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## Developing inclusive and resilient systems: COVID-19 and assistive technology

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### ABSTRACT

Assistive technology is a critical component of maintaining health, wellbeing, and the realization of rights for persons with disabilities. Assistive technologies, and their associated services, are also paramount to ensuring individuals with functional limitations have access to important health and social service information, particularly during a pandemic where they may be at higher risk than the general population. Social isolation and physical distancing have further marginalized many within this population.

We have an opportunity to learn from the COVID-19 response to develop more inclusive and resilient systems that will serve people with disabilities more effectively in the future. In this Current Issues piece, we present a starting point for discussion, based on our experiences working to promote access to assistive technologies through inclusive and sustainable systems and policies.

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Assistive technologies are products and systems which support individuals with disabilities to participate in daily life (World Health Organization 2016). In doing so, these technologies promote health and well-being, while helping to realize rights afforded by the United Nations Declaration on Human Rights and the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) (World Health Organization 2016). There are currently over one billion people in the world who need access to assistive technology, with over two billion expected by 2050 (World Health Organization 2016). This includes persons with disabilities, older and ageing adults, and individuals with health conditions to lead fulfilled and independent lives. The 71st World Health Assembly (2018) recognized the critical contribution of

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The abstract was erroneously missed from the published version. It is now been corrected in both online and print versions. Please see Correction (<http://dx.doi.org/10.1080/09687599.2021.1876399>)

assistive technologies to promoting inclusion and participation in all areas of society, urging member states to develop policies and systems capable of providing assistive technologies through universal health or social services coverage (World Health Assembly 2018).

The COVID-19 pandemic has far-reaching implications for all sectors of society, but it is likely that people with disabilities have been disproportionately affected by restrictions to movement, access to care, and the ability to exercise their fundamental rights (Armitage and Nellums 2020). Underlying many of the issues faced by people with disabilities during this pandemic is poverty, with growing recognition of the complexity of the link between poverty and disability (Groce et al. 2011). Assistive technology enables users to live fulfilled independent lives, and has the potential to be used for accessible health messaging (in the case of digital technology), which is even more important when services and support are scarce. However, in our experience, in some cases assistive technology services have been deemed non-essential, and policy, systems, and regulatory frameworks have not kept pace with the changes required to deliver services effectively during a pandemic situation. A lack of systematic preparedness could be putting those already marginalized at even greater risk.

The challenges faced in assistive technology provision – lack of supply, demand mismatches for products, inadequate numbers of trained personnel, limitations in innovation systems and processes (Holloway et al. 2018) – are played out more widely in the COVID-19 pandemic. We have an opportunity to learn from the experiences of the COVID-19 pandemic to address the systemic and systematic changes required to ensure inclusive and resilient assistive technology services.

First, it is critical for countries to continue to work towards developing sustainable infrastructure and policies to support assistive technology use and service delivery as an essential service (MacLachlan et al. 2018). These systems must be developed within a rights-based framework aligned with international law and global commitments to the UNCRPD. Their effectiveness will be directly linked to their engagement with a systems-based approach that acknowledges the complexity of assistive technology use at a societal level and the need for appropriate funding frameworks across all relevant government ministries, including universal access programmes to address individual needs regardless of socio-economic status (MacLachlan and Scherer 2018).

Second, there is now an even greater need to develop best-practice service delivery models that support the development and use of robust, accessible, tele-delivery systems capable of delivering the required services. Service delivery models must consider the requirements of the population, the essential nature of assistive technology, and the responsibility to protect

both assistive technology users and service providers from infection during the assistive technology provision process (de Witte et al. 2018).

Third, there is a need to develop more accessible and affordable communication tools that provide impairment-relevant and accessible information and support (Qi and Hu 2020). Particular attention must be paid to the needs of individuals with complex conditions who may not be able to access traditional media sources in the formats currently delivered. This is an area of private sector growth that should be harnessed by development actors and national governments.

Finally, and perhaps most importantly, assistive technology users must be central to the planning required to address the lessons learned in an inclusive and effective way. Meaningful, participatory engagement of assistive technology users will help governments and service providers to understand the unique needs of these individuals and ensure the development of inclusive, effective, and resilient services (Desmond et al. 2018).

While the inadequacies of our existing assistive technology systems, policies, and services have been highlighted by the acute and rapidly changing nature of the COVID-19 pandemic, these failures are also present and important during non-crisis times. Each of these actions, taken together, will not only address needs for more robust and resilient systems for future crises, but also the day-to-day needs of all assistive technology users. We have a responsibility as a global community, and within our respective countries, to address these inadequacies now to ensure an inclusive future.

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