International Health Lecture 2015 with Professor Vikram Patel FMedSci
Re-engineering personalised healthcare for chronic disease

Background

The 2015 International Health Lecture was delivered by Professor Vikram Patel FMedSci on 7 October; this note provides an overview of the lecture and subsequent discussion session. Professor Patel is Professor of International Mental Health and Wellcome Trust Principal Research Fellow in Clinical Science at the London School of Hygiene and Tropical Medicine. Professor Patel is primarily based in New Delhi, where he is Co-Director of the Centre for the Control of Chronic Conditions at the Public Health Foundation of India, and in Goa working with Sangath, a mental health research NGO which he co-founded.

In his lecture, Professor Patel reflected on his mother's experiences with chronic diseases to make wider points about the treatment of chronic conditions. He also highlighted the ways in which research is being used to improve access to, and quality of, care in low- and middle-income countries (LMICs). Specific examples from the Indian healthcare system and the treatment of mental disorders were used to illustrate his argument that the current model of healthcare is unsustainable and should be replaced with a person-centred approach.

The burden of chronic conditions

Professor Patel began his lecture by highlighting the impact of chronic diseases, noting that eight out of the ten leading causes of global disease burden were attributable to a chronic condition.[1] Although the term 'chronic conditions' often refers to non-communicable diseases, it was noted that a range of chronic conditions – including chronic infectious diseases, neurological disorders and long-term consequences of injury – are excluded by this definition. Professor Patel highlighted that a broader description, which encompasses these conditions, includes many medical issues which affect not only life expectancy, but also quality of life. Specifically, he noted that chronic disease now accounts for three quarters of all years lived with disability in India, with early-onset conditions – such as mental disorders which can begin as early as adolescence – resulting in potentially long-term effects. Grouping these diverse conditions together also made sense from the perspective of health systems as the principles of care are shared by these conditions. Finally, Professor Patel argued that, contrary to common assumptions, chronic diseases are strongly associated with poverty as well as affluence, an assertion that he would later support with case studies of healthcare in India.

Treating chronic disease: the status quo

The complexity associated with patients with multiple chronic conditions was illustrated by considering the numerous and varied conditions suffered by Professor Patel's mother

[1] GBD 2013 Mortality and Causes of Death Collaborators (2014). *Global, regional, and national age-sex specific all-cause and cause-specific mortality for 240 causes of death, 1990–2013: a systematic analysis for the Global Burden of Disease Study 2013.* The Lancet **385(9963)**, 117 – 171.

over the course of several decades. These health issues frequently emerged in succession, often with one condition appearing to induce the next: a trait that was particularly noticeable in later life. Most instances entailed visits to doctors who specialized in the diagnosis and treatment of just one condition, frequently requiring multiple trips to private sector hospitals. This approach generated two challenges when considering healthcare more widely: a lack of co-ordinated care and the limited options available to those unable to access expensive private healthcare providers.

Although specialist doctors identified and treated health issues within their specific remit, Professor Patel felt there was insufficient communication between specialists, or with his mother's family doctor, to properly coordinate her care. This fragmented approach addressed diseases individually, while overlooking the overall wellbeing of the patient or the potential consequences of the treatment of one condition on the risk of another. Visiting multiple specialists led to a greater number of tests and treatments, a point which Professor Patel reinforced by showing a prescription for his mother listing a total of twenty-four medicines. The introduction of such polypharmacy can lead to concerns about the cumulative side effects and adverse interactions.

Professor Patel felt that the conventional model of chronic disease care is unviable for those without access to large hospitals and medical specialists, a common situation across many LMICs. Reflecting on India as an example, he noted that much of the population relies on primary healthcare centres operated by the public sector; however, these are often inadequately equipped with staff and other resources, forcing patients towards the private sector for eventual treatment. The costs of consultations, investigations and medications resulted in low-income households being less likely to receive interventions and households across income classes suffering extreme financial hardship, including 'distress sale' of family assets. This was, in turn, associated with poorer outcomes and higher mortality in the poorest. Thus, he argued that the current, globally pervasive model of treatment for chronic diseases, is not only poorer quality, but also marginalises the poorest in society and further impoverishes people. In high income countries, access to hospital care as an entitlement of universal health coverage may not preclude individuals from seeking treatment from specialists, but does represent, at the least, an economic inefficiency in healthcare.

Professor Patel suggested that the weaknesses of the current system – including a lack of co-ordinated care, polypharmacy and an unsustainable economic burden – may be overcome by adopting a person-centred approach. This involves principally treating patients in a primary care setting, addressing multiple morbidities concurrently and caring for entire households rather than focussing solely on individual patients.

Collaborative care

Professor Patel noted that in many healthcare settings, including India, primary care has evolved with a predominant focus on responding to acute conditions; hence the system is not well-prepared for addressing chronic conditions, particularly when these co-occur. It was asserted that the most evidence-based model for integrating care for these types of conditions into the primary setting was that of collaborative care. Professor Patel described his work on the primary care provisions for mental disorders in India, where

he developed a model using case managers: lay people who interact with patients, primary care providers and psychiatrists to improve coordination.

Whereas some doctors in these overburdened settings may see their primary role as prescribers of medicines, Professor Patel explained that a case manager is responsible for overseeing the more holistic aspects of patient care. Case managers were shown to be an efficacious solution for common mental disorders, with patients treated using a collaborative care model showing substantial improvements including a 30% decrease in the prevalence of common mental disorders, a 36% reduction in suicide attempts and plans, and five to six fewer days of disability in the past month.[2] In a trial of patients with schizophrenia, collaborative care was found to be modestly more effective than the established primary care model; however larger effects were observed in rural areas with no local access to mental health services.[3] Collaborative care was also shown to be cost-effective, as expedited recovery meant patients used primary healthcare centres for a shorter time.[4] While the model has only been tested in specific case studies of mental disorders and cardio-metabolic disorders, Professor Patel was optimistic that it could be more widely applicable.

Responding to questions on the suitability of using lay health workers, Professor Patel highlighted that they have been widely accepted in maternal and child healthcare for decades, under the rubric of 'community health workers'. A competency-based education focussing on acquiring skills, which are learnt on the job under close supervision, ensures quality and professionalism; whilst cascades of supervision, including oversight by relevant specialists, guarantee quality and accountability.

Addressing multiple morbidities

Multiple morbidities are common in patients in LMICs, and the ability to address multiple conditions concurrently is highly advantageous. Professor Patel noted that, while evidence from high-income countries has demonstrated the effectiveness of the collaborative care model in treating multiple morbidities, studies in low- and middle-income settings are still in progress. He drew on examples of such trials including the *INtegrating DEPrEssioN and Diabetes treatmENT (INDEPENDENT)* study, which is currently recruiting participants in India; the integrated clinical management guidelines *Primary Care 101+* which aim to integrate metal health care with treatment for chronic infections and non-communicable diseases in routine healthcare platforms in South Africa; and the *MWELLCARE* trial in India, which is using mobile platforms to improve integrated management, by giving lay workers access to decision support systems and electronic medical records.[5,6,7] During the discussion session, Professor Patel noted that integrating care for mental and physical health might also contribute to reducing the

[2] Patel V, *et al.* (2011). *Lay health worker led intervention for depressive and anxiety disorders in India: impact on clinical and disability outcomes over 12 months.* The British Journal of Psychiatry **199(6)**, 459-466.
[3] Chatterjee S, *et al*. (2014). *Effectiveness of a community-based intervention for people with schizophrenia and their caregivers in India (COPSI): a randomised controlled trial.* The Lancet **383(9926)**, 1385-1394.
[4] Buttorff C, *et al*. (2012). *Economic evaluation of a task-shifting intervention for common mental disorders in India.* Bulletin of the World Health Organisation **90**, 813-821.
[5] http://diabetes.emory.edu/research/INDEPENDENT-Study.html
[6] http://www.mhinnovation.net/innovations/primary-care-101#.Vii34tKrSM-
[7] http://www.centreforglobalmentalhealth.org/projects-research/m-wellcare-integrated-mhealth-system-prevention-and-care-chronic-diseases

stigma associated with mental disorders. Conducting robust trials of the collaborative care approach will provide important evidence for decision making on future healthcare provisions, highlighting the key role of research in primary care.

Beyond individuals

Patient-centred care should not only shift focus away from treating conditions in isolation, but should also avoid treating the patients without consideration of their broader environment. To highlight this issue, Professor Patel drew on the experiences of his parents, who saw separate physicians for a range of similar, and potentially related, chronic conditions. The fact that his parents' care was 'completely divorced from one another' gave Professor Patel considerable cause for concern, particularly as chronic conditions are known to cluster non-randomly in households. Estimating the prevalence and patterns of such clustering is the focus on ongoing research, with the ultimate goal of establishing a research program which evaluates the mechanisms underlying clustering and develops new intervention approaches for the control of chronic conditions which target families.

Summary: re-engineering personalised medicine

Professor Patel concluded by highlighting that the current approach to the control of chronic conditions, whereby each is managed individually, both with respect to patients and their conditions, provides poorer quality care and is unsustainable. He expressed concern that specialist care models derived from high income country experiences, with their primary reliance upon hospitals, doctors and medicines, are being implemented globally despite their shortcomings. Evidence indicates a fundamentally different approach for chronic conditions: shifting the focus of delivery of care away from hospitals towards primary care where the management of multiple morbidities can take place through a collaborative care delivery model.

The next challenge is to test and implement care models which unite the management of chronic diseases at the level of households and families, addressing common risk factors and the burden of caring for chronic disease sufferers. Such research highlights the need for trans-disciplinary collaboration across medical and research disciplines, and is the primary goal of the new Centre for the Control of Chronic Conditions in India. Professor Patel shared his vision for the future: a model with district hospitals at the heart, but with seamless links to primary health centres, which are further connected to a home-based model of disease prevention and management. By making care a collaborative partnership between patients, families and healthcare professionals, co-ordinating care through designated case managers, continuing treatment and support throughout a lifetime and employing a community-oriented system, he hopes that the burden of chronic diseases will be reduced for generations to come.