International Seminar 2024 on

Satisfy the Increasing Unmet Need for Rehabilitation

24th February 2024

National Rehabilitation Center for Persons with Disabilities

Japan

WHO Collaborating Centre for Disability Prevention and Rehabilitation

Program

Time & Date: 24th February 2024, 14:00-16:00 (JST)

Conducted via Zoom

14:00-14:05	**Information for the audience**
14:05-14:10	**Opening Address** Dr. Nobuhiko Haga, President, National Rehabilitation Center for Persons with Disabilities (NRCD), Japan
14:10-14:30	**Presentation 1, Keynote Lecture** “Implementing Rehabilitation 2030: A transformative journey for countries” Dr. Pauline Kleinitz, Rehabilitation Technical Advisor, Department of Noncommunicable Diseases, Rehabilitation and Disability, Headquarters, World Health Organization
14:30-14:50	**Presentation 2** “Satisfy the Increasing Unmet Need for Rehabilitation: a commentary from Australia” Dr. Natasha Layton, Senior Research Fellow, Rehabilitation, Ageing and Independent Living (RAIL) Research Centre at Monash University, Australia
14:50-15:10	**Presentation 3** “Rehabilitation services in Indonesia” Dr. Lestaria Aryanti, Lecturer in Physical Medicine & Rehabilitation University of Indonesia, Jakarta
15:10-15:30	**Presentation 4** “Satisfying the Unmet Needs for Rehabilitation in Japan” Dr. Nobuhiko Haga, President, NRCD, Japan
15:30-15:55	**Discussion among speakers, Q&A** Facilitator: Dr. Toru Akune, Director, Rehabilitation Services Bureau, NRCD, Japan
15:55-16:00	**Closing Address** Dr. Toru Akune, Director, Rehabilitation Services Bureau, NRCD, Japan

Languages: English and Japanese with simultaneous interpretation

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Opening Address

Dr. Nobuhiko Haga, President, National Rehabilitation Center for Persons with Disabilities (NRCD), Japan

Ladies and gentlemen, thank you for joining the International Seminar 2024 today. Our center has been designated by the World Health Organization (WHO) as a Collaboration Centre for Disability Prevention and Rehabilitation and has been hosting this International Seminar since 2007. This Seminar has been held online since 2021 due to the COVID-19 pandemic.

This year's theme is “Satisfy the Increasing Unmet Need for Rehabilitation.” WHO's “REHABILITATION 2030,” released in 2017, states that “the unmet rehabilitation need around the world, and especially in low- and middle-income countries, is profound.” When I think about the phrase “unmet rehabilitation need,” various situations come to mind. I believe that an in-depth understanding of the world’s “unmet rehabilitation needs” is essential when considering the future role of our center and the way rehabilitation medicine and welfare are practiced in Japan. This is what led me to choose this as the theme for this year’s Seminar.

Today, four of us, including myself, will give presentations on this theme from our respective positions. We hope to have a lively discussion with all participants, including those participating online. Thank you very much, and please stay with us for the rest of the Seminar.

Presentation 1, Keynote Lecture

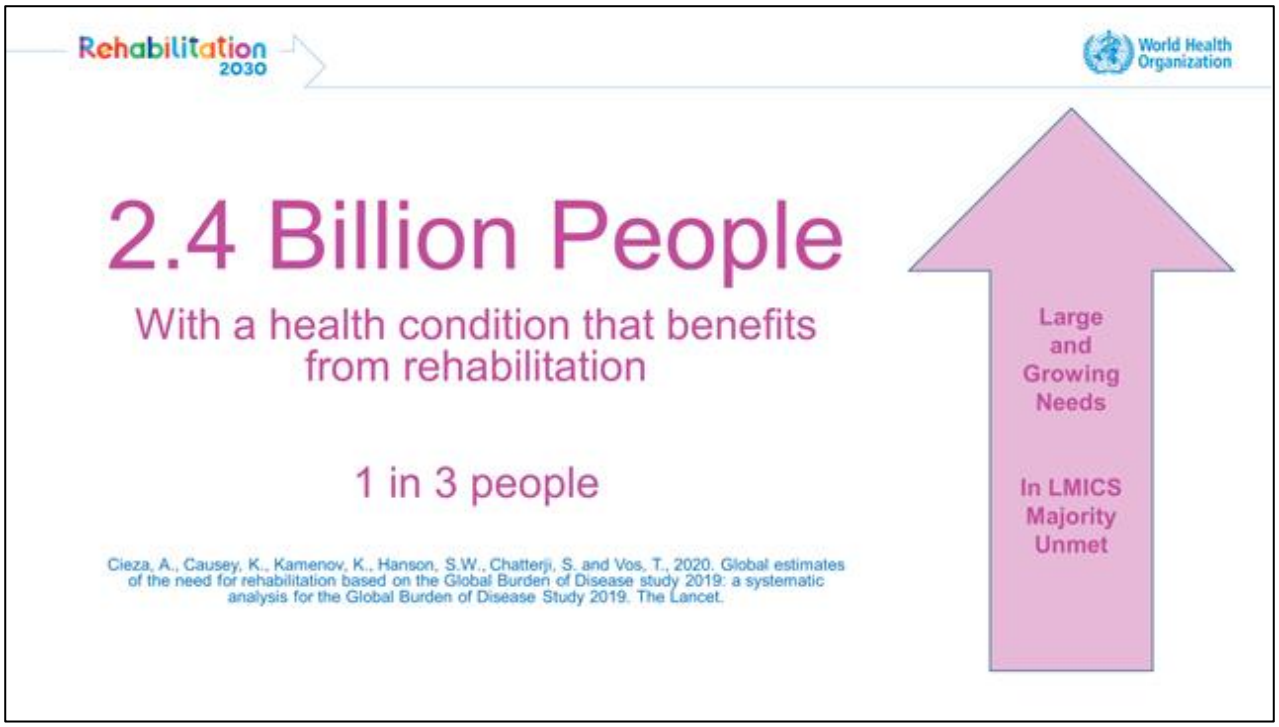
“Implementing Rehabilitation 2030: A transformative journey for countries”

Dr. Pauline Kleinitz, Rehabilitation Technical Advisor, Department of Noncommunicable Diseases, Rehabilitation and Disability, Headquarters, World Health Organization

Thank you very much, and thank you, Dr. Haga, for the opening remarks and for the honor to speak with you all today. I am always very impressed by our collaborating center in Japan and the work that you do with WHO and we are always very grateful of the support that the collaborating centers provide WHO. In these forums, I have been involved for a number of years now so it's lovely to be back and presenting. I'm hoping you can all see my screen and I will start my presentation.

I, today, will discuss the rehab 2030 initiative and some of the approaches and products that we are using with countries. Our efforts in countries are absolutely informed by the fact that there is so much unmet need, and I will certainly start by discussing that unmet need and reminding, of course, you why there is so much work still to do in so many of the low middle income countries that certainly WHO works in.

First of all, in 2020, WHO, along with others, published a publication in the Lancet that looked at the data. Using the Global Burden of Disease data, it considered what are the rehabilitation needs existing in the global population. By identifying the health conditions that are amenable and typically benefit from rehabilitation, we were able to identify or estimate 2.4 billion people in the world are living at any one time with – based on the 2019 Global Burden of Disease data, they are living with health conditions that are amenable and benefit from rehabilitation. That's nearly one in three people. There is a very large amount of need in the population. The reality is that the need is increasing due to, first of all, populations growing. Second, of course, ageing populations. Also, the increase in non-communicable disease and chronic disease, and some countries, certainly injuries from road traffic accidents, from conflict. What we see is that the needs in the population are growing, but many needs remain unmet. We estimate certainly that in many countries, it's over 50% of the rehab needs in the population that are unmet.

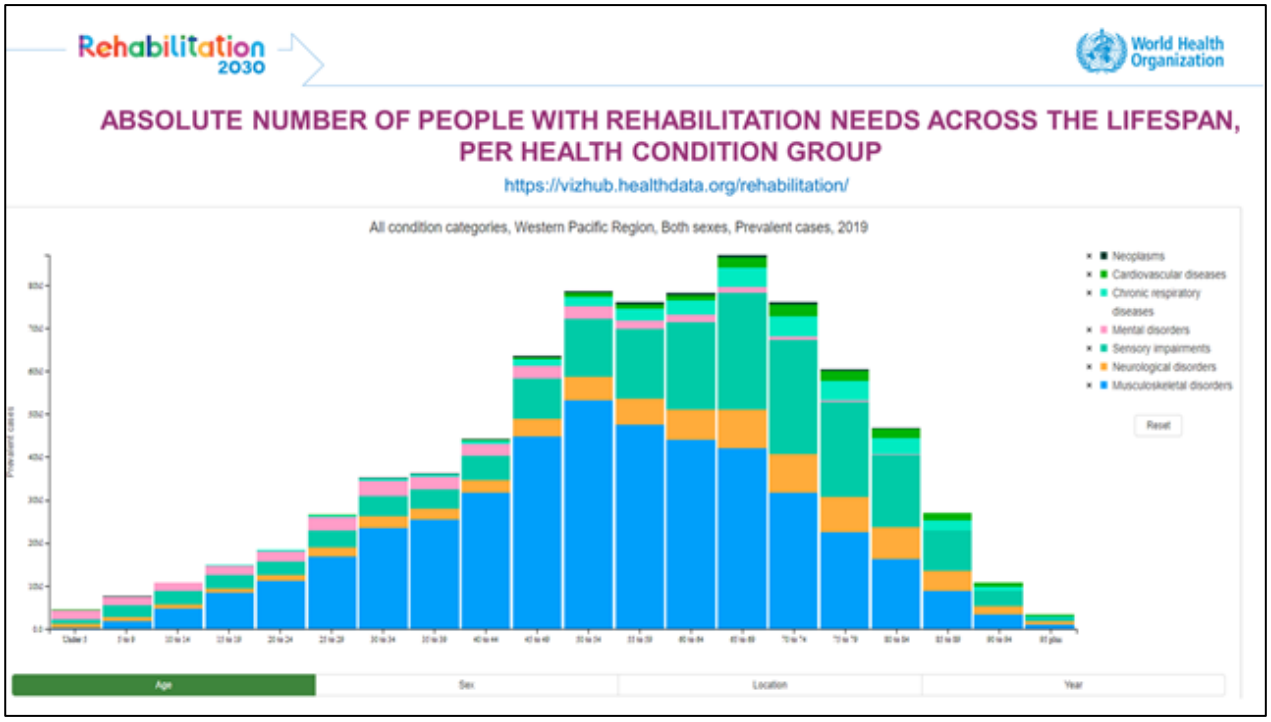


Using that Global Burden of Disease data, we were able to map globally the rehab needs. This particular graph shows you the needs across the lifespan, and it's based on actual numbers. It takes into account, of course, the demographic trends. Globally, you can see that the adult population does have the largest rehab needs and that it's actually musculoskeletal conditions that generally make up the largest proportion of rehab needs and that's the blue color. I know the key is a little bit small but that's certainly the light blue at the bottom, and then sensory, vision and hearing, make up the second largest group. You can see that generally, as we age, of course, our need for rehab services addressing neurological disorders or chronic respiratory, cardiovascular also increase. There is this very significant need.

The need in the Western Pacific Region, because of course, we are based in the WHO Western Pacific Region and Japan's Collaborating Center is very much aligned to the Western Pacific Regional Office, and when you look at that data, you can see that it's very similar, but the trend, particularly the demographic trends, and the difference in aging populations, plays out in this

particular graph. You'll see that we still have that predominance of the musculoskeletal and sensory impairments, but we have a slightly different age group.

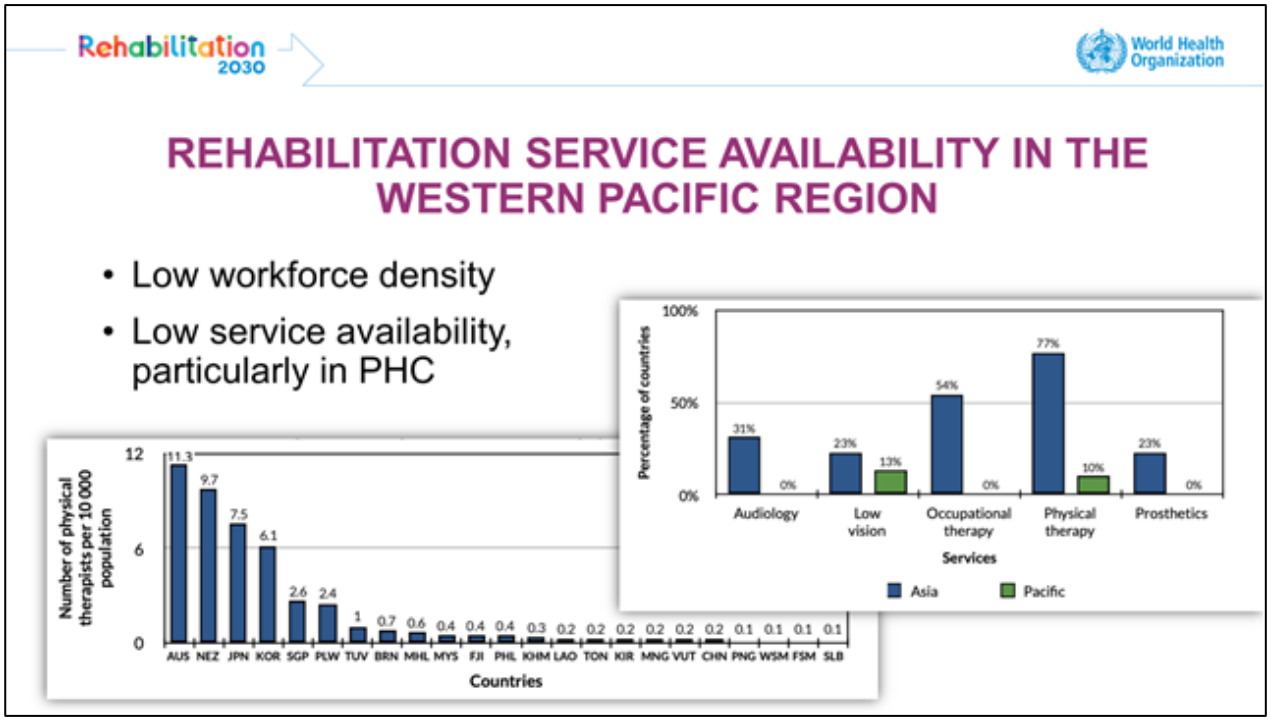
What that tells us across the lifespan is, of course, that there is a lot of rehab needs. Understanding how much of those rehab needs are unmet, and are effectively met can be difficult, but we also can start to look at the data to understand that better and to really appreciate. One of the key ways that we can do that for rehab in particular, is, of course, looking at the availability of services and taking into consideration things like the rehabilitation workforce density and the availability of services, particularly at primary healthcare level. Because at primary healthcare level, much of the need can be met.



What we find, particularly in a region like the Western Pacific but often globally with low middle income countries, is that there is this big difference. This particular data comes from 2016 and a study that was done in the Western Pacific Region, just looking at the physiotherapy levels per 10,000 of the population, and you can see the difference with the high-income countries; Australia, New Zealand, Japan, Korea, even Singapore it starts to drop off. Sometimes, this can be influenced just by data and organization of services, but you can see that very clear trend between high income countries having a very high level of rehab workforce per capita, versus then the low- and middle-income countries. In our Western Pacific Region, we have a lot of Pacific Island countries who have extremely low levels of rehabilitation workforce per capita. Some of those acronyms you can see, like even Malaysia, Philippines, those countries are not much higher than actually some of the really low middle income, the lower sort of income countries.

If you consider the actual availability of the different types of rehab services reflected through those different professions, it does improve in that the Asian countries have a lot more of that, for example, 77% of those countries had physical therapy, 54% had occupational therapy services. In the Pacific Islands, you can see that for some of these services, occupational therapists,

prosthetics, audiology, we honestly, in those islands, often have no actual trained professionals and services delivering that.

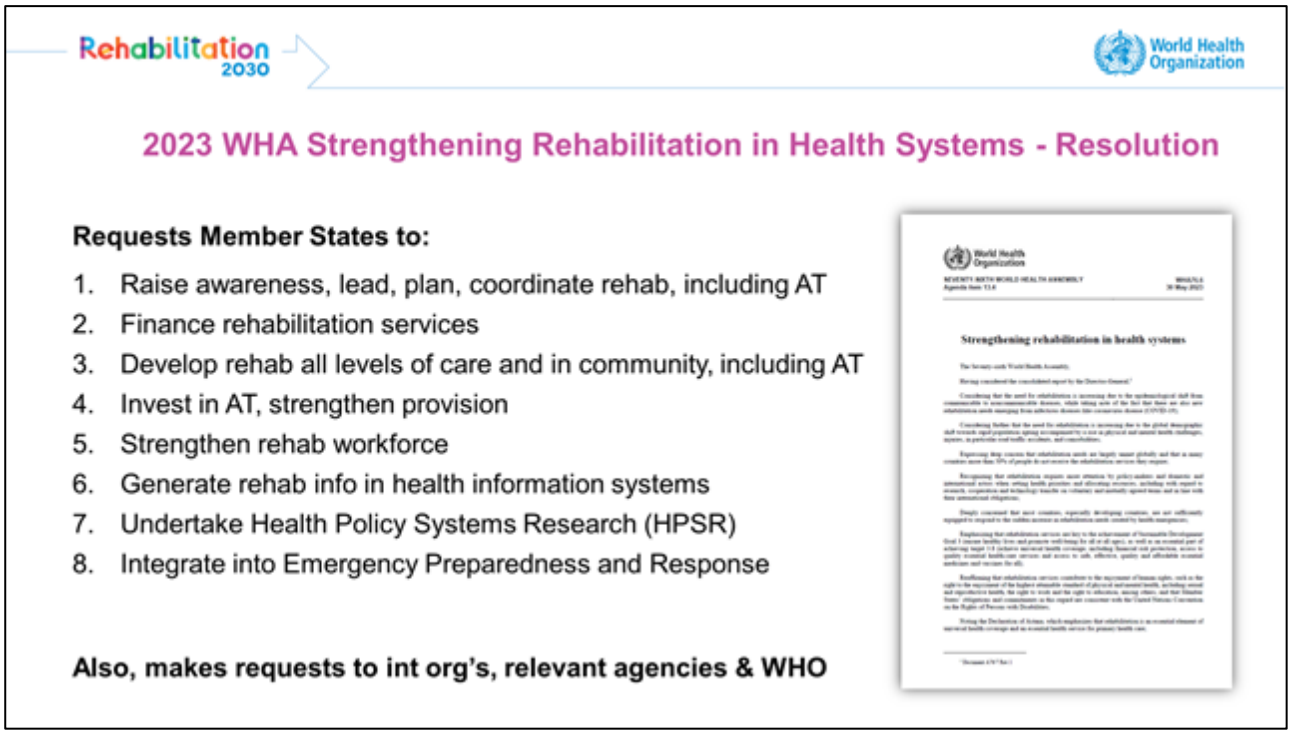


When we talk about the unmet need, we can very confidently say it's large, and without significant action, the unmet need is growing. As mentioned by Dr. Haga, that is essentially what triggered the Rehab 2030 initiative, and it was launched, of course, in 2017, and it was launched with the call for action. It was really primarily to respond to the unmet population needs for rehabilitation services.

The call for action in 2017, which accompanied rehab 2030 really put an emphasis on strengthening rehabilitation in health systems. The message was about making sure health sector and health providers were clear that rehab is an essential health service, that it needs to be well integrated into health planning, health financing, the information generation, the research, and that we really need to position rehab as a health service, while of course, recognizing that the population it serves are obviously many people accessing health services, and of course, many people with long-term disabilities as well as maybe some of the short term impairments, recovery from, you know, surgeries or accidents and that population as well.

We know that we need that health system strengthening approach and that was really how we started to move the agenda forward in 2017. Since 2017, WHO has launched a number of products, and that is a very small sample of the products, but really, I would characterize the products have been around certainly planning services, the workforce, information systems and strengthening assistive technologies. Over the years, we have worked in many countries and what did happen between 2017 and of course, now was the COVID 19 pandemic and there was no doubt that affected the work we were able to do in countries and redirected some of our resources towards addressing COVID. But we continued to make progress, and then last year, WHO at the World Health Assembly launched, and what was endorsed the World Health Assembly was, of course, the Rehabilitation in Health Systems Resolution. The World Health Assembly is the governing body of WHO and it's essentially made up of the ministers of health from around the world. That endorsement of the resolution has really strengthened the political commitment towards addressing rehabilitation in countries. We, in 2023, also launched the World Rehabilitation Alliance.

Now, just quickly, the resolution reflects very much the same messaging and approaches that the Rehab 2030 initiative also made. We do really want to bring that health system focused approach, thinking about how to strengthen and integrate into health systems. And, as you can see, it addresses the leadership, the financing, the services, the assistive technology, the workforce, the health information systems research and emergency preparedness. This resolution really also is making a difference because it can actually be a very important tool for the advocacy and the driving of political commitment of governments and particularly in low middle income countries.



That is like a very short snapshot of that journey we've made but what I wanted to do now is share some of the key approaches we are using. WHO, obviously as an agency, we are a global agency, but much of our work is focused on low- and middle-income countries. Our work with supporting rehabilitation and trying to address that profound unmet need has really occurred through health system strengthening approaches. What that looks like when we operationalize it is first of all, we consider the health system building blocks. For anyone who's familiar with health system strengthening approaches, they will be familiar with the WHO framework of the health system building blocks. Those six building blocks really are the overall composition of a health system. There are six, the concepts being the financing, the workforce, the information systems, the governance, medicines and technology, and of course, in the center of that circle is rehab services, which is really what all those other aspects of the health system are trying to contribute towards improving rehab services and ensuring that they're at all levels of healthcare and in the communities as well.

The health system building blocks are a key framework for us, but in the context of WHO, we also do a lot in the emergency sector and it is another area of our work. In addition to that, I would say, in all these areas, we partake a lot in advocacy. While WHO is not always the agency that leads on the advocacy, we certainly support it and really encourage it, particularly the advocacy aimed at the governments of low middle income countries.

Rehabilitation 2030

World Health Organization

Operationalising Health System Strengthening

Rehabilitation 2030

World Health Organization

Health System Building Blocks

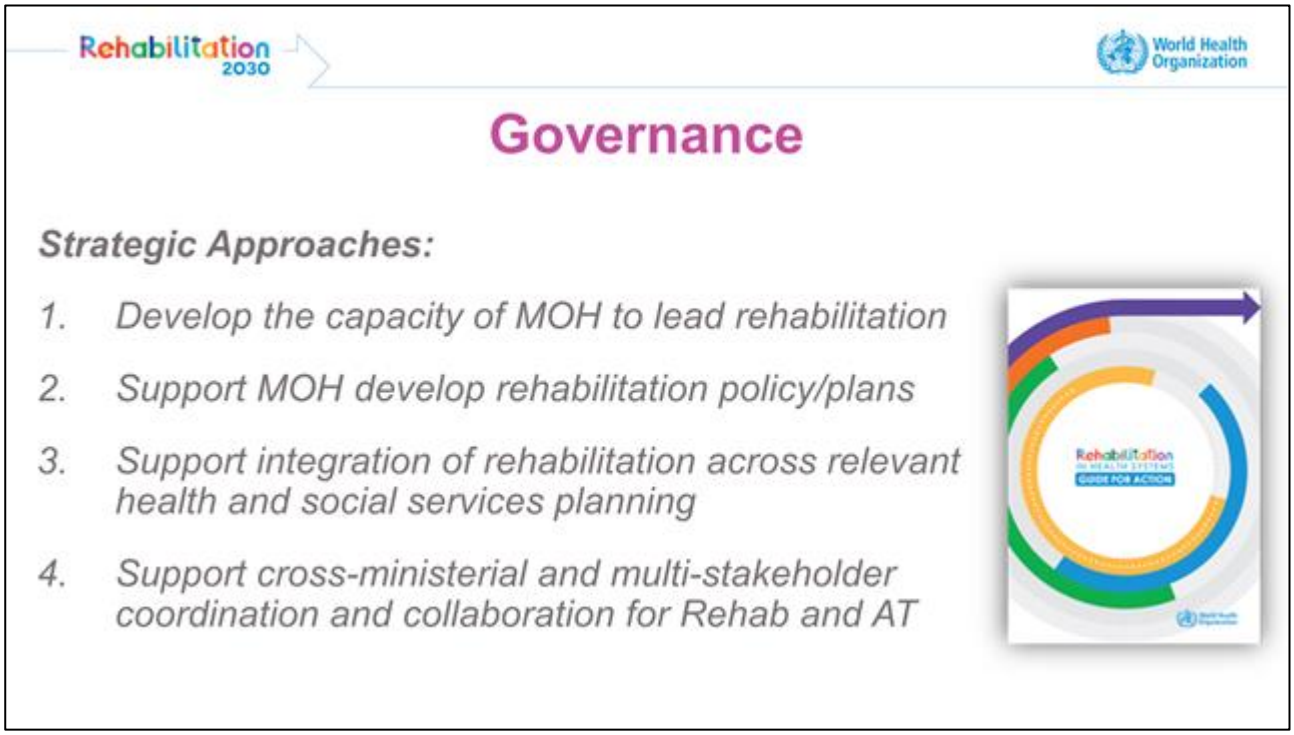
Over the last 6 years, basically, nearly 7 years since 2017, this shows you the different WHO technical products and tools that we have launched. You can see those headings really reflect those health system building blocks; the leadership, the governance, the financing, information systems workforce, service delivery. In the case of rehab, we really do focus a lot on assistive technology. That building block also considers essential medicines and medical products, which are very relevant to rehab, but a lot of the attention does go towards, of course, assistive technology, and of course emergencies.

What I'm going to do just for the next few minutes, is run through each of those areas. There're actually seven areas I'll run through. In the interest of time, I'll be brief, but what I want to do is explain that while we have these particular products that target different elements of the health system, what's really important is to understand the strategic approach that the product then supports, because the products themselves, these different resources, are not the sole answer, are not the only way forward, We really need to contextualize the use of these products in our health system strengthening, our strategic approaches when we're working with Ministries of Health, which is what we do so much in WHO.

Just looking at governance for a minute. For example, the key way forward, the strategic approach we've used a lot and is so crucial is developing the capacity of Ministries of Health. What we find is many ministries of health in low middle income countries did not have and do not have units, focal people that are focused their work on rehab or assistive technology, and really often need to build the capacity of the Ministry of Health, prompting them to create those units and those positions so we can drive this work forward. We do recognize that strategic planning and by strategic planning, I mean, those mid to long term planning exercises, where they consider what is it they're working towards? What is the goal? What are the priorities? What are the key things they need to address in their country? The resource that's on your screen, the guide for action is the key resource we use to support countries in their rehab strategic planning exercises.

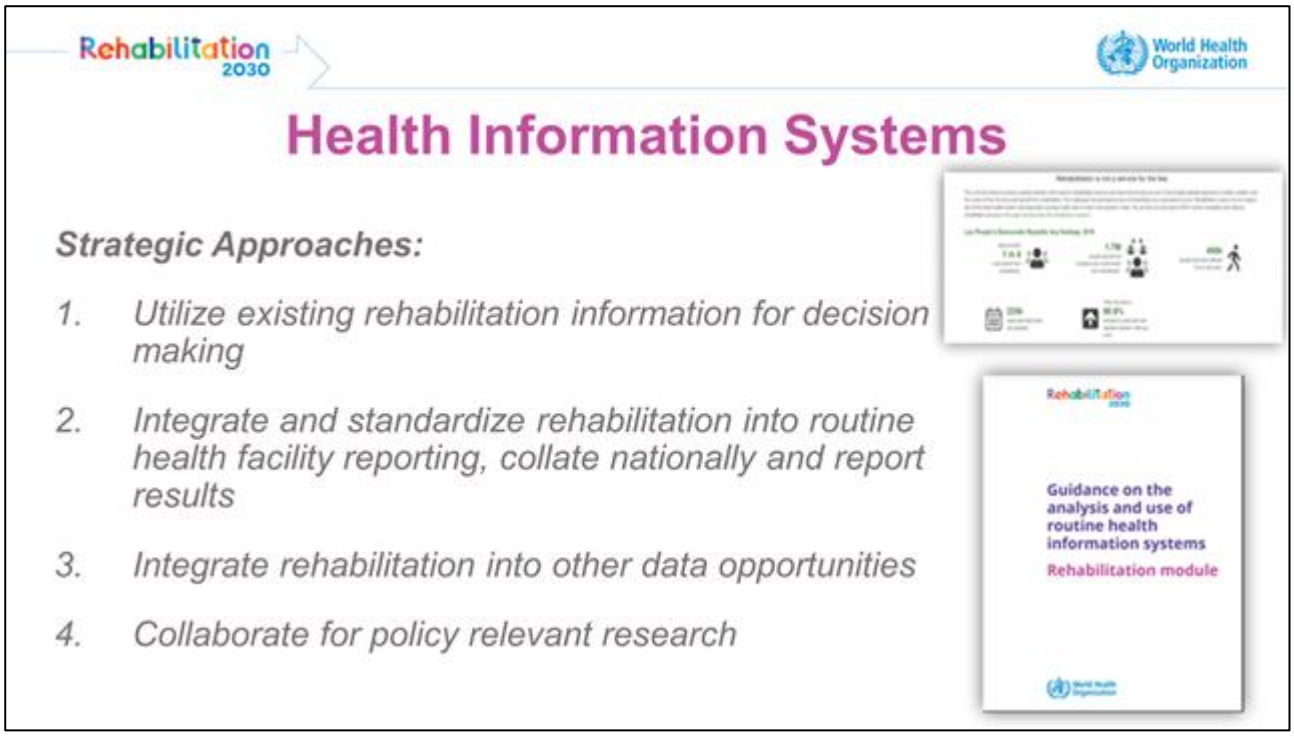
We also really need to promote and do promote the integration of rehab across other areas of health planning. While we recognize that it's very helpful to do dedicated rehab planning, what's crucial is that rehab and, of course, assistive technologies are embedded in the other planning. By that, for example, National Health Strategic Planning or maybe an NCD Plan or an eye health plan or a mental health plan that rehab is reflected across health planning. But of course, often across social service planning, because we recognize that a lot of the rehab and, of course, assistive technology related services can sometimes be funded, financed, even provided through Ministries of Social Affairs and at social services. It is about integrating, and, of course, what's super

important, recognizing that rehab is provided across different agencies, across generally different sectors, different types of providers, government, private, nonprofit. It's really also about supporting coordination in countries.



That really gives you the style or the approaches we prioritize and use in countries for governance, for example, in regards to rehab. If you look at financing, we recently launched a product you can see there, but again, we have our strategic approach that we're using with Ministries of Health in low middle income countries. Often, one of the starting points is just mapping the different sources of financing, identifying the expenditure, understanding what rehab costs exist. Of course, what's crucial is integrating rehab into recurrent financing opportunities that could be creating a budget-line items for rehab for assistive products, but certainly, the third point around just ensuring rehab is part of essential services packages or health benefit packages. Again, we have resources we use to support this work.

In terms of health information systems, again, there are resources. We have a resource now that supports the integration of rehab into routine health information systems. They're the information systems that collect data in facilities and that's really important, because we need to be able to report on what we have available, what we're providing the utilization. Our approaches are, of course, utilize the existing data, make sure we use it in decision making, integrate into the routine data, but there are always other opportunities, whether it's looking at demographic health surveys, or, you know, facility assessments, there's various health information, collection processes that are occurring in health that are not specific to rehab, they're broader, and our approach is very much one of integration. Finally, of course, we do need a lot of research and in particular, the policy relevant research and research relevant for low middle income contexts. We know there's quite a difference and we have to make sure we're generating the evidence that really can inform the ways forward in these less resource settings.



In terms of workforce, I won't go through everything in full detail, but the approaches are really building a well-trained workforce, making sure they do have the competencies to deliver evidence-based rehabilitation and making sure there is that composition of professions. We know we have rehab medicine, rehab nursing, major professions like physiotherapy, occupational therapy, speech language therapy, prosthetics, orthotics, those ones that really are often the backbone of a lot of the services. We do need to engage often in a lot more workforce planning, creating the job, dealing with some of the deployment mechanisms. One of the issues, some of the career challenges and some of the issues that we have in high income countries can exist in low-income countries as well. Particularly, what we find is that the therapy workforce faces a lot more challenges than rehab medicine. The hierarchy that exists in health services where doctors can be very much positioned as leaders and therapists often need quite a concerted proactive approach in terms of supporting their place within healthcare and within the health services, making sure they have the opportunities for career progression, seniority, specialization. What we know is that it's actually through really capable, excellent therapists that we actually see or well matured, a very effective quality rehab service system. In low middle income countries, we often have to put quite a focus on supporting the therapist development.

Finally, or not, finally, there's a few more but I will move on and I know Natasha will also be talking about assistive technology, but there's a lot going on that really supports our work in this area, and we work closely with the Assistive Technology Program at WHO headquarters. At the regional country level, we really bring them very closely together. We recognize we have opportunities to prioritize assistive products, finance and regulate, streamline procurement, integrate them into healthcare, and we very much want to promote a very integrated service system, not fragment assisted product provision from the services in which they need to be delivered through which primarily are the physical rehab services, the vision services, the hearing services, some of the mental law, aged care services, but we want very integrated services.

In terms of the actual rehab services, really, our message is very much around, again, planning, doing good analysis planning, integrating into the healthcare. We have really focused in recent time, WHO is very prioritizing primary healthcare and we recognize that there is so much opportunity to basically support the integration of rehab in primary care. What we find in most low middle income countries is this is by far the least developed area. When we talk about primary care, we're really talking about community as well, making sure we get that nice continuum of primary community level care. It's a lot about integrating rehab into the clinical pathways, the referral systems and across these services, health and social services, and of course, addressing quality.

I will just point out, there is one significant, although many significant publications, but on this slide, the top picture of the product, which is the package of rehab interventions, this was a really significant resource we launched last year, very useful for supporting the planning of health services. The other one at the bottom is something that we call the basic rehab package. That's a tool that will be targeting primary care, and really supporting what we characterize as those task-sharing approaches, trying to encourage existing primary care workers, some of the doctors and nurses, at the very minimum, recognize rehab needs, refer to rehab services, and where there is often a limit in rehab services or limitation in accessing or they're not available at all, to provide safe, effective, but basic rehab care. Often that basic rehab care is essentially education and advice.

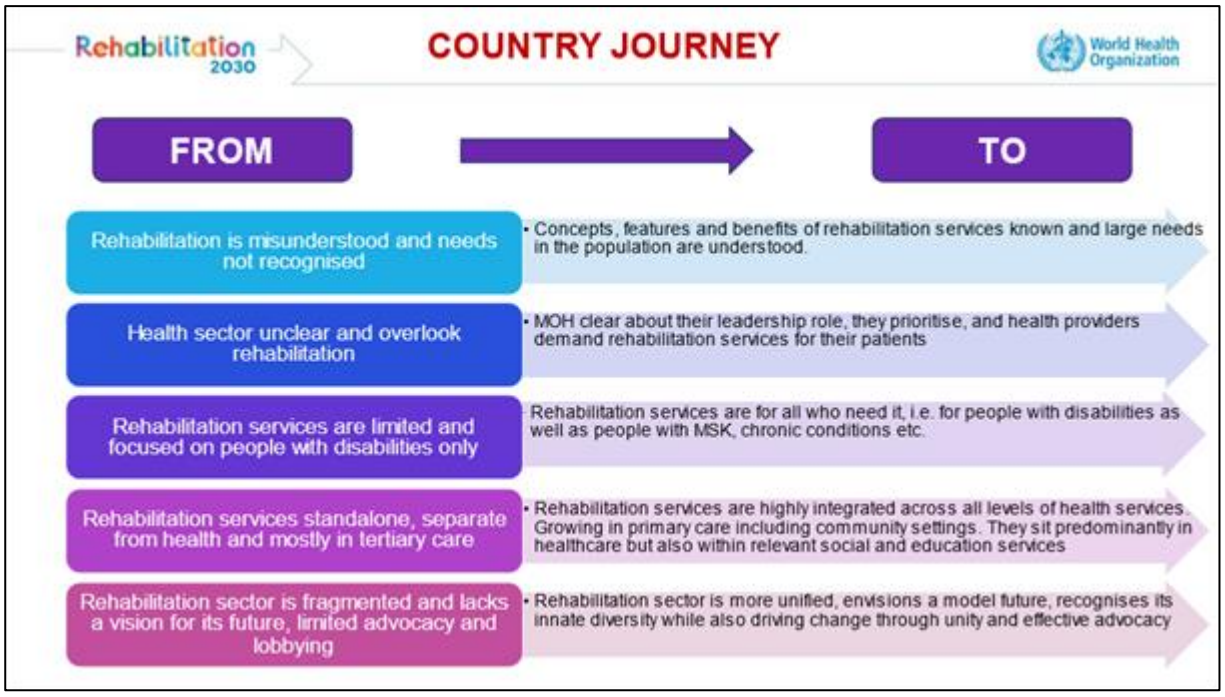
In terms of just emergencies, there have been a lot of products that we've moved forward with. A lot of them were COVID related, but recently there was a policy brief, but this is really the message is of course about integrating rehab into emergency preparedness and emergency response. In those response plans and coordination, emergency medical teams and being prepared. There are very practical ways forward, for example, stockpiling assistive products.

This really highlights some of those key approaches we're using in countries across those six health system building blocks and across the emergency area. What I would say is that the advocacy work is really kicking off more and more and the launch of the World Rehab Alliance last year was very significant and they will really support some of the Rehab 2030 advocacy and our resolution advocacy.

Key progress we've made, we've made a lot. Fifty plus countries are now implementing some of these products. We have 25 countries with national rehab strategic plans. In the Western Pacific region, we have 10 countries that are really supporting Rehab 2030 activities and five with rehab strategic plans. A lot is happening. We are seeing that shift in some countries in service expansion, which is really what is most important, but we are seeing the services increase often at that secondary and primary level.

This is just my last slide and I will just highlight the key ways that the countries have shifted. What we've found is that countries before Rehab 2030, many of them misunderstood rehab and we really have had to work towards people understanding what rehab services are. That is really shifting and we are seeing that they do understand the need and the way to organize them. We are certainly seeing rehab being better reflected, prioritized in different national health strategic plans, in monitoring frameworks, and gradually, I think the health providers are really demanding more rehab for their patients. We certainly had to keep promoting the message that rehab is for people with disabilities but also a lot of people without disabilities and lots of people with chronic conditions and that again is another area that is gradually shifting.

We are all about integration and that shift is also occurring where we are just seeing rehab more and more integrated into healthcare and targeting often primary care but really recognizing that it is also delivered in education settings and social service settings. Of course, what I would say and it's a little bit of a final message often for the rehab sector is that being quite unified, having a shared vision, not being so fragmented is so important and that is really part of the work we do in countries is to try and really bring the rehab sector together, address some of the territorial competing issues and really try and help them work together to build stronger services in their country.



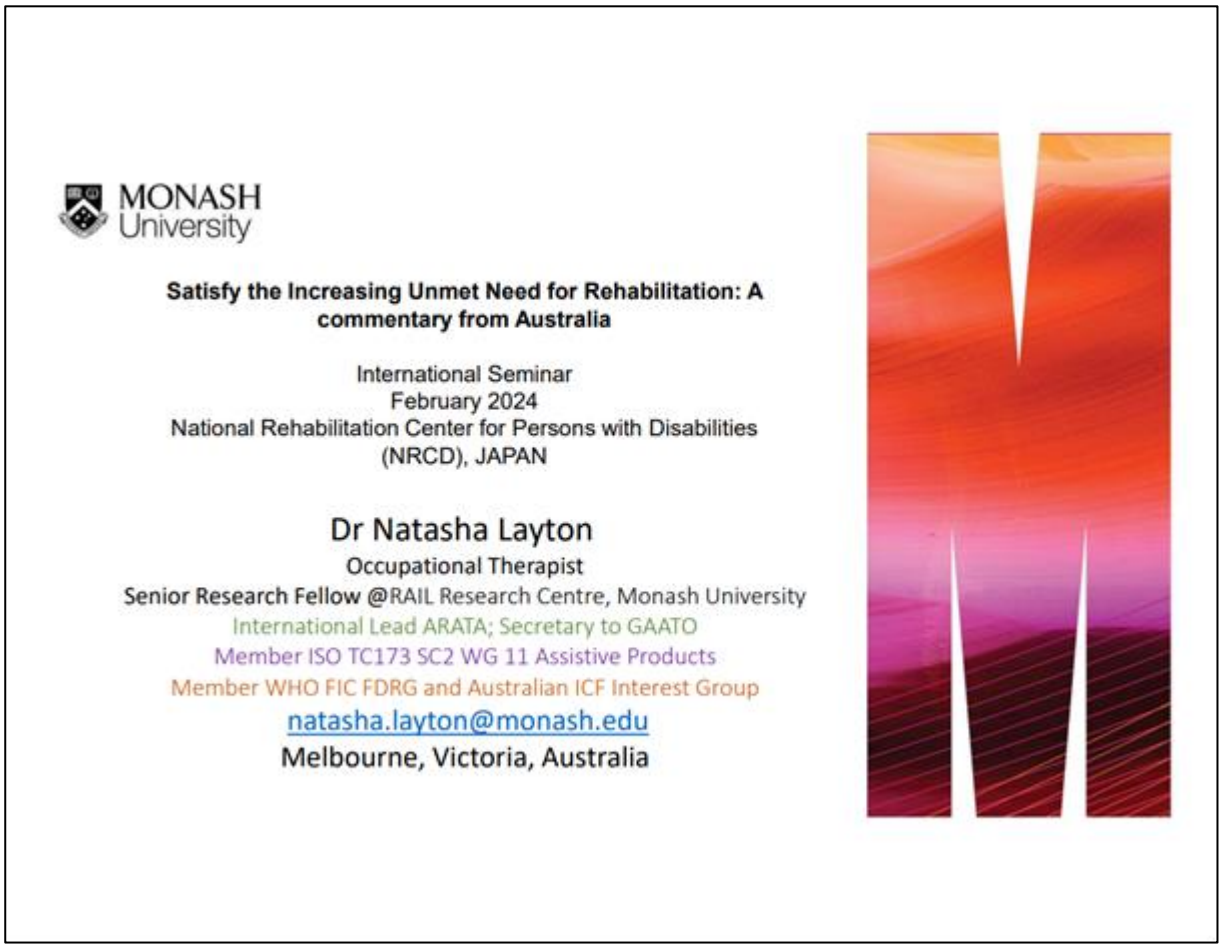
I'll finish up here and say there is progress, there is a positive change happening. Certainly, I think addressing some of those unmet needs, but certainly there's a lot more and there's always going to be more work ahead and we're taking that on. Thank you again for the opportunity to speak. Thanks.

Presentation 2

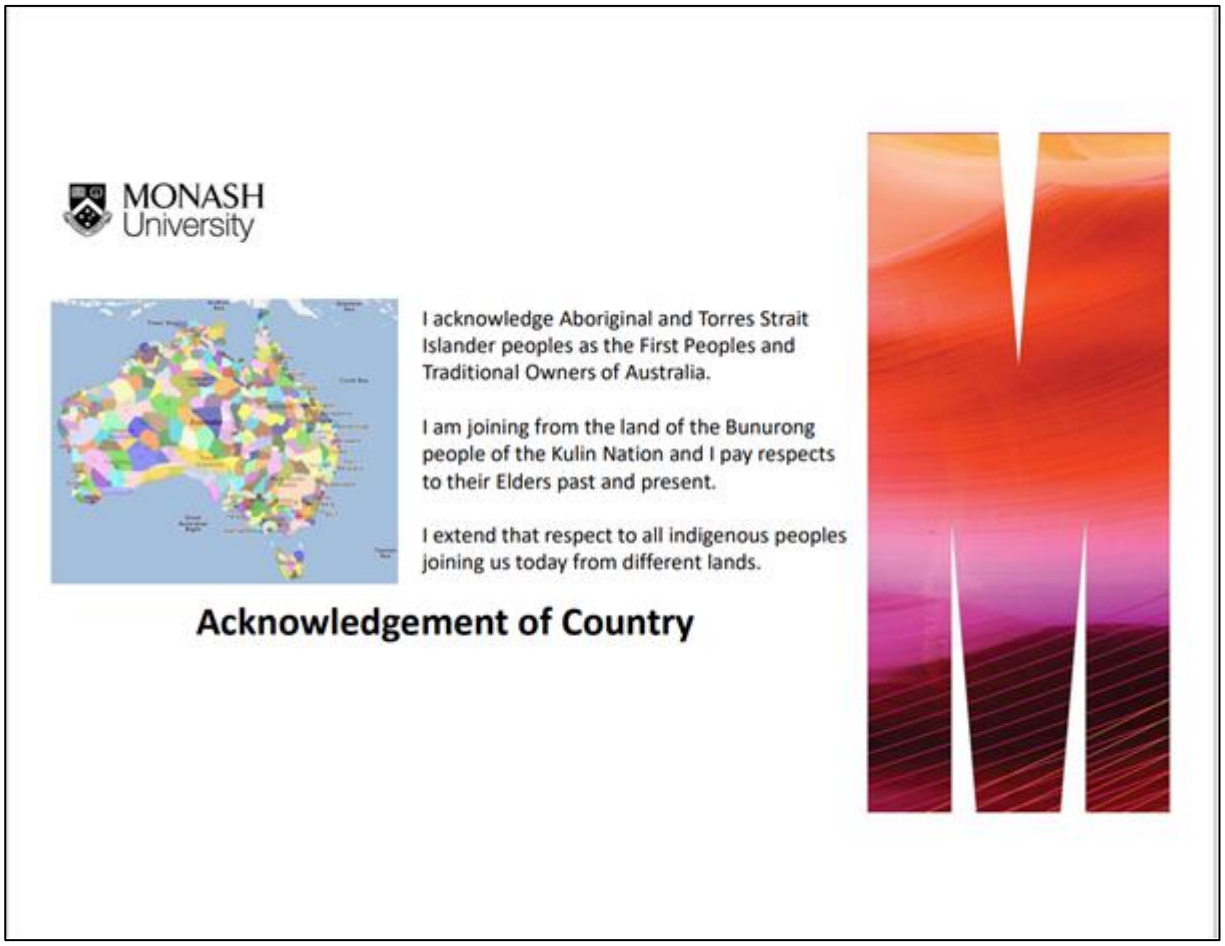
“Satisfy the Increasing Unmet Need for Rehabilitation: a commentary from Australia”

Dr. Natasha Layton, Senior Research Fellow, Rehabilitation, Ageing and Independent Living (RAIL) Research Centre at Monash University, Australia

Thank you for the opportunity to speak on the topic Satisfying the Increasing Unmet Need for Rehabilitation: A Commentary from Australia. I’m a Senior Research Fellow with the RAIL Research Center in Monash University. I’m also International Lead of Australia's assistive technology organization ARATA and I'm secretary to the Global Alliance of Assistive Technology Organizations, GAATO. I'm a member of the international standards working group for assistive products and I'm also a member of the World Health Organization, Family of International Classifications, Functioning and Disability Reference Group and the Australian ICF interest group.

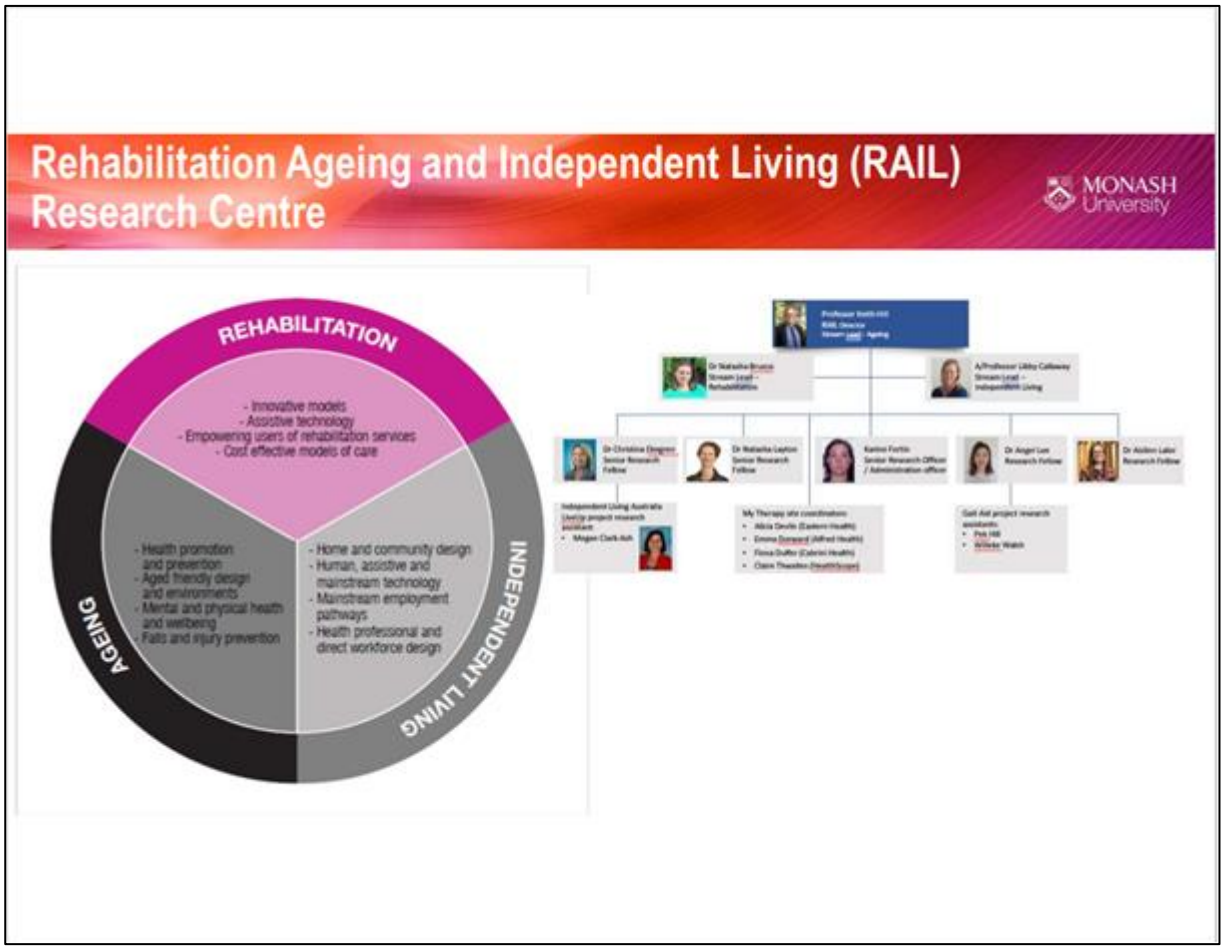


I'd like to start by acknowledging the Aboriginal and Torres Strait Islander peoples as the first peoples and traditional owners of Australia and I'm speaking to you from Australia. I'm joining from the lands of the Bunurong people of the Kulin Nation, and I pay respects to their elders, past and present. I extend that respect to all indigenous peoples joining us today from different lands.

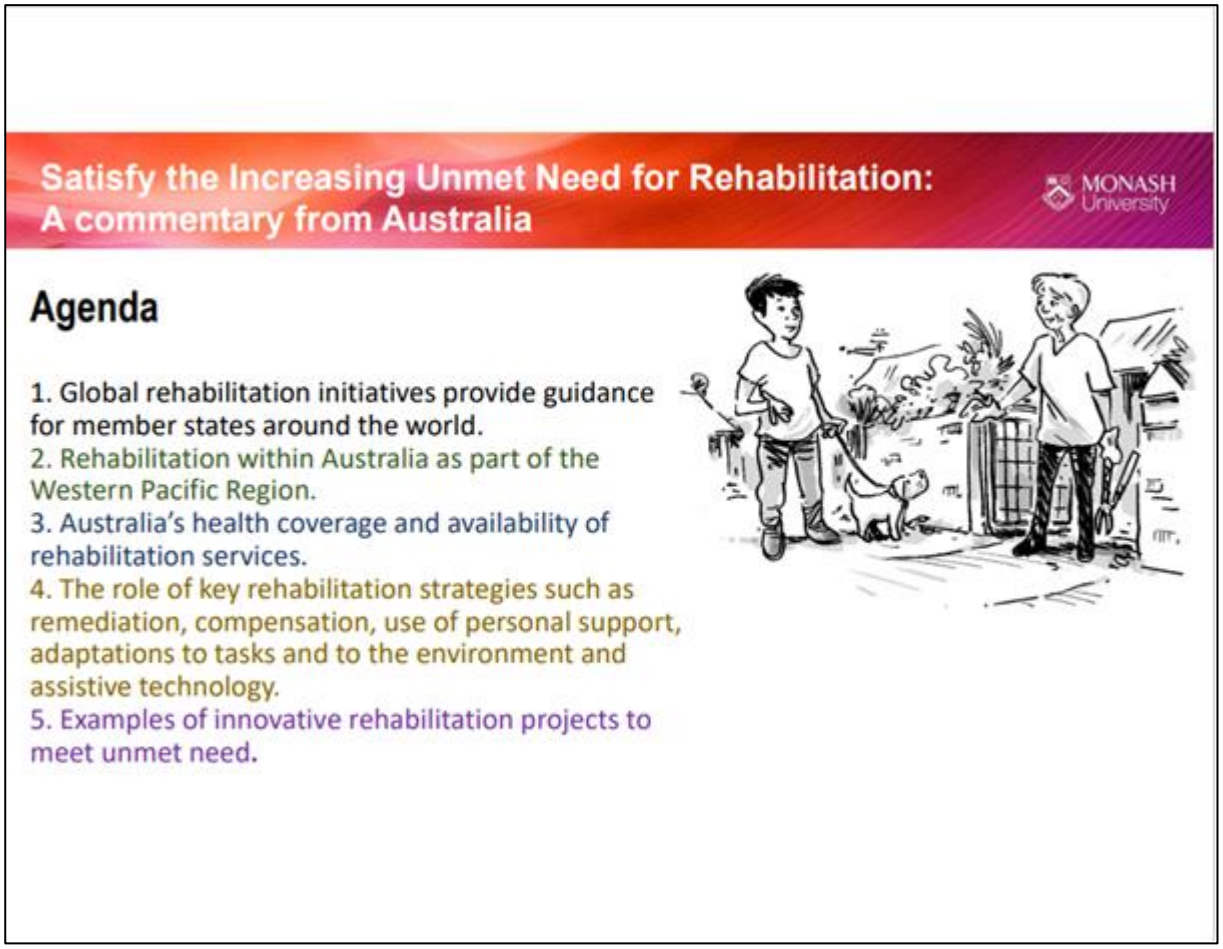


Just a brief piece of information about the Global Alliance of Assistive Technology Organizations. GAATO recently formed just in the last couple of years. I'm delighted to say that RESJA, the Rehabilitation Engineering Society of Japan are founding members of GAATO, as are many other assistive technology organizations across different countries in the globe. We're working hard to scale assistive technology capacity across global entities.

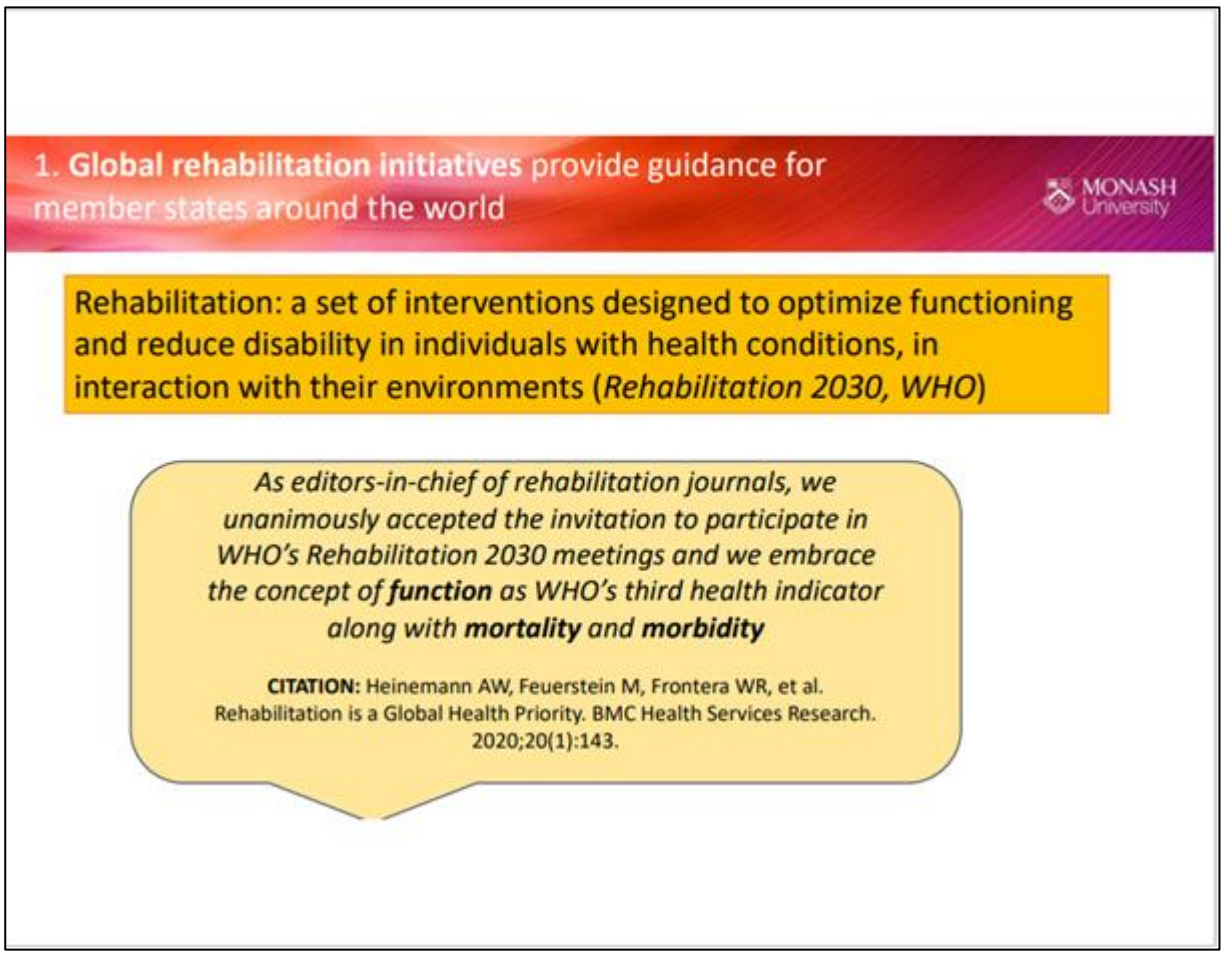
The other hat I'm wearing is my research center, Rehabilitation, Aging and Independent Living Research Center in Victoria, Australia. Here is a quick organizational chart of our very small research team and a graphic that tells you that we cover rehabilitation, aging, and independent living and there are many intersections between those three fields of research.



To the topic, “Satisfy the Increasing Unmet Need for Rehabilitation: A Commentary from Australia,” I'm going to cover briefly some of the global rehabilitation initiatives that give us guidance as member states across the world. I'll talk about rehabilitation in Australia as part of the Western Pacific region and mention Australia's health coverage and the availability of rehabilitation services in Australia. I want to visit the role of key rehabilitation strategies and share with you some examples of innovative rehabilitation projects that are meeting unmet need in Australia and can be shared and scaled.

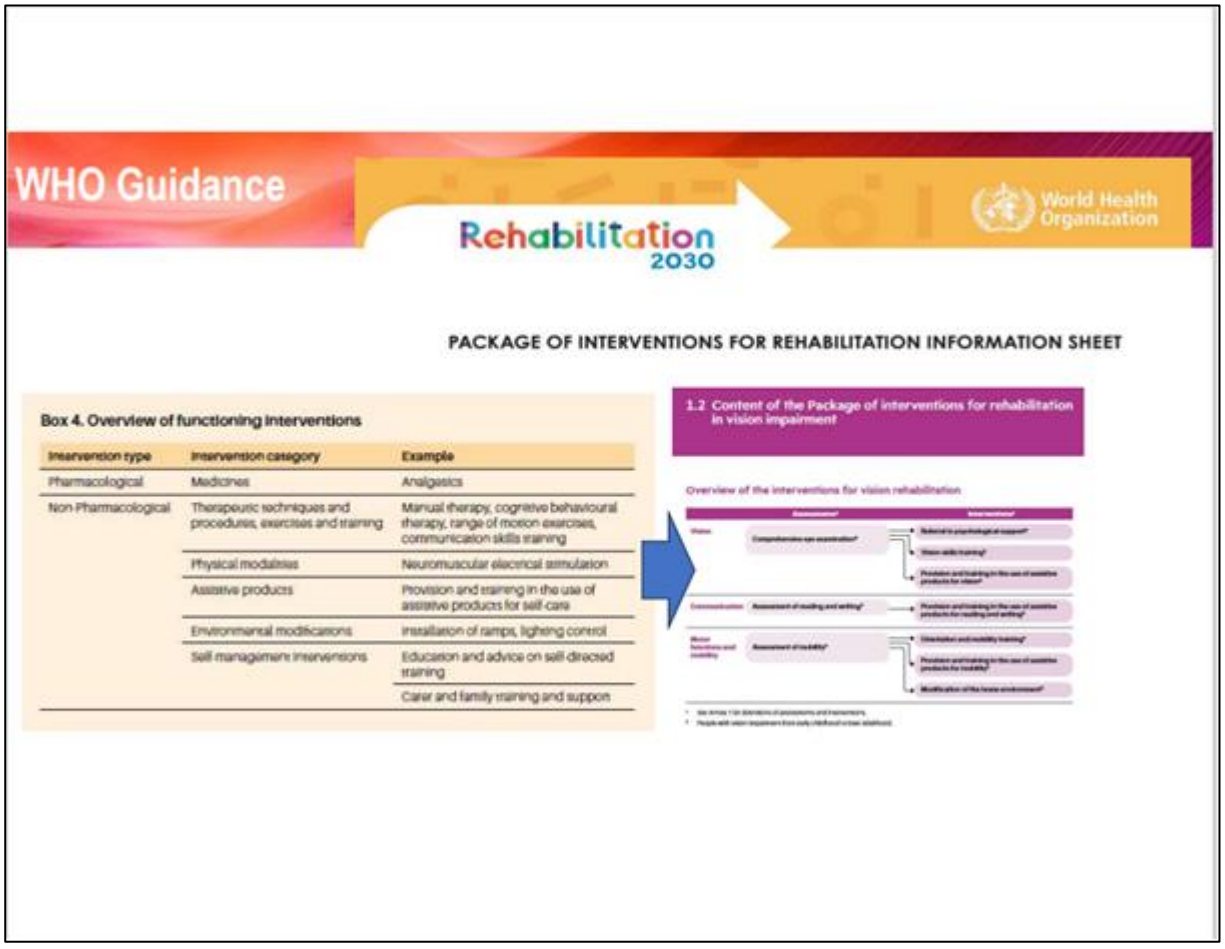


Point 1: Global rehabilitation initiatives that provide guidance for member states around the world. The WHO has provided us Rehabilitation 2030, a blueprint for scaling rehabilitation access, and they define rehabilitation as a set of interventions designed to optimize functioning and reduce disability in individuals with health conditions and interactions with their environments. Importantly, that textbox below that shares a message from the editors-in-chief of rehabilitation journals across the world who have unanimously accepted this invitation to be part of WHO Rehabilitation 2030 initiative and they embrace the concept of function and functioning as the WHO's third health indicator, along with mortality and morbidity. This is a very powerful signal particularly to occupational therapists and other allied health practitioners like myself, and many of you that the time has come for rehabilitation to really find itself.



WHO provides clear guidance. This is a little snip of the package of interventions for rehabilitation that have been provided by the WHO. I've provided here box 4 which is an overview of functioning interventions and you can see here interventions are seen as either pharmacological (so tablets, medicines); physical modalities; environmental modalities; self-management interventions; and therapeutic exercise and techniques. As an OT, my particular interest is in assistive products so I'll be using assistive products as an example of rehabilitation interventions as we go through this talk.

On the right, I have just given you a snip of one of the pages of content from the package of interventions for rehabilitation in this example, vision impairment. There it says, we do comprehensive assessments, and one of the intervention choices is to introduce assistive products, among other things, as a rehabilitation package.



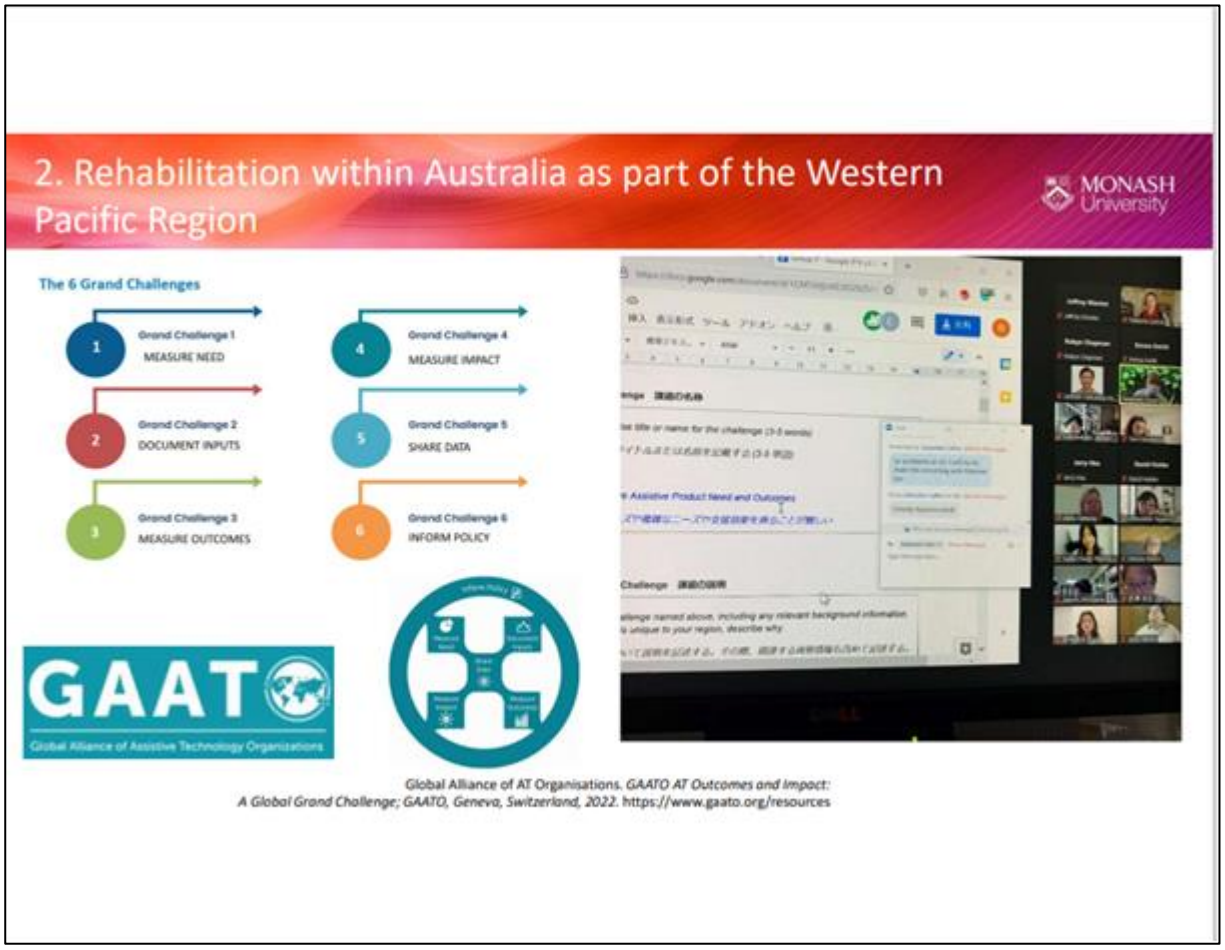
There are other relevant international policies and guidelines that Australia uses. On the left, there is a WHO international classification, so functioning disability and health and the ICHI, the International Classification of Health Interventions. The United Nations Convention on the Rights of Persons with Disabilities, so Australia is a signatory to that convention. Australia and New Zealand have adopted the ISO 9999 classification and terminology of assistive products. Australia has been very interested in and contributed to the WHO UNICEF Global Report on Assistive Technology. These are some of the documents able to help guide us to deal with unmet need for rehabilitation.

Point 2: Rehabilitation within Australia as part of the Western Pacific Region. What I'm showing you here is a screen grab of some work that was done by GAATO with my good Japanese colleagues who are on the line today to do a grand challenge, to find out across the globe what is it that is stopping us realize the full potential of one rehabilitation intervention, namely assistive technology. Assistive technology is the products and related services that can enhance functioning and reduce disability; wheelchairs, prosthetics, eyeglasses, and so on.

You can see this Zoom meeting on the screen. We had translations in and out of Japanese. We had over 300 participants from 57 different countries and many language groups, and we came up with the six grand challenges you can see on the left of the screen. Firstly, we must measure unmet need for assistive products and, more broadly, for rehabilitation. Second, we must document what goes in to our interventions. It's never just the assistive product, it’s the skill and expertise of the considered user and the allied health practitioners and assistive technology suppliers and others that all go into making a good intervention, a good assistive solution that is then not abandoned or does not cause other problems. We must document all of the aspects of that intervention so that it can be evidenced and costed and funded. We must measure the outcomes of our intervention, so not just did the person leave with a wheelchair but six months later, are they able to use it? Has it delivered the participation outcomes that were possible?

Number four, measuring impact. This is speaking to a wider set of outcomes. What difference has it made to the family, to the community, across life over a decade? Capturing the value of the longer-term holistic impacts of an intervention, like assistive technology. The fifth challenge is to

share data, and often, if we're not using the same terminology to describe our interventions, we cannot pull the data on their effectiveness and therefore, we can't do a thing. Number six there which is informed policy.



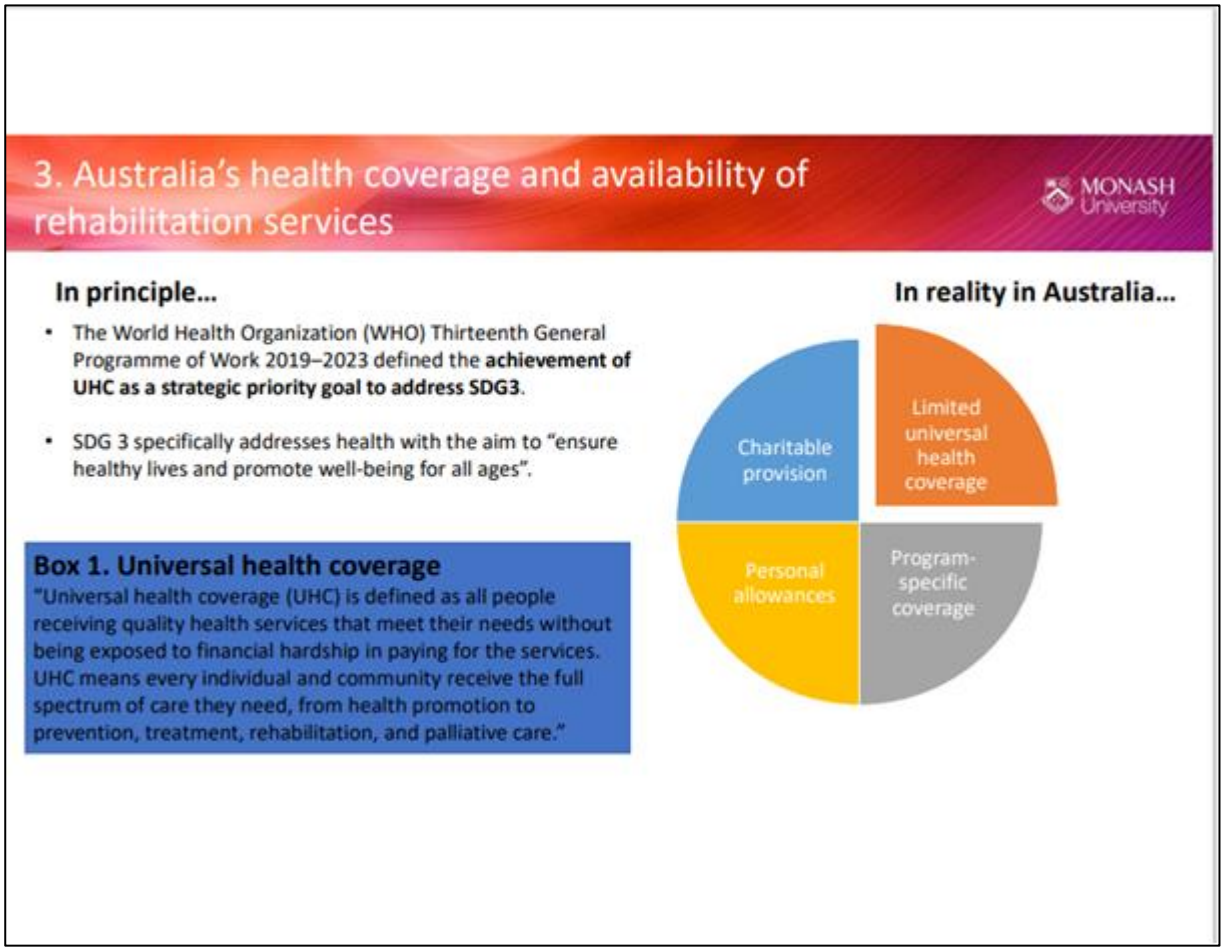
Turning to Australia's health coverage and the availability of rehabilitation services. In principle, the World Health Organization has specifically identified that universal health coverage is a strategic priority goal to address Sustainable Development Goal 3, and SDG 3 is ensuring healthy lives and promoting wellbeing for all ages. I've provided in box one there a definition of universal health coverage, so all people receiving quality health services without financial hardship in paying for those services. That's the principle.

In reality in Australia, we do not have universal health coverage. I've provided a graphic there that demonstrates that rehabilitation is split across four main modes of provision. There is limited universal health coverage through our Medicare scheme, so we're able to attend public hospitals and receive public rehabilitation with some limitations. There are some programs, specific ways, that rehabilitation and particular rehabilitation strategies are covered. For example, with assistive products, if you have an amputation, you are eligible for the artificial limb scheme which is a program specific way to cover the needs of that individual, but it's a limited or bounded scheme.

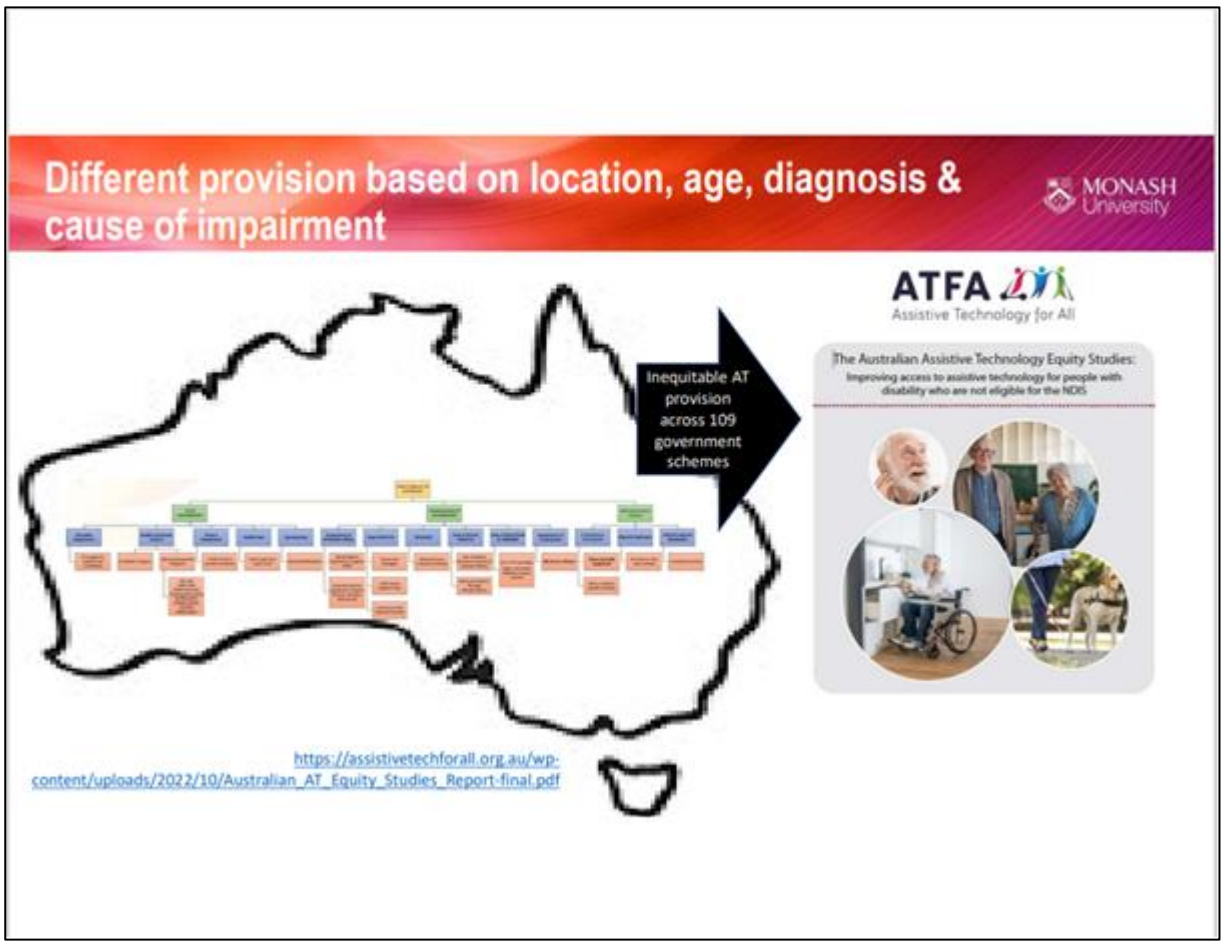
We do have personal allowances now in Australia since we have a National Disability Insurance Scheme that was introduced a decade ago, where you get a personal budget to spend on the

interventions that you might need and that might include assistive products and environmental modifications. It might include some therapy, and it might include personal support.

We still have a large charitable sector in Australia because there are many gaps that people find in government services. Often, charities or nonprofits are providing rehabilitation type services to meet people's needs.



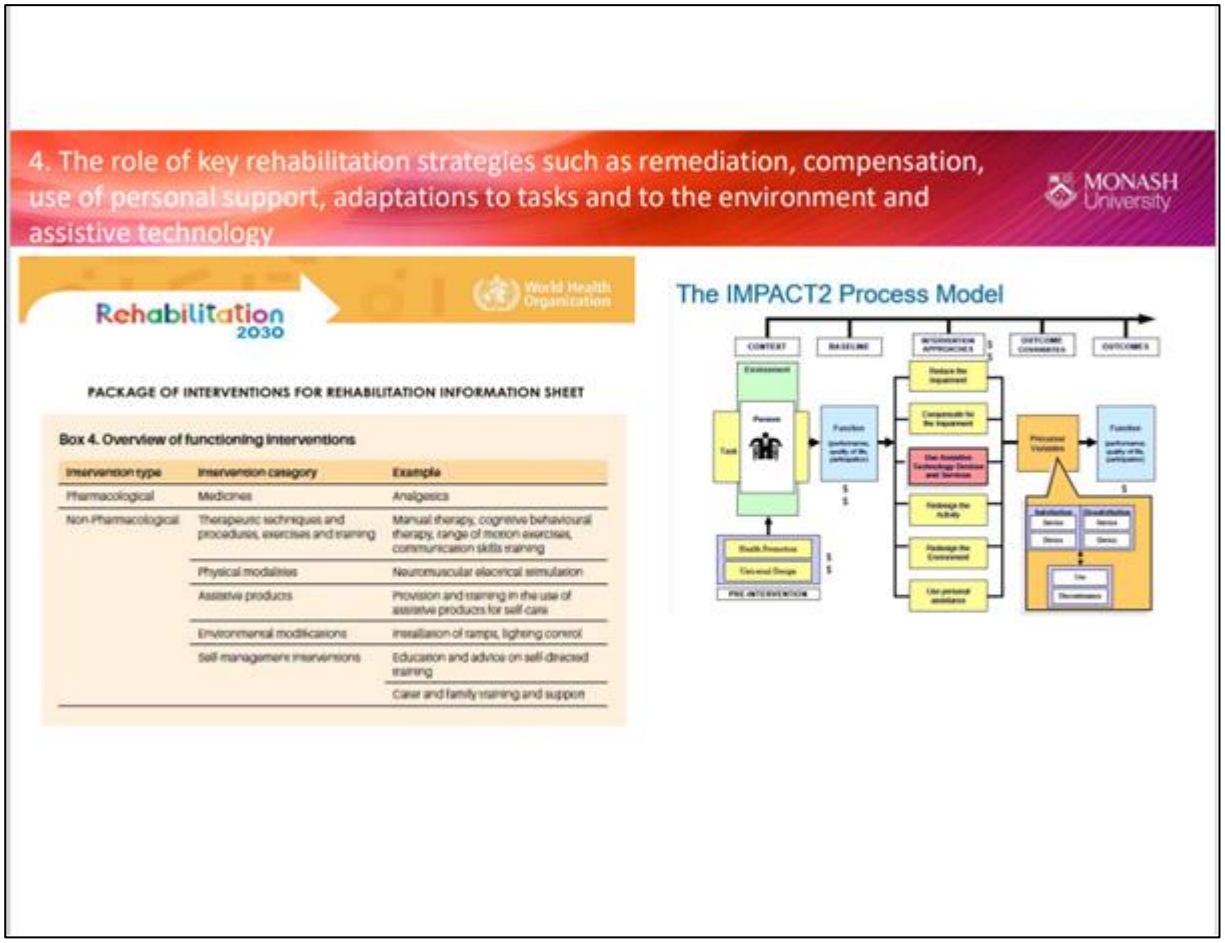
Just drilling down into that a little bit. A study that we did with civil society so with many disabled persons organizations last year at Monash was called the Assistive Technology Equity Studies and we discovered that there are 109 different government funding schemes that provide assistive products and home modifications. Some of them, they're listed in that organizational chart there. They're across commonwealth, state and territory governments and local governments. It's different in education, in vocational services, in health services, in palliative services, different if you are a compensable person, so if you've got your injury through an accident or through the defense force, so there are many different provision types based on your location, your age, your diagnosis, and the cause of your impairment. At the moment in Australia, there is not one equitable benchmark for the rehabilitation services or the assistive product services that people receive.



Australia has a population of 25 million people. There is a breakdown in the green box on the left of how many people over and under 65 that we have in Australia. People under 65 are able to access our National Disability Insurance Scheme, if they have a permanent and significant impairment affecting two or more life areas. People over the age of 65 receive general aged care services.

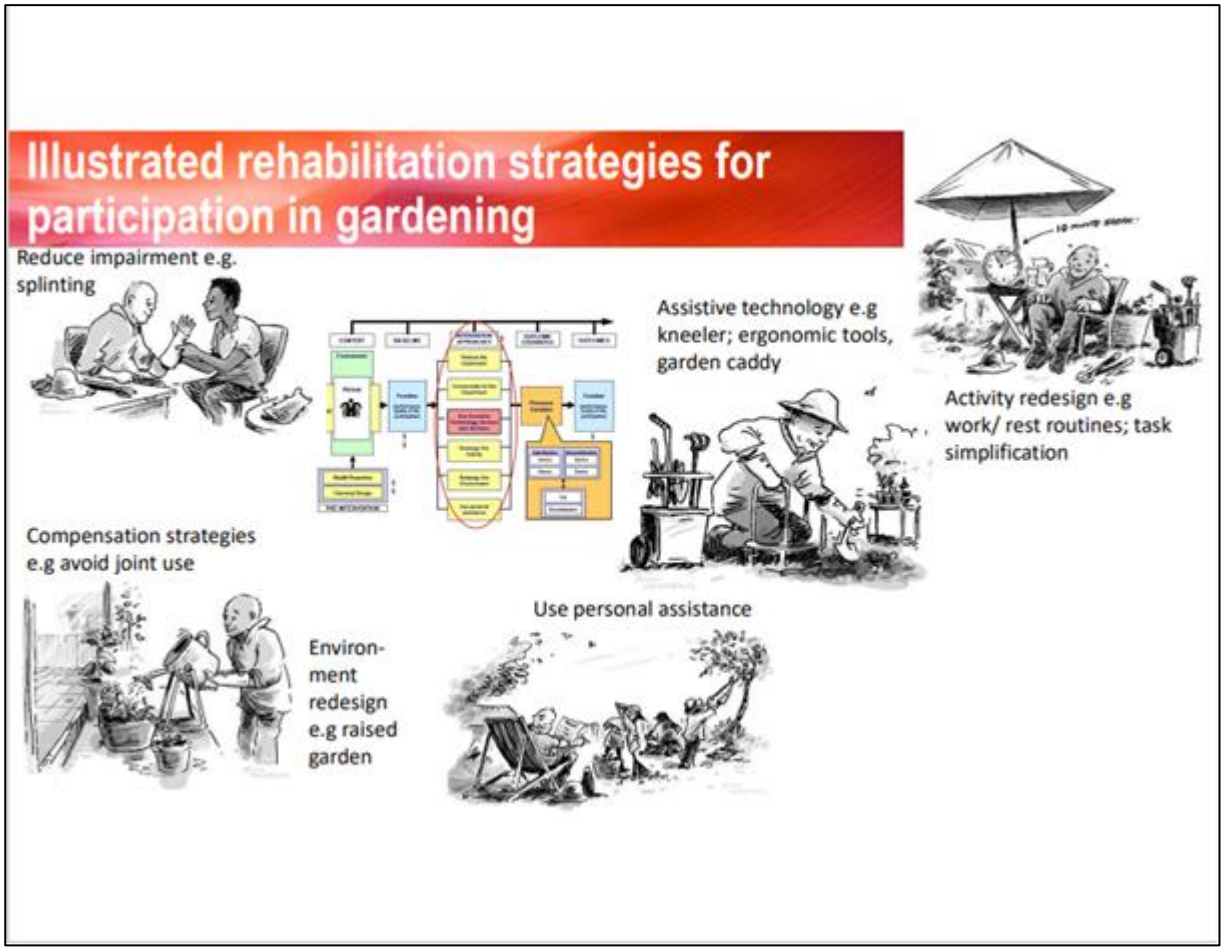
The graphic at the top explains that when you look at how much money is spent on assistive technology, on average, NDIS participants receive $2,500 per year of funding. In comparison, on average, people receiving My Aged Care Funding received $51 per year towards their assistive technology needs. We have written this up in a journal article called, “It's Time for Nationally Equitable Access to Assistive Technology and Home Modifications in Australia,” and we've written that up with colleagues from Canada who have a very similar provision system. We find it quite powerful when we draw government's attention to unmet need, to draw parallels with other countries and also look at solutions other countries like Canada have come up with.

Point 4: The role of key rehabilitation strategies. Again, I've listed point box four, the functioning interventions from Rehabilitation 2030, and I provided Roger Smith's IMPACT2 Process Model on the right. This is a model from an occupational therapist Roger Smith in North America who says, first, we must consider the person's context, then their baseline functioning. Then, we consider which intervention approach to implement. We look at outcome covariates, and then we measure outcomes, and that this is the appropriate way to deliver rehabilitation services and to measure unmet needs.

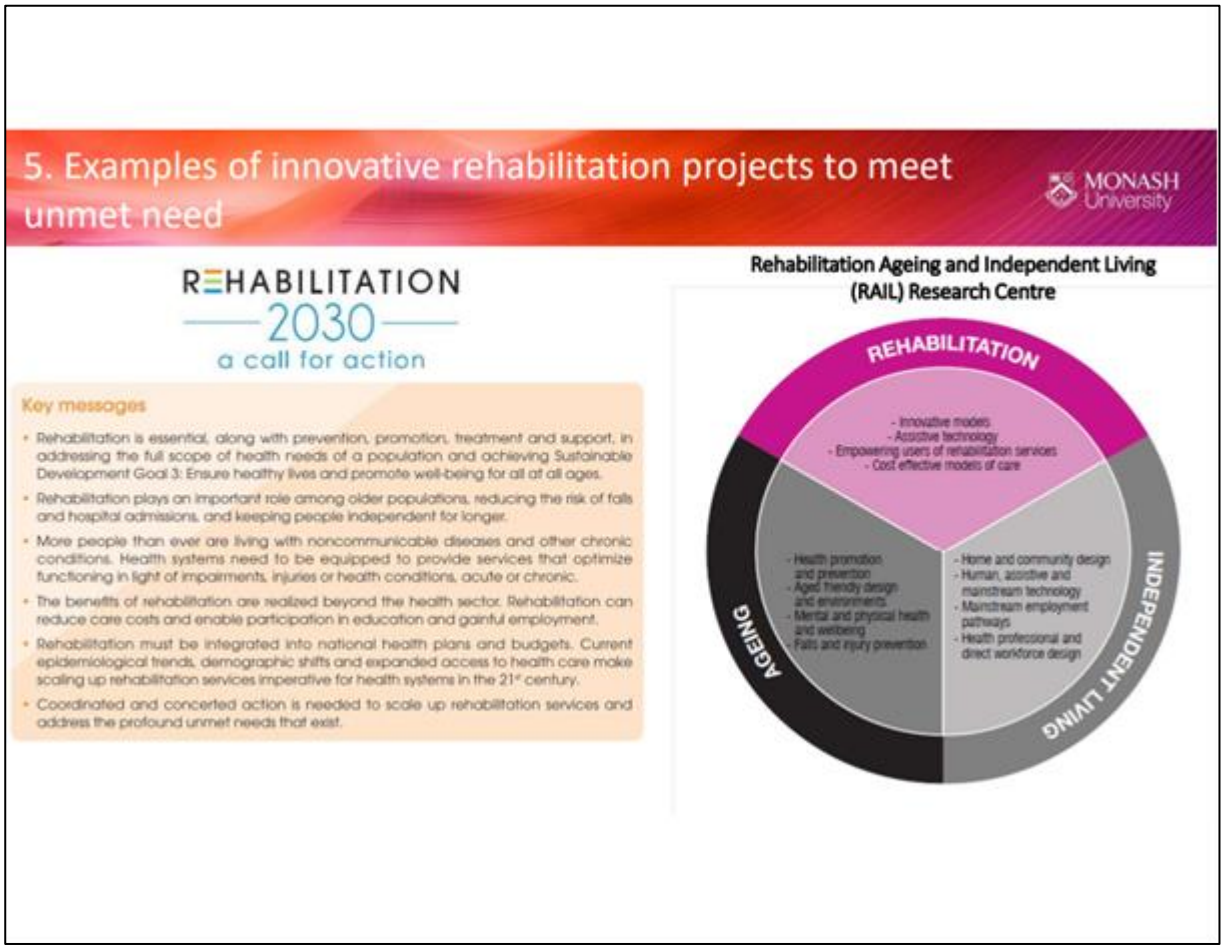


Let's take an example. Here, I've illustrated some rehabilitation strategies with participation in gardening. On the left, you can see a therapist is reducing impairment through use of a resting splint. Left at the bottom, here is somebody who is standing instead of kneeling or bending to garden using compensation strategies, so avoiding heavy manual handling and avoiding joint use. Also, in this picture on the left, you can see the environment has been redesigned. This is effectively a raised bed for gardening and outside the area is paved, so the environmental press or load for that gardener is less.

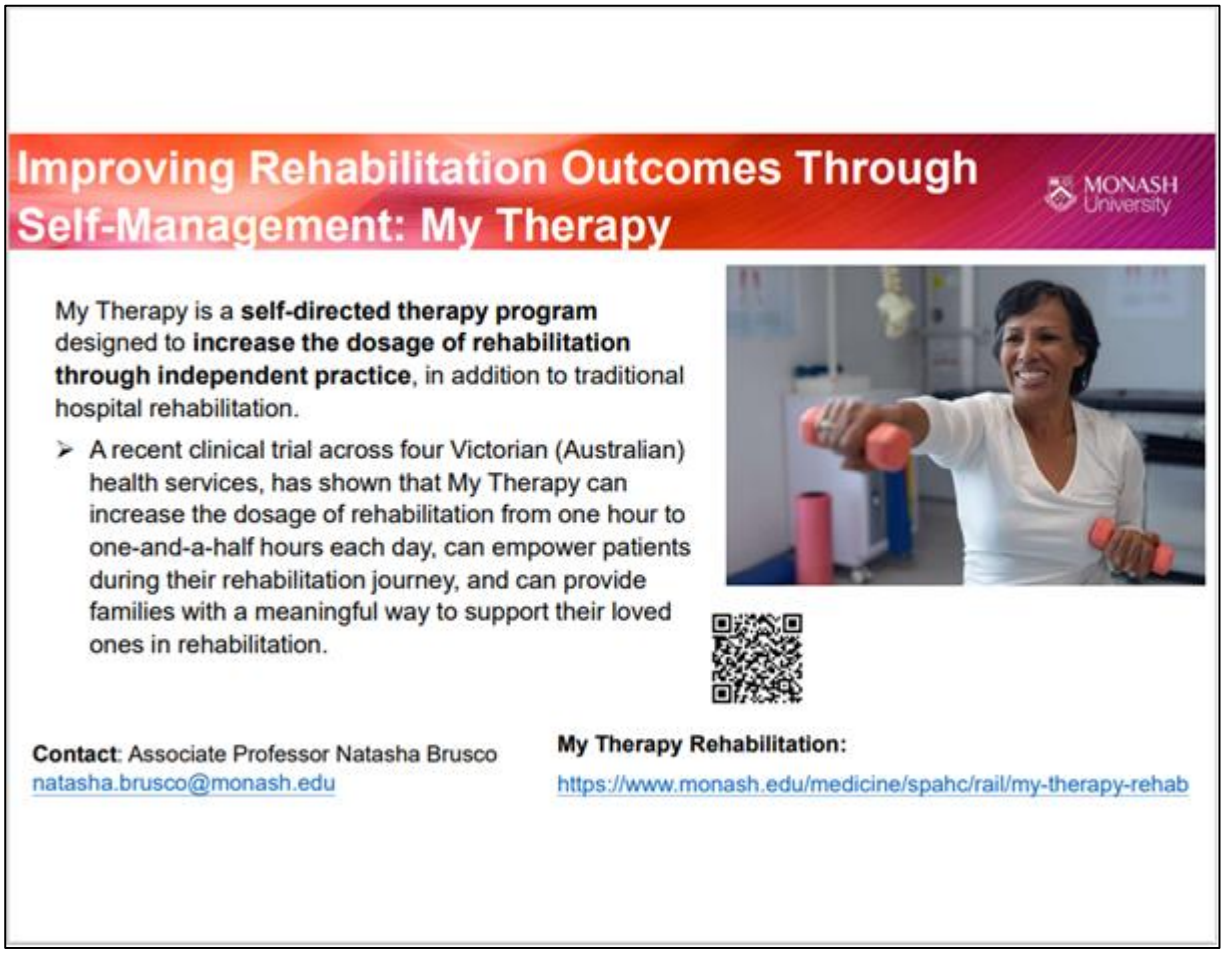
At the very bottom, you can see someone who's using personal assistance. This is an alternative so that across the course of a day, this individual can manage his energy and his capacity and still live in his house with his garden maintained. Top right is illustrating activity redesign. Here, he's got a clock that says take a 10-minute break. This is a work-rest routine, and around him are props to support task simplification. The picture in the middle, here he is using assistive technology, a garden kneeler, ergonomic tools to change the angle of his wrist, a garden caddy to carry his equipment.



What are some examples of innovative rehabilitation projects to meet unmet need? Again, I've lifted forward the Rehabilitation 2030 key messages saying rehabilitation is essential, plays an important role in the older population. More people than ever need rehabilitation, and health services need to be equipped to provide this. Notes that the benefits of rehabilitation realized beyond the health sector and that rehabilitation ought to be integrated into national health plans and budgets.



I'm going to illustrate how RAIL Research Center addressing each of those points in the next few slides. My colleague, Associate Professor Natasha Brusco, is running a project improving rehabilitation outcomes through self-management. My Therapy is a self-directed therapy programs designed to increase the dosage of rehabilitation through independent practice, in addition to the usual hospital rehabilitation. The breakout there describes a recent large clinical trial showing that this is an effective treatment and there's a QR code there for more information.



My Therapy has also been a subject of a feasibility study to self-practice in the residential aged care settings, so nursing home settings. A study at Eastern Health, one health network in Australia has demonstrated that rehabilitation reach can increase to 58% in an aged care wing, and is quite low cost, 6 AUD per resident per day. This again speaks to making the argument that rehabilitation is well funded and benefits are realized outside of acute health.

A feasibility study of self-practice of therapeutic activities via the My Therapy program, in the residential aged care setting

MONASH University

My Therapy in Aged Care is a self-management program that is individually tailored, and co-designed by Allied Health, the resident, and their family. My Therapy can be completed independently, or with the support of family or staff.

- Our study at Eastern Health successfully increased rehabilitation reach from 0% to 58% in one aged care wing and found that My Therapy was highly acceptable to residents and staff, safe, and low-cost (AUD$6 per resident, per day).

Contact: Associate Professor Natasha Brusco, natasha.brusco@monash.edu

My colleague, Dr. Angel Lee, has developed a scalable physical activity program for improving physical activity and reducing risk. There's some statistics there on how many older Australians receive home care so someone coming to their home to support them and that this group is at high risk of physical inactivity and falls. This program has been co-designed with the users so that care support workers can administer this rehabilitation program during homecare services. It's proving safe and feasible and offering many benefits.

Aging with traumatic brain injury. A number of consumer resources including a video have been developed by my colleague, Christina Ekegren, and More information can be found with the QR code here.

Ageing with a traumatic brain injury consumer resources

MONASH University

There are limited resources to assist people who are ageing and have a traumatic brain injury (TBI), and their families. It is established that there are many health and care issues relevant to this population, and preventive healthcare strategies that can be put in place to assist healthy ageing. This project will develop a co-created, tailored educational resource with, and for, people with TBI and their caregivers with reference to ageing and traumatic brain injury. The project aim is to provide Australian injury funders with resources to assist older people and their families who have severe traumatic brain injuries.

Brief project video summary:
https://www.youtube.com/watch?v=DMMEbBW4_ak

Contact: Dr Christina Ekegren, christina.ekegren@monash.edu

One of my studies is a longitudinal study of 24,000 older Australians who are using government funded assistive technology. We're just commencing this trial and we will be very interested to see if these tracks peoples slowed functional decline and increased safety and independence at home.

Longitudinal Study: Use and effectiveness of government-funded assistive technology for older Australians

MONASH University

Mobility products, daily living equipment and self-care items can make a huge difference to safety, autonomy and independence at home.

- The Commonwealth Government provide many types of assistive products to older Australians through the national Goods, Equipment and Assistive Technology (GEAT) programme
- Longitudinal study over 2 years to evaluate long term outcomes for 24,000 older Australians.

Contact: Dr Natasha Layton, natasha.layton@monash.edu

Dr. Christina Ekegren is working on physical activity, a new vital sign for hospital settings. This speaks again to the idea that functioning is extremely important beyond morbidity and mortality in the rehabilitation spectrum.

Physical activity: A new 'vital sign' for hospital settings

MONASH University

Patients in hospital often don't move enough, which can lead to deconditioning and longer hospital stays. **Measuring a problem is the first step towards improving it**. However, there is currently no feasible way to measure physical activity in hospital settings.

- This **multi-site, international project will develop a physical activity 'vital sign', to be embedded into routine reporting**.
- Future research will **implement** the vital sign and **evaluate** its psychometric, prognostic and economic properties.

Contact: Dr Christina Ekegren, christina.ekegren@monash.edu

A couple of projects hear from Prof. Keith Hill and Christina Ekegren again. One is the Exercise Right for Active Aging Project and another is related to physical activity in the local community. Keith does a lot with multi-age and seniors' exercise parks.

Active Ageing

MONASH University

ERAA: Exercise Right for Active Ageing

This independent evaluation aims to provide a 3-part analysis of the effectiveness of the **Exercise Right for Active Ageing** (ERAA) 12-week exercise program, delivered face-to-face or via telehealth to 7000 older Australians (aged 65 years and over) by Accredited Exercise Scientists (AESs) and Physiologists (AEPs). Program effectiveness = physical performance measures, physical activity levels, health status & cost-effectiveness.

Contact: Dr Christina Ekegren, christina.ekegren@monash.edu

Changing the focus: Facilitating engagement in physical activity for people with dementia in a local community - A feasibility study

People with dementia have low levels of physical activity at time of diagnosis relative to older people without dementia; and their physical activity declines further post diagnosis. This project involves **evaluating a new approach to facilitate community physical activity engagement for people with mild dementia**.

Contact: Professor Keith Hill, keith.hill@monash.edu

Carer health and well-being is also terribly important. There's some information here on carer health and well-being services that is being developed by us at Monash and hopefully can be scaled in Australia.

Carer Health & Wellbeing Service: New co-designed service to support older carers

MONASH University

Carers of older individuals at home often face health and wellbeing challenges. To address this, we are testing the **Carer Health & Wellbeing Service**.

Aim: to support carers Australia-wide in maintaining their wellbeing and caregiving role long-term

- help informal carers of older people to improve their own health while continuing to care for loved ones.
- launching in Victoria, Australia
- Evaluation of effectiveness (including cost-effectiveness).

Contact: Dr Aislinn Lalor, aislinn.lalor@monash.edu

Health Expectations

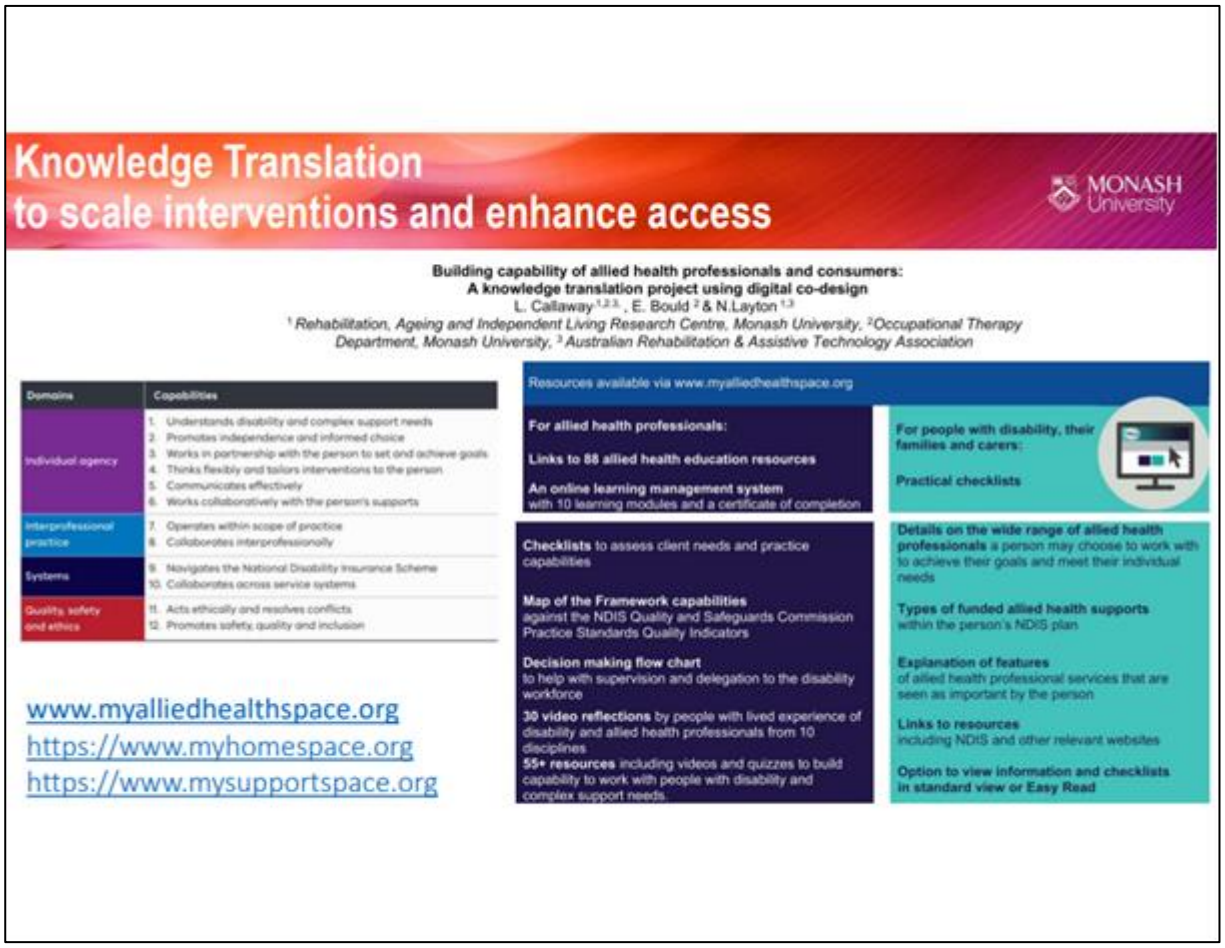
ORIGINAL ARTICLE | Open Access

Who cares for the carer? Codesigning a carer health and wellbeing clinic for older care partners of older people in Australia

Natasha Layton OT, PhD, Aislinn Lalor OT, PhD, Susan Slatyer RN, PhD, Den-Ching A Lee PT, PhD, Christina Bryant MA (Clin Psych), Moira Watson PhD, Anjali Khushu FRACP .... See all authors

First published: 08 September 2023 | https://doi.org/10.1111/hex.13863

A couple of other quick ones, knowledge translation is also vital to make our research effective, and there are some links here to training workforce and consumers and other practitioners in best practice in assistive technology and the use of other rehabilitation strategies for groups such as people with disabilities.



Rehabilitation user empowerment is critical to do good research and to research the right question and we have some links here, discussions really of how people with disability and rehabilitation users can be also researchers, be involved at a high level on projects often as chief investigators and how the whole design can be used to improve the work we do. Thank you very much for this opportunity and I look forward to taking part shortly in the Q&A session.

MONASH University

More information

Rehabilitation, Ageing and Independent Living (RAIL) Research Centre
E: spahc.rail@monash.edu
Website: https://www.monash.edu/medicine/spahc/rail

Dr Natasha Layton
Occupational Therapist & Senior Research Fellow
Rehabilitation Ageing and Independent Living (RAIL) Research Centre
natasha.layton@monash.edu
Melbourne, Victoria, Australia

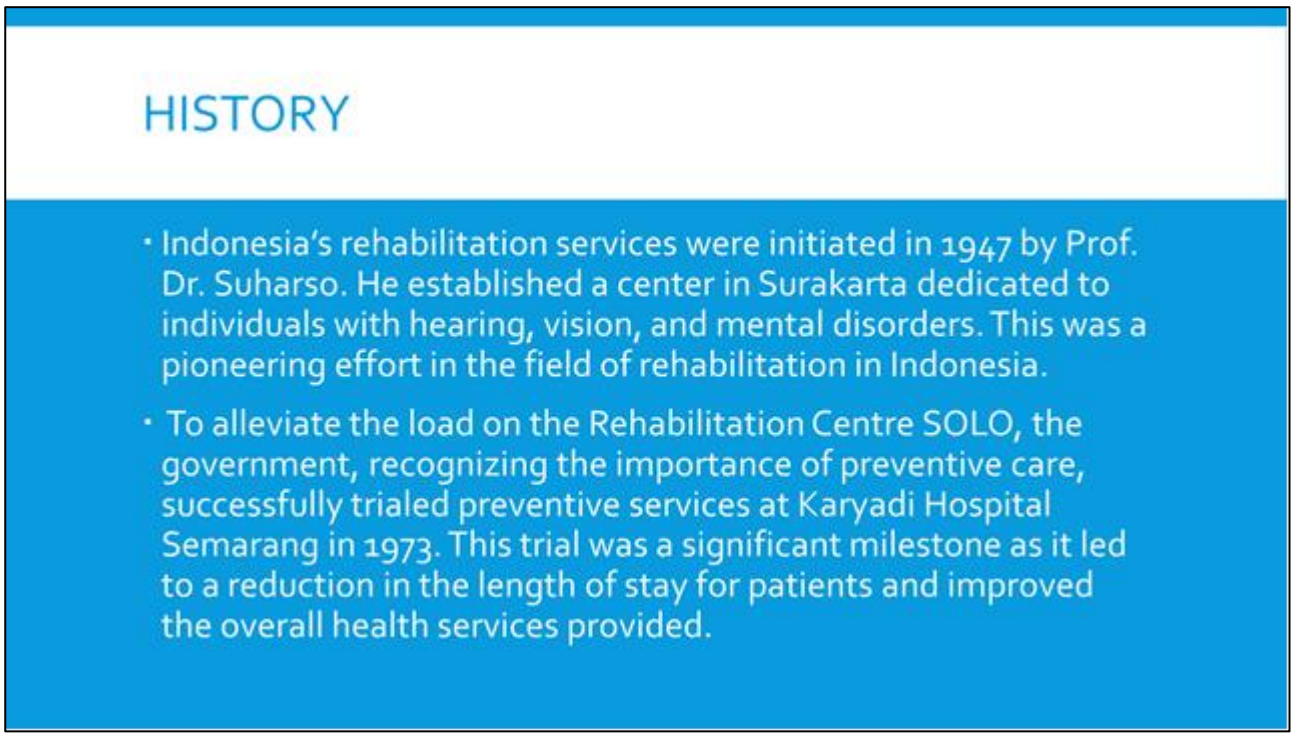
Presentation 3

“Rehabilitation services in Indonesia”

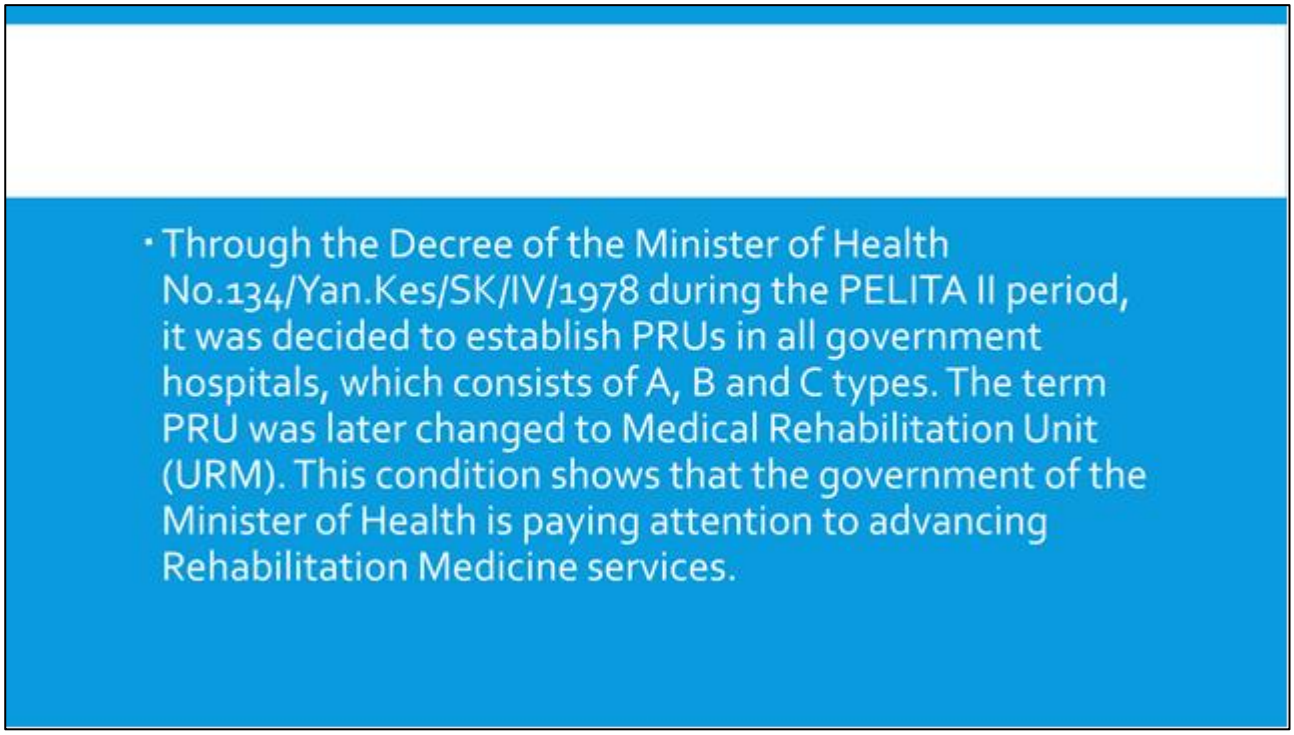
Dr. Lestaria Aryanti, Lecturer in Physical Medicine & Rehabilitation University of Indonesia, Jakarta

Thank you. I want to introduce about my country first. Indonesia, you know, this is a big country which consists of many islands and has a population of 278 million and have 38 provinces so it's a big country. The area is very big, about 1.91 million km^2 and island of about 17,500 islands. Its coastline is 81,000 km. Around 62% of Indonesian territory is sea and water and the land area is 1.91 million km^2 while the water area is 6.32 million km^2.

Rehabilitation in Indonesia services started in 1947 by Prof. Dr. Suharso. He established a center in Surakarta, is the middle Java, and dedicated to individuals with hearing problem, vision and mental disorder. This was pioneering effort in the field of rehabilitation in Indonesia. To alleviate the load in the Rehabilitation Centre SOLO, the government recognized the importance to preventive care, successfully trialed preventive services at Karyadi Hospital Semarang in 1973. This trial was a significant milestone as it led to reduction of the length of stay for patients and improved the overall health services provided.



Through the decree of Minister of Health in 1978 during the PELITA II period, the former president is President Suharto, it was decided to establish the Prevention Rehabilitation Unit (PRU) in all government hospitals. It consists of A, B, C type. It means that the big one hospital is the General Hospital is type A, and B is the second one and the capacity about 500 beds, and the C type the capacity below 100 beds. The term PRU was later changed to the Medical Rehabilitation Unit. This condition shows that the government of the Ministry of Health is paying attention for advancing Rehabilitation Medicine Services.



The education for the PMR, the physical medicine and rehabilitation specialist began at 1984 with the first graduates in 1987. In the 1987, there were just two universities as education center. In our country, specialty is based on the university, not in the hospital base. They are in Jakarta and Surabaya.

Now, they have six universities, began the education for the PMR doctor. They are in Jakarta, Surabaya, Semarang, Bandung, Manado, and Malang. Most of them is part of Java, and outside of Java, only in Manado.

The number of graduates in the last 5 years are around 80 peoples/year. In this year in 2023, the number of PMR doctor are 1,076. It’s very few as compared to our population of about 200 million.

PMR EDUCATION

- Education for physical medicine and rehabilitation (PMR) specialis began in 1984 with the first graduates in 1987.
- In 1987, there were 2 universities as a Education Center :

  University of Indonesia (Jakarta) and Airlangga University (Surabaya)
- Until 2023 it develop to 6 universities: University of Indonesia (Jakarta), Airlangga University (Surabaya), Diponegoro University (Semarang), Padjajaran University (Bandung), Samratulangi University (Manado),and Brawijaya University (Malang)
- The number of graduates in the last 5 years are around 80 peoples / year
- In 2023 the number of PMR doctors are 1076

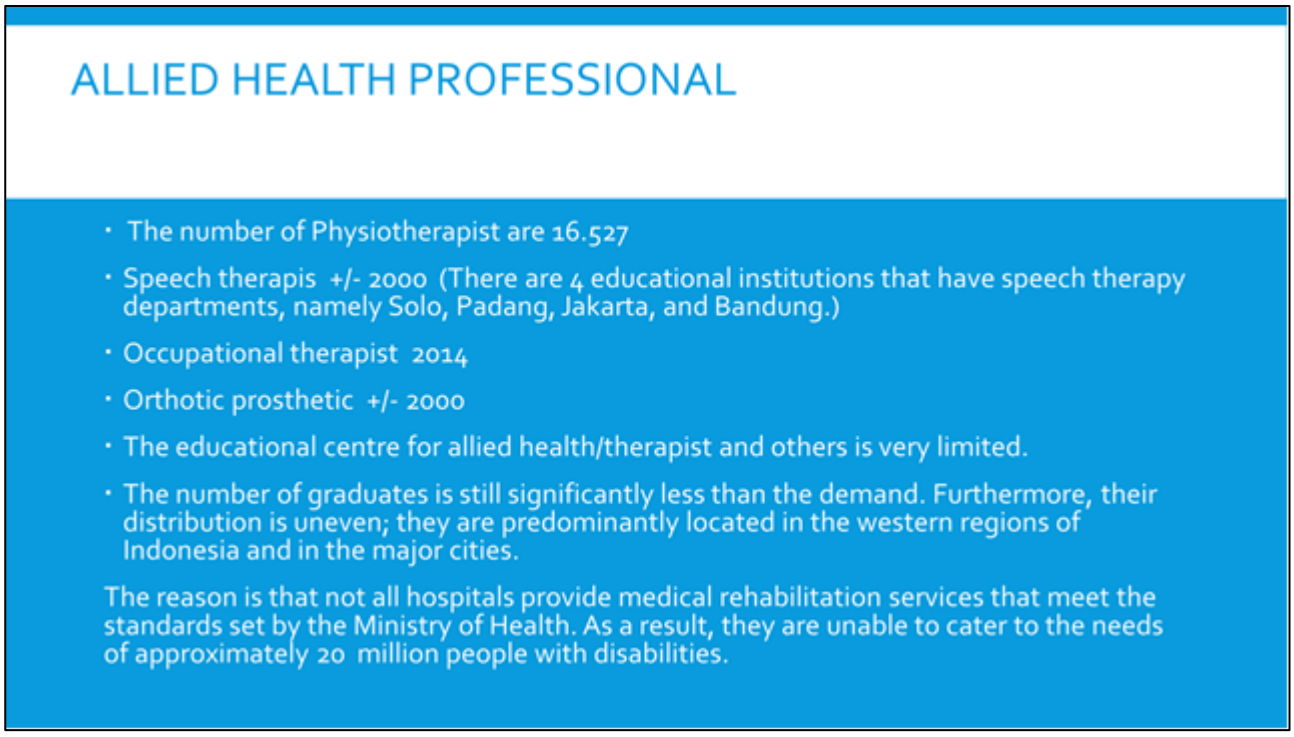
How about the distribution of the PMR? The distribution is very limited. Most of them is in the West Indonesia. In the East Indonesia, it's very few. You know that the West Indonesia has many opportunities to develop because the transportation is easier compared to the East Indonesia. When the doctor of PMR in Indonesia, about 1,489 but there are doctors who are working in the two places, in the two cities who are covering the patient there because it's not enough there.

DISTRIBUTION OF PMR SPECIALIST

How about the allied health profession? We see that Indonesian, the physiotherapist, it started a long time ago in the 1943 and when they started their rehabilitation center, the number of them is 16,500, but compared to the other like speech therapist, occupational therapists and orthotic prosthetics and prosthetics, it's very few. They are only about 2,000 people for other profession.

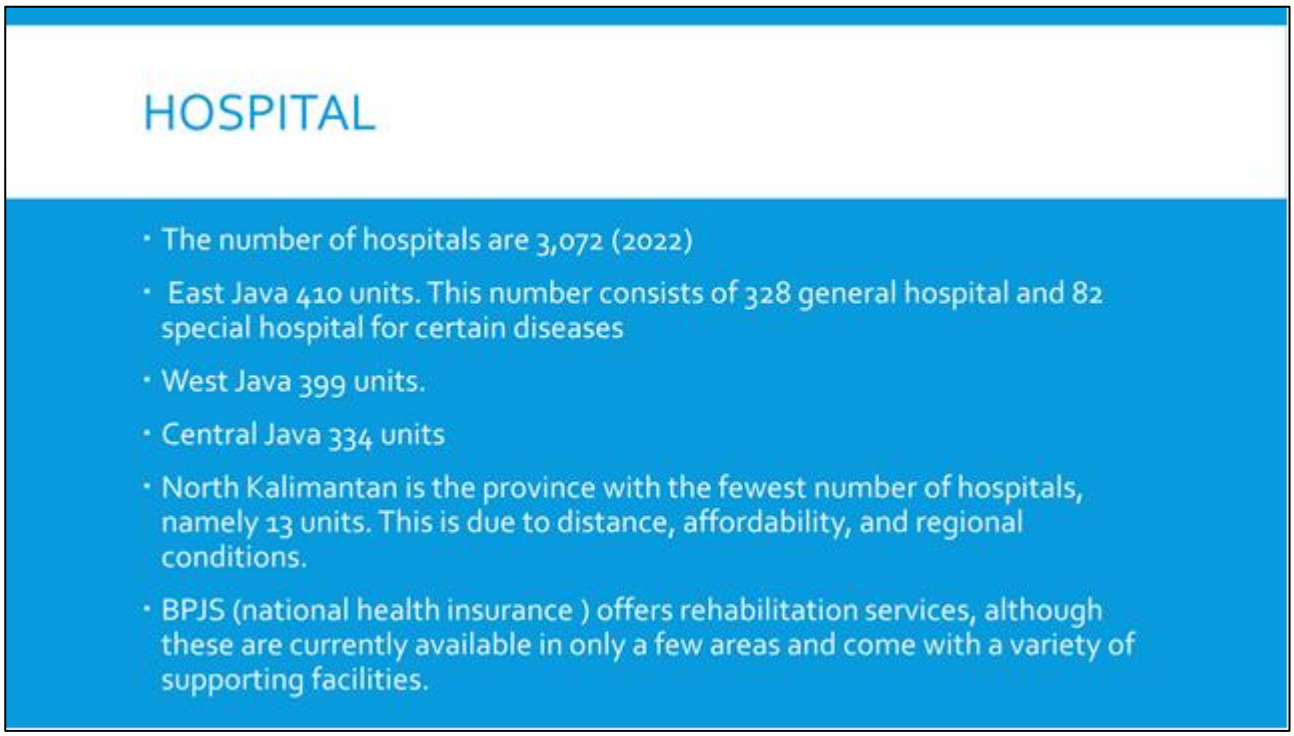
Education Center are very, very limited. Usually, they are only in the big city like in Solo, in Padang, in Sumatra, in Jakarta and Bandung. Out there, the education is more private education for them, but also very limited. Usually, they have to afford much money.

The number of graduates still significantly less than the demand. Furthermore, their distribution is uneven. They are predominantly located in the western regions of Indonesia and in the major cities. Why? Because West Indonesia is more easy to cover compared to the East Indonesia. In East Indonesia, we must use the ship or the plane to cover this area.

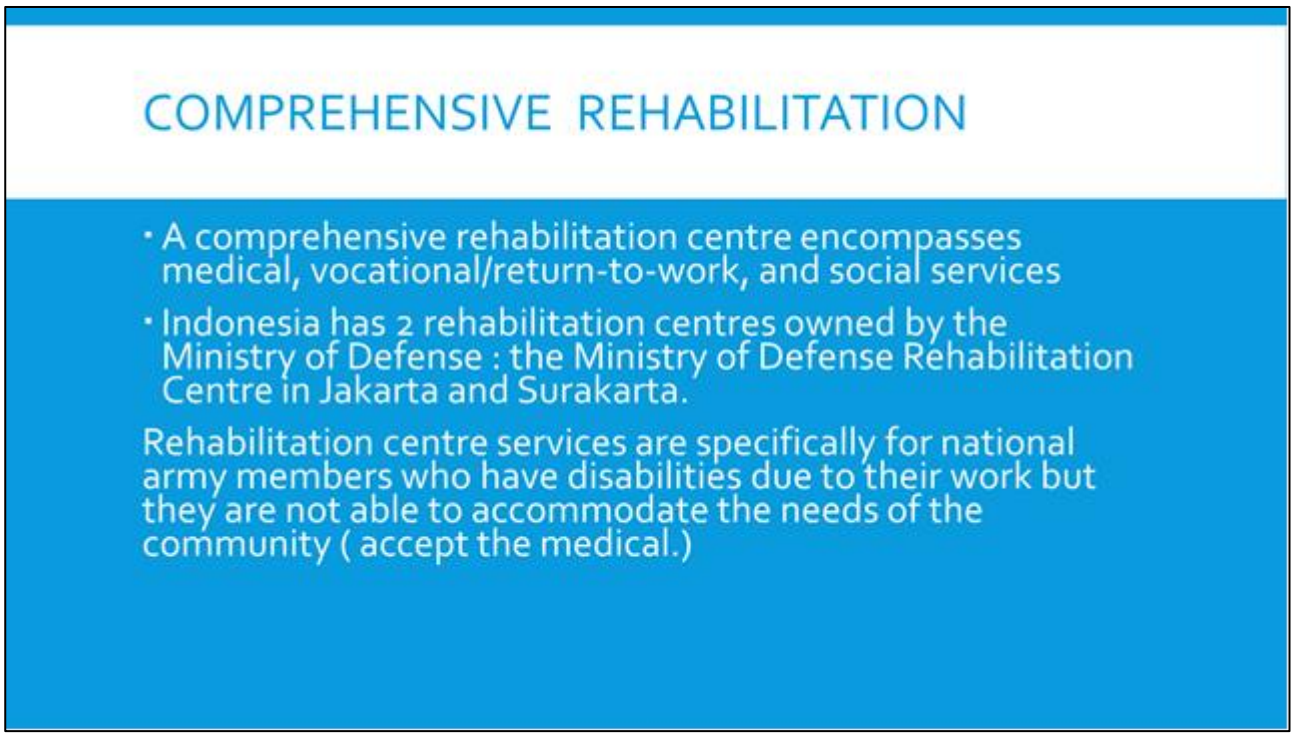


Number of the hospital. Government hospitals are 3,072 in 2022, but this is only government. We have also the private hospital, but the private hospital cannot be afforded by all of the people in Indonesia. In East Java, we have 410 units of hospital and this number consists of general hospital and also the special hospital for the certain disease. In the West Java, it's 300 and Central Java, 300 also. You see that most of the hospital, the big hospital, is lying in the Java Island. Kalimantan and Celebes, it is very few numbers of hospitals, just 13 units in the Kalimantan due to the distance, affordability, and regional conditions.

Mainly about the national health insurance or we call it BPJS offer also rehabilitation services, but not all of them cover all the services. There's probably only medicine and also the therapies like physiotherapies, the occupational therapies, speech therapies, but not assistive device. Assistive device, only a few, just only hearing and eye problem and not wheelchair, not others like assistive device to communication so it's very limited. For prosthetic also, only the simple one prosthetic. Used in the hospital, the prosthetic is possibly very sophisticated.



How about the comprehensive rehabilitation? It's new in our country. The rehabilitation services are based on the hospital so not many other parts outside of the hospital can afford the rehabilitation. When we see in other countries, they have a comprehensive rehabilitation, which are medical also, focusing on return to work and social services also included in the services. But Indonesia only has two rehabilitation centers owned by the Ministry of Defense. The Ministry of Defense Rehabilitation Center is in Jakarta and Surakarta. The rehabilitation center services are specifically for national army members who have disability due to their work, but they cannot accommodate the needs of the community, except the medical. They're focusing on return to work and social services cannot be afforded to all the people in our country. Maybe in the future we can do that.



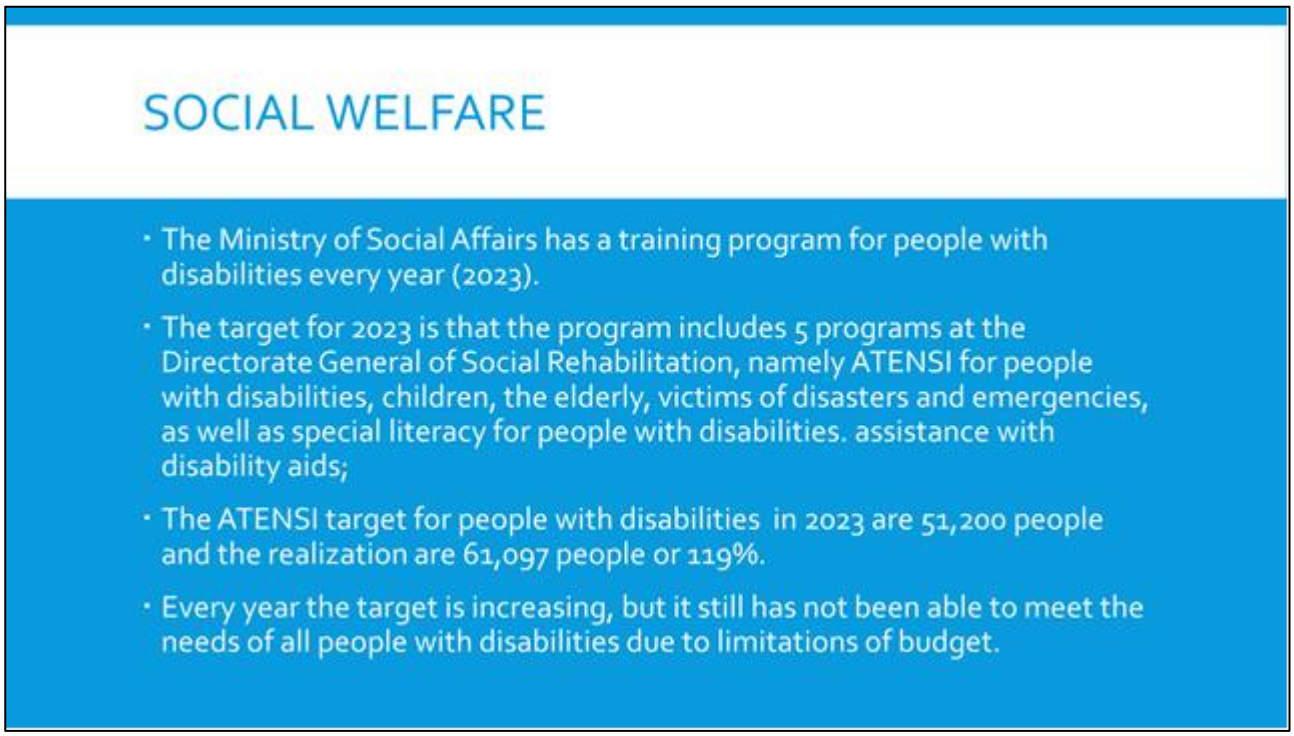
After we go into the rehabilitation and before I decide to go to the community, we need the special school. Special school and the inclusive school. The special school is also very limited, only 2,300 and most of them are private school. Private school mean the people must pay more. In the public school, they can get the education for free. How about the inclusive school? The inclusive school, also they have in public school, but it's very limited due to lack of the sufficient accompanying teachers. Teachers must fairly stand out, very important to teach all the patients with disability and readiness of the school. Most of the schools cannot accept the child with the disability because of the treatment they don't have or the condition of the school, environment of the school is not safe for them, so it's very limited, special needs school, for them.

We try to make an understanding about the people with disability in our country. There's many, many people with disability in our country being noted from the National Sociological based survey in 2020. There are 22.97 million people, about 10% or 15% with disability in Indonesia so it's very big. The largest group of functional difficulty in Indonesia, people with severe disability are 6.1 million people. It's a large number, consisting of 1.2 million people with physical limitation, 3.7 million people with sensory limitation, it means the audiology and the vision, the hearing problem and the tactile and so on, and 149,000 people with mental disability and also 1.7 million people with intellectual disability.

This condition is not yet being covered by the government, due to limitation of the capability of the province. Every province has different budget to cover, the limitation on people in this province. There are provinces who are rich because they have more supporting, they have many agricultures supporting. But other areas also don't have the resource to support this condition. So not all of them can have a good rehabilitation.

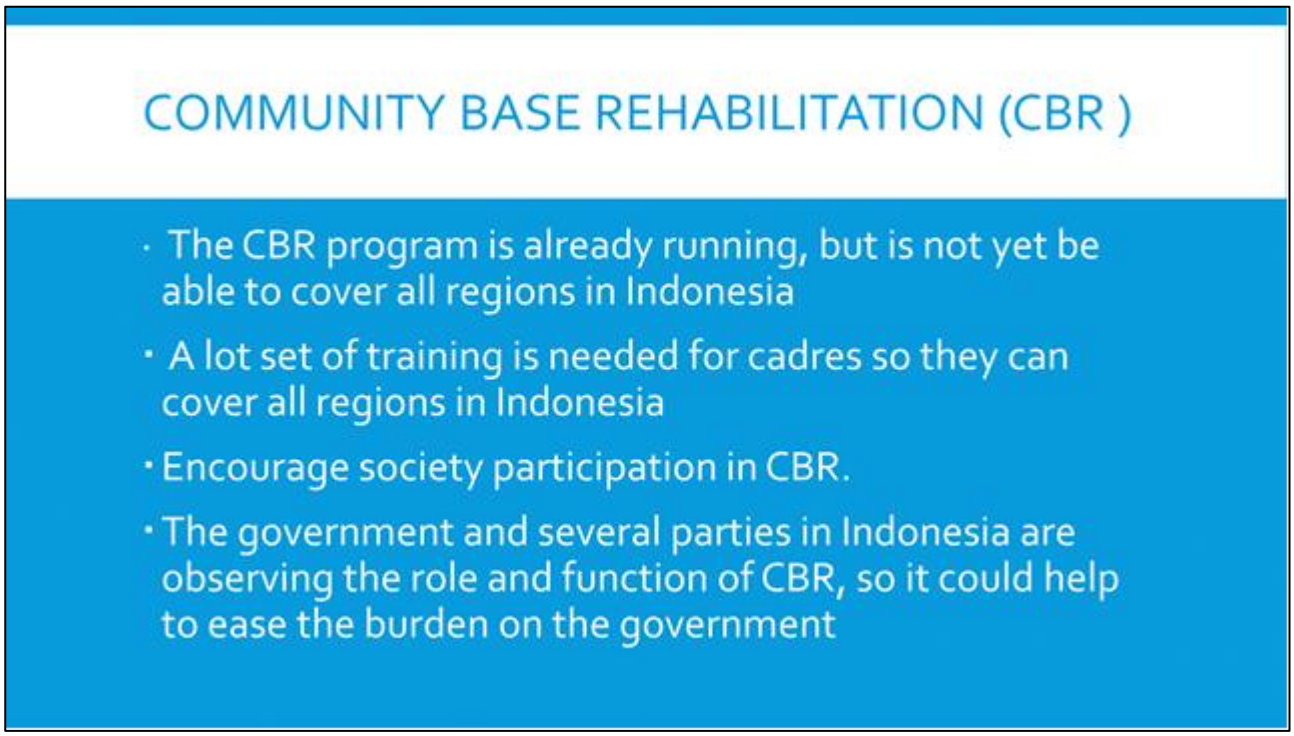
Social welfare in our country, we have also a program for people with disability. In 2023, they have a program ATENSI, ATENSI is for people with disability, for children, for elderly, a victim of disaster and emergency as well as some special literacy for people with disability and assistance with disability aids. But this condition, it's not linked with the healthcare. Usually, they make program not linked with the healthcare so it's very difficult to make our patient, (usually working in the hospital) to give the patient the social welfare, and then they can train them to make self-confidence, to make ADL and it's very, very few linked to them. We must have cooperation, collaboration with them with a good one so this condition will be justified for everyone.

The ATENSI target for the people with disability in 2023 are 51,000 people but the realization is more than that, It's 61,000. It is more than 100%. Every year, the target is increasing but also that still has not been able to meet the needs of our people with disability due to limitation of budget of the social welfare. Also from social welfare, in other province have also different programs because they are conducting the budget they have in their province.



How about the community-based rehabilitation? Actually, community-based rehabilitation is very important, because in other countries, rehabilitation services is very limited. The CBR is already running, but it's not able to cover all regions in Indonesia. A lot of set of training is needed for cadres so they can cover all regions in Indonesia. Encourage society participation, encouraging them to participation in CBR. Because CBR Program also have much more understanding for the people, how to join the CBR program and the cadres understand how they can have a role in the CBR Program to make the disability people can work well and support their life very well.

The government and several parties in Indonesia are observing the role and function of CBR. So it should help to ease the burden on the government because the government itself cannot cover all the patients with disability and rehabilitation program is very limited. I think it's better we have a community-based rehabilitation and also about assistive technology that cannot be afforded by our cadres because it’s very advance, and BPJS or the national insurance cannot cover them. I think the community-based rehabilitation is important now and can cover a big area of our country.



I think the summary of this condition is about that not every hospital has rehabilitation services facility. Our Ministry of Health have minimal standard for the hospital to have rehabilitation services facility, but due to the lack of human resource, due to facility and infrastructure so the minimal standard of rehabilitation service cannot be afforded by them. This is very important for me to increase them.

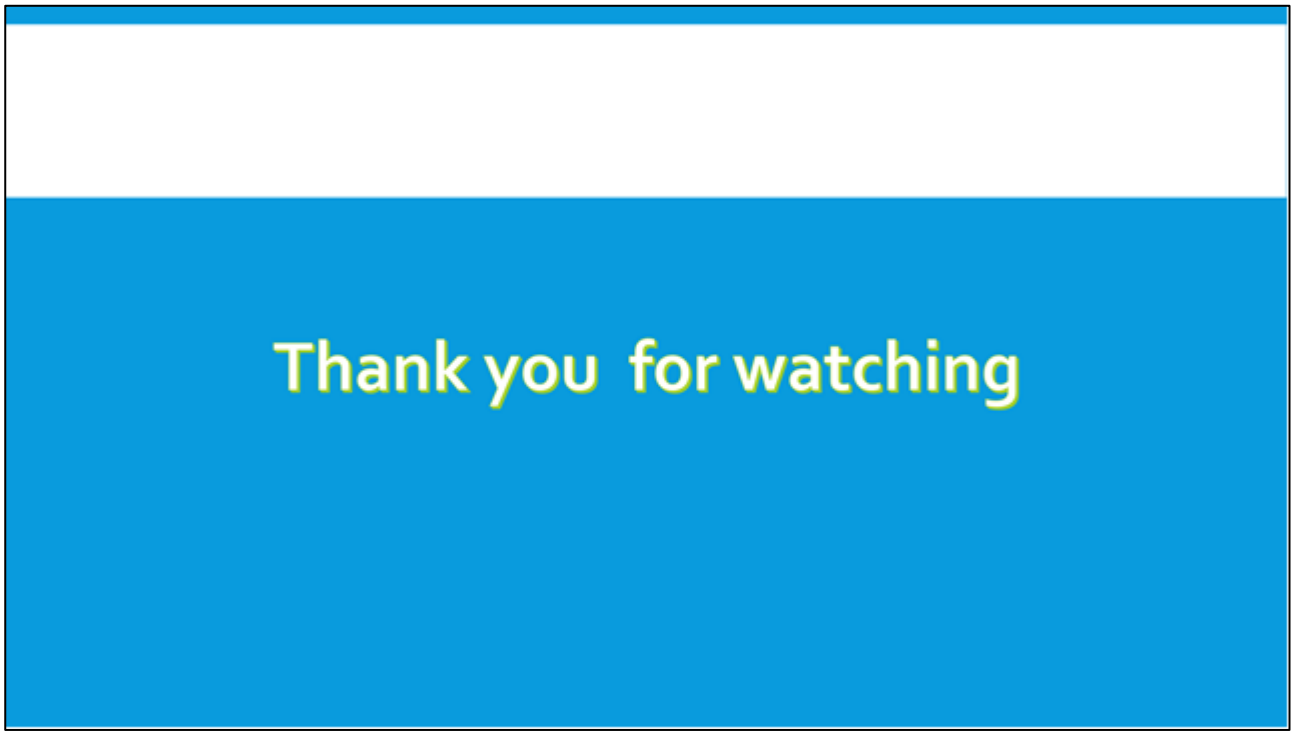
The regulation by the government to rehabilitation cannot yet be fully implemented throughout of the Indonesia. You see that the Indonesia is a big country and a part of them is not the same condition, so not all the regulation of the government – (government have a good regulation about the rehabilitation on disabled people), but not all the provinces can do that.

The budget to support the rehabilitation program needs to be increased because now, only for the healthcare, not the rehabilitation. Rehabilitation is a part of the healthcare, but the percentage of the rehabilitation is not big enough for doing the rehabilitation, the good one.

Increasing the role of CBR with its cadres is ordered to improve community-based rehabilitation services, due to improper human resource, the infrastructure, the facility, so CBR can be one of the solutions to have rehabilitation for everyone. Now, I want to see about the activity and rehabilitation center in our center of Ministry of Defense.

Rehabilitation center by the Ministry of Defense covers all the activity which the patient can do by themselves and they are structured, they are in structure, their facility, but this is only for the Army member. They also have automotive or medicine for their health and also the computer and for the singing, for the music and sewing. There are many kinds of activity for rehabilitation center in Ministry of Defense, but it's not in our hospital always, especially in rehabilitation hospital. We only have the medicine/ the medical, not all like this.

This is also how the activity they're doing in the workshop, how to cook, how to make the automotive, how to make computer, doing a computer, making repair of weapon, and also gardening and agriculture. They're doing this because they have a big, big effort and big, big area for this. In our hospital and public hospital in our country, it does not have a big area like they have. I hope in the future, government also think that we must also have a rehabilitation like this for all people, not just for the army. I finished my presentation, hopefully you can benefit from this. Thank you so much.

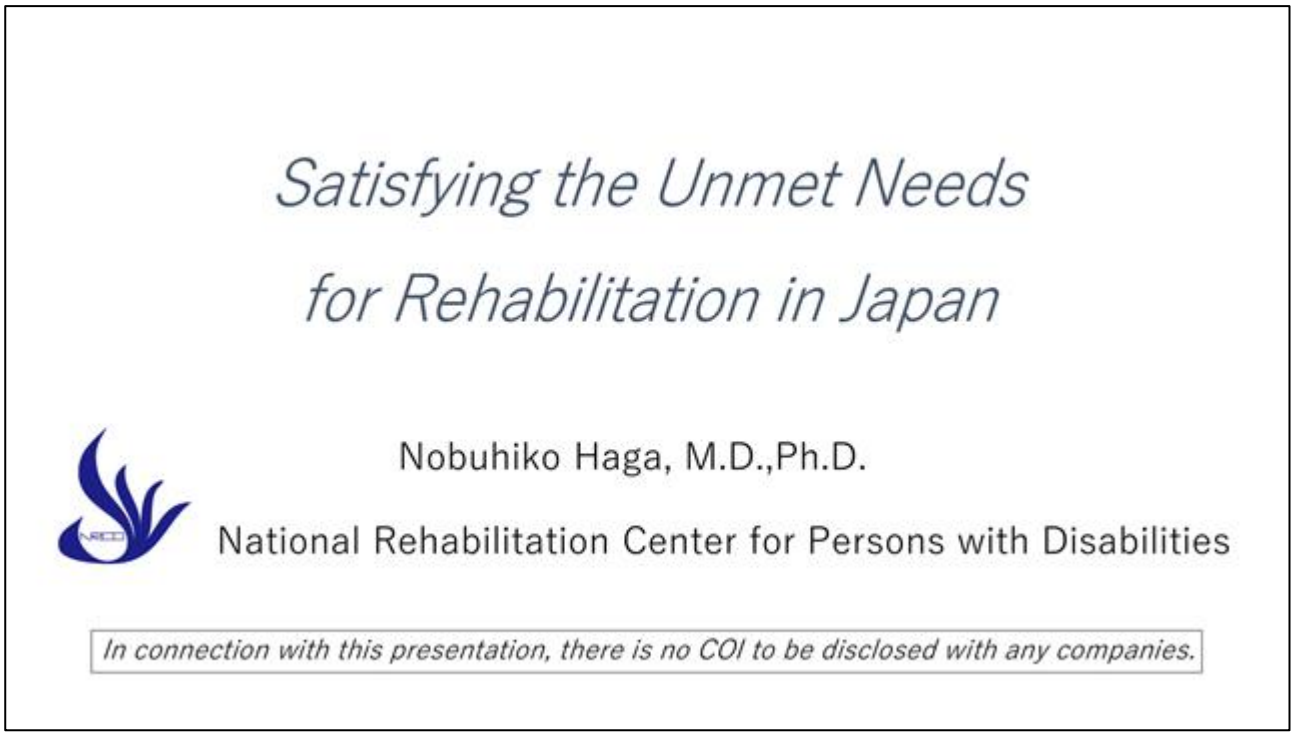


Presentation 4

“Satisfying the Unmet Needs for Rehabilitation in Japan”

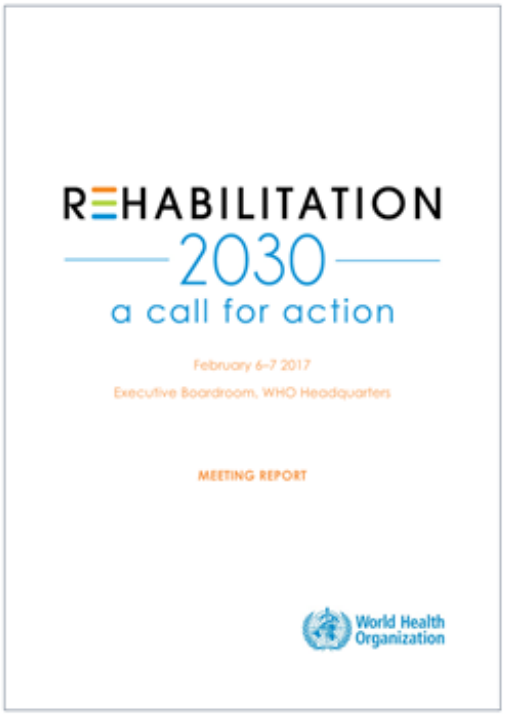
Dr. Nobuhiko Haga, President, NRCD, Japan

Hello everyone. As mentioned earlier, it is stated in the meeting report of “REHABILITATION 2030” that rehabilitation need is unmet around the world, especially in low- and middle-income countries, and that a dearth of evidence of met and unmet rehabilitation needs presents a barrier to strengthening and extending rehabilitation in each country. With this in mind, I would like to consider what rehabilitation needs and unmet needs are and reflect on the situation in Japan and our center.



Rehabilitation-2030- Meeting Report

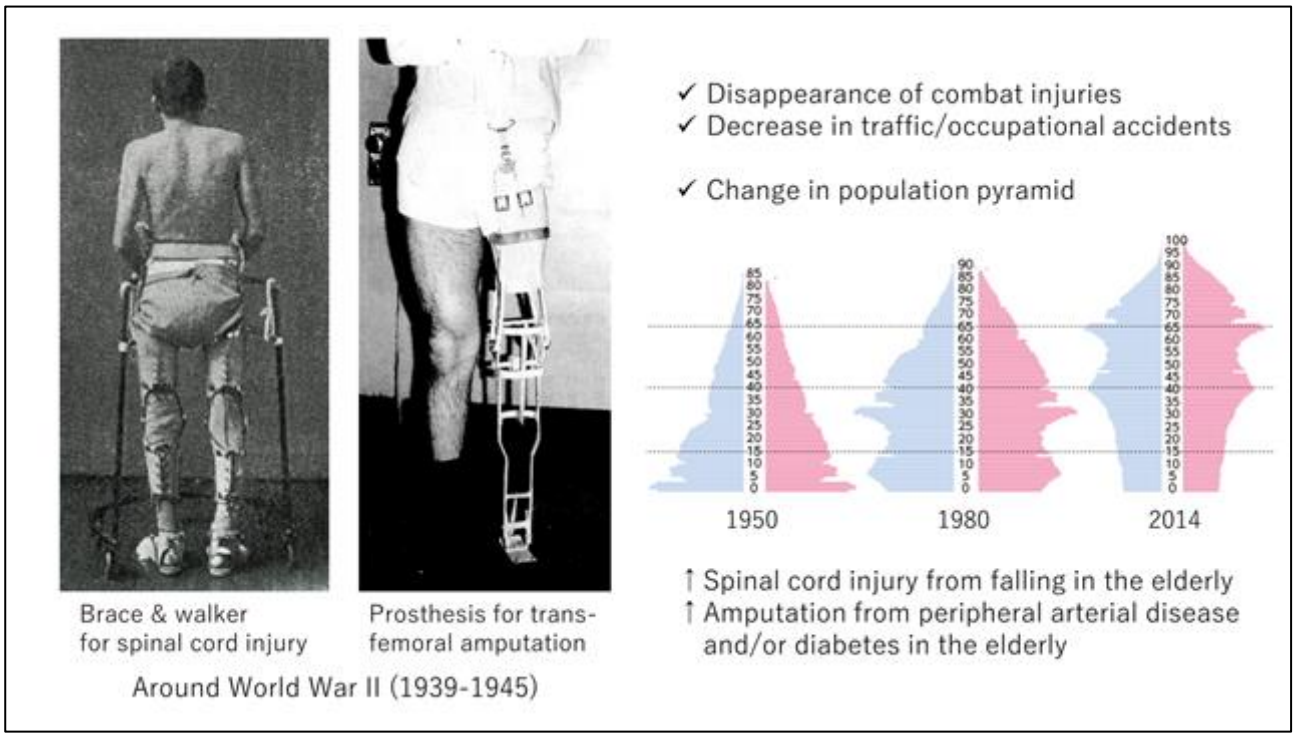
- The *unmet rehabilitation need* around the world, and especially in low- and middle-income countries, is profound.
- Current barriers to strengthen and extend rehabilitation in countries include a dearth of evidence of met and *unmet rehabilitation needs*.



Regarding the changes in rehabilitation needs in Japan, it is my understanding that rehabilitation advancement in Japan has lagged behind the West by about half a century. Shown on the left of this photo is a brace and a walker for a spinal cord injury patient during World War II, and on the right is the actual prosthetic limb of a patient with trans-femoral amputation.

For example, Mary McMillan, a physical therapist, founded an association for physical therapists in 1921 in the US, whereas an association for physical therapists was established in Japan 45 years later, in 1966.

As time went by, the number of disabilities caused by war decreased significantly, as did those resulting from traffic accidents and occupational accidents. However, Japan entered the super-aged society ahead of the rest of the world due to changes in population demographics, as shown in the diagram on the right. As a result, spinal cord injuries due to falls increased among the elderly, and we have seen a rise in lower limb amputations due to peripheral arterial disease and diabetes.



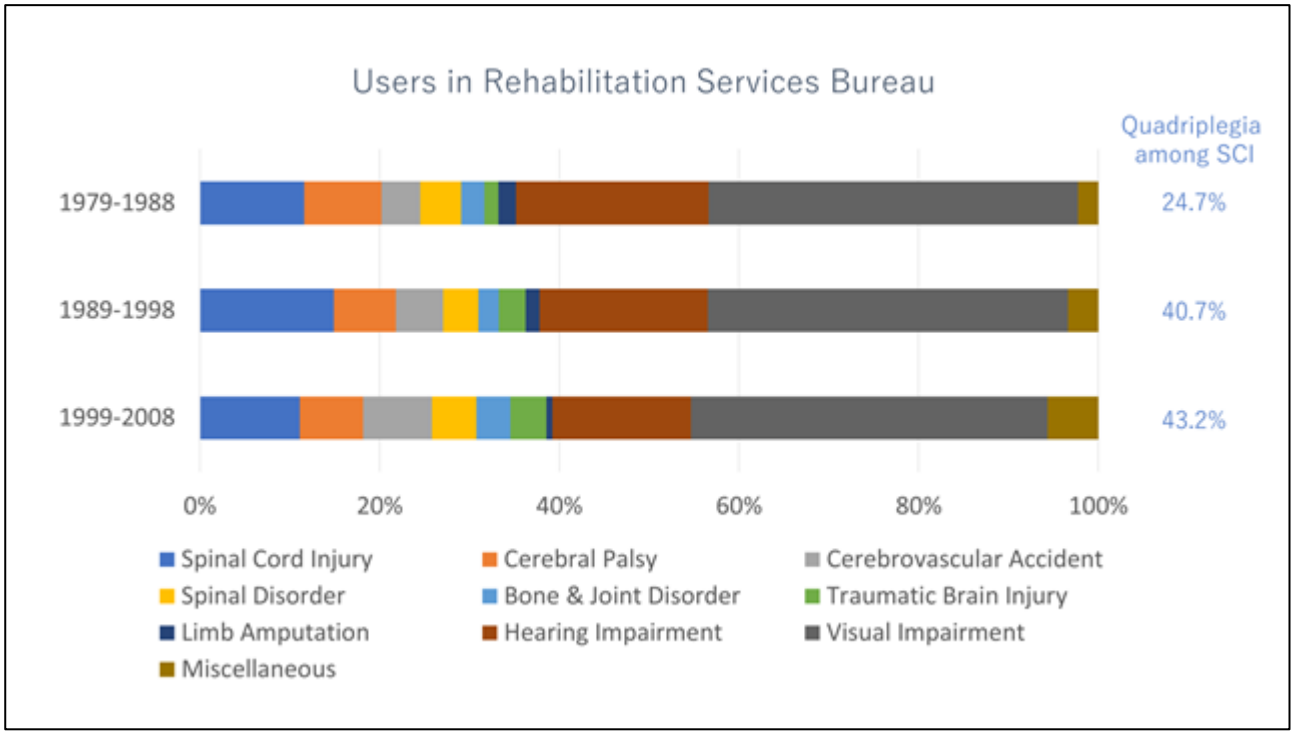
In the 2000s, there were significant changes made to the insurance system related to rehabilitation medicine. In 2000, convalescent rehabilitation wards were introduced, and different frameworks for dealing with the acute, subacute, and chronic phases of rehabilitation were established. In 2008, a disease-specific rehabilitation approach was introduced, and conditions were divided into categories like musculoskeletal, cerebrovascular, cardiovascular, and respiratory diseases, deconditioning, cancer, dementia, dysphagia, and visual impairments.

Regarding disability welfare services, “Act on the Comprehensive Support for the Daily and Social Life of Persons with Disabilities (PWD)” was passed in 2005. The scope of the law, which applied to those with physical, mental, and intellectual disabilities, was expanded in 2013 to include patients with rare diseases.

The National Rehabilitation Center for PWD has addressed various rehabilitation needs during these times. Our center, the National Rehabilitation Center for Persons with Physical Disabilities, was established in Tokorozawa City in 1979 with a site area spanning over 200,000 square meters. Although there are several departments within the center, the Hospital and the Rehabilitation Services Bureau provide support to PWD.

The Hospital provides medical rehabilitation aimed at functional independence. The Rehabilitation Services Bureau offers support related to disability welfare services to individuals covered under “Act on the Comprehensive Support Law for PWD” or children with intellectual disabilities so that they can independently lead day-to-day life and engage in social activities according to their abilities and aptitudes.

This bar graph compares the disabilities of the users of the Rehabilitation Services Bureau by decade. The blue on the far left represents spinal cord injuries. The numbers seem relatively stable, and the percentage of quadriplegic disabilities among spinal cord injury patients is indicated on the far right. As shown here, the percentage of quadriplegic disabilities among spinal cord injury patients has been increasing. Additionally, traumatic brain injuries, represented in green around the middle, have also been increasing. In contrast, the percentage of cerebral palsy, which is indicated in red, has gradually decreased.



During these times, we have been striving to meet emerging rehabilitation needs as a national institution. I will briefly describe five types of disabilities.

The first is higher brain dysfunction. The need for cognitive rehabilitation for traumatic brain injuries and cerebrovascular accidents has been increasing since 2006, and the Rehabilitation Services Bureau started a rehabilitation program for higher brain dysfunction and neurobehavioral disorders. We also founded “Information and Support Center for Persons with Higher Brain Dysfunctions” in 2011 and have been publicizing related information.

The second is developmental disabilities. In 2008, we established “Department of Child and Adolescent Psychiatry” and opened “Section for Developmental Disorders” within the hospital. Due to the increasing care needs of individuals with developmental disorders, we also opened “Information and Support Center for Persons with Developmental Disabilities”. We have been providing employment transition support to adults with developmental disabilities through the Rehabilitation Services Bureau since 2012.

Addressing New Categories of Disability in NRCD: #2

2008-: "Dept. of Child and Adolescent Psychiatry" & "Section for Developmental Disorders"

2008-: "Information and Support Center for Persons with Developmental Disabilities" in response to the increasing needs of caring people with developmental disabilities

2012-: Employment transition support for adults with developmental disabilities

The third is the intervention to children with congenital upper limb deficiencies. Since 2011, the hospital has taken the initiative to adopt a team approach towards children with congenital upper limb deficiencies. The video in the lower left shows a child wearing prosthetic limbs on their way to a sports activity in school. The video in the lower right shows a child for whom myoelectric prosthetic hands are indicated working with engineers to practice deriving myoelectric signals using toys. We have been conducting basic training sessions on pediatric myoelectric prostheses since 2019 and have been providing training sessions since 2021 to specialized professionals nationwide.

Addressing New Categories of Disability in NRCD: #3

2011-: Team approach for children with congenital upper limb deficiency

2019-: "Training Session on Pediatric Myoelectric Prostheses –Basic Course-"
2021-: "Training Session on Pediatric Myoelectric Prostheses for Rehabilitation Professionals"

The fourth is our response to stuttering. Our hospital has a long history of dealing with stuttering, and otolaryngologists and speech therapists have been treating it since 1979. In 2007, we opened a Specialty Outpatient Clinic for pediatric and adult stuttering and have been offering training sessions on stuttering for speech therapists since 2022. We approach stuttering in children using the Lidcombe Program and the JSTART-DCM, which is “Demands and Capacities Model.”

For adults, we employ techniques like Speech Shadowing, where online speech materials are played at reduced speed on smartphones and patients repeat the speech with a slight delay while listening to it, as well as group cognitive-behavioral therapy and remote face-to-face therapy.

The fifth and last is support for sports in PWD. In 2011, we opened the Center of Sports Science and Health Promotion for PWD to help with medical checkup and classification as part of our support for para-athletes. To promote health in PWD at the grassroots level, the center also provides health checkups with a focus on noncommunicable diseases, education on the necessity of participating in sports activities, and support for sports activities for PWD.

Addressing New Categories of Disability in NRCD: #5

2011-: Center of Sports Science and Health Promotion

Support for Para-sports
- ✓ Medical checkup for para-athletes
- ✓ Support for disability sport classification

Health Promotion of PWD
- ✓ Comprehensive medical checkup to find noncommunicable diseases
- ✓ Education on the necessity of participating in sports activities
- ✓ Support for sport activities of PWD

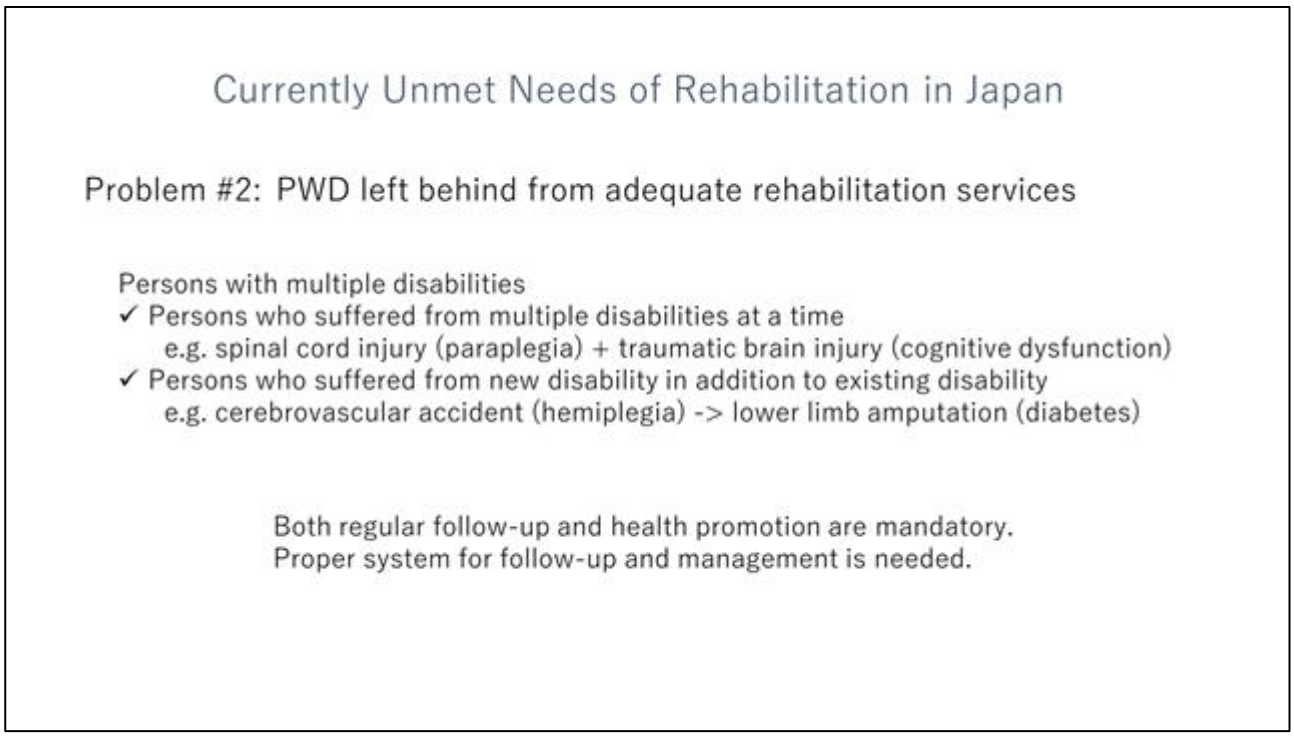
I have identified two major unmet rehabilitation needs in Japan at present. The first is the disparity in the quality of medical and social rehabilitation among areas and institutions. To address this imbalance, we educate and bring up rehabilitation and welfare professionals in the College within our center, where the six educational programs described here are offered. We also provide educational programs in the hospital to bring up physiatrists who can treat various disabilities. In addition, we offer a wide range of training programs for rehabilitation and welfare professionals outside the center.

Currently Unmet Needs of Rehabilitation in Japan

Problem #1: Disparity in the quality of medical and social rehabilitation among areas and institutions

- ➢ Education & bringing-up of rehabilitation/welfare professionals
  Our "College" has the following courses
  - ✓ Speech-Language-Hearing Therapy
  - ✓ Prosthetics and Orthotics
  - ✓ Rehabilitation Worker for Persons with Visual Disabilities
  - ✓ Sign Language Interpretation
  - ✓ Inclusive Physical Education
  - ✓ Support Worker for Children with Intellectual Disabilities
- ➢ Bringing-up of physiatrists who can deal with various disabilities
  Our "Hospital" educates senior residents of rehabilitation medicine
- ➢ Various training programs for external rehabilitation/welfare professionals

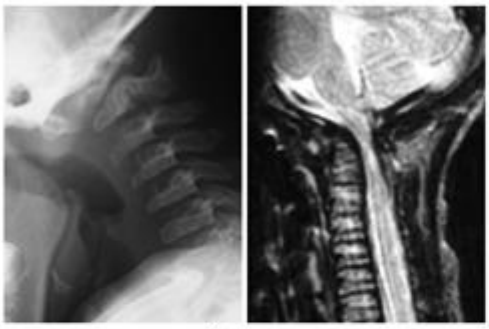
The second issue is that of PWD left behind from adequate rehabilitation services, especially those with multiple disabilities who lack sufficient access to these services. There are two types of multiple disabilities. The first type is multiple disabilities occurring at the same time. For example, a patient who simultaneously suffers from paraplegia due to spinal cord injury and from cognitive impairment due to traumatic brain injury falls into this category. The second type involves new disabilities that develop in addition to an existing one. For example, a patient with hemiplegia due to a cerebrovascular accident may have their lower limb amputated due to diabetes. Both types require regular follow-up and health promotion. I believe an appropriate framework for follow-up and/or management is necessary.



The situation becomes even more complicated when age-related changes in disabilities come into play. This patient suffers from spondyloepiphyseal dysplasia congenita, one of type-2 collagenopathies. On the left is the patient during childhood. By the age of 9, she suffered from short stature and mild visual and hearing impairments. She underwent cervical spine surgery at age 9, knee surgery at age 11, and hip surgery at age 16. Twenty years have passed since, and her final height is 98 cm. Her visual and hearing impairments have gradually progressed. She started to experience pain in the lower limb joints and back in her thirties, which required the use of a cane outside and may require a wheelchair in the future. Furthermore, she had been engaged in full-time work after reaching adulthood but had to transition from full-time to part-time employment due to difficulties in continuing full-time work.

Patients like this require an integrated approach to rehabilitation and welfare involving multiple professions. I believe such a system has not yet been established in Japan, which is something we must address in the future.

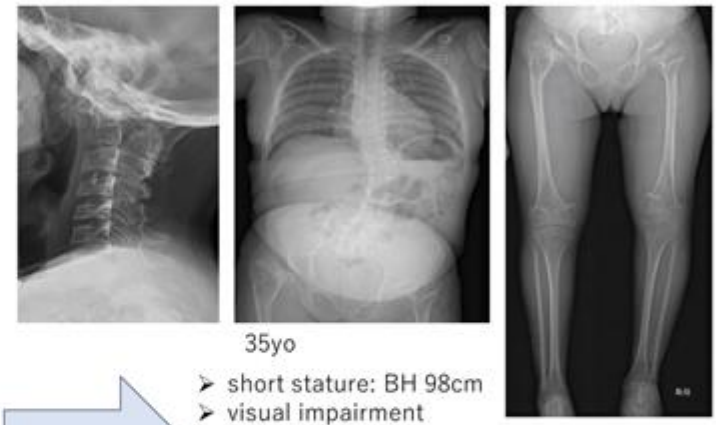
Spondyloepiphyseal Dysplasia Congenita (type 2 collagenopathy), female



9yo

- short stature
- visual impairment (high myopia)
  ->glasses
- hearing impairment
  ->hearing aid

9yo: surgery for atlantoaxial subluxation
11yo: surgery for left bowleg deformity
16yo: surgery for right hip deformity



35yo

- short stature: BH 98cm
- visual impairment
  slowly progressive
- hearing impairment
  slowly progressive

30yo-: multiple joint and back pain
cane necessary outdoors ->wheelchair?
full-time -> part-time employment

This concludes my presentation. Thank you very much.

Thank you for your attention!!

Acknowledgements
Staff members in NRCD, especially
Dr. Ishikawa & Speech Therapists (Mr. Hojo, Mr. Kakuta, Mr. Sakata, Ms. Sakai)
@Specialty Clinic for Stuttering
Occupational Therapist (Mr. Nakagawa) & Prosthetist/Orthotist (Mr. Nakamura, Ms. Yano)
@Limb Malformation Clinic

Discussion among presenters, Q&A

Facilitator: Dr. Toru Akune, Director, Rehabilitation Services Bureau, NRCD, Japan

Moderator (Dr. Akune): My name is Akune. I will be moderating the discussion. We have until 4:00 PM Japan time, so about 20 minutes left.

The title of this year's International Seminar is "Satisfy the Increasing Unmet Need for Rehabilitation." First, the WHO headquarters provided guidance and spoke about how we will take on "REHABILITATION 2030." Speakers from Australia, Indonesia, and Japan followed to speak about the current situation in each country.

During the opening remarks, President Haga emphasized the need to thoroughly understand and collectively address the unmet and expanding needs in various countries to advance the future of rehabilitation.

Today, the audience and the speakers spoke about various rehabilitation needs in different countries under varying circumstances. If anyone has any thoughts they would like to share, I would like to invite you to speak.

Dr. Kleinitz: Can I make a comment? From the panel, I would be happy to make a comment. First of all, I think that's a very accurate observation that there are these very different rehab needs and certainly the distinction between Japan and the need for what I would characterize as more comprehensive services that really can meet the needs of people with complex conditions versus in Indonesia where we recognize that the rehab medicine and therapy services are so limited that there are people essentially not getting any service for their conditions. I think we have to obviously respond differently to those. It's a very country-tailored approach that is required and I think we need to recognize that it's uncomfortable, but we can't meet all the needs at once. We are going to require very stepped and phased approaches in a country like Indonesia, which is so enormous, so large in population and geographic complexities versus other countries and that this will require often approaches that are different. I really recognize, for example, community-based rehabilitation or sometimes community-based inclusive development, those approaches that really target people with disabilities and some of those priority needs that they have are often a starting point in those contexts because we really need to ensure people have at least their assistive product needs met and at least their basic rehabilitation services and needs met.

Of course, in the context of those settings often really support to make the environment more inclusive for them. So yes, I think that's a very accurate observation. In WHO, I think we really recognize tailored approaches to countries, very stepped, phased approaches to countries and the need to prioritize and really look at population need and priority population need to inform our planning and our way forward with services. I'll stop there.

Dr. Aryanti: Can I comment? Talking about my country. Rehabilitation is very limited. I was working in Jakarta, especially in the big city. When I go around to other city over there, some cities, their rehabilitation is very limited. In the healthcare, so the primary healthcare, they don't afford this because the physiotherapy didn't go to the primary healthcare because of limited person. I think we

must try to make primary healthcare more and more understanding about rehabilitation before they go to the hospital or to the center. I think it's very important to go to the primary healthcare.

Dr. Haga: As Pauline mentioned, rehabilitation needs vary by country or region. However, regardless of the circumstances, I believe it is difficult to address the issue without adequately understanding the data and information about disabilities and rehabilitation in a particular country.

Pauline talked about health information systems that incorporate rehabilitation and disability data within the seven themes. I think this is very challenging. If anyone knows of any cases in which a country has successfully implemented this and thinks they could serve as model cases, please share them with us.

Dr. Aryanti: No. I know that primary healthcare offers rehabilitation. Maybe Japan primary healthcare can cover also the rehabilitation?

Dr. Kleinitz: Yeah, and maybe I can add to that and say, yes, data is a challenge and it is important to have good data and it's not just about the population need. It is also about distinguishing between need and then unmet need, and are they getting the services they need and are those services effective? Then even in the context of what Natasha was saying, are the services available? Are they getting everybody, their equity across different population groups who may be funded in different programs.

Your point about the data needs, yes, they are high and we need multiple efforts to get the data. In terms of countries doing a good job, yeah, I mean, obviously the high-income countries will have better data. I would suggest to countries like Australia or Japan or somewhere might be doing moderate to good in terms of the data need. Often, even those countries recognize gaps and would like more data. I think what is challenging for low middle income countries, I think when there's very little data, it often requires quite a large investment of resources to get data and we do have to really prioritize data needs and not expend too much resources on data needs. As much as it is so important, we also have to balance that because generally, for example, in low middle income countries, we know there's a lot of unmet need. We don't always need to quantify it exactly because we can't scale up and build the services at speed and we can't build demand at speed. The responses again, and I guess the approaches in countries do vary. Natasha may have an opinion in terms of Australia, for example. I believe it's doing a pretty good job, but I think many countries would to do more in this area.

Dr. Layton: Thank you, Pauline and Dr. Aryanti. Yes, it’s so interesting to be on a forum like this where we have just heard four different approaches and always, we can see some improvement is possible, but we must measure how well we have done. There is work going on everywhere to make this better. Maybe some simple steps, like for example the word that we would use for a walking aid. Sometimes, it's called a cane. Sometimes, it's called a stick. Sometimes, it's called a mobility appliance. When we even just don't use a uniform terminology, it is very difficult then to bring the evidence together to say what would good look like with giving people mobility products. That's what matters. So, using our WHO terminology from the International Classification of Health Interventions, when we translate using a standardized vocabulary such as ISO 9999 offers us. This is an easy step. I would love it in Australia if our Bureau of Statistics and our Institute of Health and Welfare use standardized terminology. They do not yet, so to Pauline's point, this might not be extra or different data collection. This is just making it more uniform so we speak the same global language. I love that WHO now have a country capacity assessment that can be done for assistive

technology, for assistive products, so that then we can compare how we are going. These uniform tools are very, very valuable for us.

Moderator (Dr. Akune): Thank you very much. This is something I also felt listening to the four speakers′ presentations. The WHO′s slide showing there are 2.4 billion people worldwide, which is roughly one in three people, that benefit from rehabilitation services left a very strong impression.

Japan has lagged behind the West in implementing various rehabilitation services. Unfortunately, with a large elderly population and a limited budget, it is quite difficult to provide all medical services to everyone. Even with welfare services, there is still an insufficient allocation of costs in that regard. With one in three people needing rehabilitation, there is someone who requires rehabilitation in every family. While it's strategically correct to train a large number of professionals and expand rehabilitation medical and welfare facilities, we also need to consider what services to provide to meet the rehabilitation needs that one in three people will have.

Regardless of whether a country's income is high or low, aspects related to primary care, such as education and suggestions, can be provided in any country. That’s why I think it would be very useful if we could cooperate a little more in those areas.

Another point is that there are limited resources—workforce, time, and money. I feel that going forward, we need to come up with optimization strategies within these finite resources to strike a balance between the combination of advanced and specialized rehabilitation services and primary-care rehabilitation services, including education and suggestions.

Now, our time is almost up, and I would like to conclude the discussion here. I sincerely thank all the speakers and those who participated in the Seminar. Thank you very much.

Closing Address

Dr. Toru Akune, Director, Rehabilitation Services Bureau, NRCD, Japan

Thank you very much to everyone who participated in today's International Seminar 2024, titled “Satisfy the Increasing Unmet Need for Rehabilitation.” I would like to express my heartfelt gratitude, especially to the four doctors who presented.

The Seminar opened with a keynote speech by Dr. Pauline Kleinitz from the WHO headquarters, followed by a report on Australia by Dr. Natasha Layton, a report on Indonesia by Dr. Lestaria Aryanti, and concluded with a report on Japan by Dr. Nobuhiko Haga.

We were able to understand and share the WHO’s policy in strengthening efforts for “REHABILITATION 2030,” as well as a wide range of unmet rehabilitation needs and challenges arising from varying circumstances in different countries. I believe it was a very meaningful Seminar.

Although many challenges remain to be addressed, I hope today’s Seminar will serve as a stepping stone for us to cooperate and move forward together so that appropriate and high-quality rehabilitation services are provided to all those who face restrictions and constraints in physical function, activities of daily living, and social participation due to health issues. Thank you very much.