World Health Organization

USAID
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WHEELCHAIR SERVICE TRAINING PACKAGE

Participant's Workbook

INTERMEDIATE LEVEL

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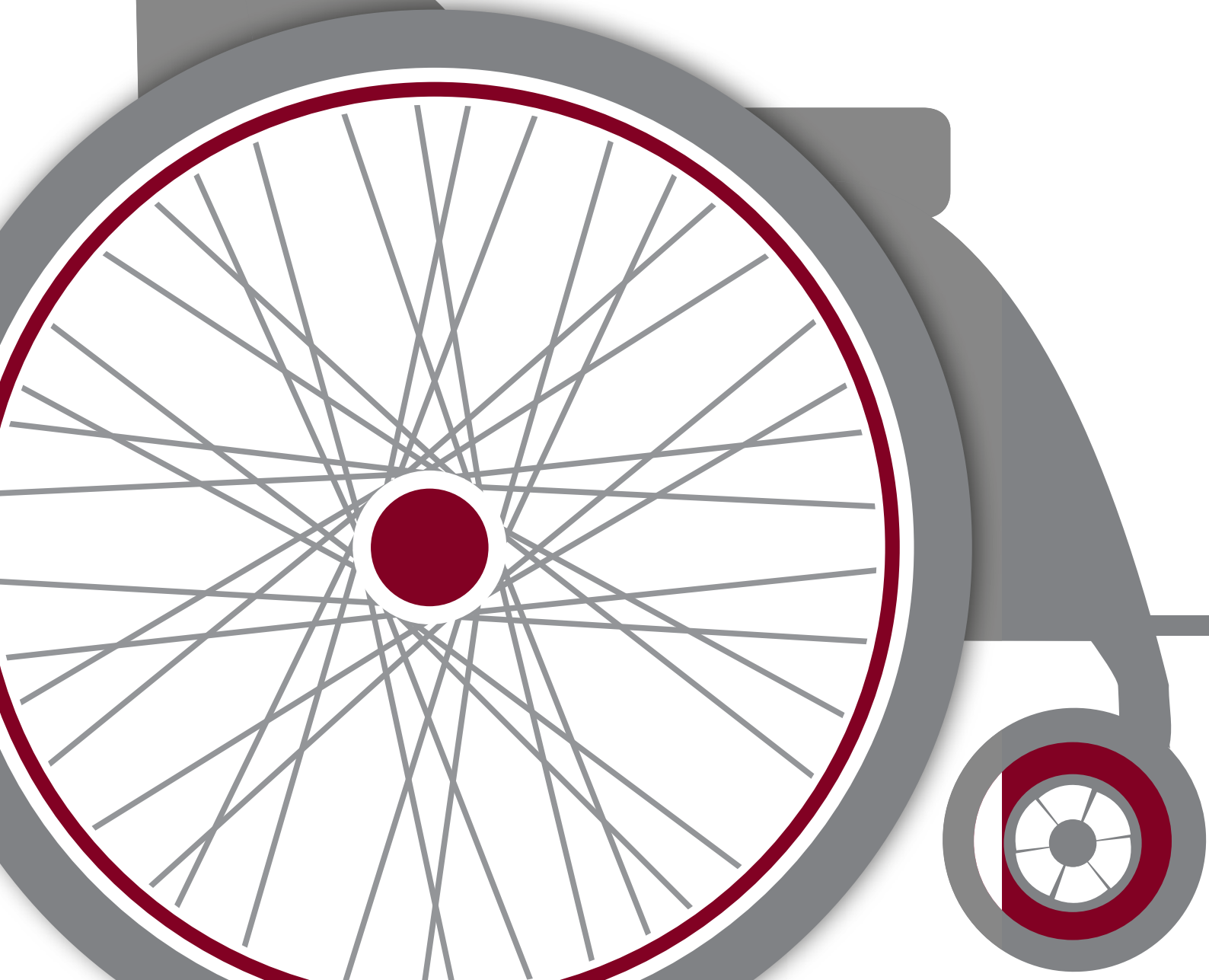

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CONTENTS

Name: _____

Purpose

The Intermediate Level training package is designed to support the training of personnel or volunteers to provide an appropriate manual wheelchair and cushion for girls, boys, women and men who need additional postural support to be able to sit upright.

The main purpose of this training package is to develop the skills and knowledge of personnel involved in wheelchair service delivery. Delivery of this training package will help to:

- increase the number of wheelchair users who receive a wheelchair, which meets their needs;
- increase the number of personnel trained in intermediate level wheelchair service delivery;
- improve the competencies of wheelchair service delivery personnel;
- increase the quality of wheelchair service delivery for people who need comparatively a higher level of intervention than basic level;
- include this training package in regular paramedical/rehabilitation training programmes and
- achieve greater integration of wheelchair service delivery within rehabilitation services.

The purpose of the Participant's Workbook is to develop the skills and knowledge of personnel involved in wheelchair service delivery. The Participant's Workbook contains exercises, which will help to test and develop participants' knowledge and skills. The Participant's Workbook contains material from lectures, slide presentations and the Reference Manual; it is intended that the participants will keep their copy of the workbook for future reference, if needed.

A.1: Wheelchair users who benefit from additional postural support

1. Throwing a ball

- Choose one person in your group to sit on chair for all three steps of this activity.
- The other two people will be helpers.
- For each step throw and catch the ball between the person on the seat and helpers five times.

Step 1: While throwing and catching the person seated on the chair sits upright with feet flat on the floor.	**How easy is it to throw and catch the ball? Does it get harder with steps 2 and 3? Why? How does the different position and posture affect how easy it is to catch the ball?**
Step 2: While throwing and catching one helper tilts the chair onto two side legs and holds it still.	
Step 3: While throwing and catching, one helper rocks the chair randomly from one leg to another.	

2. Drinking

- Each person to try drinking water in the different positions and postures described below.
- Take just a few sips each time and be careful!

• Sitting upright	**How does the different position and posture affect how easy it is to drink?**
• Sitting on the chair with your head tipped right back (nose pointing in the air)	
• Sitting on the chair in a 'slumped' posture	
• Lying down on the assessment bed	

B.1: Assessment overview and assessment interview

- Work together with your group and complete one set of questions below assigned to you depending on your group number.

Group 1	How do the diagnosis/physical issues listed below affect wheelchair provision? For example: • What characteristics of diagnosis/physical issues affect wheelchair provision? • What wheelchair features and training may be helpful? • What is important to know about the wheelchair user in each case?
Brain injury	
Polio	
Fatigue	

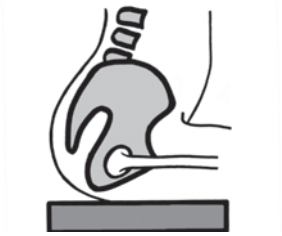
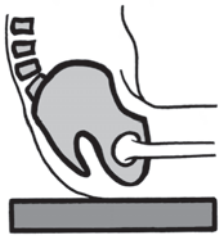
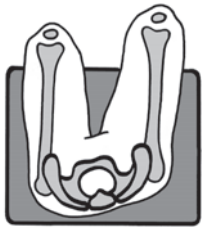
Group 2	How do the diagnosis/physical issues listed below affect wheelchair provision? For example: • What characteristics of diagnosis/physical issues affect wheelchair provision? • What wheelchair features and training may be helpful? • What is important to know about the wheelchair user in each case?
Muscular dystrophy	
Spinal cord injury	
Spasms/ uncontrolled movements	

Group 3	How do the diagnosis/physical issues listed below affect wheelchair provision? For example: • What characteristics of diagnosis/physical issues affect wheelchair provision? • What wheelchair features and training may be helpful? • What is important to know about the wheelchair user in each case?
Cerebral palsy	
Stroke	
Problems with eating, drinking or swallowing	

Group 4	How do the diagnosis/physical issues listed below affect wheelchair provision? For example: • What characteristics of diagnosis/physical issues affect wheelchair provision? • What wheelchair features and training may be helpful? • What is important to know about the wheelchair user in each case?
Spina bifida	
Progressive conditions (for example, muscular dystrophy, Parkinson disease, multiple sclerosis, motor neurone disease)	
Hip dislocation	

B.2: Physical assessment – sitting posture without support: foundation of sitting posture

- Work together to identify what changes happen to upright sitting posture when the pelvis posture changes.
- Each person in the group should model one of the pelvis postures described below. The others observe what changes happen to the rest of his/her body.
- If there is time, each person in the group should try the different pelvis postures to feel the change in their own body.

Pelvis posture	Write or draw your observations of the person's changed posture. Look at the person's trunk, head and neck, legs.
Anterior tilt	
	
Posterior tilt	
	
Lateral tilt	
	
Rotation	
	

B.2: Physical assessment – sitting posture without support: posture drawing

- Draw your own line drawing next to each one below.

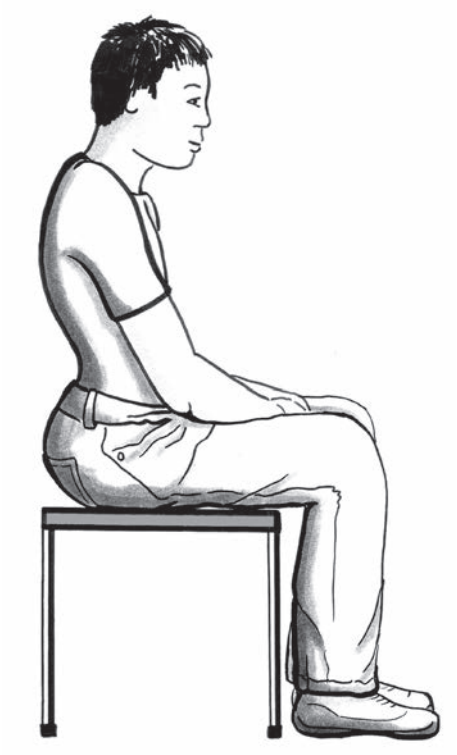
Posture line drawing from the side

Posture line drawing from the front

Posture line drawing from the front – pelvis rotation.

- Draw in the box below a line drawing to record the posture of the person in the illustration.

1.



Sitting posture without support

Describe or draw sitting posture without support:

2.

Sitting posture without support

Describe or draw sitting posture without support:

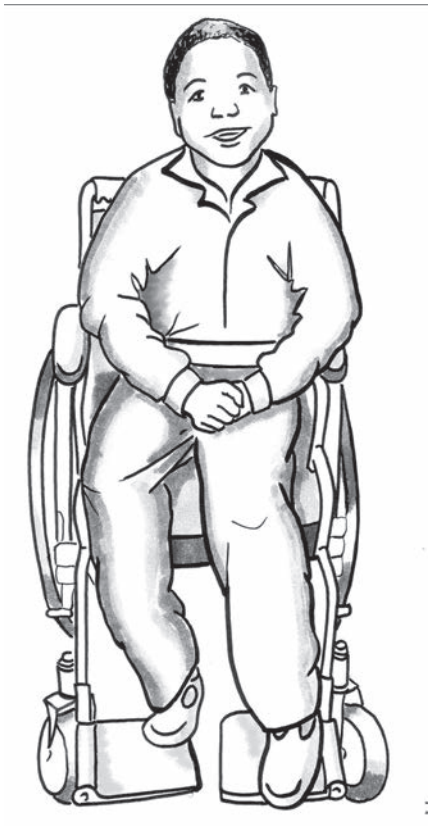
- Draw in the box below a line drawing to record the posture of the person in the illustration.

3.

Sitting posture without support

Describe or draw sitting posture without support:

4.



Sitting posture without support

Describe or draw sitting posture without support:

B.3: Physical assessment – pelvis and hip posture screen: carrying out the screening

- Carry out the pelvis and hip posture screen on each person taking on the role of wheelchair user in your group.
- Record on the 'pelvis and hip posture screen' part of the intermediate wheelchair assessment form below the results for each person taking the role of wheelchair user in your group.

Wheelchair user one:

Pelvis and hip posture screen

Check if pelvis is level and hip flexion range when lying

Can pelvis be level? Yes ☐ No ☐

Can hip bend to neutral sitting posture?

Right: Yes ☐ No ☐ Angle: _____

Left: Yes ☐ No ☐ Angle: _____

If pelvis cannot be level or hips cannot bend to neutral sitting posture – accommodate with temporary support.

Wheelchair user two:

Pelvis and hip posture screen

Check if pelvis is level and hip flexion range when lying

Can pelvis be level? Yes ☐ No ☐

Can hip bend to neutral sitting posture?

Right: Yes ☐ No ☐ Angle: _____

Left: Yes ☐ No ☐ Angle: _____

If pelvis cannot be level or hips cannot bend to neutral sitting posture – accommodate with temporary support.

Wheelchair user three:

Pelvis and hip posture screen

Check if pelvis is level and hip flexion range when lying

Can pelvis be level? Yes ☐ No ☐

Can hip bend to neutral sitting posture?

Right: Yes ☐ No ☐ Angle: _____

Left: Yes ☐ No ☐ Angle: _____

If pelvis cannot be level or hips cannot bend to neutral sitting posture – accommodate with temporary support.

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

- Read each wheelchair user's story.
- For each wheelchair user, decide if the wheelchair user's pelvis can be level and if hips bend to neutral sitting posture (trunk to thigh angle is no more than 90 degrees).
- Complete the pelvis and hip posture screen part of the intermediate wheelchair assessment form, decide if the wheelchair user needs temporary support and set up a temporary support for each wheelchair user.
- Be sure to check each temporary support and to sit on each temporary support to see what it feels like. Remember ASIS stands for Anterior Superior Iliac Spine.

Sam

Sam is 4 years old. He has cerebral palsy and cannot sit upright on his own. Through the pelvis and hip posture screen you find out that:

- Sam's pelvis can be level (both ASIS level);
- Sam's left hip can bend comfortably to neutral sitting posture. Sam has pain in his right hip and it does not bend all the way to neutral sitting posture (trunk to thigh angle is more than 90 degrees). The angle between his trunk and thigh on the right side is approximately 105 degrees.

Pelvis and hip posture screen

Check if pelvis is level and hip flexion range when lying

Can pelvis be level? Yes ☐ No ☐

Can hip bend to neutral sitting posture?

Right: Yes ☐ No ☐ Angle: _____

Left: Yes ☐ No ☐ Angle: _____

If pelvis cannot be level or hips cannot bend to neutral sitting posture – accommodate with temporary support.

Does Sam need temporary support? Yes ☐ No ☐

Martha

Martha is 57 years old. She has severe arthritis. She can walk a few steps, however walking is very painful. Through the pelvis and hip posture screen you find out that:

- Martha's pelvis can be level (both ASIS level);
- both of Martha's hips cannot bend all the way to neutral sitting position (trunk to thigh angle is more than 90 degrees). The angle between her trunk and thigh on both hips is approximately 100 degrees.

Pelvis and hip posture screen

Check if pelvis is level and hip flexion range when lying

Can pelvis be level? Yes ☐ No ☐

Can hip bend to neutral sitting posture?

Right: Yes ☐ No ☐ Angle: _____

Left: Yes ☐ No ☐ Angle: _____

If pelvis cannot be level or hips cannot bend to neutral sitting posture – accommodate with temporary support.

Does Martha need temporary support? Yes ☐ No ☐

Seren

Seren is 16 years old. She had polio as a child and now has severe contractures of both legs. Seren moves around by sitting cross-legged and scooting over the floor. Through the pelvis and hip posture screening you find out that:

- Seren's pelvis cannot be level. The right side of her pelvis is 20 mm higher than the left;
- both of Seren's hips can bend to neutral sitting posture.

Does Seren need temporary support?

Pelvis and hip posture screen

Check if pelvis is level and hip flexion range when lying

Can pelvis be level? Yes ☐ No ☐

Can hip bend to neutral sitting posture?

Right: Yes ☐ No ☐ Angle: _____

Left: Yes ☐ No ☐ Angle: _____

If pelvis cannot be level or hips cannot bend to neutral sitting posture – accommodate with temporary support.

Yes ☐ No ☐

Joe

Joe is 25 years old. He had polio as a child and now has severe contractures of both legs. Through the pelvis and hip posture screen you find out that:

- Joe's pelvis can be level (both ASIS level);
- Joe's right hip can bend to neutral sitting posture comfortably. However his left hip cannot open all the way to neutral (trunk to thigh angle is less than 90 degrees). The angle between his trunk and thigh is 70 degrees.

Does Joe need temporary support?

Pelvis and hip posture screen

Check if pelvis is level and hip flexion range when lying

Can pelvis be level? Yes ☐ No ☐

Can hip bend to neutral sitting posture?

Right: Yes ☐ No ☐ Angle: _____

Left: Yes ☐ No ☐ Angle: _____

If pelvis cannot be level or hips cannot bend to neutral sitting posture – accommodate with temporary support.

Yes ☐ No ☐

B.5: Physical assessment – taking measurements

Madavi is 13 years old and has cerebral palsy. She can sit upright without support, however she finds it very tiring and cannot sit for long. She has a mild fixed posterior tilt, and slides forward in her current wheelchair. She has asked for a tray as she would like a table/ surface in front of her so that she can read, write and eat more easily. Below are the results of the hand simulation physical assessment done by wheelchair service personnel.

- Read through the completed hand simulation results below:

Hand simulation: support needed to sit in neutral posture as close to neutral posture as is comfortable

*For each body part: If neutral sitting posture is possible **with hand support,** tick yes. If not, tick no.*

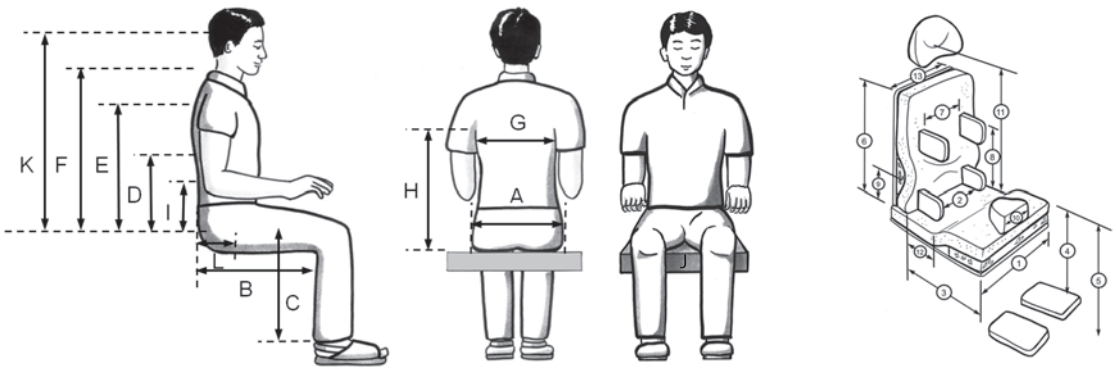
Part	Yes	No	*Describe or line draw final sitting posture achieved by the wheelchair user with hand support **and** describe or line draw the support provided to achieve that sitting posture.*
Pelvis	☐	☐	
Trunk	☐	☐	**Final posture:** posterior tilt pelvis; lower trunk slightly curved (side view) but symmetrical (front view) with support on both sides; head slightly forward; legs tend to roll inwards – gentle support brings thighs to neutral. **Support needed:** • support at front of seat bones; • support at the back of pelvis – does not bring to neutral but prevents from rolling further; • support back up to shoulders; • side support at trunk – to help keep trunk in middle; • support on both sides of pelvis/hips to keep pelvis in middle; • support on inside of thighs to stop thighs from rolling in – inside thigh wedge; • tray.
Head	☐	☐	
L Hip	☐	☐	
R Hip	☐	☐	
Thighs	☐	☐	
L Knee	☐	☐	
R Knee	☐	☐	
L Ankle	☐	☐	
R Ankle	☐	☐	

- Decide what body measurements you will need to take to be able to select a wheelchair for Madavi.
- Take these measurements of at least one member of the group and write them in the `taking measurements` part of the intermediate wheelchair assessment form (next page).
- How will you ensure that you get the correct seat depth measurement? (Remember that Madavi has a mild fixed posterior pelvis tilt)
- What measurements will you take to describe the height and size/shape of a tray for her?

Taking measurements

Body measurements (mm)				Wheelchair component measurements (mm)		
Seat width, depth and footrest height						
A	Hip width			= *seat width OR*	1	
				= *distance between pelvis side pads*	2	
B	Seat depth (back of pelvis to back of the knee)	L		*B less 30–50 mm = seat depth (if length is different, use shorter)*	3	
		R				
C	Calf length	L		= *distance between top of the seat to footrest OR* = *distance between top of the seat to floor for foot propelling*	4	
		R			5	
Backrest height						
D	Seat* to bottom of rib cage			= *distance between top of the seat to top of backrest (measure D, E or F – depending on the wheelchair user's need)*	6	
E	Seat* to bottom of shoulder blade					
F	Seat* to top of shoulder					
Modifications and/or PSDs						
G	Trunk width			= *distance between trunk side pads/ wedges*	7	
H	Seat* to axilla (armpit)	L		*H less 30 mm = maximum distance between the top of the seat and the top of trunk side pads/wedges (adjust according to hand simulation)*	8	
		R				
I	Seat* to top of the pelvis (PSIS)			= *distance between the top of the seat and mid-height of rear pelvis pad*	9	
J	Distance between knees			= *width of knee separator pad*	10	
K	Seat* to base of skull			= *distance between the top of seat to middle of headrest*	11	
L	Back of pelvis to seat bones			*L plus 20–40 mm = distance from the backrest support to the beginning of the pre seat bone shelf.*	12	
Other						

**When taking body measurements, the 'seat' is the surface on which the seat bones are sitting.*



B.6: Selecting wheelchairs and cushions

- Look carefully at each of the locally available wheelchairs.
- Work in your group to answer the following questions.
- If you are not sure, ask your trainer for clarification.

1. Lifestyle and environment

Questions:	Answers:
Which wheelchair (or wheelchairs) is best suited to travel over rough/uneven terrain? Why?	
Which wheelchair (or wheelchairs) would most easily facilitate a standing transfer? Why?	
Which wheelchair (or wheelchairs) would most easily facilitate a sideways transfer? Why?	
How does each wheelchair fold or is disassembled for transport? Common methods include: • non-folding; • cross-folding; • backrest folds down; • quick release wheels.	
Which wheelchair (or wheelchairs) does your group think would be the easiest wheelchair to transport on public transport? Why?	
Which wheelchairs (if any) have pneumatic tyres?	
Which wheelchairs (if any) have solid inner tubes?	
Which wheelchairs (if any) have solid tyres?	

2. Pressure relief

Questions:	Answers:
What types of cushion can you see in the training room?	
Which of these would you describe as a pressure relief cushion? Why?	
Of the pressure relief cushions (if any) – which would be relatively easy to modify to either: • increase pressure relief; • provide additional postural support.	
What type of cushion covers can you see in the training room? Consider: Water resistance, durability, stretchiness, thickness of fabric.	

3. Propelling

Questions:	Answers:
Sit upright in the wheelchair. Is the rear wheel in a good position for you to self-propel? Check: • allow your arm to hang down. Does your hand hang over the axle? • hold the top of the push rim directly below your shoulder. Is your elbow bent between 90–120 degrees? • Is the rear wheel position adjustable? If adjusted – would this improve the propelling position?	
Do any of the wheelchairs in the training room have an adjustable height seat? When would this be helpful?	

4. Postural support features

Questions:	Answers:
Which wheelchairs (if any) have elevating leg rest?	
Which wheelchairs (if any) have a solid seat?	
Which wheelchairs (if any) have a tension adjustable backrest?	
Which wheelchairs (if any) have additional components designed to provide additional postural support? (You do not need to describe or list the components. Just identify those wheelchairs, which have additional postural supports.)	

5. Adjustability

Questions:	Answers:
Which wheelchairs (if any) have the following adjustability?	
• Footrests height	
• Footrests angle	
• Footrests move backwards/forwards	
• Backrest height up or down	
• Backrest recline	
• Tilt in space (seat and backrest tilt)	

Intermediate Wheelchair Summary Form

- You may complete this form for each of the wheelchairs used in the training programme (ask your trainer for more copies if required).

Name of Wheelchair:			
Manufacturer/supplier:			
Sizes available:		**Overall weight:**	

Description:

Frame:	Fixed/rigid	☐	Folding	☐	Frame length:	
Backrest:	Slung/canvas	☐	Solid	☐	Tension Adjustable	☐
Seat:	Slung/canvas	☐	Solid	☐	Tension Adjustable	☐
Cushion:	No cushion	☐	Flat foam	☐	Foam contoured	☐
	Fluid	☐	Other	☐		
Footrests:	Fixed	☐	Removable	☐	Other:	
Castor wheels:	Pneumatic	☐	Diameter:			
	Solid	☐	Width:			
Rear wheels:	Pneumatic	☐	Diameter:		Push rims	☐
	Solid	☐	Width:		Adjustable axle	☐
	Solid inner tube	☐			Removable	☐
Brakes:	Short lever	☐	Long lever	☐	Other:	
Armrest:	Curved	☐	Square	☐	Other:	
	Fixed	☐	Removable	☐	Other:	
Push handles:	Push handles	☐				
PSDs:	Pelvis strap	☐	Calf strap	☐	Shoulder harness	☐
	Foot straps	☐	Anti-tip bars	☐	Trunk side pads	☐
	Tray	☐	Headrest	☐	Pelvis side pads	☐
	Other:					

Measurements, adjustment options and range of adjustment:

	Measurements *(if the wheelchair is available in different sizes list all sizes)*	**Is this adjustable?**		**Range of adjustment** *(adjustment range that is possible for this chair)*
		Yes	**No**	
Seat width		☐	☐	
Seat depth		☐	☐	
Seat height		☐	☐	
Backrest height		☐	☐	
Backrest recline		☐	☐	
Footrest height		☐	☐	
Footrest angle		☐	☐	
Push handles height		☐	☐	
Frame length		☐	☐	
Wheelbase length		☐	☐	
Backrest to seat angle		☐	☐	
Tilt in space		☐	☐	

Intermediate Wheelchair Summary Form

- You may complete this form for each of the wheelchairs used in the training programme (ask your trainer for more copies if required).

Name of Wheelchair:			
Manufacturer/supplier:			
Sizes available:		**Overall weight:**	

Description:

Frame:	Fixed/rigid	☐	Folding	☐	Frame length:	
Backrest:	Slung/canvas	☐	Solid	☐	Tension Adjustable	☐
Seat:	Slung/canvas	☐	Solid	☐	Tension Adjustable	☐
Cushion:	No cushion	☐	Flat foam	☐	Foam contoured	☐
	Fluid	☐	Other	☐		
Footrests:	Fixed	☐	Removable	☐	Other:	
Castor wheels:	Pneumatic	☐	Diameter:			
	Solid	☐	Width:			
Rear wheels:	Pneumatic	☐	Diameter:		Push rims	☐
	Solid	☐	Width:		Adjustable axle	☐
	Solid inner tube	☐			Removable	☐
Brakes:	Short lever	☐	Long lever	☐	Other:	
Armrest:	Curved	☐	Square	☐	Other:	
	Fixed	☐	Removable	☐	Other:	
Push handles:	Push handles	☐				
PSDs:	Pelvis strap	☐	Calf strap	☐	Shoulder harness	☐
	Foot straps	☐	Anti-tip bars	☐	Trunk side pads	☐
	Tray	☐	Headrest	☐	Pelvis side pads	☐
	Other:					

Measurements, adjustment options and range of adjustment:

	Measurements *(if the wheelchair is available in different sizes list all sizes)*	**Is this adjustable?**		**Range of adjustment** *(adjustment range that is possible for this chair)*
		Yes	**No**	
Seat width		☐	☐	
Seat depth		☐	☐	
Seat height		☐	☐	
Backrest height		☐	☐	
Backrest recline		☐	☐	
Footrest height		☐	☐	
Footrest angle		☐	☐	
Push handles height		☐	☐	
Frame length		☐	☐	
Wheelbase length		☐	☐	
Backrest to seat angle		☐	☐	
Tilt in space		☐	☐	

Intermediate Wheelchair Summary Form

- You may complete this form for each of the wheelchairs used in the training programme (ask your trainer for more copies if required).

Name of Wheelchair:			
Manufacturer/supplier:			
Sizes available:		**Overall weight:**	

Description:

Frame:	Fixed/rigid	☐	Folding	☐	Frame length:	
Backrest:	Slung/canvas	☐	Solid	☐	Tension Adjustable	☐
Seat:	Slung/canvas	☐	Solid	☐	Tension Adjustable	☐
Cushion:	No cushion	☐	Flat foam	☐	Foam contoured	☐
	Fluid	☐	Other	☐		
Footrests:	Fixed	☐	Removable	☐	Other:	
Castor wheels:	Pneumatic	☐	Diameter:			
	Solid	☐	Width:			
Rear wheels:	Pneumatic	☐	Diameter:		Push rims	☐
	Solid	☐	Width:		Adjustable axle	☐
	Solid inner tube	☐			Removable	☐
Brakes:	Short lever	☐	Long lever	☐	Other:	
Armrest:	Curved	☐	Square	☐	Other:	
	Fixed	☐	Removable	☐	Other:	
Push handles:	Push handles	☐				
PSDs:	Pelvis strap	☐	Calf strap	☐	Shoulder harness	☐
	Foot straps	☐	Anti-tip bars	☐	Trunk side pads	☐
	Tray	☐	Headrest	☐	Pelvis side pads	☐
	Other:					

Measurements, adjustment options and range of adjustment:

	Measurements *(if the wheelchair is available in different sizes list all sizes)*	**Is this adjustable?**		**Range of adjustment** *(adjustment range that is possible for this chair)*
		Yes	**No**	
Seat width		☐	☐	
Seat depth		☐	☐	
Seat height		☐	☐	
Backrest height		☐	☐	
Backrest recline		☐	☐	
Footrest height		☐	☐	
Footrest angle		☐	☐	
Push handles height		☐	☐	
Frame length		☐	☐	
Wheelbase length		☐	☐	
Backrest to seat angle		☐	☐	
Tilt in space		☐	☐	

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

Intermediate Wheelchair Summary Form

- **Read about the wheelchair user, and using the results from the 'taking measurements' part of the intermediate wheelchair assessment form add appropriate dimensions to the sketch below.**

Marian is an 18 year-old female. She has been assessed at your wheelchair service. She and the wheelchair service personnel have decided that she needs the following PSDs to help stabilize her pelvis:

- pre seat bone shelf
- rear pelvis pad
- pelvis strap.

Marian's body measurements are shown in the table below.

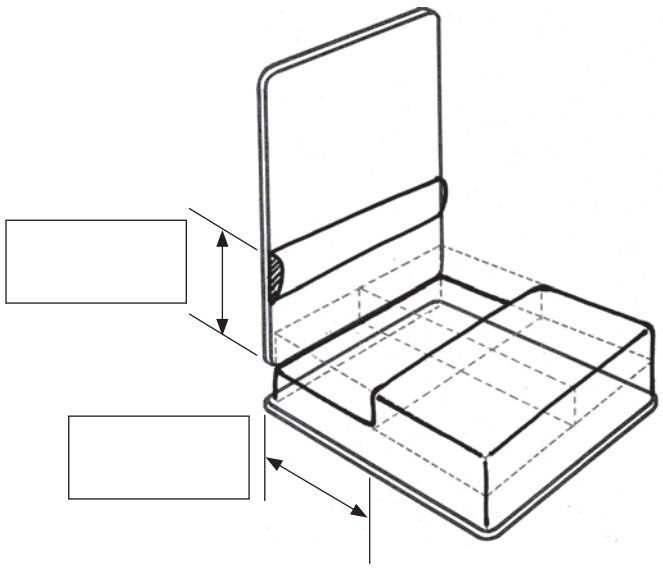
Taking measurements

Body measurements (mm)				Wheelchair component measurements (mm)		
Seat width, depth and footrest height						
A	Hip width		400	= *seat width OR*	*1*	
				= *distance between pelvis side pads*	*2*	
B	Seat depth (back of pelvis to back of the knee)	L	420	*B less 30–50 mm = seat depth (if length is different, use shorter)*	*3*	*380*
		R	420			*380*
C	Calf length	L	420	= *distance between top of the seat to footrest OR* = *distance between top of the seat to floor for foot propelling*	*4*	
		R	420		*5*	
Backrest height						
D	Seat* to bottom of rib cage			= *distance between top of the seat to top of backrest (measure D, E or F – depending on the wheelchair user's need)*	*6*	
E	Seat* to bottom of shoulder blade		500			
F	Seat* to top of shoulder					
Modifications and/or PSDs						
G	Trunk width		**370**	= *distance between trunk side pads/wedges*	*7*	
H	Seat* to axilla (armpit)	L	480	*H less 30 mm = **maximum** distance between the top of the seat and the top of trunk side pads/wedges (adjust according to hand simulation)*	*8*	*450*
		R	480			*450*
I	Seat* to top of the pelvis (PSIS)		160	= *distance between the top of the seat and mid-height of rear pelvis pad*	*9*	

Body measurements (mm)			Wheelchair component measurements (mm)		
J	Distance between knees		*= width of knee separator pad*	*10*	
K	Seat* to base of skull		*= distance between the top of seat to middle of headrest*	*11*	
L	Back of pelvis to seat bones	150	*L plus 20–40 mm = distance from the backrest support to the beginning of the pre seat bone shelf.*	*12*	*180*
Other					

**When taking body measurements, the 'seat' is the surface on which the seat bones are sitting.*

- Add the dimensions for Marian to the sketch in the box on the right for a pre seat bone shelf and rear pelvis pad.

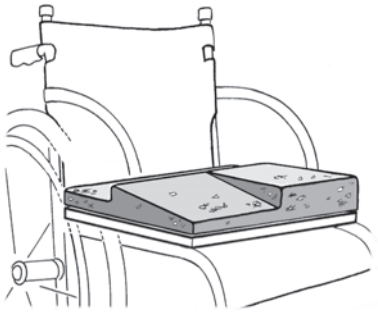


B.9: Prescription (selection) of PSDs – supporting the hips

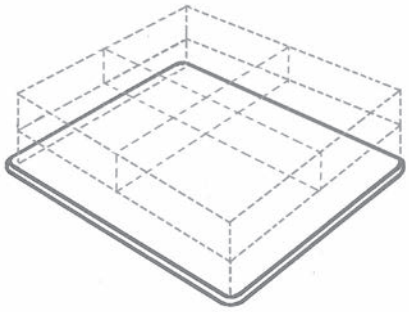
Sienna's right hip cannot bend to neutral sitting posture, so her trunk to thigh angle is greater than 90 degrees.

During the assessment she used a temporary support (foam build-up under both seat bones and her left thigh) which helped her to sit in a more upright posture.

She has been prescribed a cushion that has a pre seat bone shelf and lower seat front (right side) to accommodate her right hip.



- Describe Sienna's PSD on the 'PSDs or modifications required' part of the intermediate wheelchair prescription form below. Use the shadow drawing, and mark where dimensions would be needed.

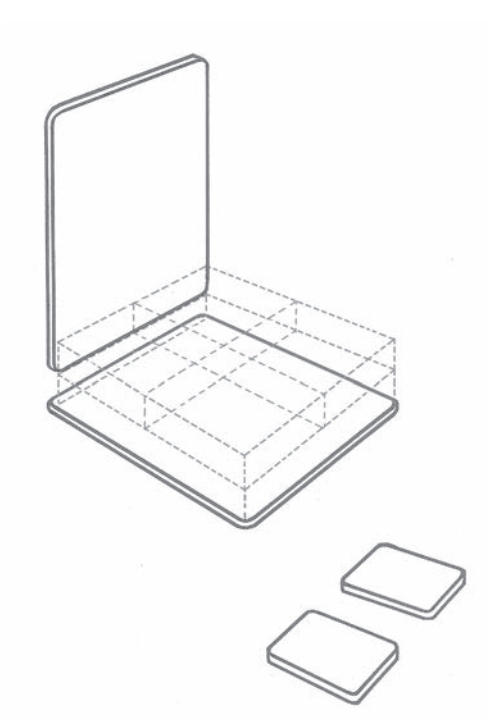
PSD checklist				Describe/draw and provide dimensions
Seat / cushion	Add solid seat	☐		
	Pre seat bone shelf *(= 3 less 12)*	☐		
	Lower seat front	L ☐	R ☐	
	Raised seat front	☐		
	Wedge for anterior tilt	☐		
	Build-up under pelvis	L ☐	R ☐	
	Pelvis side pads *(= 2)*	L ☐	R ☐	
	Outside thigh wedges	L ☐	R ☐	
	Outside thigh pads	L ☐	R ☐	
	Inside thigh wedge *(= 10)*	☐		
	Knee separator pad *(= 10)*	☐		
	Other	☐		
	Other	☐		

Robert cannot bend his hips to neutral sitting posture so his trunk to thigh angle is greater than 90 degrees.

During assessment he used a temporary support (foam build-up under both seat bones) which allowed him to sit in a more upright posture.

He has been prescribed a wheelchair that has a more open seat to backrest angle to accommodate the restriction in his hips.

- **Describe Robert's PSD on the 'PSDs or modifications required' part of the intermediate wheelchair prescription form below. Use the shadow drawing, and mark where dimensions would be needed.**

PSD checklist				Describe/draw and provide dimensions
Seat and backrest	Open seat to backrest angle	☐		
	Seat and backrest tilt (tilt in space)	☐		
Backrest	Add solid backrest	☐		
	Rear pelvis pad (= 9)	☐		
	Adjust backrest shape	☐		
	Tension adjustable backrest	☐		
	Backrest recline	☐		
	Trunk side pads (= 7)	L ☐	R ☐	
	Trunk side wedges(= 7)	L ☐	R ☐	
	Other	☐		
Tray / armrests	Tray	☐		
	Modify armrests	L ☐	R ☐	
	Other	☐		
Head supports	Flat headrest (= 11)	☐		
	Shaped headrest (= 11)	☐		
	Other	☐		

PSD checklist				Describe/draw and provide dimensions
Lower leg supports	Footrest build-ups	L ☐	R ☐	
	Footrest wedges	L ☐	R ☐	
	Lower leg supports	L ☐	R ☐	
	Other	☐		
Straps	Pelvis strap	☐		
	Calf strap	☐		
	Foot straps	L ☐	R ☐	
	Shoulder harness	☐		
	Other	☐		

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

1. Mark is 16 years old and has a high level spinal cord injury. He has a wheelchair with a slung backrest and seat. His wheelchair is the correct size and he has a soft, flat foam cushion.

Mark finds it difficult to sit upright. His back stays rounded and he tends to slide forward in his chair. He is getting red marks on his skin under his seat bones and around his shoulder blades.

- Read the results from Mark's assessment (below).
- What PSDs could be provided to help Mark sit upright in his wheelchair? Use the postural PSD Table and PSD Reference Table in your Reference Manual to assist you.
- How could you provide or make these supports for Mark, using his current wheelchair? Think about the changes that could be added to the wheelchair seat/ cushion and backrest.
- Remember to work in this sequence: Pelvis + Hips→Trunk
- Use the wheelchair and materials you have been given to show to the rest of the group how you will give Mark the support he needs.

Sitting posture without support

Pelvis and hip posture screen

Check if pelvis is level and hip flexion range when lying

Can pelvis be level? Yes ☑ No ☐

Can hip bend to neutral sitting posture?

Right hip: Yes ☑ No ☐ Angle: _____

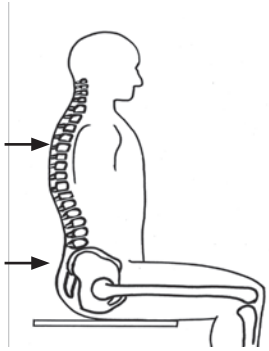
Left hip: Yes ☑ No ☐ Angle: _____

*If pelvis cannot be level **or** hips cannot bend to neutral sitting posture – accommodate with temporary support.*

Hand simulation: support needed to sit in neutral posture as close to neutral posture as is comfortable

*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 **and** describe or line draw the support provided to achieve that sitting posture.*
Pelvis	✓	☐	
Trunk	✓	☐	
Head	✓	☐	
L Hip	✓	☐	
R Hip	✓	☐	
Thighs	✓	☐	
L Knee	✓	☐	
R Knee	✓	☐	
L Ankle	✓	☐	
R Ankle	✓	☐	



To sit upright, Mark needed:
- strong support at the back of his pelvis (both hands on the back of pelvis pushing forward);
- light support behind his shoulder blades.

Intermediate Wheelchair Prescription (Selection) Form

1. Wheelchair user information

Wheelchair user's name:		**Number:**	
Date of assessment:		**Date of fitting:**	
Assessor's name:			

2. Wheelchair type, size and set-up

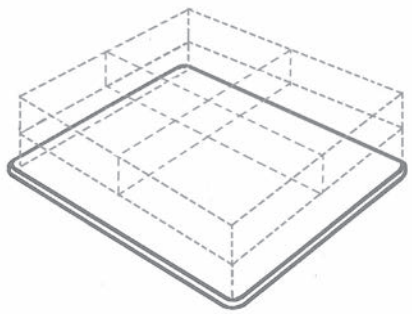
Type of wheelchair *(list available wheelchairs below)*		**Wheelchair dimensions (mm)**	
	☐	Seat width	
	☐	Seat depth	
	☐	Backrest height	
	☐	Footrest height	

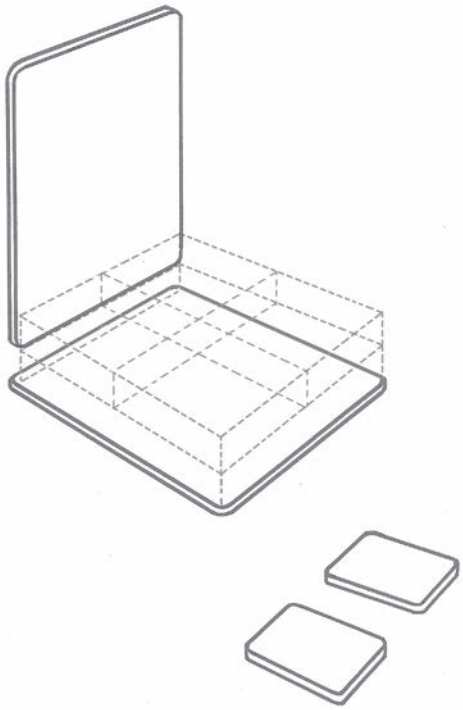
Wheelchair set-up		
Rear wheel position		**Other:**
Tilt		

3. Cushion type and size

Type of cushion		**Size**
E.g. pressure relief cushion	☐	
	☐	

4. PSDs or modifications required

PSD checklist				**Describe/draw and provide dimensions**
Seat / cushion	Add solid seat			
	Pre seat bone shelf (= 3 less 12)			
	Lower seat front	L ☐	R ☐	
	Raised seat front			
	Wedge for anterior tilt			
	Build-up under pelvis	L ☐	R ☐	
	Pelvis side pads (= 2)	L ☐	R ☐	
	Outside thigh wedges	L ☐	R ☐	
	Outside thigh pads	L ☐	R ☐	
	Inside thigh wedge (= 10)			
	Knee separator pad (= 10)			
	Other			
	Other			

PSD checklist			Describe/draw and provide dimensions
Seat and backrest	Open seat to backrest angle	☐	
	Seat and backrest tilt (tilt in space)	☐	
Backrest	Add solid backrest	☐	
	Rear pelvis pad *(= 9)*	☐	
	Adjust backrest shape	☐	
	Tension adjustable backrest	☐	
	Backrest recline	☐	
	Trunk side pads *(= 7)*	L ☐ R ☐	
	Trunk side wedges *(= 7)*	L ☐ R ☐	
	Other	☐	
Tray / armrests	Tray	☐	
	Modify armrests	L ☐ R ☐	
	Other	☐	
Head supports	Flat headrest *(= 11)*	☐	
	Shaped headrest *(= 11)*	☐	
	Other	☐	
Lower leg supports	Footrest build-ups	L ☐ R ☐	
	Footrest wedges	L ☐ R ☐	
	Lower leg supports	L ☐ R ☐	
	Other	☐	
Straps	Pelvis strap	☐	
	Calf strap	☐	
	Foot straps	L ☐ R ☐	
	Shoulder harness	☐	
	Other	☐	

5. Agreement signatures

Wheelchair user:		**Assessor:**	
Wheelchair service manager:			

2. Josephine is 35 years old. She has a spinal cord injury. She lives in a rural village, and is an active member of the local Church. She has previously been provided with a long wheelbase wheelchair, which she likes as it is easy for her family to push over the rough ground in her village. She can push it a little herself when indoors on smooth surfaces. The wheelchair is the correct size for her, and has a solid backrest and seat. She has a thick flat foam cushion.

Josephine is not comfortable in the wheelchair, and she is finding it harder to push herself. She sits with her pelvis rolled back (posterior pelvis tilt) and her trunk posture is curved forward.

- **Read the results from Josephine's assessment (below).**
- **What PSDs could be provided to help Josephine sit as upright as she is able in her wheelchair.**
- **Use the PSD Table and PSD Reference Table in your Reference Manual to assist you.**
- **How could you provide or make these supports for Joseph, using her current wheelchair? Think about the changes that could be added to the wheelchair seat/ cushion and backrest.**
- **Remember to work in this sequence: Pelvis+ Hips→Trunk**
- **Use the wheelchair and materials you have been given to show to the rest of the group how you will give Josephine the support she needs.**

Sitting posture without support

Pelvis and hip posture screen

Check if pelvis is level and hip flexion range when lying

Can pelvis be level? Yes ☑ No ☐

Can hip bend to neutral sitting posture?

Right hip: Yes ☐ No ☑ Angle: 100 degrees

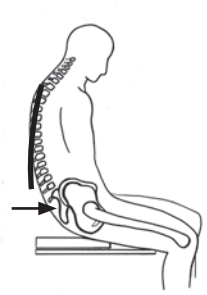
Left: hip Yes ☑ No ☐ Angle: _____

*If pelvis cannot be level **or** hips cannot bend to neutral sitting posture – accommodate with temporary support.*

Hand simulation: support needed to sit in neutral posture / as close to neutral posture as is comfortable

*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 **and** describe or line draw the support provided to achieve that sitting posture.*
Pelvis	☐	✓	
Trunk	☐	✓	
Head	☐	✓	
L Hip	✓	☐	
R Hip	☐	✓	
Thighs	✓	☐	
L Knee	✓	☐	
R Knee	✓	☐	
L Ankle	✓	☐	
R Ankle	✓	☐	



Josephine could not sit upright in neutral sitting posture. Her final posture is:

- trunk rounded forward;
- head falling forward;
- pelvis in posterior tilt.

Her posture is improved with the following support:

- temporary support under both seat bones and left thigh;
- two hands at the back of her pelvis, full contact support for her lower and upper trunk.

Intermediate Wheelchair Prescription (Selection) Form

1. Wheelchair user information

Wheelchair user's name:		**Number:**	
Date of assessment:		**Date of fitting:**	
Assessor's name:			

2. Wheelchair type, size and set-up

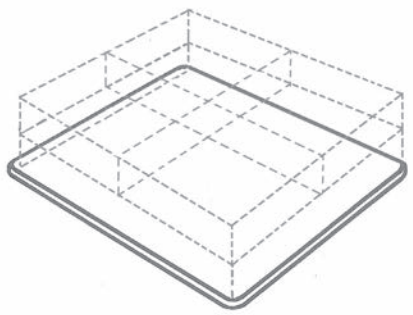
Type of wheelchair *(list available wheelchairs below)*		**Wheelchair dimensions (mm)**	
	☐	Seat width	
	☐	Seat depth	
	☐	Backrest height	
	☐	Footrest height	

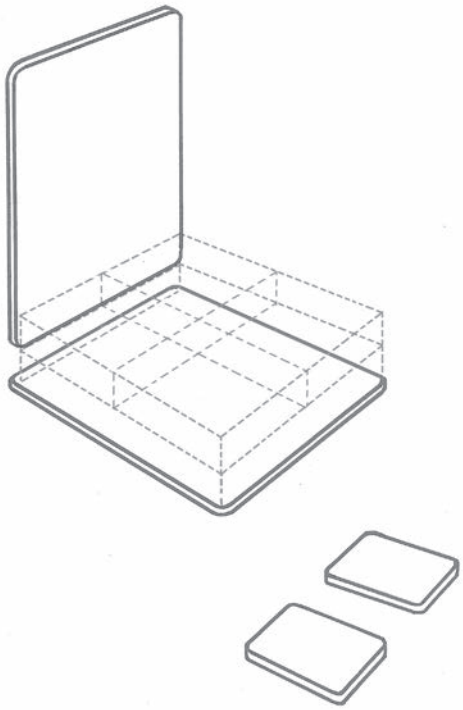
Wheelchair set-up		
Rear wheel position		Other:
Tilt		

3. Cushion type and size

Type of cushion		**Size**
E.g. pressure relief cushion	☐	
	☐	

4. PSDs or modifications required

PSD checklist				**Describe/draw and provide dimensions**
Seat / cushion	Add solid seat	☐		
	Pre seat bone shelf (= 3 less 12)	☐		
	Lower seat front	L ☐	R ☐	
	Raised seat front	☐		
	Wedge for anterior tilt	☐		
	Build-up under pelvis	L ☐	R ☐	
	Pelvis side pads (= 2)	L ☐	R ☐	
	Outside thigh wedges	L ☐	R ☐	
	Outside thigh pads	L ☐	R ☐	
	Inside thigh wedge (= 10)	☐		
	Knee separator pad (= 10)	☐		
	Other	☐		
	Other	☐		

PSD checklist			Describe/draw and provide dimensions
Seat and backrest	Open seat to backrest angle	☐	
	Seat and backrest tilt (tilt in space)	☐	
Backrest	Add solid backrest	☐	
	Rear pelvis pad *(= 9)*	☐	
	Adjust backrest shape	☐	
	Tension adjustable backrest	☐	
	Backrest recline	☐	
	Trunk side pads *(= 7)*	L ☐ R ☐	
	Trunk side wedges *(= 7)*	L ☐ R ☐	
	Other	☐	
Tray / armrests	Tray	☐	
	Modify armrests	L ☐ R ☐	
	Other	☐	
Head supports	Flat headrest *(= 11)*	☐	
	Shaped headrest *(= 11)*	☐	
	Other	☐	
Lower leg supports	Footrest build-ups	L ☐ R ☐	
	Footrest wedges	L ☐ R ☐	
	Lower leg supports	L ☐ R ☐	
	Other	☐	
Straps	Pelvis strap	☐	
	Calf strap	☐	
	Foot straps	L ☐ R ☐	
	Shoulder harness	☐	
	Other	☐	

5. Agreement signatures

Wheelchair user:		**Assessor:**	
Wheelchair service manager:			

3. Sian is 3 years old and has cerebral palsy. He has a child-size cross-folding wheelchair with swing-away footrests, a slung seat and backrest. There is no tray and no cushion. His wheelchair is the correct seat depth for him, however it is a little wide. His parents do not own a car and they walk to most places. They can push him around the community in his wheelchair although sometimes they just carry him. Sian can push his wheelchair a little himself when on a smooth surface. Sian can sit upright for very short periods without support. After 10 minutes his trunk starts to collapse and he usually leans forwards and towards the left. This causes his pelvis to lift up on the right side, and more weight goes through his left seat bone. His back has the normal curve for his age. Sian's mother would like him to be able to play outside with other children and begin to push his wheelchair.

- **Read the results from Sian's assessment (below).**
- **What PSDs could be provided to help Sian sit as upright as he is able in his wheelchair? Use the PSD Table and PSD Reference Table in your Reference Manual to assist you.**
- **How could you provide or make these supports for Sian, using his current wheelchair? Think about the changes that could be made to the wheelchair seat/ cushion and backrest.**
- **Remember to work in this sequence: Pelvis+ Hips→Trunk.**
- **Use the wheelchair and materials you have been given to show to the rest of the group how you will give Sian the support he needs.**

Sitting posture without support

Pelvis and hip posture screen

Check if pelvis is level and hip flexion range when lying

Can pelvis be level? Yes ☑ No ☐

Can hip bend to neutral sitting posture?

Right hip: Yes ☐ No ☑ Angle: 80 degrees

Left hip: Yes ☐ No ☑ Angle: 80 degrees

*If pelvis cannot be level **or** hips cannot bend to neutral sitting posture – accommodate with temporary support.*

Hand simulation: support needed to sit in neutral posture / as close to neutral posture as is comfortable

*For each body part: If neutral sitting posture is possible **with hand support,** tick yes. If not, tick no.*

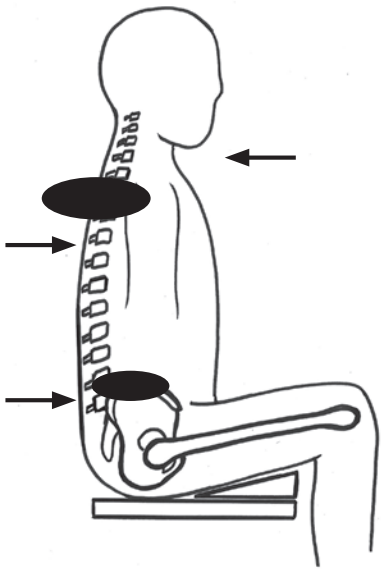
Part	Yes	No
Pelvis	☐	☐
Trunk	☐	☐
Head	☐	☐
L Hip	☐	☐
R Hip	☐	☐
Thighs	☐	☐
L Knee	☐	☐
R Knee	☐	☐
L Ankle	☐	☐
R Ankle	☐	☐

*Describe or line draw final sitting posture achieved by the wheelchair user with hand support **and** describe or line draw the support provided to achieve that sitting posture.*

Sian could sit in neutral siting posture, however with both hips bent (trunk to thigh angle approximately 80 degrees).

To sit upright Sian needed:

- temporary foam wedge support provided under both thighs;
- one hand on each side of his pelvis, holding firmly with gentle support also at the back of his pelvis;
- one hand on each side of his trunk, holding firmly. The left side needed support slightly higher than on the right;
- light support around his shoulder blades and front of chest.



Intermediate Wheelchair Prescription (Selection) Form

1. Wheelchair user information

Wheelchair user's name:		**Number:**	
Date of assessment:		**Date of fitting:**	
Assessor's name:			

2. Wheelchair type, size and set-up

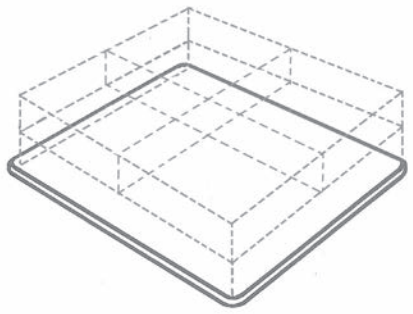
Type of wheelchair *(list available wheelchairs below)*		**Wheelchair dimensions (mm)**	
	☐	Seat width	
	☐	Seat depth	
	☐	Backrest height	
	☐	Footrest height	

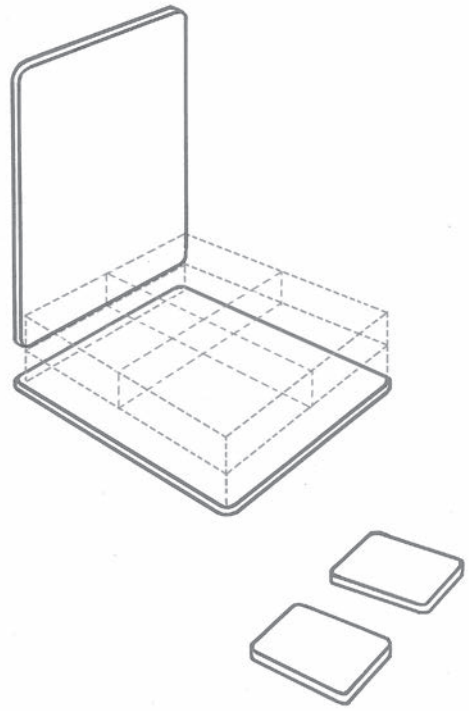
Wheelchair set-up		
Rear wheel position		Other:
Tilt		

3. Cushion type and size

Type of cushion		**Size**
E.g. pressure relief cushion	☐	
	☐	

4. PSDs or modifications required

PSD checklist				**Describe/draw and provide dimensions**
Seat / cushion	Add solid seat	☐		
	Pre seat bone shelf (= 3 less 12)	☐		
	Lower seat front	L ☐	R ☐	
	Raised seat front	☐		
	Wedge for anterior tilt	☐		
	Build-up under pelvis	L ☐	R ☐	
	Pelvis side pads (= 2)	L ☐	R ☐	
	Outside thigh wedges	L ☐	R ☐	
	Outside thigh pads	L ☐	R ☐	
	Inside thigh wedge (= 10)	☐		
	Knee separator pad (= 10)	☐		
	Other	☐		
	Other	☐		

PSD checklist			Describe/draw and provide dimensions
Seat and backrest	Open seat to backrest angle	☐	
	Seat and backrest tilt (tilt in space)	☐	
Backrest	Add solid backrest	☐	
	Rear pelvis pad *(= 9)*	☐	
	Adjust backrest shape	☐	
	Tension adjustable backrest	☐	
	Backrest recline	☐	
	Trunk side pads *(= 7)*	L ☐ R ☐	
	Trunk side wedges *(= 7)*	L ☐ R ☐	
	Other	☐	
Tray / armrests	Tray	☐	
	Modify armrests	L ☐ R ☐	
	Other	☐	
Head supports	Flat headrest *(= 11)*	☐	
	Shaped headrest *(= 11)*	☐	
	Other	☐	
Lower leg supports	Footrest build-ups	L ☐ R ☐	
	Footrest wedges	L ☐ R ☐	
	Lower leg supports	L ☐ R ☐	
	Other	☐	
Straps	Pelvis strap	☐	
	Calf strap	☐	
	Foot straps	L ☐ R ☐	
	Shoulder harness	☐	
	Other	☐	

5. Agreement signatures

Wheelchair user:		**Assessor:**	
Wheelchair service manager:			

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

Read and answer the following questions.

Jonah has come for assessment. During hand simulation you find out that Jonah`s legs tend to fall outwards (abducted) but with gentle support you can bring his legs into a neutral sitting posture (knees closer together).

- What changes do you think you can make to his wheelchair and cushion to help him sit with legs in a neutral sitting posture?

Sam has been using this wheelchair for two years. He has a head injury, and his legs are quite stiff and tight. In the assessment you find that Sam`s legs are drawn inwards but you can draw his knees apart into a more neutral sitting posture. However this takes quite a bit of force. With his knees in a more neutral sitting posture Sam feels more balanced.

- What changes do you think you can make to his wheelchair and cushion to help him sit with legs in a neutral sitting posture?

Elijah is pleased that his wheelchair can fold, and he is able to take it in a car to and from his workplace. However his back is sore and he finds his legs roll into each other. During assessment you find that Elijah can sit in neutral sitting posture, and with gentle support his legs can sit in neutral sitting posture.

- What changes do you think you can make to his wheelchair and cushion to help him sit with legs in a neutral posture?

Practical Two: Product (wheelchair) preparation – task checklist

- Use the table below to help you plan and prepare the wheelchair and PSDs.
  - List each task (preferably in the order the tasks should be completed in).
  - Decide who will be responsible for the task.
  - Tick off each task as it is completed.

List each task	Person responsible	Tick off when completed
		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐

Practical Two: Product (wheelchair) preparation – Intermediate Wheelchair Safe and Ready Checklist

Carry out intermediate wheelchair safe and ready checklist to make sure the wheelchair is safe and ready for the wheelchair user to try.

Whole wheelchair including PSDs	
There are no sharp edges	☐
No parts are damaged or scratched	☐
The wheelchair travels in a straight line	☐
Front castor wheels	
Spin freely	☐
Spin without touching the fork	☐
Bolts are tight	☐
Front castor barrels	
Castor fork spins freely	☐
Rear wheels	
Spin freely	☐
Axle bolts are tight	☐
Tyres inflated correctly (with thumb pressure, wheel can be depressed less than 5 mm)	☐
Push rims are secure	☐
Brakes	
Function properly	☐
Footrests	
Footrests are securely attached	☐
Frame	
For a cross-folding wheelchair – the wheelchair folds and unfolds easily	☐
For a wheelchair with fold-down backrest – the backrest folds and unfolds easily	☐
Cushion	
The cushion is in the cover correctly	☐
The cushion is sitting on the wheelchair correctly	☐
The cushion cover fabric is tight but not too tight	☐
If the wheelchair has a solid seat: the cushion fully covers the solid seat	☐

B.14: User training

- Read ONE of the wheelchair user's stories below. Your trainer will tell you which one to read.
- Decide what skills the wheelchair user needs to learn to be able to use and care for their new wheelchair. Complete the intermediate wheelchair user training checklist on the next page.
- Choose the role of wheelchair user, wheelchair service personnel or wheelchair user's family member/carer. A person assuming the role of the wheelchair service personnel should practise teaching at least three of these skills to other members of the group. Use 'How to make wheelchair user training successful' tips outlined in this session of your Reference Manual.

Joshua

Joshua is 6 years old and has cerebral palsy. He gets sudden uncontrolled movements. He has been prescribed (selected) a child's wheelchair with PSDs including a lap strap, pelvis side pads and trunk side pads. Joshua has thin, sensitive skin, and the trunk side pads have been provided with extra padding to help ensure he does not develop a pressure sore from the trunk side pads.

Joshua's new wheelchair has a tilt feature, which allows the wheelchair to be tilted back sometimes and then brought more upright. There is also an anti-tip bar, which can be moved out of the way for travelling over rough ground or up and down kerbs. For transport the wheelchair has removable rear wheels and the seat can be taken off the wheelchair frame.

Joshua goes to kindergarten every morning. He is picked up by a transport service arranged by the kindergarten. The vehicle is a small motorized three-wheeler. His parents are worried about whether his wheelchair will fit inside.

Joshua has come for a fitting for his new wheelchair. His mother is with him.

Sangita

Sangita is three years old and has spina bifida. She has movement difficulties; loss of feeling below her waist and has a bulge at the bottom of her spine. Her parents say she has difficulty controlling her bladder and bowels and often has urinary tract infections.

Sangita has come to the wheelchair service for a fitting of her first wheelchair, which has quick release wheels, pelvis strap, pelvis side pads, and some shaping of the backrest to avoid pressure around the bulge in her spine. She also has a pressure relief cushion. She has come with both parents. Her parents are worried that if she has a wheelchair she will not want to walk with her calipers. However, she gets frustrated when she cannot play with her brother and sisters outside.

Kim Som

Kim Som is 40 years old and had a head injury 15 years ago. He is very thin as he has difficulty eating. He has a fixed forward curve of the spine. Kim Som cannot stand up and is completely dependent upon his mother. He does not speak, however his mother says that he understands simple instructions.

In the assessment he was identified as a person at risk of developing a pressure sore as he is thin, cannot move independently and has had a pressure sore in the past (from lying in bed).

He has just received his first wheelchair. The wheelchair has a pressure relief cushion and PSD to help Kim Som sit more comfortably. His mother is his carer and has attended the wheelchair fitting appointment with him.

Intermediate Wheelchair User Training Checklist

	Skills to Teach	Skills Taught
Wheelchair handling		
Folding and lifting the wheelchair	☐	☐
Taking off and putting back on any PSDs that need to come off for transport	☐	☐
Using quick release wheels	☐	☐
Using the brakes	☐	☐
Tilting and anti-tip bars (if used)	☐	☐
Correct position of PSDs when the wheelchair user is in the wheelchair	☐	☐
Using the cushion including positioning correctly	☐	☐
Transfers		
Independent transfer	☐	☐
Assisted transfer	☐	☐
Other	☐	☐
Wheelchair use and mobility		
Pushing correctly (using the wheelchair user's preferred method)	☐	☐
Up and down a slope	☐	☐
Up and down a step	☐	☐
On rough ground	☐	☐
Partial wheelie	☐	☐
How long to sit in the wheelchair (for children and adults with additional postural support needs)	☐	☐
Assisted pushing	☐	☐
Preventing pressure sores		
Check areas of high pressure for pressure sores	☐	☐
Pressure relief lifts	☐	☐
Eat well and drink lots of water	☐	☐
What to do if a pressure sore develops	☐	☐

	Skills to Teach	Skills Taught
How to care for a wheelchair at home		
Clean the wheelchair; wash and dry the cushion and cushion cover	☐	☐
Oil moving parts	☐	☐
Pump the tyres	☐	☐
Tighten nuts and bolts	☐	☐
Tighten spokes	☐	☐
Check upholstery	☐	☐
Check for rust	☐	☐
Check the cushion	☐	☐
What to do if there is a problem		
Wheelchair needs repairs	☐	☐
The wheelchair does not fit or is not comfortable	☐	☐

B.15: Putting it all together

- Prepare a 10 minute presentation for the whole group about the wheelchair user your group worked with and what your group have learnt.

The presentation should include the following points:

1. Information gained from the assessment:

- the wheelchair user's goals (why he/she wants a wheelchair);
- their physical needs;
- their lifestyle needs;
- whether he/she has an existing wheelchair – and whether this wheelchair is meeting their needs;
- presence, risk or history of pressure sores;
- method of pushing;
- sitting posture without support;
- results of the pelvis and hip posture screen;
- results of the hand simulation.

2. Wheelchair and cushion prescribed (selected):

- type of wheelchair;
- type of cushion;
- any PSDs that were prescribed.

3. Fitting:

- any problems that were identified at fitting and needed to be resolved – and if so, how these were resolved.

4. User training:

- what did the wheelchair user and the group decide needed to be covered in user training?

5. Wheelchair user's feedback

- after receiving the wheelchair – did the wheelchair user have any comments/ feedback?

6. Follow up plan:

- what arrangements have been made for follow up?

B.16: Maintenance, repairs and follow up

- Read each wheelchair user's story.
- Complete a wheelchair follow up form for each wheelchair user.
- Discuss and record any actions to be taken.

Thusitha

Thusitha is a 7 year-old boy and lives at home with his parents and older sister. He has muscular dystrophy and received a wheelchair through the wheelchair service a year ago. At that time he could walk short distances. He was able to do a standing transfer in and out of the wheelchair on his own. He said he wanted a wheelchair because he is finding it hard to get to school.

At the follow up visit, Thusitha said that he is now finding it hard to get in and out of his wheelchair himself. He feels tired and uncomfortable by the afternoon at school. This makes it hard to concentrate. His wheelchair is the correct size and has a medium slung backrest with a simple comfort cushion.

When asked to rate how satisfied Thusitha is with his wheelchair he says 4 out of 5.

Mirella

Mirella is 23 years old and has polio. She makes honey and sells it in the local market. She received a wheelchair with a clip-on tricycle two years ago. She needed some extra PSDs in the wheelchair. She was prescribed a layered foam cushion with modifications. A rear pelvis pad was added to the backrest of the wheelchair.

At the follow up visit Mirella says that she uses her wheelchair and tricycle every day to get to and from the market.

She reports that she has had to repair two wheel punctures recently. When checking the wheelchair, the wheelchair service personnel notice that the tyres are very worn out. The rear pelvis pad has slipped down onto the seat and the cushion looks very flat.

When asked to rate how satisfied she is with her wheelchair, Mirella says 3 out of 5.

Ursula

Ursula is 6 years old and has cerebral palsy. She likes singing with her sister in the church choir. She received her wheelchair with PSDs eight months ago.

She was ill with a chest infection and missed her first follow up appointment. Her parents say that recently she has not been happy sitting in the wheelchair and asks to get out after an hour. They have noticed a dark mark on her ribs near one of the trunk side pads and wonder whether this could be the problem.

The wheelchair service personnel find a private place and ask Ursula and her parents for permission to check her skin. The wheelchair service personnel confirm that there is a dark mark. They look at the wheelchair and notice that the foam padding on the trunk side pad has compressed.

When asked to rate how satisfied they are with Ursula's wheelchair, her parents say 4 out of 5.

Wheelchair Follow Up Form

1. Wheelchair user information

Wheelchair user name: _____ Number: _____

Date of fitting: _____ Date of follow up: _____

Name of person carrying out follow up: _____

Follow up carried out at: Wheelchair user's home ☐ Wheelchair service centre ☐
Other: _____

2. Interview

		Record action to be taken:
Are you using your wheelchair as much as you would like?	Yes ☐ No ☐	
If no – why not?		
Do you have any problems using your wheelchair?	Yes ☐ No ☐	
If yes – what are the problems?		
Do you have any questions about using your wheelchair?	Yes ☐ No ☐	
If yes – what questions. Is further training needed?		
Does the wheelchair user have any pressure sores?	Yes ☐ No ☐	
Describe (location and level)		
How would you rate your satisfaction with your wheelchair from 1–5? *(1 is not satisfied and 5 is very satisfied)*	Rate:	
Comment:		

3. Wheelchair and cushion check

Is the wheelchair in good working order and safe to use?	Yes ☐ No ☐	
Is the cushion in good working order and safe to use?	Yes ☐ No ☐	
If no for either, what is the problem?		

4. Fitting check

Does the wheelchair fit correctly?	Yes ☐ No ☐		
If no – what is the problem?			
Pressure test level *(1=safe, 2=warning, 3=unsafe)* (if user at risk of developing a pressure sore)	Left:		
	Right:		
Is the wheelchair user sitting upright comfortably when still, moving, and through the day?	Yes ☐ No ☐		
If no – what is the problem?			

Wheelchair Follow Up Form

1. Wheelchair user information

Wheelchair user name: _____ Number: _____

Date of fitting: _____ Date of follow up: _____

Name of person carrying out follow up: _____

Follow up carried out at: Wheelchair user's home ☐ Wheelchair service centre ☐
Other: _____

2. Interview

		Record action to be taken:
Are you using your wheelchair as much as you would like?	Yes ☐ No ☐	
If no – why not?		
Do you have any problems using your wheelchair?	Yes ☐ No ☐	
If yes – what are the problems?		
Do you have any questions about using your wheelchair?	Yes ☐ No ☐	
If yes – what questions. Is further training needed?		
Does the wheelchair user have any pressure sores?	Yes ☐ No ☐	
Describe (location and level)		
How would you rate your satisfaction with your wheelchair from 1–5? *(1 is not satisfied and 5 is very satisfied)*	Rate:	
Comment:		

3. Wheelchair and cushion check

Is the wheelchair in good working order and safe to use?	Yes ☐ No ☐	
Is the cushion in good working order and safe to use?	Yes ☐ No ☐	
If no for either, what is the problem?		

4. Fitting check

Does the wheelchair fit correctly?	Yes ☐ No ☐		
If no – what is the problem?			
Pressure test level *(1=safe, 2=warning, 3=unsafe)* (if user at risk of developing a pressure sore)	Left:		
	Right:		
Is the wheelchair user sitting upright comfortably when still, moving, and through the day?	Yes ☐ No ☐		
If no – what is the problem?			

Wheelchair Follow Up Form

1. Wheelchair user information

Wheelchair user name: _____ Number: _____

Date of fitting: _____ Date of follow up: _____

Name of person carrying out follow up: _____

Follow up carried out at: Wheelchair user's home ☐ Wheelchair service centre ☐
Other: _____

2. Interview

		Record action to be taken:
Are you using your wheelchair as much as you would like?	Yes ☐ No ☐	
If no – why not?		
Do you have any problems using your wheelchair?	Yes ☐ No ☐	
If yes – what are the problems?		
Do you have any questions about using your wheelchair?	Yes ☐ No ☐	
If yes – what questions. Is further training needed?		
Does the wheelchair user have any pressure sores?	Yes ☐ No ☐	
Describe (location and level)		
How would you rate your satisfaction with your wheelchair from 1–5? *(1 is not satisfied and 5 is very satisfied)*	Rate:	
Comment:		

3. Wheelchair and cushion check

Is the wheelchair in good working order and safe to use?	Yes ☐ No ☐	
Is the cushion in good working order and safe to use?	Yes ☐ No ☐	
If no for either, what is the problem?		

4. Fitting check

Does the wheelchair fit correctly?	Yes ☐ No ☐		
If no – what is the problem?			
Pressure test level *(1=safe, 2=warning, 3=unsafe)* (if user at risk of developing a pressure sore)	Left:		
	Right:		
Is the wheelchair user sitting upright comfortably when still, moving, and through the day?	Yes ☐ No ☐		
If no – what is the problem?			

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

Product (Wheelchair) Preparation – Task Checklist

- Use the table below to help you plan and prepare the wheelchair and PSDs for the wheelchair user's first fitting.
  - List each task (preferably in the order the tasks should be completed in).
  - Decide who will be responsible for the task.
  - Tick off each task as it is completed.

List each task	Person responsible	Tick off when completed
		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐

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

- Carry out intermediate wheelchair safe and ready checklist to make sure the wheelchair is ready for the wheelchair user to try.

Intermediate Wheelchair Safe and Ready Checklist

Whole wheelchair including PSDs	
There are no sharp edges	☐
No parts are damaged or scratched	☐
The wheelchair travels in a straight line	☐
Front castor wheels	
Spin freely	☐
Spin without touching the fork	☐
Bolts are tight	☐
Front castor barrels	
Castor fork spins freely	☐
Rear wheels	
Spin freely	☐
Axle bolts are tight	☐
Tyres inflated correctly (with thumb pressure, wheel can be depressed less than 5 mm)	☐
Push rims are secure	☐
Brakes	
Function properly	☐
Footrests	
Footrests are securely attached	☐
Frame	
For a cross-folding wheelchair – the wheelchair folds and unfolds easily	☐
For a wheelchair with fold-down backrest – the backrest folds and unfolds easily	☐
Cushion	
The cushion is in the cover correctly	☐
The cushion is sitting on the wheelchair correctly	☐
The cushion cover fabric is tight but not too tight	☐
If the wheelchair has a solid seat: the cushion fully covers the solid seat	☐

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