

WHEELCHAIR

SERVICE TRAINING OF TRAINERS PACKAGE

ToT Handbook
INTERMEDIATE LEVEL

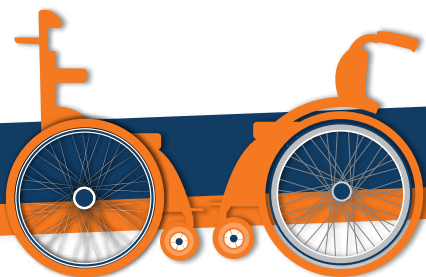


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ToT Handbook
INTERMEDIATE LEVEL





Wheelchair service training of trainers package

Contents: Trainer's manual basic level – Trainer's manual intermediate level – Trainer's manual managers and stakeholders – ToT handbook basic level – ToT handbook intermediate level – ToT handbook managers and stakeholders
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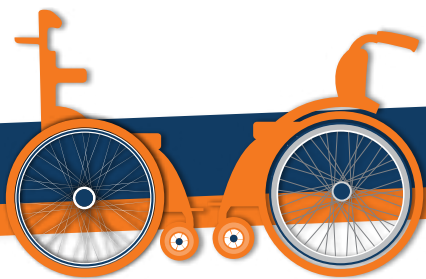
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Contributors:

Authors and editors:	Christine Cornick, Lauren Flaherty, Sarah Frost, Margaret Lamiell, Rob Mattingly, Ray Mines, Chris Rushman, Elsje Scheffler, Emma Tebbutt, Sylvia Vriesendorp, Kate Wilson
Peer reviewers:	Dave Calver, Silvana Contepomi, Vinicius Delgado Ramos, Sue Fry, Mary Goldberg, Norah Keitany, R. Lee Kirby, Katharina Kiss, Dan Mills, Kylie Mines, Gabriela Niță, Jamie Noon, Jon Pearlman, Cristina Pop, Denise Rodrigues Tsukimoto, Celia Stubbs, Andre Sugawara, Eric Wunderlich, Cheryl Ann Xavier
Copy editor:	Amanda Milligan
Photo credits:	Chapal Khasnabis and Jesse Moss
Video credits:	Global Goals Organization http://www.globalgoals.org/
Pilot trainees:	Deepti Ahuja, Ahmad Ali, Amalorpava Marie L., Nidia Johana Arias Becerra, Dinesh Balan, Bongani Bhebhe, Sneha Bhola, Rose Bongole, Sharmini Constantinescu, Fadi Daccache, Ferdiliza Dandah Garcia, Sonali R. Dalvi, Nirmala Danu, Vinicius Delgado Ramos, Shedrack T. Domingo, Amitabh Dwivedi, Kalanda Muwonge Emmanuel, Paulino Filosofo III, Mansoor Golra, Jenina Joy de Gucena, Yona E. Gyunda, Hikmat Hadoush, Omoding Herbert, Daudi S. Hilonga, Nan May Hnin Su, Chantheng Huoth, Erlis Iijazi, D. Vincent Jeyaraj, Kamalanathan P., Charles Kanyi, Kadir Kasim, Norah Keitany, James Keitany, Geoffrey Kimani, Peter Kiragu Kinyanjui, Kiran J., Katharina Kiss, Rungphet Kruanopparat, Anant Kumar, Mukesh Kumar, Rahul Kumar, Ramesh Kumar J., Ranjeet Kumar, T. Praveen Kumar, Xavier Lemire, Naw Cherry Lwin, Betty Maginifayi, Simbarashe Margaret Mapira, Martin, Nancy Mbugua, Peter McPherson Mchilima, Alexandria Miles, Ruth Mlay, Longini Basil Mtalo, Sara Munera Orozco, Yeti Raj Niraula, Seraphine Ongogo, Mohd Nor Fadly Osman, Ouma Ponplaus Agoro, Goretti Pala, Venu Gopal Pawar, Sunil Pokhrel, Cristina Pop, Uta Prehl, Puryoko, Dr. Rajalakshmi S.J., Salin Ruangsri, Christine C. Ruedas, Lameck Saka, Fred Semakula, Poutasi Seuseu, Vinakshi Singh, Song Sit, George Stefan, Govindasamy Sudhakar, Andre Sugawara, Elsie Taloafiri, Kanchana Thumpapong, Taukoriri Tibiriano, Maria Toro Hernandez, Piyawat Trevittaya, Christine Tusiime, Sanjay Kumar Verma, Tri Wibawa
Pilot trainers:	Dave Calver, Andrew Congdon, Christine Cornick, Nirmala Danu, Dietlind Gretscher, Phatcharaporn Kongkerd, Rob Mattingly, Abdullah Munish, Isaac Nyathi, Vennila Palanivelu, Sama Raju, Nicky Seymour, Govindasamy Sudhakar, Sylvia Vriesendorp, Cheryl Ann Xavier
Pilot observers:	Christine Cornick, Lauren Flaherty, Sarah Frost, Sue Fry, Krithika Kandavel, Megan Kearns, Margaret Lamiell, Rob Mattingly, Sara Munera Orozco, Elsje Scheffler, Emma Tebbutt, Sylvia Vriesendorp
Partner organizations:	Association for the Physically Disabled of Kenya (APDK), International Society of Wheelchair Professionals, Latter-day Saint Charities, Leadership, Management, and Governance Project, Mobility India, Motivation Australia, Motivation Charitable Trust, Motivation Romania Foundation, Physical and Rehabilitation Medicine Institute of the University of Sao Paulo Medical School General Hospital, Sirindhorn National Medical Rehabilitation Institute, UCP/Wheels for Humanity, University of Pittsburgh, Western Cape Rehabilitation Centre, World Vision
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Terminology

The following terms used throughout the WSTPtot are defined below.

ToT trainer	Person delivering the WSTPtot
Trainees	All participants attending the WSTPtot
Lead trainees	Trainees leading the delivery of an assigned WSTPb/i/m/s session
Support trainees	Trainees assigned to support the lead trainee in specific WSTPb/i/m/s sessions
ToT participants	Trainees who are in the role of the WSTPb/i/m/s participants during practice delivery sessions
Participants	People who are attending the WSTPb/i/m/s
ToT Handbook	Combined reference manual and workbook for ToT trainees

Acronyms

The following acronyms used throughout the WSTPtot are defined below.

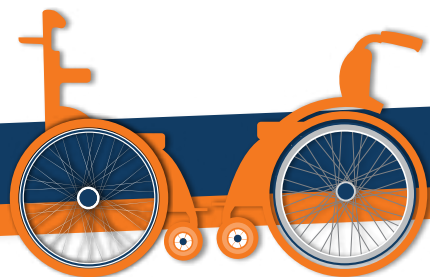
ASIS	Anterior superior iliac spine
AV equipment	Audio-visual equipment
CBR	Community-Based Rehabilitation
CRPD	United Nations Convention on the Rights of Persons with Disabilities
DPO	Disabled People's Organization
INGO	International Non-governmental Organization
ISO standards	International Organization for Standardization standards
ISPO	International Society of Prosthetics and Orthotics
ISWP	International Society of Wheelchair Professionals
ITs	Ischial tuberosities (seat bones)
NGO	Non-governmental Organization
OPD	Organization of Persons/People with Disabilities
PPT/s	PowerPoint Presentation/s or slides
PSD	Postural Support Device
PSIS	Posterior superior iliac spine
PWDs	Persons with disabilities
SDGs	Sustainable Development Goals
ToT	Training of Trainers
USAID	United States Agency for International Development
WHO	World Health Organization

WSTP	Wheelchair Service Training Package
WSTP_b	Wheelchair Service Training Package – Basic Level
WSTP_i	Wheelchair Service Training Package – Intermediate Level
WSTP_m	Wheelchair Service Training Package for Managers
WSTP_s	Wheelchair Service Training Package for Stakeholders
WSTP_{tot}	Wheelchair Service Training of Trainers Package

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About the Wheelchair Service Training of Trainers Package

Introduction

Following the release of its *Guidelines on the provision of manual wheelchairs in less-resourced settings*¹ in 2008, the World Health Organization (WHO) in partnership with the United States Agency for International Development (USAID) developed a series of four training packages to increase wheelchair access in developing countries. The *Wheelchair Service Training of Trainers Package* (WSTPtot) is the latest in this series and focuses on developing trainers to deliver the existing packages.

The need for wheelchair personnel, and therefore trainers of wheelchair personnel, is universal. With the launch of the WSTPtot, WHO expects the numbers of trained wheelchair personnel to increase substantially, enabling many more people to access an appropriate wheelchair and fulfil their potential.

The WSTPtot comprises a *Core training skills* module and one package-specific module from the existing four packages: the *Wheelchair Service Training Package – Basic Level* (WSTPb) 2012; the *Wheelchair Service Training Package – Intermediate Level* (WSTPi) 2013; the *Wheelchair Service Training Package for Managers* (WSTPm) 2015; and the *Wheelchair Service Training Package for Stakeholders* (WSTPs) published in 2015. The WSTPm and WSTPs have been combined into one package-specific module within the WSTPtot.

The WSTPtot can be delivered in 40 hours, but this period may be extended or reduced depending on the specific needs and resources available in each context. On completion of the WSTPtot, you will go forward to deliver the training packages alongside experienced trainers, allowing you to gain the skills and experience to then train independently.

1 Guidelines on the provision of manual wheelchairs in less-resourced settings. Geneva: World Health Organization; 2008 (<http://www.who.int/disabilities/publications/technology/wheelchairguidelines/en/>).

How to use the *ToT Handbook*

This *ToT Handbook* provides a step-by-step guide to the WSTPtot including information on how to deliver the package-specific modules. It has been developed for you to use during the WSTPtot programme itself and to keep as a reference when planning and delivering the WSTP in the future.

Target audience

The WSTPtot is made up of four modules:

- *Core training skills* – two days
- *Basic Level* (WSTPb) – three days
- *Intermediate Level* (WSTPi) – three days
- *Managers and Stakeholders* (WSTPm/s) – three days.

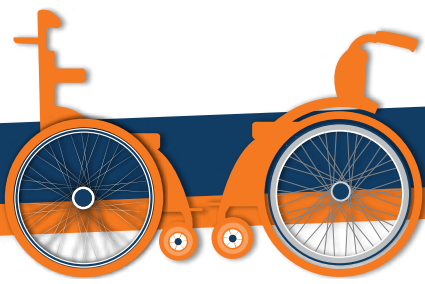
You should complete the *Core training skills* module followed by one of the package-specific modules, which will be chosen based on your training goals:

- **The WSTPtot Basic Level** module is targeted at trainers who plan to deliver the WSTPb. Previous experience providing basic-level wheelchairs is essential; the WSTPtot has been designed assuming that trainees are able to demonstrate the competencies taught in the WSTPb.
- **The WSTPtot Intermediate Level** module is targeted at trainers who plan to deliver the WSTPi. Previous experience providing intermediate-level wheelchairs is essential; the WSTPtot has been designed assuming that trainees are able to demonstrate the competencies taught in the WSTPi.
- **The WSTPtot Managers and Stakeholders** module is targeted at trainers who plan to deliver the WSTPm and WSTPs. Previous experience implementing, managing or evaluating wheelchair services; or working to raise awareness among stakeholders of the need, benefit or development of wheelchair services is essential for trainees to gain the most from the *Managers and Stakeholders* module.

You should have access to co-training opportunities within three months of completing the WSTPtot in order to consolidate and practise newly acquired skills.

Assignment of practice deliveries

After completing the *Core Training Skills* module, you will go on to the second part of the WSTPtot where you will practise the skills you have learnt by delivering sessions from your WSTP.



You will be allocated sessions on the first day of the *Core training skills* module, during ToT.3 *Practice delivery sessions*. You will also be assigned a ToT trainer as a mentor at this time. Time is included within the training programme to prepare for your session and consult with your ToT trainer mentor. The practice delivery session is followed by feedback and discussion, and the whole process allows the ToT trainer to observe and assess your skills.

To enable you to prepare well for the WSTPtot, you will be sent the package-specific materials in advance. You should arrive prepared to deliver any session.

Note:

Some practice delivery sessions have been adapted for the WSTPtot, by either shortening the time allocated or not delivering parts of the session. These changes are for the purposes of the WSTPtot only and should not be followed when delivering the WSTP.

Guidelines for preparing practice delivery sessions

Lead trainee

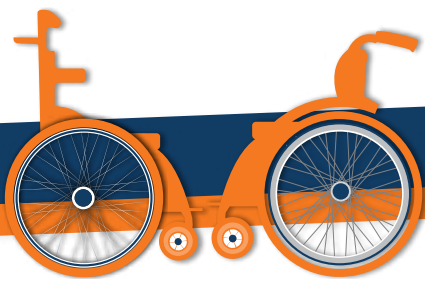
- Read the session plan assigned to you in your *WSTP Trainer's Manual* and make sure you understand all the material. Try out the activities yourself to make sure you know what your participants will be expected to do. Only prepare for the specific sections/sessions allocated to you.
- Read the relevant sections of the *WSTPb/i/m Reference Manual for Participants* and *Participant's Workbook* (not available for the WSTPs).
- Read the relevant section of the *ToT Handbook* for your session/s including the *Key considerations for teaching this session*.
- There are some known errors in the WSTP materials that are listed in this handbook; check your session to see if it has errors and make the recommended changes.
- Edit the PPT slides as appropriate.
- Incorporate your own knowledge and experience, including case studies if appropriate.
- Practise your delivery, including timing.
- Meet with your support trainers and plan how to work as a team:
 - assign roles, such as timekeeping or writing on the board
 - for group activities involving practical skills, practise together and discuss which errors to look out for and how to correct them.

Support trainee/s

- Read the session plan in your *Trainer's Manual*.
- Support the lead trainee as requested.

Before the session starts

- Upload your PPT slides onto the training laptop before the start of the training day.
- Set up the room and training materials as needed.
- Check that the audio-visual equipment is set up and working correctly.



Co-training

After completing the WSTPtot, you should continue to develop your skills by co-training alongside experienced trainers. The recommended ratio for co-training is one mentor trainer to two-to-four co-trainers.

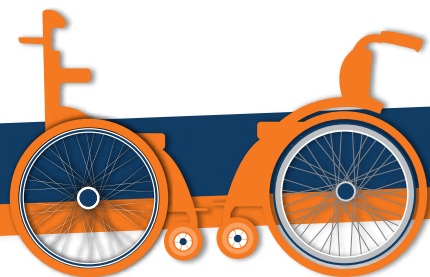
In some cases, ToT trainers may recommend that trainees develop stronger clinical or technical knowledge or skills before co-training. This information will be recorded in the *Feedback sheet for WSTPtot practice delivery sessions* and shared with the trainee.

Mentoring and peer support

You are encouraged to keep in contact with your ToT trainer/s after the WSTPtot to update them on progress and to consult them for advice. You can also get valuable ongoing support from your peers, which will help to develop your skills and confidence. You may benefit from joining or creating a group on a social media platform, to ask questions and share learning experiences.

Core training skills module





ToT.I Introduction to the Wheelchair Service Training of Trainers Package (WSTPtot)

Structure of the WSTPtot

The ToT programme consists of a two-day *Core training skills* module followed by a three-day module chosen from the basic (WSTPb), intermediate (WSTPi) or managers (WSTPm) and stakeholders (WSTPs) series. This package-specific module provides practical opportunities to develop your skills and confidence as a WSTP trainer. It will also highlight some of the common challenges that can come up when delivering the WSTP and will offer solutions.

Overview of the WSTPtot process

After the completion of the ToT programme, you should co-train until you are confident and competent to be an independent trainer. The number of co-trainings will vary from person to person. ToT trainers and trainers who mentor you while co-training will support you to decide whether you should continue co-training or train independently.



If you are not able to co-train with a more experienced trainer after the in-person ToT, WHO encourages you to seek virtual support and coaching from a ToT trainer and to connect with other ToT trainees to support each other through the planning, preparation and delivery of the WSTP.

Feedback and self-assessment

During practice deliveries in the package-specific modules, you will use the *Feedback sheet for WSTPtot practice delivery sessions*, including a list of trainee skills, to reflect on your performance. The ToT trainer will provide written feedback on this form at the end of the ToT programme, which will help you to continue to improve your training skills moving forward. This form can be found in the annexes of this manual.

ToT.2 Wheelchair service training packages

Background

The WSTP have their origins in the *Consensus Conference on Wheelchairs for Developing Countries* held in Bangalore, India, in November 2006.¹

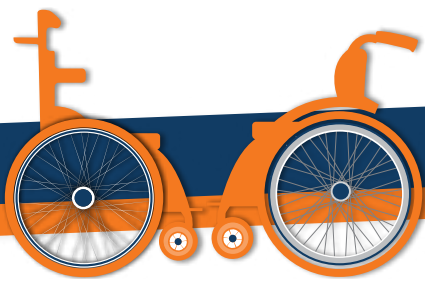
The consensus conference laid the foundation for the development of the *WHO Guidelines on the provision of manual wheelchairs in less-resourced settings*,² which were published by WHO in partnership with the International Society for Prosthetics and Orthotics (ISPO) and the US Agency for International Development (USAID) in 2008.



The wheelchair is one of the most commonly used assistive devices for enabling personal mobility, but there were very few training opportunities for service providers to ensure that wheelchair users could attain personal mobility with the greatest possible independence, be productive and enjoy a high quality of life.

The WSTP Basic and Intermediate Level were developed to implement the *Wheelchair Guidelines*, by training wheelchair service personnel in less-resourced settings in comprehensive wheelchair service provision, which enables increasing numbers of adults and children to receive a wheelchair which meets their needs.

-
- 1 Sheldon S, Jacobs NA, editors. Report of a Consensus Conference on Wheelchairs for Developing Countries, Bengaluru, India, 6–11 Nov 2006. Geneva: World Health Organization; 2006 (<http://www.who.int/disabilities/technology/WCGconsensusconf/en/>).
 - 2 Guidelines on the provision of manual wheelchairs in less-resourced settings. Geneva: World Health Organization; 2008 (<http://www.who.int/disabilities/publications/technology/wheelchairguidelines/en/>).



The four WSTP

The Wheelchair Service Training Package – Basic Level³ (WSTPb) supports the training of personnel to provide an appropriate manual wheelchair and cushion for adults and children who have mobility impairments but can sit upright without additional postural support.



The Wheelchair Service Training Package – Intermediate Level⁴ (WSTPi) supports the training of personnel to provide an appropriate manual wheelchair and cushion for adults and children who need additional postural support to sit upright.



Both WSTPb and WSTPi are designed to be delivered in a minimum of five days. However, the actual time required for each session will vary. Additional time will be needed if you:

- Add material to session plans
- Include additional sessions relevant for the context or skill level of participants
- Increase the number of practical sessions with wheelchair users
- Require translation
- Provide more preparation time for products used during the training
- Reduce the length of the training days to fit local contexts
- Are teaching participants with limited experience or formal qualifications.

3 *Wheelchair Service Training Package – Basic Level*. Geneva: World Health Organization; 2012 (<http://www.who.int/disabilities/technology/wheelchairpackage/en/>).

4 *Wheelchair Service Training Package – Intermediate Level*. Geneva: World Health Organization; 2013 (<http://www.who.int/disabilities/technology/wheelchairpackage/wstpintermediate/en/>).

If you would like to add sessions to the training timetable, The International Society for Wheelchair Professionals (ISWP) has a website which contains some additional resources. Please see: <http://wheelchairnet.org/resources>.

The *Wheelchair Service Training Package for Managers*⁵ (WSTPm) is designed to guide managers to effectively support appropriate wheelchair provision. This includes promoting the involvement of managers and stakeholders in establishing appropriate wheelchair provision. It can be delivered in a minimum of two days.



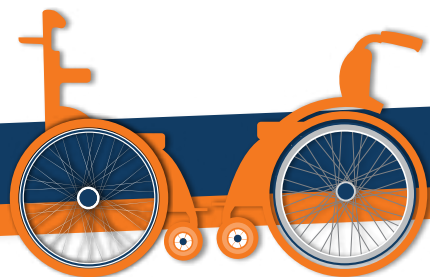
The *Wheelchair Service Training Package for Stakeholders*⁶ (WSTPs) is designed to create awareness and develop the skills and knowledge of all stakeholders in establishing appropriate wheelchair provision in their country/region. It can be delivered in a minimum of four hours.



Both packages can be delivered over a longer period allowing time for translation, more detailed discussion and planning, or to combine with other sessions relevant to the local context, such as a stakeholder action-planning meeting.

5 Wheelchair Service Training Package for Managers. Geneva: World Health Organization; 2015 (http://www.who.int/phi/implementation/assistive_technology/wheelchair_train-pack_managers/en/).

6 Wheelchair Service Training Package for Stakeholders. Geneva: World Health Organization; 2015 (http://www.who.int/phi/implementation/assistive_technology/wheelchair_train-pack_managers/en/).



Guiding principles

The WSTP has been developed following a set of guiding principles:

- user-centred and rights-based approach, which sets the wheelchair user at the centre of the wheelchair service.
- following available evidence-based, international best practice.
- a focus on less-resourced settings, with products and training appropriate for the setting.
- inclusion of wheelchair users as trainers and participants in all training packages.
- use of accessible, non-medical language and terminology so that:
 - participants without clinical or technical qualifications can be trained
 - service personnel can use terms that are easily understood by wheelchair users.

WSTP components

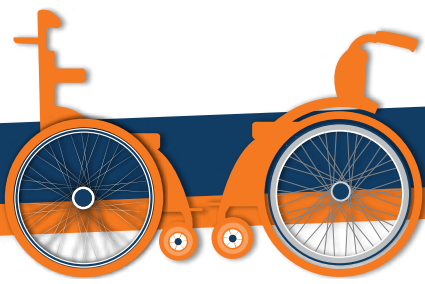
Each package contains a range of resources.

	WSTP _b , WSTP _i	WSTP _m	WSTP _s
<i>Trainer's Manual</i>	✓	✓	✓
PowerPoint presentations	✓	✓	✓
Videos	✓	✓	✓
Set of posters	✓	selected posters	selected posters
Supplementary resources: <i>Wheelchair Guidelines, CRPD</i>	✓	✓	✓
Reference Manual for participants	✓	combined	
Participant Workbook	✓		
Forms and checklists	✓	–	
Additional Resources: including tools, equipment, and forms	–	✓	

Activity 1: Getting to know the *Trainer's Manual*

Working together in your group, use your *Trainer's Manual* to answer the questions below. Write your answers next to the question.

Question		Answer
1.	Where can you see a list of everything included in the <i>Trainer's Manual</i> ?	
2.	How are group activities shown in the sessions?	
3.	Where can you find the overall aim or purpose of the training package?	
4.	How does the session plan indicate when the trainer should show a PowerPoint slide?	
5.	Where can you find out what facilities, resources and equipment are needed to run the training sessions?	



How to use the **WSTP Trainer's Manual**

Manual

Each *Trainer's Manual* gives an overview of the relevant package and provides specific guidance notes for trainers. Each section should be reviewed carefully before preparing to deliver the WSTP.

Annexes

Annexes with supporting information can be found in the back of the Trainers' Manuals for WSTPb, WSTPi and WSTPs; they include copies of forms and checklists.

Session plans

Individual session plans work like a recipe to guide trainers through the session. Following the session plans will help you to:

- stay focused on the learning objectives
- keep to time
- focus group activities, discussions and questions on relevant topics.

Video boxes

When a video needs to be shown, a video box is included in the *Trainer's Manual* along with one of the video icons.

- It is important for you to be familiar with the content, relevance and timing of all the videos.



Trainer's notes

Trainer's notes are included throughout the WSTP, including:

- most important answers to questions
- guidance about group activities or
- additional information that can assist trainers to answer questions from participants.

Activity boxes

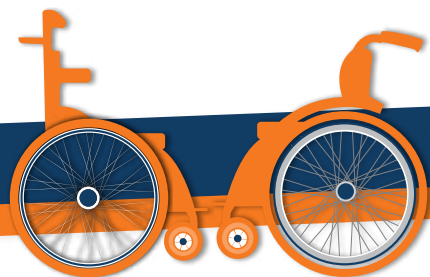
Activity boxes guide trainers by providing the following information:

- **Groups:** how to split the whole group for the activity.
- **Instructions:** how the activity should be carried out, what to say to participants.
- **Monitor:** how to monitor groups during activities to ensure they are doing the right thing.
- **Time:** gives the duration of the activity and any time for feedback at the end.
- **Feedback:** questions to ask, key points to cover and how to draw out participants' thoughts and feelings.

Activity	
Groups	Divide participants into three groups.
Instructions	<p>Read the example of national policy relating to wheelchair provision (Worksheet Page 92).</p> <p>Consider what policy areas exist in your country.</p> <p>Discuss how good the policy's issues would be in your country and consider where the policy would fit within your government structure.</p>
Monitor	Monitor the groups, and assist as needed.
Time	Allow 4 minutes and 15 seconds for discussion.
Feedback	<p>Ask each group to feedback to the whole group.</p> <p>Record answers on the whiteboard.</p> <p>Note if the policy on wheelchair provision already exists within the country and who are the main policyholders responsible for wheelchair provision.</p> <p>Note any suggested improvements based on the example of South Africa.</p>

Key point summary

Each session ends with a *Key point summary* or *Actions for Managers* in the case of the WSTPm.



ToT.3 Practice delivery sessions

Introduction

Record how confident you feel to deliver the WSTP package/s you are here to learn, on a scale of one to 10:

1	2	3	4	5	6	7	8	9	10
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Not confident

Very confident

Structure and aims of the package-specific modules

Package-specific modules include opportunities for you to deliver sessions from the WSTP you have chosen to learn.

The aim is to enable you to:

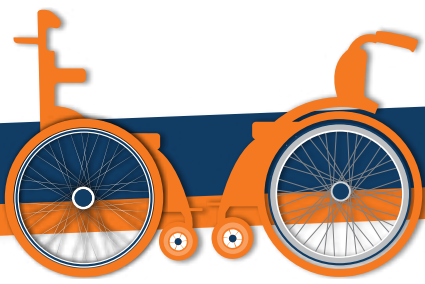
- practise using the WSTP training materials
- practise delivering sessions to your peers
- clarify your understanding of the WSTP theory, principles, skills and methodology
- learn about the common challenges that can occur when training and find ways to manage them
- develop your trainee skills (see the list in the *Feedback sheet for WSTPtot practice delivery sessions* in the Annexes of your *ToT Handbook*).

Roles of lead and support trainers and ToT participants

- You will have the opportunity to be both a lead trainer and a support trainer.
- When two or more lead trainers are allocated to the same session, one will automatically assume the support trainer role when they are not presenting.
- If there is only one lead trainer for a session, he/she may request help from any of the other ToT participants.
- For some practical sessions, the support trainer may have a specific role identified and assigned.

Activity 1: Lead and support trainers

What are the roles of the lead trainer?	What are the roles of the support trainer?



What are the roles of the lead trainer?	What are the roles of the support trainer?
<ul style="list-style-type: none">• delivering the session• preparing demonstration and practical equipment• keeping to time• coordinating support trainees.	<ul style="list-style-type: none">• writing answers on the board during participatory sessions• adding any missing or supporting information• helping to keep to time• facilitating group activities• giving feedback about participants to the lead trainer• contributing to the overall feedback/ reflection on the session delivery• assisting with demonstration equipment during the session• turning lights on/off and opening/closing blinds as needed when videos are shown.

Teamwork

Trainees will need to work together as a team to deliver their sessions. This includes supporting each other to:

- prepare for the session
- set up the training room
- prepare demonstration equipment
- tidy training areas
- manage session time
- clarify errors during the session delivery
- answer questions from participants
- manage disruptions and interruptions.

Trainers as role models

Trainers should set positive examples of professional behaviour and practice. Model the behaviour you want to see from participants by:

- being on time and well prepared
- problem solving and finding solutions for challenging situations
- providing positive and constructive feedback
- managing yourself well: this includes balancing preparation with getting adequate sleep and good nutrition to help you to manage stress.

Remember, being a good trainer and role model does not mean you always need to know the answers to questions.

If asked questions you do not know the answer to, do not pretend to know the answer. Instead you can:

- Ask support trainers if they know the answer
- Ask participants if they know the answer
- Agree to find out the answer before the training programme finishes (add to Car Park).

Reflection and feedback

Learning to reflect on your own delivery is an important skill for a trainer. It is also important that trainers are able to give constructive, guiding feedback to training participants.

This is why reflection and feedback skills are incorporated into the ToT programme.

At the end of each practice delivery session the lead trainer/s will be asked to reflect on:

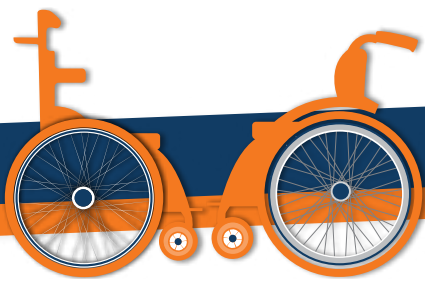
- what was good and what went well
- what can be improved.

The ToT trainer will then facilitate brief feedback from ToT participants, and finally the ToT trainer will add anything not already mentioned by the lead trainer or ToT participants.

Preparing for practice delivery sessions

Your preparation for a practice delivery should include the following:

- Read the session plan in your *Trainer's Manual* and make sure you understand all the material.
- Read the relevant sections of the participant's *Reference Manual* and *Workbook* (available for all but WSTPs).
- Make any relevant changes/additions to the PPT.
- Incorporate your own knowledge and experience and use your own case studies if appropriate.
- Practice your delivery, including timing.
- Work as a team with your support trainer.
- Prepare the resources you need for the session.



If your session includes a demonstration by the ToT trainer, discuss with them how they will manage their part of the session.

Known errors

There are some known errors in the *WSTP Trainer's Manual, Participant Workbooks* and PPTs.

- Known errors are listed in your *ToT Handbook*.
- When preparing for your session, check if your session has errors, and make the necessary changes.
- Do not discuss the errors with ToT participants, but present the session as if you are training on a standard WSTP.

Confidence in presenting

- You may feel nervous during your first session deliveries in front of your peers and ToT trainers. This is normal!
- You will grow in skills and confidence as you deliver more sessions.
- You will be required to present feedback from group activities during the *Core training skills* module – use this as an opportunity to practise presenting to your peers.

PPT presentations

- The standard PPT for each session will be available on the training laptop with the video already embedded.
- If you make any changes to your PPT such as adding slides, you will need to upload it onto the training laptop before your practice delivery.

Time limits for session delivery

- Time will be strictly monitored during practice deliveries.
- If you go over your time, the ToT trainers will stop you and move onto the next trainer, or end the session.

ToT.4 Preparing for diversity

WSTP trainers often encounter diversity and must understand how to manage a diverse training group. People often feel powerful and confident when they are in a majority. They can feel isolated and marginalized when they are in a minority. Groups can be separated or brought together by culture or by diversity.

Culture and diversity

Culture – the things that make us the same:

- a shared or common system of values, attitudes, morals, traditions, beliefs
- a shared understanding of appropriate behaviour.

Diversity – the things that make us different:

- ethnicity, gender, gender identity, age, physical abilities
- religious or spiritual beliefs, political beliefs
- professions.

Remember that we all belong to more than one cultural group and we are all diverse in many ways.

Cultural competence

Cultural competence is an active process through which individuals learn how to effectively and respectfully engage with a culture that is different from their own.

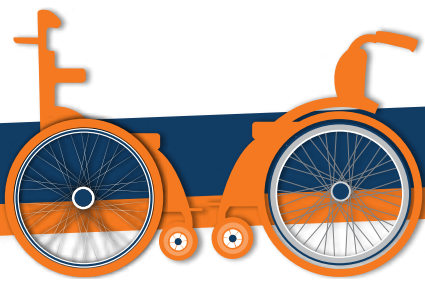
It can relate to individuals, groups or organizations and it can be learned.

Cultural competency typically involves:

- awareness of your own cultural practices
- knowledge of different cultural practices
- a positive attitude towards cultural differences
- understanding how culture impacts on interactions.

Cultural competence for trainers

You must ensure they have the required knowledge, skills and attitudes to understand and appreciate cultural differences; this includes respecting and accommodating other people's cultural beliefs, behaviour and needs.



If differences in culture are not understood and respected by WSTP trainers, these differences can lead to misunderstandings, disappointments, confusion, embarrassment, anger or insult.

Potential cultural considerations

- **Physical contact:** It may be culturally inappropriate for a female trainer or participant to assess a male wheelchair user, or for a male trainer or participant to assess a female wheelchair user.
- **Clothing:** You must ensure that your dress is culturally appropriate.
- **Communication:** In some cultures participants may not answer questions unless they are asked directly.
- **Eye contact:** It may be impolite to look at someone directly when you are speaking to them.
- **Feedback:** Be aware of what is acceptable for participants when giving and receiving constructive criticism/feedback in their society.
- **Gender:** In some cultures it will not be appropriate for men and women to be paired together for activities, or to eat together; this may affect the organization of group work and refreshment breaks.
- **Religious beliefs:** Longer break times, or different start/finish times, may be needed to fit in with local religious practices such as festivals, fasting or prayer.

Activity 2: Cultural competence

Think about and write down examples of when you experienced a culture different from your own.

What was it like?

--

How did you feel?

What did you learn from the experience?

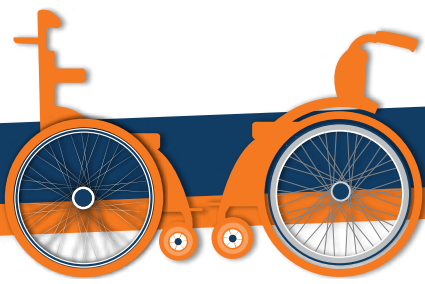
Including wheelchair users and people with disabilities in the WSTP

The WSTP promotes the inclusion of wheelchair users in training teams and as participants. This is important because:

- Wheelchair users are able to draw on their own first-hand experiences and perspectives to communicate the learning objectives of the WSTP.
- Being taught by a wheelchair user will reinforce the central role of wheelchair users in wheelchair services.



The inclusion and participation of wheelchair users can help to shift perspectives of what people with disabilities are capable of, combat stigma, and reinforce the principles of the *CRPD*.



Barriers preventing the full inclusion of people with disabilities, including wheelchair users, into society

To include wheelchair users and other people with disabilities in the WSTP, WSTP trainers must understand what might prevent people with disabilities from being included in society.

Perceptions

People are often not familiar with disability and have incorrect assumptions about people with disabilities.

- Many people think that persons with disabilities do not have, or are not able to achieve the same goals and dreams related to family, work, leisure, social and personal lives.
- They think that because someone has a physical disability they also have a cognitive impairment and treat the person like a child, talking slowly and loudly, or they address the person accompanying the person with a disability.

Attitudes

Negative attitudes towards people with disabilities can include:

- A view that people with disabilities have less value in society because of their impairments.
- Patronizing people with disabilities as objects of charity.
- Avoidance of people with disabilities because they are unfamiliar with them, or because they are afraid to say the wrong thing.
- Low value put on educating children with disabilities by families, community leaders and institutions such as schools. People with disabilities have limited opportunities without an education.

Beliefs

Beliefs are closely related to attitudes and can also create barriers. For instance, believing that someone's impairment will prevent them from accomplishing tasks that they are in fact able to do.

Culture

Cultural beliefs, norms and values may also create barriers. In some cultures, it is believed that people with disabilities are cursed so they are excluded from their families and communities; sometimes they will isolate themselves and hide away.

Stereotypes

These are negative views that do not recognize people with disabilities as individuals with their own interests and skills who can contribute to society.

Legislation and policies

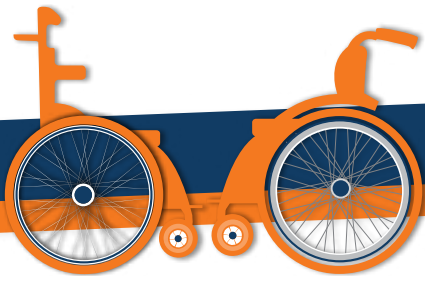
Legislation and policies protecting the rights of people with disabilities often exist but are not enforced. For example, some countries have employment legislation that includes a requirement to employ a quota of people with disabilities, or that stipulates reasonable accommodation be provided to employees. Without enforcement, such laws and policies are ineffective.

Environmental barriers

Physical barriers can limit the participation and integration of people with disabilities. In outdoor life these include gradients, sand, grass and rivers; while mobility and independence indoors can be hampered by stairs, narrow doorways, furniture and carpets.

Lack of assistive devices

This is a major barrier to inclusion and the WSTP is one initiative to help improve the availability of appropriate wheelchairs in line with the *CRPD*.



ToT.5 Adult learning

To be an effective trainer it is important to understand how adults learn best and to know about the different styles of learning.

Activity 1: Principles of adult learning

Think about positive learning experiences you have had and write down in what way the experiences were positive.

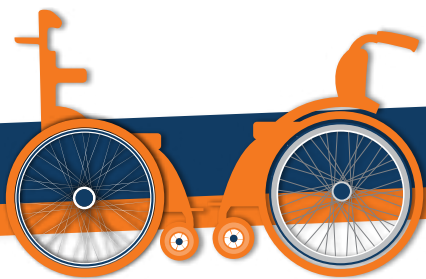
Use the space below to record your reflections during the activity.

Positive learning experiences

Activity 2: Determining your preferred learning style

Circle the statements that reflect how you learn

- A. By following instructions step-by-step
- B. By experiencing new things
- C. By making mistakes
- D. By reasoning
- E. By understanding the theory of what is being taught
- F. By applying what I learned
- G. By drawing on my own experience
- H. By watching a video
- I. By evaluating options
- J. By relying on my feelings
- K. By interacting with people
- L. By watching someone demonstrate something
- M. By reflecting on something
- N. By seeing the big picture
- O. By staying on the side and watching
- P. By listening to someone describe how to do something
- Q. By studying what others have written about the topic
- R. By engaging with others
- S. By trying out what I am learning
- T. By understanding the general principles of something
- U. By attending a lecture
- V. Through hands-on experience
- W. By relying on my observations
- X. By being personally involved in something
- Y. By exploring how I feel about something
- Z. By being active
- AA. By observing the trainer
- BB. By experimenting



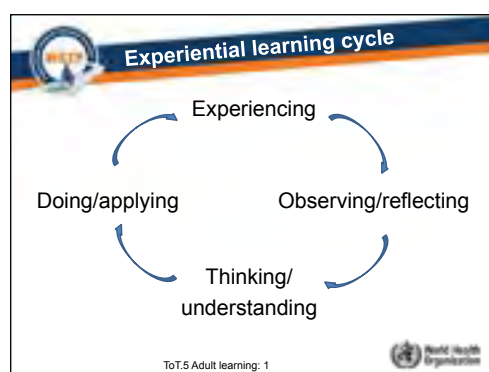
Scoring sheet for preferred learning styles

Now circle the same letters on the list. Whichever column has the most letters circled represents your preferred learning style.

If two or more have the same number it means you do not have a strong preference.

Learning by experiencing	Learning by observing	Learning by thinking	Learning by doing
B	H	D	A
G	L	E	C
J	M	I	F
K	O	N	S
R	P	Q	V
X	W	T	Z
Y	AA	U	BB
Total:	Total:	Total:	Total:

Experiential learning cycle



The four preferred styles of learning are:

1. Learning by experiencing
2. Learning by observing/reflecting
3. Learning by thinking/understanding
4. Learning by doing/applying.

The four learning styles match the experiential learning cycle.

While we all have different styles, learning new knowledge and skills is most effective when we go through each of the four stages.

In the WSTP, each of the four stages or types of learning are included so that all participants are involved.

- Role plays and simulations are most appropriate for those who learn best from experiencing.
- Those who learn best by observing and reflecting will benefit most from demonstrations, videos, and watching the trainer and wheelchair users.
- Presentations or reading materials that discuss concepts, provide frameworks, definitions or theories, are helpful to those who learn by thinking and understanding the big picture.
- Practical sessions with wheelchair users (as in WSTPb and WSTPi), that apply what was explained in theory, are most appropriate for those who learn by doing.

Group discussions, case studies, question-and-answer sessions, workbook assignments and feedback sessions are all teaching methods that can appeal to different learning styles; you will need to think about their purpose and how they are used to ensure they are adapted to each situation.

You also have your own preferred style. It is important to be aware of this and to take care not to neglect a particular approach.

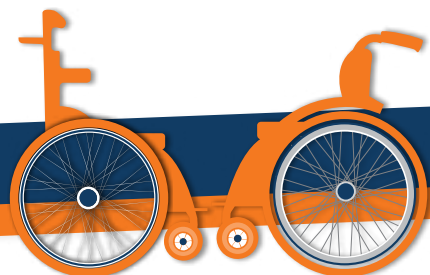
Do not skip a phase!

What would happen if we missed out the experience part? The learning will not have a connection with the person's life; it will not be anchored in the participant's personal experience – it would be abstract.

What would happen if we missed out the observation part? The learner would not be able to explore or see how his or her personal experience connects to the larger abstract concept or framework.

What would happen if we missed out the thinking part? The learner would go from one experience to another without being able to see how they link together. He or she would not be able to benefit from a framework that would help organize the experiences in a meaningful way.

What would happen if we missed out the doing (practice) part? The learner would not find out how to apply the theory or framework in the workplace or in his or her own life.



Activity 3: Matching activities with learning preferences

Put an 'x' under the name of the person who would find the training activity most effective given their learning style. Fill in the last column with your own style as a comparison.

- Carlos learns best by doing
- Miriam learns best by observing
- Sita learns best by experiencing
- Ahmad learns best by understanding the big picture.

	Carlos	Miriam	Sita	Ahmad	Self
1. Using a role play to practise wheelchair user training					
2. Watching the trainer show how to measure a new wheelchair user					
3. Attending a presentation by a government official about laws and regulations regarding wheelchair services in his or her country					
4. Watching people in wheelchairs doing the things they want to do					
5. Learning about the key documents that are relevant to wheelchair services					
6. Discussing with other participants the advantages and disadvantages of follow-up in the user's home					
7. Listening to the trainer reviewing the most important articles in the <i>CRPD</i>					
8. Making a pressure-relief cushion					
9. Riding a wheelchair to get a feel for the obstacles a wheelchair user might experience					
10. Observing the trainer conduct an assessment					
11. Doing an assessment interview with a new user					
12. Calculating the cost-savings of adding a wheelchair service to existing rehabilitation services					

Supporting adult learning

While we all have preferred learning styles, there are some common factors that relate to all adult learners.

Adult learners are self-directed and responsible for their own learning. Support them by encouraging active participation.

Adult learners bring their own knowledge and experience to learning. Encourage them to share their experience with others and learn from others.

Adult learners need learning to be relevant and practical, and they want to apply what they learn. Support them by having clear learning objectives with practical applications to their roles.

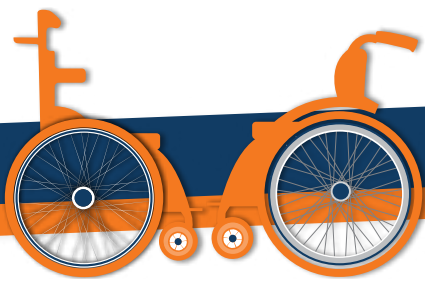


Activity 4: Problem solving

Problem solving is the process of finding the best solution to a challenge.

It is an important part of adult learning and an important skill in wheelchair service provision.

How can we help participants to problem solve and find their own solutions?



Help participants problem solve

- **Ask open ended questions** – Open-ended questions cannot be answered with a simple ‘yes’ or ‘no’. They require participants to think more deeply about something, or explore their own experience and think for themselves, rather than guessing the answer you expect.
- **Ask rather than tell** – Ask participants what they think the solution should or could be, rather than telling them. Help them work it out for themselves.
- **Invite others in the group to come up with a response** – ‘does anyone have a different idea?’
- **Encourage case discussion** – talk to participants about individual users who come to the training for assessment, fitting and user training.
- **Don’t take ‘I don’t know’ for an answer** – help participants consider what they do know about a subject and support them in considering possible answers.
- **Be patient** – developing problem-solving skills takes time.
- **One step at a time** – assist participants by breaking down the task into individual steps and asking questions/facilitating problem solving step-by-step.
- **Encourage** participants to be creative and to think laterally.
- **Encourage** participants to work together – teamwork and good communication helps to solve problems.

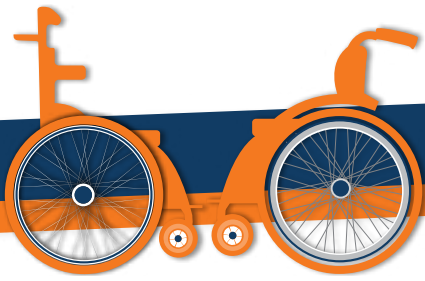
Remember

- When training participants to provide wheelchairs (WSTPb, WSTPi) there may be no simple answers.
- In the clinical context, some prescriptions, modifications or postural support devices may provide a good technical solution, but they may also create functional barriers or limitations.
- Acknowledge that often there is not one perfect solution. Wheelchair service provision requires compromise between what a client needs and the range of products available.

ToT.6 Preparation time

Preparation time has been included in the ToT timetable. This time will be used for:

- Answering car park questions.
- Meeting ToT trainers:
 - asking questions
 - receiving feedback.
- Preparing for your practice delivery sessions:
 - coordinating with co-trainers
 - preparing demonstration materials and AV equipment.



ToT.7 Presenting and facilitating

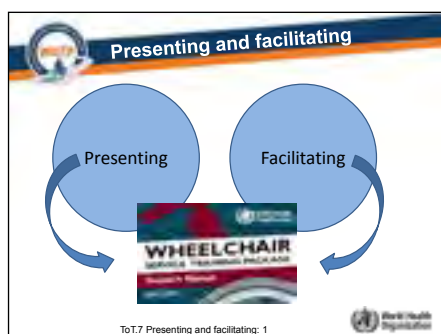
Activity I: Trainer behaviour

Think about people who have trained you in the past and identify who you consider to have been an effective trainer. In other words, people who enabled you to learn what you needed to and who gave you positive and worthwhile experiences.

Reflect on your experience in the space below.

What was effective in their behaviour?

Presenting and facilitating



Presenting is a one-way process where participants are given information. Presentations are used to provide information, facts and figures, and correct misinformation. When we present facts, theories or frameworks, we assume people don't know the information or they need to be reminded. Thus we treat all participants in the same way even if some may know the information already.

Facilitating means 'making things easier'. When we facilitate we make it easier for participants to:

- see the connection between theoretical concepts and real life challenges or tasks
- reflect on their own experience
- connect their own experience or views with new information.

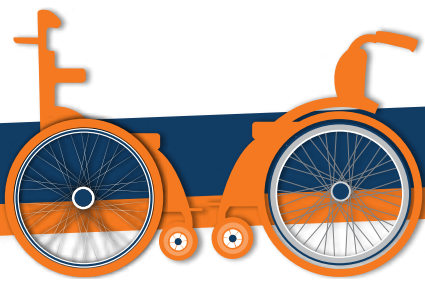
Good practice for presenting and facilitating

Presenting:

- Vary the pace and tone of speech.
- Be aware of your position in the room and vary it.
- Ask questions and encourage contributions from the group.
- Follow the instructions in the *WSTP Trainer's Manual* as these have been tested and timed.
- Make sure the slide shown corresponds with what you are saying. Keep the slide synchronized with the *Trainer's Manual*.
- Do not turn your back to the group when reading from a slide.

Facilitating:

- Try the activity out before the session so you understand its purpose.
- Give people time and space to think for themselves. Be comfortable with silence.
- Refer participants' questions to the group before answering yourself.
- Give clear instructions to participants, and make sure you understand them yourself before the session.
- Monitor participants to ensure they are learning the key points for the session.



Energizers⁷

There are times during any training when energy levels start to drop. Hot weather, stuffy rooms, a big lunch or tiredness from a long day of training can cause attention to wander and group energy to falter.

The best way to deal with this is to inject some activity and fun into the training room by creating an opportunity for people to move and interact in a light-hearted way.

This can be achieved either as part of the training or as a one-off activity to liven things up. Here are a few ideas.

As part of the training:

- Ask frequent questions to the whole group, picking a specific person to answer.
- Ask participants to face their neighbour to discuss the answer to a question or topic, or to explore a different opinion to the one just expressed.
- Ask participants to stand up and come to look at something (a wheelchair, a poster, a flipchart or a demonstration).
- If possible, move the session to a different room or outside to create some change and movement.

As separate activities:

- Sing a song together.
- Stand and do some simple stretching exercises.
- Play “Simon says”: give instructions (“jump in the air”, “touch your toes”, “point to the sky”, “turn around” and so on). Participants should only follow when the instruction is preceded by “Simon Says”.
- Have a three-minute stretch and comfort break.
- Invite a participant, or group of participants, to lead an energizer activity for a few minutes. They are likely to have different and locally-appropriate activities to share with the whole group.

7 With thanks to Robert Chambers for some of them. Chambers R. Participatory workshops: a sourcebook of 21 sets of ideas and activities. London: Routledge/Earthscan; 2002 (<https://www.routledge.com/Participatory-Workshops-A-Sourcebook-of-21-Sets-of-Ideas-and-Activities/Chambers/p/book/9781853838637>).

Remember:

- be aware of, and sensitive to, differences in culture, gender and disability
- don't force participants to do anything they can't or don't want to do
- start slowly and build up to more energetic activities
- join in yourself when you can
- have fun!

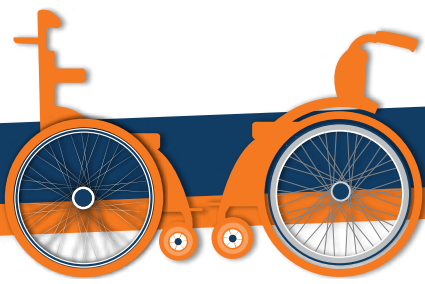
Managing time

You need to make sure that the training runs to time. There are many sessions and activities and a limited amount of time to complete them. We will often need to modify our behaviour and activities to make the best use of the time we have available.

Activity 2: Managing time

In pairs, discuss: What can we do to keep the training running on time?

Write your ideas here:



Ideas for keeping the training on schedule

- Keeping to time is everyone's responsibility; encourage participants to take responsibility for their own timekeeping.
- Begin each session on time (at the beginning of the day and after breaks); avoid penalizing those who arrive on time by making them wait for latecomers.
- Prepare equipment and resources in advance; plan how you will use these and where you will position them.
- Follow session plans closely. Do not add material or too many examples to the WVSTP unless you have additional time.
- Keep discussions focused on the aim and objectives of the session. Park topics for discussion that are not relevant to the current session or that cannot be answered quickly.
- Give clear time markers for participants, for example: '15 minute tea break, back at 10:45'; 'You have 10 minutes for discussion in your groups and 5 minutes for feedback'.
- Agree on signals with co-trainers to indicate how much time is remaining for a session.
- Have a back-up plan for sessions that require specific logistics, for example, what if rain interrupts the wheelchair mobility session?
- In areas with unreliable power, consider having a generator with in-line UPS (Uninterrupted Power Supply) for back-up.
- Check that the refreshments are organised – delays in food arriving can mean sessions start late after breaks.

ToT.8 Communication skills

Activity 1: Communication skills

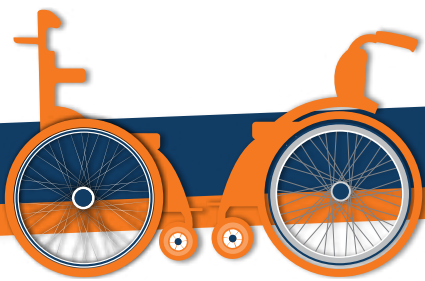
Read the information assigned to your group from the table below. Develop a presentation to ensure other trainees understand the key points.

Work as a group to decide how you will present the information and who will present which parts. Everyone in the group should participate in the presentation. You may use flipcharts, the whiteboard, or other props as desired. Be creative in your presentation.

You have 20 minutes to prepare. You will have five minutes to present to the others.

Group 1 – Verbal skills

- Be aware of speed, volume and rise and fall (intonation) of the voice when presenting.
- Avoid using socially inappropriate language, including slang and 'non-speak' ('er', 'um', 'like', 'you know').
- Be heard clearly by all participants.
- Be aware of when participants do, and do not, understand what you say.
- Be sure that everyone understands when the training programme is in a second language for participants, or when it is delivered via an interpreter.
- Use terms that will be understood by all the participants (especially when discussing anatomical parts of the body).
- Terms used in the training are simple and non-medical to ensure wheelchair service users and participants without clinical or higher education understand the content.



Group 2 – Non-verbal communication

- Maintain eye contact.
- Be aware of your body language.
- Use humour when appropriate. Humour is about lightness and not taking oneself and one's opinion too seriously.
- Humour does not mean joking. Jokes are often cultural and may not work the way you intended.
- Use appropriate actions when communicating with wheelchair users, including lowering your body to be at eye level.
- Position yourself and participants in the room:
 - when presenting, stand at the front or side
 - participants should be able to see and hear you
 - in semi-circles so that no one is in the back row and all participants can see each other
 - standing behind participants is appropriate in certain circumstances, for instance when presenting and you need to read the PowerPoint slides
 - depending on the context, it may be appropriate for you to sit at times; this creates a more relaxed, friendly dynamic.

Group 3 – Asking questions

- Allow time for all participants to think about and respond to the question – don't always take an answer from the first respondent. Some participants may need time to think, especially if the training is not being delivered in their first language.
- Don't jump to answer participants' questions. Help facilitate participants to think of the idea, concept, or answer without telling them the answer when possible. Draw answers from the room.
- Rephrase questions when needed. If the response from participants is silence, confusion, or a wrong answer, the question may need to be rephrased.
- Use open questions to check understanding (for example, 'what are the three causes of pressure sores?').
- Avoid using closed questions (questions where the response is 'yes' or 'no').
- Acknowledge when correct answers are given.
- If an incorrect answer is given, first ask the same question to another participant or to the rest of the group. Only provide the correct answer if no one in the group can do so.
- If questions are repeatedly answered incorrectly, it is a sign that something is wrong. Possible problems include:
 - participants are not learning. You may need to rephrase your explanation or return to an earlier part of the training that now appears to be poorly understood
 - questions are inappropriate for their level of knowledge
 - questions are poorly phrased
 - questions use words participants do not understand.

Group 4 – Answering questions

- Sometimes participants ask a question without thinking it through for themselves. When this happens, challenge them to work out the answer themselves. (Refer to the last exercise in Session ToT.5: Adult Learning).
- Help participants find the answer by questioning them. For example, 'What do you think?', 'What factors are important to consider when deciding...?' Draw out the correct ideas from participants, developing their clinical reasoning and problem-solving skills.
- If someone asks a question that you do not know the answer to, first ask if any participants or co-trainers can answer it.
- If no one can answer, add the question to the Car Park and offer to look it up and share it with the group before the end of the training.
- Never make up an answer if you do not know.
- If there is not enough time to answer a question at the time of asking, use the Car Park to make a note of it and address it later in the training programme.
- Avoid spending time on questions that are beyond the aim and objectives of the session. Take the opportunity in a break to discuss the issue with the questioner.
- Questions related to upcoming sessions can be parked in the Car Park. When Car Park questions are covered, check if the participant feels their question has been answered.
- Listen: make sure you listen to the whole question before assuming you know what the question is. This means not interrupting or filling in the sentence.
- Be aware of the difference between 'right/wrong' questions (especially relevant to WSTPb and WSTPi) and those that do not have a right or wrong answer, as is often the case in WSTPm and WSTPs.

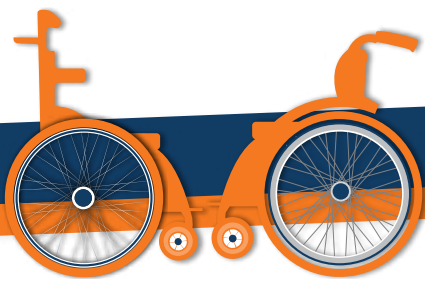
Demonstrations, videos and interpreters

Below are good practices for giving demonstrations, showing videos, and using both foreign language and sign languages interpreters during training.

Giving demonstrations

When giving demonstrations:

- make sure everyone can see
- prepare props and equipment in advance
- explain clearly, demonstrate and repeat
- know your audience
- allow participants to practise what has been demonstrated
- monitor participants and step in as necessary to give feedback (especially related to safety)



- consider gender during demonstrations in WSTPb and WSTPi, especially when touching is necessary.

Using videos

The WSTP use videos to demonstrate most practical skills. Before showing the videos:

- familiarize yourself with the content
- check for cultural and gender sensitivity
- explain what it is about before you show it
- mention the approximate length
- link it to the session
- play videos with subtitles to make them easier to follow
- ask questions about issues you want participants to consider, and highlight what they should observe
- repeat key sections, if time allows, or pause at critical points for emphasis.

Working with foreign language and sign language interpreters

Meet with the interpreter before the training starts to discuss:

- pace of speech
- key terms, including terminology related to people with disabilities
- how to communicate with wheelchair users
- their role during practical activities
- content of the training – provide a copy of the *Trainer's Manual* to interpreters
- instruct interpreters to translate everything, not to summarize or change what is being said
- interpreters should never answer a question on your behalf
- arrange for two interpreters so that they can take rest breaks.

During the training make sure that you:

- speak slowly and clearly
- watch your body language
- keep your hands away from your face for lip-readers
- always engage with the individual or audience directly
- show interest, keep eye contact and remain focused
- plan your time: talking through an interpreter makes conversations twice as long.

ToT.9 Knowledge of guiding documents

What is a guiding document?

Guiding documents are publications, policies, conventions or laws that provide frameworks, guidance or rules that are relevant to wheelchair service provision and which guide stakeholders in the provision of wheelchair services.

Many governments, international agencies, donors, and other stakeholders plan and fund development work in line with these international frameworks.

Your knowledge of them will put you in a stronger position to educate and advocate for appropriate wheelchair service provision.

National or Regional laws and policies will impact local wheelchair service provision. You need to be familiar with the documents to guide discussion.

The following section gives an overview of a range of guiding documents as they relate to wheelchair service provision. Some of these are included on the WVSTP Pen Drive and others can be accessed via the internet.

The United Nations Convention on the Rights of Persons with Disabilities (CRPD)

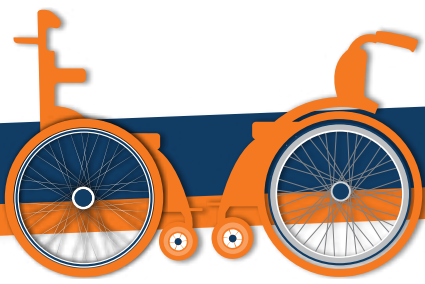


The United Nations Convention on the Rights of Persons with Disabilities is commonly known as the *CRPD* or sometimes the *UNCRPD*. The *CRPD* is widely considered to be the most important international treaty relating to people with a disability.

It came into force in 2008 and on its opening day, 82 countries signed the *CRPD* and 44 signed its Optional Protocol.

This was the highest number of signatories to a UN Convention on its opening day in history.

The *CRPD* was designed by representatives of the international community to change the way people with disabilities are viewed and treated in their societies.



Representatives involved in the development of the Convention included people with disabilities, government officials, and representatives of nongovernmental organizations.

The *CRPD* is important because it is a tool for ensuring that people with disabilities have access to the same rights and opportunities as everybody else.

Each year more countries sign the *CRPD*. Up to date information on which countries have signed the *CRPD* and its optional protocol can be found on the UN website.⁸

The CRPD has several articles relevant to wheelchair service provision:

Most relevant	Also relevant
<ul style="list-style-type: none">• Article 20 – Personal mobility• Article 4 – General obligations• Article 26 – Habilitation and rehabilitation• Article 32 – International cooperation.	<ul style="list-style-type: none">• Article 19 – Living independently and being included in the community• Article 24 – Education• Article 25 – Health• Article 27 – Work and employment• Article 30 – Participation in cultural life, recreation, leisure and sport.

Many other articles of the *CRPD* are indirectly relevant to wheelchair service provision. For example, Article 6 is concerned with the specific inclusion of women with disabilities and Article 7 with equality for children.

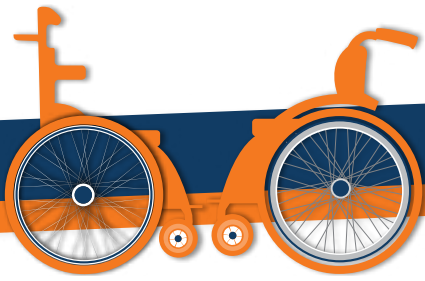
⁸ Convention on the Rights of Persons with Disabilities. In: Sixty-first session, United Nations General Assembly, New York, 6 December 2006. New York: United Nations; 2006. (Res.A/ 61/611) (<http://www.un.org/esa/socdev/enable/rights/convtexte.htm>).

What additional barriers can women and children face?

- In some cultures, and communities, women and children are not valued as equal to men.
- Where a wheelchair must be purchased, in some cultures family funds may not be prioritized for women or girls.
- Where early identification and early intervention services are not available, children may not be referred.
- Wheelchairs in suitable sizes for children may not be available.
- Children often need supportive seating, which may not be available. Parents and carers may choose to carry children with disabilities for many reasons: when they are small it can be easier; they won't have to face the stigma of their child being seen in a wheelchair; the challenges of travelling on public transport with a wheelchair are significant; or, lack of awareness of any other option.

It is important that WSTP participants are familiar with the **CRPD**:

- To use the rights-based approach of the *CRPD* to help develop wheelchair service provision for people with disabilities.
- To use *CRPD* articles as a guide when setting goals for wheelchair service delivery.
- To help advocate to government and other stakeholders to collaborate to achieve the aims of the articles.
- To encourage donors who back the *CRPD* to support wheelchair service provision in their countries.



Key articles in detail:

Article 4

Article 4 General obligations, states that States Parties:

Undertake to ensure and promote the full realization of all human rights and fundamental freedoms for all persons with disabilities without discrimination of any kind on the basis of disability.

Point (g) of Article 4 states:

To undertake or promote research and development of, and to promote the availability and use of new technologies, including information and communications technologies, mobility aids, devices and assistive technologies, suitable for persons with disabilities, giving priority to technologies at an affordable cost.

Point (h) states:

To provide accessible information to persons with disabilities about mobility aids, devices and assistive technologies, including new technologies, as well as other forms of assistance, support services and facilities.

Point (i) states:

To promote the training of professionals and staff working with persons with disabilities in the rights recognized in this Convention so as to better provide the assistance and services guaranteed by those rights.

Article 20

Article 20 Personal Mobility, is the article most relevant to wheelchair service provision. It requires that:

States Parties take effective measures to ensure personal mobility with the greatest possible independence for persons with disabilities, including by:

- (a) Facilitating the personal mobility of persons with disabilities in the manner and at the time of their choice, and at affordable cost;
- (b) Facilitating access by persons with disabilities to quality mobility aids, devices, assistive technologies and forms of live assistance and intermediaries, including by making them available at affordable cost;
- (c) Providing training in mobility skills to persons with disabilities and to specialist staff working with persons with disabilities;
- (d) Encouraging entities that produce mobility aids, devices and assistive technologies to take into account all aspects of mobility for persons with disabilities.

Article 26

Article 26 Habilitation and Rehabilitation, includes the requirement that:

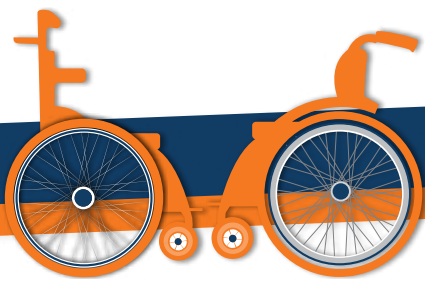
States Parties shall promote the availability, knowledge and use of assistive devices and technologies, designed for persons with disabilities, as they relate to habilitation and rehabilitation.

Definitions of rehabilitation and habilitation:

- Rehabilitation is a very well-known word but habilitation is used less often.
- Rehabilitation is focused on restoring abilities whereas habilitation is about learning or building abilities for the first time.

Article 32

Article 32 is relevant to wheelchair service provision in a broader sense as it promotes international cooperation; for example, in facilitating access to assistive technology.



WHO Guidelines on the provision of manual wheelchairs in less-resourced settings



The WHO Guidelines on the provision of manual wheelchairs in less-resourced settings (*Wheelchair Guidelines*) is the most important international document focused on wheelchair provision.

The *Wheelchair Guidelines* outline the framework by which appropriate wheelchair provision is now understood internationally. Prior to the publication of the *Wheelchair Guidelines*, organizations involved in wheelchair provision did not have a common understanding of what was important to consider when designing or producing wheelchairs; establishing service delivery systems; training staff; or developing policies related to wheelchair provision.

The *Wheelchair Guidelines* were developed with the involvement of a cross section of stakeholders from all continents. They provide us with a powerful tool to help us develop services in line with agreed standards, and to advocate to government and other stakeholders for appropriate wheelchair services. The *Wheelchair Guidelines* reflect standards that are universally achievable in low-, middle- and high-resourced contexts.

A wheelchair is appropriate when it:

- ✓ Meets the user's needs and environmental conditions
- ✓ Provides proper fit and postural support
- ✓ Is safe and durable
- ✓ Is available in the country
- ✓ Can be obtained and maintained and services sustained in the country at an affordable cost.

This is an important definition for trainers and WSTP participants to know.



The *Wheelchair Guidelines* also cover wheelchair:

- design and production
- service delivery
- training
- policy and planning.

A WSTP trainer's knowledge of the *Wheelchair Guidelines* should be comprehensive; as trainers, you should try to raise awareness of them whenever you have the opportunity.

The *Wheelchair Guidelines* are available on the WHO website in a range of languages.

Joint position paper on the provision of mobility devices in less-resourced settings

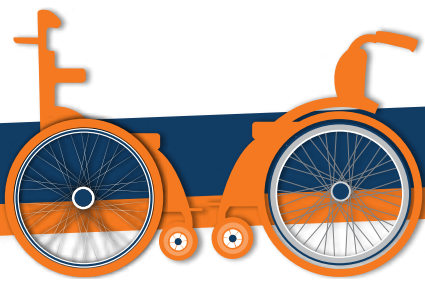


The WHO *Joint position paper on the provision of mobility devices in less-resourced settings*¹⁰ was published in 2011 to help countries implement CRPD articles associated with the provision of mobility devices.

The paper provides valuable information on barriers to accessing mobility devices; requirements to increase access to mobility devices; and recommendations for individual countries and international stakeholders.

9 Guidelines on the provision of manual wheelchairs in less-resourced settings. Geneva: World Health Organization; 2008 (<http://www.who.int/disabilities/publications/technology/wheelchairguidelines/en/>).

10 Joint position paper on the provision of mobility devices in less-resourced settings: a step towards implementation of the Convention on the Rights of Persons with Disabilities (CRPD) related to personal mobility. Geneva: World Health Organization; 2011 (http://www.who.int/disabilities/publications/technology/jpp_final.pdf).



Community-based rehabilitation: CBR Guidelines



The WHO *Community-based rehabilitation: CBR Guidelines*¹¹ were launched in 2010 and present a common understanding and approach to CBR globally.

CBR is a strategy to improve access to rehabilitation services for people with disabilities in less-resourced countries, by making optimal use of local resources. The *CBR Guidelines* provide a framework for action and offer practical suggestions for implementation.

The introductory booklet and health component of the *CBR Guidelines* are included on the WSTP Pen Drive as resources but are not referred to specifically in the WSTP.

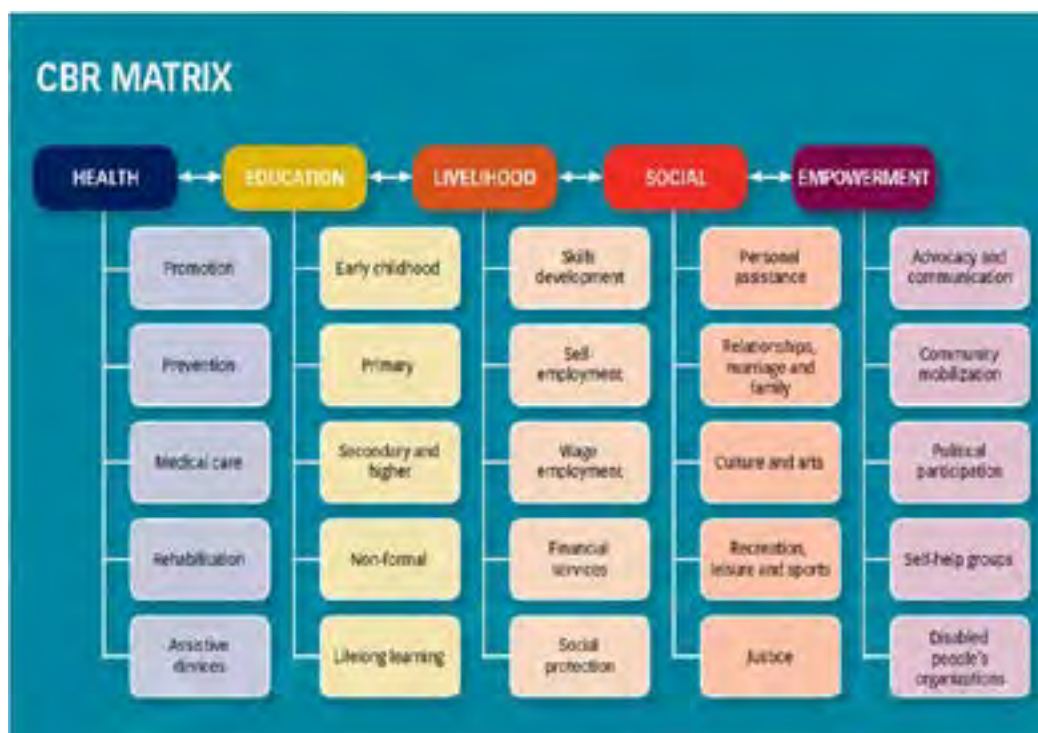
A good knowledge of the *CBR Guidelines* is recommended as CBR is currently being implemented in over 90 countries and is increasingly seen as one of the most effective ways of realizing the articles of the *CRPD*.

CBR, also referred to as Community-Based Inclusive Development (CBID), is likely to come up in discussions during the WSTP. Many aspects of CBR are highly relevant to wheelchair service provision: for example, referral networks; community health centres; and CBR workers.

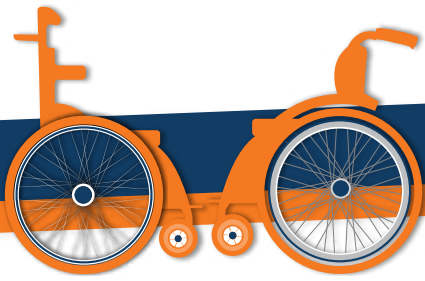
11 WHO Community-based rehabilitation: CBR guidelines. Geneva: World Health Organization; 2010 (<http://www.who.int/disabilities/cbr/guidelines/en/>).

CBR Matrix

The CBR Matrix¹² is one of the cornerstones of the *CBR Guidelines*. The five components are: Health, Education, Livelihood, Social and Empowerment. Each component of the Matrix has five elements within it, so there are a total of 25.



12 The CBR Matrix. Geneva: World Health Organization; 2017 (<http://www.who.int/disabilities/cbr/matrix/en/>).



Activity I: CBR Matrix

Working in your group, list how wheelchair service provision relates to the component of the CBR Matrix you have been assigned: Health, Education, Livelihood, Social or Empowerment.

Further information and the full *CBR Guidelines* can be found on the WHO website¹³

¹³ (<http://who.int/disabilities/cbr/guidelines/en/>).

Wheelchair service provision and the five components of CBR

Health	Education
<ul style="list-style-type: none"> • Rehabilitation – long and short term. • Health promotion and prevention of secondary complications; for instance, early identification and intervention to prevent complications such as scoliosis and pressure sores. • Access to health-care services. 	<ul style="list-style-type: none"> • Enables access to school, educational programmes and vocational programmes.
Livelihood	Social
<ul style="list-style-type: none"> • Access to perform livelihood activities. • Earning capacity. • Access financial services. 	<ul style="list-style-type: none"> • Promote access to social and recreational activities. • Join sport and cultural programmes with peers. • Opportunity to form and develop relationships.
	Empowerment
	<ul style="list-style-type: none"> • Improved self-image and confidence. • Peer support.

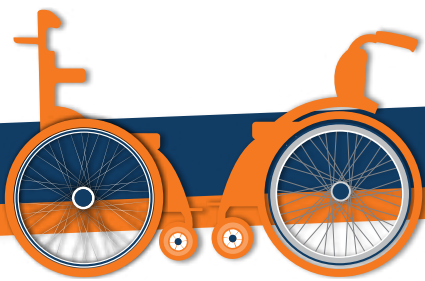
Design considerations for accessibility



*Design considerations for accessibility*¹⁴ gives useful information on how to ensure all aspects of access are considered, both when visiting the wheelchair service and in other environments. It covers:

- disabled car parking
- curb ramps
- pathways
- ramps
- stairways
- handrails
- doors and doorways
- corridors
- toilets.

¹⁴ Design considerations for accessibility 2006. Sri Lanka: John Grooms Working with Disabled People; 2006 (<http://ascon.info/publications/accessibility.pdf>).



Sustainable Development Goals (SDGs)



The *Sustainable Development Goals*¹⁵ were adopted by world leaders in September 2015 at a historic United Nations Summit and came into force on 1 January 2016. Over the next 15 years, countries will mobilize efforts to address all three dimensions of sustainable development (environmental, economic and social) and strive to achieve the 17 goals.

The SDGs succeed the *Millennium Development Goals* (MDGs), which reached their conclusion in 2015; they are the outcome of a collaborative development process that started at the 2012 United Nations Conference on Sustainable Development (Rio+20).

As the WTSP modules were developed before the SDGs were launched, they are not mentioned in the packages. However, as many governments, development and donor organizations will be focusing on addressing the SDGs, it is important for trainers and participants to be aware of them and to identify how appropriate wheelchair service provision can fit into the SDG agenda.

The SDGs are made up of 17 goals and 169 associated targets.

In Paragraph 4 of the preamble of the SDGs an important commitment is made:

As we embark on this great collective journey, we pledge that no one will be left behind. Recognising that the dignity of the human person is fundamental, we wish to see the Goals and targets met for all nations and for all segments of society. And we will endeavour to reach the furthest behind first.

A reference to persons with disabilities is also included in Paragraph 23 on vulnerable populations:

People who are vulnerable and must be empowered. Those whose needs are reflected in the Agenda include all children, youth, persons with disabilities (of whom more than 80% live in poverty), people living with HIV/AIDS, older persons, indigenous peoples, refugees and internally displaced persons and migrants. We resolve to take further effective measures and actions, in conformity with international law, to remove obstacles and constraints, strengthen support and

15 The sustainable development goals [website]. New York: United Nations (<http://www.un.org/sustainabledevelopment/sustainable-development-goals/>).

meet the special needs of people living in areas affected by complex humanitarian emergencies and in areas affected by terrorism.

Disability and the SDGs

Goal 4: to ensure inclusive and equitable quality education and promotion of life-long learning opportunities for all, focuses on eliminating gender disparities in education and ensuring equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities. In addition, the proposal calls for building and upgrading education facilities that are child, disability and gender sensitive and also provide safe, non-violent, inclusive and effective learning environments for all.

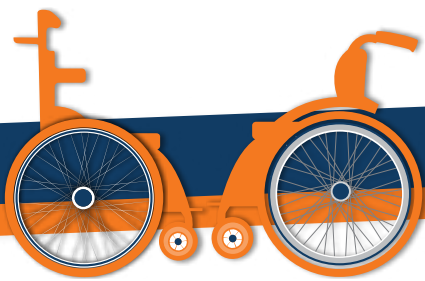


Goal 8: to promote sustained, inclusive and sustainable economic growth, full and productive employment, and decent work for all, the international community aims to achieve full and productive employment and decent work for all women and men, including for persons with disabilities, and equal pay for work of equal value.



Goal 10: strives to reduce inequality within and among countries by empowering and promoting the social, economic and political inclusion of all, including persons with disabilities.





Goal 11: aims to make cities and human settlements inclusive, safe, resilient and sustainable. To realize this goal, Member States are called upon to provide access to safe, affordable, accessible and sustainable transportation systems for all; improving road safety, notably by expanding public transportation, with special attention to the needs of those in vulnerable situations, such as persons with disabilities. In addition, the proposal calls for universal access to safe, inclusive and accessible green and public spaces, particularly for persons with disabilities.



Goal 17: stresses that in order to strengthen the means of implementation and revitalize the global partnership for sustainable development, the collection of data, monitoring and accountability of the SDGs are crucial. Member States are called upon to enhance capacity-building support to developing countries, including least developed countries and small island developing states, which would significantly increase the availability of high-quality, timely and reliable data that is also disaggregated by disability.



For further information on the SDGs see the UN website.¹⁶

Global Cooperation on Assistive Technology (GATE)



WHO estimates that today more than 1 billion people need one or more assistive products, such as wheelchairs, hearing aids, walking frames, spectacles, pill organizers and communication boards.

With a global ageing population and a rise in noncommunicable diseases, WHO expects that this number will rise beyond 2 billion by 2050, with many older people needing two or more products as they age.

¹⁶ (<http://www.un.org/sustainabledevelopment/sustainable-development-goals/>).

Assistive products play a crucial role in enabling access to education and livelihoods, maintaining independence and being connected to the world. However, today only one in 10 people in need have access to the products they need; without them they are excluded from participating in society, isolated and locked into poverty.

WHO is coordinating the *GATE* initiative to address this huge and unmet global need and to realize Article 32 of the *CRPD*. The *GATE* initiative has only one goal: to improve access to high-quality affordable assistive products globally. To achieve this, *GATE* is focusing on four interlinked action areas: products, personnel, provision and policy.

Following the example of the *WHO Model List of Essential Medicines*, *GATE*'s first priority was to develop a *WHO Priority Assistive Products List (APL)*. The APL includes the 50 assistive products that are most needed across the world. This includes four types of wheelchair, pressure cushions and portable ramps, as well as other products to enhance mobility, hearing, cognition, communication and vision.

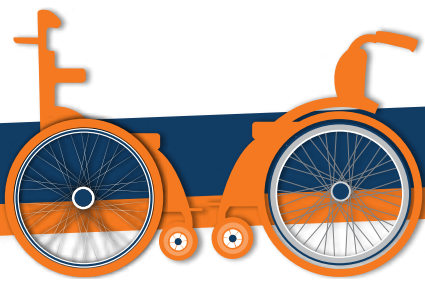
The *APL* is not a restrictive list but aims to provide Member States with a blueprint to develop a national APL in line with local need and available resources. The hope is that it will provide a rallying point for local stakeholders to synergize efforts to increase access.

GATE is now working on developing tools to support the implementation of the *APL*, including a needs assessment toolkit, a training package, a policy framework and model of service provision.

For more information on *GATE* see the WHO Website.¹⁷

¹⁷ (http://www.who.int/phi/implementation/assistive_technology/phi_gate/en/).

¹⁸ World report on disability. Geneva: World Health Organization; 2011 (http://www.who.int/disabilities/world_report/2011/en/).



World report on disability



In 2011 the first ever *World report on disability* was published, produced jointly by WHO and the World Bank.¹⁸

The report states that people with disabilities have generally poorer health, lower educational achievements, fewer economic opportunities and higher rates of poverty than people without disabilities. This is largely due to the lack of services available to them and the many obstacles they face in their daily lives.

The report provides evidence-based recommendations on ways to overcome barriers to health care, rehabilitation, education, employment and support services. It also highlights what works to create supportive environments that will enable people with disabilities to flourish.

The *World report on disability* highlights the following barriers:

- inadequate policies and standards
- negative attitudes
- lack of service provision
- problems with service delivery
- inadequate funding
- lack of access
- lack of consultation and involvement
- lack of data and evidence.

As these all relate to wheelchair service provision this is a useful background document. The report's second recommendation to, *Invest in specific programmes and services for people with disabilities*, mentions the importance of wheelchairs:

Rehabilitation – including assistive technologies such as wheelchairs or hearing aids – improves functioning and independence. A range of well-regulated assistance and support services in the community can meet needs for care, enable people to live independently and participate in the economic, social, and cultural lives of their communities.

A summary of the report together with its recommendations can be found on the WHO website.¹⁹

WHO Global disability action plan



The *WHO Global disability action plan 2014–2021*²⁰ is based on the recommendations of the *World report on disability* and is in line with the *CRPD*. It was developed in consultation with Member States, UN organizations, national and international partners including organizations of people with disabilities.

The plan seeks to address the disparities between people with disabilities and those without. It states that across the world, people with disabilities do not receive the health care they need and have poorer health than people without disabilities. They are more than twice as likely to find health-care providers' skills and facilities inadequate; nearly three times more likely to be denied health care; and four times more likely to be treated badly.

The action plan has three objectives:

- to remove barriers and improve access to health services and programmes
- to strengthen and extend rehabilitation, habilitation, assistive technology, assistance and support services, and community-based rehabilitation
- to strengthen collection of relevant and internationally comparable data on disability and support research on disability and related services.

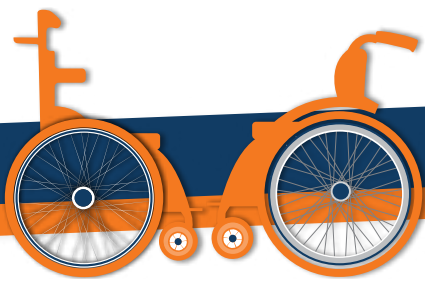
Member States are urged to implement the proposed actions adapted in line with national priorities and circumstances.

The full report can be found on the WHO website.²¹

19 Summary World report on disability. Geneva: World Health Organization; 2011 (http://apps.who.int/iris/bitstream/10665/70670/1/WHO_NMH_VIP_11.01_eng.pdf)

20 WHO Global disability action plan 2014–2021: Better health for all people with disability. Geneva: World Health Organization; 2015 (http://apps.who.int/iris/bitstream/10665/199544/1/9789241509619_eng.pdf?ua=1).

21 (<http://www.who.int/disabilities/actionplan/en/>).



High-level meeting of the General Assembly on disability and development

A one day High-Level Meeting of the General Assembly on disability²² was held on 23 September 2013 under the theme: *The way forward: a disability-inclusive development agenda towards 2015 and beyond*.

Participants included Member States, observers and representatives of the United Nations, as well as representatives of civil society, organizations of people with disabilities and the private sector.



The *Outcome Document* from the meeting lists commitments from (a) to (q).

Commitment (h) states:

Ensure accessibility, following the universal design approach, by removing barriers to the physical environment, transportation, employment, education, health, services, information and assistive devices, such as information and communications technologies, including in remote or rural areas, to achieve the fullest potential throughout the whole life cycle of persons with disabilities.

A booklet giving the background to the meeting and the outcomes can be found on the UN website.²³

22 Outcome document of the High-level Meeting of the General Assembly on the realization of the Millennium Development Goals and other internationally agreed development goals for persons with disabilities: the way forward, a disability-inclusive development agenda towards 2015 and beyond. In: Sixty-eighth Session of the United Nations General Assembly, New York, 23 September 2013. New York: United Nations; 2013 (http://www.un.org/en/ga/search/view_doc.asp?symbol=A/68/L.1).

23 The way forward. A disability-inclusive development agenda towards 2015 and beyond. New York: UN Department of Economic and Social Affairs; (http://www.un.org/disabilities/documents/hlmdd/hlmdd_booklet.pdf).

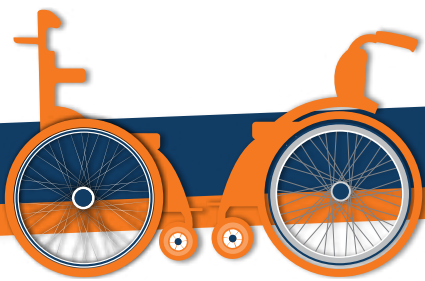
ToT.10 Audio-visual tools and equipment

It is important that you are familiar and confident with using a range of audio-visual (AV) tools when facilitating training sessions.

PowerPoint (PPT) and Portable Document Format (PDF)

Presentations for the WSTP are available in both PowerPoint and PDF format. The advantages and disadvantages of each format are summarized in the table below.

	Advantages	Disadvantages
PPT	<ul style="list-style-type: none">• The PPT can be changed to fit your individual presentation style and be relevant to the local context.• Text can be reduced/simplified.• Extra slides can be added to cover new content or questions for discussion. This is helpful when the group speaks different languages or dialects, and may find it difficult to follow your accent.• The computer's screen saver will not come on when the presentation is in "Slide Show" mode.	<ul style="list-style-type: none">• Videos must be loaded manually.• Overall file size is larger.• Time is needed to edit the PPT files.
PDF	<ul style="list-style-type: none">• The PDF is complete with links to all four video formats. You can simply click on the format you want and the video will play.• It has been tested and there should be no formatting or compatibility issues.• The files are smaller than the editable files.	<ul style="list-style-type: none">• The content is fixed and cannot be customized for local context or to fit your presentation style.• All text on the slide will appear at once (slides will not 'build' as some of them do in the editable version) and key learning points cannot be introduced individually.• Text can't be simplified or reduced on slides with a lot of content.• Because it is a PDF, the computer's screen saver will come on and needs to be deactivated before you start the presentation. (This can be done in "System Preferences" on your computer).



Adding slides to the PPTs

When adding slides, the aim is to follow the *Trainer's Manual* and not to move off the subject. You may want to add slides to the PPTs for the following reasons:

- for sections where there are none
- for key discussion questions, to remind you not to move on to the answers too soon
- as a reminder about an activity that is coming up, and include instructions.

You may want to make changes to the PPTs for the following reasons:

- to adapt slides for local context
- to provide translations
- to reduce the text on some slides or divide a lot of content on one slide into two or more slides
- to add material when you are expanding or adding training sessions.

Remember, when you add content you will need to add more time to the session.

Maintaining consistency of the PPT

- All new slides, or changes to existing slides, must follow the same format, style and font as the original PPT.
- Remember to delete the WHO and WSTP logos from slides you add or change. The simplest way to add slides to an existing WSTP presentation while keeping the same format is to duplicate an existing slide and then change the text.
- Do not add complex animations.
- You can also add slides using the PPT master.
- All video clips are available in two formats: mp4 and wmv. The mp4 format is for use on Apple computers and the wmv format is for Windows computers. If you have a Windows computer with a QuickTime player installed, you can also use mp4 videos.
- Some video clips come with subtitles which are recommended to use. They can help participants understand better when there is poor sound quality, external noise or strong regional accents are used.
- Video clips can be embedded or linked. We recommend embedding because although this makes the file larger, the video is stored inside the PPT and not lost when you copy the file to another computer.

Embedding videos into a PPT

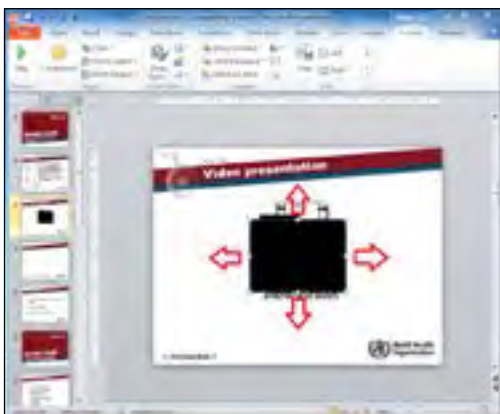


To embed a video in PPT 2010 onwards, follow these steps:

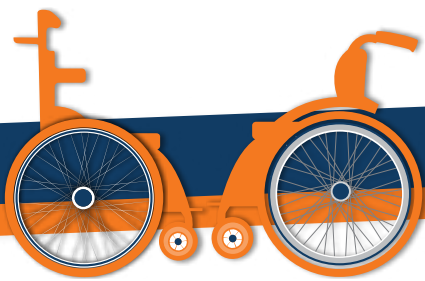
- Open the “Presentations” folder, then the “PowerPoint” folder. Open the slide you want to edit
- Click on the “Insert” tab
- Click on the drop down arrow under the Video icon
- Click “Video from File”



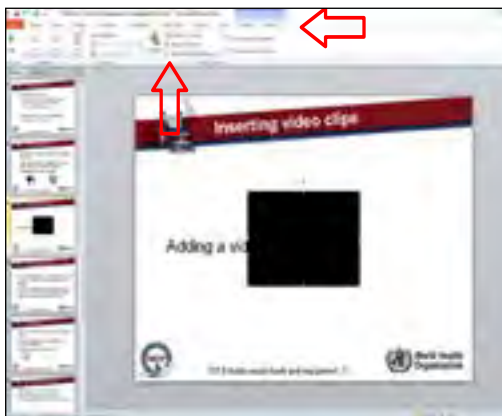
- Browse to the folder with the video clips, select the video clip you want and insert it.



- Resize the video frame if it does not fill the screen properly.

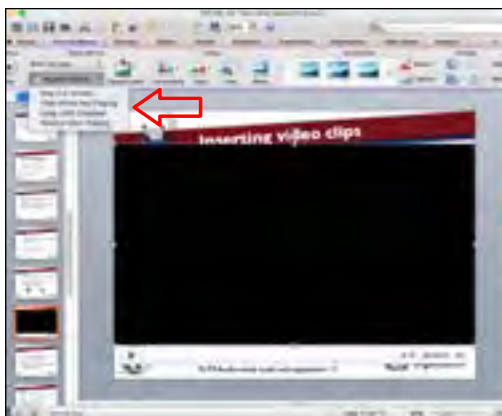


- Save your changes
- The video is now part of the PPT.



To automatically play the video in full screen mode (Windows):

- In the “Video”/“Tools”/“Playback” tab, check the box called “Play Full Screen”.



To automatically play the video in full screen mode (Mac):

- In the “Format Movie” tab, click on the “Playback Options” dropdown list and select “Play Full Screen”.

If you have any difficulties, consult the PPT help menu.

Good practice when using audio-visual equipment

Making sure the “Slide Show” plays

- When practising your PPT session, use “Slide Show” mode. This will identify any problems with transitions, animations and flow.
- Run through the slides and videos in “Slide Show” mode on the computer and data projector that will be used during the training. This is important if you are not using your own computer, as different settings on different computers can prevent presentations from running as planned.
- Consider using one computer for all presentations during training, which will save time switching between presenters.

Data projector, remote and pointers

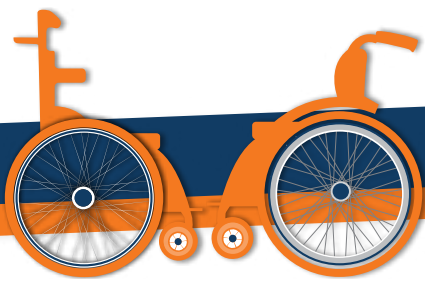
- If possible, have a spare data projector or projector lamp available.
- Switch off the projector during breaks and practical sessions to save use of the lamp.
- If you need to project a black or white screen, you can usually type W for a white screen and B for a black screen when you are in “Slide Show” mode.
- Using a remote control to click between slides means that you do not need to stand next to the computer during your presentation.
- Laser pointers can be used to draw participants’ attention to a specific item on the slide.

Speakers

- Plug in and test the speakers at the start of each day and leave them plugged in.
- Only switch the speakers on when you are playing videos as they can pick up cell phone or other electronic signals.

Cables and adapters

- Ensure that you have all the necessary cables for the laptop, data projector and speakers.
- Double check you have plug adapters including a few spares.
- Bring extra extension cords in case your cables won’t reach the power outlets.



Activity 1: Using the board/flipchart as a visual aid

Read the information assigned to your group and prepare a presentation to the rest of the group using the board/flipchart.

Drawing a sketch or diagram

If you want to use a sketch/drawing/diagram/chart to aid in an explanation, draw it yourself:

- consider drawing the outline lightly in pencil or making drawings beforehand
- plan it in advance, so it fits the board and can be seen easily
- practise until you can draw clearly and easily.

Board or flipchart – writing style and marker choice

- If you have both available, use the board for writing information that you don't need to keep after the session, and the flipchart for recording information you want to put on the wall or keep to write up as notes from the training.
- Write clearly. Check that your writing can be read from the back of the room.
- Use thick markers and darker colours, for example, black and blue. Avoid red as it is more difficult to read from a distance. Use it for underlining.

Board or flipchart location and being neat

- Make sure everyone can see it.
- When writing on the board or flipchart, stand to the side and face your audience. If this is difficult to do, write quickly and move to the side or ask a co-trainer to do the writing.
- Keep the notes and the chart neat.
- Practise writing in straight lines. Start by using faint pencil lines (with practice you will not need them).

What to write

- Write keywords, not full sentences or phrases.
- If necessary, prepare pages in advance or outline in faint pencil where you plan to write what.
- If important details are on the board at the end of a session (for example, assessment findings, small group progress, groupings for practical sessions), take a photograph so you can refer to it later.

Care and use of the whiteboard

- Be careful not to use permanent markers on a whiteboard surface. If you have used permanent marker on a whiteboard by accident, you can erase the letters by using an appropriate cleaner or drawing over them with whiteboard markers (as the solvent in these markers will dissolve the permanent ink). You must do this soon after making the mistake as dried permanent marker is more difficult to remove.
- The whiteboard can be used as a projector screen when necessary, for example, to fill in a table or draw over a picture/photo from a slide (for instance, 'stick-draw' a posture from a photograph or drawing of a person).

ToT.II Feedback

What is feedback?

Feedback is information given to someone about:

- What they are doing well – positive feedback.
- What they need to improve on – constructive feedback.

It is important that you have the skills to give feedback well, and that you can support positive learning outcomes for participants.

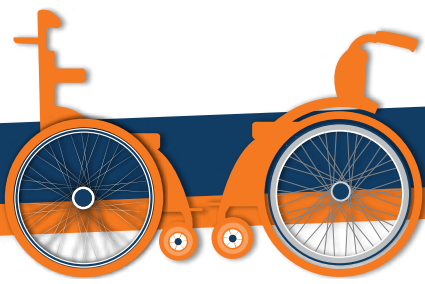
Usually people have no problem giving feedback about good performance. When mistakes are made or performance needs improvement, you must be confident in giving constructive feedback.

Activity 1: Receiving feedback

Think about feedback that was helpful for your learning and feedback that made you feel defensive or upset and was not helpful.

Record your reflections below

What should trainers consider when providing feedback?



Feedback should:

- Be timely – give feedback as soon as possible while the experience is fresh.
- Be specific – describe as clearly as possible the behaviour that was positive or that needs attention.
- Focus on the behaviour not the person when providing constructive feedback.
- Start with the positive – point out what was done well before talking about what needs to be improved. End on a positive note if you can.
- Be delivered in different ways – give constructive feedback and praise to the whole group if possible. If there are attitudinal, behavioural or disciplinary issues, deal with them in private.
- Be from the participants' perspective – ask the participant to reflect on their own performance first. They may already understand what went well and what they need to improve.
- Support participants in their different approaches – before giving constructive feedback, consider if the participant has completed an activity incorrectly, or simply in another style. Participants will all approach service provision differently. Do not expect participants to act in the same way as you.

ToT.I2 Managing group dynamics

It is important that the WSTP trainer knows how to work effectively and efficiently with groups. This session looks at facilitating small group activities, managing time and dealing with disruptive behaviour.

Why use groups?

Group work is important in training because it:

- Allows participants to share ideas, knowledge and experience. This allows you to find out more about the participants' existing expertise so that you know where the gaps are and how to pitch the session.
- Honours the existing wisdom, experience and skills in the room. This allows those with more experience and expertise to share it with others.
- Takes the focus off the trainer. As the participants share experiences and find out what they already know, this helps to build their confidence.
- Creates an environment that enables everyone to speak and contribute. Shy or more junior participants will be more comfortable speaking out in a small group. This builds confidence as they discover their ideas are valued.

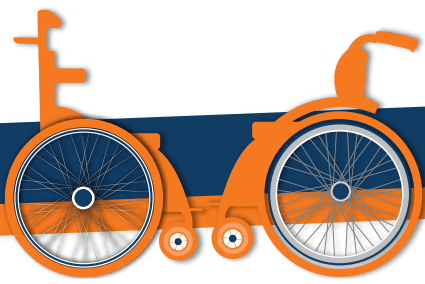
Organizing and managing group activities

What to consider when dividing a large group into smaller groups

- Determine group size
- Determine who is in each group
- Methods to create groups.

Factors to determine the size of the groups

- Time: the more groups there are the more time is needed for the feedback session. If you have less time, create larger groups, but no more than six people in a group.
- Privacy/confidentiality: pairs are best for discussing topics that are sensitive, when people are shy or there are language barriers.
- Involvement: the smaller the group the more difficult it will be for any group member not to participate.



- The activity: the amount of equipment/supplies that are needed for the group activity. For example, if you have three work stations then you will be able to accommodate three groups.

Factors to determine the make-up of each group

- Think of the purpose of the activity to determine whether you want people with similar skills and background in the same group, (by placing all clinicians working together or all technicians in the same group), or the opposite by deliberately mixing skill sets and experience in the same group.
- Grouping of participants who work together: depending on the activity or relationships, it may be appropriate to group them together or apart.
- Mixing stronger/weaker (more experienced/less experienced) participants: this facilitates learning from each other, However, if you want people to have equal opportunity to express themselves consider grouping dominant participants together and shy ones together.
- Mixing the sexes: be aware of cultural, religious or social norms of working (especially regarding touch and privacy).
- Language skills: for communication between participants and wheelchair users.
- Ensure that all participants have the opportunity to work with each other to maximize peer learning opportunities.
- Sometimes, random group selection is best.

Methods to create groups

The *Trainer's Manual* for each WSTP gives guidance about the size or number of groups required for each activity. You can adjust this to your situation, based on your experience in previous activities. Here are some methods to divide up a group:

- The fruit salad method: prepare three or four of the same fruit cards and different kinds of fruits, enough for each participant. You can then assign 'all bananas' to work together, or have a fruit salad (one of each) together.
- Count off. Count off to the number of groups you want, for example if you need three groups of three, go around the room asking the first person to count 'one', the next 'two', then 'three' and back to 'one'. All the ones, twos and threes go together.
- Matching puzzle pieces: cut photos or magazine pictures into two or three pieces according to how many groups you want. People find their match.

- Organize by birthday month: line people up by the month in which they were born and then form groups (first three together, next three, and continue until everyone is in a group). Or line up by height or by first name initial letter.
- Self-select: instruct people to select one or two people they have not worked with yet, but beware that self-organising with more than three people can take more time.
- Work in pairs with the person next to them, or if sitting in rows the people in the front row can turn their chairs around and work with the person behind them. This will work for pairs or groups of four.

Give clear directions when dividing participants into groups:

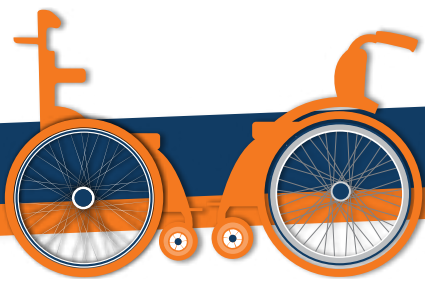
- who goes into which group
- what you want groups to do (what is their task)
- where you want groups to go (break-out rooms, or areas of a large room)
- when the group should be ready to report back
- how you want groups to report (using a flipchart; verbal presentation to the whole group; informal report to the group sitting in their seat; creative presentation chosen by the group itself)
- how much time will they have to report back.

Always monitor small group activities to ensure participants are working on the intended task and using the correct page in their workbook. Help them if necessary, by prompting and asking leading questions; don't provide the solutions or take too much time talking yourself. Remind them to keep an eye on the time.

Managing disruptive behaviour

In general, to help engage and keep participants interested and involved in the training:

- use the different training methods given in the session plans to engage all the participants
- ask questions to encourage participants to come up with answers
- praise good work from participants and give positive but honest feedback
- link learning to real examples the participants can relate to
- keep the training fun.



The dominant participant

The participant who does not give other participants an opportunity to share knowledge, answer questions or lead a group activity because they dominate, talk loudly or for a long time. This person behaves like they know everything already.

Managing a dominant participant:

- During a break, approach the person and acknowledge their experience. Ask them to help you by giving others a chance to learn and respond to questions.
- Consider asking specific participants to answer questions rather than asking the whole group.
- Pair or group the dominant participant with the strongest participants during group activities, to provide an opportunity for shy or quiet participants to contribute to their group.

The joking participant

The participant who appears not to take the training seriously, making jokes all the time and sometimes making fun of others.

Managing 'the joking' participant:

- During a break, talk to the participant about how their behaviour is disrupting the training. Ask them to help you by keeping jokes for breaks or for appropriate times during group activities.
- During sessions, respond to the joke as if it was a serious remark.

The argumentative participant

The participant who likes to raise objections or question concepts that they do not believe, to start an argument or test how strongly other members of the group feel about a topic or issue. Or, they may wish to test your skills and knowledge – and demonstrate that they are superior.

Managing an argumentative participant:

- Request that people only speak about their own beliefs and experiences.
- After an objection is raised, ask the participant 'is this true for you?' If the person says no, but that it may be for others, ask other participants for their opinion.

The negative participant

The participant that tends to be negative or discourage others. They may comment that the approach taught as part of the training 'won't work where we live'.

Managing a negative participant:

- If a negative participant feels that approaches in the training will not work, give them an opportunity to explain why. Ask other participants if they agree. If other participants agree, help them problem solve by asking: how can we make it work even in those situations?

The quiet participant

The participant who is naturally quiet or shy and feels uncomfortable speaking in front of a large group, or contributing to group activities.

Managing a quiet participant:

- Consider asking them direct questions that they are likely to be able to answer.
- Use praise and recognition to encourage more participation.
- Use small groups (pairs or three people) for group activities and discussions.

The higher status/senior participant

If there is a participant who is in a position of authority over others in the group, it can lead to participants being reluctant to speak, answer questions or to disagree with them.

Managing a senior participant:

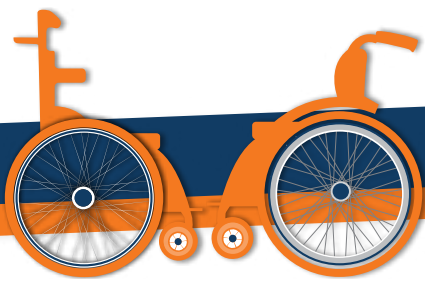
- During a break, talk to the participant about their role in the group. Ask the person to help you create a comfortable atmosphere by requesting that people speak freely.
- You may also ask the participant to sit at the back of the group, to be less dominant in the room.

The distracted participant

The participant who is easily distracted, always in and out of the training room or on the phone.

Managing a distracted participant:

- Try to find out why: is there a problem away from the training that is worrying them?
- Is he/she bored because of the subject matter or training style?
- During a break, talk to the participant about how their behaviour is disrupting the training. Remind him/her of any house rules.



Intermediate Level module



A.I: Wheelchair users who benefit from additional postural support

Key considerations for teaching this session

a. General

- Group discussions will help the trainers understand the existing level of knowledge and experience of the participants.
- Avoid discussing individual postural support devices (PSDs) in detail. They will be covered in later sessions.

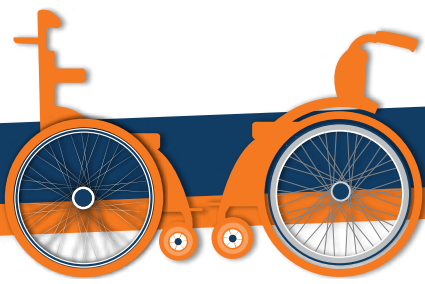
b. Section 3. When is additional postural support needed?

Tips for preparation

- For the activity: Throwing a ball and drinking on pages 34–35 of the WSTPi *Trainer's Manual*, ensure that the chairs are suitably strong. Wheelchairs can be used if there are no suitable chairs.

Content

- Many intermediate level wheelchair users are at higher risk of developing a pressure sore due to:
 1. Pressure
 - asymmetrical (uneven) posture
 - immobility (being unable to move)
 - weakness
 - poor balance
 - inability to change position or carry out pressure relief techniques.
 2. Shear
 - unstable posture as a result of weakness
 - increased tone (stiffness)
 - uncontrolled movement
 - joint contractures
 - leg length discrepancies which have not been accommodated.



3. Friction
- poor posture support can lead to parts of the wheelchair user's body rubbing against the wheelchair or PSDs
 - uncontrolled movement or spasms
 - injuries that occur during transfers: for example, if the wheelchair user's bottom does not clear the wheelchair when lifting, the skin will drag causing friction.
- For intermediate wheelchair users, a pressure relief cushion alone may not be enough to prevent pressure sores.
 - Stabilizing the wheelchair user, supporting their posture with appropriate PSDs and educating the user and/or their caregivers can help to prevent pressure sores from developing.
 - Remember a pressure sore can develop at any point of contact between the wheelchair user's body and the wheelchair, cushion or PSD.

c. Section 4. What do wheelchair users want?

- Additional answers to those listed on page 38 of the *Trainer's Manual*, "The reasons why the wheelchair users may reject a wheelchair with additional postural support", can include:
 - cost: users may pay extra fees for wheelchairs with additional postural supports
 - size: most posture-support wheelchairs are non-folding, larger and heavier
 - posture-support wheelchairs come with a fixed range of PSDs some of which the wheelchair user does not require
 - additional maintenance of the PSDs that are added to the wheelchair.

A.2: Children with disabilities

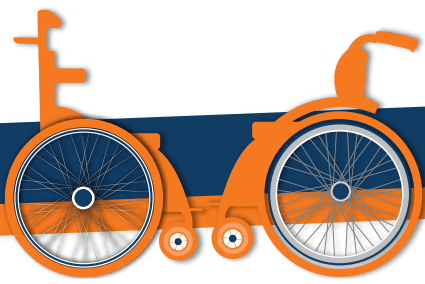
Key considerations for teaching this session

a. Section 3. Different positions

- Up to 6 years of age, children's hips cannot fully straighten (extend) or rotate inwards like an older child or adult. This is one reason why their standing and sitting postures are different.
- Young children will therefore stand with slightly bent hips, their knees apart and pointing slightly outwards. Their hips should never be forced straight and the feet should not be turned in to face forward. When lying on their front their hips should remain slightly bent and their knees and feet face out.
- The illustrations in the *Different positions* poster are of older children who already have a straightened (extended) hip.

Standing

- Add “prevention of fractures” to the notes on why standing is important (page 44 of the *Trainer's Manual*), as this is a key point.
- Other benefits of standing that are not listed include:
 - helps to manage spasticity (muscle stiffness)
 - helps digestion
 - helps bowel movement and bladder emptying
 - relieves pressure from the seat bones
 - helps the bones to develop and reduces loss of bone density (strength).
- On page 45, slide 8: Standing posture for young children, an additional point to note is that the knee support of a standing frame should be positioned below the knee caps and never directly on them because:
 - The knee caps are sensitive and pressure on them will lead to pain and discomfort.
 - The natural weight bearing area for the knee is just below the knee cap. This is also the area for weight bearing in below-knee prostheses.



b. Section 4. Importance of an early referral for children

- Providing a wheelchair does not take away a child's desire or ability to walk.
- Providing wheelchairs for children helps them to:
 - play with their friends
 - go to school
 - do things for themselves
 - help in the home.
- Using a wheelchair takes less energy than using walking aids and allows a child to cover longer distances and participate more fully.
- A child's walking may improve as a result of using a wheelchair as the child walks less and uses less effort, helping to improve the quality of their walking.

c. Section 5. Working with children

- The child-safe practices described in this session are the minimum necessary when working with children.
- Encourage participants to create a child-safe code of conduct for their service. Codes of conduct help personnel understand how to work with children safely. Child protection resources include:
 - local country and organization acts and policies on child protection
 - Australian Council for International Development: *Code of conduct guidelines for the development of a child protection policy*.¹
 - Child protection, UNICEF website²

1 ACFID Code of conduct guidelines for the development of a child protection policy. Canberra: Australian Council for International Development; 2016 (<https://acfid.asn.au/resources>).

2 Child protection. In: Disabilities in programmes, UNICEF [website]. New York: UNICEF; Sept 2015 (http://www.unicef.org/disabilities/index_65309.html).

B.I: Assessment overview and assessment interview

Errors in the WSTP materials

a. General

- The time allocations noted in the *Trainer's Manual* for sessions 1–3 should be corrected as follows:
 - Section 1 2 minutes
 - Section 2 3 minutes
 - Section 3 65 minutes

Change the time allocations in the *Trainers Manual* session plan outline on page 53 and in the individual sections on pages 53 and 54. The total session length remains unchanged.

b. Section 3. Assessment interview, including the practical activity

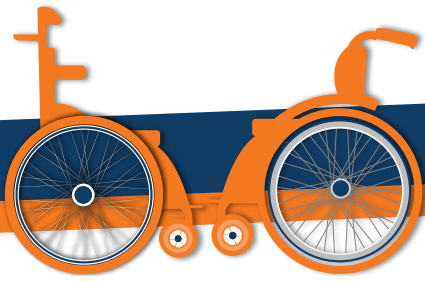
- There is an error in the instructions for the activity on page 56. The instruction states: “Give each group a number (1–5)”. This should be 1–4.

Key considerations for teaching this session

a. General

Tips for preparation

- Consider incorporating any changes made to the assessment form by local service providers into the session.
- Adjust the types of disabilities and health conditions included in the group activity for the context.



Content

- Participants should be familiar with the WSTPb assessment interview. Therefore focus on the content that is new for intermediate level wheelchair users.

b. Section 3. Assessment interview

- The total time for this section is 65 minutes (see error section above). This includes a 5 minute introduction to the session, including the instruction for the activity and 60 minutes for the activity.
- For the activity, encourage participants with more knowledge of different disabilities to support other group members.
- Avoid long discussions about a single diagnosis/physical issue.
- Some wheelchair users will not have a diagnosis and some users may have an incorrect diagnosis. Therefore, while the wheelchair user's diagnosis can give valuable information, it is important to complete a full assessment. All of this information is required in order to select the most appropriate wheelchair.

B.2: Physical assessment – sitting posture without support

Errors in the WSTP materials

a. Section 5. Upright sitting posture for young children

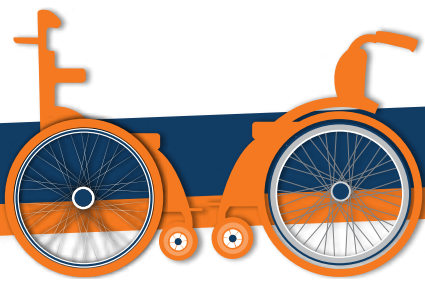
- On page 68 of the *Trainer's Manual*, the first bullet point of slide 10 should state: "Flat back with no lumbar curves". Correct the text by deleting "or thoracic" from the PPT slide and the slide notes.
- As observed in the drawing (Figure 1), there is a forward thoracic curve that results in the shoulders being slightly further forward than the child's ears and hips. The key message is that children under 5 years of age have a different 'upright' posture to that of an adult.



Figure 1. Upright posture in young children

b. Section 7. Observing sitting posture

- Slide 18 is different in the PPT and the *Trainer's Manual*. In the *Trainer's Manual*, it shows shoulders lower on the right, and on the slide it shows shoulders lower on the left. Correct the text on page 72 of your *Trainer's Manual* to say "shoulders not level (lower on the left)".



c. Section 8. Recording posture

- In the activity (page 76) the line drawings are missing from the *Trainer's Manual*. They are shown below in Figure 2:

Example line drawings for trainers

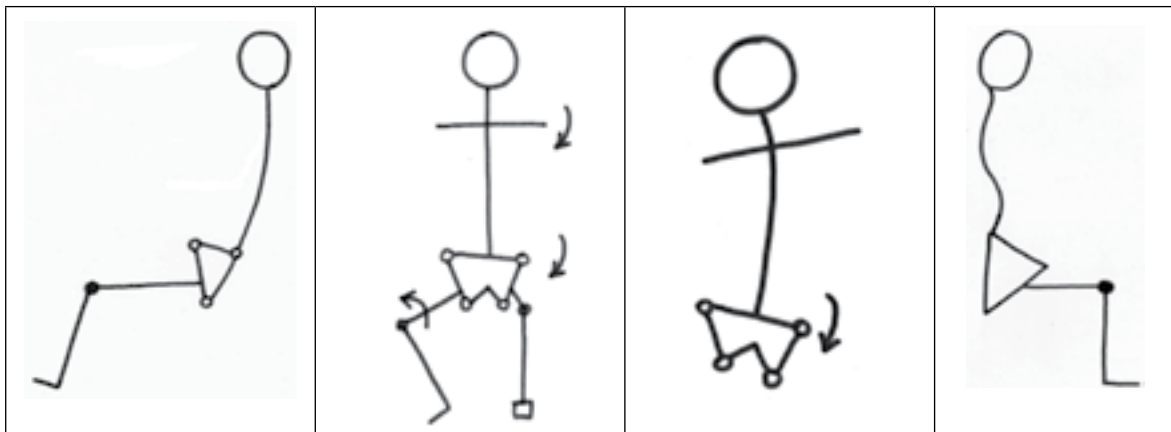


Figure 2. Example line drawings

Key considerations for teaching this session

a. Section 4. Upright sitting posture

- The terms 'fixed posture', 'flexible posture' and 'flexible partway to neutral posture' should be applied to individual joints and not the wheelchair user's whole posture. For example, the left hip can be 'fixed' while the right hip can be 'flexible partway to neutral'.

b. Section 5. Upright sitting posture for young children

- Children's lumbar and thoracic curves develop as a result of standing. For those children who never stand, these curves will not develop as they get older.

c. Section 6. The pelvis is the foundation of sitting posture

- Check that all participants can locate the seat bones (ITs), ASIS and PSIS on each other before moving on.

- Locating bony landmarks can be difficult due to contractures, deformities or obesity. Remind participants that for obese wheelchair users, the position of the ITs, ASIS and PSIS will not change relative to the midline of the body. Participants should use their knowledge of anatomy to work out where the bony landmarks should be before they begin palpating (feeling for landmarks).
- Regarding the terms 'upright/neutral' in relation to the pelvis:
 - 'Level pelvis' refers to the pelvis from the anterior/front view. A level pelvis has no sideways tilt from the front. Both ASIS are in line with each other.
 - 'Upright/neutral pelvis' refers to the pelvis from the lateral/side view. An upright pelvis has no anterior or posterior pelvis tilt from the side. It is balanced on the seat bones.

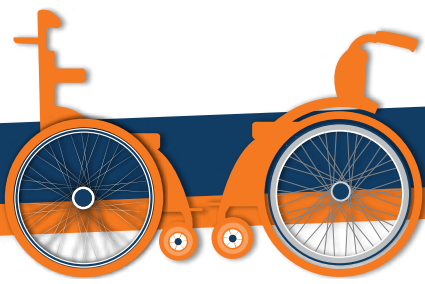
d. Section 7. Observing sitting posture

- When observing the wheelchair user's posture, some support may be needed to assist them to sit on the side of the assessment bed or chair. However, this support should not correct their posture.
- The slide notes for slide 19 (page 72) in the *Trainer's Manual* includes "some trunk rotation (back on the left side)" and "the left leg has rolled inwards". There may be disagreement from some participants. If this happens:
 - Ask participants to focus on the major deviations: the rotation of the pelvis and rolling outwards of the right leg.
 - Acknowledge that it is difficult to identify subtle postural changes by observing from one angle only. To understand a person's posture fully you must observe from the front, side and back along with identification of key anatomical/bony landmarks.

e. Section 8. Recording posture

Posture drawing tips

- If participants find it difficult to draw the postures, suggest that they draw posture lines onto the body of the person in the illustration, before drawing the posture freehand in the box provided.
- The small circles and points/corners on the pelvis represent the bony landmarks of the pelvis – the ASIS, PSIS and ITs.
- The small circles drawn on the pelvis are not essential, but they can be helpful to emphasize the position of the pelvis.
- It is important for trainers to choose one way to draw the thighs and to be consistent.



B.3: Physical assessment – pelvis and hip posture screen

Errors in the WSTP materials

a. Section 2. Pelvis and hip posture screen

- Slide 6 is missing from the PPT file. The PDF version is correct.

Key considerations for teaching this session

a. General

Tips for preparation

- Lead and support trainers should prepare for this session together to ensure consistency in teaching the practical skills. For example, correct hand placement, use of the goniometer, and correct position of the model wheelchair user.
- Temporary supports need to be prepared in advance and should be made from the local material most commonly used for the cushion base.
- An anatomical model of the spine and pelvis with short femurs, or a child size doll (if available), can help to demonstrate the application of temporary supports.

b. Section 2. Pelvis and hip posture screen

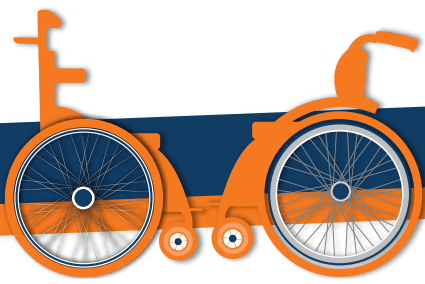
- Be respectful in how you position yourself – move around the wheelchair user and avoid leaning over them.
- Protect your back by:
 - positioning the wheelchair user near the side of the assessment bed to avoid leaning over them
 - kneeling down rather than bending.

- Begin by checking the wheelchair user's posture in lying before starting the pelvis and hip screen. This includes:
 - level the shoulders – using the end of the bed as a reference point
 - line up the head, neck and upper trunk with the side of the bed as a reference point.
- Demonstrate good handling of the wheelchair user's limbs and body. Gripping too hard may cause discomfort.
- To relieve tension in the hips, support the wheelchair user's knees when carrying out the pelvis and hip screen. If there is too much tension around the hips it can pull the wheelchair user's pelvis into a non-neutral posture.
- Ensure the wheelchair user's clothing is not preventing free movement of their hips.
- Emphasize the hand placement of both the assessor and the assistant (as described on page 84 of the *Trainer's Manual*). Feedback from the assistant is key to an accurate screening.
 - The assessor's hands support the weight of the legs. The assessor's hands should not restrict knee bending (flexion) as tension at the back of the knee (tight hamstrings) may cause the pelvis to move.
- Demonstrate correct use of the goniometer.
- Sometimes participants try to mimic a restriction. This usually only causes confusion. Remind them to focus on learning the steps and the technique, and they will feel real restrictions during the practical sessions.

Summarize by showing the DVD.

Considerations for gender/culture

- When demonstrating, or asking participants to carry out a pelvis and hip posture screen, divide participants into groups based on gender.



c. Section 4. Demonstration of temporary support for fixed unlevel pelvis

- If participants suggest adding a support under the lower side in order to level the pelvis:
 - explain that the pelvis posture cannot be corrected to a level neutral pelvis
 - pushing against the seat bones of an unlevel pelvis will cause high pressure, which may lead to a pressure sore.
- Emphasize the findings in the pelvis and hip posture screen. If participants were not able to level the pelvis in lying, the pelvis will remain unlevel in sitting.
- This PSD is not used in isolation. Wheelchair users with a fixed unlevel pelvis may need several other PSDs to support their posture.

d. Section 5. Demonstration of temporary support for the hips that cannot bend or open to neutral sitting posture

- Consider demonstrating using an anatomical spine or doll before requesting a volunteer.
- Demonstrate that the hip cannot bend to neutral in lying.
- Highlight the triangular space created by a vertical line from the back of the knee to the assessment bed (Figure 3).

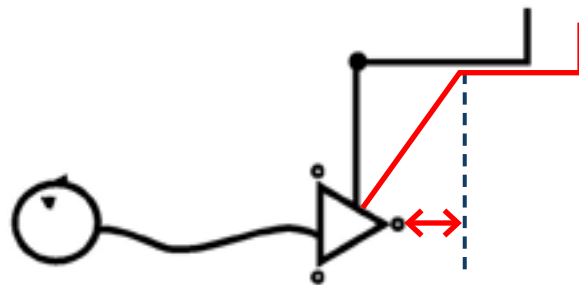


Figure 3. Temporary support

- The distance from the line to the seat bone is the height of the temporary support required to stop the thigh pushing the pelvis into a posterior pelvic tilt.
- Measure the trunk to thigh angle.
- Sit the doll/model on a temporary support.
- Show the trunk to thigh angle is the same.
- The triangle gap under the thigh is the shape that must be created in the front section of the cushion on that side to accommodate the hip that cannot bend to neutral.
- Participants sometimes suggest filling the triangular space under the thigh with a wedge. This is possible but not necessary as it does not change the final posture of the pelvis.

B.4: Physical assessment – hand simulation

Errors in the WSTP materials

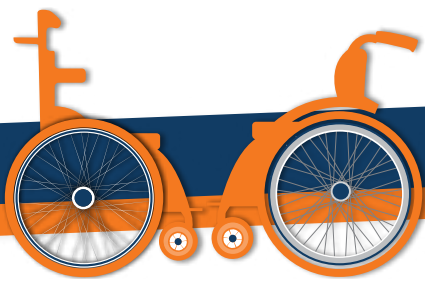
a. Section 3. Recording the results of a hand simulation

- On page 101 of the *Trainer's Manual* in the activity answer box, Enith's hip postures have been recorded as neutral. This is not correct, change the tick box to: "No" for the L Hip and R Hip.
- The notes are correct: "trunk to thigh angle more than 90 degrees".

Key considerations for teaching this session

a. General

- More time may be required if participants are not familiar with hand simulations or analysis of a wheelchair user's posture.
- Throughout the DVD case studies, emphasize the step by step approach:
 - give clear instructions to the assistant
 - begin with the position of the pelvis before moving to support other areas.
- Ensure participants understand that the final posture achieved during the hand simulation must be documented together with the supports needed. Documentation includes drawings, written descriptions and completing the checklist for each part of the body listed on the assessment form.
- If photographs are a standard part of service documentation, ask someone to take a picture after each change in posture.
 - Service personnel can review each photograph to help decide how they might change the support provided to the wheelchair user.
 - This can minimize handling and saves time.
- If photographs are used during the training programme, ask participants to record the results of hand simulations for wheelchair users they work with using the final photograph as a guide.



- Delete all other photographs and use only the final photograph in the documentation for the wheelchair user.

b. Section 2. How to carry out a hand simulation

- Some wheelchair users are physically able to sit more upright but they are unable to maintain this position. These users may need to be supported in a less upright position, with their pelvis in a posterior pelvic tilt, to be able to use their wheelchair throughout the day. From the more upright position, allow the wheelchair user's pelvis to gradually roll backwards, until you have found the best position where the user's head and trunk are balanced.
- Even with multiple assistants it is not always possible to carry out a hand simulation because firmer support is needed than can be provided with your hands alone. If this happens, consider using:
 - upholstered boards, foam or therapy blocks to provide more stable support
 - a wheelchair that can be mocked-up with temporary postural supports.
- It can be difficult carrying out a hand simulation with small children when they are upset. Consider:
 - sitting them sideways on the parent/caregiver's lap
 - taking frequent breaks
 - including the parent/caregiver in the assessment, for instance ask them to hold the child's feet or shoulders. Ensure that you give appropriate guidance about how much support they need to provide.
- It is important to compare the final posture achieved during the hand simulation with the results of the pelvis and hip posture screen. The final position of the pelvis and hips will usually be the same. Differences can be caused by:
 - using too much force during the pelvis and hip posture screen
 - insufficient support in sitting.

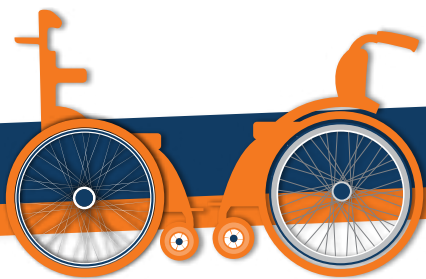
c. Section 3. Recording the results of a hand simulation

Content

- Use the *Notes for trainers* included in the *Trainer's Manual* to provide clarification when the whole posture is not visible.
- Allow time for all participants to practise how to record the final hand simulation, posture drawings and descriptions.
- To record a neutral posture, it must be neutral both from the front and the side.
- “Yes” is ticked for parts of the body that have achieved neutral posture with or without additional postural support during the hand simulation.
- All non-neutral postures (fixed or flexible part way to neutral) should be marked “No”.
- Although the pelvis and hip posture screen may identify a level pelvis and neutral hip range, the final posture is determined by the hand simulation. The final pelvis position may be in anterior/posterior tilt (non-neutral), resulting in the hips being open/closed more than neutral. The pelvis may be neutral but the hips closed because a raised seat front may have been added to provide stability.

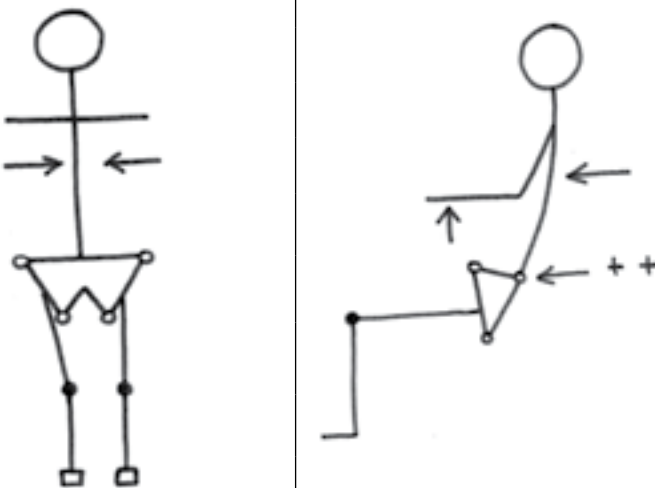
Enith

- Enith's pelvis and hip screen found that both her hips could bend to a neutral sitting posture.
- While both of her hips can come to 90 degrees in lying, she cannot sit in that position because her pelvis is fixed in a posterior pelvic tilt.
- When recording the results of the hand simulation, record the final posture achieved accurately.
- Some participants may suggest using a raised seat front PSD to close the trunk to thigh angle. Acknowledge that this can be done, but remind participants that the decision will be based on a whole picture of the wheelchair user's needs. Including a raised seat front in the final prescription may affect other things such as transfers and access under desks or tables.
- The *Trainer's Manual* describes the final posture of Enith and Bahati. See below for their final posture drawings.



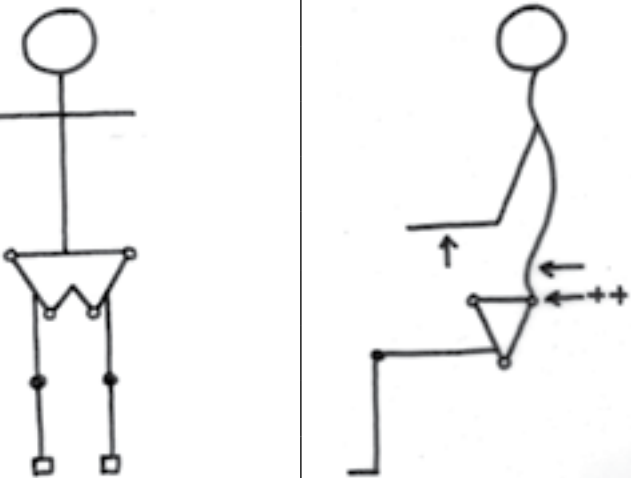
Enith

For each body part: If neutral sitting posture is possible with hand support, tick "Yes". If not, tick "No".

Part	Yes	No	Describe or line draw final sitting posture achieved by the wheelchair user with hand support. Describe or line draw the support provided to achieve that sitting posture.	
Pelvis	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Trunk	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Head	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
L Hip	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
R Hip	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Thighs	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
L Knee	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
R Knee	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
L Ankle	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
R Ankle	<input checked="" type="checkbox"/>	<input type="checkbox"/>		

Bahati

For each body part: If neutral sitting posture is possible with hand support, tick "Yes". If not, tick "No".

Part	Yes	No	Describe or line draw final sitting posture achieved by the wheelchair user with hand support. Describe or line draw the support provided to achieve that sitting posture.	
Pelvis	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Trunk	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Head	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
L Hip	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
R Hip	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Thighs	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
L Knee	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
R Knee	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
L Ankle	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
R Ankle	<input checked="" type="checkbox"/>	<input type="checkbox"/>		

B.5: Physical assessment – taking measurements

Errors in the WSTP materials

a. General

- The following are not listed in the resources and should be added:
 - two clipboards for each group of three participants
 - a set of foot blocks of different heights (or thickness).

b. Section 2. Measuring a wheelchair user to select the correct wheelchair size and location of PSDs

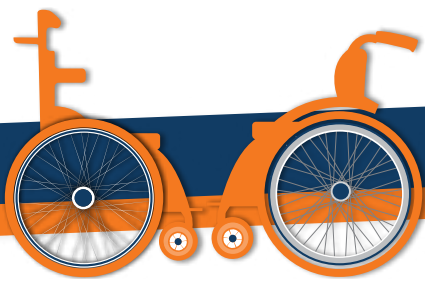
- On page 112 of the *Trainer's Manual* the drawing of Madavi's posture on slide 6 is incorrect. The drawing shows a lumbar spine with a neutral curve. However, when a user sits with their pelvis in a posterior/backwards tilt, their lumbar spine flattens and the trunk will be rounded – which causes a 'slumped' posture.
- The same error is in the *Reference Manual for Participants* on page 67. Guide participants to correct this in their manuals.

Key considerations for teaching this session

a. General

Tips for preparation

- Review the measurement notes in the *Trainer's Manual* and practise the measurement demonstration with all trainers to ensure consistency.
- Common errors to look out for during the activity may include:
 - the posture/support of the wheelchair user
 - inaccurate measurement techniques including: positioning the clipboards on an angle; starting from the wrong end of the tape measure; reading the tape measure with the head at an incorrect level.



- Avoid using participants for the demonstration, so that they are able to observe.
- Adjust for the context (such as thicker clothes in cold climates).
- If time permits, consider lengthening this session to allow each participant to practise taking all the intermediate-level body measurements.

b. Section 2. Measuring a wheelchair user to select the correct wheelchair size and location of PSDs

- In the *Trainer's Manual*, page 110, section I is titled: "Seat to the top of the pelvis (PSIS)". However, the PSIS is not the top of the pelvis. The top of the pelvis is the iliac crest.
- Trainers need to decide how best to approach this with their participants:
 - **Option 1:** Delete "to the top of the pelvis" from this sentence, and only refer to the PSIS. You will then need to change the *Reference Manual for Participants* on page 70.
 - **Option 2:** Use "the top of the pelvis" as a general term. If you choose this option, it is important for participants to understand that the PSIS sits below the "top" of the pelvis.
- Throughout the section emphasize the following points:
 - Take the measurements while the wheelchair user is still being supported in their final posture (as assessed during the hand simulation).
 - The type of wheelchair selected and PSDs required will help determine which measurements are needed. For example, for a wheelchair user who needs a full height backrest select measurement F: seat to top of shoulder. Measurement D: seat to bottom of rib cage and measurement E: seat to shoulder blade will not be necessary.
- If a wheelchair user has a fixed posterior tilt of the pelvis or a fixed forward curved trunk, participants need to think about how this will be accommodated in the wheelchair. This may change the way the seat depth measurement is taken.
- If the backrest can recline: measure from the bottom of the back of the pelvis to the back of the knee in a straight line (Figure 4).



Figure 4. Measuring for a reclining backrest

- If the backrest does not recline and an open seat to back angle is prescribed, it will need to be accommodated in the seat depth of the wheelchair.
- Body measurements for an open seat to back angle must include:
 - The distance from the apex of the c-shaped curve to the top of the seat (z).
 - The distance between the vertical line from the apex of the c-shaped curve to the top of the seat and the back of the pelvis (x) (Figure 5).

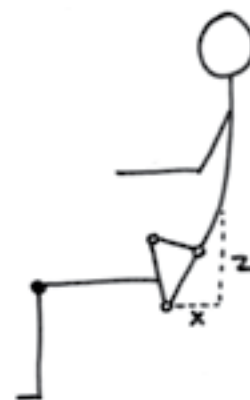
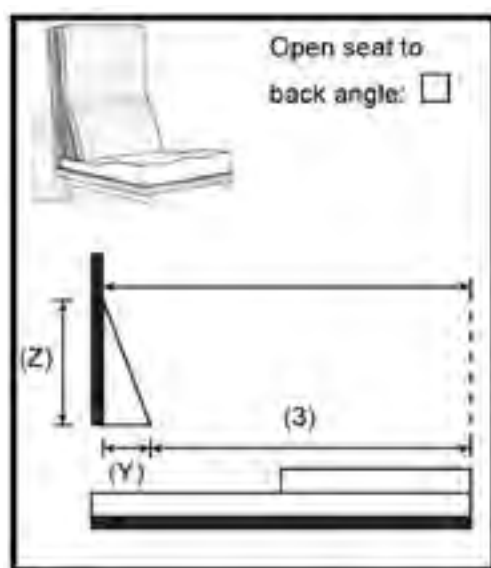


Figure 5. Measuring for an open seat to backrest angle

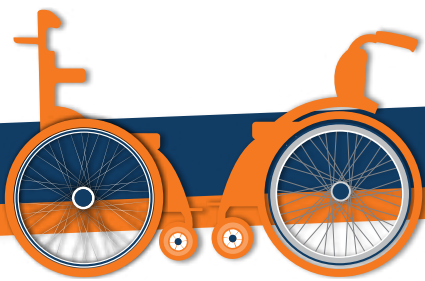
- Show how to calculate the total seat depth required when using an open seat to back angle PSD using Figure 6.



Wheelchair & PSDs	Dimensions (mm)
(Z) Length of triangle	
(Y) Thickness	
(3) Seat depth	
(3 + Y) Total seat depth	

Figure 6. Calculating seat depth

- It can sometimes be difficult to support wheelchair users in their final posture while taking measurements. Strategies to manage this include:
 - take frequent breaks
 - have more assistants available to provide postural support or to take measurements.



B.6: Selecting wheelchairs and cushions

Errors in the WSTP materials

a. General

- Sixty minutes is not sufficient time for this session. Allow 60 minutes for section 2 and 70 minutes for the total session time.

b. Section 2. Type of wheelchair and cushion

- In the *Trainer's Manual* on page 119, the drawings of the reclining backrest in slides 12 and 13 should not include a lumbar or rear pelvis support shape. Considering the indications for prescription (as listed in the slide notes), the wheelchair user will present with a pelvis in posterior tilt and consequently a flat or flexed lumbar spine.
- The lower section of the backrest should be represented as:
 - flat, or
 - with an open back to seat angle wedge (a likely PSD for the scenarios listed).
- Ask participants to correct the same error in the *Reference Manual for Participants* on page 74.
- On page 119 of the *Trainer's Manual*, the first bullet point next to slide 13: “Fixed posterior pelvis tilt with hip and knee flexion contractures” is not correct. Tilt in space is not an indication for fixed posterior pelvis tilt with hip and knee contractures. Delete the first bullet and add the following bullet points:
 - to improve head position and control
 - to improve balance.
- Ask participants to correct the same error in the *Reference Manual for Participants* on page 74.

Key considerations for teaching this session

a. General

Tips for preparation

- Ensure you are familiar with the wheelchairs and PSD components that are available locally:
 - study the manufacturers' information
 - know the available size range
 - check the adjustability options/range of features and ensure you can explain or demonstrate these
 - find out what can be customized, including any accessories available.
- Ensure that you are familiar with any changes to the local prescription forms before you deliver this session and incorporate them if appropriate.
- Local prescription forms should include the following:
 - identification of the type and size of wheelchair and cushion
 - detailed body and ideal wheelchair measurements
 - descriptions of PSDs
 - wheelchair user agreement signatures.

b. Section 1. Introduction

- Remind participants that an appropriate wheelchair is defined according to the *Wheelchair Guidelines* and that they should always consider whether a wheelchair with extra supports, or a dedicated supportive seat, would be most appropriate.

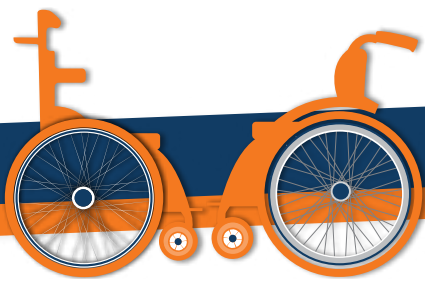
c. Section 2. Type of wheelchair and cushion

Tips for preparation

- Ensure that a range of wheelchairs, which demonstrate different features related to environment, function, fit and posture support, is available.
- Include both wheelchairs with dedicated posture support features and those to which PSDs can be added.

Content

- Consider the limitations of a dedicated posture support wheelchair for a user who only needs a manual wheelchair with PSDs:



- There may be a limited range of designs and sizes of posture support wheelchairs available.
- They may include features that are not needed, adding weight and cost.
- Posture support wheelchairs can be difficult to transport.
- For a wheelchair with ‘fixed’ tilt: the angle that will best support the wheelchair user must be selected at the time of prescription.
- For a wheelchair with ‘quick release’ or ‘adjustable’ tilt: the amount of tilt can be easily adjusted throughout the day to provide more or less support as needed. This can be helpful for a wheelchair user who is recovering after a serious injury or learning skills such as head control, and may not be able to sit in a more upright position for the whole day. Point out the wheelchairs that have these features.
- Remind participants that the wheelchair and PSDs required will also help determine the size of wheelchair required. For example, for a person who needs trunk side supports and a backrest that reclines between the back posts, the width of the wheelchair is determined by:
 - Body measurement G. Trunk width plus;
 - the thickness of both trunk side supports ($B \times 2$) (this equals the inside measurement between the back posts), plus;
 - width of the two back posts ($A \times 2$) (Figure 7).
- If the backrest is to be mounted in front of the back posts, the width of the wheelchair user’s trunk plus the thickness of both trunk side supports or pelvis/thighs (whichever is the widest) will help to identify the ideal width of the wheelchair (wheelchair component measurement 1 or 2).



Figure 7. Width of a wheelchair

B.7: Prescription (selection) of Postural Support Devices (PSDs) – introduction

Key considerations for teaching this session

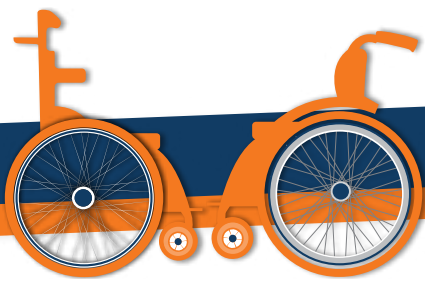
a. General

Tips for preparation

- Park questions about specific PSDs in the Car Park as they will be covered in the following sessions.
- Ensure that you are familiar with any changes to local prescription forms before you deliver this session. Incorporate local forms into the session if appropriate.
- Source examples of local PSDs for demonstration.
- Information about costs and suppliers can be prepared in advance and included as a separate handout. They should not be discussed as part of the session.

b. Section 2. What is a PSD?

- The selection of PSDs depends on the support needed, as identified during the hand simulation.
 - The **size** required (height and depth) is related to the amount of support needed. The more support needed, the larger the surface area of the PSD.
 - The **materials** selected depend on the firmness of support. For example, if light support is needed, you may prescribe trunk side wedges (made of firm foam underneath softer foam). If firm support is needed, you may prescribe trunk side supports made with a rigid structure (such as wood, metal, plastic) and lined with a softer material (such as foam, EVA).
 - The **shape** of the support depends on which part of the body is being supported. It should not restrict movement of another part of the body; for example, an armrest can interfere with propelling. The shape should not concentrate high pressure on a bony area, such as over the ribs, when accommodating a curve in the trunk. Shaping the support can spread the pressure over a larger area (reducing the risk of a pressure sore).
 - **Pressure** is very important. Every part of a PSD that is close to the body and hard enough to cause a pressure sore should be shaped appropriately and padded with an appropriate softer material (such as foam, EVA or neoprene).



c. Section 3. Recording PSDs on the intermediate wheelchair prescription (selection) form

- In slides 8 and 9 on page 130 there are examples of PSDs drawn onto a prescription form, with lines and letters representing where measurements are needed.
- When drawing on the prescription form, participants should concentrate on the shape and size of the firm foam only. Explain that every part will need to be covered with a softer foam layer, but it is not necessary to draw this.
- The shadow lines are there as a guide to make it easier to draw the PSDs. They do not represent a size or shape that you must use.
- The purpose of the drawing is to communicate the type, shape and size of PSDs required, so it is important that the drawing is clear.
- Adding shadow lines to the backrest and footrest drawings (Figure 8) can make it easier to sketch in the PSDs.
- You can add this shadow line drawing to the PPT and your assessment forms. A copy of the drawing is on the WSTP Pen Drive.

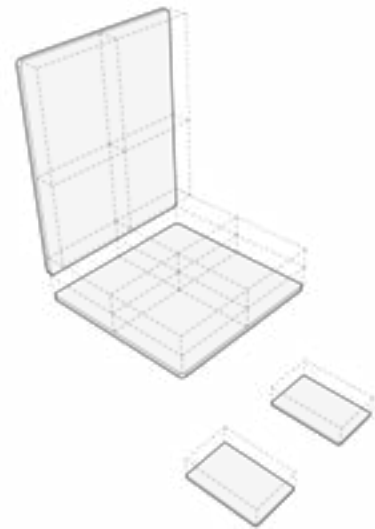


Figure 8. Using shadow lines to draw PSDs

B.8: Prescription (selection) of PSDs – stabilizing the pelvis

Errors in the WSTP materials

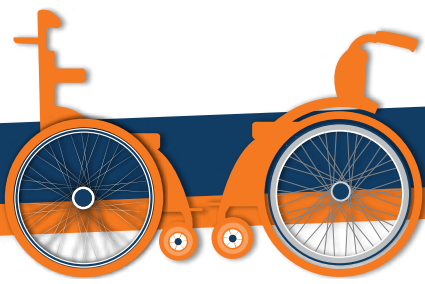
a. Section 2. Problem: Pelvis is in posterior tilt and/or slides forward

- In the *Trainer's Manual* on page 136, slide 8 shows a cushion with a pre-seat bone shelf.
- The illustration can sometimes be misunderstood. Explain that:
 - the bottom layer of the cushion is firm foam
 - the top layer of soft foam should be glued firmly to the pre-seat bone shelf.



Figure 9. Cushion with pre-seat bone shelf

- Replace the illustration on slide 8, with this new one (Figure 9) which can be found on the WSTP Pen Drive.
- In the *Trainer's Manual* on page 137 the illustration on slide 11 shows the dimensions for Marian's PSDs. The diagram shows two measurements. For the rear pelvis pad, the measurement line is incorrectly shown from the top of the seat to the bottom of the rear pelvis pad. The line should be from the top of the seat to the mid-height of the rear pelvis pad.
- For some versions of the WSTPi package, this error is also in the PPT (slide 11).
- Change this in your *Trainer's Manual* and PPT (if necessary).
- The measurement line is incorrectly shown from the top of the seat to the top of the rear pelvis pad in the *Participant's Workbook* on page 26. Guide participants to correct this.



Key considerations for teaching this session

a. General

Tips for preparation

- An anatomical model of the skeleton/spine/pelvis/hip is a very useful teaching tool. Trainers can use the model to:
 - identify bony landmarks
 - demonstrate where support needs to be provided
 - link the pelvis and hip posture screen, temporary supports (where appropriate) and hand simulation findings.
- Have the correct size and width of foam blocks and wedges available so you can quickly assemble the sample cushion solutions. For example, the raised seat front cushion in section 2 and the build-up for the pre-seat bone shelf cushion in section 3.

Content

Cushions

- All intermediate level wheelchair users should be provided with an appropriate cushion that supports their pelvis.
- Most intermediate level wheelchair users will need a cushion with a pre-seat bone shelf to help stop the pelvis from sliding forward. The pre seat bone shelf will also move some pressure away from their seat bones (providing pressure relief).
- Intermediate level wheelchair users who need a pre seat bone shelf and who are at high risk of developing pressure sores could be prescribed a cushion with a pelvic well (Figure 10).
- A pelvic well provides the same postural support as a pre seat bone shelf, and provides more pressure relief by further redistributing the weight and loading under the upper thighs (trochanters).

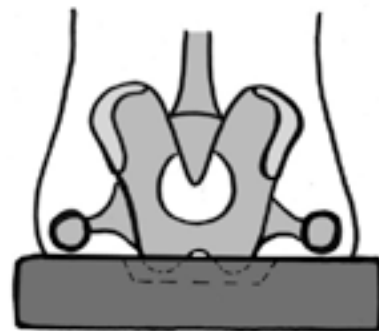
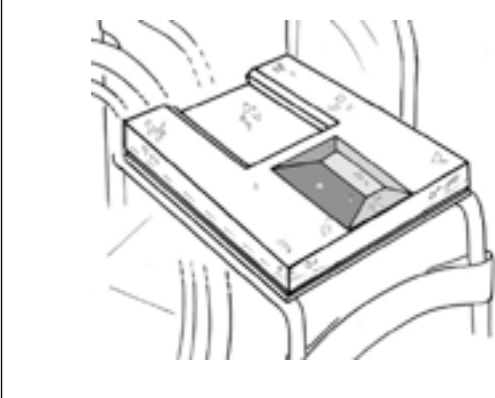


Figure 10. Cushion with a pelvic well

Pelvic well cushion shown with an inside thigh wedge: base layer



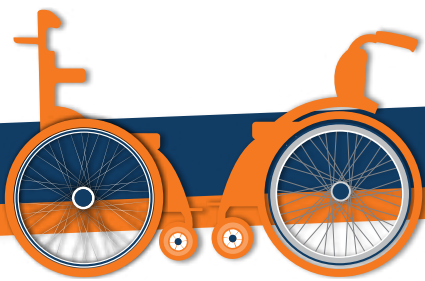
Pelvic well cushion shown with an inside thigh wedge.



b. Section 2. Problem: Pelvis is in posterior tilt and/or slides forward

Tips for preparation

- In the *Trainer's Manual* on page 136 the trainer's notes for slide 9 state: "A rear pelvis pad provides support at the top of the pelvis (at the level of the PSIS)". However, the PSIS is not the top of the pelvis. The top of the pelvis is the iliac crest. Trainers need to decide how best to approach this with their participants.
- **Option one:** delete "at the top of the pelvis" from this sentence, and only refer to the PSIS. If you make this change, you will also need to change:
 - the measurement table on page 25 of the *Participant's Workbook*
 - the *Reference Manual for Participants* on page 95 (third last paragraph)
 - measurement I in the Intermediate wheelchair assessment form.
- **Option two:** use "the top of the pelvis" as a general term for describing the top of the back of the pelvis. If you choose this option, it is important for participants to understand that the PSIS sits below the "top" of the pelvis.



Finding the PSIS

- Place hands on top of the pelvis and gently squeeze in to find the soft area. Then move the thumbs down below the level of the fingers (stretching the web of the thumb). The thumbs will be positioned close to where the PSIS are located, below the top of the pelvis (Figure 11).



Figure 11. Finding the PSIS

Content

- The appropriate angle to position a pelvic strap is between 45 degrees and 90 degrees (Figure 12).
- However, a 45 degree belt can encourage the wheelchair user to sit with a posterior pelvic tilt, especially when firm support is needed.
- An angle of 60 to 90 degrees is more effective for a wheelchair user who tends to slide forward on the seat.

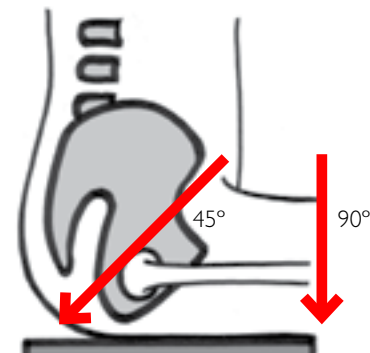






Figure 12. Positioning a pelvic strap

Rear pelvis support for adults with neutral curves of the spine

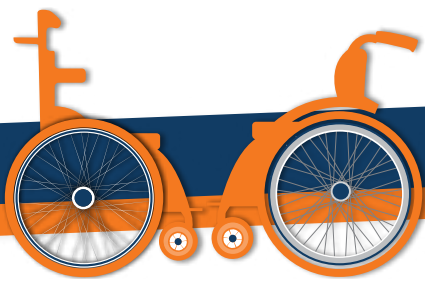
- A rear pelvis pad is designed to keep the pelvis upright and prevent posterior pelvic tilt for wheelchair users with normal lumbar/thoracic curves.
- It is designed to fill up the pelvic-trunk offset (the difference between the back of the pelvis and back of the thoracic spine) in a wheelchair with a flat backrest.
- If the pelvis cannot be corrected to neutral, or the wheelchair user does not have neutral curves of the spine, a rear pelvis pad should not be used.

Pelvic-trunk offset	A rear pelvis pad used with a straight backrest
	

- If the backrest has a backwards bend, or is a *tension adjustable backrest* that supports the pelvis to be upright (and accommodates the neutral curves of the spine), a rear pelvis pad may not be needed.
- A rear pelvis pad can be added to these types of backrests if more support is needed.

Backrest with a backwards bend	Tension adjustable backrest
	

- Do not over correct the pelvis. If the wheelchair user cannot tolerate an upright or close to upright posture, provide less support and allow the user to sit with a posterior pelvis tilt. The wheelchair user may benefit from an open seat to back angle to support the less upright posture.



Rear pelvis support for children with neutral curves of the spine

- Rear pelvis pads must not be used with young children.
- For young children, a neutral posture has a flat lumbar spine and a forward bend in the thoracic area (Figure 13).
- If a rear pelvis pad is used, it will push the pelvis forward into anterior tilt and/or push the wheelchair user away from the backrest. This can cause discomfort, pain and postural problems.



Figure 13. Neutral posture in young children

c. Section 3: Problem: Pelvis is in lateral tilt (fixed unlevel pelvis)

Fixed unlevel pelvis

- The height of a build-up under the pelvis will be a similar size to the height of the temporary support used during the hand simulation.
- The height of the temporary support is similar to the difference in height between the two ASIS in the most corrected pelvis posture (as determined in the pelvis and hip posture screen).

Unlevel pelvis – flexible to neutral

- Sometimes when a wheelchair user's pelvis is flexible to neutral, participants suggest building up the pelvis under the low side to correct it. This is unsafe, because it increases the pressure underneath the lower seat bone.
- Providing pelvis side pads and a firm pelvic strap to support the pelvis will help to achieve an aligned and balanced posture. You may also need to provide support to the wheelchair user's trunk.

d. Section 4: Problem: Pelvis moves to one side

Tips for preparation

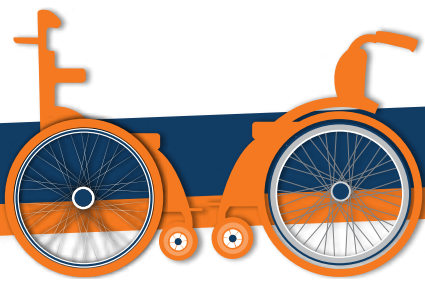
- Add the following note to slide 22 on page 143 of the *Trainer's Manual*:
 - “If the pelvis can no longer be corrected to be in line with the shoulders, the pelvis side pads will be off-centre”.
- Ask participants to add this sentence to the *Reference Manual for Participants* (at the bottom of page 96).

Content

- Pelvis side pads can be fixed to the seat, armrests, backrest or the back posts.
- Pelvis pads fixed to armrests or seats are more likely to interfere with the thighs, unless they are shaped correctly.
- Those attached to the backrest or back posts are less likely to interfere. These can be shaped from the top of the pelvis to just above the top of the thighs.
- If you need to position the pelvis side pads off-centre, you can achieve this by:
 - making one pelvis side pad thicker than the other
 - attaching the pads asymmetrically/off-centre.

e. Section 6. Key point summary

- Encourage participants to try different options and approaches with the wheelchair users in the practical sessions and when working with wheelchair users in their own services.



B.9: Prescription (selection) of PSDs – supporting the hips

Key considerations for teaching this session

a. General

Tips for preparation

- Throughout the session, link the postures to: the pelvis and hip posture screen; temporary supports needed; and the hand simulation results.

b. Section 2. Supporting the hips

Tips for preparation

- If available, an anatomical model of the skeleton can help to demonstrate various postures.

Content

- Refer to notes for session *B.3: Physical assessment – pelvis and hip posture screen*, for tips on how to determine the height of the temporary support for hips that cannot bend to neutral.
- Sitting with both seat bones on a temporary support allows the spine to be assessed without the influence of the limited hip movement (contractures).
- Once the spine has been assessed, remove the temporary support and position the pelvis in a posterior pelvic tilt.

B.10: Prescription (selection) of PSDs – supporting the trunk

Errors in the WSTP materials

a. Section 2. Supporting the trunk

Case study: Josephine

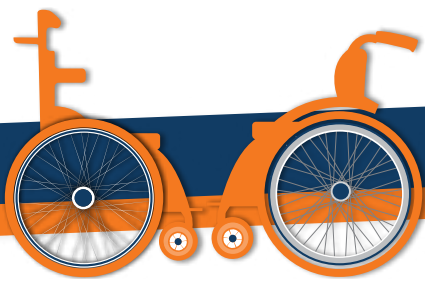
- In the *Participant's Workbook* (pages 34–35) Josephine's case study states that she is using a long wheelbase wheelchair, however the illustration shows Josephine in a short wheelbase wheelchair.
- Provide a long wheelbase wheelchair to the group working on Josephine's case study, and advise them to note the error in their workbook.
- Josephine's hand simulation results record that her left hip can come to neutral. This is incorrect – if the pelvis is not neutral, the L hip cannot be neutral.
- Guide participants to change this information in their case study information in the boxes on pages 34–35.
- Make a note of this change in the *Trainer's Manual* on page 160.

Key considerations for teaching this session

b. General

Tips for preparation

- This session requires a number of resources that need to be prepared in advance. Consider creating a training resource kit that can be reused in future training programmes.
- If participants need to shape and cut PSDs, add the tools required to the resources list in the *Trainer's Manual*.
- Add rolls of tape to the resources list for participants to mock up the PSDs. Emphasize that these materials and their methods of attachment are for training purposes only.
- When preparing PSD kits and PSD materials, try to use the same type of PSDs and materials that participants will use in their workplace. If these are not available, you can use low-cost replacements. Explain to participants that this is for training purposes only:



- use cardboard to represent wood for a solid back/seat and trunk/pelvis side supports
 - use Styrofoam, plastic foam pieces from discarded packaging material or woven grass mats to represent foam.
- If there aren't enough materials to complete mock-ups, ask participants to describe the changes they would make and how they would make them.
 - The case studies describe the type of wheelchair for each user:
 - if the type of wheelchair is not available, provide a locally available alternative
 - ensure the wheelchair does not have any PSDs attached
 - discuss the wheelchair with the group; identify any key changes between the wheelchair provided and the wheelchair described in the case study.
 - If a child size wheelchair is not available for Sian (case study 3), advise participants to use a different size and focus on the postural support required.

c. Section 2. Supporting the trunk

Tips for preparation

For the whole group activity (page 156):

- Ensure that the benches or tables that the participants sit on are not too wide, or it will cause their legs to straighten. Chairs with flat, horizontal seats can also be used by placing the side of the chair against the wall.

Content

For the case studies in the activity:

- Remind participants that the focus is to problem solve and consider all possible solutions.
- Ask them to start with the seat base, which includes pelvis and hip supports, and then to follow the same sequence as hand simulation.
- If participants are choosing solutions that are not appropriate, ask them to explain their reasoning. Lead a discussion on the clinical or functional problem that their solution may create and ask what they can do to overcome it.

Correction of common misunderstandings. Case study 1: Mark

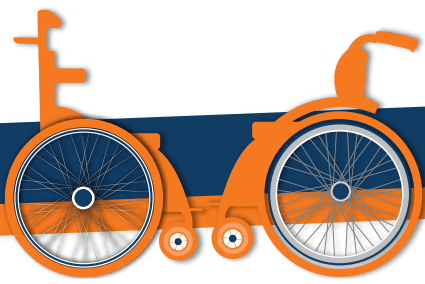
- Backrest too high. Remind participants that the findings of the hand simulation indicated that the wheelchair user needed support behind his shoulder blades. This indicates that back support to mid thoracic level is needed, not to the top of his shoulders. A backrest at the level of the shoulder blades will affect arm function.
- The backrest should provide the level and height of support as indicated by the hand simulation.
- If a lower backrest is provided, the wheelchair user may not be stable.
- The support behind the shoulder blades will not usually affect shoulder function.

Correction of common misunderstandings. Case study 2: Josephine

- The rear pelvis pad is selected instead of an open seat to back angle: Refer to the discussion about supporting the pelvis in session *B.8: Prescription (selection) of PSDs – stabilizing the pelvis; Section 2. Pelvis is in posterior tilt and/or slides forward (Trainer's Manual page 134)*.
- No pre-seat bone shelf is prescribed.
- Incorrect position of lowered seat front on one side. For a hip that cannot bend to neutral, the slope of the lowered seat front on one side should start just in front of the pre seat bone shelf.
- Too much recline. When reclining the backrest between the back posts, stop reclining just before the wheelchair user's shoulders make contact with the back posts.
- Using seat and back rest tilt. Participants should first focus on the pelvis and hip PSDs, followed by trunk support, before checking the need for tilt.
- If the trunk to thigh angle caused by her posterior pelvic tilt is the same or greater than the trunk to thigh angle caused by her hip not being in neutral (100 degrees), no cushion modification will be needed.

Correction of common misunderstandings. Case study 3: Sian

- Building-up under the low side of the pelvis. Refer back to the discussion on supporting the pelvis in Session *B.8: Prescription (selection) of PSDs – stabilizing the pelvis; Section 3: Problem: Pelvis is in lateral tilt (fixed unlevel pelvis)*.
- Raised seat front position. The raised seat front slope should start directly in front of the pre-seat bone shelf and extend to the front of the cushion.
- Adding a rear pelvis pad. Sian is 3 years of age; his lumbar curves will not have developed. A flat backrest is appropriate for children of this age.



Children with poor trunk and head control:

- A child's neutral posture has an upright pelvis, flat lower back with a slight bend in the thoracic spine, with the upper trunk leaning slightly forward (Figure 14).
- This means that a child's upper trunk does not make firm contact with a flat backrest.
- Children with low muscle strength/poor trunk control will generally find it difficult to keep their upper trunk and head upright.
- Some children may need more support.



Figure 14. A child's neutral posture

To help a child sit more upright:

1. Add a pre seat bone shelf, open seat to back angle and pelvic strap – assess:
 - Are they able to maintain this posture?
 - Do they need more support?

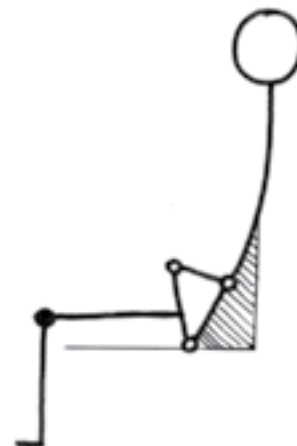


Figure 15. Open seat to backrest angle

2. If they need more support:

- Add a tray – assess:
 - Are they able to maintain this posture?
 - Do they need more support?
- Add a shoulder harness – assess:
 - Are they able to maintain this posture?
 - Do they need more support?

3. If they need more support: Add tilt seat and back (tilt in space) (Figure 16).

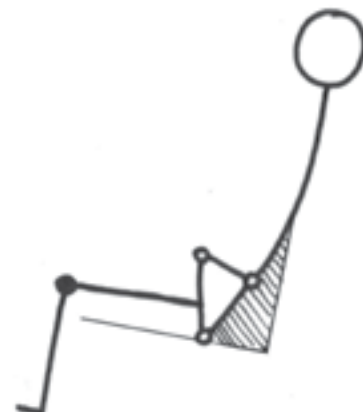


Figure 16. Tilt in space

B.11: Prescription (selection) of PSDs – supporting the head, thighs and lower legs

Errors in the WSTP materials

a. *Reference Manual for Participants*

- On page 106 of the *Reference Manual for Participants*, in the heading “Problem: one or both knees bend and are fixed less than neutral sitting posture”, replace the text in the brackets “trunk to thigh angle is more than 90 degrees” with “thigh to lower leg angle is less than 90 degrees”. Guide participants to make this change in their manuals.

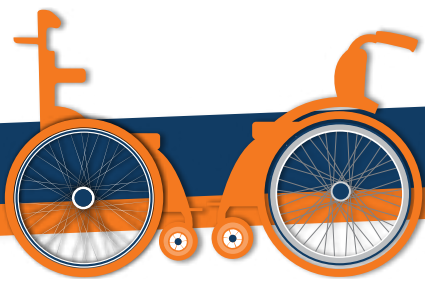
Key considerations for teaching this session

b. Section 3. Supporting the thighs

Content

Common errors in the activity case studies:

- Adding PSDs before first addressing problems with the wheelchair and/or cushion. Emphasize the importance of basic level wheelchair principles in creating a good foundation for posture.
- Not providing enough support for the wheelchair user’s thighs. Hand simulation results indicate where supports are needed and how much support is required. This includes the size, shape and firmness of the PSDs.
- Not addressing functional implications of any PSD added to the wheelchair and/or cushion – such as transfers or propelling of the wheelchair.
- Slide 11 on page 169 of the *Trainer’s Manual* shows an illustration of outside thigh wedges on a cushion with a pelvic well. This is an example of combining more than one PSD on a cushion. Not all cushions that include an outside thigh wedge need to have a pelvic well.
- This also applies to slide 15 on page 170, which shows inside thigh wedges with a pelvic well cushion. For more information on pelvic wells, see *Key considerations for teaching this session for B.8: Prescription (selection) of PSDs – stabilizing the pelvis*.



- Slide 13: Knee separator pad. The height of the cushion increases at the front when a pre-seat bone shelf or raised seat front is added. Depending on the design of the knee separator pad this may affect its position in relation to the wheelchair user's knees.

c. Section 4. Supporting the lower legs and feet

Problem: one or both knees bent and fixed less than neutral sitting posture (page 173).

- An additional solution (not listed) is to add a raised seat front. This flexes the hips (closes the trunk to thigh angle) and brings the feet forward from underneath the seat.
- Sitting with hips bent more than neutral does not increase the risk of developing contractures more than sitting in a neutral posture. However, it is good practice to advise wheelchair users to:
 - rest out of their wheelchair lying on their stomach to stretch their hips each day
 - spend time in their standing frame each day.

B.12: Product (wheelchair) preparation

Key considerations for teaching this session

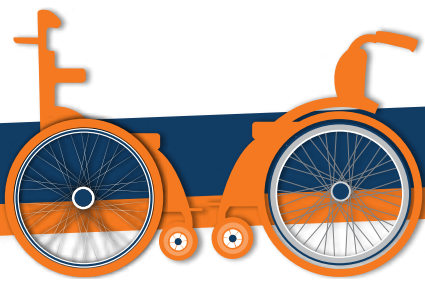
a. General

Tips for preparation

- Trainers need to be familiar with wheelchairs and materials that are locally available. Familiarize yourself during the planning stages of the training programme. If you are not based locally, you can do this by:
 - asking local services to send information and photographs of available materials
 - arriving before the training programme starts, with sufficient time to review prepared materials and to search for alternatives if necessary.
- Resources required for the training programme may vary in each location depending on:
 - local manufacturing of garments, shoes or backpacks, which may increase access to different types of fabrics, webbing, buckles, Velcro and EVA
 - local furniture making and construction industries may increase access to different materials such as timber, plywood, fasteners and steel tubing.
- There may be a supply of donated PSD components from international donors. For example, straps, head supports, harnesses or trunk side supports.
- Review the information beginning on page 110 of the *Reference Manual for Participants* for general information about materials and tools, so that you can refer to it during the discussions.
- It is helpful to have a trainer with good technical expertise for this session, and to have technical assistance for the product preparation.

b. Section 1. Introduction

- Consider which wheelchair offers the best features for the environmental and functional needs of the wheelchair user, and whether their fit and posture support needs can be adequately met by adding the required PSDs. Choosing your PSD's based on the support provided during the hand simulation will give the best solution, as only the necessary posture support features will be provided.
- Dedicated posture support wheelchairs can offer more features than the wheelchair user needs. If possible, remove those that are not needed.



B.13: Fitting

Key considerations for teaching this session

a. General

- Participants should be familiar with the fitting process from the WSTPb.
- Basic level service provision is a linear process (one step after the other). Intermediate level provision is completed in cycles. Participants may need to use the fitting checklist repeatedly as the wheelchair and PSDs are adjusted and modified from the initial prescription (see slide 3, page 182).
- If time allows, trainers can make the session more interactive. For example:
 - Using a volunteer, ask participants to demonstrate items on the checklist that they learned at the basic level check.
- Most basic level wheelchair users are able to sit in an upright/neutral posture by the end of the fitting process. At the intermediate level, many wheelchair users will not be able to sit in an upright/neutral posture. Participants may be unsure if they have achieved the best possible posture for the user. If this happens:
 - Link the findings of the pelvis and hip posture screen and hand simulation to the final posture achieved at the end of the fitting process.
- If the final posture does not closely match the posture achieved at the end of hand simulation, it may be due to:
 - assessment errors in the pelvis and hip posture screen
 - overcorrection of the postural problems during the hand simulation; which then require adjustment of the final prescription to improve comfort, balance or tolerance of the new posture
 - a long delay between assessment and final fitting; the wheelchair user's posture may have changed since the assessment. In this instance, you may need to repeat the pelvis and hip posture screen and hand simulation.

B.14: User training

Key considerations for teaching this session

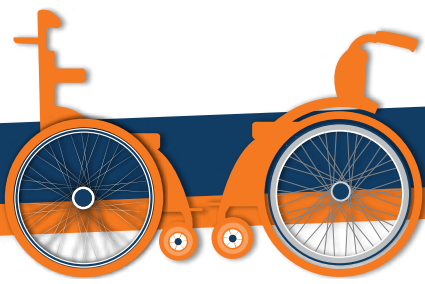
a. General

Tips for preparation

- Lead and support trainers should review and practise the skills related to wheelchair mobility and transfers to ensure they are consistent in their approach.
- Check that wheelchairs are in working order with all parts attached.
- Make sure the wheelchairs chosen match the products in each of the stories as closely as possible.
 - Joshua: a product with tilt-in-space and anti-tip features.
 - Sangita: a children's product (if possible) with quick release wheels, pelvis strap and pads.
 - Kim Som: a standard wheelchair with cushion and backrest PSDs.

b. Section 2. User training – wheelchair user's stories

- Although only one person in each group is designated as the wheelchair service personnel, ask groups to work together to identify each skill that needs to be taught and the correct way to teach it.
- The roles are designed to highlight the different aspects of wheelchair user training; it is not expected that only one person will complete the activity.
- Closely monitor how the skills are taught. Participants should explain, demonstrate, observe the practice and give feedback.
- Check that all the wheelchair features such as folding, removing/fitting removable parts such as rear wheels and trays, are demonstrated clearly to wheelchair users and their families.
- It is essential that WSTPi participants understand the features and can demonstrate them competently to the user and / or their family.



B.16: Maintenance, repairs and follow up

Key considerations for teaching this session

a. Practical follow-up activities

Tips for preparation

- The training timetable does not include practical follow up sessions. If time allows, trainers can arrange follow up appointments with local wheelchair users, either in a service or home environment.
- Have some local wheelchairs available for this session to highlight any learning points or answer questions from participants.
- Have a set of common care, maintenance and repair tools available to show participants.

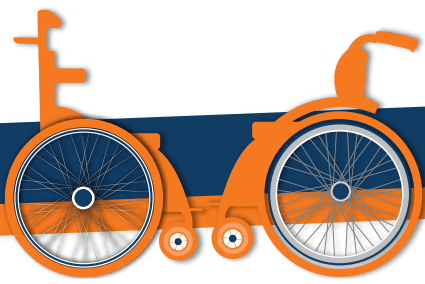
b. Section 2. Overview of follow up

- All intermediate level wheelchair users will benefit from regular follow up.
- Wheelchair users who need more frequent follow up (every 3 to 6 months) include:
 - children: PSDs must be adjusted to accommodate changes in growth, function (such as head or arm control) and/or posture
 - wheelchair users with progressive conditions or whose functional abilities or weight are likely to change.
- Follow up can be the most difficult aspect of wheelchair service provision, especially follow up in the wheelchair user's home. This may be due to limited resources for transportation; limited personnel available; or long distances between the service centre and the wheelchair user's home.
- Follow up appointments are very important. They help service providers to:
 - check that wheelchair users are able to use their wheelchairs safely
 - check that the wheelchair is working properly
 - carry out basic maintenance such as pumping up tyres and adjusting brakes
 - provide additional wheelchair user training
 - receive feedback on how the service is performing
 - collect wheelchair user stories that demonstrate the need for the service
 - understand how the products are being used and if they are appropriate for their environment and intended function.

- Where there are barriers to follow up, trainers can lead a discussion to find local solutions (if time permits). These could include:
 - using community-based organizations to carry out follow up
 - providing transportation assistance for wheelchair users to attend follow up appointments
 - creating a community schedule for follow-up, with personnel completing several home visits in one area
 - arranging follow up appointments when the wheelchair user is already in the area for another appointment, for example a doctor's appointment.

c. Section 3. Wheelchair follow up form

- Remind participants that more maintenance and repairs may be required for intermediate level wheelchair users because:
 - their wheelchairs generally have more parts that can wear out or come loose
 - some intermediate level wheelchair users have strong spasms or patterns of sitting that can put extra pressure on PSDs.



Practicals one to four

Key considerations for teaching this session

a. General

Tips for preparation

Duty of care

- Trainers have a duty of care to ensure appropriate wheelchairs, cushions and postural support devices have been provided to wheelchair users who have participated in the training programme.
- Wheelchair users should not leave the training programme with a product that the trainer feels is unsafe or not functional for them or their family. If a wheelchair cannot be provided, ensure that another appointment is made with the user's local service provider to complete the prescription, fitting and user training.
- Trainers must identify the service or service personnel who are responsible for following up wheelchair users. All relevant documentation should be provided to the service provider, including assessment and prescription forms.
- Trainers must provide wheelchair users with contact details of a local service provider who can provide assistance, repairs and follow up.

Wheelchair users

- Nominate a liaison person from the host organization or training team. Their role is to:
 - greet wheelchair users as they arrive for practical sessions
 - follow up with any wheelchair users who have not arrived for practical sessions
 - liaise between the service and the training team
 - identify a suitable area where wheelchair users and their families can wait for their appointments to begin
 - where food and refreshments are being provided, remind the catering service of everyone's needs at least one day in advance
 - ensure photo permissions have been completed before any pictures are taken.

Group allocation

- Consider how you divide participants into groups to ensure a good learning experience:
 - It may be helpful to group participants from the same service together and to mix clinical and technical participants.
 - Consider grouping more confident/talkative participants together and less confident/quieter participants together as they may work at a similar pace.
 - Think about cultural considerations such as language and whether to have mixed-gender groups for assessments.

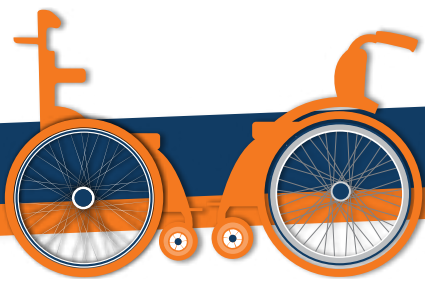
Supervision of groups during the practical sessions

- Allocate specific trainers to each group to help them coordinate practical sessions.
- The lead trainer should supervise fewer groups if possible, so that they have enough time to check in with the support trainers.
- Give participants the timing for each step in line with the *Trainer's Manual*.
- Monitor the time and regularly update participants on the time remaining.
- Keep groups with the same trainer throughout the practical sessions.

b. Practical One: Assessment and prescription (selection)

Tips for preparation

- Set up the practical area so that each group has enough space to complete their assessments privately.
- A screen can be used if private rooms are not available (for example, to look at a pressure sore).
- Provide each group with the equipment needed for the assessment and prescription. Assign responsibility to one group member to return the equipment after *Practical Three*.
- Allocate a different team member to lead each part of the assessment and prescription to share the experience between the group members.
- Encourage participants to wait for their colleague to finish each section before asking additional questions; the assessment process will flow more smoothly and the focus will stay on the wheelchair user.



Content

- Monitor the physical assessment closely and help groups to correct errors that will influence the prescription (for example, errors with the pelvis and hip posture screen, hand simulation or incorrect measuring technique).
- Trainers may want to perform the pelvis and hip posture screen independently to verify the participant's findings.
- Ensure that participants follow the sequence on the assessment form. For example, body measurements need to be converted to wheelchair measurements before deciding the wheelchair prescription.
- The wheelchair user should be an active participant during the prescription process. Ensure that participants have discussed wheelchair options and features with the wheelchair user before the final prescription is made.
- Have sample wheelchairs available to show wheelchair users and family members; this will help them to make informed decisions.
- Ask each group of participants to explain the clinical reasoning for their prescription before signing their prescription form.

c. Practical Two: Product (wheelchair) preparation

Tips for preparation

- Refer to the *Technical Annex* in this manual for more information on how to set up the room for product preparation.

d. Practical Three: Fitting and user training

- Ensure that sufficient time is allocated for user training; it should not be rushed.

e. Practical Four: Assessment, prescription (selection), product (wheelchair) preparation, fitting and user training

- Consider organizing participants into different groups to enhance their learning outcomes.
- Remind participants to work in a structured manner to complete the first five steps of wheelchair service delivery in the time allocated.
- Participants must allocate tasks to all members of their group. For example, during product preparation one person can complete wheelchair adjustments; another can prepare the cushion; and another can prepare PSDs.
- Good task allocation will ensure that all steps are completed within the allocated time.

B.15 and B.17: Putting it all together and Trainer's feedback, discussion and closing ceremony

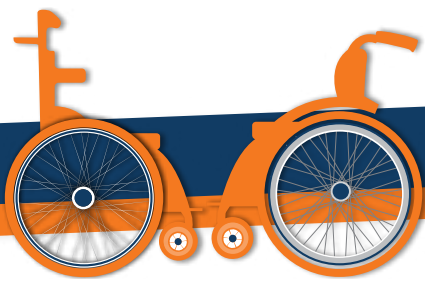
Key considerations for teaching this session

Tips for preparation

- Allocate a trainer to download and organize the before and after photographs needed to illustrate each presentation. This task should be done during a break.
- Display before and after photographs side by side as an effective way of showing the impact and outcome of the fitting.

Content

- Allocate support trainers to help the groups prepare.
- Tell participants that you will give them 5 and 1 minute warnings to ensure that each presentation is limited to 10 minutes.
- Some participants may need support when choosing which information to include in their presentation. Use the *Putting it all together* section on page 49 of the *Participant's Workbook* as a guide.
- During the presentation and facilitation, trainers should highlight:
 - the link between the pelvis and hip posture screen, hand simulation and the final posture achieved
 - the link between the supports identified during hand simulation and final PSDs selected
 - how the selected wheelchair features meet the wheelchair user's environmental and functional needs.
- Facilitate discussion about the case studies presented, ensuring that questions and feedback from the group are balanced and focused on key assessment findings and interventions.
- In less-resourced settings there is a limited range of wheelchairs and PSDs available.
- Compromises are always necessary, it is a matter of finding the right balance between achieving the best possible outcome for the wheelchair user and keeping them safe at all times.



Logistics and Preparation

The *Trainer's Manual* includes a comprehensive list of facilities, printed resources, materials and equipment needed to successfully organize a WSTPi training programme. The trainer coordinating the training programme will usually liaise with the local host to decide who takes responsibility for each aspect of the logistics and preparation.

The trainees will gain experience and skills in handling logistics and preparation tasks during their co-training. The trainer coordinator will divide up these activities among trainees and then monitor and support them.

Facilities

A full list of facilities needed is included on page 14 of the *Trainer's Manual*.

Translation services may be needed if the WSTPi trainers do not speak the same language as participants. These services are usually in high demand and should be booked well in advance. Costs will need to be added to the training budget.

Printed resources

Materials must all be printed locally. A full list of printed resources needed for the WSTPi can be found on pages 15–16 of the *WSTPi Trainer's Manual*. Use the checklist in the *Trainer's Manual* to ensure that you have printed the correct number of materials.

Materials and Equipment

A list of materials and equipment needed for the WSTPi can be found on pages 17–18 of the *WSTPi Trainer's Manual*.

Wheelchairs

The *Trainer's Manual*, at the top of page 18, refers to examples of locally available wheelchairs and cushions. If there are many different wheelchairs available, select a range of the most commonly used models. If possible, include a floor seat for infants.

Do not include motorized wheelchairs as these are not covered in the WSTPi.

Ensure that all wheelchairs are in good working order (tyres pumped up and bolts tightened) and have a cushion.

There should be a wheelchair, cushion and postural supports – or materials to make cushions and postural supports – for each wheelchair user who attends the practical sessions.

Technical work area

A technical work area with a variety of tools and materials needed for modifications should be made available or created. This may have budget implications for the training.

Power supply

Where there is unreliable electricity, a generator with an in-line uninterruptible power supply (UPS) should be arranged for back-up. This also needs to be added to the equipment list on page 17 of the *Trainer's Manual*.

Planning for training

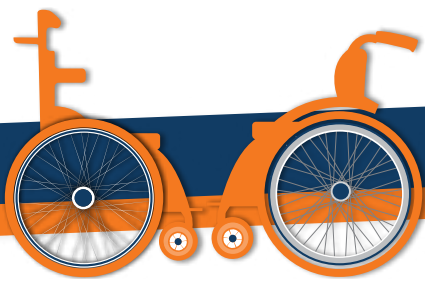
The most important activities and approximate timelines for planning a WSTPi training programme are listed here.

8 to 12 months in advance

- Develop a budget for the training programme.
- When multiple partners are involved, agree on the responsibilities of different partners.
- Identify dates, a venue, trainers, participant profiles and information on the local context such as: general policies and procedures that guide local wheelchair practice and services; types of wheelchairs, cushions and other materials available; information on local culture and diversity of the participants; and organizations involved.
- To work out how many days are required for the training, confirm start and finish times for each day and whether translation will be required.

4 to 6 months in advance

- Send invitation letters to each participant with details of the training programme (dates, venue, logistical information) to complete and return.



- Gather information on the professional background and skills of participants so that you can adapt session plans accordingly.
- Book training equipment.
- Source demonstration equipment and other resources needed for the practical sessions, such as treatment beds, foot supports, and transfer boards.
- Source consumables.
- Source equipment for users (if user equipment is dependent on donor funds and/or part of the training budget, sourcing equipment may need to start earlier).
- Brief trainers on the context and participants, and agree on the division of sessions and roles.
- Book catering services.
- Arrange for translators and translation facilities if needed.

4 to 6 weeks in advance

- Arrange for local printing of all necessary materials.
- Screen and invite wheelchair users.
- Finalize registration details: for example, arrange for name tags and registers; and liaise with whoever will carry out the registration.
- Send final written confirmation/pre-course information to participants, wheelchair users and trainers.
- Confirm caterers, venue and other logistics.

1 to 2 weeks in advance

- Confirm that any ordered items have been delivered.
- Check toilets, water and electricity supply at venue.
- Confirm cleaning schedules.

If the training team is not local, it is best to arrive a few days before the programme begins to check the equipment and the venue; meet with wheelchair users supporting the training programme; and to buy any remaining materials required.

Regular communication will be needed between the coordinating trainer and other trainers, the host organization and other organizations involved.

Wheelchair users

During the WSTPi, there are four practical sessions in which two groups of wheelchair users participate. The first group attends on two different days.

Before the training programme, trainers need to identify and invite wheelchair users who are willing and able to attend the practical sessions. There is a checklist on page 11 of the *Trainer's Manual* that helps to identify appropriate wheelchair users.

Liaise with the host organization and training organizers regarding budgets and facilities available for wheelchair users. Find out if transport will be provided for wheelchair users or whether they will be reimbursed for costs.

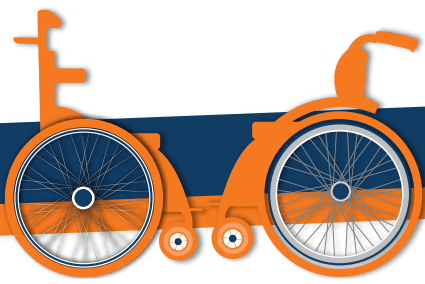
If wheelchair users are only able to attend on one day, the programme can be rearranged to accommodate *Practical One* and *Practical Two* for user group one on the same day. When adjusting the timetable, make sure service steps 2–7 have been covered before *Practical Three*.

Where possible, trainers should screen wheelchair users in person. If trainers are not based locally, a local service provider can be asked to identify potential wheelchair users and send photos and information in advance for trainers to confirm their suitability for the training level.

Invitations to wheelchair users

When drafting invitations to wheelchair users think about the following issues (a template is available on the WSTP Pen Drive):

- A description of what will happen when they attend the session.
- The time, date and the duration of the session.
- Can they bring someone with them?
- Will they receive a wheelchair at the session? What happens if they need follow up or have any problems with the wheelchair?
- Where will they receive follow-up services after the training?
- How will they get to the venue? Will their transportation costs be reimbursed?
- Do they have to bring refreshments and lunch?
- Will they receive payment for attending?



Each wheelchair user should receive an invitation letter with this information in writing. They should also sign a consent form to indicate their willingness to take part and to be photographed. The photographs are used when the small groups present back to the rest of the group.

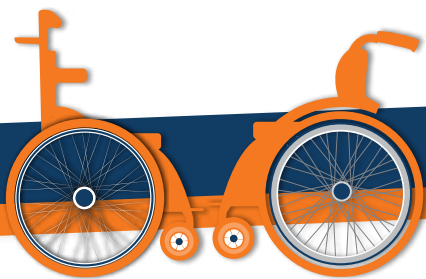
Despite careful planning, a wheelchair user may arrive with a pressure sore or fall ill on the day of the session. Discuss this possibility in advance with the host organization so that they are ready to manage the situation if it arises, and can arrange for a back-up wheelchair user to attend.

If a wheelchair user has a bladder or bowel accident during the session, have supplies ready to clean the user and the equipment. Also, a small first aid kit should be available in case of bumps and scrapes to both participants and wheelchair users.

Annexes

Annex I: Timetable for WSTPtot core sessions

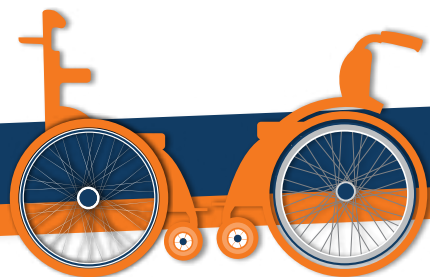
	Day One	Day Two
8:30	ToT.1 Introduction to the WSTPtot (75)	ToT.7 Presenting and Facilitating (60)
8:45		
9:00		
9:15		
9:30		
9:45	ToT.2 Wheelchair Service Training Packages	ToT.8 Communication skills (90)
10:00		
10:15		
10:30		
10:45		
11:00 – 11.15 Morning break (adjust time to suit local context and session plan)		
11:15	ToT.2 Wheelchair Service Training Packages	ToT.9 Guiding documents (75)
11:30	ToT.3 Practice deliveries (60)	
11:45		
12:00		
12:15 – 1.15 Lunch (adjust time to suit local context and session plan)		
1:15	ToT.3 Practice deliveries	ToT.9 Guiding documents
1:30	ToT.4 Preparing for diversity (60)	ToT.10 Audio-visual tools and equipment (45)
1:45		
2:00		
2:15		ToT.11 Feedback (45)
2:30	ToT.5 Adult learning (80)	
2:45 – 3.00 Break (adjust time to suit local context and session plan)		
3:00	ToT.5 Adult learning	ToT.11 Feedback
3:15		ToT.12 Managing group dynamics (45)
3:30		
3:45		
4:00	ToT.6 Preparation time (15)	Preparation (60)
4:15	Preparation (45)	
4:30		
4:45		



Annex 2: WSTPtot Intermediate Level Timetable

	Day one	Day two	Day three	
8:30	Introduction	B.5: Physical assessment – taking measurements	B.10: Prescription (selection) of PSDs – supporting the trunk <i>part II</i>	
8:45				
9:00			B.5: Feedback	B.10: Feedback <i>part II</i>
9:15				B.11: Prescription (selection) of PSDs – supporting the head, thighs and lower legs
9:30				
9:45	B.8: Prescription (selection) of PSDs – stabilising the pelvis			
10:00	Morning break			
10:15	B.2: Physical assessment – sitting posture without support <i>continued</i>	Morning break	Morning break	
10:30		B.8: Prescription (selection) of PSDs – stabilising the pelvis <i>continued</i>	B.11: Prescription (selection) of PSDs – supporting the head, thighs and lower legs	
10:45	B.2: Feedback			
11:00				
11:15	B.3: Physical assessment – pelvis and hip posture screen <i>ToT Trainer demonstration session</i>			
11:30		B.8: Feedback	B.11: Feedback	
11:45		B.9: Prescription (selection) of PSDs – supporting the hips	B.12: Product (wheelchair) preparation	
12:00				
12:15				
12:30	Lunch break	B.9: Feedback		
12:45			B.12: Feedback	
1:00		Lunch break		
1:15				Lunch break
1:30				
1:45	B.3: Physical assessment – pelvis and hip posture screen <i>continued</i>	B.10: Prescription (selection) of PSDs – supporting the trunk <i>part I</i>		
2:00			B.13: Fitting	
2:15	B.4: Physical assessment – hand simulation		Afternoon break	

2:30		Afternoon break	
2:45	Afternoon break	B.10: Prescription (selection) of PSDs – supporting the trunk part I <i>continued</i>	
3:00	B.4: Physical assessment – hand simulation <i>continued</i>		B.13: Feedback
3:15			Afternoon break
3:30	B.4: Feedback		ToT Trainer individual feedback
3:45	Car park		
4:00	Session preparation ToT Trainer individual feedback	B.10: Feedback <i>part I</i>	
4:15		Car park	
4:30		Session preparation ToT Trainer individual feedback	Closing ceremony
4:45			
5:00			
5:15			



Annex 3: Feedback sheet for WSTPtot practice delivery sessions

Trainee: _____ ToT trainer: _____

Session name/number: _____ Sections: _____

Date: _____ Allocated time: _____ Actual time taken: _____

Finished all sections? ☐ Yes ☐ No

This feedback sheet is a tool to help to develop the confidence and training skills of WSTPtot trainees. This sheet can be used by:

- trainees, to reflect on their training skills
- ToT trainers, to give feedback to trainees.

Instructions to ToT trainers: After each practice delivery, write in the two columns below, using the *WSTPtot trainee skills* list below for guidance. At the end of the WSTPtot, complete the **recommendation and summary** at the end of page 2.

WSTPtot trainee skills:

- preparation
- time management
- delivery of WSTP materials
- presenting
- facilitating
- communication
- managing group work
- giving feedback.

First practice delivery	
What was good	What can be improved

Trainee: _____ ToT trainer: _____

Session name/number: _____ Sections: _____

Date: _____ Allocated time: _____ Actual time taken: _____

Finished all sections? ☐ Yes ☐ No

Second practice delivery	
What was good	What can be improved

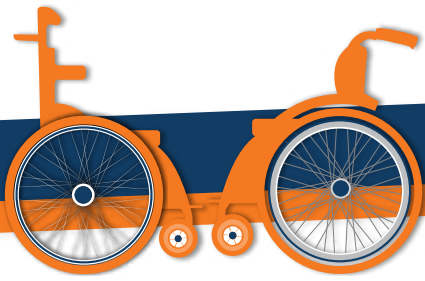
Trainee: _____ ToT trainer: _____

Session name/number: _____ Sections: _____

Date: _____ Allocated time: _____ Actual time taken: _____

Finished all sections? ☐ Yes ☐ No

Second practice delivery	
What was good	What can be improved



Instructions to ToT Trainers: At the end of the WSTPtot, select your recommendation below and write a brief summary of the trainee's strengths and areas for improvement.

Recommendation and summary

ToT trainer recommendation:

- ☐ Continue to co-training
- ☐ Develop knowledge and/or skills before continuing to co-training (details below)

Summary

Annex 4: Technical annex WSTPi

This annex aims to help trainers prepare for WSTPi practical sessions. At an intermediate level building an appropriate wheelchair becomes more complex; hands-on training is more demanding and it is important to understand the crucial role of the technician. At the planning stage trainers need to think about tools and materials, and how to get experienced technical support for training sessions. It is also important to encourage more technicians to train at an intermediate level to support the service.

The technical role in intermediate level service provision

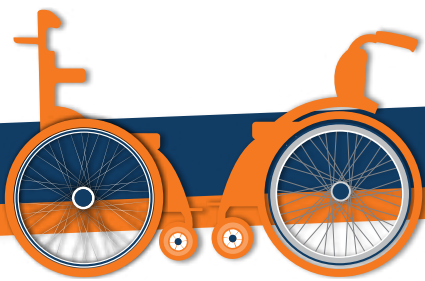
As part of its suite of training programmes, WHO teaches seating principles and gives examples of postural support devices (PSDs) that are intended to be applied to a range of different wheelchairs. It is the clinician's role to assess the user, prescribe (select) and communicate which PSDs are required. It is the technician's role to understand how to build a wheelchair that will achieve the final postural support needed; that is practical, safe, durable and as easy to use as possible, using the wheelchairs, tools and equipment, materials and parts that are available.

At basic level the technician's role is clearly defined as assembling and adjusting the wheelchair to suit the user; the process is more linear and the role simpler. As well as assembling wheelchairs, a technician working at an intermediate level needs to:

- be more involved with the user and the clinician throughout the process
- be able to problem solve more independently
- easily imagine and orientate three-dimensional shapes
- have the technical skills to make appropriate PSDs from a range of materials and parts.

Teamwork and good communication with the clinician is very important. The role of the technician extends to maintaining a safe working environment in the workshop and looking after tools and equipment.

As the clinical/technical team gradually gain experience and have exposure to wheelchair users with more complex postural support needs, they will challenge and improve their skills. An experienced technician learns to understand the limits of what can be safely achieved with the available resources. It may be possible to make a complex PSD, but that doesn't guarantee that it will be an appropriate, safe or durable solution for the user and their family. For example, a PSD that supports the



user well but is made from materials that are not durable or are attached insecurely, is only going to last a short time and is therefore not an appropriate solution.

Training more technicians

The WSTPb and WSTPi are intended to increase both the quantity and quality of practitioners providing wheelchairs in less-resourced settings. Assembly and adjustment is very specific to each type of wheelchair, which is why this information is not included in the training packages and is often covered separately by the organization delivering the training.

Involving technicians as participants in the WSTPi is very beneficial. The more they understand about the eight wheelchair service steps, the better technical support they can give. Some organizations train technical and clinical personnel at the same time, but require them to achieve different competencies at this level depending on what their on-going role in service provision will be.

Each service provider or training organization will need to identify the best way to support technicians to develop intermediate level capacities to help meet more complex needs.

The role of technicians in WSTPi training

Trainers are encouraged to have at least one experienced intermediate-level wheelchair technician available to assist during WSTPi practical sessions. This is particularly important if you plan to make PSDs, and are not using off the shelf or pre-fabricated PSDs.

Include an experienced intermediate level technician and/or technical trainer on the training team throughout the course to deliver technical content and answer technically-related questions about wheelchairs and PSDs.

Setting up the training room for practical sessions

Making PSDs requires care and time, so trainers and technicians must be well organized to keep to the timetable. You might want to consider making some common PSDs in advance.

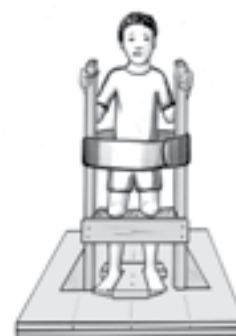


The following suggestions will help you to set up a safe, well-organized training workshop:

- Arrange a separate temporary space which:
 - is close to the clinical training room
 - has enough light and is well ventilated
 - has enough space for each technician to have a work bench or strong table
 - has space for a separate work bench for glueing in a well-ventilated location
 - has a separate area set aside if using power tools and machinery.
- An untidy workshop is unsafe and will increase the risk of accidents. Tidy the space at the end of every day, putting tools away and sweeping floors.
- Protect the surface of benches and tables with cardboard. This is particularly important when cutting and glueing foam.
- Left-over foam off-cuts should be separated from general waste and kept in boxes. Participants should be encouraged to use off-cuts first, before cutting into new foam.
- When working with a technical team, or training technicians, assign specific responsibilities to each of them. For example make a technician responsible for a specific tool kit, ask them to collect all the tools at the end of each day and check the tool kit is complete before leaving.

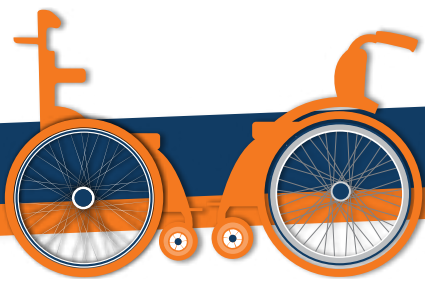
Standing frames

There are many designs of standing frames and they can be made locally. Before prescribing a frame, service personnel need to fully understand the wheelchair user's standing posture and the different ways to support them in an upright position. It is important to follow the guidance on page 45 of the *WSTPi Trainer's Manual*.



There are three main technical issues to consider:

- **Strength** – A standing frame needs to be strong enough to safely support the body weight of the user. The joints and lengths of material that make up the frame must be strong enough and connected securely together. The person might move around so consider the force that this will put on the frame. Test the strength and stability of a new device before use.



- **Stability** – It is important that a standing frame remains completely stable while in use, including when the user is getting into position and when standing up. This is usually achieved by having a wide base of support on the ground.
- **Safety and comfort of support surfaces** – Make sure there is no direct pressure on the knees. The support surfaces of the frame that come into contact with the body should be padded just like a pressure relief cushion.

Further considerations:

- Frame design should allow for easy access when approaching in a wheelchair.
- Some degree of height adjustment to the hip, knee, pelvis and trunk support will be needed to accommodate wheelchair users of different heights or ages.
- A flat surface such as a tray or table should be included, to enable activities while standing.

Foam

Two measures are used to assess the quality of polyurethane (PU) foam:

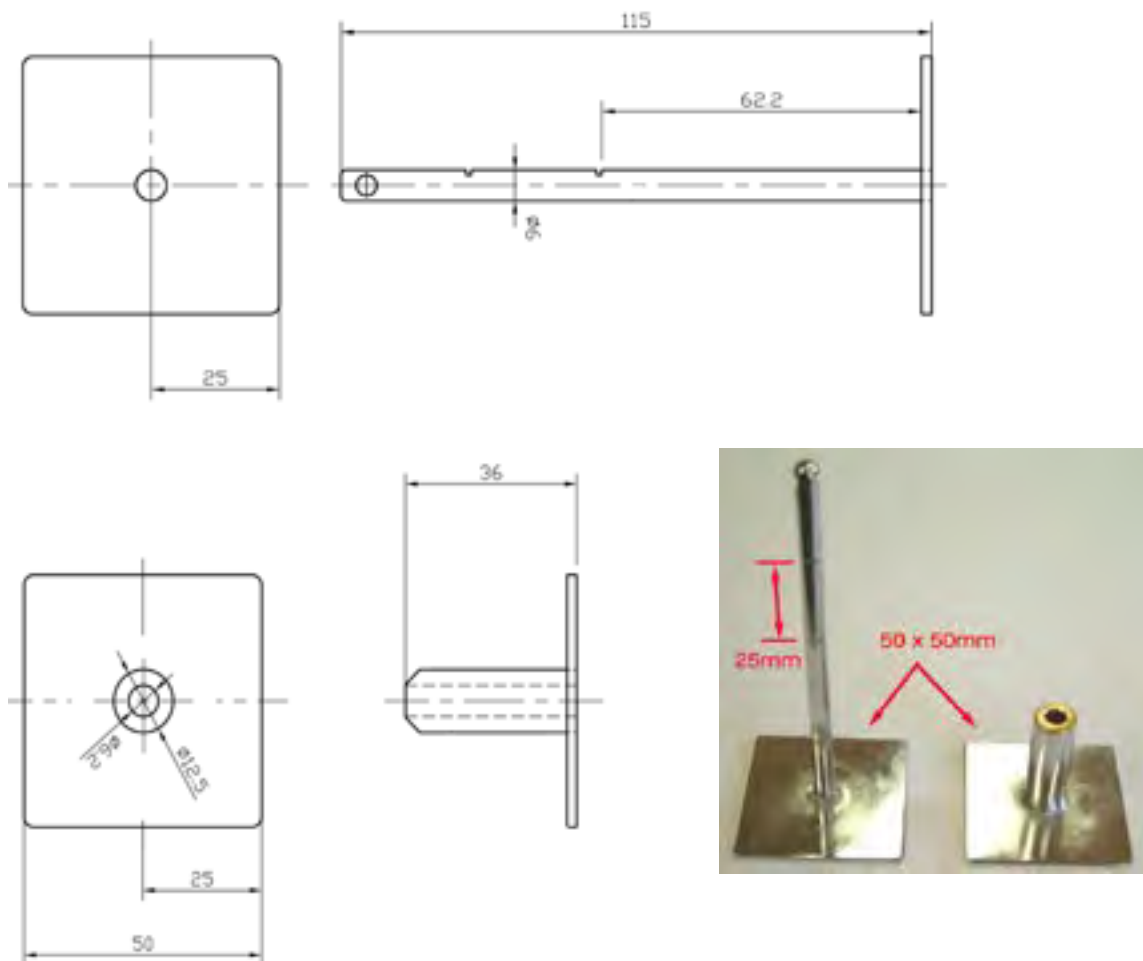
- **Firmness** – the degree of support provided. Firmness is often confused with density, but is a different property. Firmness is a physical property of the finished foam and is controlled by the chemistry of the foam during the production process. The firmer the foam, the harder it is to compress. The firmness of the foam can be measured by recording the amount of force needed to compress the foam.
- **Density** – a measurement of the mass (weight) per unit volume expressed in kilograms per cubic metre (kg/m^3). Density is a function of the chemicals and additives used to produce the foam and affects the foam's durability. Typically, the higher the density, the better the foam will retain its properties and provide support and comfort over a longer period.

Foam testing device

Use the foam testing device below (Figure 1) to carry out a simple compression test to calculate firmness of a foam sample. Measured in kilograms the results can be compared against a benchmark and other available foams.

The foam testing device consists of two metal parts, that are shown from different angles here:

Figure 1. Foam testing device



These parts are suspended from a weighing scale or spring balance (Figure 2).

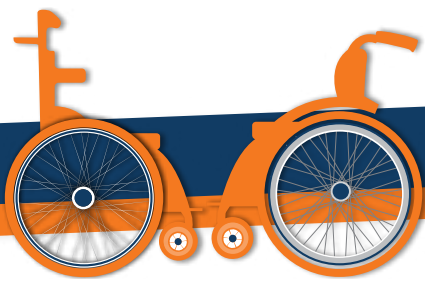


Figure 2. Compression testing procedure

The procedure for 50% compression testing is as follows:

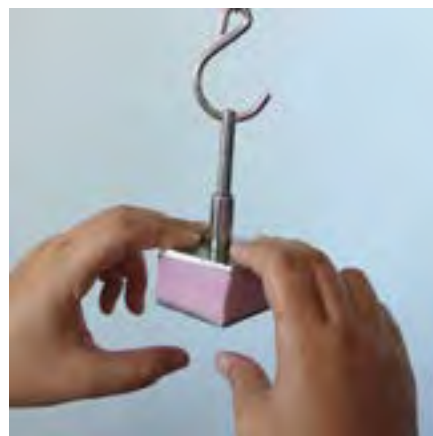


Step 3. Weighing scale

1. Cut the 50 x 50 x 50 mm foam sample as accurately as possible and punch a 6.5–7.5 mm hole in the centre.
2. Hang up the scale or spring balance; do not hold it.
3. Place sample in testing device and hang from scale or spring balance.
4. Check that scale reads zero.
5. Push down evenly on the top plate only, compressing sample to 50%. Note 25 mm marks on testing device.
6. Record weight in kg.



Step 1. Foam sample ready for testing



Step 5. Push down on the top plate only

Testing notes

- Take at least three measurements and average the results. To minimize error the same person should take all the measurements.
- When testing samples cut from moulded foam do not include any external foam skin.

Guidelines for the use of different types of foam

The following numbers are intended as guidelines only; it is always recommended to prototype and user-trial any new PSD or *Pressure Relief Cushion* which uses foam. Firmness test results were produced using the testing procedure outlined previously

Name	Application	Density	50% compression test (kg)
Medium PU foam	Comfort layer: top cushion layer, surface layer	30 kg/m ³ to 60 kg/m ³	2.2 to 3.5 kg*
Firm PU foam	Supportive layer: base layer,** contours, cushion wedges (under comfort layer)	30 kg/m ³ to 60 kg/m ³	3.5 to 5.8 kg

PU: polyurethane.

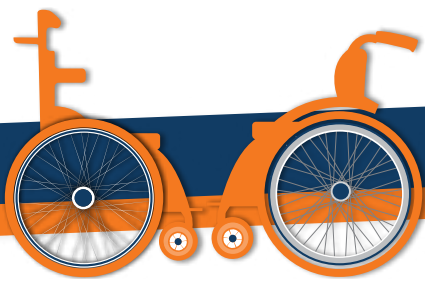
* This acceptable range of kg includes a variation in test results of ± 0.3 kg.

** Chip, composite, re-bonded or bonded foam can also be used, but can vary in firmness because it is an industry waste product.

Foam shapes for temporary support and PSD simulation

A range of firm foam blocks and wedges are useful for training. In addition to the basic blocks used for temporary support, other shapes can be used to help simulate different options in the wheelchair user's chair. For example:

- Adding a wedge of foam to the front of the backrest to simulate an *open seat-to-backrest angle*.
- Adding extra foam to the *pelvis side pads* to simulate a narrower seat width.
- Adding foam to the seat to simulate *outside thigh wedges*.
- Adding foam blocks together to simulate different angles for a *lowered seat front one side*.

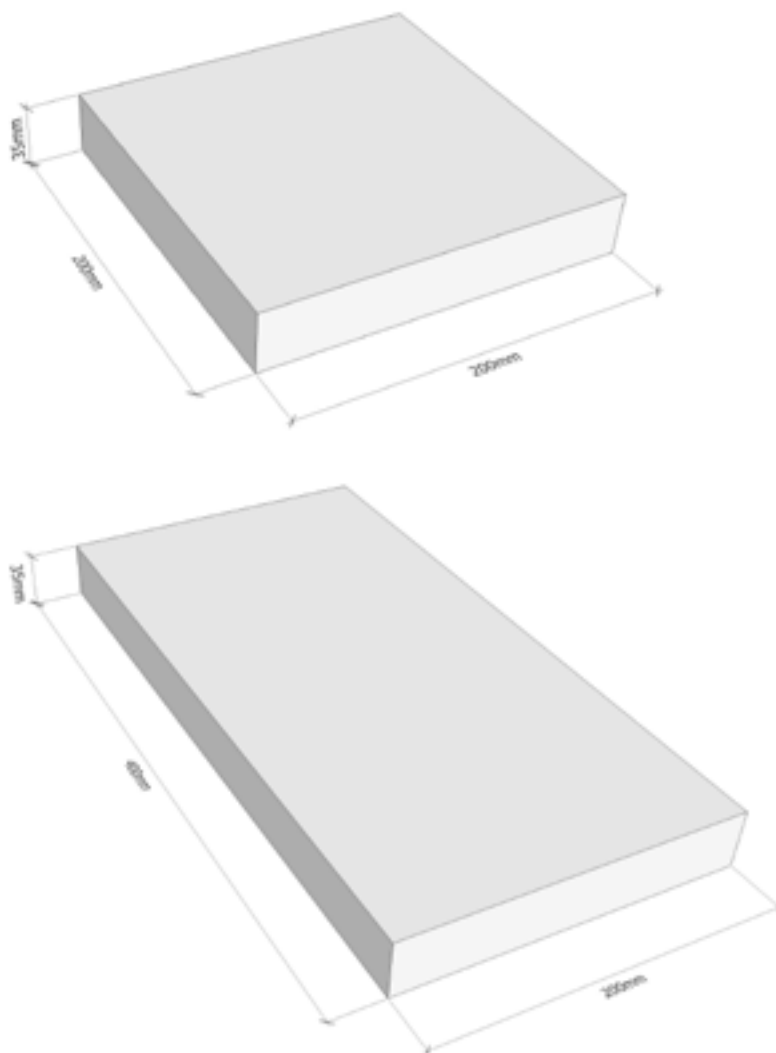


In some situations where the user's postural support needs are very complex, it may be necessary to first finalize the size, shape and location of PSDs by making them with a less expensive material. Once the final prescription (selection) for the PSDs has been agreed, they can then be made using better-quality foam.

Commonly available foam thicknesses are: 25 mm or 35 mm. Thinner foam (such as 10 mm or 15 mm) may be useful for very small children or when only slight increments of change are required, for instance when constructing a *build-up under pelvis*. Thinner foam may need to be cut from thicker foam. When doing this it is important to have the best quality foam available and a very sharp knife.

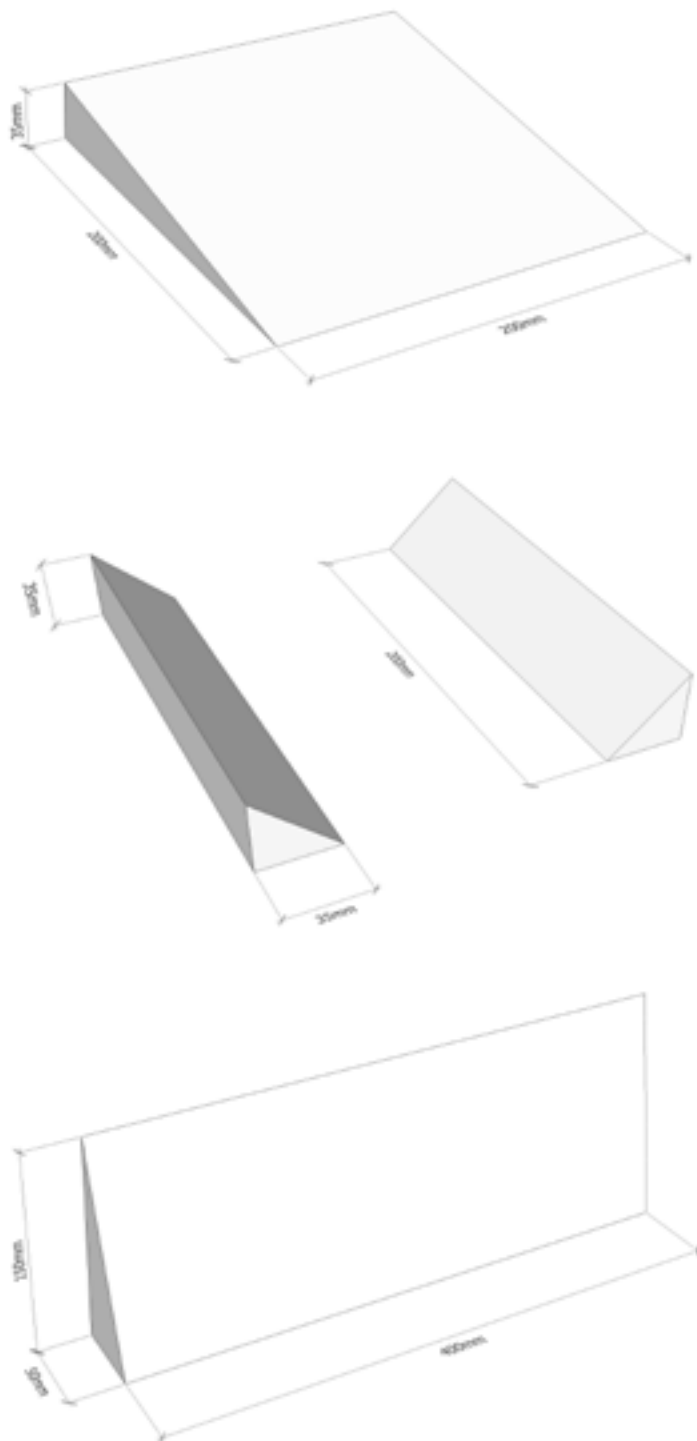
Illustrations below (Figure 3) show sample basic foam shapes; dimensions can be adjusted to suit the context. For example, common sizes for adult temporary supports are 200 x 200 mm and for children, 200 x 100 mm.

Figure 3. Suggested dimensions (in mm) of the basic foam shapes for temporary supports



Wedges of various dimensions and thicknesses are very useful for training purposes. The illustrations below (Figures 4–8) show sample foam wedges; dimensions can be adjusted to suit the context. Common thicknesses are 35 and 50 mm, common lengths range between 100 and 200 mm.

Figure 4. Sample foam wedges



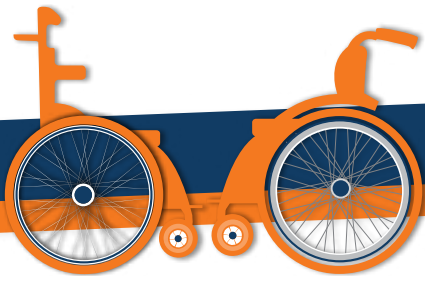


Figure 5. Example use of temporary supports

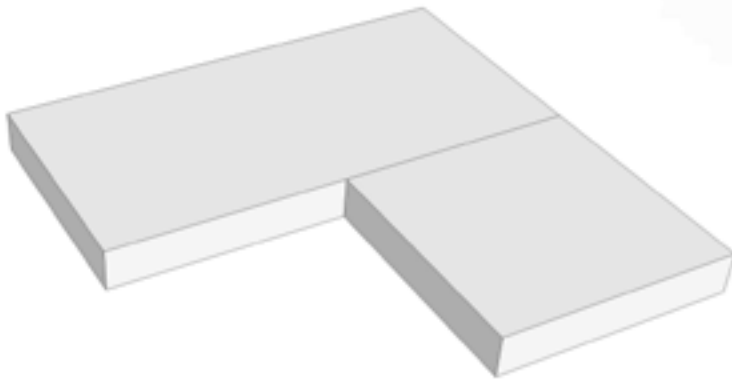


Figure 6. Example use of wedges to simulate a lowered seat front on one side

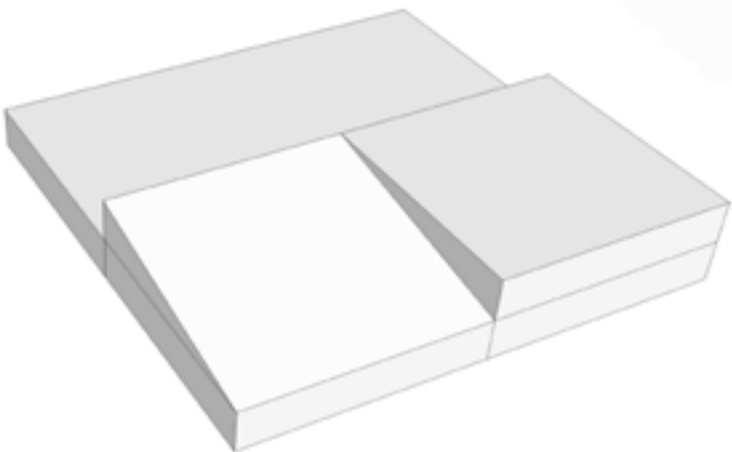


Figure 7. Example use of outside thigh wedges

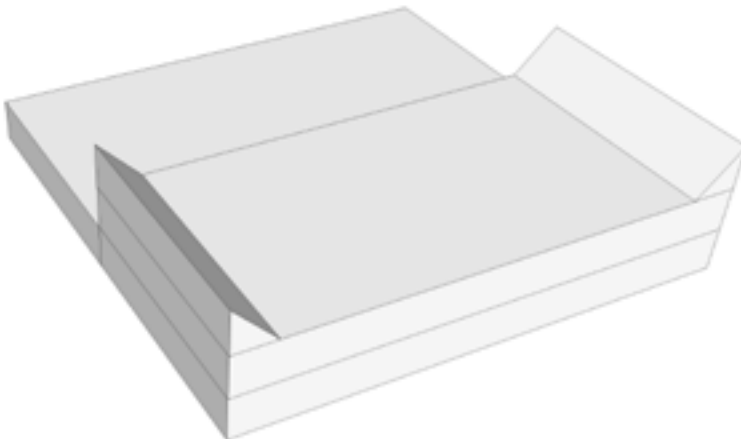
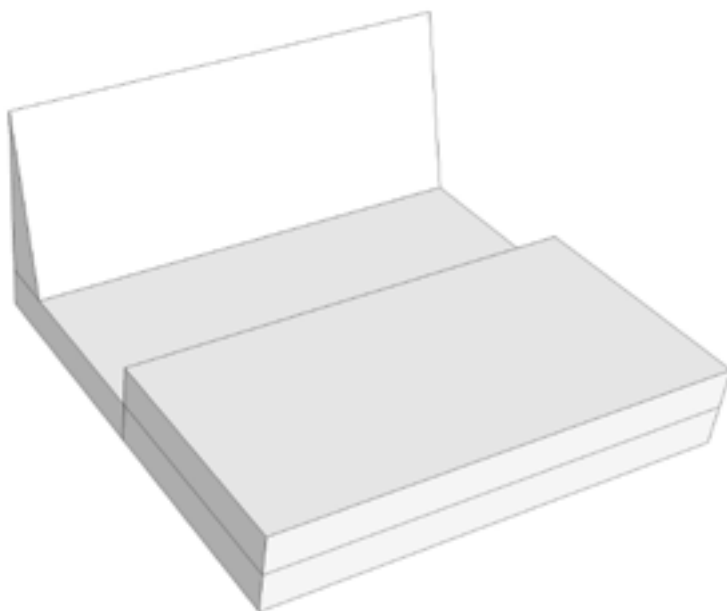


Figure 8. Example of *open seat-to-backrest angle wedge* and *pre-seat bone shelf*

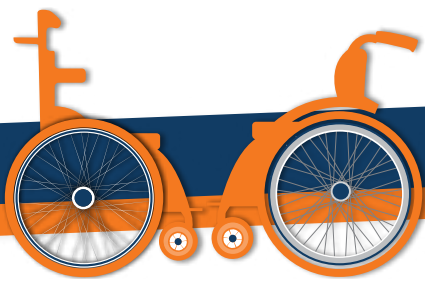


Advantages and disadvantages of seating simulators

A seating simulator is a device that clinicians and technicians sometimes use to *simulate* the posture that a wheelchair user will adopt, before preparing the final wheelchair. They are specifically designed to be adjustable in every way necessary to support the user. The simulator is used at the end of the assessment process, after the hand simulation, to inform the wheelchair prescription. There are advantages and disadvantages of using seating simulators:

Advantages

- **Less waste** – Seating simulators can minimize wastage (and therefore recurring service costs) because the wheelchair and PSDs are only prepared after the user's final posture has been achieved in the simulator.
- **Save time** – Seating simulators can save experienced clinicians' and technicians' time when fitting the wheelchair and PSDs, as the final posture is already known before the wheelchair is prepared.



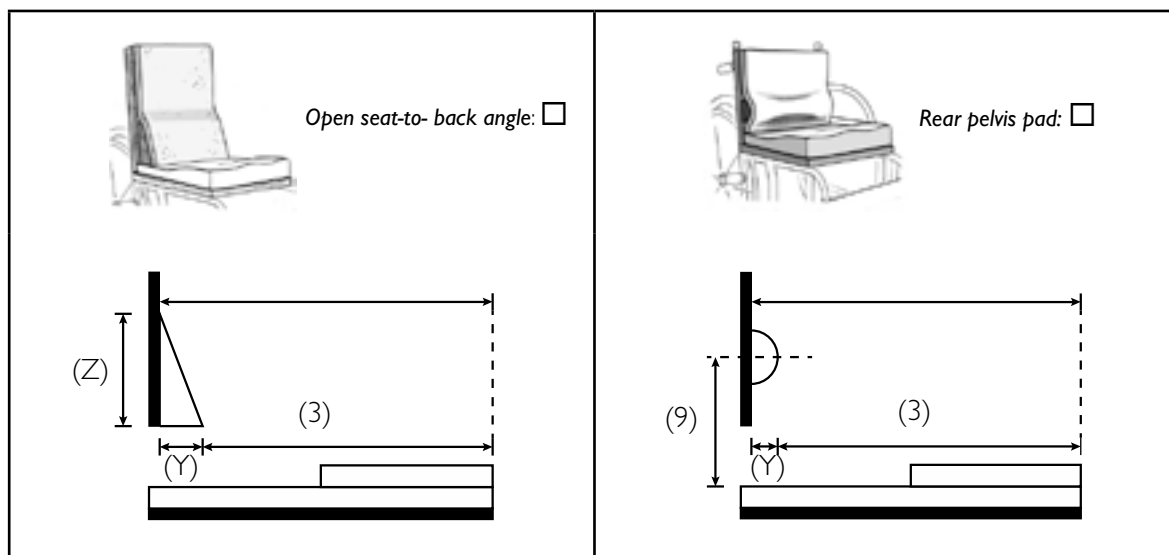
Disadvantages

- **Short cuts** – Less experienced personnel may use the seating simulator as a short cut instead of performing a full assessment and hand simulation process to determine the postural supports needed. It might also limit the type of postural supports considered to include only those on the seating simulator. This could result in the user not achieving their full postural potential in the final wheelchair.
- **Skilled technicians** – It takes technical skill to design and make a safe and durable seating simulator. It also takes skill to translate the support provided by a seating simulator into the final wheelchair and PSDs. It is particularly challenging if the service uses a range of different wheelchairs that provide postural support in various ways.
- **Cost** – The initial one-off cost to buy seating simulators may be high but could be offset against savings made later in recurring service costs. It may also be possible to reduce the costs by converting a wheelchair (and PSDs) commonly used by the service into a seating simulator, by modifying it and adding adjustments.
- **Heavy and large** – Seating simulators are often larger and heavier than the final wheelchairs. This makes it more difficult to travel with them away from service centre.

Introducing the *total seat depth* tool

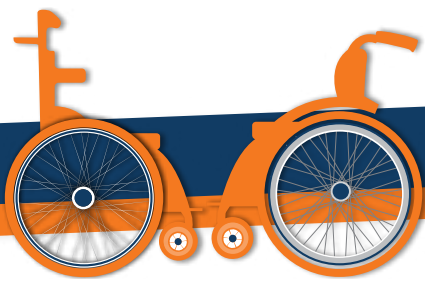
There are two postural support devices (PSDs) that are placed behind the pelvis. It is important to understand the space that they take up in the wheelchair before deciding whether the user will fit in comfortably as well, or whether a different wheelchair is needed. Here is a simple tool to help work out the total seat depth (including the thickness of either an *open seat-to-back angle* triangle or a *rear pelvis pad*) using measurements from the intermediate assessment form:

Figure 9. Calculating total seat depth



Wheelchair & PSDs	Dimensions (mm)
Support behind pelvis:	
(Z) Height of triangle	
or (9) Height to midpoint	
(Y) Thickness	
(3) Seat depth	
(3 + Y) Total seat depth	

If the chosen wheelchair is big enough to accommodate the *total seat depth*, then it will fit the user's seat depth and their PSDs will fit into the seat.



Product preparation

Product preparation at an intermediate level involves the assembly of intermediate wheelchairs and the fabrication of PSDs. More problem solving is required than at the basic level, which is a straightforward process of assembling wheelchairs.

Understanding what shape is required to support the user's posture and then making an appropriate PSD, often requires imagining and orienting three-dimensional shapes. This process is made easier by using the drawing tool on the Intermediate prescription form, which has 'shadow' lines (Figure 10).

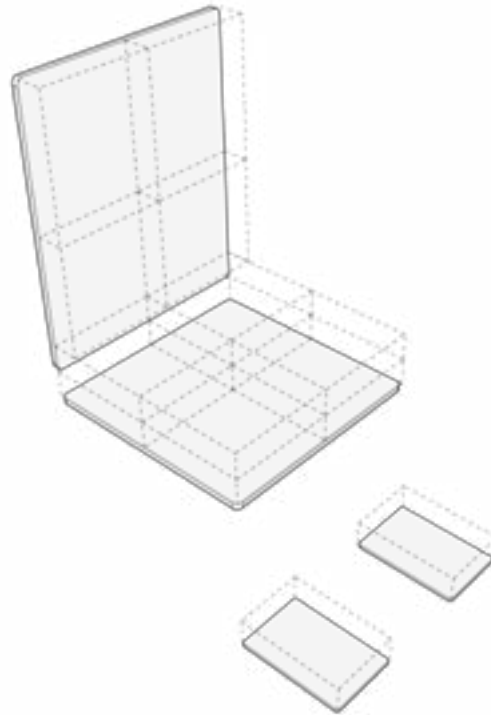


Figure 10. Intermediate prescription form drawing tool

After defining the size and shape of the proposed PSD, the technician decides how to make it and which materials to use. It is important that the final PSD is practical, safe, durable and as easy to use as possible.

The technician's role is easier when the user is smaller, has fewer postural issues and is using an adjustable seating product that incorporates various PSDs. However, the task becomes more challenging when the user is larger, has a combination of complex postural issues and makes strong, uncontrolled movements. A great deal more skill, technical knowledge, time, materials and parts, and problem solving ability is needed to fabricate appropriate PSDs for these users.

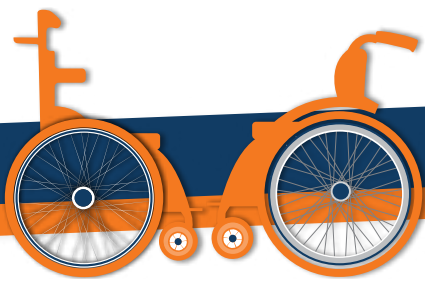
The technician needs to be familiar with how to assemble each type of wheelchair available to them. The way that PSDs are made and attached differs from one type of wheelchair to another. The technical role is different if a dedicated posture support wheelchair with built-in adjustable postural supports is available, compared to working with an orthopaedic style or other manual wheelchair.

Despite the differences in the wheelchairs, the different methods of making PSDs and the individual nature of each user's seat; there is a general order for product preparation:

1. **Seat depth** – Just as clinicians are taught to start with the pelvis and work outwards, so a technician should start with the PSDs that support the pelvis. Using the *total seat depth tool* will make it easier to prescribe (select) the most appropriate size of wheelchair or seat. Next, the technician can make the *pre-seat bone shelf* (and any other PSDs on the seat such as *lower seat front one side*, or *raise seat front*). If the PSDs on the seat are being made from foam, use the minimum amount of glue necessary to hold them in place for the first fitting, as their size and location are likely to change (particularly during training).
2. **Pelvis strap** – As a starting point, the *pelvis strap* should be fitted between 60 and 90 degrees to the seat, at approximately the same location as the *pre-seat bone shelf*.
3. **Pelvis side pads or seat width** – It is important to work out how the seat will support the user's hips, to prevent them from sliding sideways. In many situations a bracket and pad will be used.
4. **Remaining seat PSDs** – On some wheelchairs it is necessary to attach all remaining PSDs that are going to be added to the seat, for example any hardware needed for mounting a *knee separator pad*, before moving on to other parts of the wheelchair.

After the seat is complete, technicians can work outwards towards the head and feet:

5. **Backrest** – The height of the backrest should be set and any backrest-mounted PSDs should be attached.
6. **Head support** – If a head support is required, set it and make any other adjustments necessary.
7. **Footrests** – The height, angle and position of the footrests should be set. PSDs such as *foot wedges*, *foot build-ups*, *ankle* or *foot straps* will often need to be repositioned during the first fitting.
8. **Shoulder harness** – If a harness is required, the uppermost end should be attached level with or above the user's shoulder. Harnesses attached below the top of the shoulders will tend pull the user's shoulders down.



It is important that every wheelchair is safe for the user to sit in for each fitting. The technician and clinician need to make a judgement about this, paying particular attention to areas at risk of pressure sores, or PSDs that are being used but are not completely finished.

The *Safe and ready* checklist should be used, however some parts of the wheelchair do not need to be 100% complete for the first fitting. For example:

- The fabric upholstery can be left off.
- Attach foam parts with 'spots' of glue rather than full coverage so that they are easier to separate if changes are required.
- If the team is unsure whether a particular PSD is required or not, it is acceptable to leave it off and make a decision during the first fitting; for example, *trunk side wedges* or a *shoulder harness*.
- Attach the footrests according to the body measurements that were taken, but leave ankle or foot straps off until the user is sitting in the wheelchair and the final location of the footplates is set.
- If fitting a tray, leave it until the user is sitting in the wheelchair in their final posture before adjusting it.

Because it is not safe, do not:

- leave frame bolts loose
- leave bolts attaching the rear or castor wheels, push handles, seat, backrest, brakes or any PSDs loose
- leave sharp edges unfinished or exposed.

After the final fitting, the wheelchair and PSDs should be checked and signed off by one of the trainers. This should happen before the team completes final finishing such as full coverage glueing (for all remaining 'spot' glued foam), finalizing the upholstery, or painting/varnishing components.

A comprehensive *Safe and ready* check must be completed before the user and their family leave with the wheelchair.

Additional technical resources

Resource	Content/page references
<i>Guidelines on the provision of manual wheelchairs in less resourced settings</i>	<ul style="list-style-type: none"> • Wheelchair design and production-related information, including testing, page 37–65
<i>WSTPb Reference Manual for Participants</i>	<ul style="list-style-type: none"> • Making a pressure relief cushion, page 57–60
<i>WSTPi Reference Manual for Participants</i>	<ul style="list-style-type: none"> • How to make PSDs, page 112–128
<i>WSTPm Additional Resources for Managers</i>	<ul style="list-style-type: none"> • Information to support managers developing services, including information about technical resource management

For more information, contact:

World Health Organization
20, Avenue Appia
CH-1211 Geneva 27
Switzerland

Tel.: (+ 41 22) 791-2715
Fax: (+ 41 22) 791-4874

www.who.int/disabilities/en/

