Mixed approaches to data collection

There was consensus among all the representatives of international organisations that data on age and disability needed to be collected and reported, using consistent tools and standards. Interviewees from organisations that were doing this described the methods used.

HelpAge International collects and disaggregates data on age, sex and disability, using this to develop its humanitarian responses and advocate for other organisations to do the same. The main tool used for disability assessment is the Washington Group questions (described on page 12). As part of its Disability Statistics in Humanitarian Action project, include these questions in needs assessments, considering the thousands of refugees that need to be processed in some humanitarian settings.

Current training initiatives

The representatives of international organisations promote age and disability inclusion. These typically focused either on disability inclusion, or on people with disabilities and older people, but did not give and ageing.

For example, UNHCR is developing an e-learning...
Authors

The Missing Billion Initiative (MBI)  
The authors of the report are (listed in alphabetical order)

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J P Davidson/Flickr Creative Commons and Phil Sheppard.

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expect, accept and connect 1 billion people with disabilities, MBI and CHAI, 2022.

In 2019, the first Missing Billion report ‘Access to health services for 1 billion people with disabilities’
was published. In 2020, Hannah Kuper, Phyllis Heydt, Ola Abu Alghaib and Mari Tikkanen launched
the Missing Billion initiative*.

For more information please visit: www.themissingbillion.org

*The Missing Billion is to indicate that the one billion people with disabilities are missing out on equitable
healthcare access. We do not imply that this group is Missing.
“Including the experiences and skills of people living with disabilities in the design and delivery of health systems is fundamental to achieving Health For All.”

DR. TEDROS ADHANOM GHEBREYESUS
DIRECTOR GENERAL, WORLD HEALTH ORGANIZATION

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1 Dr. Tedros [@drtedros], 2022, January 4, Twitter.
Expect. Accept. Connect.
Executive Summary

Context

There are more than one billion people with disabilities worldwide. That is 15% of the world’s population. People with disabilities often have greater health needs but experience more barriers to accessing care because of health systems failures at all levels. As a result, people with disabilities frequently have poorer health outcomes. This inequality was recently highlighted during the COVID-19 pandemic – for example, in the United Kingdom, people with disabilities made up 16% of the population but 59% of people who died of COVID-19.

The world is moving beyond the pandemic towards “building back better” health services and systems. This must include people with disabilities as: 1) health targets will not be achieved by 2030 if this large population continues to be left behind, including Universal Health Coverage (UHC) and Sustainable Development Goal 3 (SDG 3); 2) people with disabilities have the right to healthcare, and healthcare contributes to their ability to live a good life; and 3) inclusive health systems work better for everyone. It is therefore critical for the global community to reimagine how health systems should be designed to be inclusive of people with disabilities.

This Report

The first Missing Billion report from 2019 highlighted the health inequities and access challenges that people with disabilities face around the world. It raised awareness among global health actors about the widespread health systems failures that people with disabilities experience. The report concluded that people with disabilities should be recognized as a key population, that there is a need for a long-term strategic approach on disability inclusion, and that immediate action are required to improve health services and address specific access barriers.

This second report builds on the previous work and describes a clear pathway for action towards defined disability-inclusive health systems. This report has the following objectives:

- Present new insights on health outcomes and health system gaps for people with disabilities via newly analyzed data from nearly 900,000 children and adults, including 65,000 with disabilities, across 37 low- and middle-income countries, and 3 new systematic reviews.
- Present a vision for health systems that are designed to be fully inclusive, using human-centered design and crowdsourcing to highlight the lived experiences of people with disabilities at all stages of the health system; giving voice to their concerns and presenting actionable responses to attain an inclusive health system.
- Translate this vision into a practical Missing Billion road map to 2030 with targets and proposed actions for key stakeholders.

Contents

This report contains the following sections:

1. Awareness of the need for equitable health access is growing
2. The urgent need for disability-inclusive health systems
3. Designing a vision for inclusive health systems
4. A framework and best practices for inclusive health systems
5. Missing Billion road map to 2030
Key messages from this report

- People with disabilities have \textbf{2.4-fold higher mortality rates} than those without disabilities and are missing 10 to 20 years of life expectancy. They also face poorer health outcomes across SDG 3 indicators. By designing health systems that prioritize inclusive health services for people with disabilities, we can \textbf{reduce the life expectancy gap of people with disabilities}.

- Health Systems that include people with and without disabilities must \textbf{expect}, \textbf{accept}, and \textbf{connect} people with disabilities to quality care. Service delivery and underlying system functions must be intentionally designed to include people with disabilities.

- To reduce the life expectancy gap between people with and without disabilities, global health actors and country governments should \textbf{develop inclusive health programs and systems through institutional leadership} involving disability-inclusion and disability-focused budget lines, plans and monitoring.

- We urge global health actors, country governments and stakeholders to collaborate to achieve disability inclusion by the key sectors involved in healthcare delivery. The \textbf{“4 Million Targets”} are proposed as a set of minimum targets that can guide a concerted and multi-sectoral effort towards reducing the life expectancy gap by 2030. We encourage stakeholders to refine and expand these targets for an ambitious roadmap with measurable short- and medium-term goals.

### OBJECTIVES

- **Autonomy:** People with disabilities make informed decisions about health care and are aware of their rights and options
  - \textbf{1 million} additional people with disabilities are champions for their right to healthcare

- **Affordability:** People with disabilities can afford to access health services
  - \textbf{1 million} additional people with disabilities in low-and middle-income countries access health insurance and/or social protection

- **Human resources:** Health-care workforce is knowledgeable about disability and has the skills and flexibility to provide quality care to people with disabilities
  - \textbf{1 million} additional health workers trained on disability

- **Health facilities:** Health-care services, including health-care facility infrastructure and information, are accessible for people with disabilities
  - \textbf{1 million} health facilities audited and an additional 10,000 are inclusive

### THE 4 MILLION TARGETS BY 2030

- **GOVERNANCE**
  - Disability-inclusive national health plans

- **LEADERSHIP**
  - Institutional leadership for disability-inclusive health

- **HEALTH FINANCING**
  - A health budget line for disability

- **DATA & EVIDENCE**
  - Disaggregated health data by disability
1. Awareness of the need for equitable health access is growing

Building on the data presented in the first Missing Billion report, disability inclusion is pathway critical for the achievement of the global health agenda and is better for all. Since the launch of the Missing Billion report in 2019, momentum and policy recognition has been building to tackle this issue.

Inclusion of one billion people with disabilities is critical to achieving the global health agenda

There are one billion people with disabilities globally. This number is set to increase further with population growth, ageing populations, a shifting disease burden, armed conflict, and global climate and health crises. The first Missing Billion report, which was published in 2019, showed that people with disabilities face higher healthcare needs, more barriers in accessing services and less health coverage, resulting in worse health outcomes across SDG 3 indicators. This is exacerbated because of their marginalized position in society, monetary poverty, and underlying health condition. This pattern is seen across the world and for people with different impairment types.

How disability leads to higher mortality and poor health

UN Convention on the Rights of Persons with Disabilities defines disability as “long-term physical, mental, intellectual, or sensory impairments, which, in interaction with various barriers, may hinder their full and effective participation in society on an equal basis with others.” People with disabilities are not a homogenous group, and the experiences of individuals will be influenced by their impairment type, gender, age, family support, environment, and so on.

The right to quality healthcare for people with disabilities is enshrined in the UN Convention on the Rights of Persons with Disabilities (CRPD) and in the laws of many countries. According to article 25 of UN CRPD, “States Parties recognize that persons with disabilities have the right to the enjoyment of the highest attainable standard of health without discrimination on the basis of disability. States Parties shall take all appropriate measures to ensure access for persons with disabilities to health services that are gender-sensitive, including health-related rehabilitation.”

Policy recognition of disability-inclusive health

Since the publication of the first Missing Billion report, there has been momentum and policy recognition around the importance of disability-inclusive health internationally.

This momentum is also seen within countries as a growing number of governments have prioritized equitable health-

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3 Poverty and marginalisation
4 Disease risk factors
5 Health conditions
6 Exclusion from health services
7 Higher mortality and worse health
8 UN Convention on the Rights of Persons with Disabilities
Momentum at the global level:

- The Political Declaration of the High-level Meeting on Universal Health Coverage urged for the inclusion of people with disabilities to achieve UHC by 2030.

- The 74th World Health Assembly adopted Resolution EB148.R6 on “The highest attainable standard of health for persons with disabilities” urging Member States to incorporate a disability-inclusive approach, with meaningful engagement with people with disabilities.\(^8\,9\,10\)

- The European Union Strategy for the Rights of Persons with Disabilities 2021-2030 highlighted that “The protection of the rights of persons with disabilities has to be at the center of our efforts, including in our response to the coronavirus. People with disabilities have been among those hit hardest by the COVID-19 crisis.”\(^6\)

- The 2nd Global Disability Summit highlighted inclusive health as a priority, for the first time. The World Health Organization hosted a pre-summit on disability inclusion in the health sector and called for action at the highest level.\(^7\)

- Forthcoming WHO Global Report on health equity for persons with disabilities will make the case for continued commitment to promote disability inclusion in the health sector.

Funders and multi-lateral agencies are also making disability-inclusion a priority in development efforts. For example, the German Federal Ministry for Economic Cooperation and Development (BMZ) launched a cross-sectoral strategy paper in 2019 on *Inclusion of persons with disabilities in German development cooperation*. The paper sets out binding requirements for German development cooperation regarding the inclusion of people with disabilities. The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) is leading the Global Project on Inclusion of Persons with Disabilities to support innovative approaches to implement this strategy in partner countries. In 2022, the UK launched the *Foreign, Commonwealth & Development Office disability inclusion and rights strategy 2022 to 2030* which aims to ensure that people with disabilities everywhere can access and use affordable, accessible, and quality health services throughout their life so they can make and act on informed decisions about their own health.\(^{12}\) UNICEF’s *Practice Guide: Inclusion of children and young people with disabilities in routine general health care* seeks to drive improvements in availability, accessibility, acceptability, affordability and quality across UNICEF’s health programs, also providing a base for efforts to strengthen disability-inclusive primary healthcare and health systems.

This momentum is promising, but more is needed to achieve good health for all by 2030 and ensure that we Leave No One Behind. All stakeholders have a responsibility to design their programming and funding strategies to be inclusive of people with disabilities.

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\(^1\) World Health Assembly Resolution 74.8, 2021


\(^3\) Pre-Summit meeting on Disability Inclusion in the Health Sector.

\(^4\) Republic of Zambia, 2021, National Disability Policy.


\(^6\) Zimbabwe, National Disability Policy, 2021.


\(^8\) FCDO Disability Inclusion and Rights Strategy 2022 to 2030.
The urgent need for disability-inclusive health systems

Building on the data presented in the first Missing Billion report, new evidence analyzed for this report highlights the large, urgent need for inclusion of people with disabilities. The life expectancy gap is substantial: mortality rates are at least two times higher for people with disabilities. This translates into a life expectancy gap of 10-20 years. These inequalities will become worse as disease profiles shift towards noncommunicable diseases. Closing the gap is possible, but simple solutions and improvements are not yet actioned. A better vision on how health systems can ensure equal and equitable health access is urgently needed.

For this report, our team generated new evidence by: (1) analyzing data from nearly 900,000 children and adults from UNICEF Multiple Indicator Cluster Surveys (MICS), including 65,000 people with disabilities, across 37 low-and middle-income countries; and (2) undertaking three new systematic reviews.

People with disabilities have dramatically higher mortality rates

A systematic review of 65 studies from low and middle-income countries finds that people with disabilities had 2.4 times higher mortality rates than people without disabilities. This impact was observed across age groups and the whole spec-

Life expectancy gap estimates for 12 countries based on modelling:

The results from the systematic review of increased mortality associated with disability were used to model the life expectancy reductions using a Life Table Approach (publication in preparation).
trum of impairment types. Increased mortality rate means lower life expectancy. Indeed, data on life expectancy and disability from nine studies (Appendix Table 1.1), as well as modelling across 12 countries as well as globally,\textsuperscript{13} shows that life expectancy is often 10-20 years lower for people with disabilities.

The COVID-19 pandemic exemplified this trend. A systematic review of 37 studies across 11 countries showed that people with disabilities were \textbf{2.8 times more likely to die from COVID-19 than their peers without disabilities globally.} These estimates were adjusted for many risk factors, like poverty, and so the true relationship is likely to be even stronger. For example, in the United Kingdom (UK), people with disabilities made up 16% of the population, but 59% of people who died of COVID-19.\textsuperscript{14} Robust data from low-and middle-income countries related to this topic are lacking. Studies from different countries, such as UK, USA and Canada show that people with intellectual disabilities, especially those with Down syndrome, appear at the highest risk for dying from COVID-19. More details can be found in Annex.

\textbf{These are often preventable deaths and gaps in life expectancy that can be closed by long-term investments in accessible, affordable, and quality healthcare.} For instance, UK data showed that the life expectancy gap was 13 years for men with intellectual disabilities and 20 years for women with intellectual disabilities. 37% of avoidable deaths in people with intellectual disabilities were from causes amenable to change by good quality healthcare, while this was only 13% in the general population.\textsuperscript{15}

\section*{New evidence highlights the health gaps experienced by people with disabilities}

The first Missing Billion report showed that people with disabilities on average have worse health status. New analysis conducted by the authors of this report using the UNICEF MICS indicators by disability status expands on these points. The work presented in this report represents the most comprehensive analysis to date, covering data from 37 low-and middle-income countries that were conducted between 2016 and 2020 and including 465,433 children aged 2-17 (50,951 with disabilities) and 428,685 adults aged 18-49 (15,228 with disabilities).

These new findings are supported by existing literature showing that on average people with disabilities have:

\begin{itemize}
  \item Lower population coverage of healthcare: e.g. overall, sexual and reproductive health services,\textsuperscript{16} menstrual hygiene management,\textsuperscript{17} dental care,\textsuperscript{18}
\end{itemize}

\begin{figure}
\centering
\includegraphics[width=\textwidth]{chart.png}
\caption{COVID-19 deaths in relation to disability in the UK}
\end{figure}

\textsuperscript{13} We used life tables to estimate what the impact of higher mortality among people with disabilities has on life expectancy. For instance, using data from the United Kingdom, a 2-fold increase in mortality rates across the age groups translates into a life expectancy reduction of 7 years (78 to 71). A 3-fold increase in mortality means 21 years of life expectancy lost.
\textsuperscript{14} ONS. 2021. COVID-19 and the impact on disabled people.
\textsuperscript{15} Heslop et al. 2013. The Confidential Inquiry into premature deaths of people with intellectual disabilities in the UK: a population-based study. The Lancet.
\textsuperscript{16} Hameed et al. 2020. From words to actions: systematic review of interventions to promote sexual and reproductive health of persons with disabilities in low- and middle-income countries. BMJ Global Health.
Results of the new health outcomes data (by SDG 3 targets):

<table>
<thead>
<tr>
<th>CHILD HEALTH</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TARGET 3.2: End preventable deaths under 5 years of age</td>
<td></td>
</tr>
<tr>
<td>Children with disabilities are at a higher risk of common causes of under-5 mortality. The percentage of children that reported experiencing the following conditions in the past two weeks:</td>
<td></td>
</tr>
<tr>
<td>With disabilities</td>
<td>Without disabilities</td>
</tr>
<tr>
<td>-------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>Acute respiratory infection</td>
<td>34/100</td>
</tr>
<tr>
<td>Fever</td>
<td>28/100</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>18/100</td>
</tr>
</tbody>
</table>

According to MICS data, treatment levels are similar between children with and without disabilities.

<table>
<thead>
<tr>
<th>HIV/AIDS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TARGET 3.3: End the AIDS epidemic</td>
<td></td>
</tr>
<tr>
<td>Adults with disabilities are lagging in the HIV response:</td>
<td></td>
</tr>
<tr>
<td>▶ Adults with disabilities were less likely to have comprehensive knowledge about HIV prevention and transmission (21%) compared to people without disabilities (28%). This gap is particularly large in Sub-Saharan Africa: 23% versus 33%.</td>
<td></td>
</tr>
<tr>
<td>▶ Adults with disabilities appear less likely to have ever been tested for HIV compared to those without disabilities in Sub-Saharan Africa (41% versus 44%) and Latin America (63% versus 65%).</td>
<td></td>
</tr>
</tbody>
</table>

Other studies show lower adherence to antiretroviral therapy for people with disabilities.

<table>
<thead>
<tr>
<th>FAMILY PLANNING</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TARGET 3.7: Ensure universal access to sexual and reproductive healthcare services</td>
<td></td>
</tr>
<tr>
<td>Women with disabilities are behind in modern contraceptive use:</td>
<td></td>
</tr>
<tr>
<td>▶ Lower coverage of modern contraceptives in women with disabilities (44%) than women without disabilities (48%). This difference was particularly large for women in South Asia: 48% versus 59%.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IMMUNIZATION</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TARGET 3.8: Achieve universal health coverage, including vaccines for all</td>
<td></td>
</tr>
<tr>
<td>Children with disabilities are generally at greater risk of missing out on vaccinations. Previous UNICEF analyses show:</td>
<td></td>
</tr>
<tr>
<td>▶ Lower basic vaccination coverage in children aged 24 to 35 months with disabilities compared to children without disabilities: 56% fully vaccinated versus 58%.</td>
<td></td>
</tr>
<tr>
<td>▶ Among children with multiple functional impairments, only 44% were fully vaccinated.</td>
<td></td>
</tr>
<tr>
<td>▶ Immunization levels were lowest among children with multiple disabilities in the poorest wealth quintile (34%) and children living in rural areas (40%).</td>
<td></td>
</tr>
</tbody>
</table>

- Inadequate range of health services provided: Frequently cannot obtain the disability-related services they need, like rehabilitation and assistive technologies;21,22
- Higher healthcare expenditure: 50% more likely to face catastrophic health expenditures;23
- Poorer quality care.24,25,26

People with disabilities are therefore falling behind in the key components of UHC.

The new MICS analyses that we conducted also show challenges in early development for children with disabilities, which will impact on their capacity across the life-course. Early Childhood Development Index scores were substantially lower in children with disabilities.

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28 Hashemi et al. 2022. Barriers to accessing primary healthcare services for people with disabilities in low and middle-income countries, a Meta-synthesis of qualitative studies. Disability and Rehabilitation.
CASE IN POINT: Reaching UNAIDS 95-95-95 fast-track targets by 2030

The failure to reach health targets can be illustrated through HIV. A lack of disability inclusion can impede the achievement of the UNAIDS 95-95-95 targets. At least one in four people living with HIV have disabilities.27 This is because people with HIV are more likely to develop impairments (e.g. hearing loss) as a result of concurrent infections, ARTs and/or the direct effect of the virus.28 People with disabilities are also more likely to contract HIV, due to their marginalized position in society, more prevalent sexual risk factors, and barriers to accessing services and information.29 We also demonstrated earlier in this report that people with disabilities are less likely to be tested for HIV or to adhere to HIV treatment.

Modelling shows that this exclusion of people with disabilities will make it very difficult to reach UNAIDS 95-95-95 targets by 2030:

- Achieving 95% of people living with HIV know their HIV status means that 97% of HIV-positive people without disabilities would need to know their status to compensate for only 88% of HIV-positive people with disabilities who have been tested.

- Achieving 95% of people on treatment with suppressed viral loads means that 99% of HIV-positive people without disabilities would need to adhere to treatment to compensate for adherence reaching only 88% among HIV-positive people with disabilities.

These models also show that by 2030, the majority of people who have not met the targets will be people with disabilities.

Without a focus on disability, by 2030, we will not achieve UNAIDS 95-95-95 targets.

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27 Banks et al. 2015. The relationship between HIV and prevalence of disabilities in sub-Saharan Africa. TMIH.
28 Kuper et al. 2022. A focus on disability is necessary to achieve HIV epidemic control. The Lancet HIV.
Overall, only 38% of children with disabilities achieved an adequate score, compared to 56% of children without disabilities. This pattern was observed across all geographic regions, although the discrepancy was particularly big in the Middle East (41% versus 76%) and South Asia (37% versus 69%). Levels of stunting were higher among children with disabilities (39% versus 32%), across most geographic regions. Levels of wasting were higher among children with disabilities (8% versus 5%). This gap was most obvious in East Asia (7% versus 3%) and sub-Saharan Africa (8% versus 6%). These gaps persist as disability funding declined between 2007 and 2016, and only 2% of the estimated USD 79.1 billion invested in early childhood development during this period was spent on disabilities. Meanwhile, children with disabilities are routinely excluded from early child development programs, despite their greater need.30

People with disabilities are at higher risk for non-communicable diseases:

<table>
<thead>
<tr>
<th>CANCER RISK</th>
<th>Different sources of evidence show that people with disabilities are at higher risk of cancer diagnosis and death, compared to people without disabilities:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweden:</td>
<td>People with intellectual disabilities were 3.6 times more likely to die from cancer.31</td>
</tr>
<tr>
<td>Korea:</td>
<td>Women with disabilities were more likely to be diagnosed with cervical cancer (16% versus 7%), and mortality rates were higher.32 This pattern was also seen for lung cancer33 and gastric cancer.34</td>
</tr>
<tr>
<td>Netherlands:</td>
<td>People with intellectual disabilities were 1.5 times more likely to die from cancer.35</td>
</tr>
<tr>
<td>USA:</td>
<td>Women with disabilities experienced higher cervical and breast cancer rates.36</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CANCER SCREENING AND TREATMENT</th>
<th>Our new systematic review of 29 studies from 7 countries showed that women with disabilities were 25% less likely to have been screened for breast cancer and 37% less likely to have been screened for cervical cancer compared to their non-disabled peers.37 Other studies and reviews confirm these patterns, showing:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lower uptake of other types of cancer screening, including colorectal cancer screenings (25% lower), in people with disabilities38</td>
</tr>
<tr>
<td></td>
<td>Greater difficulty experienced by people with disabilities with receiving quality cancer care39</td>
</tr>
<tr>
<td></td>
<td>Together, this evidence shows that people with disabilities will experience higher cancer fatality rates, which could be avoided through more inclusive services. For instance, data from Korea showed that women with disabilities who had localized cervical cancer were 26% more likely to die, compared to patients without disabilities, and this was due to differences in cancer stage, treatment, and socio-economic factors.40</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DIABETES</th>
<th>It is already established that people with disabilities are more likely to have diabetes, but they also have worse diabetes care:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Korea:</td>
<td>over 2 times as likely to have diabetes-related avoidable hospitalizations in people with severe disabilities.41 This risk was particularly elevated in people with intellectual or psychosocial disabilities.</td>
</tr>
<tr>
<td></td>
<td>A systematic review showed that people with intellectual disabilities and their caregivers have less understanding of diabetes, and there is little emphasis on self-management by the person with disabilities.41</td>
</tr>
</tbody>
</table>

---

36 Iezzoni et al. 2021. Association between disability and breast or cervical cancer, accounting for screening disparities. Medical Care
On the other side, the analysis shows some positive trends for maternal health: there were similar levels of antenatal care coverage, institutional deliveries, and qualified antenatal providers for women with and without disabilities. However, we must be cautious as these results do not capture differences in the quality of the birth and other antenatal experiences, including whether the preferences of women were respected.

There are also other examples from the analyses where there were no observable discrepancies in coverage between people with and without disabilities. However, for some of these statistics the sample size is small, for instance malaria treatment, and again, these overall figures may conceal differences in quality, cost, and acceptability of services.

The healthcare inequities will worsen as disease profiles shift

People with disabilities are more likely to experience non-communicable diseases. This will be a growing concern as there is an epidemic shift from infectious to non-communicable diseases in the coming decades. We can demonstrate this pattern using cancer and diabetes as examples.

Addressing these gaps: solutions exist but action is needed

Health insurance offers an effective means at improving healthcare access. People with disabilities should be prioritized for coverage, as they have higher healthcare needs yet greater poverty levels. National health plans often do not specifically mention people with disabilities and very few health insurance schemes and approaches exist to help with financing gaps for people with disabilities.42 Our analyses shows no major difference in health insurance coverage between people with and without disabilities in adults (38% versus 39%) or in children (children aged 2-4: 12% versus 11%; children aged 5-17: 20% versus 21%). This finding is consistent with the limited data available on this topic.43

These data highlight both the inequities in health faced by people with disabilities, and the missed opportunities for action. A vision is needed of what it means to have health systems that are fully inclusive to support countries to move towards disability-inclusive health services. This vision must be guided by and based on the needs and desires of people with disabilities.

Online Data Dashboard

The complete results of our analysis using the UNICEF MICS analysis, as well as additional data from systematic reviews have been visualized into an interactive dashboard available at www.themissingbillion.org/data-dashboard

The dashboard offers:
- a view of indicators by country, regional and global estimates;
- disaggregated data by sex and type of impairment when available;
- a tool to compare data for up to three countries.

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3. Designing a vision for disability-inclusive health systems

People with disabilities have described a vision of inclusive health systems as one in which they are expected, accepted, and connected to receive quality care. This vision centers around the idea of the system being prepared to provide quality services to people with disabilities in a respectful, predictable, and comprehensive manner. This reimagined health system will reduce the barriers and stressors that people with disabilities may face when navigating how to seek care and will also improve their health outcomes.

A Human-centered design approach to re-imagine health systems

One of the guiding principles in disability-inclusive development is that changes must be informed by people with disabilities to be appropriate, acceptable and contextually relevant. Here, we take the next step to reimagine health care that is inclusive. We used a participatory and human-centered design approach to co-create a vision for inclusive health systems that was informed by more than 400 people with disabilities and their families or caregivers from different geographic regions, ages, genders, impairment

Experiences of people with disabilities when accessing health services

<table>
<thead>
<tr>
<th>What people with disabilities experience</th>
<th>What people with disabilities want</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncertain about symptoms and whether or not to seek care</td>
<td>Everybody is equipped to access care in their own settings</td>
</tr>
<tr>
<td>&quot;I was used to having frequent headaches and was so conditioned to the pain that I did not realize when to seek help. We only got to know about the tumor when it was at a later stage.&quot;</td>
<td>Everybody is informed about what they can expect at a healthcare service</td>
</tr>
<tr>
<td>Concerned about the quality and accessibility of care I will receive</td>
<td>Basic minimum standard of healthcare is within reach and affordable for all</td>
</tr>
<tr>
<td>&quot;I always have to take someone along when I go to a healthcare service for the first time because I worry that they will not understand me and think I have a mental disability and I will be put into an asylum.&quot;</td>
<td>Everybody receives healthcare in an environment that accommodates for their abilities</td>
</tr>
<tr>
<td>Unable to access accessible or affordable transport</td>
<td>Everybody’s needs are comprehensively understood and mindfully addressed</td>
</tr>
<tr>
<td>&quot;I kept checking the vaccination portal for slot availability in the nearby hospital but it constantly showed full. There was no provision for people with disabilities and it was too difficult and expensive for us to take her far away.&quot;</td>
<td>Everybody is equipped to determine and protect themselves from risk and identify</td>
</tr>
<tr>
<td>Not able access the health facility</td>
<td>&quot;The doctor couldn’t understand that I was pregnant. I was given pain medication for stomach ache and sent home.&quot;</td>
</tr>
<tr>
<td>&quot;I have kidney stones, so I need to keep using the washroom. But the toilet in the hospital was so inaccessible, that I couldn’t go there at all.&quot;</td>
<td>WOMAN WITH PHYSICAL IMPAIRMENT</td>
</tr>
<tr>
<td>Confused about what to do after the visit</td>
<td>&quot;I had to rely on my faltering memory to remember the information given. I was too intimidated by the doctor to ask for his time again to confirm.&quot;</td>
</tr>
<tr>
<td>&quot;I had to rely on my faltering memory to remember the information given. I was too intimidated by the doctor to ask for his time again to confirm.&quot;</td>
<td>MAN WITH VISUAL IMPAIRMENT</td>
</tr>
</tbody>
</table>

"People who face a particular challenge are the key to solving it. Change is going to happen when we shift the power of decision making."

PARTICIPANT WITH DISABILITIES FROM DESIGN WORKSHOP, KENYA
types and health seeking needs. We worked with people with physical, sensory, intellectual, and neurological impairments to understand their needs, desires, and expectations for an inclusive health system. This included interviews with people from Africa, North and South Americas, and Asia, an in-person workshop in Mumbai, an online workshop with participants from various countries across Asia, Africa, and Europe, and further engagements through social media.

A clear pattern emerged highlighting the compounded levels of difficulty and concern that people with disabilities experience when accessing healthcare.

People with disabilities expressed a re-imagined vision for healthcare as one where they are:

▶ EXPECTED: Services are provided in settings that suit people with disabilities, and facility-based care is accessible and affordable. Participants can access health services in ways convenient to them, either through tele-health consultations, home visits, or in-person at an accessible facility when required. Participants viewed their ideal system as one where they could anticipate how to navigate their visit: how long the consultation will take, what transport options will be reliable, how much the service will cost, what procedures will take place, if accessible equipment will be provided, and if instructions will be given in accessible formats. Being able to ask questions and plan is critical.

▶ ACCEPTED: People with disabilities are welcomed and provided with quality care by trained and motivated staff regarding disability. Having facilities and staff that are prepared for people with disabilities helps to reduce access and communication barriers and respect patients' dignity and privacy. Participants drew parallels from analogous positive examples such as airports who have trained staff, wheelchairs on hand, and printed language on the ticket stating the accessibility needs of the person with disabilities.

▶ CONNECTED: Referrals and accessible follow-up care are given after healthcare visits with connection and coordination across the entire healthcare journey. People with disabilities expressed wanting accessible health information in communities for identifying symptoms, to reaching the healthcare venue through reliable transportation, to encountering friendly staff who provide care in tailored formats, to clear instructions for after-care and connections to other services and people with similar conditions.

Components of inclusive health services
The components of disability-inclusive health services

1 Strong health literacy and early diagnosis

“We didn’t know he was sugar intolerant for months, we need to be able to detect a problem, he isn’t able to share on his own.”
GUARDIAN OF YOUNG PERSON WITH AUTISM, INDIA

“I went for a regular checkup. They took my blood and they told me I had cancer. You go to the doctor for something else and when you’re there you know.”
OLDER PERSON WITH CEREBRAL PALSY AND SPEECH IMPAIRMENT, CANADA

What people with disabilities want:
▶ To be equipped with health knowledge and awareness to seek care

Why is it important:
▶ Delay in detection of risk or symptom leads to pursuing medical care only for emergency or acute conditions
▶ Links within communities to health services can encourage and better support people with disabilities to seek care

Examples of immediate action:
▶ Provide health education information and materials that are understandable and concrete, in accessible formats, and with images of people with disabilities.
▶ Reach out to people with disabilities through community health worker visits, community-based services, and collaborations between facilities and peer-led people with disabilities health groups

Examples of aspirational action:
▶ Offer telehealth services and smartphone-based diagnostics that are affordable, accessible and user-friendly for everyone
▶ Provide school-based health education programs that are disability-inclusive
▶ Train community health workers to use disability-inclusive screening tools and to connect people with disabilities to necessary follow-up care

2 Predictable healthcare experience

“I am always scared of what to expect, how long will he have to stay, if they have to draw blood and put holes all over his body.”
CAREGIVER OF CHILD WITH DEVELOPMENTAL DISABILITIES, BRAZIL

“Google is a very great platform to know the doctor, where they sit etc. But there were no details on what he can help me with. My needs were very different – even psychiatrist won’t understand me, only a person with hearing issue will understand me. The psychiatrist I went to had a website so I could connect easily with him and do a brief call with him on how he can help me.”
GIRL WITH HEARING IMPAIRMENT, INDIA

What people with disabilities want:
▶ To be informed about what they can expect during a healthcare visit

Why is it important:
▶ Prior negative experiences with the health system make those who have sought care more concerned about future encounters
▶ An unfamiliar space may lead to a loss of control and feeling of helplessness thus reducing motivation to seek care
▶ Providing information about procedures and the opportunity to ask questions in advance can make a person with disabilities more confident in claiming their right to healthcare

Examples of immediate action:
▶ Provide Medical History Cards with relevant information on the individuals’ impairment and accessibility requirements
▶ Install accessibility help desks or focal persons in healthcare facilities that can support patients with disabilities in seeking care

Examples of aspirational action:
▶ Set up services where health facilities proactively contact the patient to confirm the visit and ask them about accessibility needs
▶ Organize for community health workers to remind people with disabilities if they are due for upcoming appointments and provide information and support
3 Affordable health care service within reach

“The last delivery was best—there wasn’t a lot of cost incurred, they didn’t charge anything extra to take good care of people with disability because they had the intent to do so. You just need to be empathetic, disability doesn’t require too much money, just intent. My child lost oxygen and they got an ambulance to take him to the children’s hospital and didn’t charge me for any fuel, etc.”

WOMAN WITH VISUAL IMPAIRMENT, UGANDA

“There was a last delivery was best—there wasn’t a lot of cost incurred, they didn’t charge anything extra to take good care of people with disability because they had the intent to do so. You just need to be empathetic, disability doesn’t require too much money, just intent. My child lost oxygen and they got an ambulance to take him to the children’s hospital and didn’t charge me for any fuel, etc.”

WOMAN WITH VISUAL IMPAIRMENT, UGANDA

“Sometimes here when I go to the taxi—it costs me $200 to just go to half an hour distance to the hospital. I call it highway robbery. If I want to ride the bus, I don’t feel safe, the ramp that comes down is so narrow— it just looks good but getting on and off is a challenge.”

MAN WITH PHYSICAL IMPAIRMENT, USA

“What people with disabilities want:

- To have affordable health services which are within easy reach

Why is it important:

- Economic and geographic circumstances become an obstacle to accessing healthcare

Examples of immediate action:

- Provide accessible transportation options, such as wheelchair accessible vans, and/or transport subsidies
- Leverage lessons learned from COVID-19 in providing more virtual consultations, where appropriate
- Include people with disabilities in social protection programs and/or offer health insurance or fee waivers to disability card holders

Examples of aspirational action:

- Ensure that performance-based financing programs include disability to encourage timely provision of treatment
- Explore partnerships with ride-sharing companies to offer subsidized rides for people with disabilities seeking healthcare

4 Universally designed environment

“In the radiology department, they have those adjustable tables because they are expecting people like me. But in the examination room, they don’t have those tables.”

YOUNG ADULT WITH PHYSICAL IMPAIRMENT, INDONESIA

“When I sat in the queue, I waited. The person called out the card—so and so come. Because I couldn’t hear, I didn’t go when they called. I stayed until the end.”

MAN WITH HEARING IMPAIRMENT, KENYA

“The space to change into the gown was really small, I couldn’t shut the curtains, so I had to change looking over my shoulder. It was really embarrassing.”

OLDER ADULT WITH MOBILITY IMPAIRMENT, CANADA

What people with disabilities want:

- Healthcare environments which are universally designed to accommodate people with disabilities

Why is it important:

- Inaccessible settings make it difficult or impossible for people with disabilities to seek healthcare

Examples of immediate action:

- Ensure comprehensive accessibility, including entrance, facility, toilets, equipment, for all new facilities and upgrade existing facilities, considering people with:
  - Physical impairments (e.g., ramps, accessible toilets, seating and equipment)
  - Hearing impairments (e.g., hearing loop provided, clear signage, sign language interpreter booked)
  - Visual impairments (e.g., high-contrast signage, accessible lighting, braille pavers, medical letters in different formats)
  - Psychosocial impairments (e.g., provision of calm environment and quiet spaces)
- Implement routine audits to monitor and enforce accessibility

Examples of aspirational action:

- Redesign primary health facilities to be fully accessible and climate resilient
- Leverage assistive technology into the health experience, for instance, provide intake forms that have screen reader functions when required
Comprehensive and mindful consultation

“I’ve never had direct communication with the doctor, including my own hearing doctor. Mostly they talk with my parents because they take the hearing machine and set it according to my listening power. I want to know what the doctor is saying because the problem is with me, I can’t live with my parents forever.”

GIRL WITH HEARING IMPAIRMENT, INDIA

“(At the health facility,) they were so accommodating – they were so open, they took my case as a special case and they were interested and treated me nicely. They also helped me make the right choice for contraceptives. The doctors were nice, they were never bothered even when I asked them hundreds of questions. I liked this better because the service providers are trained on all types of family planning – so they explain to you and take out time and help you make the right decision. In that other clinic, they were just rushing me to get the injectable.”

WOMAN WITH EPILEPSY, KENYA

“Your appointment is 20 minutes, but by the time you reach there and settle in, the time is almost over. It’s such a rush rush rush that you feel like you’re an imposition.”

OLD ADULT WITH MOBILITY IMPAIRMENT, CANADA

What people with disabilities want:

▶ To receive a respectful and comprehensive clinical assessment from healthcare staff providing mindful treatment and care

Why is it important:

▶ Patients who are treated poorly are less likely to follow through with treatment recommendations, resulting in poorer health outcomes and damaged trust in health providers

Examples of immediate action:

▶ Train healthcare workers on how to communicate with people with different impairments, using respectful language, knowledge on rights and accessibility for people with disabilities, and how to make appropriate referrals
▶ Ensure providers obtain informed consent and maintain privacy
▶ Ensure providers give clear decision-making support and explain next steps in treatment

Examples of aspirational action:

▶ Train more people with disabilities as healthcare professionals
▶ Ensure health records maintain detailed information about disability history and are routinely updated

Maintaining quality care

“For rare disabilities – there should be some support groups readily available.”

GIRL WITH CHRONIC CONDITION, INDIA

“Even on drug prescriptions there is no braille, you can overdose or underdose.”

WOMAN WITH VISUAL IMPAIRMENT, UGANDA

“Basic habits they should write – remove it while sleeping, bathing, when to change the battery. They should give you a prescription – what you should be doing, what you shouldn’t be doing. Give me some guidance to take care of my hearing. At least it shouldn’t get worse.”

GIRL WITH HEARING IMPAIRMENT, INDIA

What people with disabilities want:

▶ To be equipped with resources and support networks to sustain care after the doctor’s visit

Why is it important:

▶ Having clear guidance and simple pathways for follow up care allows people with disabilities to better manage their health

Examples of immediate action:

▶ Provide accessible documentation and information to patients about their health condition and treatment instructions to revisit at home
▶ Establish support groups for people with shared experiences and their caregivers
▶ Enable bookings for next visits while at the current visit, where appropriate
▶ Ensure providers communicate referral procedures and timelines clearly using methods tailored to the patient (e.g. writing down or explaining verbally)

Examples of aspirational action:

▶ Equip health facilities with telehealth to follow up with patients on any challenges they may face and health education tools wherever needed
4. A framework and best practices for disability-inclusive health systems

We have introduced a vision for inclusive healthcare. The six components that support this vision reflect people with disabilities’ requirements when seeking and receiving healthcare services. Health systems should be strengthened or adapted to meet this vision. In this section, a health systems framework is introduced to provide governments and global health actors with a structure to help realize inclusive healthcare for people with disabilities. Best practice examples are shared from different parts of the globe.

Introducing the Missing Billion inclusive health systems framework

A health systems framework has been developed and piloted by the Missing Billion Initiative. It is based upon existing conceptual frameworks and consultation with key stakeholders, including government and global health actors, bilateral stakeholders, people with disabilities, disability and health systems experts. The framework presented below aims to describe the critical components of a strong disability-inclusive healthcare system.\textsuperscript{44,45,46} Health system indicators and national health plans can be reviewed against this framework to identify areas for strengthening disability inclusion. The social determinants of health and context are the non-medical factors and conditions in the places where people live, learn, work, and play that affect a wide range of health and quality-of-life risks and outcomes.

Missing Billion Inclusive Health Systems framework

\begin{table}[h]
\centering
\begin{tabular}{|c|c|c|c|c|}
\hline
\textbf{System} & \textbf{Service Delivery} & \textbf{Outputs} & \textbf{Outcomes} \\
\hline
Governance & Demand & Autonomy and Awareness & Effective Service Coverage & Health Status \\
Leadership & & Affordability & \\
Health Financing & Supply & Human Resources & \\
Data & Evidence & Health Facilities & \\
& & Rehabilitation Services & & \\
& & & Assistive Technology & \\
\hline
\end{tabular}
\end{table}

Social Determinants and Context

\textsuperscript{44} WHO EURO. 2021. Policy brief on disability-inclusive health systems.\textsuperscript{45,46} WHO 6 building blocks are: 1. Service delivery; 2. Health workforce; 3. Information; 4. Medical products, vaccines and technologies; 5. Financing; 6. Leadership/governance.\textsuperscript{46} PHCPI Conceptual framework considers: 1. System (e.g. governance/leadership); 2. Inputs (e.g. Drugs, supplies); 3. Service delivery (e.g. Access); 4. Outputs (effective service coverage); 5. Outcomes (e.g. health status).
Translating the vision into Health Systems Objectives

We use the framework to define objectives for disability-inclusive health systems that will help fulfill the vision that has been expressed by people with disabilities. For example, the vision describes that people with disabilities seek healthcare experiences that are predictable. This can only be achieved when they are aware of their rights and options (autonomy and awareness), when there is available and knowledgeable health workforce (human resources) and when health infrastructure is accessible (health facilities).

Objectives for achieving disability-inclusive health systems

The following summarizes the objectives for disability-inclusive health systems and outlines current good practices that was compiled by the Missing Billion Initiative. A table providing a starting point for governments to drive action, is provided in the next section of the report.

<table>
<thead>
<tr>
<th>Vision Components</th>
<th>Service Delivery</th>
<th>System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strong literacy and diagnosis</td>
<td>Autonomy &amp; Awareness</td>
<td>People with disabilities make their own decisions about health care and are aware of their rights and options.</td>
</tr>
<tr>
<td>Affordable care within reach</td>
<td>Affordability</td>
<td>People with disabilities can afford to access health.</td>
</tr>
<tr>
<td>Comprehensive, mindful consultation</td>
<td>Human Resources</td>
<td>Health workforce is knowledgeable about disabilities and has the skills and flexibility to provide quality care.</td>
</tr>
<tr>
<td>Universally designed environment</td>
<td>Health Facilities</td>
<td>Health-care services, including health-care facility infrastructure and information, are accessible for people with disabilities.</td>
</tr>
<tr>
<td>Maintaining quality care</td>
<td>Rehabilitation Services &amp; Assistive Technology</td>
<td>Rehabilitation and specialist services are available, affordable and of good quality for people with disabilities.</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Objective</th>
<th>Example Actions</th>
<th>Good Practice Examples</th>
</tr>
</thead>
</table>
| Autonomy & Awareness | People with disabilities make their own decisions about healthcare and are aware of their rights and options. | Civil society and mass media campaigns raise awareness; information is available in accessible formats; patient support groups. | Active Rehabilitation Services by and for people with disabilities in Poland
Peer educator training on sexual and reproductive health and rights of people with disabilities in Burundi
Autism and Mental Health Literacy Project (AM-HeLP) in Canada |

Unless referred to another source, the descriptions of the good practices can be found online: [www.missingbillion.org/goodpractices](http://www.missingbillion.org/goodpractices)
<table>
<thead>
<tr>
<th>OBJECTIVE</th>
<th>EXAMPLE ACTIONS</th>
<th>GOOD PRACTICE EXAMPLES</th>
</tr>
</thead>
</table>
| **Affordability** | People with disabilities can afford to access health services | Provision of social protection or health insurance; fee waivers for people with disabilities; integrated care and outreach programs to reduce travel costs. | ▶ Accessible COVID-19 vaccination transportation in Toronto, Canada  
▶ Guidance on ensuring social protection works for people with disabilities⁴⁸  
▶ International Labor Organization portal on disability-inclusive social protection⁴⁹ |
| **Human Resources** | Health-care workforce is knowledgeable about disability and has the skills and flexibility to provide quality care to people with disabilities. | Incorporate disability awareness and skills training into initial and/or ongoing healthcare curriculum; include people with disabilities in the health workforce; include disability care coordinators within teams. | ▶ Community Health Worker Training in India  
▶ Disability-inclusive Nursing Practice Handbook in Germany  
▶ Learning Disability and Autism Training for Health and Care Staff in the UK  
▶ Health worker handbook on sexual and reproductive health in Ecuador  
▶ Disability and inclusion training for health care workers in Tanzania  
▶ Future Learn: Improving Health Assessments for People with Intellectual Disabilities  
▶ Disability Training for Community Health Assistants in Zambia  
▶ Guidance on approaches to improve healthcare professionals’ competency on disability⁵⁰ |
| **Health Facilities** | Health-care services, including health-care facility infrastructure and information, are accessible for people with disabilities. | Establish accessibility criteria; audit facilities regularly; budget for accessibility retrofitting; design facilities and equipment for inclusion; develop incentives for accessibility. | ▶ Home Testing for COVID-19 in the United Arab Emirates  
▶ Sightsavers Accessibility Audit for health facilities⁵¹ |
| **Rehabilitation and Specialist Services** | Rehabilitation (such as physiotherapy, assistive technology and medical devices) and specialist services (like ophthalmology and mental health services) are available, affordable and of good quality for people with disabilities. | Map referral pathways for rehabilitation and specialist services; increase service availability through health practice supported by mobile devices (mHealth) and task-sharing; raise awareness among healthcare workers on importance of rehabilitation and specialist services. | ▶ Annual Health Checks for people with learning disabilities in the UK  
▶ Wheelchair user training in El Salvador, India, Kenya, Nicaragua, and Romania  
▶ Comprehensive community-based rehabilitation in Tanzania  
▶ National Rehabilitation Plan in Ukraine  
▶ Guidance on approaches to overcome barriers to access rehabilitation⁵²  
▶ Guidance on approaches to overcome barriers to access assistive technology⁵³  
▶ Care for Stroke – a web-based, smartphone-enabled educational intervention for management of physical disabilities following stroke⁵⁴ |

⁴⁸ Disability Evidence Portal. How do we ensure that social protection assistance initiatives work for people with disabilities?  
⁴⁹ International labour Organization. Disability Inclusive social protection.  
⁵⁰ Disability Evidence Portal. What works to improve healthcare professionals’ competency on disability?  
⁵¹ Sightsavers. Ensuring health facilities are accessible for all.  
⁵² Disability Evidence Portal. How can we overcome barriers to accessing rehabilitation for persons with disabilities in LMIC?  
⁵³ Disability Evidence Portal. How can we promote access to assistive technology for individuals with disabilities in Low- and Middle-Income Settings  
⁵⁴ Sureshkumar et al. 2015. Care for Stroke. BMJ Innovation
<table>
<thead>
<tr>
<th><strong>OBJECTIVE</strong></th>
<th><strong>EXAMPLE ACTIONS</strong></th>
<th><strong>GOOD PRACTICE EXAMPLES</strong></th>
</tr>
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</table>
| **Governance** | The ratification and adoption of international commitments are matched with the introduction of appropriate in-country laws, and policies that assert the right to reasonable accommodation and outlaw discrimination based on disability. | Review existing laws/policies; advocate for new or extend existing laws and/or policies; establish mechanisms to monitor implementation. | ▶ National Clinical Programme for people with disability in Ireland  
▶ Improving access to health care among people with disabilities in Uruguay  
▶ National Roadmap for Improving the Health of People with Intellectual Disability in Australia |
| **Leadership** | Disability is clearly articulated and represented in the Ministry of Health, health sector structures and coordination mechanisms. | Establish a designated committee or focal person(s) responsible for disability-related issues in the Ministry of Health; establish coordination structures which include people with disabilities; establish leadership on disability within crisis or disaster response actions. | ▶ COVID-19 Disability Advisory Group (CDAG) in Canada  
▶ Advisory Committee for the COVID-19 Response for People with Disability in Australia |
| **Health Financing** | There is sufficient earmarked budget for disability inclusion, AT, and rehabilitation. | Establish budgets for the provision of disability-inclusive health services (e.g. accessibility, assistive technology); co-ordination of Ministry of Health and Ministry of Finance on inclusive health budgets; make available and provide adequate reimbursement mechanisms to account for additional costs. | ▶ Dental health reimbursement for people with disabilities in Germany  
▶ National Disability Insurance Scheme in Australia  
▶ Coverage of disability-related services for children with disabilities in the Philippines |
| **Data & Evidence** | Data describing the health situation of people with disabilities and how their health can be improved are available, and evidence is generated to understand and improve delivery of health services. | Include measures of disability in health information systems and large-scale health surveys; undertake disability-specific surveys; undertake periodic review of health situation of people with disabilities. | ▶ Learning Disabilities Mortality Review (LeDeR) programme in the UK  
▶ Learning Disability Registers in the UK |
The Missing Billion road map to 2030 proposes a pathway to guide collective action to level up and tackle the main access barriers for people with disabilities in health. It provides guidance on the most impactful and feasible actions that can be taken by governments, health funders, and implementers.

The recommendations in this section were developed from the main findings of the report and checked with more than 10 international stakeholders (including representatives from bilateral agencies, people with disabilities, NGO experts, UN agencies, academics and experts from LMICs).

Establishing targets

People with disabilities have 2.4-fold higher mortality rates than those without disabilities and are denied 10 to 20 years of life expectancy. These gaps in life expectancy between people with and without disabilities can be closed by long-term investments in accessible, affordable, and quality healthcare. We must collaborate across multiple dimensions for disability inclusion.

Objective

Reduce the life expectancy gap of people with disabilities via disability-inclusive health systems that expect, accept, and connect people with disabilities to quality care.

Minimum targets:

**THE 4 MILLION TARGETS**

**SERVICE DELIVERY**

<table>
<thead>
<tr>
<th>Autonomy</th>
<th>Affordability</th>
<th>Human Resources</th>
<th>Health Facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 million additional people with disabilities are champions* for their right to healthcare</td>
<td>1 million additional people with disabilities in LMICs access health insurance and/or social protection</td>
<td>1 million additional health workers trained on disability</td>
<td>1 million health facilities audited and an additional 10,000 are inclusive</td>
</tr>
</tbody>
</table>

*Champions are defined as people who vigorously promote the right to health and support and encourage others to fulfil this right.

To contribute to these ‘4 Million Targets’, we urge countries to pledge for:

**SYSTEM FUNCTIONS**

<table>
<thead>
<tr>
<th>Governance</th>
<th>Leadership</th>
<th>Health Financing</th>
<th>Data &amp; Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disability-inclusive national health plans</td>
<td>Institutional leadership for disability-inclusive health</td>
<td>A health budget line for disability</td>
<td>Disaggregated health data by disability</td>
</tr>
</tbody>
</table>
We aim for stakeholders to align efforts and pledge actions over the next decade. By proposing a set of minimum targets – called the ‘4 Million Targets’, we want to encourage governments, donors, implementing partners, and civil society to reevaluate and align their efforts and approaches and consider how the efficiency and effectiveness of their commitments and contributions can be improved. A multi-sectoral approach will be needed, including actors beyond health, such as social protection, and Ministries of Finance, and of course Organizations of Person with Disabilities. These targets were established through discussion with key stakeholders, on the basis that they are: Specific and Measurable, Achievable through collective action, Relevant to the health system framework presented and Time-Bound to be realized by 2030.

Countries are both the drivers and the beneficiaries of progress towards these targets. Governments will lead efforts to define ambitious agendas and realize objectives.

**Priority actions**

To achieve these targets, we are proposing priority actions that can be implemented in the short-term and deliver long-term gains. The overview of actions is not comprehensive, so stakeholders are encouraged to revise these and add to it according to context and need.

### Proposed priority actions for the global health community

<table>
<thead>
<tr>
<th>OBJECTIVES</th>
<th>KEY GOALS</th>
<th>KEY ACTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autonomy &amp; Awareness</td>
<td>1 million additional people with disabilities are champions for empowered on their right to healthcare</td>
<td>Re-affirm rights in laws and policies</td>
</tr>
<tr>
<td>Affordability</td>
<td>1 million additional people with disabilities in LMIC’s access health insurance and/or social protection</td>
<td>Re-affirm or expand health benefits packages and/or financing schemes</td>
</tr>
<tr>
<td>Human Resources for Health</td>
<td>1 million additional health workers trained on disability</td>
<td>Incorporate disability in healthcare worker training curricula (foundational and on-the-job)</td>
</tr>
<tr>
<td>Health Facilities</td>
<td>1 million health facilities have been audited and an additional 10,000 are inclusive</td>
<td>Conduct accessibility audits of clinics and upgrade facilities</td>
</tr>
</tbody>
</table>

* $ low-cost; $$$ high-cost.*
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<td><strong>Governance</strong></td>
<td>Disability-inclusive national health plans</td>
<td>- Conduct assessments of national health sector plans</td>
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<td></td>
<td></td>
<td>- Fund technical assistance of governments according to assessments</td>
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<td></td>
<td></td>
<td>- Provide technical assistance to governments (NGOs)</td>
</tr>
<tr>
<td><strong>Leadership</strong></td>
<td>Institutional leadership for disability-inclusive health</td>
<td>- Establish clear responsibility in Ministry of Health for disabilities</td>
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<tr>
<td></td>
<td></td>
<td>- Fund design and set up of leadership programs to strengthen capacity in Ministries of Health</td>
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<td></td>
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<td>- Collaborate with leadership company/organization to provide training (OPDs)</td>
</tr>
<tr>
<td><strong>Health Financing</strong></td>
<td>A health budget line for disability</td>
<td>- Negotiate with Ministries of Health &amp; Finance counterparts and set budget line</td>
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<tr>
<td></td>
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<td>- Include budget line in all donor funding projects on disability</td>
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<tr>
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<td>- Fund costing analysis and investment case for systems improvements</td>
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<td>- Advocate with governments on the importance of data</td>
</tr>
<tr>
<td><strong>Data &amp; Evidence</strong></td>
<td>Disaggregated health data by disability</td>
<td>- Include disability disaggregation in national health surveys, analyze data and set targets for inclusion</td>
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<tr>
<td></td>
<td></td>
<td>- Fund technical assistance and analytical capacity for government-owned surveys, and dorm global database on all existing data</td>
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<td>- Run surveys</td>
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</tbody>
</table>

* *$ low-cost; $$$ high-cost*.  

## Measuring impact

Generating more data on the health, disaggregated by disability, while also using existing data more effectively is a priority so that we can count what matters and track progress. Opportunities include:

- **Analyze existing data:** In June 2022, the Global Health Data Exchange included 2,491 datasets with both health and disability indicators. This data is mostly un-analyzed with respect to disability and health and so a priority is to use this existing information.

- **Conduct more disability-specific surveys** to generate an in-depth understanding of the experiences of people with disabilities in terms of healthcare needs and coverage.

- **Include disability in routine health and demographic surveys**, such as MICS and Demographic and Household Surveys to generate large-scale comparable data.

- **Include disability indicators in medical records** to allow disaggregation. For instance, in Australia, France and Korea disability is measured in national health insurance programs and in the UK there is a Learning Disability Register linked to general practitioner records.

- **Undertake systematic reviews** of interventions to improve healthcare access for people with disabilities. Evidence and Gap Maps can show where sufficient data is available to allow a review.\(^{35}\)

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Activating a global movement

More needs to be done and can be done within the health system to reach people with disabilities and close the sizable mortality gap and other disparities. Without action to tackle barriers for the one billion people affected, SDG 3 and other health targets will not be realized. The authors of this report, along with members of the Advisory Panel, call all stakeholders to initiate and collaborate on the following to strengthen the implementation of disability-inclusive health systems.

In the words of Dr. Tedros Adhanom Ghebreyesus, Director General, World Health Organization:

"Including the experiences and skills of people living with disabilities in the design and delivery of health systems is fundamental to achieving Health For All". The first Missing Billion report described the widespread exclusion of people with disabilities from health systems, and how this led to worse health outcomes. Based on new data and systematic reviews, this report underlines how this exclusion makes it impossible to reach the SDGs, UHC and other health targets, or fulfil the right to healthcare of people with disabilities.

We have worked with people with disabilities to reimagine a health system where people with disabilities are expected, accepted, and connected, and the steps needed to achieve this vision.

Now is the time for us to come together as a global movement and pledge to improve access to healthcare for people with disabilities, and thereby achieve health for all.

---

### To all stakeholders:

1. Pledge to actions to close the mortality gap and to reimagine the health system for people with disabilities.

2. Raise awareness and advocate for systems that expect, accept and connect people with disabilities to quality care, both individually and through a global mobilization campaign.

3. Establish a consortium of global health actors committed to disability inclusion who work together towards a common goal. The ‘4 Million Targets’ and the priority actions suggested in this report can be the starting point for that collaboration.

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### To governments and implementers:

4. Measure and improve the level of disability inclusion in the health system (e.g., against the Missing Billion inclusive health systems framework).

5. Engage people with disabilities throughout policy development, service planning and delivery.

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### To funders:

6. Adjust health investments to be disability-inclusive with specified budget lines and accountability systems for monitoring progress.\(^\text{57}\)
   
   a. Mainstream disability - incorporate disability inclusion as a prerequisite condition throughout the full portfolio of health investments via bilateral, multilateral and partner engagement.
   
   b. Disability-focused investments – to meet the additional healthcare needs of people with disabilities.

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### To researchers and innovators:

7. Generate and analyze high quality data on healthcare needs of people with disabilities, potentially combined as a global reporting system with an annual report.

8. Co-design solutions and innovate where gaps exist.

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\(^{56}\) Dr. Tedros [\(@\text{drtedros}\)]. 2022, January 4. Twitter.

\(^{57}\) Guidance on disability-inclusive planning and budgeting is provided by CBM, 2012, Inclusion made easy.
### 6.1. Life Expectancy scoping table

<table>
<thead>
<tr>
<th>Study</th>
<th>Impairment type</th>
<th>Location</th>
<th>Population</th>
<th>Average life expectancy gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zheng XY, Chen S.J., <em>Life expectancy of people with physical disabilities in China.</em></td>
<td>Any functional impairment</td>
<td>China</td>
<td>all</td>
<td>13-17 years</td>
</tr>
<tr>
<td>Tareque MI, Chan A, Saito Y, Ma S, &amp; Malhotra R., <em>The Impact of Self-Reported Vision and Hearing Impairment on Health Expectancy.</em></td>
<td>Hearing and vision impairment</td>
<td>Singapore</td>
<td>60+</td>
<td>4 years</td>
</tr>
<tr>
<td>Heslop, P. et al., <em>The Confidential Inquiry into Premature Deaths of People with Intellectual Disabilities in the UK: A Population-based Study.</em></td>
<td>Intellectual disability</td>
<td>UK</td>
<td>5-75</td>
<td>13-20 years</td>
</tr>
<tr>
<td>Walker et al., <em>Mortality in Mental Disorders and Global Disease Burden Implications: A Systematic Review and Meta-analysis.</em></td>
<td>Mental disorders</td>
<td>Global</td>
<td>-</td>
<td>10 years</td>
</tr>
<tr>
<td>Hjorthøj C, Stürup AE, McGrath JJ, Nordentoft M, <em>Years of potential life lost and life expectancy in schizophrenia: a systematic review and meta-analysis.</em></td>
<td>Schizophrenia</td>
<td>Global</td>
<td>all</td>
<td>20-27 years</td>
</tr>
<tr>
<td>Fekadu, A. et. al., <em>Excess mortality in severe mental illness: 10-year population-based cohort study in rural Ethiopia.</em></td>
<td>Severe mental illness</td>
<td>Ethiopia</td>
<td>18+</td>
<td>28 years</td>
</tr>
</tbody>
</table>
### 6.2. Data tables from UNICEF Multiple Indicator Cluster Surveys (MICS) analysis

**Definitions:** The adjusted prevalence ratio (aPR) is the ratio of prevalence of the outcome in those with a disability to the prevalence without a disability, adjusting for age. The 95% confidence interval (95% CI) is a range of values that you can be 95% confident contains the true mean of the population.


**Regions:** East Asia and Pacific (EAP), Europe & Central Asia (ECA), Latin America and the Caribbean (LAC), Middle East and North Africa (MENA), South Asia (SA), Sub-Saharan Africa (SSA).

<table>
<thead>
<tr>
<th>Health status/development</th>
<th>All children</th>
<th>Regional estimates</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% disabled</td>
<td>% non-disabled</td>
<td>aPR (95% CI)</td>
</tr>
<tr>
<td><strong>Acute respiratory infection in past two weeks</strong></td>
<td>34%</td>
<td>27%</td>
<td>1.2 (1.1-1.4)</td>
</tr>
<tr>
<td><strong>Diarrhoea in past two weeks</strong></td>
<td>18%</td>
<td>13%</td>
<td>1.4 (1.1-1.7)</td>
</tr>
<tr>
<td><strong>Fever in past two weeks</strong></td>
<td>28%</td>
<td>23%</td>
<td>1.2 (1.0-1.5)</td>
</tr>
<tr>
<td><strong>Early Child Development index</strong></td>
<td>38%</td>
<td>56%</td>
<td>0.7 (0.6-0.7)</td>
</tr>
<tr>
<td><strong>Wasted</strong></td>
<td>8%</td>
<td>5%</td>
<td>1.4 (1.0-2.2)</td>
</tr>
<tr>
<td><strong>Stunted</strong></td>
<td>39%</td>
<td>32%</td>
<td>1.2 (1.0-1.4)</td>
</tr>
<tr>
<td><strong>Overweight</strong></td>
<td>5%</td>
<td>5%</td>
<td>1.0 (0.7-1.7)</td>
</tr>
</tbody>
</table>

**Preventative**

<table>
<thead>
<tr>
<th></th>
<th>All children</th>
<th>Regional estimates</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ever breastfed (age 2)</strong></td>
<td>87%</td>
<td>85%</td>
<td>1.0 (1.0-1.1)</td>
</tr>
<tr>
<td><strong>Population under 5 that slept under a bednet</strong></td>
<td>85%</td>
<td>83%</td>
<td>1.0 (1.0-1.1)</td>
</tr>
</tbody>
</table>

**Treatment**

<table>
<thead>
<tr>
<th></th>
<th>All children</th>
<th>Regional estimates</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sought care for acute respiratory infection</strong></td>
<td>55%</td>
<td>51%</td>
<td>1.1 (1.0-1.2)</td>
</tr>
<tr>
<td><strong>Sought care for diarrhea</strong></td>
<td>57%</td>
<td>52%</td>
<td>1.1 (0.9-1.3)</td>
</tr>
<tr>
<td><strong>Sought care for fever</strong></td>
<td>57%</td>
<td>52%</td>
<td>1.1 (1.0-1.2)</td>
</tr>
<tr>
<td><strong>Received any oral rehydration salts</strong></td>
<td>33%</td>
<td>29%</td>
<td>1.1 (0.9-1.4)</td>
</tr>
<tr>
<td><strong>Treatment with ACT among children who receive anti-malarials</strong></td>
<td>7%</td>
<td>7%</td>
<td>0.9 (0.4-2.2)</td>
</tr>
</tbody>
</table>

---

*https://mics.unicef.org/*
<table>
<thead>
<tr>
<th>Maternal and reproductive health indicators</th>
<th>All women</th>
<th>Regional estimates</th>
</tr>
</thead>
</table>
|                                             | % disabled | % non-disabled | aPR
(95% CI) | EAP | ECA | LAC | MENA | SA | SSA |
| HIV                                         |           |                |           |     |     |     |      |    |     |
| Counselling during ANC                      | 39%       | 38%            | 1.0
(0.8-1.4) | -   | 0.9
(0.4-1.8) | 1.0
(0.8-1.2) | 1.0
(0.1-6.6) | 1.5
(0.3-7.3) | 1.0
(0.9-1.3) |
| Testing during ANC                          | 54%       | 54%            | 1.0
(0.9-1.2) | 1.2
(0.7-1.9) | 1.1
(0.6-1.8) | 1.0
(0.9-1.1) | 0.5
(0.1-2.2) | 0.7
(0.1-6.8) | 1.0
(0.9-1.2) |
| Malaria*                                    |           |                |           |     |     |     |      |    |     |
| 3+ doses of IPT for malaria in pregnancy    | 23%       | 15%            | 1.5
(0.6-3.8) | -   | -   | -   | -    | -  | 1.5
(0.6-3.8) |
| Percent of pregnant women who slept under bednet | 90%   | 90%            | 1.0
(1.0-1.0) | -   | -   | -   | -    | -  | 1.0
(1.0-1.0) |
| Family Planning                             |           |                |           |     |     |     |      |    |     |
| Contraceptive coverage for women married/in union | 44% | 48% | 0.9
(0.8-1.0) | 1.0
(0.7-1.3) | 1.0
(0.7-1.2) | 1.0
(0.9-1.1) | 1.0
(0.9-1.1) | 0.8
(0.8-0.9) | 0.9
(0.7-1.2) |
| Maternal Health                             |           |                |           |     |     |     |      |    |     |
| 4 or more ANC visits                        | 74%       | 74%            | 1.0
(1.0-1.0) | 1.1
(1.0-1.2) | 1.0
(1.0-1.1) | 1.0
(0.9-1.1) | 1.0
(0.7-1.4) | 1.1
(1.0-1.3) |
| Institutional delivery                      | 86%       | 85%            | 1.0
(1.0-1.0) | 1.0
(1.0-1.0) | 1.0
(1.0-1.0) | 1.0
(1.0-1.0) | 1.0
(0.8-1.3) | 1.1
(1.0-1.2) |
| Qualified ANC provider                      | 95%       | 95%            | 1.0
(1.0-1.0) | 1.0
(1.0-1.0) | 1.0
(1.0-1.0) | 1.0
(1.0-1.0) | 1.0
(0.9-1.1) | 1.0
(1.0-1.0) |
| Skilled birth attendant                     | 80%       | 80%            | 1.0
(1.0-1.0) | 1.0
(1.0-1.0) | 1.0
(1.0-1.0) | 1.0
(1.0-1.0) | 1.0
(0.7-1.3) | 1.1
(1.0-1.2) |

* data available for 13 countries: Central African Republic, Chad, Democratic Republic of Congo, Ghana, Guinea-Bissau, Guyana, Lao, Madagascar, Malawi, Sao Tome et Principe, Sierra Leone, Togo, and Zimbabwe
<table>
<thead>
<tr>
<th>Population health indicators</th>
<th>All adults</th>
<th>Regional estimates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% disabled</td>
<td>% non-disabled</td>
</tr>
<tr>
<td>HIV testing and knowledge (adults)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comprehensive knowledge about HIV prevention</td>
<td>21%</td>
<td>28%</td>
</tr>
<tr>
<td>Knowledge of mother-to-child transmission</td>
<td>37%</td>
<td>38%</td>
</tr>
<tr>
<td>Tested in the past 12 months</td>
<td>14%</td>
<td>13%</td>
</tr>
<tr>
<td>Ever tested</td>
<td>41%</td>
<td>43%</td>
</tr>
<tr>
<td>Sexually active young people (15-24) who have been tested for HIV and know the result</td>
<td>54%</td>
<td>49%</td>
</tr>
<tr>
<td>Health insurance (all ages)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health insurance coverage (18-49)</td>
<td>12%</td>
<td>11%</td>
</tr>
<tr>
<td>Health insurance coverage (5-17)</td>
<td>19%</td>
<td>21%</td>
</tr>
<tr>
<td>Health insurance coverage (2-4)</td>
<td>12%</td>
<td>11%</td>
</tr>
<tr>
<td>Malaria (all ages)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Population slept under a bednet (all ages)</td>
<td>68%</td>
<td>70%</td>
</tr>
</tbody>
</table>

* data available for 13 countries: Central African Republic, Chad, Democratic Republic of Congo, Ghana, Guinea-Bissau, Guyana, Lao, Madagascar, Malawi, Sao Tome et Principe, Sierra Leone, Togo, and Zimbabwe
6.3. Detailed User Journeys demonstrating the vision for inclusive health system.

Personas and their journeys derived through interviews with proxy users and key informants, and qualitative literature review.
### Dustin, man with intellectual disabilities accessing dental care services in USA

<table>
<thead>
<tr>
<th>USER ACTIONS</th>
<th>Connected</th>
<th>Expected</th>
<th>Accepted</th>
<th>Connected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dustin notices some discoloration in the mirror post brushing. He recognises early signs of tooth decay from his lesson on recognising early indicators, conducted at the group home.</td>
<td>Dustinalertscaregiver,thecaregiveratthegrouphomebooksanappointmentfordustinatthedentalclinic.Dustingetsextra-longappointmentsothatheisnearlyrushed.</td>
<td>ThedentistlooksatDustin'smedicalhistory,asksquestionsabouthispaininsimplelanguageandchecksissuethatDustinisabletocomplywiththedoctorbecauseshethatorexperiencedentalpainbefore.</td>
<td>ThehealthcarestafffollowupwithDustininthesamevisittosupervisepainlessnesssthatDustinisabletocomplywith.</td>
<td>ThedentistmadesimplenotesforDustinotetoreturnonanearlycoordinatedentalsession.</td>
</tr>
</tbody>
</table>

| SYSTEM REQUIREMENTS | Development of accessible and simple health information to monitor subtle, early indicators of illness | Registration of people with disability in a central database along with their medical records, allowing for benefits such as post-hours checkups and disability pension | Training and tools for healthcare providers to communicate and provide information in ways that are easy for the patient to understand | Follow up and remote consultations post healthcare visits |

### Morowa, woman with physical impairment accessing maternal health services in Ghana

<table>
<thead>
<tr>
<th>USER ACTIONS</th>
<th>Connected</th>
<th>Expected</th>
<th>Accepted</th>
<th>Connected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morowa reachers out to her community health worker for the antenatal checkup. Morowa explains that although she wants to attend, she cannot position her wheelchair to the health centre as it is too far and the public bus isn’t accessible.</td>
<td>ThecommunityhealthworkerarrangesforanaccessibleambulancetopickupanddropmorowaforANCvisitsandalsoforthecarriage.</td>
<td>Thehospitalhasteamworkthatmadensureshowsthattheverticalimpairedpersonisaidtogetoutofherwheelchairandassistsheingettingonthebed.</td>
<td>Afterthedeathofthepatient,thedoctorrecommendsexerciseathomeforshecanconductthecarethroughremotevideoconferencing.</td>
<td>Uponreachinghome,Morowareceivesthedocorderadviceonhermobilephonealongwithareviewofvirtualglobalhyperlinksongroupsofnursesthatcanconductremotevisitsforthebettermentofhercare.</td>
</tr>
</tbody>
</table>

| SYSTEM REQUIREMENTS | Monitoring information on who is able to access healthcare and who isn’t as well as difference in frequency of recurring visits | Creating a concrete response to improve outcomes and prevent dropout for those who are unable to access healthcare | Information on healthcare accessibility requirements for a broad range of disabilities for planning. Accessibility requirements consider physical access, construction, and operation of buildings and facilities, products and equipment, and transportation vehicles. | Medical education and research expands to include healthcare scenarios for people with disabilities |

Morowa has list of people with disabilities in the community.
### Simon & Tuwafu, boy with hearing impairment, and his father seeking specialized hearing services in Malawi

<table>
<thead>
<tr>
<th>USER ACTIONS</th>
<th>Expected</th>
<th>Accepted</th>
<th>Connected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuwafu notices that Simon only hears them when he looks at them. The school alerts Tuwafu that Simon is not able to follow in class and it may be a sign of hearing loss.</td>
<td>The school advises Tuwafu to connect with the frontline health worker and share the problem. The health worker does some basic screening tests and explains the results in simple language.</td>
<td>Since the hospital is 100 km away, the health worker books a van for Simon &amp; Tuwafu to reach the hospital. Once at the hospital, the doctor calls Simon &amp; Tuwafu in at the scheduled time.</td>
<td>The doctor is very patient and friendly with Simon. He conducts a detailed hearing test for Simon along with some additional tests to rule out any other conditions. The doctor suggests and provides a hearing aid for Simon.</td>
</tr>
<tr>
<td>SYSTEM REQUIREMENTS</td>
<td>Development of accessible and simple health information to monitor subtle, early indicators of illness</td>
<td>Development of simple tools to help frontline health workers screen and identify disabilities.</td>
<td>A standard operating procedure for healthcare visits available in accessible forms</td>
</tr>
</tbody>
</table>

### Sylvia & Maria, a girl born with Zika and her mother, accessing health services for an ear infection in Brazil

<table>
<thead>
<tr>
<th>USER ACTIONS</th>
<th>Expected</th>
<th>Accepted</th>
<th>Connected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maria notices a change in Sylvia's behaviour, that she's irritable and crying a lot. She notices a discharge coming out of Sylvia's ear.</td>
<td>Maria searches for a nearby ear clinic and scans through its information handout to understand what the visit would be like and the accommodations in place.</td>
<td>Maria &amp; Sylvia reach the clinic using the bus. They are able to get a walk-in appointment without waiting a lot.</td>
<td>The doctor is very calm and friendly with Sylvia. She conducts a detailed ear examination for Sylvia along with some additional tests to rule out any other conditions. She writes down the medication.</td>
</tr>
<tr>
<td>SYSTEM REQUIREMENTS</td>
<td>A standard operating procedure and accommodations for healthcare visits available in simple language</td>
<td>Training of health workers, i.e. primary healthcare workers, about disabilities</td>
<td>Follow-up and remote consultations post healthcare visits</td>
</tr>
</tbody>
</table>