Equity is key to *Build Back Better* after COVID-19:
prioritize non-communicable diseases and kidney health

Valerie Ann Luyckx

**Affiliations:**
Honorary Associate Professor, Department of Paediatrics and Child Health, University of Cape Town, South Africa; Associate Lecturer, Renal Division, Brigham and Women’s Hospital, Harvard Medical School, Boston, USA; Academic Associate, Institute of Biomedical Ethics and the History of Medicine, University of Zurich, Zurich, Switzerland; Nephrologist, Kantonal Hospital Graubünden, Chur, Switzerland

**Correspondence:**
Valerie Ann Luyckx, MBBCh, MSc, PhD
Institute of Biomedical Ethics and the History of Medicine, University of Zurich
Winterthurerstrasse 30, Zurich, 8006, Switzerland

**Email:** valerie.luyckx@uzh.ch

**Tel:** +41 76 617 3343
As COVID takes its toll worldwide, from the perspective of non-communicable disease (NCD) physicians and activists it feels as if the world has suddenly woken up to the fact that NCDs are important and have been neglected. NCDs no longer only affect the affluent and the elderly. Indeed, NCDs take a major toll on the world’s poorest billion given the confluence of poverty-associated risk factors and inadequate access to screening, early diagnosis and early treatment. NCDs kill 41 million people every year (71% of all deaths).

The 1st United Nations High Level Meeting (UNHLM) on NCDs in 2011 highlighted that NCDs were the leading global case of deaths, but as recently acknowledged at the 3rd UNHLM on NCDs in 2018, despite small progress for some NCDs, action has not been sufficient. A major contributor to NCDs having been left behind is the fact that since 2000 only 1-2% of development aid to low (LIC) and lower-middle income countries (LMIC) has been allocated towards NCDs despite their comprising over 75% of the Disease Adjusted Life Year (DALY) burden and being the leading causes of death (Figure 1). This disproportion was likely driven in part by the Millennium Development Goals (MDGs) which led countries to focus efforts on meeting the targets which excluded NCDs. Furthermore, infectious diseases may have been prioritized because are typically thought to be acute, require urgent treatment, relatively cheap and simple to treat, are reversible, contagious, affect vulnerable populations, and from the donor perspective, the impact of targeted programmes is relatively easy to measure within short time frames. Each of these criteria, with the exception of the time required to assess programme impact, however, can be argued to apply equally to NCDs and cannot therefore ethically or morally justify the differential and inequitable approach to communicable versus non-communicable diseases taken thus far (Table 1). The call is not to reduce or reallocate funding for communicable diseases, but in parallel to increase funding for NCDs and optimize synergies between the approaches to communicable and non-communicable diseases, such that efficiencies, quality of care and the likelihood of sustainability are maximized.

As the focus on the NCD burden has increased in recent years, inequities within the approach to NCDs themselves have however also arisen. Since 2008, the global response to NCDs has concentrated on 4 and then 5 major contributors to NCD morbidity and mortality (cardiovascular disease, cancer, chronic lung disease, diabetes and mental health), but this approach overlooks many other NCDs, some of which are leading killers in some regions, such as
kidney disease in Oceania and Central America. From the response to the MDGs it is clear that if countries are given specific disease targets to meet and report on, other diseases are likely to be relatively neglected. The focus on these priority NCDs is not wrong, but should not be interpreted as exclusive. Many people living with one NCD have another NCD. Indeed, people with kidney disease tend to have the highest rates of comorbidities. People living with NCDs, including kidney disease, are also frequently affected by infectious diseases, either acutely due to their enhanced susceptibility to infection and severity, as we are witnessing daily in the COVID-19 pandemic, or through chronic infections, such as human immunodeficiency virus (HIV), tuberculosis (TB), Hepatitis B and C, and Human Papilloma Virus (HPV) which may cause chronic disease. Furthermore, exposure to systemic discrimination and structural violence enhance vulnerability and therefore susceptibility to NCDs, as well as increasing risk of exposure to infectious diseases (e.g. HIV, TB, COVID-19) and disease severity. NCDs themselves in turn enhance disadvantage and vulnerability through chronic ill health and exacerbation of poverty. NCDs, like kidney disease, are therefore at the epicenter of the cycle of risk for infections, worsening health, poverty and vulnerability. NCDs are complex and require a holistic, comprehensive and long-term view towards prevention and optimal management, which has thus far been lacking in many places globally. The inextricable interdependencies of social and political context, structural violence and both communicable and non-communicable diseases have been described as “syndemic vulnerability” - a new approach is urgently needed to tackle this paradigm systematically and effectively.

It is important to recognize that NCD risk, including kidney disease risk, begins in utero and is amplified throughout the life course. A holistic approach to wellness, as highlighted by the sustainable development goals (SDGs) offers the opportunity to stem the tide of NCDs at the source. Babies born preterm or with low birth weights are at increased risk of NCDs. This risk can be mitigated through adherence to healthy life-styles and mitigation of the social determinants of health throughout the life-course. Healthy women and girls who are well nourished, educated, safe and have equal opportunities, are more likely to have planned pregnancies, healthy babies, healthier children and families and to earn more. Prevention of NCDs should be facilitated through ensuring freedom from discrimination and structural violence, regulation of the commercial determinants of health and environmental pollution, ensuring equitable access to public health, primary and antenatal care, equal education and
opportunities for all, affordable healthy foods, as well as safe environments and fair employment opportunities. Prevention of NCDs should begin in utero and continue throughout life, to strive towards healthy people living in healthy cities on a healthy planet. Comprehensive multisectoral action is required, beyond the health system.

Effective management of NCDs requires a horizontal integrated approach within the health system. Achieving universal health coverage (UHC) will be key to improving access to care, but NCDs, most especially kidney disease, remain major causes of catastrophic health expenditure even when UHC is in place\textsuperscript{11}. UHC is therefore not sufficient to ensure sustainable access to NCD care\textsuperscript{11}. Close attention to the delivery of quality care (the lack of which is a major cause of NCD deaths\textsuperscript{12}) is critical, incorporating adequate training and support of the health care workforce, as well as ensuring reliable infrastructure and supplies. People living with NCDs receive most of their care through self-care, people therefore need to be empowered with knowledge and the means with which to look after themselves and manage their diseases, having access not only to primary care which is the first step, but also to healthy food, education, lack of discrimination, safe living and work environments and (psycho)social support. Simultaneous multi-sectoral attention is required to address the social determinants of health as major amplifiers of NCD risk and severity, as highlighted by the SGDs, to ultimately alleviate poverty and to create opportunities for individuals to maximize their wellbeing.

The NCD community is heartened by the strong call to “Build Back Better” and strengthen health systems world-wide to incorporate sustainable and effective approaches to manage and reduce the NCD burden. The need for an ethical approach to policy-making and priority setting regarding NCDs has been highlighted by the WHO High Level Commission for NCDs\textsuperscript{13} as a prerequisite to enhance equity. The economic and disease burden arguments to tackle NCDs are strong\textsuperscript{1,14}, but alone have not thus far been enough to motivate concerted action. Building Back Better may be easier said than done, but should be possible with deliberate and patient action.

Equity, across diseases, ethnicities, age, gender and countries must be a core goal of the “Building Back Better” strategy for NCDs, based on ethical, medical, economic and public health grounds. Funding and efforts must not be diverted away from infectious diseases which, as COVID has glaringly demonstrated, continue to require attention – but simultaneously, funding
and cooperation for NCDs must be increased. Debates regarding access to the potential COVID-19 vaccines highlight that these could be considered “public goods” - everyone should have a right of access at a fair price. Such sentiments and any processes developed should serve as a blueprint upon which to advocate for similarly equitable and affordable access to a spectrum of many other life-saving treatments, especially those for NCDs ranging from basic antihypertensives and insulin, to dialysis, transplantation, cancer treatment and many others, which have thus far remained out of reach for many in lower income settings. International and multi-sectoral action and solidarity are needed now to accelerate global progress towards UHC and towards achievement of the SDGs, such that prevention of NCDs, including kidney disease, and access to equitable and quality care can become a global reality\textsuperscript{15}.

Disclosures: V. Luyckx reports Honoraria: Honoraria as invited speaker at German Nephrology Meeting, speaker in Grand Rounds University of Miami, Brigham and Women's Hospital. No Pharmaceutical connections. Scientific Advisor or Membership: member of the Advocacy Committee of the International Society of Nephrology; Editorial Boards: CJASN, Current Opinion in Nephrology, Kidney360, Nature reviews Nephrology; Other Interests/Relationships: Royalties from Elsevier as Editor of text book "The Kidney".

Funding: None

Acknowledgements: The content of this article reflects the personal experience and views of the author(s) and should not be considered medical advice or recommendation. The content does not reflect the views or opinions of the American Society of Nephrology (ASN) or Kidney360. Responsibility for the information and views expressed herein lies entirely with the author(s).

Author Contributions: Valerie Luyckx: Conceptualization; Data curation; Writing - original draft
References

Table 1. Potential reasons why infectious diseases may historically have been prioritized over non-communicable diseases, and their relevance to both disease groups

<table>
<thead>
<tr>
<th>Potential justification</th>
<th>Communicable Diseases</th>
<th>Non-communicable diseases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preventable</td>
<td>✓</td>
<td>✓ with Best Buys, HPV vaccination e.g. hypertension, cervical cancer</td>
</tr>
<tr>
<td>Acute reversible disease</td>
<td>✓</td>
<td>✓ with early diagnosis and treatment e.g. AKI, myocardial infarction, acute stroke</td>
</tr>
<tr>
<td>Curable</td>
<td>✓</td>
<td>✓ with early diagnosis and treatment e.g. cervical cancer, AKI, glomerulonephritis</td>
</tr>
<tr>
<td>Chronically controllable</td>
<td>✓</td>
<td>✓ with UHC and access to essential diagnostics and medicines e.g. hypertension, diabetes, CKD</td>
</tr>
<tr>
<td>Contagious</td>
<td>✓</td>
<td>✓ socially and environmentally e.g. obesity, diabetes, chronic lung disease</td>
</tr>
<tr>
<td>Cost effective</td>
<td>✓</td>
<td>✓ e.g. Best Buys save money and lives</td>
</tr>
<tr>
<td>Affects most vulnerable</td>
<td>✓</td>
<td>✓ highest premature mortality in LMIC, children largely overlooked</td>
</tr>
<tr>
<td>Individuals are not considered to blame</td>
<td>✓</td>
<td>✓ healthy choices are limited for the most vulnerable e.g. food deserts in poor urban areas</td>
</tr>
<tr>
<td>Amenable to vertical programs</td>
<td>✓</td>
<td>✗ requires health-system wide approach of access to good quality care across the life course</td>
</tr>
<tr>
<td>Quick win for donors</td>
<td>✓</td>
<td>✗ requires long-term view</td>
</tr>
</tbody>
</table>

- applicable; - not-applicable; WHO Best Buys - [https://apps.who.int/iris/handle/10665/259232](https://apps.who.int/iris/handle/10665/259232); HPV – human papilloma virus; UHC – universal health coverage; LMICs- low and middle income countries; AKI -acute kidney injury; CKD – chronic kidney disease

Adapted with permission from Luna, F. & Luyckx, V. A. Why have Non-communicable Diseases been Left Behind? *Asian Bioethics Review* 12, 5-25
Figure Legend

Figure 1.
a) Total deaths by leading disease groups stratified by World Bank country income category in 2019, error bars indicate upper and lower limits for global totals. b) The relative allocations of total development assistance for health (DAH) transferred in 2019. Total DAH transferred in 2019 was US$ 41 billion, including US$ 730 million (1.8%) for all NCDs, including mental health. Sub-allocation of the US$ 730 million transferred for NCDs included mental health (21.1%), other NCDs (45.9%), HSS (7.9%), human resources (16.1%), tobacco (9%). Data obtained from https://vizhub.healthdata.org/fgh/ and https://vizhub.healthdata.org/gbd-compare/.

DAH refers to financial and in-kind resources distributed by major health development agencies/NGOs/countries to low and middle-income countries, with the goal of improving or maintaining health; CVD – cardiovascular disease including stroke; CKD – chronic kidney disease; aCKD deaths exclude deaths from acute kidney injury, and deaths among those not able to access dialysis/transplantation (estimated 2 – 7 million, 2010)5. Global mortality attributed to reduced kidney function was 3.16 million in 2019; bdiabetes deaths excludes contribution to mortality from other disorders attributed to elevated fasting blood sugar (6.5 million, 2019); HIV/AIDS – human Immunodeficiency Virus infection/acquired immunodeficiency syndrome; TB – tuberculosis; LRTI – lower respiratory tract infection; HSS - health systems support; SWAps - sector-wide approaches; *current global priority NCDs.
Figure 1

a. Million deaths, 2019

b. DAH 2019

- NCDs + Mental health
- Child health 20.9%
- Maternal Health 11.9%
- HIV/AIDS 23.4%
- Tuberculosis 4.1%
- Other infectious diseases 5.9%
- Other areas 12.2%
- SWAps & HSS 13.8%
- Unallocable 0.2%

NCDs 1.8%