HEALTHCOPEIA BULLETIN

ASSISTIVE TECHNOLOGY

(FREE SUBSCRIPTION, COPY NOT FOR SALE)

HEALTHCOPEIA/ASSISTIVE/FEB23/B01

JOINT INITIATIVE OF
ICMR, NEW DELHI & HEALTHCOPEIA FOUNDATION

Dr. Rajeev Singh Raghuvanshi, *Secretary-cum-Scientific Director – IPC - Ministry of Health & Family Welfare, GoI inaugurated the* ***"Healthcopeia"*** *in the presence of* ***Sacheen Gandhi,*** *Founder, Healthcopeia and other Guest of Honour* ***Dr. Atul Nasa,*** *Head of the office, Controlling and Licensing Authority, Drugs Control Department - Govt of NCT of Delhi;* ***Mr. Daara B Patel,*** *Secretary General - Indian Drug Manufacturers Association, Mumbai and* ***Prof. (Dr.) Reenu Yadav,*** *Principal, IES University, Bhopal, India.*

HEALTHCOPEIA FOUNDATION

healthcopia

Contact Us
www.healthcopeia.org
healthcopeia@gmail.com

Healthcopeia Foundation (Registered under section 8 Companies Act 2013) works to create awareness and spread knowledge about the usage of medicines, medical devices, and healthcare therapies to the public by organizing various conferences, seminars, educational camps, webinar series, panel discussions and having a periodic supplement and a monthly bulletin. Healthcopeia Foundation with its scientific & technical members from academia, pharmaceutical and healthcare industries, hospitals, and entrepreneurs from all over India. **The Foundation's main goal is to provide "Healthcare for All".**

- We have been working consistently towards powerful and safe drug disposal campaigns to create awareness through standard studios, talks, and events at training organizations, universities, schools, and corporate.
- Healthcopeia worked on Medicines Adverse Reaction Awareness i.e. Pharmacovigilance in support of the **Indian Pharmacopeia Commission, Government of India.**
- Recently, Healthcopeia Foundation has taken initiatives in the awareness of "Assistive Technology" with support from **Indian Council Medical Research (ICMR), New Delhi.**

Donation / Registration
Healthcopeia

Healthcopeia Foundation has collaborated with the **Indian Council of Medical Research (ICMR), New Delhi** for the awareness of "Assistive Technology" at the National and International levels. With Technical Support from ICMR, New Delhi, Healthcopeia Foundation is initiating a monthly bulletin **"Healthcopeia Bulletin – Assistive Technology"** that will mainly focus on the awareness of "Assistive Technology".

A key goal of the **"Healthcopeia Bulletin – Assistive Technology"** bulletin is to reach out to the common public, colleges, universities, and healthcare professionals through print media and give awareness about the various available Assistive Technology devices, their manufacturers, ongoing innovations and current regulations in India and worldwide.

Healthcopeia Foundation is committed to spreading knowledge and awareness about Assistive Technologies and is committed to helping people with disabilities lead more independent and productive lives by removing barriers to meaningful participation in society and increasing their quality of life in meaningful ways. Various Assistive Technology such as Wheelchairs, Prostheses, Hearing Aids, Vision Aids, and Specialised Computer Software and Hardwaat may be used to improve one's mobility, hearing, vision, or communication abilities.

Indian Council of Medical Research (ICMR), New Delhi
Technical Committee

Dr. Rajiv Bahl
Secretary to GoI, Department of Health Research & Director General

Dr. R S Dhaiwal
Scientist G & Head
Non-Communicable Diseases (NCD) Division

Dr. Ravinder Singh
Scientist D
Disability, Rehabilitation, Assistive Technology (NCD) Division

Dr. Ashoo Grover
Scientist F
Non-Communicable Diseases (NCD) Division

Dr. Geeta Rani
Scientist C
National Centre of Assistive Health Technology (NCAHT), (NCD) Division

Dr. Salaj Rana
Scientist C
National Centre of Assistive Health Technology (NCAHT), (NCD) Division

भारतीय आयुर्विज्ञान अनुसंधान परिषद
स्वास्थ्य अनुसंधान विभाग, स्वास्थ्य और परिवार
कल्याण मंत्रालय, भारत सरकार

Indian Council of Medical Research
Department of Health Research, Ministry of Health
and Family Welfare, Government of India

February 07, 2023

Appreciation Letter

It gives me great pleasure to appreciate the outstanding work done in bringing out the Assistive Technology Bulletin. The effort and dedication by Healthcopeia Foundation team in this project is truly commendable.

The information and insights shared in the bulletin have been extremely valuable, providing a comprehensive overview of the latest developments in assistive technology. The way you have organized and presented the information makes it easy for everyone to understand and benefit from it.

Your efforts in creating this bulletin have not gone unnoticed, and it will and is already having a positive impact on the community. The information you have provided is helping people with disabilities to access new and innovative technologies, enabling them to lead more independent and fulfilling lives.

I cannot thank you enough for your hard work and commitment to this project. Your contribution will have a lasting impact and will be remembered for years to come.

Please accept my sincerest gratitude and admiration for the exceptional work Healthcopeia Foundation team have done.

With best wishes and warm regards,

Dr. Ravinder Singh
Sr. Scientist and Prog Officer
Disability, Rehabilitation, and Assistive Technology

डॉ. रविन्द्र सिंह /Dr. Ravinder Singh
वरिष्ठ वैज्ञानिक / Sr. Scientist
भारतीय आयुर्विज्ञान अनुसंधान परिषद
Indian Council of Medical Research
वी. रामलिंगास्वामी भवन, अंसारी नगर, नई दिल्ली
V. Ramalingaswami Bhawan, Ansari Nagar, New Delhi

वी. रामलिंगस्वामी भवन, पोस्ट बॉक्स नं. 4911,
अंसारी नगर, नई दिल्ली - 110 029, भारत
V. Ramalingaswami Bhawan, P.O. Box No. 4911,
Ansari Nagar, New Delhi - 110 029, India

Tel: +91-11-26588895 / 26588980 / 26589794
+91-11-26589336 / 26588707
Fax: +91-11-26588662 | icmr.nic.in

FROM THE FOUNDER DESK

It is a matter of pride and privilege that Healthcopeia Foundation is strengthening its journey of spreading awareness about Assistive Technology through its new vertical "Healthcopeia Bulletin – Assistive Technology".

We are grateful that now, Healthcopeia Foundation has associated with the Indian Council of Medical Research, New Delhi for the awareness of "Assistive Technology" at the National and International levels. We highly appreciate that ICMR, New Delhi has assured us to provide Technical Support and appreciated our hard work in bringing the first issue of "Healthcopeia Bulletin – Assistive Technology".

I congratulate Technical Support Team from ICMR, New Delhi and our Editor-in-Chief Dr. Artiben R Thakkar & Team for their untiring and proactive efforts in bringing out the first issue of the "Healthcopeia Bulletin – Assistive Technology".

I extend my warm regards to each reader.

Sacheen Gandhi
Founder, Healthcopeia Foundation
& Healthcopeia Wellness Pvt. Ltd.

DESK OF EDITOR-IN-CHIEF

It gives me immense pleasure to bring out the first issue of the "Healthcopeia Bulletin – Assistive Technology", a bulletin that started with technical support from the Indian Council of Medical Research (ICMR), New Delhi. It synergizes the mission of the Healthcopeia Foundation for spreading awareness in the healthcare segment specifically awareness of Assistive Technology.

Our main aim is to make the common public aware of "Assistive Technology" through the bulletin. We are focused to highlight the policies and strategies made by the Government and each issue of the Bulletin will be covering the Institute working in the field of "Assistive Technology"; Interview & Invited articles of the stakeholders of the focus institution; Technical specifications of any specific Assistive Technology Product and the Feedback of the user using the specific AT.

Thus, through the bulletin we will be able to help people with special need to be more independent and have productive lives by removing barriers to meaningful participation in society and increasing their quality of life in meaningful ways.

We would appreciate that if any reader would like to give suggestions please send E-mail to "healthcopeiaoutreach@gmail.com". Also, feel free to reach out to us in case if you wish to have subscription for Bulletin .

Dr. Artiben R. Thakkar
Editor-In-Chief
Healthcopeia Outreach

HIGHLIGHTS OF THE BULLETIN

INTRODUCTION TO ASSISTIVE TECHNOLOGY (AT)

Dr. Ravinder Singh, Scientist, ICMR Headquarter, New Delhi

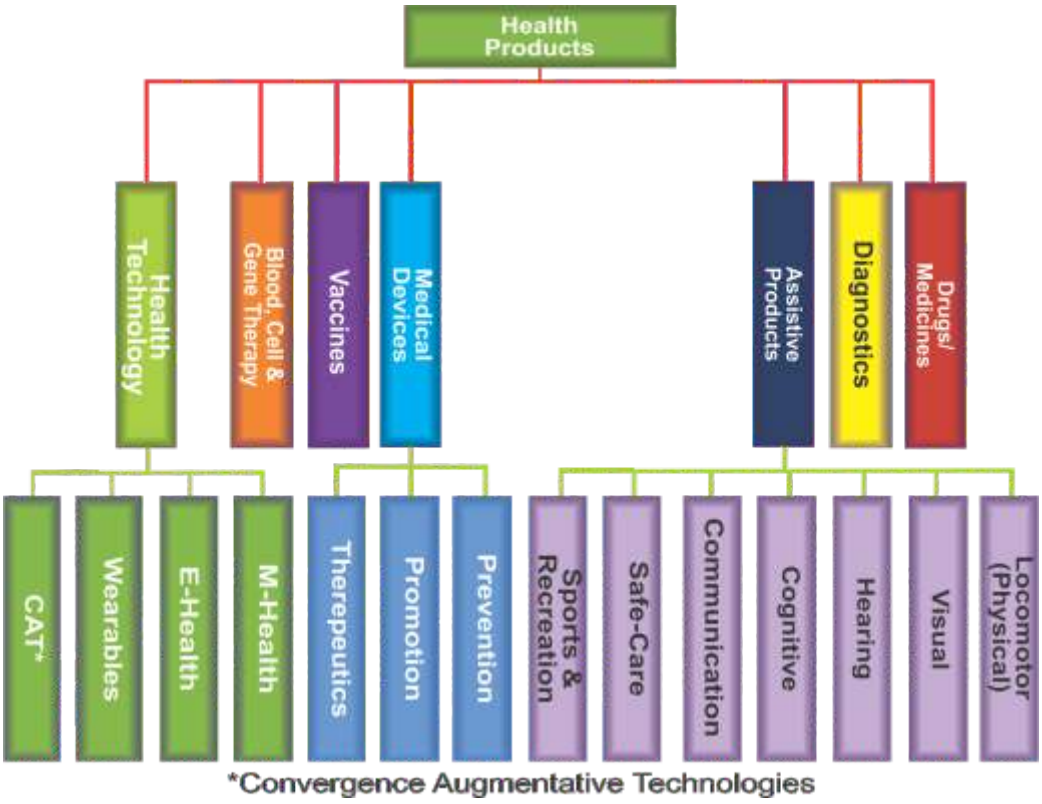
Background

South-East Asia region inhabits one-fourth population of the world. Out of six regions of the World Health Organisation (WHO), all 11 countries in this region are unique in their diversities related to cultural, geographical and economical aspects. It becomes challenging to provide healthcare services for such diverse groups, especially when the resources are limited. Further challenges are posed by health conditions or consequent restricted mobility or permanent disabilities, which require rehabilitation in form of clinical, surgical treatment or Assistive Technologies (ATs).(1) As the prevalence of NCDs, injuries, ageing populations, mental health conditions(at both extremes of the age spectra such as autism, slow learning disorders and dementia in the elderly) and associated disabilities will continue to increase so will the unmet needs for rehabilitation. We lack the data to understand the demands of condition-specific ATs at the state, national and regional levels. Nearly more than 1 billion will require one or more assistive products/technology. At present only 1 in 10 people in need have access to ATs.(2,3) Low and middle-income countries (LMIC) are facing growing need for assistive technologies. Authentic and evidence-based research is lacking, limiting appropriate policies and practices useful to these people. In a scoping review (2000 to 2016) of research on assistive technologies from LMIC and other resource constraint settings, it was found that, out of 252 studies included in the study, more than 80% focused on assistive technologies for mobility (45.2%), vision (35.5%) and prosthetics accounting for over 50% of all publications. The review found that evidence was most lacking on assistive technologies to address hearing, communication and cognition needs. It is clearly evident that ATs are required for streamlining the functioning in routine confined environments, workplaces, schools & other educational institutions, while travelling, in hospitals as well as in disaster risk management programmes. (4)

Introduction

As per WHO, AT is "Any item, piece of equipment, or product system, whether acquired commercially, modified, or customized, that is used to increase, maintain, or improve functional capabilities of individuals with disabilities". Mainstream technologies used on an everyday basis with universal design such as smartphones and robots are considered ATs when they are used for enhancing the capabilities and functioning of individuals with disabilities. International Standards Organization (ISO) incorporated the ICF model to define AT as "any product (including devices, equipment, instruments and software), especially produced or generally available, used by or for persons with disability for participa¬tion, to protect, support, train, measure, or substitute for body functions, structures, and activities, or to prevent impairments, activity limitations, or participation restrictions" (ISO, 2016).

ATs contribute towards reducing the need for formal health support services, long-term care and the burden of caregivers.(5,6) Without assistive technologies, people may suffer exclusion, risk of isolation & poverty, and many times become a burden to their family & society. The positive impact of ATs goes far beyond improving the health and well-being of individual users and their families. There are also socioeconomic benefits to be gained, by virtue of reduced direct health and welfare costs (such as recurrent hospital admissions or state benefits), and by enabling a more productive labour force, indirectly stimulating economic growth. (6) WHO estimates that over one billion people need one or more assistive products.



Assistive Technology (ATs) as Essential Tools

Refers to Assistive Technology and related systems and services developed for people to maintain or improve functioning and thereby promote well-being. It enables people with difficulties in functioning to live healthy, productive, independent and dignified lives, participating in education, the labour market and social life. It can reduce the need for formal health and support services, long-term care and the burden on carers.

Some of the examples of ATs are Wheelchairs, Hearing aids, Walking frames, Spectacles, Pill organizers Prosthetic legs, and Assistive information and communication technology which includes memory aids, specialized computer hardware and software, augmentative and alternative communication, and customized telephones.

Various categories of people with functional impairments may get support in different spheres of life by using ATs e.g. visual, hearing, physical, speech, cognitive, psychiatric and health-related conditions (7). (1) People with visual impairments may require the assistance of spectacles, visual magnifiers, Braille-enabled materials, mobile app, softwares for various activities while using computers; (2) People with hearing and speech restrictions may be able to perform all activities like abled by using hearing aids, cochlear implants, sign language enabled materials, virtual speech training software; (3) People with physical or locomotor disabilities may require braces, cane, wheelchair, prosthetic limbs; (4) People or children with cognitive disabilities suffer in terms of intelligence, memory, self-expression, information processing, performing academic tasks. These can be taken care by using smart computers, verbal and visual instructions, charts etc.;

(5) Persons with disabilities due to mental health conditions face social phobias or bipolar personality disorders making consistent decision and academic performance. They can be helped by specially designed app or computer programmes; and (6) There are various health conditions, which in their chronic stages impedes with routine activities like diabetic foot, respiratory conditions.

Who Need ATs?

ATs are required to compensate for impairment or loss of intrinsic capacity. They help in reducing the consequences of gradual functional decline. If given support in form of ATs, their functional decline can be minimised and confidence can be increased to move freely or perform their daily routine activities. The burden of carers is reduced, as now such people with functional limitations are able to perform without any support.

WHO estimates that there are more than 1 billion people who would benefit from one or more assistive technologies. This seems to be an underestimation, as a large category of people need ATs. We often ignore post-injury scenarios, when a person may be in need of AT for a shorter period or permanently, depending on the post-traumatic residual disability. Further, with populations ageing and the prevalence of non-communicable diseases rising across the world, this number is likely to rise above 2 billion by 2050, with many older people needing two or more products as they age. There are other major categories of populations who require ATs like People with disability (PwD), Older people, Children with neuro-development disorders & specific learning disorders, People with non-communicable diseases, People with mental health conditions, and People with gradual functional decline. India currently has a 12% population, which falls under the category of older persons/elderly. This is projected to increase to 20% by the year 2030. The majority of people in this age group would require ATs in the coming years.

References:

1. Global atlas of medical devices. Geneva: World Health Organization; 2017. Licence: CC BY-NC-SA 3.0 IGO.
2. https://www.who.int/news-room/fact-sheets/detail/assistive-technology
3. Institute for Health Metrics and Evaluation, Human Development Network, The World Bank. The Global Burden of Disease: Generating Evidence, Guiding Policy – South Asia Regional Edition. Seattle, WA: IHME, 2013.http://www.healthdata.org/policy-report/global-burden-disease-generating-evidence-guiding-policy-%E2%80%93-south-asia-regional-edition as accessed on May 04, 2020.
4. https://www.un.org/disabilities/documents/2016/Disaster-Disability-and-Difference_May2016_For-Accessible-PDF.pdf.
5. Realizing the Sustainable Development Goals by, for and with persons with disabilities-Disability and Development Report (2018). United Nations. New York
6. Marasinghe, Keshini. (2015). Assistive technologies in reducing caregiver burden among informal caregivers of older adults: a systematic review. Disability and Rehabilitation Assistive Technology. 10.3109/17483107.2015.1087061.
7. Priority Assistive Products List (2016). World Health Organisation. Geneva

Focus Institute – Indian Council of Medical Research, New Delhi

One of the oldest and largest medical research organisations in the world is the Indian Council of Medical Research (ICMR), which is responsible for formulating, coordinating, and promoting biomedical research in India. The Indian Ministry of Health and Family Welfare's Department of Health Research provides funding to the Institute for Clinical and Medical Research (ICMR).

The ICMR's 26 national institutes focus on research in a wide range of medical fields, including TB, leprosy, cholera and diarrhoeal illnesses, HIV/AIDS, malaria, kala-azar, vector control, nutrition, food and drug toxicity, reproduction, immuno-haematology, oncology, and many more. Its six medical research facilities focus on local issues and work to improve or establish research infrastructure in their respective regions.

ICMR's priority research areas are Disability, Rehabilitation & Assistive Technologies (DRAT) at the Indian Council of Medical Research (ICMR) Headquarters, New Delhi for last more than two decades. ICMR identified Disability and Rehabilitation after India ratified the United National Convention on Rights of Persons with Disability (UNCRPD). Subsequently, India enacted the Rights of Persons with Disability Act (RPwD Act) in the year 2016.

Later, Assistive Technology (AT) was identified as a priority area of research in collaboration with the World Health Organisation (WHO). ICMR-AIIMS Disability & Rehabilitation Research Coordinating Unit (IADRRCU) was established for fostering research through institutions of eminence like AIIMS and their various departments working on disability, rehabilitation, and assistive technologies.

Director General (DG)-ICMR constituted a ***"Committee on Creating Enabling & Accessible Environments"*** at ICMR Headquarters and ICMR Institutes. Currently, ICMR Headquarters and many ICMR institutes across India have initiated the creation of accessible environments on their premises. ICMR has committed allocation of 3% of ***its total budget*** for disability, rehabilitation and assistive technology-related activities, which is being used to support health research, and create inclusive eco-systems for better work environments for Persons with Disabilities (PwDs).

Flagship Scheme National-Level Initiative

- ICMR has established National Centre for Assistive Health Technologies (NCAHT) @ AIIMS & IIT Campuses.
- The proposal for establishing WHO Collaborating Centre (WHO-CC) at ICMR Headquarters has been submitted to WHO.
- National Expert Committee (NEC) under ICMR has compiled a National List of Essential Assistive Products (NLEAP) for Indian populations with support from experts and stakeholders through a consultative process. A total of 380 products are listed in the draft list to be included under healthcare centres.

ICMR-WHO Collaboration

ICMR has contributed a chapter in the recently launched **WHO-Global Report on Assistive Technology (GReAT). The GReAT** report was developed in response to the World Health Assembly resolution WHA71.8 on improving access to assistive technology adopted in May 2018. The global impact of the WHO-UNICEF Global Report on Assistive Technology will be reviewed in 2026 and 2030. ICMR organized a first-ever meeting of AT stakeholders (GATE Initiative-Stakeholders Consultation: Role of Assistive Technologies-Looking Beyond) in collaboration with WHO and Trust Cradle. This was the game-changer in the field of Assistive Technologies in India.

Expert Members

ICMR is a member of the **Executive Committee and General Council of the Rehabilitation Council of India (RCI)** and an Expert of the Committee on R&D (Disability & Rehabilitation) under the Ministry of Social Justice & Empowerment (MoSJE). ICMR is an active member of the Technical Advisory Group of WHO to review its tools like rATA, AT-Capacity and AT-Impact. ICMR contributed as a member of the Committee for the development of **disability assessment and certification** under the Ministry of Social Justice & Empowerment (MoSJE). ICMR is a member of the expert Committee to **develop standards for assistive technologies** being undertaken by the Bureau of Indian Standards (BIS).

Promotion of Innovation in Assistive Technology

- National Centre for Assistive Health Technology (NCAHT) has the mandate to develop or innovate 20 new assistive technologies in the n next five years.
- Centre for Advanced Research and Excellence- Disability and Assistive Technology at AIIMS and IIT is working on an External Robotic Exoskeleton for Rehabilitation of Upper Limb Paralysis among Post-Stroke patients.
- ICMR has a validated indigenous and innovative hearing device called SOHUM. It is a portable OAE-based hearing assessment device, which can be used under field new-borns also.
- ICMR is also working in collaboration with DRDO for the development of a low-cost affordable Indian Cochlear Implant.

Future Prospects

ICMR has identified future activities as short-term, mid-term, and long-term goals.

- Aa s short-term goal, partnerships will be developed among different stakeholders. Inter-ministerial strengthening will be done through official channels. International collaborations will be created among the different agencies and research organisations.
- A As a med-term goal, an AT Consortium will be the constitution of research organisations, academic institutions, AT manufacturers, different stakeholders, and end-users. Courses for the Certification and UG & PG Degrees will be launched in collaboration with academic and research institutions in India and abroad. Assistive Technologies Manufacturers Association (ATMA) will be facilitated in near future.
- In the long-term goals, ICMR will strengthen research through joint funding of research projects related to disability, rehabilitation, and assistive technologies. Need assessment will be carried out with help from partner institutes.

INTERVIEW – DR. RAVINDER SINGH, SCIENTIST, ICMR, NEW DELHI

1.Could you please let us know your journey in leading "Assistive Technology"? What were the main inspiring parameters to lead this section?

The Government of India (GoI) identified disability as a major area of concern by enacting the Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995 and later strengthening it and updating it as the Rights of Persons with Disability Act 2016 encompassing principles of United Nations Convention on the Rights of Persons with Disability (UNCRPD). An action plan was prepared by the Government of India by earmarking a dedicated budget for all its Ministries and Departments. ICMR followed the GoI directives and created health research support for researchers across the country. A special Call for Proposals (CFP) was made to attract researchers to carry out research on issues related to disability and rehabilitation. International agencies like United Nations (UN) and World Health Organisation (WHO) broadened the scope of disability work by identifying Assistive Technology (AT) through the 71st World Health Assembly by adopting resolution WHA71.8. A key deliverable under this resolution was the status report on AT, popularly called as GReAT (Global Report on Assistive Technology) Report, which was prepared with inputs from all the member states. WHO also developed a rapid Assistive Technology Assessment (rATA) Survey tool, to find out the need, use, gaps, and satisfaction of AT users. ICMR has played a crucial and important role throughout the journey. ATs have a significant and important role in prevention, promotion, management, rehabilitation, and assistive healthcare. Citing the overall impact of ATs on the health and independence of the users, there is a huge need to carry out research, enhance provision, and improve usage.

2.What kind of challenges have you faced in bringing "Assistive Technology" to its current status?

ICMR has faced many challenges in advancing the scope of ATs due to a lack of policy, regulations, awareness, and lack of clarity of work allocation between ministries and departments. Some of the challenges are listed below:

- Cost: Assistive technologies are very expensive, making them inaccessible to many potential users.
- Lack of Awareness: The majority of individuals are not aware of the various assistive technologies available, making it difficult to find the right solution.
- Inadequate Regulation: There is a lack of standardized regulations and standards in the field of assistive technology, making it challenging to ensure the quality and safety of products.
- Technical Limitations: Assistive technologies are still developing and have limitations, such as the lack of compatibility with other devices and systems, which affects their usability and effectiveness.
- Stigma: Despite its many benefits, there is still a stigma surrounding the use of assistive technology, making some people reluctant to use it. For example, most of the elderly don't use hearing aid because of stigma.
- Maintenance and Upkeep: Assistive technology requires regular maintenance and updates, which can be time-consuming and costly.

There is also a shortage of service providers.

- Lack of User Involvement: In some cases, assistive technology is developed without involving the end-users, leading to products that do not meet their needs and preferences. So, it is important to involve the end-users from the stage of innovation till manufacturing.

3.What kind of government regulations are available? & What are the major challenges in regulations of "Assistive Technology"?

Currently, in India, there are no regulations on the standards, manufacturing, provisioning, and service providers. The challenges are to create an overarching policy and related services. All the challenges mentioned above are also important for improving access to AT.

4. What are the major policies taken up by ICMR to promote "Assistive technology"?

Indian Council of Medical Research (ICMR) is working on positioning the Disability, Rehabilitation & Assistive Technology (DRAT) in the health sector. ICMR identified Disability and Rehabilitation as a priority area after India ratified United National Convention on Rights of Persons with Disability (UNCRPD). Assistive Technology (AT) was identified as a priority area of research & development by the World Health Organisation in 2008. ICMR established National Centre for Assistive Health Technologies (NCAHT) @ AIIMS & IIT Campuses. ICMR compiled the National List of Essential Assistive Products (NLEAP) for Indian populations with support from experts and stakeholders through a consultative process on the pattern of the National List of Essential Medicines (NLEM). ICMR supported a Centre for Advanced Research & Excellence (CARE) on Assistive Technologies (Post-Stroke Rehabilitation using Robotic Hand) at AIIMS, New Delhi. Policy Briefs for Provision and Removing Barriers to Assistive Technologies (ATs) prepared by ICMR. Guidelines for the Uniform Standard Structure & Functioning of Rehabilitation Centres are developed. Draft Guidelines for the care of persons with disabilities during pandemic-like situations were prepared in the first quarter of the year 2020. An AT insurance policy for persons with disability was launched by the Star Health Insurance Company, Bengaluru. ICMR has contributed a chapter in the WHO-UNICEF Global Report on Assistive Technology (GReAT), rapid Assistive Technology Assessment (rATA) survey tool, and AT-Impact, AT-Capacity tools. Meeting of AT stakeholders (GATE Initiative-Stakeholders Consultation: Role of Assistive Technologies-Looking Beyond) organized in December 2017. ICMR is a member of the Expert Committee constituted by the Bureau of Indian Standards (BIS) for developing standards for assistive technologies.

5. What steps should be taken to have more awareness of "Assistive Technology"?

There are several measures that can be taken to improve awareness of assistive technology, including:

- Outreach and Education: Conducting workshops, seminars and public speaking events to educate people about the benefits and uses of assistive technology.
- Social Media and Online Presence: Creating an online presence and using social media to reach a wider audience and spread awareness of assistive technology.
- Partnerships and Collaborations: Forming partnerships with organizations and groups that serve individuals with functional impairments to promote the use of assistive technology.

- Government Support: Encouraging government agencies to support and fund assistive technology initiatives, such as research and development, training programs, and accessible technology initiatives.
- Product Demonstrations: Providing product demonstrations and hands-on experiences to give individuals the opportunity to try out different assistive technology devices and software. ICMR has created an Experience Zone at IIT-Delhi Campus.
- Accessibility Guidelines: Ensuring that websites, products, and services are accessible and usable by individuals with disabilities, by following established accessibility guidelines and best practices.

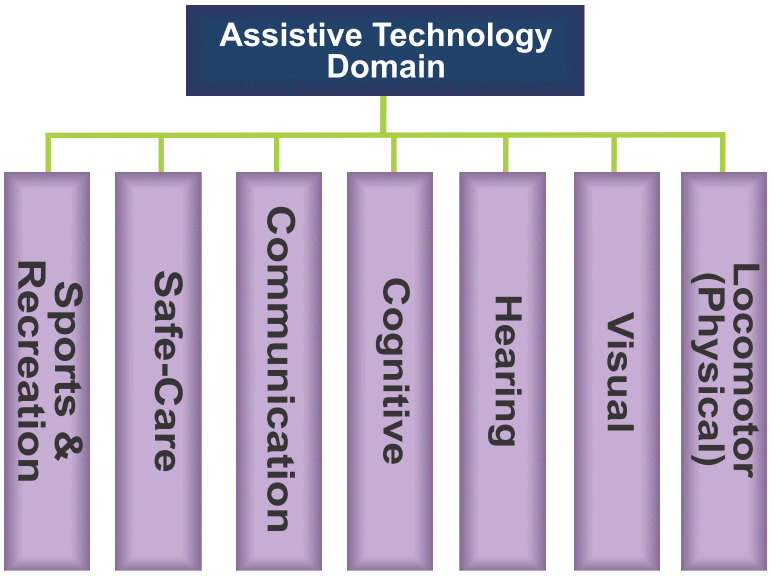
6. What is the strategy of ICMR for the next 5 years for making the "Assistive Technology" field stronger?

ICMR will continue working towards this goal through:

- Increase public awareness: Raising public awareness about the availability and benefits of assistive technologies can increase demand and drive innovation.
- Government funding: Government should invest in research and development of new assistive technologies, as well as provide financial incentives for companies to make them more affordable. ICMR is making efforts to involve different stakeholders.
- Collaboration between stakeholders: Collaboration between government agencies, non-profit organizations, technology companies, and healthcare providers can help ensure that assistive technologies are developed, tested, and made available to those who need them.
- Enhance distribution channels: Improving the distribution channels for assistive technologies, such as online marketplaces, can increase access for those in remote or underserved areas. ICMR is making efforts to involve Microsoft for this purpose.
- Integration with mainstream technology: Assistive technologies should be designed to be compatible with mainstream technology, such as smartphones and laptops, to ensure that they are easily accessible to all users. National Centre for Assistive Health Technology (NCAHT) at AIIMS-Delhi and IIT-Delhi is working towards this goal.
- Focus on user-centered design: User-centered design can help ensure that assistive technologies are designed with the needs and preferences of users in mind, improving their effectiveness and uptake.
- Training and Support: Training and support should be provided for users, caregivers, and professionals to effectively use and integrate assistive technology into daily life.
- Universal Design: The principles of universal design should be incorporated into the development of all technology products and services to make them accessible to the widest possible range of users, including those with disabilities.

EXAMPLES OF ASSISTIVE TECHNOLOGY DOMAIN

Assistive technology may range from low-tech aids like walking canes and customised cups to high-tech solutions like adaptive computer programmes and powered wheelchairs. It is useful to group these various aids into distinct groups.



LOCOMOTOR (PHYSICAL)

People with physical impairments often have difficulty maintaining good lying, standing or sitting positions for functional activities and are at risk of developing deformities due to improper positioning. The following devices can help overcome some of these difficulties:

- Wedges
- Chairs, e.g., Corner Chairs, Special Seats
- Standing frames
- Wheelchairs
- Canes
- Crutches
- Walkersor Walking Frames
- Walking Stick
- Tricycles
- White Cane

PROSTHETICS-These are usually custom-made devices which replace, support or correct body parts. They are designed, manufactured, and fitted in specialized workshops or centres by trained prosthetic/orthotics personnel and include: • Prostheses, e.g., artificial legs or hands • Orthoses, e.g., spinal braces, hand/leg splints or callipers • Orthopaedic shoes. • Clubfoot brace

VISION- Low vision or blindness greatly impacts a person's ability to carry out important life activities. A range of devices (simple to complex) can be used to maximize participation and independence, including:

- Large print books
- Magnifiers
- Eyeglasses/spectacles
- White canes
- Braille systems for reading and writing
- audio devices, e.g., radios, talking books, mobile phones
- Screen readers for computers, e.g., JAWS (Job Access with Speech) is a screen reader programme.
- Eyeglasses, magnifier, magnifying software for computer
- Communication cards o GPs app for walking poles

HEARING

Hearing loss affects a person's ability to communicate and interact with others; it can impact on many areas of development, e.g., speech and language and restricts educational and employment opportunities, resulting in social discrimination and isolation. Devices include:

- Hearing aids
- Headphones for listening to the television.
- Amplified telephones
- TTY/TTD (telecommunication devices)
- Visual systems to provide cues, e.g. a light when the doorbell is ringing.

COGNITIVE

Cognition is the ability to understand and process information. It refers to the brain's mental functions such as memory, planning and problem-solving. Brain injuries, intellectual impairment, dementia, and mental illness are some of the many conditions that may affect an individual's cognitive ability. The following devices can assist individuals to remember important tasks/events, manage their time and preparing for activities:

- Lists
- Diaries
- Calendars
- Schedules
- Electronic devices, e.g., Mobile phones, pagers, personal organizers.

COMMUNICATION- Augmentative and alternative communication devices can assist individuals who have difficulty understanding and producing speech. They are provided to support speech (augmentative) or to compensate for speech (alternative). Devices include:

SELF-CARE- GPS-based navigation device; Timers: manual or automatic reminder; Smartphones with adapted task lists

SPORTS AND RECREATION- •Adapted toys and games, •Braille systems for reading and writing, •Talking book players

FOCUS DEVICE – WHEELCHAIR

People who have trouble walking often rely on mobility aids like wheelchairs to help them get around and have a better quality of life (e.g., a person with spinal cord injuries resulting in quadriplegia or paraplegia, muscular dystrophy, etc). Access to education, employment, and social activities, as well as necessities like healthcare, are all made more feasible for those who use wheelchairs. A good wheelchair does more than just get its user from point A to point B; it also enhances their physical health and quality of life by preventing or alleviating common issues like pressure sores, slowing the advancement of deformities, and facilitating better breathing and digestion.Wheelchair users who want to move around freely and easily should invest in a device that is tailored to their body and their needs.

A great number of people throughout the globe are wheelchair-bound due to physical impairments:

- An estimated 10,000,000 persons, or 1% of the population, need the use of a wheelchair in the 34 industrialised countries.
- It is predicted that among the 156 developing nations, 121,800,000 individuals (or at least 2% of the population) use wheelchairs.
- With a global population of 7,091,500,000, around 131,800,000 persons (1.85%) are wheelchair dependent.
- There are a lot of people who could benefit from using a wheelchair but now don't have access to one.
- Only about half a million people (5% of 10 million) in industrialised nations need but do not have access to a wheelchair.
- At least 109,620,000 persons need of a wheelchair but do not have one (90% of 121.8 million) in poor nations.
- As a result, there are about 110,000,000 people who need a wheelchair but cannot get one.

There have been innumerable variations on the wheelchair theme since the first mass-produced models appeared fifty years ago. From standard manual wheelchairs to more complex electric models with features like standing, tilting, and reclining, the following are some examples.

1. Manual Wheelchairs , 2.Powered Wheelchairs , 3.Positioning Wheelchairs , 4.Sports Wheelchairs , 5.All-Terrain Wheelchairs , 6 . Standing Power Wheelchairs , 7.The Best All-Around Wheelchair Type

PRODUCT SPECIFICATION– WHEELCHAIR NEOBOLT BY NEOMOTION

Description- NeoBolt is a motor and battery powered add-on / attachment-unit to the NeoFly wheelchair.

Use- Wheelchair users can use NeoBolt to convert NeoFly Wheelchair into a battery and motor-powered device. This device can be driven on flat terrains and on roads, for purpose of mobility. A few examples include commuting to education, work, recreation, etc.

Who can use?- A person using a wheelchair, after assessment by a medical professional.

Highlights - NeoFly

- 18 customizations to meet the needs to the individual. • 3-5 times more energy efficient
- 30% lesser footprint for the same seating area. • User is more visible than the wheelchair.
- Stylish and fashionable. • Has a rugged built for outdoor use with NeoBolt. , • Portable in auto-rickshaw, car.

Highlights - NeoBolt

- User can independently attach to wheelchair.
- Safe on uneven terrain.
- Battery powered. Travels 25 km per charge.
- Recharge in 6 hours. Portable battery for easy recharging.
- Speed limited to 25 kmph.
- Drum brake.
- Headlight, Horn, Reverse, Digital Display, Mirrors.
- Can climb a gradient of 8 degrees.

NEOMOTION

LIVE LIFE TO THE FULLEST

BACKED BY: SHARK TANK INDIA

NEOMOTION, AN IIT MADRAS STARTUP, CREATES TRANSFORMATIVE PRODUCTS FOR WHEELCHAIR USERS (ELDERLY, PHYSICALLY CHALLENGED) TO ENABLE THEM TO BE AN INCLUSIVE PART OF SOCIETY.

Incubated at IIT Madras

Our Users

What I love the most is the balance of comfort, efficiency of efforts and active features which I get from NeoFly

Capt Shubhajeet Mazumdar (Retd), Bangalore
Project Manager, Deloitte

The feeling of wind in my hair when I take the NeoBolt out on the road - It is the true sign of Freedom

Justin Jesudas, Hyderabad
CEO, The Spinal Foundation & Para-Athlete

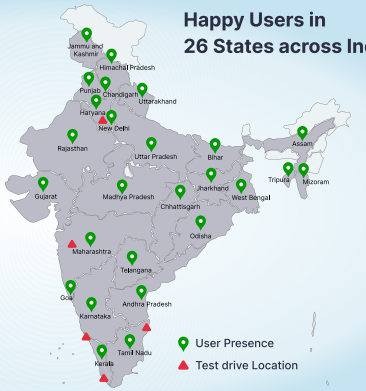
For 37 years as an SCI, I experienced severe back and shoulder pain on my old wheelchair. With the NeoFly, I am now free of those pains!

Baljeet "Sweety Bagga" Kaur, Hyderabad
Founder, IAMpossible Foundation

Contact Us

NeoMotion Assistive Solutions, Chennai
97909 51730 | info@neomotion.co.in
www.neomotion.in
@neomotionlife

Happy Users in 26 States across India



NEOBOLT : USER FEEDBACK

Username – Mr. Niranjan Narayan Jadhav
Location – Goregaon East, Mumbai.
Age – 51 years
User experience – I am double leg amputee and lost both my legs in a Local Train accident. I amusing Multipurpose Wheelchair of Neomotion last 14 months and drove about 5335 km. I am riding without Assistant.

1. **How you came to know the Multipurpose Wheelchair of Neomotion?**
   I was using a normal wheelchair and which was bit troublesome in terms of, If I have to travel somewhere, I have to take help of someone to help me to be seated in car or whatever transport I was using. Due to this kind of I came about Neomotion through social media as somebody posted a video saying the IIT Chennai based firm has developed some wheelchair which can help me better. I called to their customer care number, and I was told that in Mumbai there was no test drive or demo available but it was available in Pune. I took that test drive and it made me felt I can be independent with this Assistive Technology – Multipurpose Wheelchair.

2. **Before using Multipurpose Wheelchair of Neomotion, which kind of device you were using?**
   After having my accident, I was told to use the wheelchair and one of my friends was having business of wheelchair and I was gifted from him and after having Multipurpose Wheelchair of Neomotion, I am using that wheelchair at my home and for outside work and travel I use Multipurpose Wheelchair of Neomotion.

3. **Cost of Multipurpose Wheelchair of Neomotion and Loan schemes for purchasing this technology**
   The cost of normal wheelchair was about 8000 Rs. + other travelling was costing me about 15000 Rs per month. After having Multipurpose Wheelchair of Neomotion I could save this amount. Multipurpose Wheelchair of Neomotion, costed me about 1 lac Rs + taxes. I could have purchased through my company and facility of loan was also available, but I purchased myself. I have travelled more than 5000 km using this wheelchair moped across Mumbai and that too without anyone's help.

4. **What kind of awareness program should be there by Government?**
   If government start promotion of these kinds of products on TV, Newspapers and their social media channels and through various NGOs and various professional association, many people who are disabled seating home and doing nothing, will be coming forward and can be "Aatmnirbhar" for at least themselves. I, myself felt the need of awareness and after having this wheelchair, I am using my social media to promote this device to reach out to maximum people.

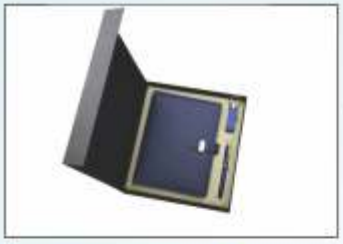
5. **Do you have any idea that this product is part of Ayushman Bharat Insurance, or it should be included in it?**
   I am not aware of it but I am aware that many companies provide such insurance for their employees and also for purchasing these kind of devices bank loans are available. Some NGOs help people as a donor to purchase such devices and if government include such assistance procurement in insurance it would be helping out many people.

Interview : Dr. Ashoo Grover, Scientist F, Non-Communicable Diseases (NCD) Division, ICMR, New Delhi

Focus Institute :
National Centre for Assistive Health Technology (NCAHT) at AIIMS, New Delhi

AIIMS-Delhi will allocate a dedicated space of approx. 10,000 SQ.FT. for the National Centre for Assistive Health Technology (NCAHT) @AIIMS on the 9th Floor of upcoming Geriatric Tower near new Rajkumari Amrit Kaur OPD (copy placed below). With availability of large number of patients with functional limitations or impairments, AIIMS is the most suitable place for NCAHT. More than 19 departments are visited by such patients, which can act as clinical material for validation of innovations @ IIT-D and associated institutions. On the other hand, WHO predicts that majority of older persons would require two or more than two ATs for a healthy and independent lives.

designcopeia



DESIGNCOPEIA PRIVATE LIMITED

EXCLUSIVE LEATHER CORPORATE GIFTS, TROPHIES,

WOODEN NOVELTIES, PLANNERS & OTHER PROMOTIONAL PRODUCTS

Vasant Kunj, New Delhi & Sector -62 Noida

Mobile : +91- 87 4400 3200 +91- 85 8889 5567

Email : deaigncopeia@gmail.com office@deaigncopeia.com

/designcopia

Our unique herbal formula with 28 natural ingredients purifies blood, improves liver function and removes toxins to give your skin a blemish free, natural glow!

TREATS PIMPLES AND ACNE **ELIMINATES TOXINS**

GIVES CLEAR AND GLOWING SKIN **REMOVES DARK SPOTS**

TOLL FREE 1800 1800 108 | www.hamdard.in