

COCHLEAR IMPLANT ADVOCACY:

Implications of the World Report on Hearing, 2021

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Cochlear implant is one of the most successful of all neural prostheses developed to date

(WRH, page 100)

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INTRODUCTION

The World Report on Hearing (WRH) 2021 is a major milestone in bringing together our understanding of the causes and impact of deafness and hearing loss. It is also a global call to action for governments and societies including ensuring increased access to cochlear and other hearing implants.

For too long the importance of hearing which enables us to communicate with others, express our thoughts, be educated and take part in society has been underestimated as a public health and social issue. The Report addresses this fundamental failure to prioritise hearing loss in our health and social care systems.

The World Report on Hearing provides the health, social and economic case for addressing deafness and hearing loss to ensure that we have the policies to improve lives and manage resources well, and makes it clear that we have the technology to do so.

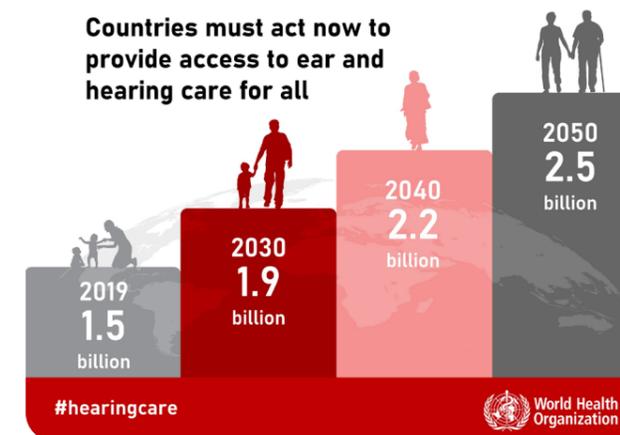
This goal is especially important for those with severe to profound hearing loss, for whom a cochlear implant (CI) can provide benefit. However, there is a huge global gap between those who have cochlear implants and those who need them. The World Report on Hearing is a vital tool to support advocacy activities working to close the gap in access to cochlear implants and to establish better support for those who already use them.

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Hearing loss is on the rise

Countries must act now to provide access to ear and hearing care for all



THE IMPACT OF HEARING LOSS

The report therefore makes clear that deafness and hearing loss is a challenging global health and social issue that must be tackled.

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If unaddressed, hearing loss can negatively impact many aspects of life: communication; the development of language and speech in children; cognition; education; employment, mental health; and interpersonal relationships.

(WRH, page 10)

More than 1.5 billion people experience some degree of hearing loss and addressing this issue is one of the most significant and important challenges for Global Health. Hearing loss is predicted to increase and as it increases across the world so will the impact on lives and health resources. The impact is often under recognised. In children:

“When deaf infants are unable to access language stimulation early in life, it poses a challenge for their overall development.”
(WRH, page 45)

“Language is essential not only as a means for communication, but also as contributor for cognitive development, a tool for education, and the basis for social relationships.”
(WRH, page 45)

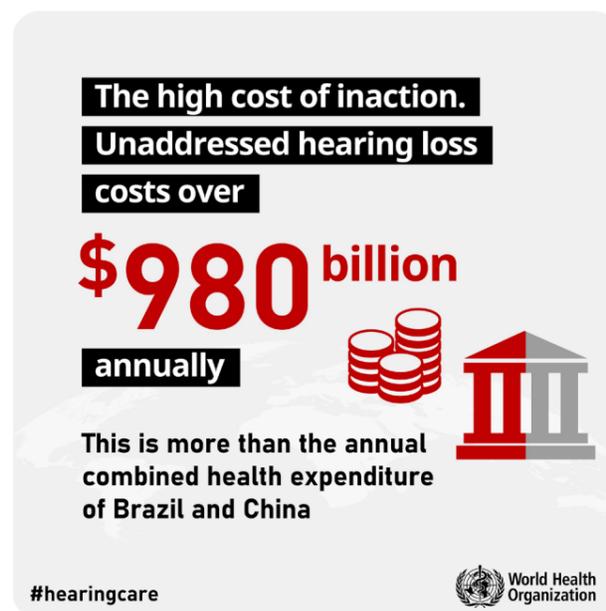
Deafness from birth, at whatever level, but particularly profound deafness, impacts on language learning, cognitive development, self-esteem and educational attainments.

The report also illustrates that hearing loss is responsible for significant levels of disability in adults. In 2019 age-related hearing loss was the third largest source of global Years Lived with Disability and the leading cause for adults older than 70 years of age.

“Hearing loss is the largest potentially modifiable risk factor for age-related dementia.”
(WRH, page 46)

“Overall, adults with hearing loss have increased odds of unemployment or underemployment.”
(WRH, page 45)

“People with hearing loss commonly have higher rates of depression and report lower quality of life compared with their hearing peers.”
(WRH, page 47)



THE ECONOMIC IMPACT OF HEARING LOSS

The Report estimates that the financial impact of:

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Unaddressed, hearing loss imposes a global cost of more than \$980 billion annually.

(WRH, page 1)

WHO SHOWS THIS INCLUDES:

- **The Health-Care Sector:** costs are estimated to be around \$ 314 billion and include health-care costs for children and adults.
- **The Education Sector:** a conservative estimate of the cost for providing support to children (i.e. those aged 5–14 years) with unaddressed hearing loss is nearly \$27 billion.
- **Lost Productivity:** costs related to unemployment and premature retirement among people with hearing loss is conservatively estimated as \$182.5 billion annually.
- **Societal Costs:** the result of social isolation, communication difficulties and stigma result in a further \$456.5 billion each year.
(Figures WRH, page 49)

WHO calculates these costs based on the monetary value attached to the avoidance of a year lived with disability often referred to as disability-adjusted life years (DALYs) attributed to hearing loss. This is an internationally recognised standard which shows the impact on all areas of life and society.

KEY INSIGHTS FOR POLICY:

- Unaddressed, hearing loss imposes a global cost of more than \$980 billion annually and will continue to rise if not addressed.
- Age-related hearing loss was the third largest source of global Years Lived with Disability.
- The impact of deafness and hearing loss is routinely underestimated in planning and funding decisions by health and other government departments.
- Costs of unaddressed hearing loss include health-care, education, lost productivity and societal costs.
- WHO’s analysis supports previous studies showing that the impact on individuals and the cost to society of unaddressed hearing loss is more significant than has been understood in the past.
- It is crucial to understand that unaddressed hearing loss dramatically affects children’s and adults’ health and life chances while leading to significant additional costs for society.

COCHLEAR IMPLANTATION

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Cochlear implants are electronic devices, especially useful when a conventional hearing aid has little or no benefit or cannot be used.

(WRH, page 98)

Hearing technology, such as hearing aids and cochlear implants are effective and cost-effective and can benefit children and adults alike.

(WRH, Executive Summary, page 6)

IN CHILDREN:

The Report recognises the benefits of hearing aids and implants:

“In children, timely intervention with hearing aids and implants leads to better hearing, spoken communication and quality of life, which further translates into better educational outcomes.” (WRH, page 103)

“Their use in children with severe degree of hearing loss has brought substantial benefits to those implanted, and when accompanied by proper rehabilitation they lead to significant improvement in audiological status, overall functioning and speech perception skills. Children with cochlear implants have greater likelihood of acquiring oral language, integrating into regular schools and being able to experience sounds along with better speech skills.

Cochlear implants can also have a beneficial impact on learning and educational outcomes as well as the overall quality of life, though many factors other than implantation influence these results.” (WRH, page 98)

Cochlear implants can also have a beneficial impact on learning and educational outcomes as well as saving society money. Cochlear implants for children can ensure that more children will be able to attend mainstream settings, acquire speech skills, and obtain better educational outcomes. This has massive cost benefits for society in reduced educational costs and other costs, ensure individuals are able to reach their full potential.

IN ADULTS:

Cochlear implants have also been successful in addressing the negative impact of hearing loss for adults:

“In adults, the use of hearing aids and cochlear implants improves listening abilities and quality of life.” (WRH, page 103)

With the benefits shown, the criteria for implantation have changed:

“In recent years, the scope of implantation has been expanded to adults with severe to profound sensorineural hearing loss, who show improved speech perception and health-related quality of life with their use.” (WRH, page 98)

Rehabilitation therapy is also seen a crucial to ensure the success of cochlear implants for their users:

“Rehabilitative therapy is essential to ensure that people benefit from the use of their hearing aids and implants. Such rehabilitation improves the acceptability, effectiveness and cost-effectiveness of these devices.” (WRH, page 111)

The Report also makes clear that cochlear implantation must only take place *“where the supportive infrastructure for rehabilitation therapy exists” (WRH, page 100)* and outlines the potential benefits of telemedicine to provide such services:

“When applied effectively, telemedicine has the capacity to revolutionize the delivery of ear and hearing care and significantly improve the quality of health care by increasing accessibility and efficiency.” (WRH, page 158)

According to the report *“Age is not a barrier”* for cochlear implant treatment. (WRH, page 105-106)

KEY INSIGHTS FOR POLICY:

Severe to profound deafness has a massive negative impact on children and adults.

- Cochlear Implants are now an accepted intervention to address severe to profound deafness and hearing loss for both children and adults
- Cochlear implantation is proven to be effective and cost-effective for both children and adults
- Rehabilitation is essential to ensure the potential benefits of cochlear implantation are achieved
- Governments and health systems need to urgently invest in addressing hearing loss, including CI

THE COST BENEFITS OF COCHLEAR IMPLANTATION

The Report recognises that hearing technologies, specifically including CI, are available to ensure that hearing loss can be addressed successfully.

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With unilateral cochlear implants, estimations based on actual costs in a high-income setting showed a return of 2.59 International dollars for every 1 dollar invested, and a lifetime value of DALYs averted of 38,153 dollars for each individual. In the example of a lower-middle-income setting, the return on investment ratio was 1.46 International dollars with a lifetime value of DALYs averted of 6,907 dollars. For an upper-middle-income setting, the return on investment ratio was estimated to be 4.09 International dollars with a lifetime value of DALYs averted of 24,161 dollars

(WRH, page 104)

The Global Burden of Disease (GBD) study on hearing loss, which informed the WHO report also argued that:

“Early rehabilitation along with use of hearing devices such as cochlear implants are also cost-effective, despite large costs associated with initial technology investments and the risks of infectious complications after implantation.” (The Lancet, Global Burden of Disease, March 2021)

KEY INSIGHTS FOR POLICY

- Cochlear Implants save health and social care systems money by preventing disability and all the associated societal and personal costs.
- It is crucial that advocates use the cost benefit analysis and ensure that health funders and planners are aware of the costs of unaddressed hearing loss and the savings that the provision of cochlear implants can bring.
- WHO shows that for every dollar invested there is a return of 2.59 dollars using international dollars for high income settings and 1.46 for lower-middle income settings.
- Advocates can play a major role in ensuring that the barriers identified by WHO are tackled by working with health systems and industry to tackle costs, ensure that governments and commissioners are aware of the cost benefits of Cochlear Implants and that good aftercare and rehabilitation support are available to support users.

SCREENING FOR HEARING LOSS AND DEAFNESS

Screening for hearing loss and deafness across the lifespan is a vital part of any strategy for addressing hearing loss and ensuring that early intervention including cochlear implantation, proven to be more effective, is possible.

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Early identification plus intervention enables best results . . . Once hearing loss is identified, it is essential that it is addressed as early as possible . . . Measures available to rehabilitate people with hearing loss include the use of hearing technology through hearing aids, cochlear implants and middle ear implants.

(WRH, page 66)

CHILDHOOD HEARING SCREENING FOLLOWED BY EARLY INTERVENTION

For children we know that early intervention and support is crucial in ensuring they have the best possible chance of addressing communication and language delay and therefore ensuring they are not disadvantaged educationally or socially. Hearing screening plays a vital role in identifying children who are deaf and, if appropriate, fitted with a cochlear implant with rehabilitation support by locally-based professionals in early intervention to minimise language and developmental delay.

WHO concludes that hearing screening is central for identifying children with deafness and hearing loss and taking early action:

“Hearing screening in newborns, when followed by prompt and appropriate interventions, is effective in ensuring that those born with significant permanent hearing loss do not experience the associated adverse impacts.” (WRH, page 84)

“There is ample evidence to demonstrate that children benefit significantly when newborn hearing screening is coupled with early intervention programmes, . . . and that effectiveness increases the earlier the child (and family) is identified and rehabilitation starts.” (WRH, page 85)

Newborn screening leads to significant cost benefits across the life span:

“WHO conservatively estimated a return on investment from newborn hearing screening in a lower-middle and a high-income setting. Results, based on actual costs, estimated that in a lower-middle-income setting . . . there would be a possible return of 1.67 International dollars for every 1 dollar invested in newborn hearing screening. With a high income country, this return was estimated to be 6.53 International dollars for every 1 dollar invested.

In addition, the lifetime value of DALYs averted in each individual would be 21,266 International dollars, and the net monetary benefit 1.21 dollars. In the case of a high-income setting, the value of DALYs averted would be 523,251 International dollars.” (WRH, page 86)

KEY INSIGHTS FOR POLICY

- Advocates should ensure that education and health systems are aware that investing in childhood screening enables early intervention, including cochlear implantation, to take place, reducing the negative impacts of childhood deafness
- Advocates should ensure that follow up services and expertise are available to support provision of appropriate technology including cochlear implants and the appropriate aftercare
- Advocates should routinely point to the cost benefits for health systems where there is a benefit of 6.53 International dollars for every 1 dollar invested in hearing screening

ADULT SCREENING

Many people struggle for years with the impact of unaddressed hearing loss before seeking help and for some it will mean that a cochlear implant may now be a more appropriate intervention.

“Despite the functional limitations associated with hearing loss, adults typically wait as much as nine to ten years before seeking any hearing care. To address this gap, it is essential to provide active screening services for older adults in an easy and accessible manner, followed by suitable interventions.” (WRH, page 90)

The report also comments on the positive influence on cognition of adult hearing screening:

“Adult Hearing Screening and Early Intervention have become even more relevant given the links between hearing loss and dementia in older adults.” (WRH, page 91)

Screening for adults has also been shown to deliver cost benefits even for older age groups:

“WHO made a conservative estimation of return on investment from hearing screening for adults aged above 50 years. Results based on actual costs estimated a possible return of 1.62 International dollars for every 1 dollar invested in hearing screening among older adults in a high-income setting, and 0.28 International dollars in a middle-income setting, taken as examples.

In addition, the lifetime value of DALYs averted for 10,000 individuals screened would be 877,785 International dollars. In the case of a high-income setting, the value of DALYs averted would be 788,604 dollars for a similar population.” (WRH, page 91-92)

KEY INSIGHTS FOR POLICY:

- Hearing Screening is cost effective for adults over 50 and could play a major part in helping to address cognitive decline and delay the onset of dementia.
- Advocates should ensure that health funders and planners are aware of the potential benefits of adult screening.
- The cost benefits of screening and early intervention need to be taken in account and integrated into health strategies.
- Advocates should routinely point to the cost benefits for health systems of 1.62 International dollars for every 1 dollar invested in hearing screening in high income settings as well as improvements in life chances and quality of life for adults of screening.
- Adult screening allows earlier fitting of hearing aids and cochlear implants

RECOMMENDATIONS FOR ADVOCACY WORK

“Highlight the importance, need, and means for ear and hearing care and advocate for its prioritization in government health agendas.”

(WRH, page 250)

ADDRESSING HEARING LOSS AS A PUBLIC HEALTH ISSUE

WHO points to the lack of political leadership in making hearing loss a priority:

“The lack of leadership and governance is attributed to the lack of political attention, low perceived priority of hearing loss as a public health issue, and the lack of financial resources due to competing health priorities. Despite the high impact of hearing loss, availability of cost-effective interventions, and WHO-led global action, the challenge of limited financial resources to address hearing loss persists at global and country level.” (WRH, page 185)

WHO supports the idea of advocacy aimed at raising the profile of hearing loss within individual countries and internationally. Advocates need to campaign to push hearing loss up the political agenda of governments and commissioners. This means working to illustrate the high impact hearing loss has on health systems and individuals, using the evidence provided: *“Tailored communication and advocacy can be effective drivers for policy formulation. Such advocacy has to be undertaken at global, regional and national levels and be based on facts and figures supported by evidence.”* (WRH, page 186)

“Improve access to high-quality, affordable hearing technologies (hearing aids, cochlear implants and other assistive devices) and services required for their effective use.” (WRH, page 246)

WHO points out that additional investment is needed to scale up services and support:

“Annually, US\$ 1.33 per capita additional investment is required into the health system to scale up the identification, treatment, and rehabilitation of ear and hearing problems. Over a 10-year period, this promises a return (or gain) of nearly US\$ 16 for every 1 dollar invested.” (WRH, page 215)

Advocacy work, influencing the provision of Ear and Hearing Care (EHC) and particularly for cochlear implantation, is essential to close the gap in provision and the recognised variation. A key focus of the Report is the shift to people-centred Ear and Hearing Care in line with growing advocacy work. (WRH, page 276)

Moving towards people-centred care means:

“People in communities are viewed as partners in shaping both health policy and the series to be delivered through health systems.” (WRH, page 226)

The Report defines this shift as being from services being organised around individual diseases and health issues, to being organised around *“the comprehensive needs of individuals, families and communities . . .”* (WRH, page 276)

This *“integrated life-course approach is at the core of EHC provision.....”* and requires that people have *“awareness, education and support to make decisions.”* This is fundamental to advocacy work and the Report makes wide ranging recommendations for society to be able to address hearing loss.

Investment in hearing interventions is crucial if unaddressed hearing loss is to be tackled and public health improved. WHO summarises the approach in the following way:

“Key public health interventions for EHC provision across the life course are summarized in the acronym “H.E.A.R.I.N.G.”: Hearing screening and intervention; Ear disease prevention and management; Access to technologies; Rehabilitation services; Improved communication; Noise reduction; and greater community engagement. Implementing H.E.A.R.I.N.G. interventions can significantly benefit countries.” (WRH, page 202)

THE HEARING FRAMEWORK

WHO policy framework. Access to technologies are a key part of the WHO's framework, and includes cochlear implants.

- H** HEARING SCREENING AND INTERVENTION
- E** EAR DISEASE PREVENTION AND MANAGEMENT
- A** ACCESS TO TECHNOLOGIES
- R** REHABILITATION SERVICES
- I** IMPROVED COMMUNICATION
- N** NOISE REDUCTION
- G** GREATER COMMUNITY ENGAGEMENT

ADDRESSING STIGMA

WHO notes in the report the important role played by fear of stigma in people not coming forward to address their hearing loss. They suggest that there needs to be:

“Awareness campaigns that address attitudes towards, and stigma related to, ear diseases and hearing loss.” (WRH, page 246)

“Raising awareness on hearing loss and reducing associated stigma through:

– *communication campaigns that provide accurate and accessible information.*

– *strengthening associations of people with hearing loss.”* (WRH, page 181)

ADVOCACY FOR COCHLEAR IMPLANTS IS VITAL

“Despite the effectiveness and cost-effectiveness of hearing amplification in rehabilitation, many challenges restrict their use and accessibility.” (WRH, page 104)

Specifically, with regard to cochlear implantation, while WHO notes that cochlear implants are *“one of the most successful of all neural prostheses developed to date”* their use to lessen the impact of deafness and hearing loss has been limited with considerable variation and a lack of take up of those who could benefit, including in high income countries. WHO concludes that there are significant barriers preventing the wider adoption of cochlear implants:

“With cochlear implants, there is limited research and data on access and factors limiting their use. However, as with hearing aids, issues such as high costs, and shortages of trained workforce and rehabilitation services, have resulted in their restricted accessibility to countries other than those in high-income groups – with considerable variation even within these.” (WRH, page 179)

WHO also points to the need to reduce the costs related to providing the latest hearing interventions and technology. Advocacy groups could look at campaigns to ensure that costs are reduced:

“Reducing costs by adopting measures such as waving import duties or taxes; pooled procurement; use of solar-powered batteries and locally-sourced materials; and innovative reimbursement schemes.” (WRH, page 181)

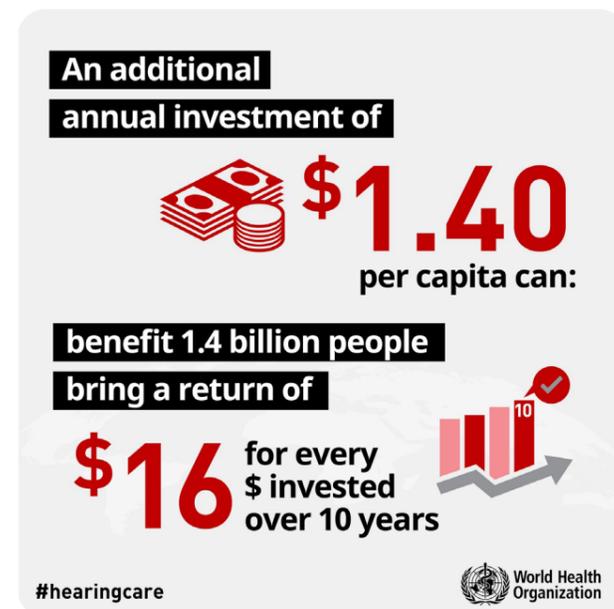
WHO also suggests that users need to be included in the development and design of technologies such as cochlear implants by ensuring:

“Research and innovation in design and delivery of hearing aids and cochlear implants to suit the unique requirements of countries, as well as development of user-driven hearing technologies that reflect the diverse needs of individuals with hearing loss.” (WRH, page 181)

THE REPORT SUGGESTS ACTIONS FOR ADVOCACY INCLUDING:

- *“Establish and support regional and sub-regional multi stakeholder groups to identify region-specific needs, resources and opportunities, in collaboration with WHO.*
- *Join the World Hearing Day advocacy event each year as a means for raising the profile of ear and hearing care within communities and decision-makers at all levels.*
- *Organize national and sub-regional launch events and policy dialogues to disseminate and advocate for the adoption of recommendations made in the World report on hearing.*
- *Join and support the World Hearing Forum for promoting coordinated and collaborative global action on hearing loss.” (WRH, page 249-50)*

COST BENEFIT OF ADDRESSING HEARING LOSS



KEY INSIGHTS FOR POLICY:

- Over a 10-year period, investment in hearing care promises a return (or gain) of nearly US\$ 16 for every 1 dollar invested.
- Advocates could work with public health organisations and government departments to deliver awareness campaigns.
- Families of children with hearing loss together can have a stronger coordinated voice in obtaining the necessary ongoing support, including educational support, for their children and reduce stigma in their communities
- Associations of people with hearing loss could be supported by Governments to provide examples and cases studies of the positive impact of taking action on unaddressed hearing loss.
- Cochlear implant provision should be part of the people-centred approach to Ear and Hearing Care
- Advocates who use cochlear implants can provide powerful role models for the benefits of taking action and reduce stigma.

INDICATORS OF PROGRESS

WHO has set targets for the monitoring of progress against this agenda for addressing hearing loss which all settings can monitor their progress. Having targets are crucial if the current under provision is going to be addressed.

FOR CHILDREN

“Effective coverage of newborn hearing screening services within the population: defined as the proportion of infants with hearing loss in a defined population who have received suitable interventions within the first six months of life to address their hearing loss.” (WRH, page 223)

“A 20% relative increase in the effective coverage of newborn hearing screening services, by 2030.

- *Countries with effective coverage rates below 50% should strive for a minimum of 50% effective coverage.*
- *Countries with effective coverage rates of 50–80%, should strive for a 20% relative increase in effective coverage.*
- *Countries with effective coverage rates currently above 80% should strive for universal coverage.*
- *Countries with population groups covered by newborn hearing screening services should ensure a coverage of 95% or above.” (WRH, page 224)*

Targets for screening are only one measure to consider in the continuum of support.

FOR ADULTS

“Effective coverage of hearing technology (e.g. hearing aids and implants)use among adults with hearing loss: defined as the number of adults in a defined population having a perceived benefit through the use of hearing technology as a proportion of those with hearing loss (moderate or higher grade).” (WRH, page 224)

“A 20% relative increase in the effective coverage of adults with hearing loss that use hearing technology (i.e. hearing aids and implants), by 2030.

- *Countries with effective coverage rates below 50% should strive for a minimum of 50% effective coverage.*
- *Countries with effective coverage rates of 50–80% should strive for a 20% relative increase in effective coverage.*
- *Countries with effective coverage rates currently above 80% should strive for universal coverage.” (WRH, page 224)*

KEY INSIGHTS FOR POLICY

- Advocates can use these targets to hold their own Governments to account in monitoring how well they are responding to the challenge of addressing hearing loss.
- Work with Government departments and commissioners to establish these targets, ensure they are monitored
- Ensure the investment necessary to meet them is available.

SUMMARY

The World Report on Hearing (WRH) 2021, defines the first ever Global hearing and care policies across the lifespan. For the first time it provides evidence for and recognises;

- **The global and personal impact** of hearing loss and deafness
- **The need to tackle the stigma** associated with deafness and hearing loss
- **The financial impact** of hearing loss and deafness to society and individual
- **The effectiveness,** including cost-effectiveness, of today's hearing technologies, including specifically cochlear implants
- **The variability in access** to cochlear implantation and rehabilitation
- **The crucial need for screening programmes,** to ensure early intervention and early CI
- **The importance of rehabilitation** for both adults and children to ensure maximum effectiveness of cochlear implantation
- **The need for users** to be involved in technology design and research
- **The provision of cochlear implant services** should be part of the move to people-centred Ear and Hearing Care
- **The need to drive down costs,** of CI and rehabilitation in innovative ways such as tele-health
- **The need to integrate** hearing health care costs into government health care/insurance plans
- **The value of evidence based advocacy work** and action in improving access to and quality of service provision

CONCLUSION

The World Report on Hearing offers a once in a generation opportunity for advocates to promote the need for better awareness, access and support for people with hearing loss who could benefit from or use a Cochlear Implant. The clear demonstration of the massive benefits to individual's health and wellbeing while also saving money for health and social care systems makes the case for need for cochlear implants to be put higher on the public health agenda across the world.

As WHO concludes the report is a:

"Wake-up call for health policy-makers across the world. To ensure that all world citizens can enjoy a state of optimum health and well-being. Adopting a people-centred approach that integrates ear and hearing care into national health care systems as part of universal health coverage is the only way to confront this growing challenge."
(WRH, page 244)

CIICA will be working with groups globally and regionally to support advocacy ensuring that there are resources to support advocates to ensure better awareness, access and support for cochlear implantation as part of the global drive to improve Ear and Hearing Care.

Brian Lamb and Sue Archbold

RELEVANT DOCUMENTS

You can find the documents referred to here at;

WHO World report on Hearing 2021 www.who.int/publications/i/item/world-report-on-hearing

The Lancet (2021). Hearing loss prevalence and years lived with disability, 1990–2019: findings from the Global Burden of Disease Study 2019. VOLUME 397, ISSUE 10278, P996-1009, MARCH 13, 2021 DOI: [doi.org/10.1016/S0140-6736\(21\)00516-X](https://doi.org/10.1016/S0140-6736(21)00516-X)

WHO. Integrated people-centred ear and hearing care. Policy Brief 2021. https://cdn.who.int/media/docs/default-source/documents/health-topics/deafness-and-hearing-loss/world-report-on-hearing/wrh-policy-brief-en.pdf?sfvrsn=cff40649_20&download=true

International Consensus statements on Adult Cochlear Implants www.adultheating.com

From more information and support on advocacy for better access and provision of Cochlear Implants go to www.ciicanet.org

Note: We have put the relevant page numbers of the report – if you go to the report itself you will be able to find the evidence on which these points in the report are based.

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