The Missing Billion

> ACCESS TO HEALTH SERVICES FOR 1 BILLION PEOPLE WITH DISABILITIES

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Executive Summary

Context

The global health community has set overarching, ambitious goals for 2030:

- The United Nation's Sustainable Development Goal 3 (SDG 3), to **"ensure healthy lives and promote well-being for all at all ages."**[1]
- **The World Health Organization's "triple billion" targets**—one billion more people benefitting from Universal Health Care (UHC); one billion more people better protected from health emergencies; and one billion more people enjoying better health and well-being.[2]

Underlying each of these two goals is the achievement of UHC itself, which will be subject to further deliberations in September 2019 during the UN High-Level meeting. Through all of these efforts, the global health community is committed to "reach the unreached" and "leave no one behind." The UN resolution on the 2030 Agenda for Sustainable Development even committed to "reaching the furthest behind first".[3] Yet it is clear that the targets of SDG 3 cannot be met without accelerated progress in general,[4] and, specifically, better efforts to include marginalised groups, such as people with disabilities.

This report

One billion people around the world live with disabilities. This report makes the case that they are being "left behind" in the global community's work on health. This lack of access not only violates the rights of people with disabilities under international law, but UHC and SDG 3 cannot be attained without better health services for the one billion people with disabilities.

People with disabilities include those with long-term physical, mental, intellectual, developmental, or sensory impairments. These impairments—in interaction with various barriers—may stop people from participating equally in society. There are one billion people with disabilities globally, and they are concentrated in low- and middle-income countries and the poorest sections of society.[5]

Health and healthcare are critical issues for people with disabilities. People with disabilities often need specialized medical care related to the underlying health condition or impairment (e.g., physiotherapy, hearing aids). They also need general healthcare services like anyone else (e.g., vaccinations, antenatal care). On average, those with disabilities are more vulnerable to poor health, because of their higher levels of poverty and exclusion, and through secondary conditions and co-morbidities.

People with disabilities therefore may require higher levels of prevention, diagnosis, and treatment services. However, health services are often lower quality, not affordable, and inaccessible for people with disabilities. In many situations these barriers are even more significant for women with disabilities, compared to men with disabilities.[6]

People with disabilities face higher healthcare needs, more barriers to accessing services, and less health coverage, resulting in worse health outcomes.

The authors of this report—with the support of a Steering Committee—have brought together existing knowledge on access to health services for people with disabilities. Additionally, we have provided a human experience perspective of those living with disabilities, as well as some practical principles and seven immediate actions for change, and recommendations that should inform the way forward. We hope that the needs of people with disabilities will

[1] United Nations, Sustainable Development Goals Platform, SDG 3, 2015.
[2] World Health Organization, "Thirteenth general program of work 2019–2023," 2019.
[3] UN Resolution A/RES/70/1, September 2015.
[4] John McArthur, Krista Rasmussen, and Gavin Yamey, "How many lives are at stake? Assessing 2030 sustainable development goal trajectories for maternal and child health," Brookings Institute, February 15, 2018.
[5] L.M. Banks, H. Kuper, S. Polack, "Poverty and disability in low- and middle-income countries: A systematic review," PLoS ONE 12(12)(Dec. 21, 2017): e0189996. https://doi.org/10.1371/journal.pone.0189996
[6] World Health Organization, "World Report on Disability", 2011.

be recognized by governments, health funders, and global health leaders as essential for SDG 3 and UHC achievement and that country-level planning mechanisms will take particular consideration of their access barriers and needs.

Key messages from this report:

- **UHC and SDG 3 are unattainable without better health services for the 1 billion people with disabilities:** Across all indicators of SDG 3, studies from different countries and including people with different or multiple types of impairments have shown that people with disabilities **have worse health access and poorer health outcomes.** That means that current systems are failing them. If the current approach remains inconsiderate of specific needs of people with disabilities, then UHC, SDG 3, and WHO's triple-billion target are unattainable, given that 15% of the world's population has some form of severe or moderate disability.

EXAMPLES:

DIABETES
3X MORE LIKELY

HIV/AIDS
2X MORE LIKELY

MALNOURISHED AND DIE AS A CHILD
2X MORE LIKELY

SERIOUSLY ILL AS A CHILD
10X MORE LIKELY

CATASTROPHIC HEALTH EXPENDITURE
50X MORE LIKELY

HEALTH SYSTEM REASON FOR LOW LIFE EXPECTANCY
40% OF CASES

NOTE: The references to these statistics are listed in the main body of the report.

- **UHC and SDG 3 are not the only reasons why this matters:** Improving access to healthcare for people with disabilities is critical to ensuring compliance with international law, avoiding unnecessary cost for the health system, and achieving all SDGs (given these goals' interdependence). Most importantly, it is essential for ensuring the attainment of everyone's individual highest quality of life and well-being. Designing health systems with consideration of people with disabilities will also improve health services for everyone.
- **A targeted strategy inclusive of the needs of people with disabilities is necessary; some actions can be taken immediately.** The 1 billion people with severe or moderate disabilities worldwide are not a homogenous group. Further work is required to better understand differentiated needs and responses. However, while this strategy may take time, some changes can be implemented immediately. These include health worker training about disability awareness, provider accessibility audits, and making health information accessible.

People with disabilities need to be recognized as a key population that requires a long-term strategic approach, but also immediate action.

Recommendations

Given these findings we recommend the following actions:

- To **global policy makers** – (i) Recognize persons with disabilities as a large vulnerable population that represents a critical pathway risk for UHC; (ii) Ensure that the health needs of people with disabilities and their access barriers are addressed in in-country UHC and SDG 3 Action planning processes; (iii) Consider health access for people with disabilities a key driver of and metric for UHC achievement
- To **governments** – (i) Develop and/or reform health and disability laws, policies and plans; (ii) improve access; (iii) review budgets for addressing access barriers, rehabilitation services and assistive technologies; (iv) collect data on health disaggregated by disability
- To **funders** – (i) Develop/review criteria for grant making to make sure that all programming ensures equitable access for people with disabilities; (ii) Make catalytic investments in activities that we know will have impact on improving healthcare access for this group; 7 areas of immediate actions are included in this report; (iii) Invest in further operational research and human-centered design work to strengthen our knowledge and understanding of the barriers to healthcare facing people with disabilities
- To **implementers and advocates** – (i) Ensure that all health services, programming, and trainings consider the needs of people with disabilities; (ii) Create a coalition of organizations and advocates focused on this topic to organize a shared strategy to hold policy-makers and governments accountable

Actions are required by all stakeholders to improve health services for people with disabilities. All in-country planning and implementation work needs to address particular access barriers for people with disabilities.

This Report

This report includes the following sections:

1. **The case: People with disabilities are pathway-critical for the achievement of UHC and SDG 3**
2. **Informing a better approach: Current situation, principles for change, and immediate actions**
3. **The importance of data and metrics**
4. **Recommendations**

1. The case: People with disabilities are pathway-critical for the achievement of UHC and SDG3

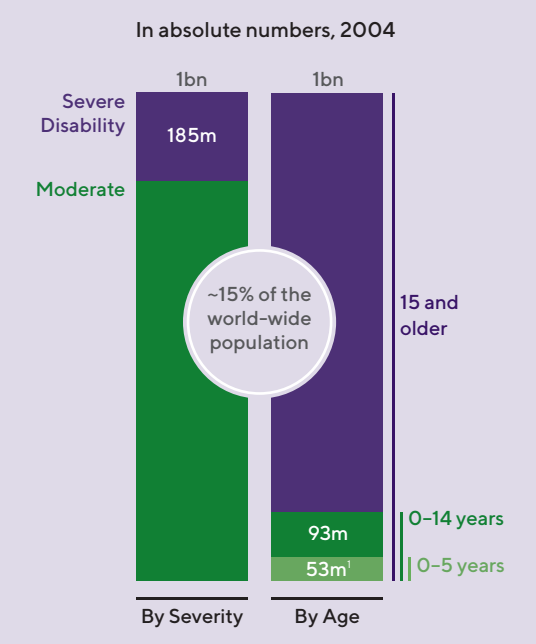
Disability is a core element of the 2030 Sustainable Development Goals agenda

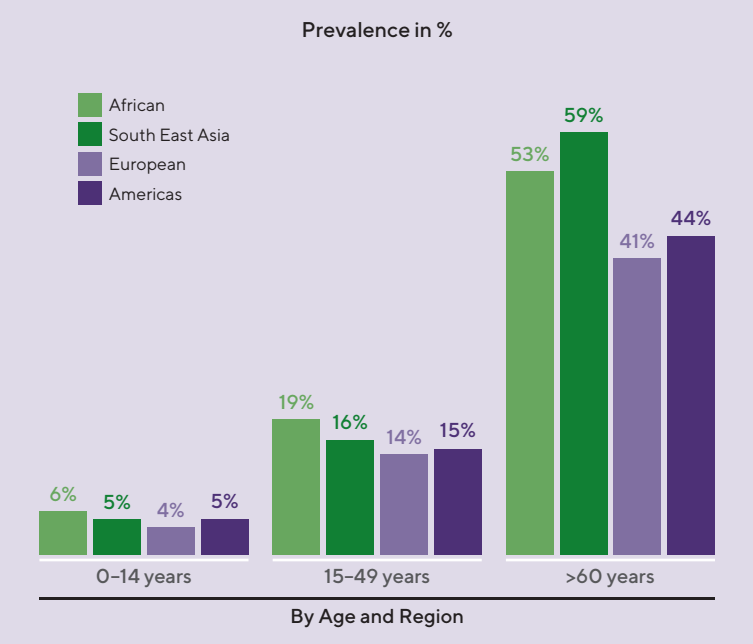
The 2010 World Disability Report estimated that there are one billion people with severe or moderate disabilities globally. As the graphs below show, disability is most common among older people and in lower-resource settings. Yet still, worldwide, around 100 million children have severe or moderate disabilities. With trends such as growth and ageing, shifting disease burden and the climate crisis these numbers are expected to increase significantly.

What is disability? According to the UNCRPD the definition of disability is:[7] Persons with disabilities include those who have 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.

Across the world, people with disabilities are more likely to be poor, excluded from education and employment opportunities, and face social exclusion and poor quality of life. In recognition of these gaps, the SDG framework explicitly emphasizes including people with disabilities in terms of education, employment, reducing inequality, inclusive settlements, and data collection as part of its commitment "to leave no one behind."

People with disabilities, severe or moderate





[1] HME Lancet report on developmental disabilities 2018. Source: World Disabilities Report

[7] The UNCRPD definition of disability was not used in the World Report on Disability to estimate the global magnitude at 1 billion people. Instead, the ICF-compatible definition of disability was used. In the ICF, disability is an umbrella term for impairments, activity limitations, and participation restrictions, denoting the negative aspects of the interaction between an individual (with a health condition) and that individual's contextual factors (environmental and personal factors).

The UNCRPD is also critical for ensuring disability-inclusive development to close these gaps. This international human rights treaty, adopted in 2006, had 161 signatories as of 2019. Parties to the Convention are required to promote, protect, and ensure the full enjoyment of human rights by persons with disabilities, and to ensure that they enjoy full equality under the law.

The focus on disability, however, is less clear in the health development agenda. SDG 3 does not explicitly mention disability, although, of course, UHC (SDG target 3.8) implicitly includes people with disabilities. Some health-related policy frameworks do include disability. For instance, the WHO Disability Action Plan 2014-2021 provides specific guidance for improving the health of people with disabilities, in terms of better access to healthcare and rehabilitation, and improved data collection. UNCRPD does address equality in terms of the right to health in Article 25 and habilitation and rehabilitation in Article 26,[8] which means that signatories are under immediate obligation to tackle discrimination in access to health. However, the UNCRPD country evaluations make it clear that current efforts are inadequate to achieve equity in healthcare access.

Health inequities and poorer results for people with disabilities

There are three important points with respect to the need for healthcare for people with disabilities.

First, on average, people with disabilities are more likely to experience poor health. A variety of factors drives this vulnerability to poor health among people with disabilities, including the existence of an underlying health condition/impairment, higher levels of poverty, stigma, and discrimination, and barriers faced to accessing healthcare services.

> A recent international cross-sectional study showed that in almost half the thirty countries studied, children with disabilities had at least five times greater odds of reporting having been seriously ill in the last year than children without disabilities.[9]

Second, people with disabilities need health services like anyone else. This includes access to promotion, prevention, diagnosis, and treatment, including sexual and reproductive health services. However, because they are more likely to experience poor health, they will have an even greater need for services compared to others in the population.

Third, people with certain impairments may also require specialized medical treatment or rehabilitation services (e.g. occupational therapies, psychological care, or the fitting of an assistive technology).

Collectively, these points mean that on average, people with disabilities will have greater need for healthcare services, including both general and specialist services. Yet, as discussed in more detail below, people with disabilities face different barriers to accessing healthcare, such as poverty, inaccessible transport, negative attitudes and poor training of healthcare workers and lack of social support. As a consequence, people with disabilities may have lower coverage of healthcare services, despite their greater need.

> A recent systematic review, including 127 studies from low- and middle-income countries, shows that people with disabilities tend to have higher need for general healthcare services, but poorer coverage, more healthcare expenses, and low access to specialist healthcare services, such as rehabilitation and assistive technologies.[10,11]

Who are people with disabilities and what could their health concerns be?

People with disabilities are not a homogeneous group, and include people with different impairment types, and varying in age, gender, and country of residence. This will influence their healthcare needs and access. For instance, children with disabilities need early identification and additional support in their early years to allow them to maximize their development and functioning. Older adults with disabilities are particularly likely to experience multiple impairments, which makes seeking healthcare more difficult. Women with disabilities may face dual discrimination, on the basis of gender and disability, and so have greater difficulties accessing services. Based on qualitative studies and interviews, the following representative personas provide a better understanding of what an individual's situation might be.

[8] Convention on the Rights of Persons with Disabilities, New York, 2006.

[9] H. Kuper, et al., "The impact of disability on the lives of children; cross-sectional data including 8,900 children with disabilities and 898,834 children without disabilities across 30 countries," PLoS One, 9(9):e107300 (September 9, 2014).

[10] T. Bright, S. Wallace, H. Kuper, "A Systematic Review of Access to Rehabilitation for People with Disabilities in Low- and Middle-Income Countries," International Journal of Environmental Research and Public Health 15(10); (Oct. 2, 2018).

[11] T. Bright, H. Kuper, "A Systematic Review of Access to General Healthcare Services for People with Disabilities in Low and Middle Income Countries," International Journal of Environmental Research and Public Health 15(09); E2165 (Aug 30, 2018).

These personas will follow the reader through the remainder of the report.

United States
Dustin

Man with intellectual disabilities

"I am 20 years old. I live in a group home."

"My teeth hurt at night."

Malawi
Simon & Tuwafu

Boy with hearing impairment, and his father

"My 8 year old son, Simon, he cannot hear. I am a farmer with four children."

"I want Simon to get treatment for his hearing loss."

Ghana
Morowa

Woman with a physical impairment

"I am a 27-year-old mother."

"I am 7 months pregnant and am expecting my second child."

South Africa
Anesu

Woman with visual impairment and HIV

"I am 17 years old and I go to school. I was born blind and contracted HIV when I was younger."

"I am now on ARV treatment."

Brazil
Sylvia & Maria

Girl born with Zika syndrome, and her mother

"My Sylvia is 3 years old, she is a very calm child. I noticed some discharge from her little ear."

"We need to check if it is an ear infection."

Personas and their journeys derived through interviews with proxy users and key informants, and qualitative literature review

As is clear from the personas described above, people with disabilities are a very diverse group and have different health care needs. These needs will also vary over time. For instance, Sylvia (the child born with Zika) has multiple and severe impairments and needs early intervention with regular physiotherapy and speech and language support to help her maximize her functioning. But she can also experience regular health concerns, like an ear infection as described here, which must be addressed in addition to her chronic needs.

To further understand the current health situation of people with disabilities, the authors reviewed, for the purpose of this report, the existing literature in relation to health and health outcomes in the context of the SDG 3 indicators specifically.

In the context of SDG 3, examples from studies suggest that people with disabilities ...

TARGET 3.1 REDUCE MATERNAL MORTALITY

- Have higher prevalence of **pre-term births** and **low weight** babies (up to 2x)
- Have higher prevalence of **still births** (1.5x)

TARGET 3.2 END ALL PREVENTABLE DEATHS UNDER 5 YEARS OF AGE

- Are more likely to be **malnourished** (up to 3x) and **die from malnutrition** (2x)
- Are more likely to suffer from **severe diarrhea** (2x)
- Are more likely to experience **serious illness** in the last year (up to 10x)

TARGET 3.3 FIGHT COMMUNICABLE DISEASES

- Have higher **HIV prevalence** (2x), and **higher risk of infection**

TARGET 3.4 REDUCE MORTALITY FROM NON-COMMUNICABLE DISEASES AND PROMOTE MENTAL HEALTH

- Have a higher **diabetes** prevalence (up to 3x)
- Have a higher **cardiovascular** prevalence (2x)
- Have higher rates of **suicidal ideation**

TARGET 3.5 PREVENT AND TREAT SUBSTANCE ABUSE

- Are more likely to **abuse substances**

TARGET 3.7 UNIVERSAL ACCESS TO SEXUAL AND REPRODUCTIVE CARE, FAMILY PLANNING, AND EDUCATION

- Are less likely to use **reversible contraceptives** and more likely to be sterilized

TARGET 3.8 ACHIEVE UNIVERSAL HEALTH COVERAGE

- **Access**: Are less likely to access services (e.g. ANC services, outpatient care when needed, mammograms, assistive devices, etc.)
- **Quality**: Are more likely to find healthcare provider's skills and facilities inadequate (2x)
- **Affordability**: 50% cannot afford healthcare, 50% more likely to suffer catastrophic health expenditure

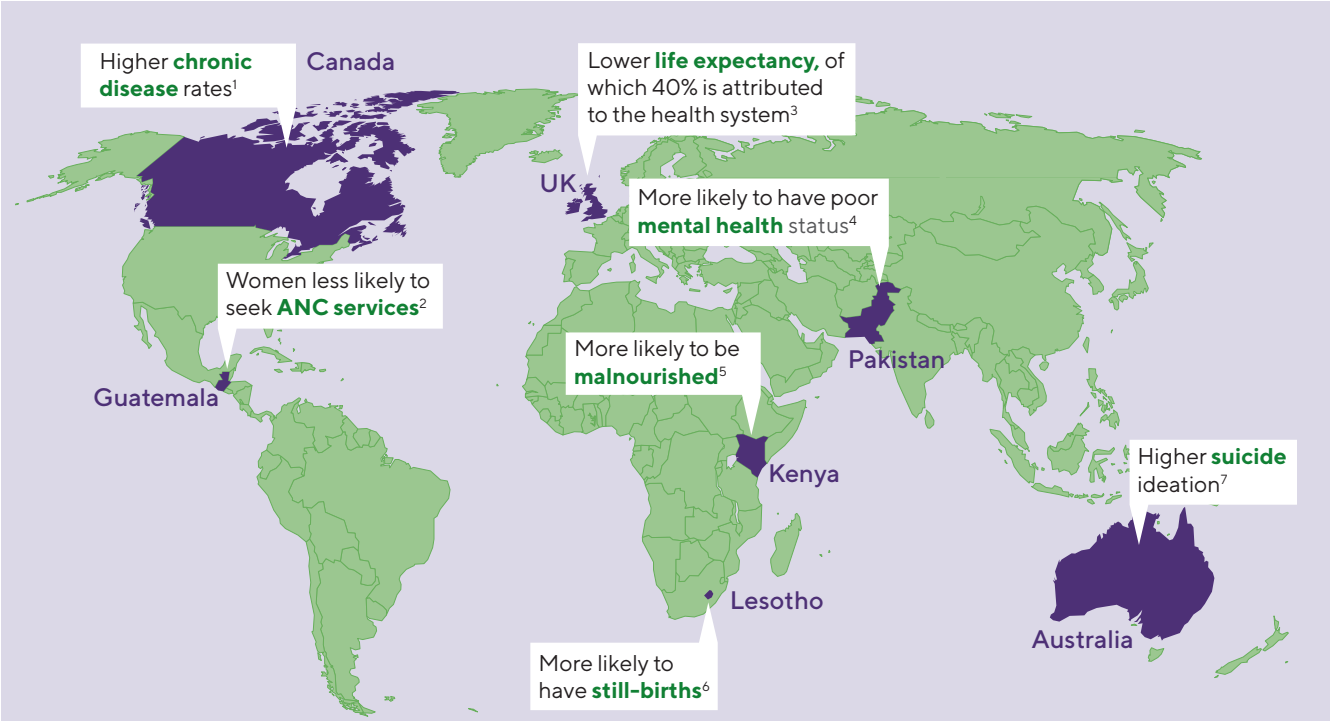
TARGET 3.9 REDUCE ILLNESSES AND DEATH FROM HAZARDOUS CHEMICALS AND POLLUTION

- Are 30% more likely to live in areas with **environmental risks** (toxins)

Note: 3.6 (road traffic accidents) not included; sources for all data points in appendix

This pattern of outcomes in terms of SDG 3 indicators is global in nature, with examples from all over the world.

Examples from studies suggest disparities in health outcomes for people with disabilities in all parts of the world



1 Reichard A et al, "Health disparities among adults with physical disabilities or cognitive limitations compared to individuals with no disabilities in the US." Disability Health Journal

2 Kuper H et al, "Can we achieve universal health coverage without a focus on disability? Results from a national case-control study in Guatemala." PLoS One

3 University of Bristol, Annual Report, the Learning Disabilities Mortality Review Programme

4 World Health Organization, Model Disability Survey Pakistan

5 Kuper H et al, "Malnutrition and Childhood Disability in Turkana, Kenya: Results from a Case-Control Study." PLoS One

6 Kamaleri Y et al "Living Conditions among People with Disabilities in Lesotho A National Representative Study." SINTEF Technology and Society: Global Health and Welfare

7 Australian Institute of Health and Welfare, "Health of Australians with disability: health status and risk factors"

Currently, people with disabilities have poorer healthcare outcomes, access, and coverage for all SDG 3 indicators. This pattern is seen across the world, and for people with different impairment types.

These health gaps matter

Addressing the health gaps experienced by people with disabilities is critical for several reasons:

1. **Achieving global health goals, i.e. SDG 3:** Already, current projections show that the world is "off-target" to meet SDG 3.[12] However, SDG 3 and all its sub-indicators (such as the aspiration of UHC, reducing child mortality, reducing the burden of NCDs, and eliminating the epidemics of AIDS and malaria) will become unachievable if the gap in health and healthcare access persists for the 1 billion people with disabilities.
2. **Complying with international law:** People with disabilities have the right to equal access to the highest attainable standard of physical and mental health and rehabilitation without any discrimination, according to UNCRPD Article 25 and Article 26. These rights/obligations are often not fulfilled. Indeed, lack of equity in access to healthcare for people with disabilities will likely reflect the lack of inclusion of people with disabilities in society more widely, as well as perpetuate discrimination against them and the disability experience.

[12] John McArthur, Krista Rasmussen, and Gavin Yamey, "How many lives are at stake? Assessing 2030 sustainable development goal trajectories for maternal and child health," Brookings Institute, February 15, 2018.

3. **Improving health services for all through universal design:** "Universal design" is an approach that ensures services and products are usable by all people to the greatest extent possible. If a design works well for people with disabilities, it works better for everyone. Improving the health system to meet the needs of people with disabilities will also help meet the needs of all, including other vulnerable groups (e.g. elderly people or minority language speakers.)
4. **Preventing unnecessary cost for the health system:** People with disabilities are more likely to experience reduced or delayed access to healthcare. For example, people with disabilities have lower rates of cancer screening and ultimately present later-stage disease, when treatment is more difficult and expensive.[13] Lack of specialist services, such as vision correction or occupational therapies, makes people more vulnerable to falls, which will require healthcare attention. Lack of provision therefore raises the risk of unnecessarily high healthcare costs.
5. **Achieving all SDGs:** The SDGs are inter-linked. Access to healthcare, rehabilitation, and assistive technologies is crucial for enabling effective and sustained access to other services. If people with disabilities do not achieve good health, then they are less likely to get a good education (SDG 4) or be able to earn a living wage (SDG 1). If people are unhealthy, they may require care from family members who are then also less likely to be able to work. So, if the health system does not deliver, the individual, the family, and the society will suffer economic damage.
6. **Most importantly, it matters to the individual's quality of life:** Health is important in itself, because it enables a person to have a good life and a full life expectancy. In particular, "rehabilitation and assistive devices can enable people with disabilities to be independent,"[14] which is foundational to all other areas of life.

Despite the importance of this issue, there is currently almost no consideration of people with disabilities in the overall UHC context. There are no indicators tracking progress towards UHC or the other SDG 3 targets with respect to disability. The current draft of the SDG 3 Action Plan includes the word "disability" only once.[15] Organizations such as CBM, Humanity & Inclusion, Special Olympics, Sightsavers, ATscale, and different WHO teams are important advocates, working to focus greater attention on health barriers for people with disabilities. However, there have been limited investments in data strengthening and operational research, and overall health-system grants from institutional and other funders in global health show insufficient, and often no, consideration to people with disabilities.

Lack of access to healthcare services is a violation of the rights of people with disabilities. Without a specific focus on improving healthcare access for this large and excluded group all dimensions of UHC—coverage of services, appropriate services, and affordability— won't be met. And if the health system does not deliver, good education, poverty reduction and independent living are less likely too.

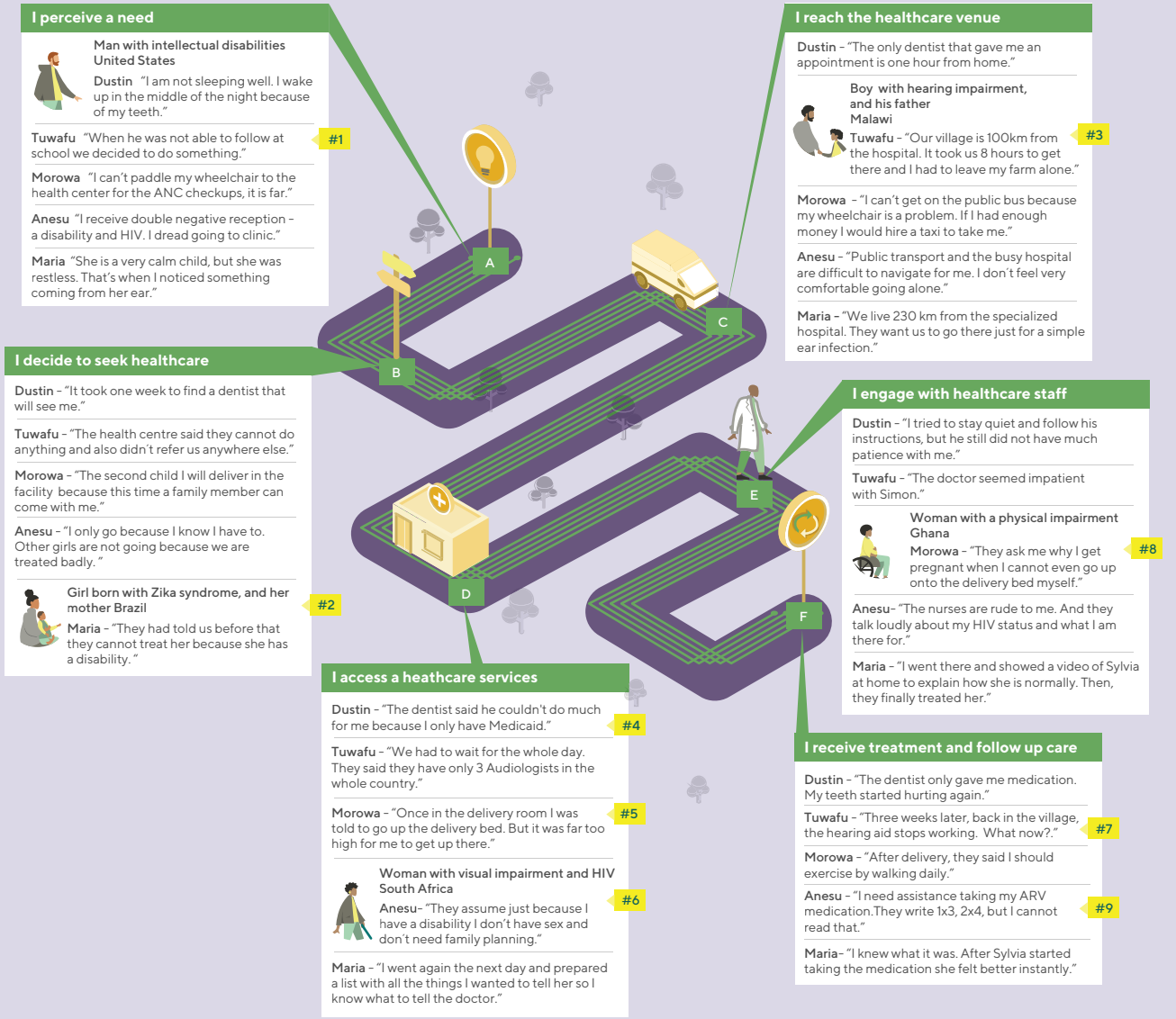
[13] CDC/NCHS. National Health Interview Survey Data, 2010. https://www.cdc.gov/ncbddd/disabilityandhealth/breast-cancer-screening.html
[14] World Health Organization, "World Report on Disability," 2011.
[15] October 2018 version, available as the latest draft on the WHO website June 2019.

2. Informing a better approach: Current situation, principles for change, and immediate actions

Understanding the current situation: experiences of accessing health services and underlying drivers across the health-seeking journey

We have introduced different illustrations of personas with disabilities and their health needs. The following illustrates the difficulties that these people with different types of impairment may experience when accessing health services. A comprehensive description of each individual's journey is included in the appendix.

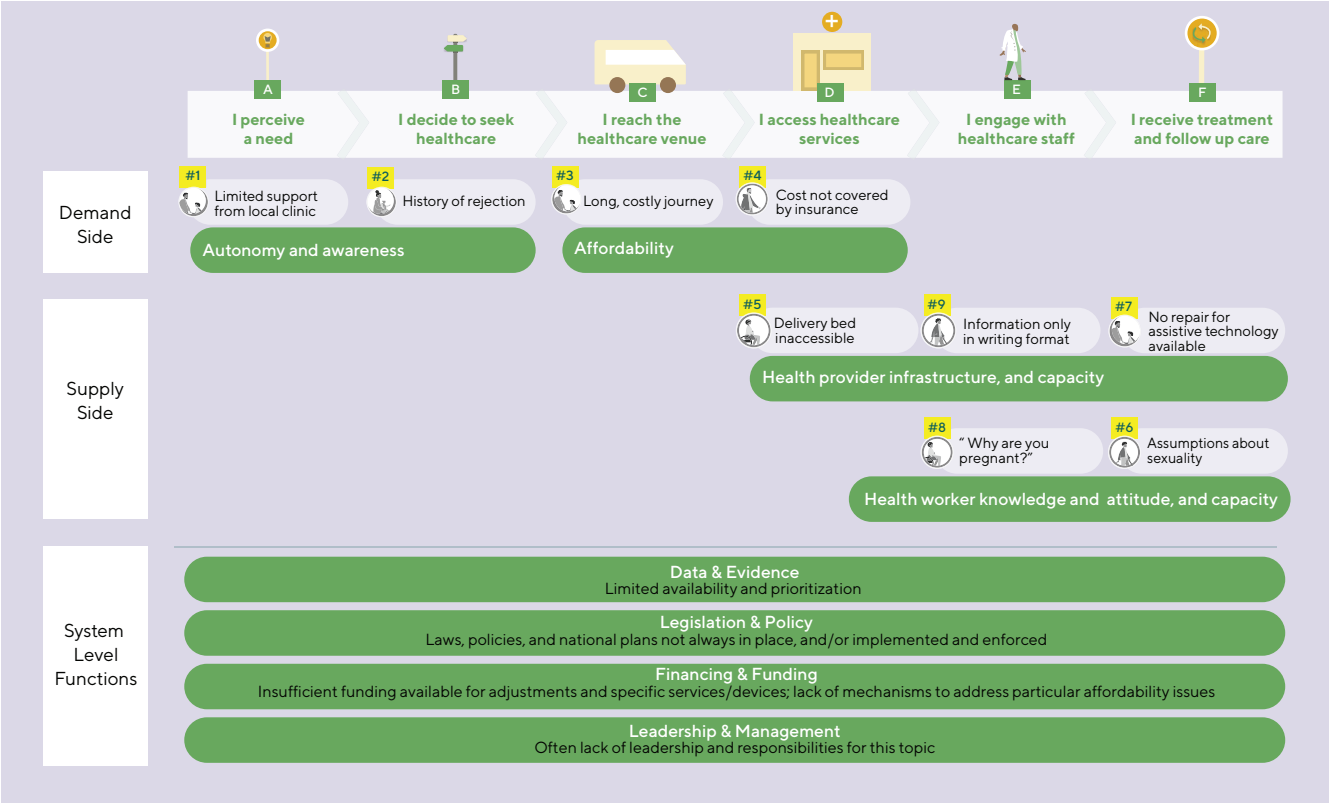
Summary of experiences when accessing health services



Personas and their journeys derived through interviews with proxy users and key informants, and qualitative literature review

These personas and their experiences highlight challenges in health-service delivery and underlying health-system functions. Understanding these can inform practical changes and adjustments.

Overview health services and system challenges



Common barriers for people with disabilities are:

- **Affordability at the household level:** People with disabilities are on average poorer but also incur higher healthcare costs. Consequently, the World Report on Disability found that half of people with disabilities cannot afford healthcare, and they are 50% more likely to experience catastrophic health expenditure. Transport cost is often cited as a key barrier for access.[16]
- **Health workers knowledge and skills:** Disability-related skills, information, and sensitization are rarely included in health-worker training. For instance, in one review, only 8% of Western Pacific countries incorporated disability-related information into healthcare undergraduate training.[17] Evidence from the Special Olympics revealed that 80% of U.S. medical students received no clinical training for treating people with intellectual disabilities, and that 52% of medical school deans and 56% of students reported that graduates were "not competent" to treat people with intellectual disabilities.[18] Because of this training gap, healthcare professionals may exhibit negative attitudes and poor skills in communicating with people with disabilities. The World Report on Disability[16] found that people with disabilities were twice as likely to find healthcare providers' skills and facilities inadequate, 3 times more likely to be denied care, and 4 times more likely to be treated badly in the healthcare system.

[16] World Health Organization, "World Report on Disability," 2011.
[17] World Health Organization Regional Office for the Western Pacific, "Rehabilitation and disability in the Western Pacific," 2017.
[18] Special Olympics International, "Changing Attitudes Changing the World: The Health and Health Care of People with Intellectual Disabilities," 2005.

- **Specialized health workforce capacity:** There are substantial worldwide shortages of rehabilitation workers (including for example physical therapists, mental health professionals, occupational therapists, speech-language pathologists, prosthetic and orthotic practitioners). The scenario is worst in lower income countries. For example, there are only six physicians specialized in rehabilitation in all of sub-Saharan Africa,[19] or there are fewer than ten physiotherapists per million inhabitants in many countries in the South-East Asia Region.[20]
- **Health-provider infrastructure:** There is often limited physical accessibility of healthcare facilities, including buildings, rooms, equipment, and toilets. A survey from Florida showed that people with disabilities were 5-10 times more likely to encounter physical barriers to access as well as communication challenges.[21] In a study from Lesotho, more than 40% of respondents with disabilities claimed that facilities were not accessible.[22] Few attempts are made to provide information in formats such as braille or sign language, to adapt guidelines or campaigns, or to include pictures of people with disabilities in information. Overall, there is little monitoring of the inclusion of people with disabilities or penalties for exclusion, so that there is little incentive to improve accessibility.
- **Specialized service provision capacity:** There is a gap in the availability of specialized service provision, especially at the primary and community healthcare level.[23] And where services are available they are often for a narrow scope, e.g. occupational services, and not including prosthetics, wheelchair services, or are very fragmented. In countries like Kenya or Malawi, for example, hearing aid fitting and services are not available through the government public health system, but only provided through a limited set of NGO facilities that are funded through donations.[24]
- **Plans, legislation, and policy:** Most countries have ratified UNCPRD and have legislation or policies to protect the rights of people with disabilities to healthcare; yet these are rarely monitored or enforced. In WHO's Western Pacific region, for example, 70% of countries have no insurance discrimination laws prohibiting exclusion of people with disabilities.[25] National health plans often don't specifically mention access to healthcare for people with disabilities. For example, two reviews, one focusing on national strategic plans on HIV and the other on legislation in eastern and southern Africa, reveal that only a few countries have acknowledged the need to include people with disabilities, and none have included disability comprehensively.[26]

> **"Health care and health systems need to shape up to better identify, remedy and care for people with disabilities — else there will be no UHC. U is for universal!"**
>
> **STEFAN PETERSON**, UNICEF

- **Financing and funding:** Ministry of Health budgets often lack funding for rehabilitation, assistive devices and their delivery, or adaptations to health services. Too few insurance schemes and approaches exist to help with particular financing challenges people with disabilities face—for example, transport cost. And in some situations, insurance schemes even exclude people with disabilities altogether. For example, in the U.S. public system there is no coverage of dental care access for adults with intellectual disabilities.[27]
- **Management and leadership:** Responsibility for disability and rehabilitation services does not always lie with the Ministry of Health. That makes implementation of disability-inclusive health plans more challenging. Many Ministries of Health also lack a department or staff member with dedicated responsibility on disability or rehabilitation. Again, in WHO's WPRO region, 20% of countries had no disability-related capacity within the Ministry of Health.[28]

The appendix includes a list of best practice examples addressing each of these areas.

[19] T.S. Jesus, et al, "Human resources for health (and rehabilitation): Six Rehab-Workforce Challenges for the century", https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5259954/ Human Resources for Health, 2017.
[20] Rehab2030, "The need to scale-up rehabilitation – background paper", available on the WHO website
[21] S.E. Bauer, et al, "Disability and physical and communication related barriers to health care related services among Florida residents: a brief report," Disability Health Journal 9(3):552-6 (July 2016).
[22] Y. Kamaleri and A.H. Eide, "Living Conditions among People with Disabilities in Lesotho: A National Representative Study," SINTEF Technology and Society: Global Health and Welfare, 2011. Available from: www.sintef.no
[23] World Health Organization Regional Office for the Western Pacific, "Rehabilitation and disability in the Western Pacific," 2017.
[24] WHO, "Rehabilitation and disability in the Western Pacific", 2018.
[25] Lund C, Generating evidence to narrow the treatment gap for mental disorders in sub-Saharan Africa: rationale, overview and methods of AFFIRM. Epidemiol Psychiatr Sci. 2015; 24 : 233-240
[26] Boston Consulting Group analysis for ATscale – the Global Partnership for Assistive Technologies, 2018
[27] Interview with Clinical advisor on dentistry, Special Olympics International
[28] World Health Organization Regional Office for the Western Pacific, "Rehabilitation and disability in the Western Pacific," 2017.

Guiding principles for the way forward

The following principles are based on experience in disability-inclusive development, and on existing policy frameworks such as the WHO Disability Action Plan. They are a work in progress, to be honed by new research, consultations, and experience. But here is what we know so far:

1. **A "twin-track" approach is needed.** This means that people with disabilities must be incorporated within mainstream services, but also need focused attention in order to *"remove barriers and improve access to health services and programs, and meet their specific needs"* (WHO Disability Action Plan).
2. Changes must be **informed by people with disabilities** to be contextually relevant.
3. It is more efficient to incorporate changes into **programs from the planning stage**, rather than attempting to adapt existing programs.
4. Efforts to include people with disabilities and to overcome barriers **throughout the health seeking journey** should be made across **the whole spectrum of health care services** (promotive, preventive, curative, rehabilitative, and palliative), across the lifecourse (including children) and for both men and women.

Immediate actions

More work needs to be done to understand this population group and develop tailored approaches that build on the above principles; however, there are obvious actions that can be taken. The authors of this report, together with the Steering Group members, have identified the following seven actions that can be taken immediately and that will improve health access and reduce barriers. Some of these actions won't require significant additional budget.

Make health services better

1. **Consult:** contact people with disabilities in local contexts to understand key barriers and gather suggestions for how these may be overcome
2. **Curricula:** include information about disability awareness in training curricula for all types of health workers (medical doctors, nurses, community health workers, etc.) and in post-qualification training
3. **Health facility accessibility:** conduct accessibility audits in all types of health facilities
4. **Health information:** make all health information, education and prevention opportunities (e.g. leaflets) accessible for different types of disabilities

Start changing the system

5. **Accountability:** develop an accountability mechanism, which could also include a UHC metric on access to healthcare for people with disabilities
6. **Budget:** review case for dedicated funding for adaptations, rehabilitation and assistive technologies
7. **Collect data:** Conduct research studies to understand the barriers and facilitators for people with disabilities in accessing healthcare

3. The importance of data and metrics

Improving our knowledge will require better **data** and **metrics**:

- **Data – overall routine health metrics, disaggregated by disability:** The need to improve routine data collection and focused research on disability has been highlighted in several documents and is also promoted as part of WHO's general program of work, 2019-2023. National health-related surveys need to include disability indicators so that health data can be disaggregated by disability.

- **Data – individual healthcare coverage, by disability:** The two systematic reviews show that there is limited data available on healthcare access, and existing studies have focused on the use of services by people with disabilities.[29] However, since people with disabilities on average have higher healthcare needs, utilization of services is not an appropriate measure to assess equity. Coverage is a better measure to assess whether people with disabilities have equitable access to healthcare. Ideally, these coverage indicators would also include a measure of affordability (e.g., risk of catastrophic expenditure) and quality of experience. A common metric should be developed so that data are collected consistently in different countries, and at different times.
  - *Example indicators:* Comparison of people with and without disabilities, for the sixteen tracer indicators selected to monitor progress towards UHC on coverage of essential health services
  - *Source of data:* Disability surveys (e.g., Model Disability Survey) or health surveys (e.g., SAGE) where disaggregation by disability is possible

- **Metrics – local level measures to ensure performance management for equity:** Data on coverage and access to health services for people with disabilities, as well as other social determinants of health and equity measures, need to be included at local levels of health systems. Such data should be integrated with routine health information systems and made actionable for primary health care workers, in real time, at a granular and local level.

- **Metrics – systems level measures of inclusive health:** Consistent and comparable data are needed at national level of activities to ensure inclusive health.
  - *Example indicators* (from WHO Global Action Plan):
    - % of countries with national health policies that explicitly mention that persons with disabilities have the right to the highest attainable standard of health
    - % of countries that prohibit health insurers from discriminating against pre-existing disability
    - % of healthcare facilities that are accessible for people with disabilities
  - *Source of data:* Within-country assessment, routine accessibility audits of health care units

- **Evidence – effective interventions/intervention packages to ensure equitable and effective health services:** An Evidence and Gap Map was undertaken in 2018 to chart what works for disability-inclusive development.[30] This review highlighted the lack of evidence on how to improve access to healthcare services for people with disabilities. Rigorous studies are needed to understand which policies and programs are most effective.

[29] T. Bright, S. Wallace, H. Kuper, "A Systematic Review of Access to Rehabilitation for People with Disabilities in Low- and Middle-Income Countries," International Journal of Environmental Research and Public Health 15(10); (Oct. 2, 2018), and T. Bright, H. Kuper, "A Systematic Review of Access to General Healthcare Services for People with Disabilities in Low and Middle Income Countries," International Journal of Environmental Research and Public Health 15(09); E2165 (Aug 30, 2018).

[30] Ashrita Saran, H. White, and H. Kuper, "Effectiveness of interventions for people with disabilities in low- and middle-income countries: an evidence and gap map," The Campbell Collaboration: Feb. 7, 2019. https://campbellcollaboration.org/library/effectiveness-of-interventions-for-people-with-disabilities-in-low-and-middle-income-countries-an-evidence-and-gap-map.html

4. Recommendations

For Global Policymakers

- **Recognize persons with disabilities** as a "cohort"/ vulnerable population that represents a critical pathway risk for UHC.
- Ensure people with disabilities and their **access barriers are addressed as part of in-country UHC and SDG 3 Action planning** processes.
- Consider health access for people with disabilities as a **key driver of and metric for UHC achievement,** and establish an accountability mechanism.

> **"People with disabilities are amongst those in greatest need of health services and at greatest risk of financial hardship when seeking health care. They must be a priority for UHC – both in terms of service delivery and financing packages. To ensure that people with disabilities are not left behind in the global movement towards UHC, we need multi-stakeholder efforts that define and implement UHC inclusive of people with disabilities."**
>
> **OLA ABU ALGHAIB**, THE UN PARTNERSHIP TO PROMOTE THE RIGHTS OF PERSONS WITH DISABILITIES (UNPRPD)

For Governments

- Develop and/or reform **health and disability laws, policies, strategies, and plans** to make them consistent with CRPD.
- With participation of people with disabilities, **improve access** to and quality of general health services, rehabilitation services, and assistive technologies; **improve data** in line with the Global Disability Action Plan.
- **Review funding in Ministry of Health budgets** for any adaptions to address access barriers, rehabilitation services and assistive technologies.
- **Collect data** on healthcare disaggregated by disability.

For Funders

- Develop/review **criteria for grant making and monitoring and evaluation frameworks** to ensure that all programming on health makes specific considerations for people with disabilities, eg., in line with other efforts to ensure equity and gender. This applies to all funders, in particular institutional funders in health.
- Invest in **catalytic activities that are known to be high-impact.** These include trainings for health workers about disability awareness, analysis to understand the ROI from investments in more available health services, market-shaping opportunities for assistive technologies as identified by ATscale, and the development of accessibility audits. This report also provides 7 areas of immediate action to improve service delivery and to start changing the system.
- Invest in **further operational research and human-centered design work** to strengthen our knowledge and understanding and allow for more tailored strategies.

For Implementers and Advocates

- Ensure that all **health services, programming, and trainings consider** the needs of people with disabilities; adaptions to address access barriers, rehabilitation services and include content on disability awareness in all health care worker curriculum.
- Create a **coalition of organizations and advocates focused on people with disabilities** to organize a shared strategy to hold policy-makers and governments accountable.

5. Appendix

5.1. Detailed journeys of five personas accessing health services

Anesu, adolescent with visual impairment
Accessing HIV treatment services

South Africa

I perceive a need	I decide to seek healthcare	I reach the healthcare venue	I access healthcare services	I engage with healthcare staff	I continue with treatment and follow up care

Community perception	Awareness	Getting to the facility	Accessing what is needed	Communication	Compliance
"I definitely feel like I receive more rejection at the health clinic and in the community, as a person with a disability and HIV, more than if I just had HIV. Thankfully I go to school and my parents support me. "	"I need to go to the clinic for my ongoing HIV treatment. But I dread it. I know that other girls simply don't go. In the past I have heard people, including some of the health workers, in the queues in the clinic ask each other why I would need ARVs as a disabled. "	"I feel more comfortable if somebody would accompany me on the way to the clinic. Public transport and the busy hospital are not easy to navigate. I sometimes ask my family, but I wished I wouldn't have to do that."	"They provide HIV information flyers. Relevant for me that I cannot read them. " "I have to continue to flag to the nurse that I am sexually active and also need family planning and safe sex protection, given my status. They always assume just because I have a disability I don't have sex. "	"Some of the nurses don't have patience for us. They'd say things like, So if you are blind, are you also deaf, can't you hear what I am saying? Also, the nurse always talks loudly about my HIV status when explaining things to me. I don't feel comfortable about this."	"I need assistance with my medication. Usually the health workers are writing the instructions on the package, for example 1x3, 2x4 and so on, but I cannot read that. If they are home, my parents help me with the medication."
Barriers					
Limited community support	Limited community support Negative attitude of health workers	Lack of accessible transport	Limited accessibility of health information Lack of health worker knowledge and awareness	Negative attitude of health workers Breach of patient confidentiality	Limited accessibility of health information/ instruction

Dustin, man with intellectual disabilities

Accessing dental care services

USA

I perceive a need | I decide to seek healthcare | I reach the healthcare venue | I access healthcare services | I engage with healthcare staff | I continue with treatment and follow up care

Notice the pain	Finding a dentist	Long distance drive	Affording treatment	Getting Treatment	Medication
"I am not sleeping very well. I wake up in the middle of the night because my teeth are hurting. I have been two months with this problem every night. I speak with the home leader and he gives me pain medication."	"After I told my group home leader a few times, he called a few dentists to try and make an appointment for me. It took him one week to find a dentist that was willing to see me."	"The driver from the group home took me to the appointment. The only dentist that gave me an appointment is one hour from home."	"The dentist only spent 10 minutes with me and did not check much. The dentist said he couldn't do much for me because I only have Medicaid."	"The dentist was abrupt when he said things like 'open your mouth' and 'don't move'. I tried to stay quiet and follow his instructions, but he still did not have much patience with me."	"The dentist gave me medication. My teeth started hurting again now."

Barriers

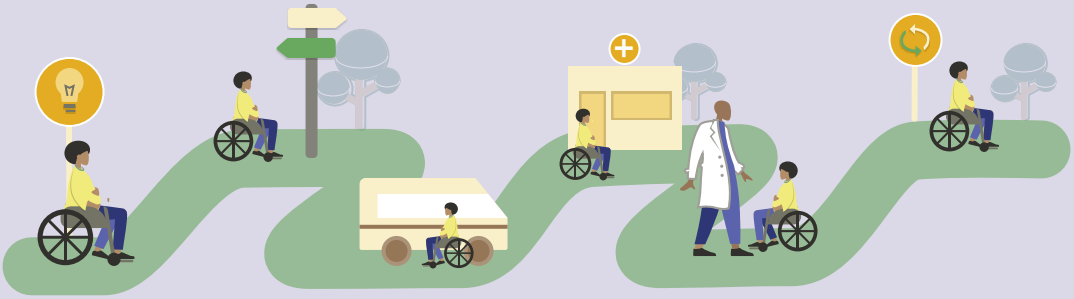
_____	Lack of available health providers	Lack of available health providers	Lack of appropriate financial coverage and reimbursement mechanisms	Lack of health worker knowledge, skills and awareness	Lack of appropiate treatment

Morowa, woman with physical impairment

Accesing maternal health services

Ghana

I perceive a need | I decide to seek healthcare | I reach the healthcare venue | I access healthcare services | I engage with healthcare staff | I continue with treatment and follow up care



Missing ANC visits	Family support	Getting to the facility	Moving in the facility	Understanding my situation	Post-partum advice
"It is not that I don't want to, I really want to go check my pregnancy. But I can't paddle my wheelchair to the health centre, it is far. My first birth was also not easy."	"I delivered my first child at home because my husband was away and I didn't get help from my family. For this second one, I will deliver in the hospital no matter what. Now, at least my first child will be able to help me."	"I live in the city, but the hospital is still 10km away from my home. If I had enough money I would hire a taxi to take me... I can't get on the public bus without somebody to help. Even if I get on, where do I put my wheelchair? This is a problem."	"Luckily the hospital had a ramp for my wheelchair. But the doorframes of the maternity ward weren't wide enough. We eventually found a way. The nurses then told me to get on the delivery bed, but it was too high for me to get up there."	"They said 'You who cannot even get up on the bed. Why did you even get pregnant; why do you try to handle jobs that you cannot manage?' You can tell that the nurses don't want to help me. It is as if they are afraid of me like I'm a lion waiting to eat them."	"The nurses don't really think about my situation. After delivery, they said I should exercise by walking daily. But look at me, I can't stand and walk. I can only move about in this wheelchair. So how is this advice relevant?"

Barriers

Lack of transport options	Limited community support	Lack of transport options	Limited accessibility of facilities and equipment	Negative attitude of health workers Lack of knowledge and awareness of health workers	Lack of appropriate health information and advice

Simon & Tuwafu, boy with hearing impairment, and his father

Seeking specialized hearing services

Malawi

I perceive a need | I decide to seek healthcare | I reach the healthcare venue | I access healthcare services | I engage with healthcare staff | I continue with treatment and follow up care

Understanding the situation

"We noticed he only heard us when he looked at us. When he was not able to follow at school we decided to do something. The traditional healer in the village said we should put cooking oil in the ear."

Finding the entry point

"The health centre said they cannot do anything. At some point an NGO had a screening camp nearby. They said Simon has a big problem and that we need to go to the hospital in Blantyre. They gave us a paper, but the results were not explained. I felt confused."

Making the journey

"Our village is 100km from Blantyre. It takes 8 hours to get there with two minibuses. We didn't get any money for the trip nor instructions on where to go in the city. We are harvesting now. I hired a helper since I cannot be there. This is not good for our family income."

Waiting

"Once we arrived at the hospital, we had to wait for the whole next day until somebody saw us. The doctor was telling us that there are only 3 of him (audiologists) in the whole country."

With the doctor

"Simon was feeling tired, it was difficult for him to communicate. The doctor seemed impatient. He then said Simon can get a hearing aid. It usually costs USD 100. That's more than we earn in a month. The NGO paid for this one, so we got it 5 hours later."

Solution not working

"The hearing aid helped a lot... at first. But after three weeks, Simon complained that it stopped working. I couldn't fix it. Nobody at the health centre could either. What shall we do? Travel again for 3 days to the hospital? We cannot do that. I hope the NGO has a camp here soon, then we can ask them."

Barriers

Understanding the situation	Finding the entry point	Making the journey	Waiting	With the doctor	Solution not working
Limited awareness on when and were to seek care	Lack of counselling through primary care health workers	Lack of transport options Limited affordability for health access	Lack of trained specialized health workers	Lack of trained specialized health workers Limited affordability for health products	Lack of follow-on services available at primary care clinic level No financing mechanisms to enable access to follow-on care

Sylvia & Maria, girl born with Zika and her mother

Trying to access health services for an ear infection

Brazil

I perceive a need | I decide to seek healthcare | I reach the healthcare venue | I access healthcare services | I engage with healthcare staff | I continue with treatment and follow up care

Noticing something

"Despite Sylvia's disability and pathology, she is a very calm child. When she became irritable and was crying a lot, I got really worried because her behaviour wasn't normal. That's when I noticed a discharge coming from her little ear."

Getting rejected

"We took her to the closest clinic, but the doctor told us she cannot treat her because of her disability. She said she needs special services that she cannot provide and suggested we go to the hospital. We left there not being attended to and feeling restless."

Returning home

"On the way back home, the bus driver did not stop when he saw us. We had to wait a while for the next bus.

We live 230km from the hospital where we were told to go to. Just for an ear infection, we cannot go all that way."

Preparing for the doctor

"After speaking with my neighbour, I found the courage to go and insist again to get her examined by the doctor.

I prepared a list of all the things I wanted to tell the doctor."

Perseverance

"I went back and showed the doctor a video of Sylvia at home. I wanted to show how differently she behaves at home when she is happy and relaxed. The doctor finally examined her ear and gave us the right medication. We went home feeling much calmer."

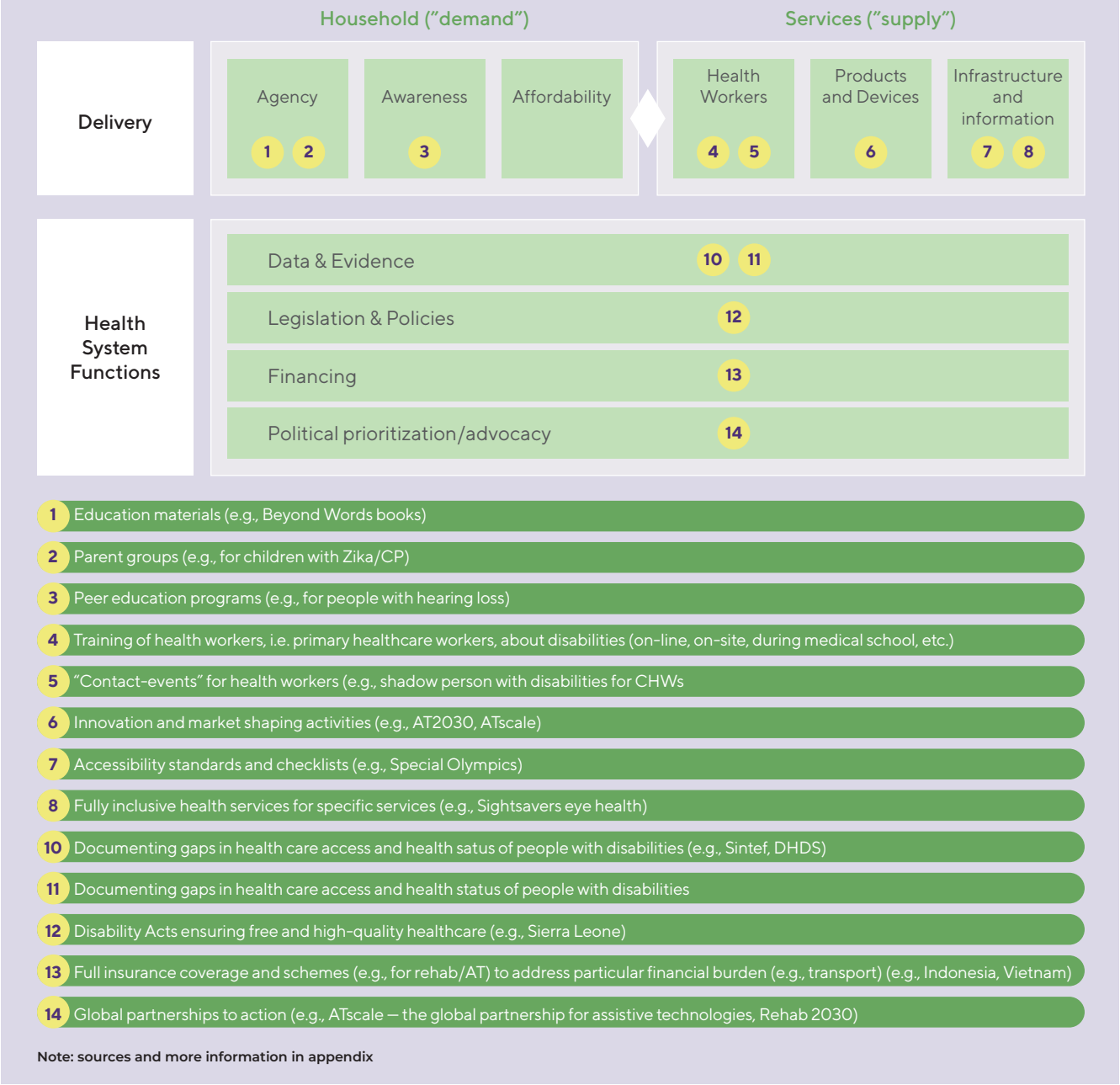
Quick recovery

"After Sylvia started taking the medication she felt better instantly. I'm glad I knew what it was."

Barriers

Understanding the situation	Finding the entry point	Making the journey	Waiting	With the doctor	Solution not working
_____	Lack of health worker knowledge, skills and awareness	Long distance to specialised services	Lack of health worker knowledge, skills and awareness	_____	_____

5.2 Best practice examples



Note: sources and more information in appendix

5.3 SDG 3 Analysis sources

Relevant SDG 3 Target Number(s)	Topic	Claim	Place	Type of Disability	Age	Source	Evidence
TARGET 3.1	**Maternal Health**	Women with disabilities are more likely to have pre-term births and low-weight babies (1.5-2x)	Rhode Island, USA	Multiple/all	Adults (birthing age)	M. Mitra, K.M. Clements, J. Zhang, et al., "Maternal Characteristics, Pregnancy Complications, and Adverse Birth Outcomes Among Women With Disabilities," *Medical Care* (December 2015); 53(12):1027–32. Available from: http://www.ncbi.nlm.nih.gov/pubmed/26492209	13.4%; 95% CI, 11.6-15.6 compared with 8.9%; 95% CI, 8.5-9.3 for women without disabilities
			Rhode Island, USA	Multiple/all	Adults (birthing age)	Mitra, *Ibid.*	10.3%; 95% CI, 9.4-11.2 compared with 6.8%; 95% CI, 6.8-6.9
TARGET 3.1	**Maternal Health**	Women with disabilities are more likely to have stillbirths than women without disabilities (1.5x)	Lesotho	Multiple	Women 15+	Y. Kamaleri and A.H. Eide, "Living Conditions among People with Disabilities in Lesotho: A National Representative Study," *SINTEF Technology and Society: Global Health and Welfare*, 2011. Available from: www.sintef.no	The incidence of stillbirth among disabled females aged 15 years old and above was 53% higher compared to females without disability of the same age
			Swaziland	Multiple	Women 15+	A.H. Eide and B. Jele, "Living Conditions among People with Disabilities in Swaziland," *SINTEF Technology and Society: Global Health and Welfare*, 2011. Available from: https://www.sintef.no/globalassets/upload/samfunn/finalreportlc_swasilandweb.pdf	"Among disabled women, 7.0 % (111) reported stillbirths, while the corresponding figure for non- disabled was 6.4 % (84) (n.s.). Mean number of stillbirths was 1.6 among disabled women and 1.4 among non-disabled, but this difference is not large enough to be statistically significant. There is thus a weak but non-significant tendency for disabled women to have more stillbirths than the non-disabled control group"
TARGET 3.2	**Child Health**	Children with disabilities are more likely to be malnourished (2-3x) & die from malnutrition (2x)	Malawi	Multiple types	Children	M. Kerac, J. Bunn, G. Chagaluka, et al., "Follow-Up of Post-Discharge Growth and Mortality after Treatment for Severe Acute Malnutrition (FuSAM Study): A Prospective Cohort Study," *PLoS One* (June 3, 2014); 9(6):e96030. Available from: http://www.ncbi.nlm.nih.gov/pubmed/24892281	Hazard ratios for death for malnourished people with disability (any) - 2.77 (1.43-5.34) p=.002 for those who were HIV positive and for those who were HIV negative, 1.76 (0.94-3.28) p=0.08
			Turkana County, Kenya	Multiple types	6 mo - 10 years	H. Kuper, V. Nyapera, J. Evans, et al., "Malnutrition and Childhood Disability in Turkana, Kenya: Results from a Case-Control Study," J. van Wouwe, editor, *PLoS One* (Dec. 21, 2015); 10(12):e0144926. Available from: https://dx.plos.org/10.1371/journal.pone.0144926	Relative Risk Ratio, 1.6-2.9 times more likely to have malnutrition in comparison to controls; Wasting: OR=1.9, 95% CI 0.8-2.7

Relevant SDG 3 Target Number(s)	Topic	Claim	Place	Type of Disability	Age	Source	Evidence
TARGET 3.2	**Child Health**	Children with disabilities are more likely to experience serious illness in last year (5-10x)	30 countries	Multiple types (Learning, Communication, Vision, Hearing, Physical)	Children aged 0-17	H. Kuper, A. Monteath-van Dok, K. Wing, et al. "The Impact of Disability on the Lives of Children; Cross-Sectional Data Including 8,900 Children with Disabilities and 898,834 Children without Disabilities across 30 Countries," S. Federici, editor, *PLoS One* (Sept. 9, 2014); 9(9):e107300. Available from: http://www.ncbi.nlm.nih.gov/pubmed/25202999	
TARGET 3.2	**Child Health**	Children with disabilities are more likely to suffer from severe diarrhea (2x)	Guatemala	Multiple types	Adults and Children 2 years and older	H. Kuper, I. Mactaggart, C. Dionicio, et al., "Can we achieve universal health coverage without a focus on disability? Results from a national case-control study in Guatemala," K. Latham-Mintus, editor, *PLoS One* (Dec. 27, 2018); 13(12):e0209774. Available from: http://dx.plos.org/10.1371/journal.pone.0209774	Coverage of treatment for severe diarrhea (told they have condition by doctor): people with disability 89 (13%), people without disabilities 31 (7%). Age, sex, region, SES adjusted OR 1.8 (1.2-2.8); Prevalence ratio: 13 / 7 = 1.86
TARGET 3.3	**HIV/AIDS**	Adults with disabilities have a higher HIV prevalence (2x)	Yaounde, Cameroon	Multiple Types	15 to 49 years	P. De Beaudrap, G. Beninguisse, E. Pasquier, et al., "Prevalence of HIV infection among people with disabilities: a population-based observational study in Yaoundé, Cameroon (HandiVIH)," *Lancet HIV* (April 2017); 4(4):e161–8. Available from: http://www.ncbi.nlm.nih.gov/pubmed/28126484	HIV prevalence among control population 3.9% (95% CI 2.9-5.3) while HIV prevalence among people with disabilities 6.8% (95% CI 5.0-8.6); conditional odds ratio 1.7, p=0.04; Prevalence ratio: 6.8 / 3.9 = 1.74
TARGET 3.3	**HIV/AIDS**	Adults with disabilities have a higher risk of HIV infection (30%)	Systematic Review - studies from 6 countries in sub-Saharan Africa	Mental illness/ intellectual disabilities; hearing impairment	Adults	P. De Beaudrap, Muriel Mac-Seing, and Estelle Pasquier, "Disability and HIV: a systematic review and a meta-analysis of the risk of HIV infection among adults with disabilities in Sub-Saharan Africa," *AIDS Care* 26(12): 1467–1476 (July 17, 2014).	Pooled RRs of HIV infection in people with disabilities compared to the general population were 1.31 (1.02-1.69) overall; 1.16 (0.71-1.87) among people with mental illness or intellectual disabilities and 1.07 (0.58-1.95) among people with hearing impairment
TARGET 3.4	**Diabetes**	Adults with disabilities have a higher diabetes prevalence (2-3x)	USA	Cognitive limitations; physical impairment	Adults 18+	A. Reichard, H. Stolzle, and M.H. Fox, "Health disparities among adults with physical disabilities or cognitive limitations compared to individuals with no disabilities in the United States," *Disability and Health Journal* (April 1, 2011): 4(2):59–67. Available from: https://www.sciencedirect.com/science/article/pii/S1936657410000373?via%3Dihub	Age adjusted Prevalence per 1000 for ND=no disability, CL=cognitive limitations, PD=physical disability: Diabetes: 3.7 (3.4-4.0) ND, 18.0 (16.1-19.9) CL, 15.1 (14.0-16.2) PD
			Pakistan	Multiple types	Children and Adults	World Health Organization, "Model Disability Survey: General Results Ziarat District, Balochistan Province, Pakistan," Geneva: 2018.	% Prevalence According to Disability Status: Diabetes - 2.7 severe disability, 3.8 moderate, 2.1 mild
			Sri Lanka	Multiple types	Children and Adults	World Health Organization, "Model Disability Survey: General Results Sri Lanka," Geneva: 2019	% Prevalence According to Disability Status: Diabetes - 22.4 severe disability, 12.1 moderate, 8.6 mild

Relevant SDG 3 Target Number(s)	Topic	Claim	Place	Type of Disability	Age	Source	Evidence
TARGET 3.4	**Diabetes** *(continued)*		USA	Multiple types		G.L. Krahn, D.K. Walker, and R. Correa-De-Araujo, "Persons with disabilities as an unrecognized health disparity population," *American Journal of Public Health* (April 6, 2015); 105 Suppl 2(S2):S198-206. Available from: http://ajph.aphapublications.org/doi/10.2105/AJPH.2014.302182	Annual no. of new cases of diagnosed diabetes (per 1000 persons) - 19.1 people with disabilities vs. 6.8 people without disabilities
			Cameroon	Multiple types	Children and Adults	World Health Organization, "Model Disability Survey: General Results Bankim Health District, Adamawa, Cameroon," Geneva: 2019	% Prevalence According to Disability Status: Diabetes - 30 severe disability, 3.6 moderate, 1.6 mild
TARGET 3.4	**Cardiovascular Disease/ Hypertension**	People with disabilities have a higher cardio-vascular disease prevalence (2x))	USA	Cognitive impairment; physical impairment	Adults 18+	Reichard, op. cit.	Age adjusted Prevalence Rates per 1000 for ND=no disability, CL=cognitive impairment, PD=physical impairment: Cardiovascular Disease: 5.1 (4.7-5.5) ND, 13.0(11.7-14.3) CL, 19.7 (18.5-20.9) PD
			Athletes from 50 countries	Intellectual Disabilities	Children and Adults	Special Olympics, "Healthy Athletes Prevalence Report 2016," 2017.	56.4% of athletes had a pre-hypertensive or hypertensive reading.
			Pakistan	Multiple types	Children and Adults	World Health Organization, "Model Disability Survey: General Results Ziarat District, Balochistan Province, Pakistan," op. cit.	% Prevalence According to Disability Status: Heart Diseases - 16.2 severe disability, 11.8 moderate, 2.6 mild
			Cameroon	Multiple types	Children and Adults	World Health Organization, "Model Disability Survey: General Results Bankim Health District, Adamawa, Cameroon," op. cit.	% Prevalence According to Disability Status: Heart Diseases - 10 severe disability, 1.8 moderate, 3.1 mild
TARGET 3.4	**Mental Health**	People with disabilities are more likely to have a poor mental health status (4x)	Lesotho	Six disability core domains registered in the study: vision, mobility, hearing, remembering, self-care, and communicating	Adults and Children	Y. Kamaleri and A.H. Eide, "Living Conditions among People with Disabilities in Lesotho: A National Representative Study," *SINTEF Technology and Society: Global Health and Welfare*, 2011. Available from: www.sintef.no	The proportion of disabled respondents who answered that their overall mental health status was poor or not very good was almost 5 times higher than the proportion of non-disabled respondents. Only 5.7% of disabled respondents stated that their current mental health was very good compared to 16.2% among non-disabled respondents.
			Pakistan	Multiple types	Children and Adults	World Health Organization, "Model Disability Survey: General Results Ziarat District, Balochistan Province, Pakistan," op. cit.	% Prevalence According to Disability Status: Depression - 40 severe disability, 37.8 moderate, 4.7 mild
			Cameroon	Multiple types	Children and Adults	World Health Organization, "Model Disability Survey: General Results Bankim Health District, Adamawa, Cameroon," op. cit.	% Prevalence According to Disability Status: Mental Disorders - 5.4 severe disability, 4.3 moderate, 0 mild

Relevant SDG 3 Target Number(s)	Topic	Claim	Place	Type of Disability	Age	Source	Evidence
TARGET 3.4	**Mental Health**	People with disabilities are less likely to receive treatment for psychiatric or behavioral disorders than those without disabilities	Guatemala	Multiple types	Adults and Children 2 years and older	H. Kuper, I. Mactaggart, C. Dionicio, et al., "Can we achieve universal health coverage without a focus on disability? Results from a national case-control study in Guatemala," K. Latham-Mintus, editor, *PLoS One* (Dec. 27, 2018); 13(12):e0209774. Available from: http://dx.plos.org/10.1371/journal.pone.0209774	Coverage of treatment for mental (psychiatric) or behavioral disorders: people with disability 33 (5%), people w/o disabilities 8 (2%) Age, sex, region, SES adjusted OR 3.3 (1.5-7.4); Prevalence ratio of coverage: 5/2 = 2.5
TARGET 3.4	**Mental Health**	High rates of suicidal ideation among people living with disabilities	Australia	Multiple types	Under 65 years	Australian Institute of Health and Welfare, "Health of Australians with disability: health status and risk factors," Canberra; 2010. Available from: https://www.aihw.gov.au/getmedia/070c288b-8603-4438-86a3-bac43f1845c3/11608.pdf.aspx?inline=true	42% people aged 16-64 years had thought about committing suicide; includes 18% who had attempted suicide
TARGET 3.5	**Substance Use**	More likely to abuse substances	USA	Defined disability as: a) reported a work disability, or b) age under 65 (non-aged) and Medicare-eligible	Working age (18-64 years)	R. E. Glazier and R. N. Kling, "Recent trends in substance abuse among persons with disabilities compared to that of persons without disabilities," *Disability and Health Journal* (April 2013); 6(2):107–15. Available from: http://www.ncbi.nlm.nih.gov/pubmed/23507161	Among younger adults (18-24 years), persons with disabilities were more likely than those without disabilities to report that they had used heroin (adjusted odds ratio [OR] = 6.89; 95% confidence interval [CI] = 1.35, 35.1) or crack cocaine (OR = 6.38; 95% CI = 1.05, 38.6). Among older adults (35 years and older), persons with disabilities were more likely to report the use of sedatives (OR = 2.46; 95% CI = 1.21, 4.94) or tranquilizers (OR = 2.18: 95% CI = 1.08; 4.42) not medically prescribed.
TARGET 3.7	**Family Planning**	Women with disabilities are less likely to use reversible contraceptives than women without disabilities	Systematic Review - 62 publications of 54 original studies were included for review	Women with intellectual, physical, or sensory impairments		W. Horner-Johnson, E. L. Moe, R. C. Stoner, et al., „Contraceptive knowledge and use among women with intellectual, physical, or sensory disabilities: A systematic review," *Disability and Health Journal* (April 2019); 12(2):139–54. Available from: http://www.ncbi.nlm.nih.gov/pubmed/30473221	Estimates of the proportions of women with disabilities using contraceptives varied widely, reflecting substantial diversity in study samples and methods. The majority of the comparative studies we reviewed – including those that were methodologically strongest – found that women with disabilities were less likely than women without disabilities to use reversible contraceptive methods, especially the most effective methods.
TARGET 3.8	**UHC – Access**	Women with disabilities less likely to seek antenatal care	Guatemala	Multiple	15–49 years who had given birth in the last 5 years	Kuper, Mactaggart, Dionicio, et al., op. cit.	OR 0.4, 0.1-1.0

Relevant SDG 3 Target Number(s)	Topic	Claim	Place	Type of Disability	Age	Source	Evidence
TARGET 3.8	**UHC – Access** *(continued)*	People with disabilities don't receive assistive device services when they need it	Mozambique	Multiple types	Children and Adults	A. H. Eide, Y. Kamaleri, K-G. Hem, and I.B. Scheel, "Living Condition among People with Disabilities in Mozambique," *SINTEF Technology and Society: Global Health and Welfare*, 2009. Available from: https://www.sintef.no/globalassets/upload/helse/levekar-og-tjenester/lc-report-mozambique---2nd-revision.pdf	The results showed that less than one-tenth of people who were in need of vocational training and educational services received the services. Other services that also have a noticeable wider gap include assistive devices services, counselling for person with disability and welfare services: 82%, 78% and 85% respectively
		People don't receive outpatient care when they need it	Cameroon	Multiple types	Children and Adults	World Health Organization, "Model Disability Survey: General Results Bankim Health District, Adamawa, Cameroon," op.cit.	% people who needed outpatient care but did not receive by disability level. 17.4% no disability; 20% mild disability; 20.9% moderate disability; 32.4% severe disability
		People don't receive the assistive device they need	Cameroon	Multiple types	Children and Adults	World Health Organization, "Model Disability Survey: General Results Bankim Health District, Adamawa, Cameroon,"	% Persons of persons, who don't use products, reporting unmet needs of assistive products and modifications by disability level Mobility disability - 10.1% severe disability, moderate, 1.8% mild Seeing disability - 26.6 severe disability, 19.1 moderate, 5.5 mild
TARGET 3.8	**Quality**	More likely to find health care provider's skills and facilities inadequate (2x)				World Health Organization, "World Report on Disability," 2011. Available from: http://www.who.int/about/	
TARGET 3.8	**Affordability**	50% cannot afford healthcare, 50% more likely to suffer catastrophic health expenditure				World Health Organization, "World Report on Disability," 2011. Available from: http://www.who.int/about/	
		The medical expenditure of people with disabilities is higher	USA	Cognitive limitations; physical disabilities	Adults 18+	A. Reichard, H. Stolzle, and M.H. Fox, "Health disparities among adults with physical disabilities or cognitive limitations compared to individuals with no disabilities in the United States," *Disability and Health Journal* (April 1, 2011); 4(2):59–67. Available from: https://www.sciencedirect.com/science/article/pii/S1936657410000373?via%3Dihub	Individuals with cognitive impairments: $11,487/year Individuals with physical impairments: $10,288/year Individuals without disabilities: $2,375/year

Relevant SDG 3 Target Number(s)	Topic	Claim	Place	Type of Disability	Age	Source	Evidence
TARGET 3.8	**Affordability** *(continued)*		USA	Intellectual Disabilities (ID)	Children and Adults	Special Olympics, "Inclusive Health: Case Statement Meeting the Health Needs of People with Intellectual Disabilities Would Lower Health Care Costs, and Ensure Social Justice Escalated Rates of Hospitalizations," 2018. Available from: http://www.partnershipforsolutions.org/DMS/	People with ID represent 4.9% of the Medicaid recipient population, but 15.7% of the Medicaid expenditure
TARGET 3.9	**Environmental Health**	Persons with disabilities are more likely to be poor, and thus are more likely to be exposed to environmental risk factors/ toxins	UK	Intellectual Disabilities	Children	E. Emerson, J. Robertson, C. Hatton, and S. Baines, "Risk of exposure to air pollution among British children with and without intellectual disabilities," *Journal of Intellectual Disability Research* (Feb. 1, 2019); 63(2):161–7. Available from: http://doi.wiley.com/10.1111/jir.12561	Averaging across ages, children with IDs were 33% more likely to live in areas with high levels of diesel particulate matter, 30% more likely to live in areas with high levels of nitrogen dioxide, 30% more likely to live in areas with high levels of carbon monoxide and 17% more likely to live in areas with high levels of sulphur dioxide.