombia and India. By fostering links between academics and policy makers from Brazil, UK, and USA with extensive experience in analysing linked datasets, microsimulation modelling and qualitative research, we will build research skills and research translation capacity among all team members.

Health Systems Research Initiative - Call 3 Full Grant		
Project title		
Verbal Autopsy with Participatory Action Research (VAPAR): expanding the knowledge base through partnerships for action on health equity		
Grant holder	**Institute**	**Grant reference**
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Summary

Health systems can be considered as the products of human relationships: between patients and health workers, managers and policy makers, communities and governments. As a whole, these relationships establish norms of who is eligible for care and what can be expected from the health system. In poor countries where health services are weak and under-funded, care that is unaffordable and unavailable can become socially normal. Communities and health workers have substantial knowledge of these norms and interactions and how health policy is 'brought alive' through them. Their voices are often overlooked in the routine design and delivery of services however.

The project will address this situation by institutionalising processes to: (1) strengthen systems to record and report on deaths, their causes and circumstances; (2) enable the voices of people excluded from access to health systems on their needs and priorities for action, and; (3) act on this information with health workers, managers, planners and policy makers. The process will collect data, analyse, plan and act, and demonstrate an ability to bring about change in partnership with those for whom the situations are most directly relevant. Practical research that is understood and 'owned' by end users in an action-oriented process will strengthen relationships between patients, health workers and policy makers to support and sustain positive change.

The research builds on development work providing actionable health information for poor and rural groups in South Africa. Rural villages in South Africa represent many settings in the region, with deeply entrenched poverty, inequality, avoidable illness, and weak health systems where many deaths go undocumented and uncounted. The development work has adapted Verbal Autopsy, a method used in many poor countries to establish the causes of death for people who die without a doctor present. The research has introduced a system to record new information in Verbal Autopsy on factors such as transport and hospital admissions. In developing countries these processes can play a critical role

	in survival, and documenting them provides important information for health service provision. The development work has also tapped into local knowledge on long standing health problems by building partnerships with communities. Using Participatory Action Research, we have developed understandings of the social issues affecting health, and how these affect people's interactions with care. Participatory Action Research provides a route to involve those in the greatest need in health services. This can empower disadvantaged groups to have more of a say in health systems, in turn strengthening people's abilities to protect and promote their health. We have worked with the health authority throughout, considering what the data are telling us, and how changes can be implemented to respond to the issues identified. The project will extend the development work into an ongoing system of collaborative problem solving, taking data to those who organise and provide services, and working at different levels to understand and enable what is required for change. The work will strengthen existing partnerships with communities, policy makers and planners, and develop new relationships with health workers and clinic managers to act on the evidence towards shared goals. The research will embed a partnerships culture to generate and use information on the realities of health workers and patients to improve care, strengthening access to the health system, achieving improved outcomes and fostering equity in health. The work has been done with a research centre in South Africa established for over 20 years. A team of researchers and policy makers from universities and health authorities in developing and developed countries who have shaped health research and policy in Africa for over 25 years have come together to lead the five year programme.

Health Systems Research Initiative - Call 3 Full Grant		
Project title		
Designing and evaluating provider results-based financing for tuberculosis care in Georgia: understanding costs, mechanisms of effect and impact		
Grant holder	**Institute**	**Grant reference**
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Summary

Tuberculosis remains one of the world's biggest killers, and Georgia is among the countries where the TB burden is high. Georgia has low TB treatment success rates, indicating that people are not completing treatment, thus posing a risk to their health and to their families and communities. Untreated TB cases lead to the development of drug resistance, which is a huge challenge for the country, for the region and the world. The GoG recognises the importance of this public health problem. Significant achievements in TB control were made during the last decade, including improvements to TB case detection and treatment. Nevertheless, challenges related to timely initiation of treatment, patients' poor adherence to treatment and lower than targeted treatment success rates remain.

A number of factors could potentially explain the poor control of TB cases in Georgia, including health system (provider) related factors, such as demotivation of health care providers and delayed TB detection, and patient related factors, such as failure to seek treatment, and poor adherence to treatment. In an attempt to address these barriers, Georgia has provided patient adherence support to all TB patients since 2007, with the support of the Global Fund (GF). This includes monetary incentives to encourage continuous treatment and to cover transportation costs.

Notwithstanding the introduction of incentives for patients, treatment adherence remains low and the attention has shifted to the incentives available for service providers. In Georgia, primary care facilities are predominantly privately owned and paid by capitation, without tying incentives to their performance (e.g. for case detection and referral). These providers must provide TB treatment in their mandate, but this mandate will shortly expire. Although the GoG is paying referral specialists salaries for the provision of TB services through its vertical programme, it has limited capacity for monitoring and leverage over the performance of these providers, and salaries are low compared to other specialists.

	The GoG is therefore planning to introduce a provider RBF intervention in pilot areas in 2017. The pilots intend to explore the potential of a provider intervention, in addition to the already existing patient incentives, to increase the motivation of both public and private providers in improving patient adherence and treatment outcomes. From a research perspective, the introduction of this scheme provides an opportunity for embedded development and research, working closely with the national programme and policy makers, and leveraging Global Fund support and influence. The main goal of the research is to participate in problem analysis during the design phase and provide evidence on the implementation and effects of the new supply side RBF scheme on adherence and treatment success rates, on the cost of the intervention, and how it works in different contexts in Georgia (including wider health system effects, intended or not). To achieve this goal, we will engage with policymakers and programme managers during the process of designing and developing the intervention. By doing so we will ensure that the design is theory-led, engage policy makers from an early stage and develop and document the iterative and participative learning process between policy makers and researchers. As well as informing policy in Georgia, the results are expected to enrich global policy debates on RBF and TB programming, including through public-private partnerships, as well as feeding into academic debate on how to combine realist evaluation techniques with trials and cost-effectiveness analysis.

Health Systems Research Initiative - Call 4 Foundation Grant		
Project title		
Exploring strategies for integrating breastfeeding peer supporters in public hospitals in Kenya		
Grant holder	**Institute**	**Grant reference**
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Summary

Acute malnutrition among infants aged under 6 months is a major public health problem. Recent reports indicate that globally, 8.5 million infants under 6 months suffer from moderate or severe acute malnutrition. Malnourished infants are significantly more likely to be hospitalized and die from treatable infectious diseases than non-malnourished infants. Studies have shown that the majority of these infants (up to 90%) are not exclusively breastfed, even though evidence suggests that exclusive breastfeeding is particularly important for recovery and survival among this group. To improve the nutritional status of hospitalized malnourished infants, the World Health Organization (WHO) recommends the re-establishment of exclusive breastfeeding. However, challenges such as shortages of appropriately trained health workers and lack of information on "how" exclusive breastfeeding can most effectively be re-established have hampered the effective implementation of these recommendations in many low-income settings, including Kenya. In Kenya, as elsewhere in sub-Saharan Africa, breastfeeding lay peer supporters (mothers from the local community trained in breastfeeding assistance) are used to promote and support exclusive breastfeeding among mothers of healthy infants in their communities. We are currently undertaking a study (IBAMI) in a hospital in Kenya investigating the maintenance of exclusive breastfeeding amongst infants recovering from acute malnutrition and infection after they have been discharged from hospital. We have introduced breastfeeding peer supporters in the hospital to help the health workers implement the WHO guidelines. With the support of study staff and funding, peer supporters have become a central part of the inpatient treatment management team undertaking tasks integral to the breastfeeding treatment plan. Our experiences from the IBAMI study suggest that breastfeeding lay peer supporters might be an effective strategy for enhancing the implementation of the WHO guidelines. However, the supportive financial and management conditions provided by the IBAMI study are unlikely to be repeated in resource constrained hospital settings in Kenya and routine implementation would involve introducing a new low skilled,

	as yet unrecognised cadre into complex, multi-professional hospital environments. To understand when, where and how breastfeeding peer supporters might be integrated into the routine treatment of inpatient malnourished infants, we propose to undertake a pilot study investigating the health system factors that are likely to enhance or constrain the use of breastfeeding peer supporters in the implementation the WHO guidelines for nutrition rehabilitation of inpatient infants under routine conditions in two public hospitals in Kenya. To gauge policy level interest in the approach, we will identify and engage with key policy makers at national and county levels in Kenya; determine their views on employing lay peer supporters in a hospital setting and discuss potential barriers and facilitators to implementation. To assess the feasibility of using breastfeeding peer supporters, we will collaborate with the Kilifi County Ministry of Health (MoH), to identify two hospitals and in each we will work with the hospital management team, frontline health workers, UNICEF and National MoH to develop and agree on a strategy for the implementation of a breastfeeding peer supporters' intervention. During strategy implementation, quarterly meetings to review progress and identify factors enhancing or constraining the integration process will be held. After 12 months, we will estimate the costs of implementing the strategy and hold review meetings and interviews in each of the two hospital to assess perceptions of its feasibility, acceptability and sustainability. The findings from this study will generate new knowledge to improve the hospital management and treatment of malnourished infants under 6 months.

Health Systems Research Initiative - Call 4 Foundation Grant		
Project title		
Practices, regulation and accountability in the evolving private healthcare sector: lessons from Maharashtra State, India		
Grant holder	**Institute**	**Grant reference**
Professor Susan Fairley Murray	King's College London	MR/R003009/1
Co-Investigators Dr Indira Chakravarthi Anusandhan Trust	**Summary** This research is about the expansion and changing face of private sector hospital care and related diagnostic services through an organised, and increasingly transnational, healthcare industry. It responds to concerns, expressed in a recent paper in the Lancet, about how incentive structures within health services may become distorted to meet the economic interests of this industry, and about the risks of regulatory capture and disempowerment of communities and citizens. The research team is composed of social scientists from King's College London and public health researchers and health rights activists from India. To explore this issue, we will construct a detailed case study of the sector in Maharashtra State, India which has many expanding healthcare hubs. Our objectives are first to examine the implications of these emerging forms of healthcare delivery and their business and management practices for the healthcare sector, for medical practitioners and for healthcare users. As there is no central register, we will conduct a mapping of facilities by collating information from various registers and business media reports; we will interview a wide range of medical practitioners, managers, facility owners, regulators, policy makers, patient organisations and health rights advocates; and we will conduct a 'witness seminar' to explore the contemporary history of corporatisation of healthcare in the State. Second, we will consider the nature, successes and failures of past attempts at regulation of the private medical sector in the State. For this we will hold a stakeholder consultation and a witness seminar exploring recent regulations, and obstacles and distortions in implementation. The final stages of the project will be to develop and advocate for mechanisms of 'social regulation', such as patient and citizen involvement in monitoring of enforcement of rules and regulations from a rights-based perspective, and to draw lessons for other low and middle income countries.	

Health Systems Research Initiative - Call 4 Foundation Grant		
Project title		
Exploring the potential of civic engagement to strengthen mental health systems in Indonesia.		
Grant holder	**Institute**	**Grant reference**
Dr Helen Brooks	University of Liverpool	MR/R003386/1
Project duration in months	**Total amount funded**	
18	£105,264	

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Summary

Psychosis is ranked 11th among the top 25 causes of disability worldwide, and has serious personal and financial consequences for individuals, their families and the economy, including reduced life expectancy, social exclusion, poor quality of life, and poor health amongst caregivers. In Indonesia, mental health systems are struggling to meet the needs of people with psychosis; more than 90% of people with mental illness do not get any treatment and Indonesia has the highest rate of years of life lost to disability or early death from Schizophrenia than any other country in the world. This, combined with low health literacy (poor knowledge of mental health) and high levels of stigma within the general population has resulted in tens of thousands of people of people being illegally chained up ('pasung') in the family home.

Civic engagement, a core part of the WHO global health strategy, could help address these challenges. The benefits of civic engagement have been demonstrated across the world, and include improved access to, and quality of care, reduced stigma, better outcomes for service users and reduced costs. In a health systems context, civic engagement is a 'bottom-up' approach in which service users and their families become actively involved in the design and delivery of health services. It recognises 'lived experience' as an important and valuable form of expert knowledge, and so strengthens health systems by using it alongside clinical or scientific expertise in decision-making, leading to the development of people-centred services.

As a rapidly developing middle income country, Indonesia's mental health system is expanding. This early stage of development presents a unique opportunity for civic engagement to shape and strengthen these emerging systems, and ensure they are designed around the needs and preferences of the people they aim to serve. However, our understanding of the pathways through which civic

	engagement might operate in Indonesia is limited. Our study aims to address these gaps in knowledge and develop a systems level, culturally appropriate civic engagement framework to strengthen local mental health services. People with psychosis and their carers will receive training in research methods and will be involved in all stages of the project. The study will take place at two research sites (Jakarta and Bogor), which represent different health systems and urban/rural contexts. It will be implemented in four phases; Phase 1, a systematic review of research studies, will identify the range of approaches to civic engagement implemented in South East Asia, and review current evidence around the use of these approaches. Phase 2 will be a social network analysis to map the main sources of collaboration and evidence used by stakeholders when making decisions in mental health services and will identify opportunities for civic engagement. In phase 3 we will conduct interviews with key stakeholders across the health system, including, policy makers, clinicians, service users and carers, to explore their views of civic engagement and how it might work for people in Indonesia. In Phase 4 we will hold a series of synthesis workshops with local stakeholders to present our findings and co-produce a testable, culturally appropriate civic engagement framework and implementation strategy. We will also identify key questions/topic areas for a larger evaluation of this approach. During these workshops film and video-interviews will be used to capture important and impactful thoughts and messages amongst stakeholders. Our project will increase potential for civic engagement in Indonesia. It will build research capacity, and provide opportunities for more 'user focussed' research. We will develop a grant application for a rigorous evaluation of the civic engagement strategy we develop, and a strong Indonesian research group, with the knowledge, skills and experience required to lead such a study in the future.

Health Systems Research Initiative - Call 4 Foundation Grant		
Project title		
Combating drug resistance through better governance of unregulated antimicrobial sellers in Cambodia: addressing stakeholder connections & perceptions		
Grant holder	**Institute**	**Grant reference**
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Summary

The research proposed here is for a 20-month Foundation grant applying innovative methods to understand, and develop strategies to address unresolved challenges relating to governance of a poorly characterised segment of the health system - unregulated, for-profit drug sellers. We focus on a high priority global health issue, inappropriate dispensing of antimicrobials (AMs), in one of the world's Least Developed Countries: Cambodia. Cambodia serves as an important case study with wider relevance because, like many other countries in the region and those whose health systems have been weakened by conflict, it has experienced a massive growth in unregulated, for-profit healthcare providers.

Our project is a collaboration between the University of Health Sciences in Cambodia and the London School of Hygiene and Tropical Medicine, building upon work initiated in 2014. The team convened is a multidisciplinary group of researchers bringing together experience in health systems research, the Cambodian context and private health sector in Asia. The research will identify the diverse providers that sell AMs, and analyse power relations and networks between unregulated drug sellers (UDS) and local stakeholders that influence policy, in order identify governance approaches for improving AM selling by UDS that are likely to be supported by local policymakers and implemented at scale,

We will address three linked research questions sequentially, producing specific research outputs for each:
1. What are the key "visible" and "invisible" types of outlets selling AMs to engage in interventions to reduce inappropriate use?
To address this research question we will conduct focus group discussions involving a community walk through during which local researchers will be taken to public and private healthcare providers that residents visit for common illnesses in four communes across Phnom Penh, Cambodia. Local researchers will conduct non-participant observations to create a database of healthcare providers including information about whether

	they are registered or unregistered, and whether they primarily sell medicines or other items. 2. How do the UDS identified link to policy actors including community leaders, commercial drug suppliers and government health officials? Based on information collected through the initial study, we will select approximately 35 UDS representing the range of actors we identified for in-depth interviews. Through interviews we will investigate people or institutions they are connected to through social or financial networks and generate a list of common stakeholders UDS are connected to. 3. How is policy influenced by UDS's connections to, and ways they are perceived by, policy actors? We will conduct interviews with the stakeholders identified (we estimate 25) to investigate perceptions of the role that UDS play in providing healthcare, and interviewees will rank alternative governance approaches - banning, regulation, encouragement/subsidy, and purchase of services - while talking through their rationale. Research undertaken for this Foundation grant will generate: a) understanding of the social and geographical spread of unregulated drug sellers dispensing antimicrobials in urban Cambodia, b) an analysis of stakeholders that are critical to governing unregulated drug sellers and access to antimicrobials in Cambodia, their networks and underlying power relations and c) on this basis, develop a governance intervention to reduce inappropriate access to antimicrobials through unregulated drug sellers. This knowledge and intervention developed will inform a larger research proposal testing the intervention on national scale in Cambodia and provide timely information for policymaking on unregulated drug sellers in other low and middle-income countries that are currently developing health systems strengthening plans under the International Health Regulations.

Health Systems Research Initiative - Call 4 Foundation Grant		
Project title		
MICA: BIOS - Assessing the potential of wearable digital biosensors for health system strengthening in LMICs.		
Grant holder	**Institute**	**Grant reference**
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Summary

Non-communicable diseases, including heart diseases, cancers, chronic respiratory diseases, and diabetes, are increasingly important health concerns in many developing countries. In 2012, for example, a global survey found that non-communicable diseases accounted for 34.5 million deaths of the 52.8 million deaths worldwide, and nearly 75% of those occurred in developing countries. Most premature deaths from these diseases are preventable through changes in lifestyle, such as increasing physical activity, quitting smoking, reducing the consumption of alcohol, and eating healthier food. However, capacities of public health authorities to promote healthier habits and thus improve lives are still inadequate worldwide. In poor-resourced countries, moreover, the burden of non-communicable diseases and the prevalence of associated risk factors is often not known with precision due to the lack of resources and weak information systems. For example, recent reviews of global trends in health surveys found that population data on cholesterol were not available in 100 countries, and no data on blood pressure were obtained for 64 countries. As a result, health authorities lack essential information to develop policy and programmes to address these challenges.

The development of new wearable technologies for health monitoring, such as smartwatches and smartbands, is a promising technological innovation with great potential to support programmes for the prevention and control of non-communicable diseases. Boosted by commercial success of wireless medical devices and the rapid uptake of fitness trackers in high-income countries, advances in this sector have led to increasingly sophisticated hardware and software which can capture a wide range of biometric data, including respiration, oxygen saturation, heart rate, blood pressure, skin temperature, and more. In parallel, there has been a great expansion of wireless networks in developing countries, which can provide the necessary infrastructure to enable data transfer from users to health information systems. Thus, wearable health systems could be introduced to conduct regular surveys on risk factors for preventable diseases and

	their distribution across population groups, providing important information to health authorities who develop policy to minimise these risks. Wearable health systems can also be used to deliver messages to the users based on individual progress, helping them to achieve health targets and reduce risks. Despite these promises, however, the public health potential of wearable health monitors remains untapped, as no studies to date have explored ways in which such devices could support health policy and programmes. This project aims to conduct a preliminary evaluation of this potential, laying the foundation of a more comprehensive multi-country study. Research activities will be conducted in Cambodia, where a prototype device will be deployed for field evaluation. This is an exemplary case country in which most research and prevention to date have focused on infectious diseases, while non-communicable diseases have received much less attention and support despite their increasing importance. In this context, the introduction of wearable devices could be useful for strengthening preventive programmes and monitoring of population health. Aware that the introduction of a novel technology is a complex process, we will explore the full range of institutional, socio-economic and technical factors that may be more or less conducive to the uptake of the proposed innovation, with particular attention to the response of individual users.

Health Systems Research Initiative - Call 4 Foundation Grant		
Project title		
Understanding health system linkages: Formative research to develop strategies to support quality improvement in treatment in the private sector		
Grant holder	**Institute**	**Grant reference**
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Summary

Prompt antibiotic therapy for an infected patient can make the difference between cure and death or long-term disability. Unfortunately, all around the world, some infections are becoming resistant to the antibiotic medicines used to treat them. This could lead to a future scenario in which illnesses last longer, deaths increase, and the cost of treatment rises. Under this scenario, the greatest impacts are likely to be felt in low-income countries where infectious diseases are most common and many families lack financial security. Antibiotic resistance is now considered to be one of the biggest threats to global health. The World Health Organization has called for urgent action, research and investment to counter this threat, through the development of new antimicrobial drugs and through more responsible use of existing drugs. In September 2016, global leaders met at the UN General Assembly - only the fourth time in the history of the UN that a health topic was discussed at the General Assembly - to call for concerted action by every national government to limit the development and spread of drug resistance.

Poor prescription practices by health workers, such as overuse of drugs, sale of partial doses, or non-adherence by patients to the full treatment course, all create situations which are conducive to the selection and spread of resistant mutations. Health workers and pharmacists can help tackle resistance by only dispensing antibiotic drugs when they are truly needed; and by prescribing the right drug in the right quantities to treat the illness. Improving the use of antibiotic medicines thus ultimately involves guiding the treatment decisions made by health workers and patients to discourage indiscriminate use. Therefore, if effective intervention strategies are to be developed, better knowledge and understanding of the factors that influence the prescribing practices of health workers will be essential.

The private sector plays an important role in provision of health care in many African countries, with many patients seeking care from private clinics and drug shops, and cannot be overlooked in strategies to control misuse of antibiotics.

	Neither can treatment practices and standards be addressed by focusing on one sector in isolation. The private sector interacts with, and is shaped by the organisation and performance of the public sector, demand from patients and regulatory controls. Poor practices in one sector can easily undermine or disincentivize behavioural change in another. Yet regulation of the private sector is an acknowledged weakness of the health system in many low income countries. The proposed research aims to address this challenge. We shall investigate the situations, norms, experiences, and motivations that affect health care practices in private clinics and drug shops in rural Uganda, including the influence of interactions between private providers, government health workers and public health officials, in order to generate improved understandings of how the health system can more effectively control treatment practices, and improve the quality of care that patients receive from private providers. We intend to use the knowledge and insights gained from this research to develop a comprehensive intervention strategy to improve patient care and combat irresponsible use of antibiotics in private clinics and drug shops in Uganda. This intervention strategy will be tested in future studies. We hope that our findings will also be of value to Ministries of Health and national governments in other low-income countries, and can be used to help inform the development of national plans to counter the threat of antimicrobial resistance.

Health Systems Research Initiative - Call 4 Foundation Grant		
Project title		
Building an evidence base to support and enhance community health workers' (informal) use of mobile phones in Ghana, Malawi and Ethiopia		
Grant holder	**Institute**	**Grant reference**
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Summary

Africa's recent communications 'revolution' has generated optimism that using mobile phones for health (mhealth) can help bridge healthcare gaps, particularly for rural, hard-to-reach populations. However, while scale-up of mhealth pilots remains limited, community health workers (CHWs) across the continent possess mobile phones. CHWs form a vital part of healthcare delivery across Africa and many countries are scaling up their deployment (target of 1 million CHWs).

There is thus enormous untapped potential here. While much research has focussed on formal mhealth initiatives (small-scale successes, challenges of scale-up), we know almost nothing about what CHWs across Africa are doing with their own mobile phones, and with what implications for healthcare. Last year, we published what we believe to be the first study to have looked seriously at this issue (Hampshire et al, 2016, Health Policy & Planning). Our very small-scale preliminary study, based on interviews with 16 health-workers in Ghana and 18 in Malawi, revealed that CHWs used their own mobile phones regularly (often on a daily basis) to communicate with colleagues and patients, obtain help in emergencies, seek information, organise work logistics such as drug supplies, etc. By contrast, only one had ever participated in a (now defunct) formal mhealth programme.

The potential for what we have called 'informal mhealth' to enhance primary care in resource-limited settings could thus be very significant. The CHWs we interviewed were innovative and adept at harnessing new features on their phones to help manage their work. However, our study also pointed towards challenges, both for patient care and health-worker wellbeing, including: the financial burden of phone costs and emotional burden of being available to patients 24/7; decreased face-to-face interaction with patients; concerns about patient confidentiality when communicating through personal phones; and difficulties in accessing reliable online information, etc. Our aim for this Foundation Grant is to build a strong evidence base of current mobile phone use among community health workers in Ghana, Malawi and Ethiopia (three countries

	committed to major CHW programmes), in order to enhance the effectiveness of 'informal mhealth' and address challenges. If our hypothesis is correct, and CHWs' 'informal' mobile phone use is widespread, this study could provide crucial evidence to support innovative ways to strengthen health systems in resource-limited settings. Methods: 1) Comprehensive policy reviews of CHW programmes and mhealth initiatives in each country, plus analysis of health systems and contextual factors affecting implementation. 2) Questionnaire survey of CHWs in each country to estimate levels of work-related mobile phone usage and collect comparable data on: (a) Split between formal and informal mhealth usage, and function/purpose (e.g. communicating with patients, colleagues, logistics, information seeking, etc.); (b) Estimated financial costs of phone use and who meets these costs; (c) Perceived benefits and challenges arising from this 'informal mhealth' for CHWs and patients. 500 CHWs in Ghana and Malawi and 1000 in Ethiopia (where the total number of CHWs is much higher) will be sampled across multiple sites to cover a range of urban, semi-rural, rural settlement types. 3) Two sets focus groups of CHWs (minimum 14/country) and patients (minimum 6/country) will be convened before and after the survey, to reflect on current practices and experiences (incorporating survey findings), and to identify possible ways of supporting, enhancing and sharing good practice, and addressing challenges. 4) Meetings and on-going discussions with national stake-holders throughout the project to feed into policy/practice (see impact summary).

Health Systems Research Initiative - Call 4 Foundation Grant		
Project title		
Strengthening the quality of paediatric primary care in South Africa: Preliminary work for a pragmatic randomised trial.		
Grant holder	**Institute**	**Grant reference**
Dr Lara Fairall	UCT Lung Institute (Pty) Ltd	MR/R004080/1

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Summary

There are important gaps in the primary care delivery of child health in low and middle income countries: there is little user-friendly guidance for health workers seeing children over the age of 5 or those with increasingly common long term conditions like asthma, and preventive care (like vaccinations and growth checks) is not smoothly integrated with sick-child services, making for disjointed care for children, their caregivers and health workers.

The Knowledge Translation Unit in Cape Town has developed a health systems intervention for adult primary care (Practical Approach to Care Kit - PACK) that has become entrenched in health services throughout South Africa and is being piloted elsewhere in Africa and in South America. PACK comprises a clinical guide, a training package and work at policy and management level to prepare the system and the health worker for its implementation. The unit has conducted rigorous implementation science studies showing that PACK improves care and patient outcomes. The reasons for PACK's success are that it takes a comprehensive, simple approach to clinical care while tackling the systems issues that make improving primary care difficult. A partnership with the British Medical Journal is helping take PACK to a global audience (www.pack.bmj.com).

In response to the gaps described above and to requests from those using PACK Adult, the KTU has now developed the first version of the PACK Child clinical guide in collaboration with local government in the Western Cape province of South Africa, and plans to implement it alongside PACK Adult in several countries. Before rollout, however, we need to work out two things: One, how best to implement the PACK Child programme in a system that has multiple other programmes and priorities - and limited capacity - and two, how best to evaluate whether PACK Child does indeed improve the care and health of children. This Foundation Grant will support the KTU to:
- Develop and pilot the PACK Child health systems intervention package.

	- Design the research protocol to evaluate the PACK Child health systems intervention. - Establish a PACK Child Advisory Board. Each of these activities will draw on stakeholders from policy makers to nurses and doctors to children themselves to ensure that the PACK Child health systems intervention and its evaluation speaks to the needs of those who will use and benefit from it.

Health Systems Research Initiative - Call 4 Foundation Grant		
Project title		
MICA:Development of new paradigm in differentiated care for HIV patients; Community pharmacy drug refill using the ARTAccess Mobile phone application.		
Grant holder	**Institute**	**Grant reference**
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Summary

We have made great progress in getting life saving medication to people living with HIV all over the world. However, there are still around 15 million people worldwide who need treatment. This treatment is essential to stop people living with HIV from getting sick and dying, but it also helps to prevent new infections happening. As there are no vaccines for HIV at the moment and no cure, this is a very important form of preventing the spread of the infection. However, in many setting such as Uganda the cost of treating patients with HIV puts a great strain on the health services, and as more patients need treatment this will increase. Therefore, we need to find different ways of providing HIV treatment which will enable the health services to cope. This could include reducing the need for patients to see a doctor or nurse every time they go to clinic and so reduce the burden on staff, to reduce the paperwork involved, to make it easier for the patients to access their medication near to their homes, so that they do not lose working hours, and many more. Lots of people have now been on medication for a number of years and are doing very well. At the moment they still need to come frequently (every 1-3 months) to their local clinic to pick up medication which adds burden to both them and their clinic.

We propose to use mobile phone technology to see if we can help to reduce this burden. Mobile phones are cheap and widely available in sub-Saharan Africa and very many people use them. In fact, many people use them to send money and do business, without the need for banks. We will use a mobile phone or tablet to link the patients records and their recent blood tests to community pharmacies, so that the patients can get their drugs from multiple sites, not just their clinic. As this approach is new we will need to see how the technology works, see what the patients, doctors and nurses, pharmacy staff and the government think about this system and to see what effect it is having on the delivery of services to the patients.

We will also plan for a much larger research study which will link these technologies with other mobile phone based tools,

	such as daily reminders to take pills, and see how we can link up a whole geographical area and streamline the services for people living with HIV. If this works, it may be used for very many hundreds of thousands of people on HIV treatment, and in future may be used for other conditions such as high blood pressure or diabetes in Uganda and elsewhere in sub-Saharan Africa.

Health Systems Research Initiative - Call 4 Foundation Grant		
Project title		
Role of Nurses in the delivery of quality care: understanding the workforce deficit		
Grant holder	**Institute**	**Grant reference**
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Summary

There is growing consensus that achieving Sustainable Development Goal 3(SDG 3) on healthy lives and well-being through universal health coverage (UHC) requires a critical focus on human resources for health (HRH). In developing countries the shortage of health workers is estimated to be over 7 million, with the worst shortages experienced in the poorest countries in Africa. Kenya faces a severe health workforce crisis with nursing densities in the public sector ranging between 1.2 to 0.008 per 1000 population across counties, compared to an internationally suggested minimum health workforce threshold of 2.5/1000 population. Nurses form the largest component of the health professional workforce and are recognized as essential to the delivery of safe and effective care and should be key players in promoting and shaping effective health policy.

However, we suggest nurses are often undervalued and their contribution underestimated with their 'voice' in discussion on major HRH issues and on quality of care (QoC) often lacking. Some of the barriers associated with poor involvement in policy development in the literature include: lack of recognition of nurses as key stakeholders in policy development, a negative image of nursing as 'only an assisting profession', and bureaucratic processes. A potentially important aspect that has rarely been examined is how nursing professional socialization influencing their professional identity may influence the ability of nurses to mobilize power and authority within the health care system.

Increasingly availability of good information is used to provide evidence and advocacy in policy and management debates with measures of quality of care being of a particular focus. Efforts to measure quality of care in LMIC have focused almost exclusively on medical aspects of care. At primary care level most of this care is actually delivered by nurses. In larger facilities too, quality assessment focuses on medical quality of care; yet nurses are gate keepers of the delivery of clinical interventions (e.g. treatments, nutrition interventions etc.) and other nurse initiated interventions as well as being largely

	responsible for holistic care to address wider patient needs. However, little attention has been paid to measures of nursing quality and their potential to highlight the impact of the nursing deficit on quality. The absence of such measures may further undermine the ability of nurses to affect policy and management decisions. We will begin work using an identity theory as a lens to examine how the identity of nurses as professionals is created and its potential influence on their ability to exert power and agency in management and policy roles. We will also explore how measures of quality that are more specific to nursing care might be adapted and implemented in an African context. Measures that can better inform workforce policy and management decisions aimed at providing quality care and universal health coverage. Empirical research will explore nurses' professional identity and their influence in practice at national, county and hospital levels through ethnography, interviews with key stakeholders and stakeholder meetings. We will examine existing approaches to measuring missed nursing care by reviewing literature before developing and pretest tools, co-designed with the nursing community, that may produce metrics of nursing quality to inform debate on policy and practice. This programme of work will contribute essential new thinking by using an identity lens to explore how the nursing profession shapes and defines workforce policy, roles and tasks. In addition, we will develop tools that provide the often lacking data on quality and quantity of nursing care delivered. We will embark on work to identify avenues through which nurses can be actively engaged in research, improving care and informing policy as part of broader efforts to tackle the global workforce challenge.

Health Systems Research Initiative - Call 4 Foundation Grant		
Project title		
Exploring how to increase access to healthcare services for border resident communities in East Africa		
Grant holder	**Institute**	**Grant reference**
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Summary

Access to healthcare remains a big challenge in Africa. The situation is particularly appalling for border resident communities as they are often not given priority by policy makers. The existence of different state territorial sovereignty, administrative frameworks with different currencies, support services, legal/regulatory systems, and languages make healthcare access for border resident populations even more complex. Unlike in the central areas; in some sparsely populated border areas, the nearest facility may be in another country. Another significant barrier lies in the economic deprivation to which the border areas are usually exposed.

In this era of Universal Health Coverage, how are communities residing along national borders going to be served without any financial burden as well as ensuring their overall wellbeing? This is an overarching question we intend to contribute to. This will be done through a study conducted at five paired-cross border sites in East Africa. Specifically; four interrelated objectives are proposed;

Objective 1: This will explore the existing legal-institutional contextual constraints and enablers to access to cross border healthcare services for border resident communities, by way of two main methods; 1) review of administrative and legal documents and 2) Key Informant Interviews with border officials and managers of political administrative units near the border.

Objective 2: This objective will explore the health systems constraints and implications for serving border communities. Key informant interviews will be the main methods for this objective. District or county health managers and providers will provide the bulk of this category of respondents. CBOs working to improve health services will also be included in the survey as key informants.

Objective 3: This objective will determine how border resident communities navigate legal-institutional and health systems constraints and enablers to health service access. Two main

	methods will be used a) Survey of those that successfully manage to access services across the border and b) Focus Group Discussions (FGD). For the survey, Appreciative Inquiry (AI) approach will be taken to probe the access pathways for those that have successfully navigated access to three selected services on the other side of the border. We will undertake FGDs to help to mitigate the limitation of surveying only those that successfully navigated the access barriers. The FGD participants will include potential services for cross-border services ie 1) mothers attending child immunization services, and 2) community leaders - including community health workers. Objective 4: This objective aim to identify feasible actions to advance the access and coverage agenda to services for the communities residing along state borders. This will be done through; 1) convening stakeholders to deliberate on the findings from objectives 1, 2 and 3 in order to influence policy and practice and 2) sharing the study findings with the highest regional policy platforms. At these meetings we shall engage sub national, national, and regional policy practitioners to make salient the need to plan for border resident communities. Relatedly, the findings will also be disseminated at local, regional and international conferences in addition to publishing in peer review journals. The survey is anticipated to increase understanding of healthcare access issues and the health systems implications for serving border resident communities. In turn border resident communities will benefit from improved cross border healthcare provision and greater EAC cooperation in health care delivery.

Health Systems Research Initiative - Call 4 Full Grant		
Project title		
Strengthening health system responsiveness to citizen feedback in South Africa and Kenya		
Grant holder	**Institute**	**Grant reference**
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Summary

Citizens in LMICs experience a range of problems with public and private health services: from poor quality of services to rights violations. In spite of numerous calls and interventions for increased community participation in health, service users and citizens often do not have adequate opportunities to engage with the system about their problems and induce appropriate responses and remedies. Responsiveness to citizens' rights and needs is an essential quality of health systems, and is necessary in order to provide inclusive and accountable services, ensure the social rights of citizens and improve the quality of services. Mechanisms for feedback and response are varied and result in dispersed and sometimes conflicting feedback. These range from conventional facility-based complaints boxes and exit surveys to strategies such as community report cards, social audits, and hotlines. Citizen feedback at community-level has also been sought by implementing health facility committees, intersectoral forums, and community monitoring systems. Growing access to information technology in LMICs has often empowered citizens to raise their concerns through social media, the mainstream press, and even through social protest.

Health system responsiveness is gaining global currency as an intrinsic goal of health systems alongside service delivery outcomes, financial fairness and equity. However our current understanding of health system responsiveness is extremely limited, and there is a significant evidence gap about the structure, implementation and effectiveness of citizen feedback and the related response mechanisms about health services currently in place in LMICs. In this study, we aim to address these knowledge gaps by asking: What policies and mechanisms (formal and informal) work for receiving and responding to citizen feedback on health systems in South Africa and Kenya? How can health systems responsiveness be strengthened towards the development of learning, equitable health systems?

The proposed study is an interdisciplinary mixed methods study, running from 2018 to 2020. The study will be conducted

	in three phases, and we will apply several, primarily qualitative methods and tools. The first phase will consist of 'mapping' of policies, feedback mechanisms and pathways for system responsiveness in the study provinces (as well as theoretical and methodological framing relating to responsiveness). Many governments in LMICs are recognising the pressing need to improve health system responsiveness, and both countries in this study have recently implemented significant policy reforms aimed at improving responsiveness to citizen feedback on health services. We will capitalise on this window of opportunity, with the second in-depth phase consisting of case studies in each country, tracking the implementation experience of a particular innovation in this area. The third phase will focus on knowledge translation and cross-country comparison. This project will contribute to a deeper and more systematic understanding of health system responsiveness in South Africa and Kenya, with relevance for other comparable LMICs. By applying an embedded approach to HPSR, it is intended that the research will also have a health system strengthening effect: creating space for reflective practice, strengthening feedback and response within the system, and improving decision-making opportunities for HS leaders. Therefore, this study on responsiveness to citizen feedback should also improve the responsiveness of the health systems in which it is implemented. In each country, we have partnered with policy decision-makers engaged in implementing reforms for greater health system responsiveness, and this study will directly help bring about improvements in these policies. We will also engage with other health system and civil society leaders to identify strategies to strengthen health system responsiveness.

Health Systems Research Initiative - Call 4 Full Grant		
Project title		
Novel methods for optimising health systems payment for performance interventions to improve maternal and child health in low-resource settings		
Grant holder	**Institute**	**Grant reference**
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Summary

There are different ways to pay health care providers. They can be paid based on the resources they use (e.g. staff, drugs) and the size of their population. They can also be paid based on what outcomes they achieve, which is termed payment for performance (P4P). P4P schemes are aimed at influencing the behaviour of health workers and their managers to deliver better quality health care. P4P schemes are currently being implemented in many low- and middle-income countries to improve maternal, newborn and child health.

Many studies have focused on assessing these P4P programmes' impact on the performance targets. More recently, studies have considered the effect of P4P on the inputs and infrastructure required to deliver health care services (i.e. the health system). However, these studies have mainly focused on effects on a single element within the health system, e.g. drugs or staff, rather than looking at all these factors in an interconnected, comprehensive manner. Mathematical models enable the analysis of how interconnected systems such as the health system function and respond to change. While models have been built and used to look at health programmes, to date there has been very limited use of these models to study health systems in low- and middle-income countries and their response to programmes such as P4P. One of the advantages of models is that they can also be used to anticipate the likely effects of programme changes before these changes are actually made. This can be helpful to those designing programmes to help them work out which design would work best.

This study will use two types of models to understand the effects of P4P: a model of how a health facility functions in terms of the overall flows of patients and drugs and supplies across the facility (i.e. a system dynamic model) and a model of the way health care workers, their managers and patients interact and behave within the health facility (i.e. an agent-based model). The models will be developed in two different settings: Tanzania and Zambia. Tanzania and Zambia were chosen as they have made mixed progress in terms of

	maternal, newborn and child health outcomes and they both made the decision to introduce P4P to try to improve maternal and child health. These two models will provide us with an understanding of how health systems work and respond to the P4P programme in these settings, and how P4P can be best designed for maximum impact on the health of mothers, newborns and children. To construct models of the Tanzanian health care system, we will use information from a previous study of the impact of P4P in Tanzania together with interviews with programme implementers. The models will be used in Zambia to see if they can accurately predict the effects of P4P on the Zambian health system or if changes in the model structure are needed. The models will be used to understand the effects (both intended and unintended) of P4P in each country and explore how changes in the design of the Tanzanian and Zambian P4P programmes may affect health and health systems outcomes. Results will be used to improve P4P programme design in each setting. We will also develop a toolkit for how to develop and use system dynamics and agent-based models to analyse health system response to interventions such as P4P for use in other countries, and training activities to support their uptake. This project will support knowledge sharing and learning across partners in the United Kingdom, Tanzania, Zambia and Uganda.

Health Systems Research Initiative - Call 4 Full Grant		
Project title		
War and Peace: The Health and Health System Consequences of Conflict in Colombia		
Grant holder	**Institute**	**Grant reference**
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Summary

Internal armed conflicts have become more common and more physically destructive since the mid-20th century. Although these conflicts constitute a global problem, poorer countries have been disproportionately affected, with devastating consequences for health and development. Beyond the direct health effects of people being killed or maimed, population health is affected indirectly through destruction of economic assets, damage or lack of access to public health infrastructure and large population displacements.

The overarching goal of our project is to investigate the consequences of long-term internal conflict for population health, the health system and post-conflict health policymaking through an in-depth study of the past and current experience of conflict and peace agreement in Colombia. Since 1958 an estimated 220,000 people have died in Colombia due to the civil conflict and more than six million (13% of the population) have been forcibly displaced. A peace accord between rebel forces and the Colombian government was agreed in December 2016 and has ended hostilities, creating a unique window of opportunity to conduct research of immediate policy relevance. Our project will provide much needed evidence on under-researched issues such as the consequences of conflict for health service organisation and delivery, and the impact on often overlooked populations including internally displaced families and the poorest groups.

These questions will be answered through a mixed-methods research programme involving two linked work packages. The quantitative package will rely on survey data collected by the team and data already available, analysed using state-of-the-art techniques. The qualitative and historic analyses will employ focus groups with residents of selected municipalities, interviews with national and local government officials and civil society representatives, and examination of publicly available official documents and historic administrative datasets, generating a uniquely rich portrait of the consequences of civil conflicts for the health system. The

	conclusions drawn from all these analyses will provide the basis for specific, evidence-based health policy recommendations by the research team. The principal elements that will ensure this project has practical impact are its distinctive timeliness for health policymaking, constant stakeholder engagement and methodological rigour. Close engagement with Colombian and international policymakers, aligned with the breadth and depth of our analyses, will inform the extent of generalisation of health system policy implications to other developing countries, particularly where sustained conflicts with resulting population displacements are currently ongoing or have recently concluded. Potential beneficiaries of our research include populations affected by conflict violence, health policymakers and the broad academic community.

Health Systems Research Initiative - Call 4 Full Grant		
Project title		
Examining the level and variation in the efficiency of county health systems in Kenya, and how it can be improved		
Grant holder	**Institute**	**Grant reference**
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Summary

Universal Health Coverage (UHC), which means that everyone has access to the care that they need without getting into financial difficulties, is a global health priority. Kenya, like other low and middle income countries (LMICs) has made a commitment to achieve UHC. However, like other LMICs, Kenya's UHC aspiration is impeded by the twin problem of low public funding of healthcare, and wastage of available resources. Achieving UHC will require additional funding, that will only be justified if current resources are not wasted. Efficiency refers to the optimal use of resources by maximizing healthcare outcomes and outputs, given available resources. That is, efficiency is about reducing resource wastage. Improving the optimal/efficient use of available resources is one of the feasible ways of increasing the availability of resources in the health sector, especially in LMICs such as Kenya. Improving the efficiency of the Kenyan health system is therefore an important research and policy question. However, research in this area is scarce, and has only focused on the facility level (hospitals and primary healthcare facilities). The available research shows that there is variation in the level of efficiency in the Kenyan health sector. Kenya transitioned into a devolved system of government in 2013, creating 47 semi-autonomous county governments. These county governments are now responsible for delivering healthcare services to Kenyans. This research aims to measure the level of efficiency of county health systems in Kenya, and examine the reasons for the differences in efficiency between counties. It also aims to explore how the efficiency of county health systems can be improved, and how this can in turn result in additional resources for the health sector. Further, the research aims to test the application, and refine available methods for measuring efficiency me, so that they can be readily applied to LMIC settings, and at sub-national levels of the system (such as counties/districts) rather than health facility level (such as hospitals).

To carry out the research, we will employ mixed methods. This includes applying existing quantitative methods (data envelopment analysis and stochastic frontier analysis) to

	measure efficiency, and regression methods to examine the reasons for variability in the efficiency of county health systems. We will then employ qualitative case study methods to examine these reasons for variation in more depth in selected (well and poor performing) counties. We will develop models to explore the potential for unlocking additional health sector resources by improving the efficiency of county health systems in Kenya. The findings of this research will be relevant not only to Kenyan but also similar LMIC health system policy makers in informing strategies for efficiency improvement and ultimately resource mobilization for UHC. The study will also contribute to literature and knowledge building on the methods for efficiency measurement in LMICs, and for sub-national health system units (counties/districts), beyond healthcare facilities (such as hospitals).

Health Systems Research Initiative - Call 4 Full Grant		
Project title		
Scaling up the '24/7 BHU' strategy to provide round-the-clock maternity care in Punjab, Pakistan: A theory-driven, co-produced implementation study		
Grant holder	**Institute**	**Grant reference**
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Summary

Pakistan has a persistently high level of maternal deaths. Its government-run first-level health care facilities, the Basic Health Units (BHUs), are an important place for poor and rural women to receive skilled care during delivery and birth. However, BHUs have only been open from 8.00 am to 2.00 pm daily. The provincial government of Punjab has recognized that these hours of operation severely constrain access to maternity services. Therefore the Health Department is implementing the 24/7 BHU Initiative to upgrade BHUs to provide round-the-clock care. This scale-up is based on a successful pilot project but initial reports reveal challenges in rolling out the new approach.

In this 54-month project we will work closely with the Punjab Health Department and other stakeholders to address a key concern: How can the 24/7 Basic Health Unit initiative be successfully implemented at scale to provide high quality, round-the-clock skilled maternity care in its first level care facilities in remote, rural Punjab? The project will include two overlapping work packages. The first will provide a detailed understanding of the current status of the initiative and the obstacles to successful roll out. The second will identify and test potential solutions to improve implementation.

Work package 1 extends from months 1-36 and consists of 3 modules. First, we will look at policy documents and interview policy makers to draw up a clear description of what the 24/7 BHU Initiative consists of and how it is meant to operate. Next, we will assess how well the initiative is being rolled out across the province. We will analyze the government routine monitoring data, alongside data from our own survey of 1500 births in up to 50 BHUs. This will provide a picture of how many BHUs are performing well and how many are not. We will also be able to examine factors that are associated with better or worse performance. Finally, we will spend 4-6 months looking closely at what is going on in 4-5 BHUs in 3 districts. Observations, interviews and group discussions with healthcare providers, managers and patients will allow us to understand in detail the factors that support, or get in the way

	of, successful round-the-clock service provision. We will particularly look for the ways in which successful BHUs are operating and identify any innovations that help things work better. Work package 2 extends from months 24-54 and includes two modules. First, we will conduct two workshops and engage in regular meetings with government officers and other stakeholders to discuss the detailed knowledge of the 24/7 BHU initiative generated during work package 1. We will work collectively to identify a series of promising modifications that might be feasible to roll out more widely. Next, the study team will work with Punjab Health Department senior managers to select priority "change ideas" to test. We will also identify one district and 2-3 BHUs in which to carry out a pilot. We will then test the changes in a structured way, documenting how they work in practice, and working with stakeholders to agree on next steps. We will help Punjab Health Department and local stakeholders produce a longer term plan for implementing system-wide changes that are needed to make the 24/7 BHU initiative more successful. The project will be delivered by an experienced team of researchers. Several team members have worked successfully together on previous similar research in Pakistan. Team members also have excellent links to policy-makers and senior managers who will be closely involved through a Policy and Programming Research Stakeholders Group (PPRSG). A Project Advisory Group (PAG) will also be formed, including representatives of women's organisations, to provide guidance to the project. Research findings will be shared via a range of formats tailored to policy, practice and lay audi

Health Systems Research Initiative - Call 5 Foundation Grant		
Project title		
Leveraging social networks in demand-side health financing to improve demand for preventive services in low-income settings		
Grant holder	**Institute**	**Grant reference**
Dr Mylene Lagarde	London School of Economics & Political Science	MR/S012524/1
Co-Investigators Dr Manuel Sanchez Masferrer Higher School of Economics & Business ESEN Dr Mauricio Maza Basic Health International	**Summary** Conditional cash transfers (CCT) have proved to be effective health-financing tools to complement universal health coverage (UHC) efforts in Latin America, in tackling underutilisation of essential health services among disadvantaged groups. CCTs traditionally targeted preventive behaviours for communicable, nutritional or maternal and child health (CN-MCH) conditions, with notable successes in improving health service utilisation. However, a rapid shift in the region's disease burden from CN-MCH to non-communicable diseases (NCDs) in recent years - particularly cardiovascular diseases (CVDs), which are now the leading causes of death and disability in Latin America - and concurrent challenges of financing UHC efforts with limited public budgets, raises the question of if and how past CCT successes can be replicated in tackling NCDs, and be done in more cost-effective ways. This question has been largely neglected in academic and policy circles to date, and forms the basis of this proposal. The research will take place in the context of an innovative intervention by a micro-finance organisation (MFI) in El Salvador, to tackle CVD risks among its vulnerable client population (predominantly women from disadvantaged backgrounds). To support timely treatment of potential CVD risks among its clients, the MFI has offered free CVD risk assessments at an affiliated healthcare clinic in San Salvador. It also launched a text messaging campaign to increase clients' CVD awareness, and publicise the risk assessments. Despite these efforts however, take-up of care at the clinic has been very low. The proposed study is co-designed with the MFI, and will be informed by formative interviews with the MFI's clients. These interviews will explore barriers and enablers of demand for CVD preventive care, including the potential influence of social networks. A randomised controlled trial will then be conducted to first assess whether simple CCTs can be effective in incentivising individuals to attend the CVD risk assessments. We will then leverage the MFI's group-lending micro-finance model, where loans are given to groups of borrowers, to test different social incentives and targeting strategies for improving the effectiveness of the cash transfers alone. Specifically, we		

	assess whether appealing to existing social ties within groups (for example, by asking loan group members to encourage targeted individuals to attend the risk assessments) and targeting such interventions on socially influential individuals (loan group leaders) can enhance the overall effectiveness of simple CCTs. The costs and effects of these different incentive designs on risk assessment take-up, self-reported health behaviours, and measured CVD risk outcomes (blood pressure, BMI) will be evaluated through a follow-up survey and clinic records. Novel findings will be disseminated to a wide audience of academics, policy makers and practitioners interested in health system strengthening for tackling a growing CVD epidemic. Results are expected to contribute valuable evidence on the potential for CCT interventions in addressing these challenges, and inform further research on the feasibility of system-level implementation of similar interventions.

Health Systems Research Initiative - Call 5 Foundation Grant		
Project title		
Mobile consulting as an option for communities with minimal healthcare access in low-resource settings		
Grant holder	**Institute**	**Grant reference**
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Professor Rita Yusuf

Summary

There is rapid growth in the use of mobile communications technology in low and middle income countries (LMICs), including Bangladesh, Kenya, Nigeria, Pakistan and Tanzania. In these countries, where our study will take place, over 70% of people have mobile phone subscriptions. Mobile technology brings possibilities for improving access to quality health care and strengthening health systems, particularly in communities where people have difficulty finding quality services because they do not exist, they are not available when needed, they are too far away or they cannot afford the service. Mobile consulting ("mConsulting") is when someone with a health need consults a healthcare provider using mobile communication technology, e.g. consulting with a community health worker, pharmacist, nurse or doctor using a mobile phone. The enabling potential of mConsulting is important globally and locally, given the pressing need for creative, innovative ways to make quality health care available to everyone who needs it, regardless of who they are, where they come from or their ability to pay. But not enough is known about what mConsulting services are already available, who uses them and why in such contexts. There are well-known corporate providers in each country but with the availability of mobile money transfer, individuals and small organisations may also be providing mConsulting. In our study, we want to explore how mConsulting is used and provided and its perceived impact in urban slums, remote rural areas and refugee camps in five LMICs in Africa and Asia so that we can generate ideas for health policy and build an evidence base for future research. Working with stakeholders, we aim to propose an intervention in mConsulting to improve health care access and strengthen health systems for future implementation and evaluation. In this Foundation Grant project, we will interview experts and review policies about mConsulting. We will search the internet, social media and use word-of-mouth to identify available services in the communities where we are working. We will hold community workshops and mini-interviews to ask community leaders, local healthcare workers, pharmacists, shop and drug vendors, traditional healers and other community members about

Independent University, Bangladesh Professor Akinyinka Omigbodun University of Ibadan Professor Eme Owoaje University of Ibadan Dr Olufunke Fayehun University of Ibadan Professor Senga Pemba St. Francis University College of Health and Allied Sciences Dr Beatrice Chipwaza St. Francis University College of Health and Allied Sciences	mConsulting services - what is available, used and why? We will explore their perceptions of its impact on users and the wider health system and hear their ideas about mConsulting as an option to strengthen access to health care. We will interview mConsulting providers about their purpose, history, size and coverage, operating systems and costs. Towards the end of the study, in each site, we will bring together stakeholders from within the community, public sector, mConsulting services and non-governmental organisations for a consensus-building workshop to discuss our findings, develop ideas for health policy and for future research. Out of this Foundation Grant, we will achieve an understanding of the opportunities for and dilemmas created by mConsulting in communities with minimal healthcare in low-resource settings. We will develop a proposal to refine, implement and evaluate a mConsulting intervention in collaboration with existing providers and develop case studies on mConsulting to inform teaching in all participating institutions. Our work will be guided by project advisory groups in each site, made up of community representatives, on-the-ground healthcare providers, and mConsulting providers. They will ensure our work is locally relevant and responsive. Members of our interdisciplinary team are also part of the NIHR Global Health Research Unit on Improving Health in Slums and the Digital Health for Healthworkers project from which we will draw expertise, engagements and data to complement this study. In each site, we have included junior co-applicants to work alongside seniors, as part of building research capacity in health systems within LMIC contexts.

Health Systems Research Initiative - Call 5 Foundation Grant		
Project title		
Policy analysis of the drivers of antimicrobial resistance within Tanzania's one-health care systems		
Grant holder	**Institute**	**Grant reference**
Professor Mecky Matee	Muhimbili University of Health & Allied Sciences	MR/S012796/1

Co-Investigators

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Summary

The causes and impacts of AMR are multi-factorial, not confined to biological, environmental, clinical, or social-economic domains, therefore inter-disciplinary approaches are needed. The proposed project aims to uncover the covert and overt drivers of AMR within Tanzania's health system and the pig production sector using a multi-method and interdisciplinary, "One Health" research approach. First, we will conduct a needs assessment based on a literature and policy document review as well participant observations at key sites in the human and animal health systems. Second, we will conduct a stakeholder analysis which will involve comprehensively mapping out the range of actors involved in policy processes relating to appropriate use of antimicrobials, across the One Health spectrum including formal and informal sector actors. Third, once politically feasible interventions addressing key issues indicated by the needs assessment have been identified we will pilot test an intervention targeted at critical segments within healthcare and/or veterinary systems. Fourth, we will present finding to policymakers and investigate how the new information influences their support or opposition for policy implementation. The overall expected outcome will be a cost effective, evidence base for policy recommendations, which are relevant in human and animal health systems in Tanzania. By engaging with key policy actors in Tanzania - including the National AMR Coordinating Committee, the technical working groups, the secretariat and the AMR focal point - we will contribute evidence to inform strategies for implementation of the National AMR Action Plan and serve as a model for other resource limited countries. Policy briefs with synthesised evidence on the role of health and veterinary systems in the contribution and persistence of AMR will be a key output. We anticipate that the information generated from this research will be used in strengthening systems for antimicrobial distribution and use.

Health Systems Research Initiative - Call 5 Foundation Grant		
Project title		
Identifying a package of cost-effective interventions to address non-communicable diseases in Gaza		
Grant holder	**Institute**	**Grant reference**
Dr Eszter Panna Vamos	Imperial College London	MR/S012877/1

Co-Investigators

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Summary

Long term diseases are increasing worldwide, including in developing countries, resulting in a huge economic and health burden to society. While there are known policies and interventions to prevent and control long term diseases, these may not be applicable in settings exposed to prolonged armed conflict, such as Gaza. It is therefore important to understand which policies could best work in these situations to minimise the harm long term diseases cause to societies. This research will involve conducting a household survey of the population in Gaza in order to understand the types of long term diseases experienced (e.g. diabetes, heart disease) as well as their risk factors (e.g. smoking, unhealthy diet). The data from this household survey will inform a statistical model, which will predict how long term diseases and their risk factors will change over time depending on the policies that governments and other agencies implement in Gaza. This modelling component will test different scenarios under different conditions, such as siege, blockage, armed conflict, and restrictions to farming and imports, and will aim to identify set of value for money and feasible interventions best suited to the population of Gaza.

Health Systems Research Initiative - Call 5 Foundation Grant		
Project title		
Integrating participatory approaches and traditional models to strengthen One Health responses to zoonotic diseases in India's changing environments		
Grant holder	**Institute**	**Grant reference**
Dr Bethan Purse	NERC CEH (Up to 30.11.2019); UK Centre for Ecology and Hydrology	MR/S012893/1

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Summary

Zoonotic pathogens, that circulate between animals and humans, like the Leishmaniases, and Nipah and Chikungunya viruses, cause 60% of emerging infectious disease events worldwide and disproportionately affect people in tropical, resource-poor areas. Aside from impairing human and animal health, zoonotic diseases are detrimental to livelihoods and economies, for example, preventing small-holder farmers being lifted out of poverty by increasing livestock production. The impacts of zoonotic diseases are increasing and shifting globally, as the environment and societies undergo rapid change. Our lack of knowledge on how these pathogens circulate between wildlife, livestock (as well as possible insect and tick vectors) and people, and how people are exposed as they use the landscape makes it difficult to understand these changes in terms of impact, and to develop effective disease control strategies in many local settings. Effective management and understanding of zoonotic diseases requires cooperation of policy-makers and managers from across the animal health, human health, agriculture and environment sectors, from national and international decision-makers down to district managers that all interact with the disease system, as advocated by the global One Health initiative, that recognises the "interconnectedness of human health, wildlife and domestic animal health and the environment". Surveillance, decisions and policy need to be better integrated across sectors, and research that leads to informatics to support management decisions, like maps and forecasts must be informed by the knowledge, priorities and needs of local disease managers and policy makers. More-over, neglected endemic pathogens that affect poor communities need to be better represented in policy frameworks and surveillance systems. Focussing in India as a key global hotspot for endemic and emerging zoonotic diseases and small-holder livestock communities, and bringing together a network of stakeholders with experts in public and animal health, ecology, epidemiology and social science, this project aims to reduce health, welfare and livelihood impacts of zoonotic diseases by better understanding links between surveillance, knowledge,

	research and models across sectors and improving current information systems that support intervention. The research underpinning these improvements will include: (1) Mapping of key stakeholders in each sector, their priorities and needs for decision-support tools (2) Identifying where surveillance data, knowledge and skills exist and could be leveraged across sectors to better understand and manage zoonotic diseases (3) Understanding the full range of potential socio-ecological drivers that might cause disease impacts to increase (4) Interpreting geographical patterns in disease impacts in relation to environmental data within models to disentangle social, climate and landscape factors precipitating disease for case-study diseases and settings and, in turn, predicting outcomes of intervention (5) Building capacity in research, data analysis and cross-sectoral collaboration to underpin future One Health approaches in India. Improved decision-support tools will help disease managers to better target vaccination and communication efforts towards the communities that are most at risk and help managers in agriculture and environmental sectors to understand how, for these communities, disease impacts may coincide with other negative impacts of environmental change. The project platform and approach of co-developing research and decision support tools on zoonotic diseases with stakeholders across sectors, accounting for their needs and underlying ecological and social processes, will build significant capacity in science, policy and practitioners to respond to these emerging and endemic global threats.

Health Systems Research Initiative - Call 5 Foundation Grant		
Project title		
Synthesising evidence from other sectors to strengthen health system responses to mass displacement: supporting Rohingya refugees in Bangladesh		
Grant holder	**Institute**	**Grant reference**
Dr Natasha Howard	London School of Hygiene and Tropical Medicine	MR/S013008/1

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Summary

Since August 2017, a large influx of Rohingya refugees have fled Myanmar and settled in Cox's Bazar in south-eastern Bangladesh, where two registered refugee camps, Kutupalong and Nayapara are operational. The health system in the region is facing tremendous pressure in serving such a large population, although 150 national and international partners coordinated by WHO and the Civil Surgeon's Office of Cox's Bazar, are providing health service delivery through 270 static and mobile health facilities. Several health system challenges include large host and refugee populations; responding to immediate, emerging health needs during the upcoming monsoon season and mitigating risks related to floods, landslides and cyclones, which could damage health infrastructure, and limit population access to health facilities. A team of researchers from London School of Hygiene and Tropical Medicine in the UK and University of Dhaka and BRAC University in Bangladesh are proposing to synthesize lessons from other humanitarian sectors to strengthen health system responses to support displaced Rohingya in Bangladesh. During this 18 month project we will investigate the following question 'What lessons can the health sector apply from other sectors to strengthen local health system responses to mass displacement?' This foundation study will have three components: 1. Evidence synthesis: We will conduct a review of non-health literature following from recently published evidence synthesis reviews. 2. Framework development: We will draw from the evidence synthesis to develop a health systems resilience framework. 3. Case study: We will conduct a case study in Balukhali refugee camp in Cox's Bazar, Bangladesh, to test our framework by examining how the local health system has been affected by and adapted to the refugee influx. We propose to conduct a dissemination workshop in Dhaka, to engage with regional stakeholders and incorporate their inputs on the robustness and resilience of health system responses to mass displacement. We will submit at least one manuscript to an international peer-reviewed journal and prepare a technical report to enable non-academic practitioners to benefit from the research.

Health Systems Research Initiative - Call 5 Foundation Grant		
Project title		
Testing the OPERA framework to monitor the right to health in Uganda		
Grant holder	**Institute**	**Grant reference**
Professor Janet Seeley	London School of Hygiene and Tropical Medicine	MR/S013016/1

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Summary

Universal health coverage - which means access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines - is the cornerstone of the United Nations Sustainable Development Goal on health, which governments committed to achieve by 2030. For the World Health Organisation, universal health coverage is a practical expression of the human right to health. The right to health can help civil society organisations hold their governments accountable for advancing universal health coverage. However, human rights law and explanations of human rights law are often formulated in a language that is difficult for people without legal training to understand. Furthermore, the right to health applies to all countries of the world - from the wealthiest to the poorest - and is therefore not specifically geared towards any particular country context. These two challenges make it especially difficult for people in developing countries to push their government to roll out universal health coverage which is essential for the right to health. The Center for Economic and Social Rights developed a tool - the OPERA framework - to help civil society organisations 'break open' human rights, by giving concrete advice on how to claim human rights more effectively. Applying the OPERA framework can help civil society organisations develop specific demands or monitor government policy (for example, the government's health budget or health workforce plan) to ensure the government complies with its human rights obligations. However, to be useful it needs to be adapted to local conditions as each country has its own human rights challenges. As a low-income country in Africa, Uganda faces particular challenges: the government budget for healthcare is only about £10 per person per year; there is a shortage of health workers; the poorest people living in rural areas benefit much less from health services than wealthier people living in the cities. In this project, UK based researchers will work with Ugandan civil society organisations so that they can to use the OPERA framework to monitor the government's policy and activities related to universal health coverage in Uganda. This two-year project will examine the introduction of one framework aimed

	to support advocacy and monitoring of human rights for health, the OPERA framework. Introducing this framework through a participatory method, we will rigorously assess how CSOs take up, use and adapt health based rights for Universal Health Coverage. Civil society organisations can continue to use, and modify, this Uganda specific OPERA framework to ensure that the Ugandan government respects its health rights commitments by continuing its efforts on universal health coverage. By working together this project will allow Ugandan civil society and UK researchers to use their combined knowledge to improve advocacy and monitoring of progress towards universal health coverage for Ugandans. Finally, we hope that the lessons learned while conducting this project can be adapted to other low-income countries in Africa. We will invite civil society organisations from other low-income countries in Africa to our end of year one meeting to explore opportunities for future co-operation. We are optimistic that this will lead to the spread of OPERA framework based monitoring and advocacy for advancing universal health coverage.

Health Systems Research Initiative - Call 5 Foundation Grant		
Project title		
Health system adaptation and governance in conflict: a case study of Syria		
Grant holder	**Institute**	**Grant reference**
Dr Natasha Howard	London School of Hygiene and Tropical Medicine	MR/S013121/1
Co-Investigators Dr Aula AbbaraImperial College London Dr Samer Jabbour American University of Beirut	**Summary** Despite seven years of conflict, published research exploring health system adaptation and governance in opposition-controlled areas (OCAs) in Syria is non-existent. This is partly due to the obvious challenges of conducting research in Syria and also due to health system governance being a 'neglected agenda' in health system research, with evidence lacking on how it is interpreted and assessed at national and sub-national levels. Most health system research has focused on rebuilding after conflict, as health system adaptation and governance during shocks and stresses such as conflict, are difficult to measure and interpret. However, such research does not consider important grassroots responses arising during conflict that could potentially be leveraged to improve the effectiveness of later rebuilding and strengthening efforts. This study will examine ongoing adaptation and governance responses among health directorates in opposition-controlled areas of Syria (e.g. Idlib, Hama, Aleppo, Daraa), to generate lessons to inform current and future health system strengthening in the country and potentially other conflict-affected countries. Findings can be used by Syrian health directorates, non-governmental healthcare providers, and international funding partners interested in supporting Syria's health system. We will seek to identify areas in which governance and accountability can be improved now and during Syria's eventual health system reconstruction. The participatory nature of this study, which will include interviews and discussion with service-users, health system managers, and frontline healthcare providers supports ownership by those immediately affected by research findings. Over the longer term, research can contribute to policy changes to improve health system access, quality, and value-for-money in the areas studied. Research can potentially contribute to the evidence base for rebuilding the Syrian health system through contributions on several WHO building blocks (e.g. services delivery, governance, health workforce) at a time when interest in investing in fragile health systems is increasing.	

Health Systems Research Initiative - Call 5 Foundation Grant		
Project title		
Assessing the Potential for Transforming Health in Uganda through an Electronic Health Data Sharing Platform and Data Science		
Grant holder	**Institute**	**Grant reference**
Professor Josephine Nabukenya	Makerere University	MR/S013164/1

Co-Investigators

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Associate Professor Agnes Semwanga
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Dr Simon Kasasa
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Summary

Health institutions worldwide, including the World Health Organization (WHO), have recognised that adoption and innovative use of information from electronic medical records will be necessary to provide equitable care to the growing population of the world. Uganda is committed to meeting this goal, however, there are challenges to developing and implementing electronic health record data capture and analysis systems, especially as implementation of these systems have mostly occurred in high-income countries where challenges are different. In this project, we will assess whether or not Uganda is ready to implement an electronic health record data capture system at the point of care that can centrally process information through statistical analysis and provide important information to care providers and public health practitioners to support healthcare delivery. This assessment involves collecting information from key stakeholders about barriers, facilitators, costs and other 'readiness' factors, such as acceptability and training of the healthcare professionals who will enter data into the system. We will map these measures to known models of electronic health record adoption readiness and technology adoption success. We will also assess the opinions of the community on how their health information should be handled and used. Additionally, we will look at the technology components of this system that may already exists and determine the costs to provide all necessary components. Finally, we conduct analyses to determine how long it will take to see benefits in terms of cost savings in healthcare provision. The Ministry of Health in Uganda has recommended a 'stepped' approach to adopting electronic health records, we will therefore focus on areas of greatest concern to the Ministry of Health. While Uganda has a number of important health concerns, such as child and maternal health and cancer, we will focus predominantly on malaria and HIV, and also look at scope for other infections. The reason for this choice is that these infections are still some of the leading health problems in Uganda, and they are treatable. This means that if successful implementation of electronic health record data capture occurred, combined with faster, more efficient and effective

	treatment due to processing those data and providing key information, such as who to target for testing and treatment, we could reduce costs to the health system and increase human health. The findings of the study will be shared with the scientific community and provided to the Uganda Ministry of Health as a report. The Ministry of Health plans to use this report as a guide to developing their electronic medical record and information analysis platform.

Health Systems Research Initiative - Call 5 Foundation Grant		
Project title		
Strengthening health professional regulation in Kenya and Uganda		
Grant holder	**Institute**	**Grant reference**
Professor Gerald McGivern	University of Warwick	MR/S013172/1

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Summary

Regulation can enhance quality and safety in health care, yet the limited research on health care regulation in LMICs suggests it is often ineffective and clinical malpractice, perhaps partly consequently, widespread. We therefore need to better understand how and why health care regulation in LMICs operates and might be improved. Some research has suggested that developing, 'responsive regulation' (Ayres and Braithwaite, 1992) involving regulator-regulatee dialogue to develop and agree regulatory legitimate regulatory standards, persuade professionals to comply, and detect and sanction noncompliance, may improve regulatory effectiveness in LMICs' health care systems. Using responsive regulation as our 'theory of change', we therefore propose to research health professional regulation for doctors and nurses/midwives in Kenya and Uganda to provide evidence supporting regulators to improve health regulation and, in turn, enhance health systems and the quality and safety of patient care. As we noted, there is very little research on regulation in LMIC health systems or evidence about its impact on health care practices. We therefore propose mixed methods research, which members of the research team have previously used to research professional regulation, to develop this evidence base. This research would involve: Analysis of documentation and interviews with national regulatory stakeholders in Kenya and Uganda; focus groups with doctors and nurses/midwives in Kenya and Uganda about their experiences/perceptions of regulation; four case studies of health professional regulation at county/district level; and an online survey of Kenyan and Ugandan doctors and nurses/midwives at national level. Professionals in the Ugandan and Kenyan health systems are regulated by different profession-specific bodies but both countries are establishing single oversight bodies to monitor regulation across all health professions. These major policy changes, coupled with members of the project team's connections to regulators and health policy-makers in both countries, make this research particularly useful and timely. This foundational project aims to provide evidence to help regulators improve regulation and develop research capacity and provide a foundation for a larger research proposal,

	piloting regulatory improvements and evaluating their impact. Our international interdisciplinary research team contains experts on regulation, health systems improvement and health policy from Uganda, Kenya and the UK, with experience of conducting research on health systems and regulation, which has had impacted health and regulatory policy. We will collaborate closely with regulatory bodies in Kenya and Uganda throughout the project to ensure that we research issues and questions they believe are important and report findings back to regulatory stakeholders in Kenya and Uganda (at workshops in both countries) and other LMICs (via international regulatory policy and academic conferences, in publications and online) to help them improve health regulation and, in turn, the quality and safety of patient care in Kenya, Uganda and LMICs beyond.

Health Systems Research Initiative - Call 5 Foundation Grant		
Project title		
Addressing Gaps in Men's Health Literacy and Health Seeking in Mozambique: A Case for Differentiated Care for HIV and CVD		
Grant holder	**Institute**	**Grant reference**
Dr Karina Kielmann	Queen Margaret University Edinburgh	MR/S013253/1

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Ministry of Health - Mozambique

Summary

As in other parts of the world, men are more likely to delay health care seeking and drop out of care than women in Southern Africa. There is evidence for men's gaps in health care for tuberculosis and HIV, and increasingly for non-communicable diseases (NCD) such as diabetes and hypertension which are on the rise in the region. However, due to emphasis on women and children in the global health agenda, men's health gaps have been neglected and there is limited regional data on their awareness, decision-making, and actions with regards to seeking health care. In this project, we focus on the case of cardiovascular disease (CVD) in HIV-positive men in Mozambique, a country where poverty, conflict, and migration for work have influenced men's health and their vulnerability to disease. Our project aims to contribute data for the development of 'differentiated' care strategies, that is models of care that are responsive to men's health needs and adapted to local systems processes and resource constraints. Mozambique has a high burden of infectious diseases (ID) as well as a growing burden of NCD, and men have lower levels of awareness, control, and uptake of treatment for both ID and NCD. Our project is based in a large urban district of Maputo and will use a range of qualitative and quantitative methods to explore aspects of men's health literacy and health-seeking. A literature review and mapping of men's health interventions in Mozambique will examine current approaches and assumptions. Facility-based observations and interviews with health providers and male patients with HIV and CVD will look at how their pathways to care are influenced by social, structural, and systems-related factors. A community-based survey and a nested qualitative study will use different measures to compare data on health literacy, self-perceived health and household influences on men's health seeking behaviour. Data from these different sources will be used to develop models of processes and pathways to care for men. Finally, we will consult with our project partners, researchers and stakeholders in the fields of health and gender to share findings and discuss how these can potentially inform strategies to strengthen men's engagement with HIV and CVD

	services. We expect to deliver timely insights for the systems response to HIV/CVD co-morbidity in men. Further, our partnership will provide a solid interdisciplinary platform for the development of a larger proposal that can implement and evaluate health systems strategies to address the chronic health needs of male migrants and mobility across borders in the Southern African region.

Health Systems Research Initiative - Call 5 Full Grant		
Project title		
How does a multi-country, multilateral network focused on specific health care improvements evolve and what shapes its ability to achieve its goals?		
Grant holder	**Institute**	**Grant reference**
Dr Timothy Colbourn	University College London	MR/S013466/1

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Summary

Maternal and newborn mortality remain high in low-resource settings, including Malawi, Bangladesh and Uganda, the focus countries of this proposal, and the other six countries involved in the quality of care network we seek to evaluate. With increasing rates of births in hospitals across low-income settings including Malawi, Bangladesh and Uganda, there is a need for health system interventions that optimise quality of care so that further reductions in mortality can be achieved despite resource constraints. To tackle a shared low- and middle-income country (LMIC) need for improved labour, childbirth and newborn care the World Health Organisation (WHO) and global partners are pursuing a 'global network' approach called The Network for Improving Quality of Care for Maternal, Newborn and Child Health (QCN). Their aim is for countries to learn from each other about which approaches to improving quality of care may work best in which circumstances to achieve shared health outcome goals. The QCN, which initially involves nine countries, aims to promote coordination between partners while emphasising country ownership and leadership, and shared learning. Though there is an emerging body of work on health networks this is mostly from high-income countries or on networks focused on drawing attention to global health issues rather than those implementing change. Research on whether and how purposefully created networks might leverage global, national and local change is however, sparse. We intend therefore to take advantage of the launch of the QCN by WHO and partners and examine how it is constructed, its operations and their effects. The network was launched in February 2017 though, to date, no external evaluation has been commissioned. Given the scale and ambition of this new QCN, the investments it involves and the possibility it could influence the way international health organisations and donors operate in the future, it needs to be studied. We propose to retrospectively (2016-2018) and prospectively (2018-2022) evaluate what aspects of the QCN work best, how it influences efforts at global, national, and local levels and how it bridges the interfaces between each of these levels (see research questions in summary of objectives). Our work will draw on

	theories concerning network organisation and structure, emergence and effectiveness of networks, the policy process (agenda-setting, formulation, decision-making, implementation and evaluation), the nature of power and agency in relation to structure, and diffusion of innovation. Given available resources for this funding call we have chosen to focus our evaluation at the global level and in three of the nine countries. We have chosen Malawi, Bangladesh and Uganda as case study countries based on the range of settings and starting points they represent, their initial engagement in the network (so that we have material to evaluate), existing research links and collaborations, and enthusiasm to participate in this research. We will answer our research questions via a multi-disciplinary mixed methods programme of work that aims to achieve our objectives (see summary of objectives) by targeting the global level of the QCN, and Malawi and Bangladesh's programmes as case studies for the national and local levels, to develop theory on how the QCN operates. We will then test this emerging theory in Uganda to assess its external validity and refine aspects of it in relation to country and health systems context as appropriate. We aim to develop generalizable theory to improve the operation of the QCN and future networks, as indicated in our impact and objectives summaries.

Health Systems Research Initiative - Call 5 Full Grant		
Project title		
Integrating Refugees into National Health Systems: Enhancing Equity and Strengthening Sustainable Health Services for All.		
Grant holder	**Institute**	**Grant reference**
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Summary

According to United Nations High Commissioner for Refugees (UNHCR), until June 2017, 65.6 million people were forcibly displaced worldwide of whom 22.5 million were refugees. Historically, health services for refugee populations have been provided primarily through dedicated health clinics located within refugee camps run by UNHCR or international non-governmental organizations. However, as patterns of mobility and emergency duration have changed, there is recognition that these parallel health services in camps are unsustainable and insufficiently benefit the surrounding host populations, many of whom are also vulnerable. Instead, UNHCR has called for the integration of refugee populations into national health systems, and the World Bank recently established a US$2 billion fund for refugee-hosting governments to support the integration of refugees and host communities, covering multiple sectors, including health. This move towards a "humanitarian-development nexus" has the potential to support refugees and nationals, while increasing the capacity of national systems. There has been limited research exploring the issue of integrating refugees into health systems and its effects on such systems. Thus, there is limited evidence available to international, regional or national actors in terms of which types of arrangements may work best in a particular context. We will conduct case studies in three different countries currently hosting large numbers of refugees: Lebanon (1.1m), Jordan (655,624), and Uganda (940,800). We plan to focus on Syrian refugees in Lebanon and Jordan, and South Sudanese refugees in Uganda. While policies in Lebanon, Jordan and Uganda have all integrated refugees into health systems to some degree, they differ widely in their approach, and in the structure of the underlying health system. We will analyse each country case separately and then seek to identify patterns across the three cases, so as to be able to draw conclusions that are relevant to other contexts. Specifically, our research will seek to understand the perceptions and experiences of stakeholders as well as host and refugee populations towards refugees' integration into national health systems including how these stakeholders understand the meaning of integration and perceive its

Johns Hopkins Bloomberg School of Pubic Health Dr Sarah Parkinson Johns Hopkins University Dr Yusra Shawar American University	desirability. It will identify the structural, institutional and individual/community factors that have shaped policies on integration of refugees, including refugee health workers, into national health systems. The study will also assess how the pattern and extent of refugee integration across these three contexts has affected health services received by refugee and host populations and how financial mechanisms and flows affected financial sustainability of services. We will then convene national, regional and international policy and decision-makers to reflect upon the findings from these analyses, and identify their implications for future policy and practice. Within each of the three country cases we will employ a mixed-method approach that will be tailored to match local circumstances. We plan to identify timelines for the development of refugee policies and will conduct a policy analysis to understand how policies and practices evolved and why. We will then use existing datasets and primary data collection within district level cases, to explore how different aspects of refugee integration into national health systems over time has affected availability, access to health services and quality of health care. A comparative study, across these three different contexts, will enable decision-makers within the three countries to learn from and consider alternative approaches to refugee integration, but will also provide evidence and policy recommendations that will be transferable to other existing and future refugee settings. We also seek to inform global policy and guidance on this issue, working with actors such as the UNHCR, the World Bank and WHO among others.

Health Systems Research Initiative - Call 5 Full Grant		
Project title		
A multi-stakeholder approach towards operationalising antibiotic stewardship in India's pluralistic rural health system.		
Grant holder	**Institute**	**Grant reference**
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Summary

In this study we seek to develop a stewardship intervention that addresses two major interrelated challenges that India faces: increasing antimicrobial resistance (AMR) and a pluralistic health system with a large and unregulated informal health sector. AMR is high on India's policy agenda as it has one of the highest burdens of bacterial infections in the world and is also one of the world's biggest consumers of antibiotics (ABs) for human health. One of the major causes of increasing AMR is the excessive use of ABs in humans, animals and the environment. A majority of healthcare providers in rural India, where 68% of the population lives, do not have a formal medical qualification but they fulfil a need for proximate healthcare that the formal health sector has not been able to fill. They are the first contact providers for a variety of illnesses, who frequently and inappropriately treat with ABs. Some states in India, including West Bengal, Bihar and Andhra Pradesh are implementing programmes of training and integrating informal providers (IPs) but evaluations suggest that providers' use of antibiotics has proven difficult to change. We conducted a study in 2016-17 (funded by HSRI Call 3) in rural West Bengal to understand the social, economic and behavioural drivers of antibiotic use (ABU) by IPs in order to address the root causes and develop tailored solutions. We found that the key drivers lay beyond IPs' individual economic needs and knowledge gaps. There was a strong influence of the pharmaceutical industry's aggressive marketing of antibiotics, and the regulatory and health systems had limited resources and capacity to provide stewardship in this health market. Although IPs' integration had initially been opposed by the Indian Medical Association at present there were mutually supportive relationships between informal providers and formal doctors (both public and private) on an individual level. IPs learned from formal doctors who have also been found to prescribe inappropriately. Other drivers were communities' low awareness about the long term dangers of inappropriate antibiotic use, and low purchasing power for full courses. We found that about a quarter of the IPs also treated animals, typically with the same antibiotics as humans. To contain antimicrobial resistance (AMR), we need to work

	collectively with these diverse stakeholders to arrive at solutions through deliberations and consensus. In this study we propose to co-design an intervention with multiple stakeholders to serve as an effective model of antibiotic stewardship and health systems strengthening at this level. We will start with formative research in two rural locations in district South 24 Parganas in West Bengal (where our previous study was located) to supplement the data that we have collected in our earlier study. During this phase we will explore antibiotic use with animals in more detail, map the pharmaceutical supply and value chains for human and animal ABU, conduct a stakeholder analysis, map community platforms for behavioural communication and conduct a secondary data review of local AMR prevalence. This will be followed by an intervention development phase where we will work with key stakeholders identified through the stakeholder analysis using 'Deliberative Mapping', a participatory methodology used with multiple stakeholders for democratic decision making. The intervention options that arise from this process will be further developed and piloted with a small group of providers, about 20 in each site. Evaluation will consist of a feasibility analysis of what worked and did not work, any changes in antibiotic use by IPs (IP and patient exit interviews), and analysis of the actions and reactions of stakeholders during the co-design phase to provide systematic learning to support the design of strategies for strengthening stewardship at scale in future, both in India as well as in similar settings in South Asia and Africa.

Health Systems Research Initiative - Call 5 Full Grant		
Project title		
Migration, gender and health system responses in South Africa: A focus on the movement of healthcare users and workers		
Grant holder	**Institute**	**Grant reference**
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Summary

This project will examine how migration and population mobility affect the South African health system, how the health system responds and adapts as a result of migration and population mobility, and crucially, how gender intersects with these processes. It will adopt an intersectionality approach. The research will be undertaken in South Africa, a country that has historically faced high levels of migration - both inward, outward, and internal. The research focuses on mobility of patients and health workers into and out of South Africa and interactions with the public health system. It will involve the application of a range of innovative qualitative and quantitative research methods. Specifically, the research will involve examining: a) levels of migration of healthcare users and workers within, into, and out of South Africa; b) healthcare experiences of migrant, non-migrant and mobile healthcare users, and migrant and non-migrant health workers; and c) how the South African health system responds to these user and/or worker movements. Given the increasing recognition of the gendered nature and effects of migration, the research explicitly explores gender and how gender shapes the above experiences. We will develop recommendations for how the health system in South Africa, and elsewhere, could improve responses to migration and population mobility including gendered aspects. It will include an innovative method of tracking patient movement over time using social media (WhatsApp), which will generate new data on how movement by patients into and out of South Africa interacts with their health systems use. This is paired with a new quantitative analysis of existing data sets on movement of patients and health workers into and out of South Africa. Specifically, this quantitative analysis includes analysis of the Tourism South Africa border survey, and the first ever analysis of patient mobility as it is regulated under the bilateral agreements between the South African government and 11 neighbouring countries.

Health Systems Research Initiative - Call 6 Foundation Grant		
Project title		
Exploring the potential for using parent experiences of pre-term birth to improve care in LMICs, using video narratives and digital stories.		
Grant holder	**Institute**	**Grant reference**
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Summary

Providing people-centred care is now recognised as a fundamental pillar of high-quality healthcare, and part of the WHO's global health strategy. Empowering and engaging the people at the heart of health systems has the express aim of influencing the ways health services are delivered to individuals, families and communities, enabling health system co-production. Health systems in many countries in sub-Saharan Africa, including Kenya, are frequently characterised as 'weak', lacking human and financial resources and suffering from inadequate management and accountability mechanisms. Taking a people-centred approach is now a central tenet of health systems research and policy that seeks to understand, strengthen and improve these systems. Understanding patient experiences of health systems was identified as a key research priority by the Lancet Global Health Commission's 2018 report, "High-quality health systems in the Sustainable Development Goals era". This pilot project is a collaboration between centres of excellence from Kenya (health systems research) and the UK (patients' narratives and applied health research). In high income countries, studies of patients' narratives have been used highly effectively to inform policy and improve services, providing direct patient benefit. To date these approaches have not been applied in low and middle-income countries (LMICs). This project will address the need for people-centred care through a pilot, based on rigorous social science research, that uses mothers' experiences of preterm birth as a pathfinder to explore the potential for using

	patient experiences to improve care in LMIC settings. The research will explore the experiences of mothers of premature babies in Kenya, and use those experiences in the co-production of people-centred training resources for the multi-professional teams providing newborn care. Premature birth remains a global health priority and a perfect target for our health experience sharing project. In 2013 2.8 million deaths in neonates occurred in LMICs across the world. Improving access and the quality of care for premature babies is central to improving outcomes. In Kenya, 120 in every 1000 babies are born prematurely, nearly 200,000 babies each year. Prior work by this team, in Kenyan capital, Nairobi, estimated the potential burden of illness in this population, identified available care, how mothers access that care, and the quality of existing nursing services. Half of the babies born early or underweight do not access appropriate care. The ratio of nurses to babies is extremely low. While our work reveals mothers are important members of the care team, we know little about their experiences and perspectives in Nairobi or elsewhere in Kenya. Capturing the experiences of mothers of preterm babies is the next step towards improving care for this highly vulnerable population. This project will build on a recently completed longitudinal qualitative study of mother's experience of pre-term birth in two Nairobi hospitals. We will collect additional interviews, to broaden the sample, (audio or video recorded depending on preferences and consent) with mothers of premature babies in two settings (urban and rural). We will analyse these narratives to develop visual resources (video narratives and/or digital stories) and use these in the co-production of training resources for staff. We will work throughout the project with local, regional and national stakeholders to ensure our work can influence policy and change in the health system. We will evaluate the training to understand the impact of patient narratives on staff to produce empathetic and patient and family-centred care, and explore the potential for

	scale up. Our collaboration will build research capacity in Kenya, allow for mutual learning and, we hope, foster the development of regional health systems

Health Systems Research Initiative - Call 6 Foundation Grant		
Project title		
Concentration and fragmentation: analysing the implications of the structure of Georgia's private healthcare market for quality and accessibility		
Grant holder	**Institute**	**Grant reference**
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Summary

The private sector is increasingly recognized as playing an important role in health systems in low- and middle-income countries (LMIC), yet policymakers struggle to identify the role of the private sector in relation to their Universal Health Coverage objectives. Developing policies for engaging with private health care providers requires a good understanding of how healthcare markets operate. Markets are described according to their market structure which can range from highly fragmented (a large number of small firms), through to highly concentrated (one or a few large firms, including those where providers have invested in diagnostic facilities or pharmaceuticals). While the risks of excess concentration have long been recognised, evidence is emerging from a number of LMICs about the potential risks to patients of excess fragmentation. These include quality of care, if treatment volumes are too small to be safe or where opportunities for training are absent; or health system risks, arising from the difficulties of purchasing from or regulating large numbers of small providers. The overall aim of this study is to elaborate this conceptual framing of risks of harm from concentration and fragmentation of healthcare markets and develop a set of tools for undertaking healthcare market analysis that can inform policy options for shaping healthcare markets in the context of UHC. We will undertake this research in Georgia, a lower-middle income former soviet country which has undergone extensive privatisation. This award will set the foundation for evaluating future policy changes in Georgia and extendingt the analytic approach to other settings in a future research project. We will achieve this aim through 4 specific research questions: 1. What is the structure and nature of the healthcare market in Georgia: to what extent is the market characterized by fragmentation and concentration, and by horizontal and vertical integration? 2. What demand, supply and policy factors are driving this pattern? 3. What are the risks and benefits for patients, and for the health system, of fragmented and consolidated health service provision? 4. What policy levers are available to shape the private healthcare market to better serve the needs of UHC? The study uses a mixed methods approach, collecting qualitative

	interview data and undertaking quantitative analysis of large social insurance databases. We will describe the Georgian healthcare market in terms of types of business and market structure, explore the reasons for the patterns that we observe, and then construct "theories of harm" which will describe the potential risks to patients and to the health system of fragmentation and concentration. We will use quantitative methods applied to insurance claims data to look at the extent to which key individual outcomes such as price and intensity of treatment, and system level outcomes such as accessibility, approaches to quality assurance and the costs of contracting and regulating, differ by provider business model and market structure. Findings will be presented at a series of structured policy dialogues, to validate our data and interpretations, and to develop potential policy interventions. These will engage a wide variety of health policy stakeholders and consider how to shape private health care markets through for example, changes in regulation and purchasing policies, so that they operate in the interests of UHC. This project is being proposed by a highly experienced, multidisciplinary, international research team with strong connections at the national, regional and global level to support the achievement of research impact. Capacity will be developed in both directions, with Georgian colleagues gaining exposure to approaches to researching the private sector as well as analysis of large administrative datasets, and UK collaborators learning about the nature of privatization in a former Soviet setting.

Health Systems Research Initiative - Call 6 Foundation Grant		
Project title		
Health systems strengthening through person-centred care: development of a feasible and acceptable theory-based workforce approach to improve quality.		
Grant holder	**Institute**	**Grant reference**
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Summary

What is the problem we want to address? Serious illness has major effects on both the patient and family. In low and middle income countries these can be physical (such as pain and their symptoms) psychological, social (with additional stressors on income, children's school fees, stigma) and spiritual. This can affect both the wellbeing of the patient and family and their ability to access and stay in care. Health systems must address more than just the disease- they must become more "person centred". Person-centred care means that the health system is organised to meet the needs of the individual in ways that respond to their preferences, values and beliefs, offering dignity and respect. Being person-centred is seen to be a way to ensure that care services are high quality. By improving the health system through the workforce (the health care staff) the information it holds (on the individual's needs and preferences) and the way things are delivered, we can make care more person-centred. What will we do? In this study, we want to do some of the important initial work to inform a larger study to improve person-centredness. We will use our partnership across the UK, Zimbabwe and Uganda to find out what best person-centred care looks like from the view of patients and families facing serious illness, and very importantly from those who would be responsible for delivering (health care professionals). We will use this new information to work with health care teams to develop a strategy that is acceptable to patients and staff that can be put into practice in these countries as examples of health systems strengthening. We will also look at the best way to measure person centredness, so that when we conduct a larger study we have an accurate way to knowing if we have achieved our goals. What will be the outputs? The World Health Organisation has a strategy to improve person-centredness of care for all- this study will provide a practical way to deliver this from an African perspective. We will also deliver an adapted way to measure the experience of care from the patient & family perspective. Our proposed strategy will be led by the views of patients, families and health professionals- making it more likely to achieve success. We are working with health organisations in the community and with

	Governments to make sure that we can achieve better care through stronger health systems.

Health Systems Research Initiative - Call 6 Foundation Grant		
Project title		
Understanding male engagement in child health and nutrition in urban informal settlements: A formative participatory exploration		
Grant holder	**Institute**	**Grant reference**
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Summary

Improving child health requires primary prevention, quality health services and community action to address the underlying drivers of health and wellbeing. Whilst there is recognition that the health system encompasses both the suppliers of policy, services, and interventions, and the communities and households intended to benefit from them; in health systems research the focus has primarily been on the supply-side with little attention given to the demand-side of this equation. Gender roles and relations play an important role in child health and nutritional status. In many sub-Saharan African (sSA) settings, childcare and health is predominantly a female domain with men largely absent or only involved in perceived severe or serious cases. Similarly, intentionally or unintentionally, child health programmes in sSA countries predominantly focus on women. While women are perceived as responsible for children, paradoxically they must negotiate decision-making and resources with other family members, including men. By exclusively focusing on women without considering family dynamics or the broader social context, these programmes may inadvertently reinforce harmful gender divisions and practices related to child health and nutrition. Evidence suggests that programmes targeting women might be more effective if men's roles are considered and transformed to affirm more equitable gender relations. For example, in the 'Men in Maternity' programme in New Delhi, India, husbands were encouraged to play an active role in their wives' antenatal and post-natal care with improved outcomes in the intervention compared to the control groups. Similarly, the IMAGE intervention in Limpopo South Africa used a participatory approach to engage men and challenge behaviours in relation to intimate partner violence and HIV transmission; resulting in a significant reduction in the risk of physical and sexual violence by an intimate partner even up to two years after introduction of the intervention. Informal settlements (referred to colloquially as 'slums') house a significant proportion of the world's urban population particularly in low- and middle-income countries; with this number set to rise with increasing urbanization. Throughout their life-course, these populations suffer from

	disproportionately higher burden of illness compared to the general population. In Kenya where this work will be undertaken, studies show that slums in the capital city of Nairobi have higher child and under-five mortality rates compared to the national, urban and rural averages with long and complex pathways to seeking care; frequently involving the use of informal systems of healthcare prior to, or concurrently with, engaging formal health facilities. Furthermore, following treatment in the formal health system, ill or recovering children are 'discharged back' into their homes and communities. Without proper understanding of the complexities and dynamics operating at the household and community levels, hospital-initiated interventions are likely to be less effective and sustainable. Focusing on the demand-side of the health system, the proposed work seeks to answer if and how participatory approaches can strengthen male involvement in child health and nutrition for better outcomes. Specifically:1) To understand men's and women's perspectives of the actual, desired and perceived role of men in child health, and related barriers and facilitators; and 2) Use an in-depth participatory approach to engage men and other stakeholders in co-creating a context-specific, feasible, and scalable male engagement intervention package for improved and more responsive health service delivery.

Health Systems Research Initiative - Call 6 Foundation Grant		
Project title		
Identifying the health systems changes necessary to sustain and scale up the integration of mental health services into primary care in Lagos, Nigeria		
Grant holder	**Institute**	**Grant reference**
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Summary

STATEMENT OF THE PROBLEM: Despite the huge burden of mental health problems, about 85% of people with severe mental illness in sub-Saharan Africa (SSA) do not receive any form of treatment. Integrating mental health services into primary health care (PHC) has been advocated as the most viable means of closing this treatment gap. The linear model of intervention development, efficacy testing and implementation led to problems with sustainability over time and in real world setting. As there are policy and ethical implications of developing effective heath programmes without sustainability and scale-up, an understanding of the factors and processes that influences sustainability and scale up of an evidence-based intervention is needed for proactive planning OVERALL AIM: This feasibility study aims to identify the strategies to facilitate the health system changes necessary to sustain and scale up mental health services in primary care in Lagos, Nigeria. SPECIFIC QUESTIONS TO BE ADRESSED BY THE PROJECT 1) what is the state of implementation of the MeHPriC Project and what are the factors that are currently underlying its implementation?; 2) What are the dynamic interactions between the different components of the programme as regards contexts (inner and outer), implementation processes, implementation actors and intervention outputs and outcomes?; 3) How do these components influence the sustainability of the programme; and 4) What strategies may be required to facilitate the changes necessary for sustainability and scale-up METHODOLOGY There are 5 phases of the study. 1. In Phase 1, We will review policy documents and conduct in-depth interviews with selected policy makers to develop hypotheses, assess whether the target indicators for the project are met, identify how they are met, identify the key contextual facilitators and constraints and the way they affect the outcome. 2. In Phase 2, we will conduct a quantitative survey amongst the stakeholders including policy makers and administrators, programme managers, PHC health workers and recipients of care. They will complete scales to assess organisational readiness to change, sustainability and perceived intervention acceptability and feasibility 3. In Phase

	3, we will conduct a brief evaluation of the implementation and through in-depth interviews, we will examine the stakeholders' perception about the health systems constraints to delivering, scaling up and sustaining the intervention. We will also observe selected PHC facilities to enable us to understand the factors that act as facilitators or barriers to sustenance of the intervention delivery. 4. In Phase 4, we will conduct a Theory of Change (ToC) workshop that will draw mainly on the results from the analysis of the earlier phases in combination with scientific knowledge and programme experience to identify health system changes that will improve sustainability in the delivery of the intervention. 5. In Phase 5, we will analysis and present the project report to the funders and the stakeholders RESEARCH IMPACT: 1. The individual care recipients will benefit from sustained level of evidence-based interventions leading to better outcomes and improved quality of life. 2. This study will enhance the health workers knowledge, motivation and attitude in providing effective mental health interventions in a sustainable way. 3. The programme implementers will be able to identify and include sustainability components to their design and implementation of complex interventions. 4. Evidence generated in this study will be shared with the WHO team to inform potential strategies for a sustainability and scalability of mental health interventions in LMICs. 5. The project will inform Policy makers on methods of sustaining beneficial interventions thereby maximizing the judicious use of funds

Health Systems Research Initiative - Call 6 Foundation Grant		
Project title		
A systems approach to examining health sector responses to cholera epidemics in Kenya		
Grant holder	**Institute**	**Grant reference**
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Summary

Kenya has experienced an increased disease burden due to cholera outbreaks characterized by continuous transmission in the refugee camp settings of Garissa and Turkana, and sporadic transmission in cities such as Nairobi and Mombasa. However, while inquiry has been made regarding how the health sector has responded to and how populations have been impacted by epidemics such as cholera, not enough attention has been paid to causal relationships between the unique components of the health systems leading to an inadequate understanding of how the building blocks of the health systems interact in disease surveillance and epidemic response. Consequently, this research effort focuses on examining the health sector responses to these epidemics, developing a systems-theory-based description of the said responses, and based on the results, provide recommendations that may help break the epidemic's continuous and cyclical nature. The study will be conducted in Turkana and Garissa in Kenya, as well as in Nairobi. These are counties that have diverse levels of health system sophistication and recent experiences of cholera epidemics. Moreover, the study draws on several systems analytic frameworks to determine the actors and their decisions, as well as their inter-relationships, linkages and dependencies. Thus, the study appropriates systems-oriented research techniques and applies them in a novel fashion to the assessment of health service delivery. The findings of this study are expected to guide interventions aimed at improving disease surveillance and epidemic response. The study will also act as a primer for the research community by assessing the utility of systems-thinking approaches in such settings, and subsequently opening a related research agenda.

Health Systems Research Initiative - Call 6 Foundation Grant		
Project title		
Strengthening private-sector medicine systems to tackle the persistence of poor-quality medicines in Africa: a proof-of-concept study		
Grant holder	**Institute**	**Grant reference**
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Summary

Poor-quality medicines, containing little or no active ingredient - whether through deliberate fraud, poor manufacturing practice or post-manufacture deterioration - represent a major public health threat in low/middle-income countries (LMICs): responsible for more than 200,000 under-5 deaths each year in Africa and contributing to antimicrobial drug resistance. Efforts by governments and international agencies to curb the problem through improving detection rates, tightening regulation and public education have been hampered by the economic realities of medicine supply in resource-poor, high-need contexts, but also - we suggest - by a failure to apprehend fully the complex workings of medicine supply systems, particularly beyond the public sector. Private-sector medicine systems can be characterised as 'complex systems' involving multiple dispersed actors with no central organising authority. Recent developments in the study of complex systems have revealed how the actions of individuals can combine to have non-intuitive effects on the system as whole. This has significant implications for well-intentioned policy interventions based on 'common sense' intuition, which may have unwelcome unanticipated consequences. Our ultimate goal is to understand - and predict - the workings of complex medicine systems in order to inform effective interventions to minimise the penetration of poor-quality products in LMICs. This will require: mapping complete medicine supply chains; understanding the motivations/behaviours of buyers, sellers and regulators; developing sophisticated computational models to simulate the system; and engaging stake-holders to co-design evidence-based interventions. This is an ambitious project which needs careful groundwork through a proof-of-concept study with the following objectives and activities: (1) To assess fieldwork feasibility in these contexts and validate research instruments: Very few people have attempted to trace a full medicine supply chain in an under-regulated context. In order to assess feasibility, safety and ethical issues, we will map a limited number of medicine supply chains starting at retail outlets across Ghana and Tanzania and moving upwards to point of manufacture, obtaining as much relevant information as

	possible at each stage. Research instruments will be validated in each local context, and re-validated across contexts to ensure consistency. (2) To develop our understandings of the structure and operation of private-sector medicine systems: Geographically weighted analysis will be employed to describe the structure/organization of supply systems (length, number of transaction points, degree/level of vertical 'collapse', etc.) and investigate spatial dependencies in the data. Thematic analysis of ethnographic data and secondary sources will be used to understand actors' decision-making and behaviour at each point. (3) To build Agent-Based Models (ABMs) simulating medicine systems, based on empirical data: We will build a sequence of ABMs simulating medicine supply systems in Ghana and Tanzania as 'complex systems'. These models will allow us to understand, and ultimately predict, how individual behaviours might affect the system as a whole. We will develop 'user-friendly' models to use with policy-makers, highlighting potential unintended consequences of interventions. (4) To develop and evaluate strategies for engaging relevant actors (market, regulatory, political) in the research and intervention design: In each country, we will convene National Stake-holder Groups (NSGs), with policy, regulatory and high-level market actors and Project Working Groups (PWGs), comprising 'on-the-ground' supply-chain actors (buyers, sellers and regulators). Through a series of collaborative workshops, we will work with 'user-friendly' models to identify potential 'bottlenecks' or problematic behavioural logics that might underpin interventions.

Health Systems Research Initiative - Call 6 Foundation Grant		
Project title		
Consumer Cost-Sharing in Primary Care: Unintended Health and Economic Outcomes		
Grant holder	**Institute**	**Grant reference**
Dr Marcos Vera-Hernández	University College London	MR/T022175/1

Co-Investigators

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Summary

In many countries, even insured individuals must pay a fee (usually patient cost-sharing) to see their family doctor. The theoretical purpose of that fee is one of cost-containment: to limit the overuse of doctor visits, although it can also play a role in the funding the health system. An unintended consequence of such fees is that they might prevent individuals from visiting their family doctor for necessary medical conditions. Hence, individuals' health might deteriorate, and in the future they might need much more expensive medical treatments (e.g. hospitalizations), which would defeat the cost containment purpose that the fee was supposed to serve. The importance of this unintended consequence might be growing with the rapid increase in Non-Communicable Diseases (NCDs), which require timely diagnosis and management through primary care services. For many NCDs, it is easier to postpone doctor visits because they are not painful in their initial stages (e.g. diabetes), but if they are not diagnosed timely and appropriately managed, they will lead to more expensive medical procedures in the future. Visiting the family doctor might help to diagnose the conditions timely, as well as to keep an adequate management of such conditions. Hence, patient fees might be favoring use of hospitals instead of primary care services, which is inefficient because hospital services are much costlier. This inefficiency weakens the health system and limits how much the health system can improve in other dimensions (coverage, quality improvement). Although the literature has been interested in this topic, most previous research has reported associations, which might be spurious. Some recent papers have been able to estimate the effect of patient fees on health, but they have not been able to assess how health care use patterns or overall treatment costs change. These are key issues to understand how patient fees affect the health system (split of resources between primary and secondary care), and its efficiency. To contribute to this debate, we will be testing whether (and by how much) increased patient fees in primary care increase undiagnosed chronic conditions, adverse health outcomes, mortality, use of hospital services, and treatment costs both in the short and long term (up to 7 years). To

	conduct this work, we will be using health administrative data for the years 2011 to 2018, covering 97% of the Colombian population and containing patients records of all health care services provided in the Colombian Health System, including date and type of service used (outpatient, hospital, etc), prescriptions, treatment costs, ICD-10, sociodemographic characteristics of individuals (including income or wealth scores) and mortality. The person identifier is consistent across the seven years, providing a uniquely rich and detailed longitudinal administrative database. Moreover, its huge size allows us to estimate the effects of interest for particular subpopulations of interest (e.g. individuals with poor socio-economic status, or chronic patients). However, data is not enough to provide a robust answer to the question of interest. We also need a method to be sure that we will not be reporting spurious associations in the data. Experiments are usually used for that purpose but they are unlikely to provide us with long term effects as the ones that we will be estimating, nor the samples be large enough. We are fortunate enough that the patient cost-sharing system in Colombia works "in abrupt jumps," that is, cost-sharing jumps abruptly at pre-specified thresholds of some continuous variables. This is the ideal setting to apply a quasi-experimental method called Regression Discontinuity (RD), which is known to provide causal estimates, free of spurious correlations, under very weak assumptions. Note that you cannot use RD whenever you want, the conditions must be there, but we are fortunate that they do hold in Colombia.

Health Systems Research Initiative - Call 6 Foundation Grant		
Project title		
Adapting the health system in Ghana to reach the urban poor		
Grant holder	**Institute**	**Grant reference**
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Summary

In rural areas, Ghana has a well-established programme of community-based nurses, community health officers and volunteers working with rural communities to improve maternal and child health. The approach is called Community Health Planning and Services (CHPS) and evaluations in rural areas have shown that the approach has halved all maternal deaths and with increased access to family planning, reducing by one the number of children a woman gives birth to. While successful in rural areas, the approach has not yet been extended to urban areas. Ghana is urbanising rapidly and inequalities between the rich and poor are unacceptably high, with children under the age of 14 in poor urban communities five times more likely to die than the general urban population. Extending CHPS to poor urban communities is now a top government priority. This proposal has been put together by health systems researchers and policy makers embedded within Ghana's health services (GHS) and the national CHPS programme. Our aim is to conduct the foundation work needed to scale-up CHPS so that the poorest, marginalised urban residents can benefit from the approach. We will engage closely with three urban communities, each with different variations of urban poverty, for example informal settlements or more mixed, well-established neighbourhoods. Our team includes senior GHS staff, including the head of CHPS, head of nursing research and a strong team of health systems researchers. Ghanaian public health registrars who have worked throughout GHS, with expertise in research methods, will work alongside UK public health registrars (at no salary cost to the project). They will conduct two focus groups in each of the 3 areas. Participants will include women with children facing a variety of challenges to accessing health care. We will conduct approx. 24 interviews with marginalised groups and also community leaders. The registrars will conduct a desk review of urban community health initiatives. We will collect details of current services provided in the 3 areas and their costs. Key decision makers from within the CHPS programme and GHS will come together for a workshop to design a prototype urban CHPS model and identify all materials, guidelines and training that need to be

	developed. Our team will develop the practical tools and revise them based on learning throughout the project. CHPS staff and volunteers will be trained to deliver the new model and will begin implementation in the three areas. Our team will facilitate participatory action research groups with the CHPS staff, community members in each of the areas. The groups will identify issues, agree on and implement solutions and then observe the results. This will lead to a continual cycle of learning and development. The registrars will document this process, collect cost and service data to estimate cost and increase in utilisation and qualitative data with marginalised groups to inform improvement. This will provide valuable new knowledge on how to engage communities and develop an urban health system to reach the most vulnerable. We will draw on a theoretical framework that spells out different components to consider in community engagement. This will ensure that the model we develop considers all aspects of creating a successful and sustainable community engagement model. Our findings will also allow us to propose modifications to the framework which is currently based on evidence from high income countries. A final workshop with CHPS and CHS decision makers will enable the detailed development of a plan to scale-up the model across urban Ghana. It will also enable us to plan for future large scale evaluation. By the end of the project, a full suite of policy and practice documents will be available to enable scale-up across urban areas. We will establish a centre of excellence for Urban CHPS to maintain the culture of research to continually evaluate and improve urban CHPS as it is scaled up.

Health Systems Research Initiative - Call 6 Foundation Grant		
Project title		
Interdisciplinary Research into political interest, civil society support and available data to strengthen Alcohol Policy Systems in Brazil and Peru		
Grant holder	**Institute**	**Grant reference**
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Summary

Alcohol consumption ('drinking') is a major cause of disease globally, and is the leading cause of preventable deaths in people aged 15-49 years old. It impacts negatively on the economy as well as drinkers and those around them, through lost days of work, violence, relationship breakdown and road traffic accidents, as well as placing a major burden on health services. Drinking is increasing in low and middle income countries (LMICs) causing harms there to rise. Drinking is not simply a matter of individual choice, as people's choices are shaped by how available, affordable and attractive alcohol is in each community and country. Alcohol companies can increase drinking by making alcohol widely available to buy, opposing government taxation to keep prices low, and designing and promoting brands that are attractive to current and future drinkers. Research has shown that enforcing controls on where, when and by whom alcohol can be bought, increasing alcohol taxes and controlling alcohol advertising are measures likely to work to reduce harms. These measures are supported by the World Health Organization (WHO) although studies are lacking in LMICs, and they need government action and political support to be implemented. They are typically opposed by large alcohol companies. In Brazil and Peru, there are few controls on alcohol, those that do exist are not well-enforced, and there are high levels of alcohol-related harms. Charities, health organizations and others sometimes successfully work together in 'advocacy coalitions' to strengthen controls on alcohol, but have not yet done so in Brazil and Peru. In both countries, new policymakers have recently said that they are concerned about alcohol related harms and interested in introducing greater controls. This creates an opportunity to strengthen alcohol policies to reduce harms and our study will build on this opportunity. Our aim is (1) to understand how policymakers and charities/health organizations in Peru and Brazil view alcohol consumption, harms and possible regulations, what concerns them, what action they would support, and how interested they are in working with others to improve alcohol control policies. We will do this through analysing 60 interviews, split between countries and different 'stakeholder' types i.e.

	policymakers and charities/health representatives. We also wish find out (2) what alcohol statistics and other data are available in each country to help policymaker decisions, how those data could be improved, and whether they could be used to find out the impact of any policy changes. We will do this by checking national statistics providers, speaking with stakeholders in both countries and international researchers. Our team consists of six experienced researchers who have an excellent range of knowledge relevant to this bid from different academic areas (policy studies, public health, psychology, epidemiology, sociology, health economics), two of whom are based in Peru/Brazil and will lead the research there. We will be supported by a study advisory panel made up of academics, a senior WHO advisor, other health organizations and policymakers from Latin America, and researchers from the USA and South Africa, with expertise in alcohol policy as well as the study of policy changes and health systems more generally. We will recruit fulltime researchers for the study in both Peru and Brazil and offer them multiple opportunities to learn about alcohol policy research, how to use research to influence policy, and working with the media. We will work closely with stakeholders from the start of the study and throughout to give them an opportunity to be involved in shaping (1) our interview questions and (2) our data assessment, so that they are helpful to local policy and advocacy; (3) to share our findings and find out what they think of them, and (4) to plan next steps for policy development, advocacy, and research in each country and regionally.

Health Systems Research Initiative - Call 6 Full Grant		
Project title		
Improving health systems responsiveness to neglected health needs of vulnerable groups in Ghana and Vietnam		
Grant holder	**Institute**	**Grant reference**
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Summary

Responsive health systems improve utilisation of services and improve health outcomes. Yet, it is a least studied health systems goal, especially in low- and middle-income countries (LMICs). Despite significant progress, maternal health remains an international and national priority, and is highly inequitable in Ghana and Vietnam. However, mental health in pregnancy and postpartum are often neglected alongside the more mainstream maternal health priorities; this represents a challenge which responsive health systems should effectively address. This study seeks to improve health systems responsiveness to neglected health needs of vulnerable groups in LMICs. We will explore interpretations of responsiveness by key actors (people, healthcare providers, managers) to inform the design, implementation and pilot-testing of health systems interventions to make systems more responsive to the maternal, including neglected mental, health needs of women from vulnerable groups. We will work in Ghana and Vietnam, which were selected because their different commonalities and differences provide excellent cases for cross-country comparisons and developing transferable best practices, there is high interest from policymakers and our strong collaborations which will enhance South-South exchange and learning. In each country, we will select two districts. Within each district, we will intervene at district hospital, 2-4 primary health care facilities and communities. However, we will also engage with key decision-makers at the regional/province and national levels to maximise the interventions' sustainability, replication and scaling up. This 42-months study will be theory-driven, utilising our expertise in the realist approach and will include three Phases: In Phase 1 we will understand actors' expectations of responsive health systems, drawing on literature from realist synthesis will develop an initial working theory, will identify key priorities for the interventions and generate a baseline. We will review relevant documents and analyse facility records, conduct in-depth interviews, focus groups and community survey. Data will be analysed using a retroductive approach. In Phase 2, we will co-produce the context-sensitive interventions. We will consolidate, adapt and extend our experiences in Ghana and Vietnam to address key

	priority areas from Phase 1, relating these to responsiveness and our initial theory. These will inform meetings in each district with key actors to co-produce the interventions, to be led by the district health leadership and facilitated and documented by researchers. The interventions will focus on improving internal and external interactions from our framework, using low-cost participatory and interactive workshops with staff and communities. In Phase 3, we will implement and evaluate the interventions within local contexts. The implementation will be conducted through existing structures and processes. In the evaluation, we will test our theory through comparing the planned to the actual performance of the interventions through adapting and extending Phase 1 methods. Local, regional and national decision-makers will be engaged throughout, using the embedded approach to research and development. The key study's outcomes and impact will be two-fold: (1) improved health systems responsiveness to the complex health needs of vulnerable groups and therefore contribution to improved health equity in Ghana and Vietnam and (2) an empirically-grounded and theoretically-informed model of complex relations between the contexts, mechanisms and outcomes of the interventions, along with transferable best practices for scalability (i.e. expansion within similar contexts) and generalisability (i.e. expansion to different contexts, such as other health areas and other countries) for future health systems strengthening.

Health Systems Research Initiative - Call 6 Full Grant		
Project title		
Addressing conflict of interest driving irrational prescribing of antibiotics in pluralistic health systems: an interventional study in Pakistan		
Grant holder	**Institute**	**Grant reference**
Dr Mishal Khan	London School of Hygiene and Tropical Medicine	MR/T02349X/1

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Summary

The study proposed here applies cutting-edge health policy and systems research to address a critical and poorly addressed global health challenge: conflict of interest (COI) hindering improvements in the quality of care delivered by private healthcare providers. We define COI as a situation whereby the impartiality of a healthcare provider's judgment may be influenced by a secondary interest, such as financial gain, leading to a decision that is not in the patient's best interest. There is strong evidence that private doctors seeking to make a profit from patient consultations often experience a COI resulting in prescription of medication or diagnostic tests that are either unnecessary or more costly than available alternatives. We focus on irrational prescribing of antibiotics by private doctors in Pakistan, the sixth most populous country in the world, where more than 80% of people first seek care at private doctors and where antibiotic usage is among the highest in the world. Studies in Pakistan and other low and middle income countries, including our own earlier research, show that private doctors prescribe multiple antibiotics when patients do not need them in order to receive benefits from pharmaceutical companies, or make profits from the medicine sales. Despite the scale and urgency of this issue, which affects millions of people and drives antimicrobial resistance which can spread across the world, there is extremely limited evidence on strategies that are effective in contexts where resources and political support for the enforcement of rules are low. Therefore, training interventions focusing on increasing knowledge and skills to affect voluntary behaviour change in private providers is the most common approach used. However, these interventions have had limited success when irrational prescribing is mainly motivated by profit-generation rather a lack of knowledge; here norms and values associated with professional ethics are critical to address with interventions. Our study has four linked objectives, which together will generate new evidence about the impact of a continuing medical education intervention with specially designed messages to sensitise doctors to professional ethics and COI, as well as critical insights about barriers that need to be overcome in order to facilitate scale-

	up of this intervention in the local health system. Since influential stakeholders responsible for addressing practices of private doctors may be crossing professional ethics boundaries themselves, often by having multiple income streams without disclosure, our first objective is to understand how COI and professional ethics is conceptualised by influential stakeholders in Pakistan in order to identify potential supporters and opponents of our intervention. We next focus on private doctors, investigating how they decide what is ethically unacceptable and acceptable with respect to getting personal benefits from prescribing antibiotics. Our third objective is to understand how best to present messages that sensitise private doctors to professional ethics and the role of conflict of interest driving irrational prescription of antibiotics in order to design our intervention. Our final objective is to assess the impact of our intervention on the behaviour and attitudes of private doctors with respect to unethical benefits from pharmaceutical companies for prescribing antibiotics. A key strength of the proposed study is that it has been co-designed with Pakistani researchers and policymakers, building on two previous research council funded projects in Pakistan and Cambodia. In addition to producing new evidence to inform ongoing investments in improving quality of care and tackling antimicrobial resistance, our medical education material on COI can be used for research and training in other settings, and the tools developed as part of our innovative health systems research methods will be made available for future studies.

Health Systems Research Initiative - Call 6 Full Grant		
Project title		
The impact of federalisation on Nepal's health system: a longitudinal analysis		
Grant holder	**Institute**	**Grant reference**
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Summary

Nepal is currently in the midst of a process of radical constitutional reform. After almost a decade operating under a post- conflict Interim Constitution, the highly contested political process of agreeing on a model for the country's future governance finally came to an end in late 2015, when a new Constitution was adopted by the Constituent Assembly. The 2015 Constitution heralded a complete restructuring of the country's political system, creating a Federal Republic with significant devolution of power and resources from the central government to seven newly-created Provinces, each with its own legislature. Implementation of the new Constitution has already delivered the first local elections in 20 years, which were held in late 2017. The new Constitution brings about significant changes in the health system. Nepal's national health system has historically been unitary and centralised, with the Ministry of Health and Population providing the resources and directing health services for the entire country. The new Constitution places the responsibility for health service provision primarily with the seven new Provincial governments, with significant powers and responsibilities being further devolved to Municipalities/Rural Municipalities. All of this has put Nepal's health system in a period of rapid, and far-reaching, transformational change. In theory, these changes have opened up the possibility for greater localism and responsiveness to communities' health needs. In practice, national health policy has not (yet) been revised to reflect the new system. Furthermore, there are fears regarding the capacity of the newly formed Provincial and Municipal governments to successfully take on their new roles, as well as doubts about the 'readiness' of the health system to adapt to the changes. How the transition to a Federal Republic unfolds within the health system, how the system itself responds to the reforms. These concerns are central to our project. This project uses Participatory Policy Analysis (PPA) to track this immense health system reform effort in real time, drawing upon the experiences, perceptions and expertise of health system actors from across all levels of government. We will work with policymakers at the federal, provincial and municipal levels, as well as with community-level providers

	(primary health centre staff and the Female Community Health Volunteers who are on the frontline of delivering maternal and child health services in rural communities). The project aims to uncover the perceptions of this wide range of different stakeholders and to bring them into dialogue with one another - bridging governance and practice levels - in order to identify systemic design deficits, delivery gaps and capacity constraints in the emerging system that may be impacted by, and in turn impact upon, the reform process. Supporting the PPA with a mixture of quantitative and in-depth qualitative work, the research team will iteratively track developments and perceptions within the health sector, across all of the health system building blocks and all levels of government, over a vital period in the creation of the new system. This will allow us to better understand the dynamic process of this transformational change. We will work with stakeholders to co-produce new knowledge of relevance to policy and practice in Nepal, but also to a variety of academic and policy audiences elsewhere.

Health Systems Research Initiative - Call 6 Full Grant		
Project title		
Understanding and eliminating health sector corruption impeding UHC at district level in Nigeria and Malawi: institutions, individuals and incentives		
Grant holder	**Institute**	**Grant reference**
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Summary

Weak accountability and corruption (the abuse of entrusted power for private gain) threatens health in LMICs, especially among the poor. Evidence shows that corruption remains pervasive, harms health and access to care, and is a major barrier to achieving Universal Health Coverage. The health sector is consistently rated as among the most corrupt. Unaccountable and corrupt practice undermines the trust underpinning effective, equitable, and responsive health care and has a major impact on health outcomes. Corruption is often seen as an intractable problem-with limited evidence on successful strategies to address it. Most approaches to weak accountability and corruption have seen these as a failure of management, a result of poorly governed and financed systems or reflecting social norms. Many interventions seek to improve law, policy, accountability and transparency. We argue that these can be more effectively addressed through a) understanding the main types of corruption manifest in the provision of care at district and local level (e.g.informal payments, absenteeism, leakage of health commodities, inappropriate referrals), b) the individual and organisational characteristics that drive it, and c) the underlying power structures. Thus, research must explore how formal structures (policy and its implementation) interplay with informal social, economic and political structures (local elites and kinship networks) to shape everyday practice within the health system. With this knowledge, it is possible to identify pragmatic strategies ('openings') to address corruption that takes into account their fit within the broader organisational and political distribution of power. Drawing on health systems research, anthropology, and political economy, our hypothesis is that measures based on a detailed understanding of the intersections between formal and informal structures, incentives and networks can inform the design of contextually appropriate interventions to tackle corruption in public health systems. The study will take place in Nigeria and Malawi. Both have high levels of corruption and momentum-driven by political leaders and civil society-to tackle corrupt practice. We ask: how do health systems structures and practices, and informal socio-political and economic structures incentivise

	corruption at district level and how can these be overcome? Our choice of methods reflects our intention to explore incidents of corruption in real time within frontline exchanges between provider and patients in district management structures and local community. We will develop novel and ethically robust approaches and methods: content analysis of policies and regulations, media (print and radio) relating to accountability/anti-corruption. Institutional ethnography in district health offices, primary, secondary and tertiary levels facilities, in-depth interviews with formal and informal political and health systems structures, focus group discussions and a household survey with service users, data from anonymous calls/ messages by individuals reporting corruption cases. The analysis will also draw on political economy, with analysis of actors, their power and their informal networks, on systems theory, especially complexity, and will involve co-production workshops and policy dialogues to interpret and validate findings. In Nigeria we will work in the Enugu state in the south and in the Kano state in the north and, and within each, urban and rural areas, and in Malawi we will select up to 4 districts. These will be selected to represent diverse populations, needs, outcomes, level of resources and institutional strength. We will engage at all health system levels-with community organisations, districts/ state, as well as national authorities, to promote anti-corruption action. We will build a community of practice, share knowledge and support researchers and implementers in LMICs-linked to global anti-corruption initiatives.

Health Systems Research Initiative - Call 6 Full Grant		
Project title		
Examining effects of decision-making space and its practices on health systems performance in Tanzania		
Grant holder	**Institute**	**Grant reference**
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Summary

Many low and middle income countries (LMICs), including Tanzania, have been implementing decentralisation since 1990s as a process to strengthen health systems and its performance through improved efficiency, quality of services and a means of promoting democracy and accountability. While decentralisation is widely practiced in LMICs empirical studies have predominantly focused on understanding the extent of the decision-making authority provided by the central government to the authorities at the lower levels. A few studies which have examined the actual use of decision-making space have focused on the influence of decentralisation on one or few health systems functional areas rather than addressing multiple functional areas. Other studies have only been conducted in a few districts making it difficult to explore how the exercise of the decision space vary across the districts and the factors that account for the variations. Additionally, studies examining the evidence for the effectiveness of decentralisation on improving health system performance are scarce and results are mixed. Building on earlier studies, we aim to better understand how and if decentralized local authorities use decentralisation opportunities for improving health systems performance. Specific objectives are to: (i) analyse the decision-making authorities transferred from the central government to institutions at the periphery in the decentralised health system in Tanzania; (ii) assess the actual decision-making space exercised by local government officials and district health managers within the decentralised health system; (iii) assess performance of the decentralised district health systems; (iv) investigate effects of the decision-making space on health systems performance in Tanzania; (v) engage decision makers at the national and district levels aiming at informing policy and improving the practice of decision space within the decentralized health systems The proposed study will be carried out in 20 selected districts in Tanzania over a three-year period. The project will adopt a multiple-case study design and apply a Qualitative Comparative Analysis (QCA) approach. Purposive sampling technique will be used to select 10 best performing and 10 worse performing districts. The

	performance will be based on the 2018 Star Rating assessment conducted by the Ministry of Health in Tanzania.

Health Systems Research Initiative - Call 6 Full Grant		
Project title		
Understanding the consequences for quality and efficiency of expanding services through the private sector in South Africa		
Grant holder	**Institute**	**Grant reference**
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Summary

The private sector provides a large proportion of health services in many low- and middle-income countries (LMICs), particularly for primary health care (PHC), even for poor patients. But the role of the private sector in expanding universal health coverage (UHC) in LMICs remains contentious. Proponents argue that the private sector could increase patient choice and PHC access, and that competition incentivises private providers to be more responsive and provide better quality care than public providers. However, evidence suggests that these advantages may not materialise. Arguments supporting the role of the private sector rely on the assumption that private providers compete for patients. Yet many factors influence market performance and health markets are often not competitive. Effective competition also requires that patients respond to changes in price or quality. Although these dynamics are critical in determining the health system impacts of private PHC provision in LMICs, they have received little attention in the literature. Understanding the role and impact of private sector provision is especially important in South Africa as policy proposals for achieving UHC promote the contracting of private providers to expand access to quality PHC for uninsured patients. There are concerns about the current performance of private PHC providers, and the functioning of the PHC market, with little empirical evidence to inform current debates. Expanding the role of the private sector as part of efforts to achieve UHC requires a more thorough understanding of the potential risks and benefits, and the likely responses of both the supply and demand sides of the market. The aim of this study is to undertake a detailed empirical investigation of the market for public and private primary care services. It will focus on the determinants of provider performance on the one hand, and demand for private services from uninsured cash-paying patients on the other. The study will be conducted in Soweto, Johannesburg, and it will include five components. Firstly, we will undertake a detailed description of the local PHC market through a census, mapping and interviews of all providers, an analysis of market concentration, and investigation of the strategies which private providers use to compete for patients.

	Secondly, using 'fake' standardised patients (SPs), we will compare the performance of private and public providers in terms of accessibility to services, technical quality of care and cost of treatment recommended. Thirdly, we will establish the relationship between competition and performance outcomes, testing if greater competition leads to better outcomes. Fourthly, using linked data on provider performance and cost, we will investigate if accessibility, quality and cost are important determinants of the demand for services by uninsured patients. Finally, in a small randomised pilot, we will test study how populations would react to the introduction of subsidised access to private services, and explore if information about quality influences demand. The study will provide important information on whether the private PHC market can contribute to better health system access, quality and efficiency. The results are relevant to many LMICs trying to expand UHC within mixed health care systems.

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Summary

The recent Astana Declaration emphasizes the importance of health systems based on a strong Primary Health Care (PHC), which should be part and coordinate multisectoral actions addressing economic and social determinants of health. PHC should be one of the main hubs of the network of interventions composing the welfare state, synergistically connecting the healthcare system with social and poverty-relief interventions. Several Latin American countries (LAC) have implemented and expanded over the last two decades PHC, healthcare system components, and social assistance interventions with different degrees of intensity and connection. However, recent economic crisis and austerity measuresare threatening the consolidation of public healthcare systems and of the welfare state in the majority of LAC. Some evaluations of PHC in a limited number of countries have found positive effects on specific health outcomes, but no study has performed multi-country comparisons or adopted a comprehensive approach for the estimation of the effects -including long-term effects- of PHC programs on a broad range of health outcomes (notifiable diseases, hospitalizations and mortality - overall and for specific causes and age-groups), measuring its synergistic impact with the other healthcare system components and with social assistance, in particular conditional (CCT) and social pensions (SP). Similarly, no research has measured the influence of PHC coverage duration and of contextual factors such as local governance indexes or human development index. While the synergistic impact of PHC with CCT is expected because the health conditionalities should be attended in the PHC units, the interaction effects of SP with PHC are plausible because of the physiological effects of the relief from poverty, in particular in the pathways of prevention and cure. The aim of this project is to systematically address all these issues for a comprehensive evaluation of the effectiveness of PHC on the broadest possible range of morbidity and mortality outcomes in Brazil, Colombia, Ecuador and Mexico (BCEM). The comparative evaluation will be possible because BCEM have undertaken different PHC, healthcare and social assistance

	implementations during the last two decades. Aggregate and individual-level, longitudinal and cross-sectional, socioeconomic and health data from a wide range of sources in each BCEM will be merged and the most robust quasiexperimental designs will be used to evaluate these comprehensive PHC impacts on such a wide number of outcomes. With the large amount of data and parameters from all the retrospective impact evaluations, and using a microsimulation modelling approach -arguably one of the most accurate forecasting techniques up-to-date - we will forecast the effects of different PHC coverage reductions - due to budget constraints or austerity measures - in conjunction with the above mentioned welfare state components, versus scenarios of coverage stabilization or coverage expansion, evaluating differences in a broad range of health outcomes in BCEM up to 2030. Using all the granularity of data and effect estimates, we will evaluate the most effective PHC, CCT and SP expansion coverage dynamics -on specific subpopulations- in the next years. We will also calibrate and select the best policy scenarios for the reduction of health inequalities and the achievement of each health-related SDG in each BCME. This project will also consolidate a network of researchers in LAC and will develop algorithms and methods to integrate expost and ex-ante impact evaluations of public policies using ecologic and individual-level data. All the datasets created in the study will be made available in an open dynamic platform of comprehensive LAC data from healthcare systems, social interventions and health outcome, and the research network will use the platform and the developed algotihms to stimulate continuous cycles of monitoring, evaluation and forecasting.