

**Table i.** Research questions proposed during the scoping survey.(Cont'd on page 2)

Responses to stage 1 (scoping) survey				
Unique question	1. What is the condition/injury you would like investigated?	2. What is the treatment (intervention) you would like to test in the above condition?	3. What other treatment (intervention) would you compare it against?	4. What outcome would you measure? (i.e. how would you determine success)
<b>Elective</b>				
1	Bone cyst (simple)	Autologous bone marrow aspirate injection	intralesional steroid	time to heal, percentage cyst filled in radiologically, thickness of thinnest cortex
2	Cerebral Palsy	Prospective cohort study along the lines of BOSS but for CP.	No control group. Prospective cohort design.	We'd use CPIP (already in use in Scotland and the West Midlands) the core data set measuring a number of things including GMFCS, dominant neurological pattern, FMS, range of motion of lower limbs, clinical exam of spine, Reimer's migration percentage, physiotherapy, orthotic and surgical interventions, fractures. Added to this would be a patient/carer reported quality of life measure (eg CP-QOL, CP-CHILD, DisabKids).
3	Cerebral Palsy with Hip Displacement	Early soft-tissue release	Late boney reconstruction	x
4	DDH	Current Screening	Ultrasound population screening	Missed cases of DDH
5	DDH	Closed vs open reduction	Closed vs open surgery	Outcome of dysplasia and avn
6	DDH in neonate - stable dysplasia	Harness	Conservative treatment	Alpha angle at 6 months
7	Flatfoot	insoles are they effective	a placebo insole	pain improvement
7	Painful Flatfoot	Insoles	No Insoles	Oxford Foot Score
8	Infection	How long a course of antibiotics is required to ensure cure	Is length of treatment required dependent upon the degree of abnormality of the blood tests at presentation (ESR, CRP, WBC, etc). Could randomize to 3 week, 4 week, 5 week or 6 week course of antibiotics.	relapse in symptoms/recurrence of disease when antibiotic course stopped
Not Prioritized - clinical question unclear	Knee pain does it get better by itself what is the incidence of serious pathology	observation	none	does it get better with no treatment
9	Normal variants	Giving standard advice and discharging	Following up to determine whether there are thresholds that predict problems in later life.	Functional outcomes at age 20, 30, 40, etc (i.e. Massive longitudinal study)
10	Normal variants Patella dislocation	Online information Surgical stabilization	Conventional Clinics Conservative management	Cost effectiveness and safety Primary: redislocation, Secondary: objective exam measure and subjective (PROM)
11	Perthes Perthes Disease Perthes'	Surgery Containment Surgery Surgery to contain the hip	No surgery No Surgery Conservative treatment	Function at 2 years Function and sphericity Sphericity
12	Sufe	Prophylactic fix	No fix	Function at 1 year
13	Sufe	Open reduction	Vs pin <i>in situ</i>	Avascular Necrosis and Hip Morphology
14	Toe walking (non-cerebral palsy)	role of botox in a formalized randomized trial	non-botox care with serial casting/physio	subjective gait assessment/ functional outcome scores
<b>TRAUMA</b>				
1	Clavicle fractures - Offended Displaced in adolescents	Operative Fixation	Conservative management	Healing and Function
2	Distal radius <10 years old (Offended)	Op	No-op	Function
3	Femoral fracture length unstable	Im nails	submuscular plate	Function
4	Forearm fractures - Proximal one-third (ulna) both bone forearm fractures	Extension above elbow cast	Flexed above elbow cast	Primary: radiographic outcome, angulation, Secondary: objective (especially ROM) and subjective ratings
5	Humeral fractures (proximal)	Fixation	Conservative management	Function
6	Lateral condylar fracture	Lateral wires buried	Wires sticking out	Function at 3 months
7	Medial epicondyle fracture	Fixation	No fixation	Function at 3 months
	Medial epicondyle	Fix	Don't Fix	Function at 6 months
	Medial epicondyle avulsion with unstable elbow	screw fixation and early mobilisation	screw fixation and 4 weeks in cast	range of movement, failure of fixation, redislocation, patient satisfaction
	Medial epicondyle fracture	surgery	non op	function
8	Stable limb fractures (e.g. buckle fractures) in children	Is it safe to manage them in a virtual fracture clinic?	compare outcome with seeing same patients in a face to face clinic.	were any serious injuries missed in the virtual fracture clinic group that were picked up in the face to face fracture clinic group, or are both settings equally safe.

**RESPONSES TO STAGE**

**2A (Delphi First Round)**

**SURVEY**

**ELECTIVE**

*Added* Surgical strategy for the late presenting dislocated hip'. There are multiple questions within this, according to age and grade of dislocation. But practice is so incredibly varied that this must be a high priority question to address.

*Added* Sprengel shoulder; should we have a nominated centre/surgeons with an interest in, to perform all national cases?

*Not prioritised - unclear* Muscle strengthening and working length reduction in opposing muscle groups after tendon lengthening in cerebral palsy

**TRAUMA**

*Added* Distal tibia SHII fractures      Open Reduction      Conservative treatment      Function

Distal tibia fracture conservative vs ORIF

*Added* Supracondylar Humeral Fracture      Ex-Fix/Traction      Operative Treatment      Function

*Added- Additional questions added to cover age-spectrum of femoral fractures* Femur fractures in children over 7 years - TENS nails or locking IM nails?

Spica vs traction for young femoral shaft fracture; elastic nail vs plating for preadolescent children

Femoral fractures in under 4, traction vs early spica

*Added* Tibial fractures, increased use of frames vs other treatment modalities; is there an outcome or cost benefit?

Tibial shaft fractures, length stable & unstable, EIMN vs plate vs ex Fix

*Added* Greenstick forearm fractures      Rigid Cast      Soft Cast      Pain and Functional Outcomes

*Revision- Distal radius question revised to two different groups. Thought to address question of AED vs theatre reduction* Distal Radius Question needs revision to distinguish between SHII and Metaphyseal injuries

Value of emergency department reduction vs operating theatre reduction

*Not prioritised - difficult to formulate intervention PICO* Radial neck fractures - what is acceptable ?

*Question included previously* As per previous form I submitted - management first time patella dislocation

*Too infrequent in children - though a question primarily deliverable in an adult population -no addition* fracture neck femur- closed vs open reduction,

*Original question broader -no change* CP Hip question is wrong. Question should be adductor release vs femoral osteotomy at migration 50% i.e. at same choice point

*Out of scope* Epidemiology of spino pelvic injury in children

*Out of scope* Sequelae of pelvic fractures

*Out of scope* Head injuries and relationship to limb injuries

*Out of scope* Psychological aspects of fractures (including polytrauma)

*Question Unclear* Dislocation hip joint

*Out of scope* elbow hemiarthroplasty vs total for elderly pt with multi-

**Table ii.** research priority scores (5=highest priority, 1=lowest priority).

Trauma	Round 1	Round 2	AVERAGE (MAX 5)	RESPONSES
<b>ROUND 1 &amp; 2</b>				
Clavicle fractures (adolescent). Non-op vs op	<b>2.2</b>	85	<b>1.8</b>	85
Adolescent Femoral fracture (length unstable). IM nails vs submuscular plate	<b>3.3</b>	85	<b>3.5</b>	85
Lateral Condyle fractures. Buried wires/screw vs non-buried wires (i.e. prominent through skin for removal in clinic)	<b>3.2</b>	85	<b>3.3</b>	86
Medial Epicondyle fractures. Fix vs don't fix.	<b>3.8</b>	83	<b>4.0</b>	85
Proximal one-third both bone forearm fractures. Extension above elbow, vs flexed above elbow cast.	<b>2.8</b>	85	<b>2.8</b>	85
Proximal humeral fractures. Fixation vs conservative treatment.	<b>2.5</b>	83	<b>2.0</b>	85
Stable limb fractures. (i.e. torus) Virtual fracture clinic vs conventional clinic.	<b>2.8</b>	85	<b>2.5</b>	85
<b>REVISED FROM ROUND 1</b>				
<b>ROUND 1 QUESTION - Distal radius fractures (off-ended) in children &lt; 10 years old. Operative vs non-operative treatment.</b>		83		
REFINED QUESTION 1 - Distal radius fractures in children < 10 years old. Metaphyseal fractures. Surgery to reduce fracture vs cast without reduction (within certain parameters).			<b>3.5</b>	85
REFINED QUESTION 2 - Distal radius fractures in children < 10 years old. Salter Harris 2 fractures. Surgery to reduce fracture vs cast without reduction (within certain parameters).			<b>3.3</b>	84
<b>NEWLY ADDED AFTER ROUND 1</b>				
Distal tibia Salter Harris 2 fractures. Reduction +/- fixation vs cast without reduction.			<b>3.3</b>	84
Tibial shaft fractures requiring surgery. Elastic nails vs ex-fix vs plate.			<b>3.5</b>	85
Femoral fracture < 5 years. Traction vs spica.			<b>3.1</b>	85
Femoral fracture - Pre-adolescent. Elastic nails vs plate fixation.			<b>3.3</b>	84
Forearm greenstick fractures. Soft cast vs rigid cast.			<b>2.3</b>	85
Supracondylar Humeral fractures. Wire fixation vs external fixation.			<b>1.7</b>	85
<b>ELECTIVE CARE</b>				
Bone cyst (simple cyst) - Autologous bone marrow aspirate injection vs intralesional steroid	3.0	82	<b>2.9</b>	81
Cerebral Palsy: Early soft-tissue release vs late bone reconstruction in hip displacement	3.8	82	<b>4.0</b>	81
Cerebral Palsy: a national prospective cohort study, based on the BOSS framework, to collect data on lower limb surgery in ambulant children with diplegic CP	3.8	82	<b>4.3</b>	80
DDH screening. Current selective system vs population ultrasound.	3.8	82	<b>4.3</b>	81
DDH - Babies with dysplastic hips (not subluxed/ dislocated). Splint vs natural history.	3.8	80	<b>4.2</b>	81
DDH. Closed surgery vs open surgery	3.5	81	<b>3.6</b>	81
Flatfoot. Insoles vs sham insoles	2.6	81	<b>2.1</b>	80
Bone infection. Short course Abx vs current duration Abx.	4.0	82	<b>4.5</b>	81
Normal variants. Routine clinic visit vs video/ letter to parents explaining 'normal variants' with an optional appointment if still unhappy.	3.4	81	<b>3.6</b>	81
Patella dislocation. Surgical stabilization vs natural history.	3.7	80	<b>4.0</b>	80
Perthes' disease. Op vs no op	3.9	81	<b>4.5</b>	81
Slipped epiphysis. Prophylactic pin vs no prophylactic pin.	3.8	81	<b>4.3</b>	81
Slipped epiphysis (severe). Open reduce vs pin <i>in situ</i> .	4.2	81	<b>4.6</b>	80
Toe walkers (idiopathic). Standard care + botox, vs Standard care.	2.8	81	<b>2.6</b>	80
<b>NEWLY ADDED AFTER ROUND 1</b>				
Late presenting hip dysplasia (>1 year). National study of management (similar to BOSS) to define current practice.			<b>4.2</b>	80
Sprengel shoulder: National study of management (similar to BOSS) to define current practice.			<b>2.8</b>	80