



Supplementary Material

Qualitative work to generate outcome domains of relevance to patients

The qualitative research on patient perspectives on outcomes relevant to hand fractures and joint injuries involved interviews and focus groups. Patients were recruited from Queen's Medical Centre (Nottingham) adult fracture clinics with purposive sampling based upon sampling frames constructed to ensure a mix of demographics (sex, age), injury type (distal radius fracture or other injury) and treatment (conservative/surgical).

Recruitment continued until saturation of outcome domain generation was achieved, with an estimate that 20-30 interviews and three focus groups of 6-8 participants would be required. In total, 25 interviews were conducted, as well as five focus groups with a total of 21 participants.

The majority of transcripts of the audio recordings of interviews were produced by a member of the research group, along with some support from an external transcription service for the remainder. Transcripts of the focus groups were produced by the external transcription service. Nvivo v12 (Nvivo, USA) was used in handling of transcripts.

Analysis proceeded under an inductive thematic methodological approach as described by Braun and Clarke, with constant comparison to guide collection of additional data. There was an initial elicitation of aspects of the patient journey in terms of experience of the injury, treatment and recovery processes. The coded data were further analysed to develop subthemes related to outcomes.

At a subsequent stage, examples and wording obtained over the course of the qualitative work was used to guide the wording of outcome domains and descriptors that were used in the Delphi study.

Table i. Table showing linking of qualitative study and systematic review outcome domains to form Delphi longlist.

Delphi outcome item	Qualitative study outcome domain	Systematic review WHO ICF outcome domain
Change in sensation	Change in sensation	b265 Touch function b270 Sensory functions related to temperature and other stimuli b260 Proprioceptive function b156 Perceptual functions
Pain/discomfort	Pain/discomfort	b280 Sensation of pain b289 Sensation of pain, other specified and unspecified
Strength or muscle power	Strength or muscle power	b730 Muscle power functions b455 Exercise tolerance functions
Range of movement	Range of movement	b710 Mobility of joint functions
Confirmation of bone healing and alignment (fractures only)	Confirmation of bone healing and alignment (fractures only)	nc-Bone healing s730 Structure of upper extremity nc-Bone healing time
Confirmation of soft-tissue healing	Confirmation of soft tissue healing	b820 Repair functions of the skin
Stability of joints		b715 Stability of joint functions
Grasping and moving light objects	Grasping and moving light objects	d445 Hand and arm use
Self-hygiene/personal care	Self-hygiene/personal care	d510 Washing oneself d530 Toileting d520 Caring for body parts d230 Carrying out daily routine nd-ph (physical health) d570 Looking after one's health
Cooking/preparing meals	Cooking/preparing meals	d630 Preparing meals
Dressing	Dressing	d540 Dressing
Eating and drinking	Eating and drinking	d550 Eating d560 Drinking
Shopping for groceries	Shopping for groceries	d620 Acquisition of goods and services d860 Basic economic transactions
Walking/mobility	Walking/mobility	d450 Walking d455 Moving around d460 Moving around in different locations
Using hands to change body position	Using hands to change body position	d410 Changing basic body position d420 Transferring oneself
General household chores	General household chores	d640 Doing housework d650 Caring for household objects
Sleeping	Sleeping	b134 Sleep functions
Thinking and memory		b160 Thought functions b144 Memory functions b117 Intellectual functions b164 Higher-level cognitive functions b140 Attention functions d839 Education unspecified b180 Experience of self and time functions
Fine hand use/dexterity	Fine hand use	d440 Fine hand use

		b760 Control of voluntary movement functions
Hobbies and recreation	Hobbies and recreation	d920 Recreation and leisure
Return to usual work/job	Return to work/job	d850 Remunerative employment d855 Non-remunerative employment d845 Acquiring, keeping and terminating a job
Carrying or lifting heavy objects	Carrying or lifting heavy objects	d430 Lifting and carrying objects
Being able to control a vehicle for transport	Return to driving	d475 Driving d470 Using transportation
Keyboard and mouse/touchscreen use	Keyboard and mouse/touchscreen use	
Socializing/relationships with friends and family	Socializing/relationships with friends and family	d760 Family relationships d750 Informal social relationships d710 Basic interpersonal interactions d720 Complex interpersonal interactions b122 Global psychosocial functions d910 Community life
Fatigue/tiredness	Fatigue/tiredness	b130 Energy and drive functions
Looking after dependents within household	Looking after dependents within household	
Intimate/sexual activity	Sexual activity	b640 Sexual functions
Appearance	Appearance	s810 Structure of areas of skin
Emotional/mood impact to self	Emotional/mood impact to self	b152 Emotional functions b126 Temperament and personality functions nd-gh (general health)
Emotional/mood impact to friends and family	Emotional/mood impact to friends and family	
Overall patient satisfaction	Overall patient satisfaction	nc-Overall satisfaction nc-Satisfaction with intervention
Added expenses due to injury	Added expenses due to injury	
Loss of income	Loss of income	d870 Economic self-sufficiency e565 Economic services, systems and policies
Healthcare resources used	Healthcare resources used	e580 Health services, systems and policies
Treatment complications	Treatment complications	nc-Complications/Adverse events b830 Other functions of the skin
Treatment inconvenience/discomfort	Treatment inconvenience/discomfort	nd-Patient adherence to treatment

Table ii. Table showing 37 outcome domains at start of Delphi, along with descriptors and clarifying examples.

Group	Delphi Outcome Item	Descriptor
Biology and physiology	Change in sensation	Change from normal feeling in the hand/wrist (either sensations in the hand or in how things feel to touch) e.g. numbness, pins and needles, tingling, being able to sense hot/cold through touch, dysesthesia – in which the things that one touches feel different to normal
	Pain/discomfort	Discomfort or pain in the hand or wrist, whether at rest or with activity e.g. ache, shooting pain, sharp pain, throbbing
	Strength or muscle power	Being able to use strength or exert power through the hand or wrist e.g. pinch between thumb and fingers, gripping with hand, moving the wrist with force
	Range of movement	How much movement one has through the joints of the hand or wrist, whether active (i.e. moving it with the muscles of the injured side) or passive (e.g. if someone else were to try to move it for the patient) Includes stiffness in the joints or how much one can bend or straighten the thumb, fingers or wrist
	Confirmation of bone healing and alignment (fractures only)	Having confirmation of healing of broken bone(s) including how well they are lined up. e.g. x rays to show how the bones are healing (NOT cases where the bones are obviously not aligned well and from the outside appearance one can already see the change from normal shape)
	Confirmation of soft-tissue healing	Having confirmation of healing of soft tissues (e.g. tendons, ligaments, surgical wound) e.g. clinical assessment or tests to confirm the soft tissues are healing
	Stability of joints	Having the joints in the hand/wrist feel stable during use e.g. no feeling that the bones will 'come out of joint' when being used

Self-care and independence	Grasping and moving light objects	Being able to hold onto and move/lift objects weighing less than ~1kg/2lb e.g. lifting a cup of tea, opening doors with a handle/knob, opening small containers
	Self-hygiene/personal care	Being able to do the usual tasks involved in maintaining one's own hygiene and self-care e.g. washing oneself, toileting, washing hands, washing the face, brushing teeth, shaving, looking after one's hair, applying make-up
	Cooking/preparing meals	Being able to complete the tasks involved in preparing meals for oneself to ensure proper nutrition
	Dressing	Being able to put on and take off one's own clothing and footwear
	Eating and drinking	Being able to carry out the tasks involved in eating and drinking
	Shopping for groceries	Being able to carry out the tasks involved in shopping for groceries, putting shopping away, etc (NOT the travel to and from shops)
	Walking/mobility	Being able to walk/mobilize as one usually would after an injury, and have the confidence to do this e.g. general walking, stairs, using walking aids such as stick or frame (if normally needed)
	Using hands to change body position	Being able to use one's hands to push up and stand from a chair or turn in bed
	General household chores	Being able to do general tasks around the house e.g. household cleaning, doing dishes, laundry, making the bed, putting out bins, general maintenance, gardenwork
	Sleeping	Being able to sleep and rest overnight, and the impact on activities if having trouble sleeping
	Thinking and memory	Being able to think about and remember things clearly

Wider social roles, engagement and responsibilities	Fine hand use /dexterity	Being able to do fine motor tasks or precise activities with the hand/wrist e.g. writing, drawing, picking up coins from a table, using a key
	Hobbies and recreation	Being able to do usual hobbies or pastimes e.g. sports, exercise, reading, playing an instrument, playing video games
	Return to usual work/job	Being able to return to the work or job that one was doing prior to their hand/wrist injury (NOT including the financial impact of any lost income)
	Carrying or lifting heavy objects	Being able to lift or carry objects weighing more than ~5kg/10lb (i.e. more than a shopping bag with groceries)
	Being able to control a vehicle for transport	Being able to drive a motor vehicle or ride a bicycle, whether for work, social or recreation reasons
	Keyboard and mouse/touchscreen use	Being able to make use of keyboard and mouse or touchscreens e.g. being able to perform the hand/wrist actions needed to use devices such as a computer, laptop, tablet computer or smartphone
	Socializing/relationships with friends and family	Being able to socialize and maintain relationships with family and friends
	Fatigue/tiredness	General feeling of low energy, tiredness or fatigue which restricts how much one can do (NOT due to issues with sleeping)
	Looking after dependents within household	Being able to do the tasks involved in looking after dependents within the household e.g. caring for children, pets, elderly relative within household)
	Intimate/sexual activity	Being able to engage in one's usual intimate/sexual activity

Miscellaneous – emotional & psychological impact, personal/healthcare resources, treatment factors/complications	Appearance	How the hand/wrist looks after treatment is complete e.g. change in shape of injured hand/wrist, scars, swelling
	Emotional/mood impact to self	Effect on mood/emotions to oneself e.g. anxiety, depression/low mood, frustration, anger
	Emotional/mood impact to friends and family	Effect of one's injury on mood/emotions of their friends and family e.g. anxiety, depression/low mood, frustration, anger
	Overall patient satisfaction	Overall satisfaction with the treatment, recovery process and result from the patient's perspective
	Added expenses due to injury	The increased costs to oneself while recovering from a hand/wrist injury (this is separate to the lost income from not being able to work). e.g. using public transport/taxi, buying ready meals, buying different clothing/footwear to accommodate cast/splint
	Loss of income	Any loss of income due to the hand/wrist injury from not being able to do usual work
	Healthcare resources used	Medical resources used in providing healthcare for the hand/wrist injury. Includes cost of treatment, follow-up, etc until end of recovery
	Treatment complications	The risks of unwanted and unexpected events due to a treatment e.g. infection after surgery, anaesthetic risks, pressure sore/blister due to cast
	Treatment inconvenience /discomfort	The inconvenience or discomfort caused directly by a treatment e.g. inconvenience/discomfort with having a cast or splint on, dressings changes and stitch removal after surgery

Table iii. Summary of Delphi participant demographics.

Characteristic		Patients (n=54), n (%)	Therapists (n=35), n (%)	Surgeons (n=55), n %
Median age (interquartile range)		49 (38 to 62)	49 (40 to 53)	52 (43 to 59)
Sex	Male	23 (47)	7 (20)	44
	Female	31 (57)	28 (80)	11
Injury group (DRF – distal radius fracture non-DRF – all other hand fractures and joint injuries)	DRF	20 (37)		
	Non-DRF	33 (61)		
	Both	1 (2)		
Injury management	Surgical	17 (31)		
	Conservative	36 (67)		
	Both	1 (2)		
Patient occupation type	None/retired	10 (19)		
	Office/non-manual	26 (48)		
	Light manual	14 (26)		
	Heavy manual	4 (7)		
Clinician experience (years)	< 5		2 (6)	5
	5 to 15		8 (23)	13
	15 to 25		12 (34)	15
	25 +		13 (37)	22
Surgeon training background	Orthopaedic			48
	Plastic			7
Therapist training background	Occupational therapy		23 (66)	
	Physiotherapy		12 (34)	
Therapist accredited/certified	Yes		19 (54)	
	No		9 (26)	
	N/A		7 (20)	

Country of residence	Australia	0	3 (9)	2 (4)
	Brazil	0	0	2 (4)
	Canada	0	0	1 (2)
	Chile	0	1 (3)	0
	France	0	0	1 (2)
	Guatemala	0	0	1 (2)
	India	0	0	1 (2)
	Ireland	0	0	1 (2)
	Israel	0	1 (3)	0
	Japan	0	1 (3)	0
	Netherlands	0	0	2 (4)
	Norway	0	0	1 (2)
	Philippines	0	0	1 (2)
	Poland	0	0	1 (2)
	Qatar	0	1 (3)	0
	South Africa	0	5 (14)	0
	Spain	0	0	2 (4%)
	Sweden	0	2 (6)	2 (4)
	Switzerland	0	2 (6)	0
	Ukraine	0	0	1 (2)
United Kingdom	54 (100)	16 (46)	33 (60)	
United States of America	0	3 (9)	3 (5)	

Table iv. Round 1 percentage of participants from each stakeholder group in each rating category for all outcome domains.

Outcome domain	% of patients			% of surgeons			% of therapists		
	1-3	4-6	7-9	1-3	4-6	7-9	1-3	4-6	7-9
Change in sensation	2	27	71	5	24	71	3	15	83
Pain/discomfort	2	14	84	0	4	96	0	8	93
Strength or muscle power	2	5	93	2	24	75	0	13	88
Range of movement	2	12	86	0	33	67	0	8	93
Confirmation of bone healing and alignment (fractures only)	2	10	88	11	46	43	3	33	65
Confirmation of soft tissue healing	4	15	81	7	48	44	5	30	65
Stability of joints	2	7	91	0	28	72	0	18	83
Grasping and moving light objects	2	16	82	0	16	84	0	8	93
Self-hygiene/personal care	2	12	86	0	9	91	0	13	88
Cooking/preparing meals	4	21	75	0	38	62	3	18	80
Dressing	7	14	79	0	24	76	5	10	85
Eating and drinking	2	16	82	0	20	80	3	8	90
Shopping for groceries	5	39	56	9	53	38	8	48	45
Walking/mobility	16	20	65	29	31	40	43	28	30
Using hands to change body position	7	41	52	5	42	53	5	46	49
General household chores	7	39	54	2	44	55	3	43	55
Sleeping	11	21	68	9	15	76	8	28	65
Thinking and memory	29	17	54	39	24	37	35	40	25

Table v. Round 2 percentage of participants from each stakeholder group in each rating category for all outcome domains.

Outcome domain	% of patients			% of surgeons			% of therapists		
	1-3	4-6	7-9	1-3	4-6	7-9	1-3	4-6	7-9
Change in sensation	0	27	73	0	16	84	0	14	86
Pain/discomfort	4	7	89	0	0	100	0	5	95
Strength or muscle power	0	5	95	0	20	80	0	11	89
Range of movement	0	15	85	0	29	71	0	3	97
Confirmation of bone healing & alignment (fractures only)	0	13	87	9	56	35	3	35	62
Confirmation of soft tissue healing	2	15	83	6	50	44	3	30	68
Stability of joints	0	9	91	0	19	81	0	5	95
Grasping and moving light objects	4	4	93	0	9	91	3	8	89
Self-hygiene/personal care	2	4	95	0	4	96	3	3	95
Cooking/preparing meals	2	16	82	0	31	69	0	16	84
Dressing	0	18	82	0	20	80	0	16	84
Eating and drinking	4	7	89	0	15	85	3	11	86
Shopping for groceries	7	36	56	5	62	33	8	59	32
Walking/mobility	14	27	59	24	42	35	49	27	24
Using hands to change body position	2	37	61	4	4	56	5	46	49
General household chores	6	37	57	2	47	51	3	38	59
Sleeping	7	13	80	5	13	82	0	27	73
Thinking and memory	24	26	50	37	30	33	43	38	19
Fine hand use/dexterity	0	5	95	0	0	100	3	3	95
Hobbies and recreation	0	27	73	2	36	62	3	24	73
Return to usual work/job	6	4	91	0	4	96	0	0	100
Carrying or lifting heavy objects	2	27	71	2	45	53	3	32	65

Being able to control a vehicle for transport	4	9	87	2	29	69	0	24	76
Keyboard and mouse/touchscreen use	8	23	70	0	27	73	3	27	70
Socialising/relationships with friends and family	13	38	49	11	42	47	11	41	49
Fatigue/tiredness	10	37	54	24	53	24	19	59	22
Looking after dependents within household	12	18	70	2	53	45	3	19	78
Intimate/sexual activity	19	47	34	13	46	41	19	62	19
Appearance	13	47	40	16	45	38	8	62	30
Emotional/mood impact to self	5	22	73	0	40	60	3	22	76
Emotional/mood impact to friends and family	17	44	39	24	58	18	14	59	27
Overall patient satisfaction	0	5	95	0	15	85	0	3	97
Added expenses due to injury	20	45	35	22	53	25	16	43	41
Loss of income	17	21	62	5	29	65	0	27	73
Healthcare resources used	4	29	67	15	56	29	0	35	65
Treatment complications	4	13	83	0	9	91	0	5	95
Treatment inconvenience/discomfort	7	24	69	11	40	49	5	27	68
Speed of movement	2	30	68	13	59	28	12	38	50
Pain/discomfort during activity	0	15	85	0	11	89	0	11	89
Pain/discomfort during rest	4	9	87	2	9	89	0	20	80
Patient satisfaction with outcome/result	2	6	92	2	9	89	0	3	97

Table vi. Round 3 percentage of participants from each stakeholder group in each rating category for all outcome domains.

Outcome domain	% of patients			% of surgeons			% of therapists			Final consensus status
	1-3	4-6	7-9	1-3	4-6	7-9	1-3	4-6	7-9	
Change in sensation	0	15	85	0	13	87	0	11	87	In
Pain/discomfort	0	6	94	0	0	100	0	6	94	In
Strength or muscle power	0	2	98	0	16	84	0	9	91	In
Range of movement	0	11	89	0	27	73	0	0	100	In
Confirmation of bone healing and alignment (fractures only)	0	12	88	7	57	35	0	40	60	No consensus
Confirmation of soft-tissue healing	2	12	87	2	54	44	3	29	69	No consensus
Stability of joints	0	2	98	0	17	83	0	0	100	In
Grasping and moving light objects	0	2	98	0	4	96	0	6	94	In
Self-hygiene/personal care	2	0	98	0	5	95	0	6	94	In
Cooking/preparing meals	0	19	81	0	29	71	0	17	83	In
Dressing	0	15	85	0	20	80	3	9	89	In
Eating and drinking	0	6	94	0	13	87	0	11	89	In
Shopping for groceries	6	35	59	5	65	29	6	66	29	No consensus
Walking/mobility	12	30	58	22	45	33	54	26	20	No consensus
Using hands to change body position	2	30	68	4	38	58	6	49	46	No consensus
General household chores	6	33	61	2	49	49	3	40	57	No consensus
Sleeping	6	11	83	4	9	87	0.0	26	74	In
Thinking and memory	21	29	50	35	33	31	49	29	23	No consensus
Fine hand use/dexterity	0	2	98	0	0	100	0	3	97	In
Hobbies and recreation	0	19	81	2	33	65	0	17	83	No consensus
Return to usual work/job	4	2	94	0	2	98	0	0	100	In
Carrying or lifting heavy objects	4	24	72	2	44	55	0	34	66	No consensus

Being able to control a vehicle for transport	4	7	89	2	25	73	0	20	80	In
Keyboard and mouse/touchscreen use	6	17	77	0	22	78	0	20	80	In
Socialising/relationships with friends and family	8	42	50	11	45	44	9	43	49	No consensus
Fatigue/tiredness	8	37	55	24	53	24	17	63	20	No consensus
Looking after dependents within household	12	18	69	2	56	42	6	14	80	No consensus
Intimate/sexual activity	21	44	35	13	48	39	20	60	20	No consensus
Appearance	13	44	43	16	45	38	6	69	26	No consensus
Emotional/mood impact to self	4	19	78	0	36	64	3	17	80	No consensus
Emotional/mood impact to friends and family	13	46	40	22	62	16	9	69	23	No consensus
Overall patient satisfaction	0	7	93	0	13	87	0	0	100	In
Added expenses due to injury	20	41	39	22	55	24	14	46	40	No consensus
Loss of income	16	18	67	5	27	67	0	29	71	No consensus
Healthcare resources used	6	26	69	11	62	27	0	34	66	No consensus
Treatment complications	2	13	85	0	7	93	0	3	97	In
Treatment inconvenience/discomfort	6	22	72	11	38	51	6	31	63	No consensus
Speed of movement	0	28	72	15	60	25	9	43	49	No consensus
Pain/discomfort during activity	0	6	94	0	9	91	0	3	97	In
Pain/discomfort during rest	0	4	96	2	9	89	0	9	91	In
Patient satisfaction with outcome/result	0	4	96	2	9	89	0	0	100	In

Table vii. Additional outcome items suggested at end of Delphi round 1 with study group decision and rationale regarding inclusion for second round.

Key: **New domain added** **Example added to existing domain descriptor** **Not added**

Suggested additional outcome	Decision	Rationale for decision
<p>Pain during daytime activities</p>	<p>Added domain ‘pain/discomfort during activity’ Descriptor: Discomfort or pain in the hand or wrist specifically during activities (NOT at rest) e.g. ache, shooting pain, sharp pain, throbbing, discomfort/pain due to not being able to tolerate hot or cold sensation</p> <p>&</p> <p>Added domain ‘pain/discomfort during rest’ Descriptor: Discomfort or pain in the hand or wrist specifically during rest (i.e. with the hand/wrist not moving, so NOT during activities) e.g. ache, shooting pain, sharp pain, throbbing, discomfort/pain due to not being able to tolerate hot or cold sensation</p>	<p>This highlights a divide in the fairly broad ‘pain/discomfort’ domain and might help to highlight whether subset of activity vs rest is important when considering the ‘pain/discomfort’ domain</p>
<p>Movement velocity</p>	<p>Added domain ‘speed of movement’ Descriptor: How quick movements through the joints of the hand or wrist can be, including any issue of delay in being able to start the movement</p>	<p>In some ways movement velocity bridges the concepts of range of movement and strength/muscle power. However this, alongside initiation/hesitation, has its own elements and so has been added as a novel domain</p>
<p>Movement-initiation hesitation</p>		

Satisfaction with the outcome	Added domain ‘patient satisfaction with outcome/result’	This is a subset of the ‘overall patient satisfaction’ domain but has been mentioned by more than one participant. It might be considered the key long-term aspect of ‘overall patient satisfaction’ as the result is what patients live with whereas the treatment and recovery phases (though of variable length) do eventually conclude
Are you (patient) happy with the final result?	Descriptor: Satisfaction with the overall result from the patient’s perspective (NOT with treatment or recovery process, but the end result only)	
How your family and friends perceive your injured hand or digit	Added to ‘appearance’ domain descriptor	The research group concluded that these suggestions were mainly to do with what other people thought of the appearance of the patient’s injury. This could be considered part of the existing ‘appearance’ domain if assuming that part of a person’s perception of their own appearance is influenced by how they believe others view them
How strangers perceive your injured hand or digit		
Information provision of possible issues and what to do during the healing process	Added to ‘overall patient satisfaction’ domain descriptor as an example	Information provision is mentioned multiple times and is clearly important, but is not an outcome itself. Added to specified domain descriptor as it is an aspect of the treatment and recovery process
Information on suitable hand exercises when in a cast		
Interim timescales for regaining mobility/swelling/appearance/strength would be helpful and help to incentivise exercise without overdoing it.		

More information on what to expect regarding pain; weakness etc before leaving hospital		
Patients should be informed exactly what kind of injury they have and treatment/complications that could occur		
Hospital outpatient visits (frequency; departments; waiting time)	Added to 'treatment inconvenience/discomfort' domain descriptor as an example	In terms of the healthcare resource perspective this is covered by the 'healthcare resources used' domain. However this was submitted by a patient and therefore it is the research group's opinion that this was meant more from an inconvenience perspective
Cold intolerance	Added to 'pain/discomfort' domain (and newly added pain domains) descriptor as an example	This is considered a specific example within the broader existing 'pain/discomfort' domain
Proprioception (especially in DRF)	Added to 'change in sensation' domain descriptor as an example	This is considered a specific example within the broader existing 'change in sensation' domain
Oedema	Added as specific example within the 'confirmation of soft tissue healing' domain	The example of swelling is within the 'appearance' domain, but we believe this refers to the sign as an outcome from the professional perspective as an indicator of soft tissue damage and healing
Grip and pinch strength	Not added	This forms much of the 'strength or muscle power' domain and therefore little would be gained by creating an additional domain based on these

<p>Participating in social activities with friends/family</p>	<p>Not added</p>	<p>This is covered within an existing domain 'socialising/relationships' with friends and family</p>
<p>Fear of movement</p>	<p>Not added</p>	<p>This appears to refer to existing domains such as 'emotional impact of the injury' and perhaps 'overall patient satisfaction' (through the specific example of information given about safe movement and exercise during treatment and recovery)</p>
<p>Assess independence/dependence of others; (family; friends; including therapists) during the recovery process. Patients that rely 100% on the therapist for the recovery; tend to obtain lower outcome scores</p>	<p>Not added</p>	<p>The research group considers this as a 'how to measure' aspect of multiple existing domains. For each one, as part of the outcome the dependence on others could also be assessed. As such, it is not considered a novel domain in its own right</p>
<p>Assess if the patient is the main economical provider of the house and has a formal job. Not being able to work can provide extra stress or interfere with the correct healing phases</p>	<p>Not added</p>	<p>Though this is clearly of relevance to patients with these injuries and the healthcare professionals treating them, it is a demographic characteristic rather than an outcome</p>
<p>Functional use in/out of a splint/support</p>	<p>Not added</p>	<p>In the research group's opinion, this suggestion reflects on 'how to measure' rather than 'what to measure'. The 'what to measure' appears to fall under the existing domains of function (of which there are several) or potentially in the existing domain 'treatment inconvenience/discomfort'</p>

Caring for others	Not added	In the research group's opinion this falls within the existing domain 'looking after dependents within household'
I'd like to see more specific pain related questions eg type; timeframe; "Rate your pain" gives so little information	Not added	In the research group's opinion, this suggestion reflects on 'how to measure' rather than 'what to measure'
Xenomelia (When patient doesn't want to associate a hand as a part of his body) for mangled hands	Not added	This is an outcome for injuries outside the scope of this core outcome set and therefore has not been added
Surgery would have been better as first line of treatment as bones moved whilst in a cast	Not added	This is not an outcome, but instead refers to existing domains such as 'treatment complications' and/or 'confirmation of bone healing and alignment'
Bilateral injuries	Not added	This is a characteristic of the injury and while it may be of value to record when measuring outcomes, due to the impact on various outcomes compared to unilateral injuries, it is not itself an outcome

Table viii. Summary of Delphi survey outcomes with consensus of 'very important' at end of round 3.

Outcome domains	
Fine hand use/dexterity	Treatment complications
Return to usual work/job	Strength or muscle power
Grasping and moving light objects	Eating and drinking
Pain/discomfort	Range of movement
Self-hygiene/personal care	Change in sensation
Patient satisfaction with outcome/result	Dressing
Pain/discomfort during activity	Sleeping
Stability of joints	Being able to control a vehicle for transport
Overall patient satisfaction	Cooking/preparing meals
Pain/discomfort during rest	Keyboard and mouse/touchscreen use

Table ix. Outcomes not included in final COS but rated as ‘very important’ at different stages of consensus process by some stakeholder groups.

Stage when domain dropped from COS	Outcome domains
<p>Outcomes reaching consensus of ‘very important’ through Delphi survey but not reaching consensus for inclusion in COS at the meeting (presented in descending order according to final ‘yes/no’ vote results at meeting)</p>	<p>Eating and drinking (Reached threshold amongst professionals – 86% of professionals – but only 67% of patients)</p>
	<p>Treatment complications (Almost reached threshold amongst patients – 75% of patients – but only 67% of professionals)</p>
	<p>Strength or muscle power (Almost reached threshold amongst patients – 75% of patients – but only 53% of professionals)</p>
	<p>Dressing</p>
	<p>Sleeping</p>
	<p>Cooking/preparing meals</p>
	<p>Change in sensation</p>
	<p>Grasping and moving light objects</p>
	<p>Stability of joints</p>
	<p>Pain/discomfort</p>
	<p>Being able to control a vehicle for transport</p>
	<p>Keyboard and mouse/touchscreen use</p>
	<p>Overall patient satisfaction</p>
<p>Outcomes reaching threshold of ‘very important’ for patient and therapist groups in Delphi survey (but not surgeon group)</p>	<p>Hobbies and recreation</p>
	<p>Emotional/mood impact to self</p>
<p>Outcomes reaching threshold of ‘very important’ for patient group in Delphi survey (but not therapist or surgeon groups)</p>	<p>Confirmation of bone healing and alignment (fractures only)</p>
	<p>Confirmation of soft tissue healing</p>
	<p>Carrying or lifting heavy objects</p>
	<p>Speed of movement</p>
	<p>Treatment inconvenience/discomfort</p>
<p>Outcomes reaching threshold of ‘very important’ for therapist group in Delphi survey (but not patient or surgeon groups)</p>	<p>Looking after dependents within household</p>
	<p>Loss of income</p>

Lists of participants of Delphi study and consensus meeting

The following is a list acknowledging all participants of the Delphi study who consented to be named:

Alejandra, Meera Anadkat, Hamish Anderson, Gregory Bain, Rodrigo Barradas, Bill Bell, Melanie Bell, Ishan Bhoora, Rodrigo Bolaños, Grainne Bourke, Sarah Bradley, Terra Bredy, Mark Brewster, Samantha M Brown, Nikki Burr, Cristina P Carmona, Ana Carreño, Anna Carreras-Castañer, Fiona Cashin, Margaret Chrich, Chrisna, Keitha Clayton, Zoe Clift, Tanya Cole, Courtney, Melissa Dallison, David Darling, Avi Das, Michael David, Aron Davis, Shaun Dawson, Denise, Rajiv G Deshmukh, Joseph Dias, Neil Doherty, Nicholas D Downing, Herwig Drobetz, Andrew Duckworth, Mel Eissens, Sancha Eliot-Righele, Fiona Everton, Sarah Ewald, Carlos H Fernandes, Sue Fullilove, Nick Gape, Grey Giddins, Philip Grieve, Craig Gunton-Day, Nic Hallam, Daniel Harte, Ruth Hennelly, Carlos Heras-Palou, Sharon Hillery, Christine Hobbs, Rita Hood, Ian Howick, Ryota Imai, Ana M Iordache, Abhilash Jain, Phil Johnston, Matthew Jones, Agneta Karlsson, Kiran M Ladkat, Donald Lalonde, Lisa Leonard, Andrew Logan, Jessica Lund, Andrii Lysak, Ravi Mallina, Steven Marsden, Lynne Marshall, Richard Marson, Wayne Martin, Rachael Masterson, Philip Mathew, Jane McEachan, Lorenzo Merlini, Leanne Miller, Jamil Moledina, Moussa, Lindsay Muir, Elani Muller, Zaf Naqui, Cecilia M Navarro, Kathryn Needham, Lisa Newington, Nathaniel Orillaza Jr, Joseph Oxby, Simon Palmer, Sophie Phillips, Rajan Pichaimuthu, Simon Pickard, Marc Prangnell, Mark Price, Reanna, Christine Redfern, Fiona Reilly, David Ring, Marco Ritt, Elizabeth Rusbridge, Rodrigo G Sabongi, Dan Shaerf, David Shewring, Grzegorz Sianos, Ida N Sletten, Andrew Smith, Bee Smith, Matthew Smith, Susan Stack, Jeffrey Stepan, James Sutton, Sofia Svärting, Magnus Tägil, Jane Thomas, Lisa Tourret, Yuk W Tsang, Sarah Turner, Craig Turner, Loren T Valle, Jane Venter, Nicole Vogt, John Wakefield, David Warwick, Greg Watts, Leslie Weissman, Paul MN Werker, George Wheble, Stacey Wilson, Margaret Winson, Jennifer M Wolf, Sheryl Wrightson, Andrzej Zyluk.

The following is a list acknowledging all participants of the consensus meeting who consented to be named:

Grainne Bourke, Stephen Brealey, Fiona Cashin, Xin Chang, Zoe Clift, Matthew L Costa, Brie Dawson, Nick Gape, Grey Giddins, Carlos Heras-Palou, Christine Hobbs, Marilyn James, Donald Lalonde, Richard Marson, Jane McEachan, Kathryn Needham, Lisa Newington, Marc Prangnell, David Ring, Elizabeth Rusbridge, Bee Smith, Sofia Svärting, Jane Thomas, Craig Turner, Jane Venter, Nicole Vogt, Greg Watts.