Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

We declare no competing interests.

*Jay Ramchand, Louise M Burrell
ramchaj@ccf.org

Section of Cardiovascular Imaging, Heart and Vascular Institute, Cleveland Clinic, Cleveland, OH 44195, USA (JR); and Department of Medicine, Austin Health, University of Melbourne, Melbourne, VIC, Australia (JR, LMB)

1 Burrell LM, Johnston CI, Tikellis C, Cooper ME. ACE2, a new regulator of the renin-angiotensin system. *Trends Endocrinol Metab* 2004; **15:** 166–69.
2 Donoghue M, Hsieh F, Baronas E, et al. A novel angiotensin-converting enzyme-related carboxypeptidase (ACE2) converts angiotensin I to angiotensin 1-9. *Circ Res* 2000; **87:** E1–9.
3 Crackower MA, Sarao R, Oudit GY, et al. Angiotensin-converting enzyme 2 is an essential regulator of heart function. *Nature* 2002; **417:** 822–28.
4 Kuba K, Imai Y, Rao S, et al. A crucial role of angiotensin converting enzyme 2 (ACE2) in SARS coronavirus-induced lung injury. *Nat Med* 2005; **11:** 875–79.
5 Hoffmann M, Kleine-Weber H, Schroeder S, et al. SARS-CoV-2 cell entry depends on ACE2 and TMPRSS2 and is blocked by a clinically proven protease inhibitor. *Cell* 2020; **181:** 271–80.e8.
6 Epelman S, Tang WH, Chen SY, Van Lente F, Francis GS, Sen S. Detection of soluble angiotensin-converting enzyme 2 in heart failure: insights into the endogenous counter-regulatory pathway of the renin-angiotensin-aldosterone system. *J Am Coll Cardiol* 2008; **52:** 750–54.
7 Ramchand J, Patel SK, Kearney LG, et al. Plasma ACE2 activity predicts mortality in aortic stenosis and is associated with severe myocardial fibrosis. *JACC Cardiovasc Imaging* 2020; **13:** 655–64.
8 Ramchand J, Patel SK, Srivastava PM, Farouque O, Burrell LM. Elevated plasma angiotensin converting enzyme 2 activity is an independent predictor of major adverse cardiac events in patients with obstructive coronary artery disease. *PLoS One* 2018; **13:** e0198144.
9 Narula S, Yusuf S, Chong M, et al. Plasma ACE2 and risk of death or cardiometabolic diseases: a case-cohort analysis. *Lancet* 2020; **396:** 968–76.
10 Vasan RS. Biomarkers of cardiovascular disease: molecular basis and practical considerations. *Circulation* 2006; **113:** 2335–62.
11 Henriksson M, Palmer S, Chen R, et al. Assessing the cost effectiveness of using prognostic biomarkers with decision models: case study in prioritising patients waiting for coronary artery surgery. *BMJ* 2010; **340:** b5606.
12 Sparks MA, South A, Welling P, et al. Sound science before quick judgement regarding RAS blockade in COVID-19. *Clin J Am Soc Nephrol* 2020; **15:** 714–16.
13 Walters TE, Kalman JM, Patel SK, Mearns M, Velkoska E, Burrell LM. Angiotensin converting enzyme 2 activity and human atrial fibrillation: increased plasma angiotensin converting enzyme 2 activity is associated with atrial fibrillation and more advanced left atrial structural remodelling. *Europace* 2017; **19:** 1280–87.

Reframing the NCD agenda: a matter of justice and equity

Published **Online**
September 14, 2020
https://doi.org/10.1016/S0140-6736(20)31910-3

See **Comment** page 941
See **The Lancet Commissions** page 991

The international development community has never taken non-communicable diseases (NCDs) seriously. Seen largely as a challenge for high-income nations, NCDs and their community of advocates have met with, at best, warm words and, more commonly, indifference. There have been moments for optimism. The landmark 2005 WHO report, *Preventing Chronic Diseases: a Vital Investment*;[1] the 2011 Political Declaration on NCDs;[2] and the inclusion of NCDs in the Sustainable Development Goals (SDG) in 2016 (SDG 3.4: by 2030, reduce premature mortality from NCDs by a third and promote mental health and wellbeing). But, despite an increasingly well organised civil society response, NCDs have not broken through into the mainstream of development and global health.

One reason could lie in the framing of NCDs. A biomedical model, for example, emphasises genetic and other biological risk factors and processes. When viewed through the lens of epidemiological transitions, changes in NCD prevalence are associated with industrialisation, growing economic prosperity, and rises in life expectancy. And when NCDs are viewed as lifestyle conditions, attention is paid to individual behaviours rather than to wider social and commercial determinants of health.[3]

The current 5 × 5 approach to NCDs, favoured by WHO, focuses on five diseases (cardiovascular disease, cancer, diabetes, chronic respiratory diseases, and mental ill-health) and five risk factors (tobacco use, unhealthy diets, physical inactivity, harmful use of alcohol, and air pollution).[4] But, as the NCD Countdown 2030 showed, "Although premature mortality from NCDs is declining in most countries, for most the pace of change is too slow to achieve SDG target 3.4".[5] The global NCD community needs to consider a different approach to the framing of chronic diseases.

The central argument of *The Lancet* NCDs and Injuries (NCDI)[6] Poverty Commission is that although the

For **SDG targets** see https://www.who.int/sdg/targets/en/

Tommy Trenchard/Sightsavers/Panos Pictures

existing concept of NCDs has achieved much, it has come at a cost to the world's poorest and most marginalised populations. Commission co-chairs Gene Bukhman and Ana Mocumbi led an international team of 23 researchers, clinicians, and policy makers to define the NCDI burden among the world's poorest billion, propose a set of cost-effective and equitable NCDI interventions tailored to the needs of this population, and issue a call for global solidarity to address this burden.

The Commission found that NCDIs account for more than a third of the burden of disease among the world's poorest people, including almost 800 000 deaths annually among those younger than 40 years. Compared with higher-income populations where the burden of NCDs strongly correlates with advancing age, the poorest billion suffer higher morbidity and mortality from NCDIs at every age. And although diabetes, cardiovascular disease, cancer, chronic respiratory diseases, road traffic injuries, substance use, and mental disorders account for a large proportion of the avoidable disease burden among the poorest billion, about half of this avoidable burden is due to less-recognised NCDIs, including haemoglobinopathies, acute abdominal disorders, musculoskeletal conditions, sense organ diseases, congenital disorders, and neurological conditions. The epidemiological picture of NCDIs that emerges from this Commission is thus one of a more diverse set of conditions and risk factors across a broader age range compared with the dominant global NCD framework. Crucially, NCDIs must be viewed not only as diseases of affluence but also as diseases of poverty.

Despite the importance of NCDIs to the health and wellbeing of the world's poorest billion, the Commission's economic analyses reveal that funding to address this burden is grossly inadequate and that the share of development assistance for NCDIs directed at countries where most of the world's poorest reside is declining. The case for investment is nonetheless strong. The Commission shows that addressing NCDIs is key to achieving progress towards universal health coverage (UHC), with NCDIs accounting for 60–70% of the UHC financing needs in the low-income and lower-middle-income countries where the poorest billion live.

Importantly, given the low capacity for domestic spending on health by these countries, progress towards closing the NCDI poverty gap and realising UHC requires an expansion of development assistance. But as the world grapples with the economic consequences of the COVID-19 pandemic, health financing at national and global levels risks being squeezed, alongside projected increases in global poverty and economic inequality. Before COVID-19, the pace of reductions in global poverty was already slow.[7] Now, although forecasts vary, it is estimated that between 71 million and 100 million people could be pushed into extreme poverty by the pandemic[8] and an impending debt crisis looms for low-income economies.[9]

Advocates for expanding the global NCD agenda to encompass the needs, perspectives, and rights of the world's poorest face an enormous challenge. This is a task in which partnerships and coalition building will be key not only within the NCD community but also in alliances forged with the UHC and anti-poverty movements through recognition of shared values and cross-cutting interventions and programmes. The Commission has begun this journey through the establishment of an NCDI Poverty Network that is already active in 16 countries. This Commission's report will arm them with the evidence they need to strive for a more just and equitable future for the world's poor.

We declare no competing interests.

Elizabeth Zuccala, Richard Horton
elizabeth.zuccala@lancet.com

The Lancet, London EC2Y 5AS, UK

1 WHO. Preventing chronic diseases: a vital investment. Geneva: World Health Organization, 2005. https://www.who.int/chp/chronic_disease_report/contents/en/ (accessed Sept 7, 2020).
2 UN General Assembly 66th Session. Political Declaration of the High-Level Meeting of the General Assembly on the Prevention and Control of Non-communicable Diseases. Sept 16, 2011. https://digitallibrary.un.org/record/710899?ln=en#record-files-collapse-header (accessed Sept 7, 2020).
3 Adjaye-Gbewonyo K, Vaughan M. Reframing NCDs? An analysis of current debates. *Glob Health Action* 2019; **12:** 1641043.
4 UN General Assembly 73rd Session. Political Declaration of the 3rd High-Level Meeting of the General Assembly on the Prevention and Control of Non-communicable Diseases. Oct 17, 2018. https://digitallibrary.un.org/record/1648984?ln=en (accessed Sept 7, 2020).
5 NCD Countdown 2030 collaborators. NCD Countdown 2030: pathways to achieving Sustainable Development Goal target 3.4. *Lancet* 2020; published online Sept 3. https://doi.org/10.1016/S0140-6736(20)31761-X.
6 Bukhman G, Mocumbi AO, Atun R, et al. *The Lancet* NCDI Poverty Commission: bridging a gap in universal health coverage for the poorest billion. *Lancet* 2020; published online Sept 14. https://doi.org/10.1016/S0140-6736(20)31907-3.
7 UN Human Rights Council 44th Session. The parlous state of poverty eradication: report of the Special Rapporteur on extreme poverty and human rights. July 2, 2020. https://chrgj.org/wp-content/uploads/2020/07/Alston-Poverty-Report-FINAL.pdf (accessed Sept 7, 2020).
8 Mahler DG, Lakner C, Aguilar RAC, Wu H. Updated estimates of the impact of COVID-19 on global poverty. June 8, 2020. World Bank Blogs. https://blogs.worldbank.org/opendata/updated-estimates-impact-covid-19-global-poverty (accessed Sept 9, 2020).
9 Rashid H, Stiglitz JE. Averting catastrophic debt crises in developing countries. Extraordinary challenges call for extraordinary measures. Centre for Economic Policy Research Policy Insight No 104. July, 2020. https://cepr.org/active/publications/policy_insights/viewpi.php?pino=104 (accessed Sept 7, 2020).