

PSP Name	Total number of verified uncertainties identified by the PSP	Uncertainty	Explanatory note	Explanatory note	Date of the priority setting workshop	Rank of the uncertainty at the final workshop	Evidence	Evidence	Health Research Classification System
Broken Bones of the Upper Limb in People Over 50	50	What are the most important outcomes after an upper limb fracture in people over 50 including physical, psychological and financial effects? (e.g. time for the bone to heal / return to normal activities / time to achieve a good recovery / cosmetic appearance)	This was a combination of two indicative questions that was formed at the 'Final Workshop'. 1. What are the most important outcomes after an upper limb fracture? (e.g. time for the bone to heal / return to normal activities / time to achieve a good recovery / cosmetic appearance) 2. What physical, psychological and financial effects do upper limb fractures have on people over 50 and their families?	Upper limb fractures can have a significant impact on a patient's life, from a physical, psychological and financial aspect. Enabling a patient to do everything they could do before breaking their arm is the main priority of treatment. However, this is not always possible. How do we judge whether a patient's treatment has been successful? This question aims to determine what the most important aspects of a patient's recovery are. Uncertainties included whether patients would achieve their pre injury level of function and how long this may take; how they would be affected psychologically (such as fear of falling); and how it would impact on them financially. It also included whether there were any factors we could use to predict these outcomes.	03/12/2018	1	Bjorkman P, et al. The use of computer adaptive tests to outcome assessments following upper limb trauma: A SYSTEMATIC REVIEW. The Bone & Joint Journal. Volume 100(B), June 2018, p. 693-702	Jayakumar P, Williams M, Ring D, Lamb S, Gwilym S. A Systematic Review of Outcome Measures Reporting Disability Following Upper Extremity Trauma. J Am Acad Orthop Surg Glob Res Rev. 2017;1(4):e7. Published 2017 Jul 27. doi:10.5555/AAOOrtho.000016	
Broken Bones of the Upper Limb in People Over 50	50	What type of information should patients over 50 with an upper limb fracture be given and how should this be provided? (e.g. nutrition, pain relief, rehabilitation, return to work, driving, sport / exercise)		Information is crucial in enabling a patient to engage in their treatment and recovery after an upper limb fracture. However, what information do they need, how should it be delivered and does the lack of information lead to poorer outcomes? Should this information be standardised across the health system? Uncertainties related to weight bearing, pain relief; beneficial and detrimental activities; nutrition; exercise; driving; sport; and work	03/12/2018	2	National Institute for Health and Care Excellence. Fractures (non-complicated): assessment and management (NG33). London: NICE; 2016.	The British Society of Surgery for the Hand. Best Practice for management of Distal Radius Fractures (DRFs). BSSE; 2018	
Broken Bones of the Upper Limb in People Over 50	50	What is the best physical rehabilitation programme for people over 50 with an upper limb fracture (with or without surgery) when it NO (NICE) needs to be kept still?		Rehabilitation is important to ensure a patient achieves their best possible outcome following an upper limb fracture. However, we do not know what the ideal rehabilitation programme should be once a patient is allowed to start moving their injured arm. This question aims to determine the ideal rehabilitation programme for both surgically and non-surgically managed upper limb fractures. Uncertainties included the ideal rehabilitation programme for specific fractures, such as the proximal humerus, wrist and clavicle. Respondents asked about different aspects of rehabilitation such as timing / intensity / duration of physiotherapy; use of manual therapy; isometric exercises; weight bearing exercises; and home exercise programmes; functional use of the arm; as well as the cost-effectiveness of physiotherapy.	03/12/2018	3	Handoll H & Branson S. Interventions for treating proximal humeral fractures in adults. Cochrane Systematic Review. Intervention. Version published: 11 November 2018.	Handoll HGG & Elliott J. Rehabilitation for distal radius fractures in adults. Cochrane Database of Systematic Reviews 2015, Issue 3	
Broken Bones of the Upper Limb in People Over 50	50	In people over 50, what is the patient experience of an upper limb fracture management and how does it influence outcomes?		Sustaining an upper limb fracture is a traumatic experience for all people. Respondents commented on how different aspects of their injury and subsequent management (both good and bad) influenced their outcome. This question looks to determine whether different aspects of a patient's treatment influences their outcomes. Uncertainties included aspects such as isolation; communication; satisfaction with treating clinician; waiting time; level of emotional care and timing of discharge from the service.	03/12/2018	4	Gordon J, et al. The patient experience in the emergency department: A systematic synthesis of qualitative research. International Emergency Nursing. Volume 34, Issue 4, April 2018, Pages 80-85	Sved K, et al. Factors Determining Wait Time and Patient Satisfaction at Post-Operative Orthopedic Follow-Up. Open Journal of Medical Psychology. 2018, 3, 47-53	
Broken Bones of the Upper Limb in People Over 50	50	What is the best alternative to medication / casts to manage pain following an upper limb fracture in people over 50? (e.g. splints / casts / lining the fracture back up / ice)?		Sustaining an upper limb fracture and its subsequent management can be a very painful experience. We normally use medications to help control this pain but there are other ways that we can control pain in the management of a patient's treatment. This question looks to determine what the best ways are to reduce acute and chronic pain that does not involve medication. Uncertainties included questions about casting; using slings; and immobilisation of the fracture.	03/12/2018	5	Johnson ML, Paley CA, Howe TE, Siska EA. Transcutaneous electrical nerve stimulation for acute pain. Cochrane Database of Systematic Reviews 2015, Issue 6.	Green S, Buchholzer B, Hainrich SE. Interventions for shoulder pain. Cochrane Database of Systematic Reviews 2005, Issue 2	
Broken Bones of the Upper Limb in People Over 50	50	What is the best physical rehabilitation programme for people over 50 with an upper limb fracture (with or without surgery) whilst it needs to be kept still (e.g. in a cast or sling)?		Rehabilitation is important to ensure a patient achieves their best possible outcome following an upper limb fracture. There is often a period of time that patients are not allowed to move their injured arm whilst in a sling. We currently do not know what the ideal rehabilitation programme should be during this period of time. This question looks at ways that we can prevent stiffness and weakness in both the affected limb and unaffected limbs, as well as maintaining a patient's general fitness.	03/12/2018	6	Nash CE, Michka SM, Del Mar CB, Glasziou PP. Resting injured limbs delays recovery: a systematic review. Journal of Family Practice. 2004; 53(9): 706-712	Handoll HGG & Elliott J. Rehabilitation for distal radius fractures in adults. Cochrane Database of Systematic Reviews 2015, Issue 3	
Broken Bones of the Upper Limb in People Over 50	50	Which are the most important factors which decide whether a patient over 50 with an upper limb fracture is treated with or without surgery?		An upper limb fracture can be managed with or without an operation. There are many factors that can help doctors and patients decide what is best for them. This question looks to determine what are the most important factors that influence whether we operate or not on an upper limb fracture. Uncertainties focused on specific upper limb fractures such as proximal humerus, clavicles and wrists as well as asking about specific factors such as preventing complications; allowing earlier mobilisation; the fracture pattern and co-morbidities.	03/12/2018	7	National Institute for Health and Care Excellence. Fractures (non-complicated): assessment and management (NG33). London: NICE; 2016.	The British Society of Surgery for the Hand. Best Practice for management of Distal Radius Fractures (DRFs). BSSE; 2018	
Broken Bones of the Upper Limb in People Over 50	50	What is the best surgical management for an upper limb fracture in people over 50? (e.g. incision, technique, metalwork, technology)		Some patients who have broken their arm will require an operation to help the bone heal. This question looks to determine what is the ideal way that we operate on specific upper limb fractures to optimise recovery and prevent complications, such as long-term pain. Uncertainties focused on the method of incision and surgery; the type of metalwork used; and whether we can use technology to improve surgical techniques (such as using 3D printing or virtual surgery).	03/12/2018	8	National Institute for Health and Care Excellence. Fractures (non-complicated): assessment and management (NG33). London: NICE; 2016.	The British Society of Surgery for the Hand. Best Practice for management of Distal Radius Fractures (DRFs). BSSE; 2018	
Broken Bones of the Upper Limb in People Over 50	50	What is the best way of treating people over 50 who are at risk of developing psychological issues following an upper limb fracture?		Breaking a bone in the arm can lead to a patient developing psychological issues such as fear of falling. This question looks to determine what is the best way to manage these issues throughout a patient's treatment.	03/12/2018	9	Misser E, et al. The course, prediction and treatment of acute and post-traumatic stress in trauma patients: A systematic review. Journal of Trauma and Acute Care Surgery. 2017;82(6):1-11	Goulds S, Swan D, McMillan G, et al. Use of a Psychological Workbook Associated With Improved Disabilities of the Arm, Shoulder and Hand Scores in Patients With Distal Radius Fracture. Orthop Relat Res. 2018 Apr;47(64):831-835	
Broken Bones of the Upper Limb in People Over 50	50	For people over 50, how well does a wrist fracture need to be reduced (put back into its normal position) to ensure a good long-term functional outcome?		Ensuring a patient achieves a good level of function after they break their wrist is essential. When a patient breaks their wrist, we try to put it back into the same position as it was before it was broken. This question looks to determine if this is necessary and whether a patient can achieve a good level of function even if their bones do not line up perfectly? Can we cause more damage by trying to put the bones back into place?	03/12/2018	10	The British Society of Surgery for the Hand. Best Practice for management of Distal Radius Fractures (DRFs). BSSE; 2018	Maiders MAM, Detering R, Bunn DN, Rosenwasser MP, Goolings JC, Sheph WW. Association Between Radiological and Patient Reported Outcome in Adults With a Displaced Distal Radius Fracture: A Systematic Review and Meta-Analysis. The Journal of Hand Surgery. Aug 2018, vol. 43 (sup. 8), p. 710-718.e6	
Broken Bones of the Upper Limb in People Over 50	50	What is the best way to manage an upper limb fracture in people over 50 that does not need surgery?		Some patients who break their arm do not need an operation. There are a variety of ways that a patient can be managed without an operation. This question looks to determine what is the best way to treat upper limb fractures that do not need surgery? Uncertainties included timing of immobilisation, best type of cast/splint/sling; and preventing complications.	03/12/2018	11	Handoll H & Branson S. Interventions for treating proximal humeral fractures in adults. Cochrane Systematic Review. Intervention. Version published: 11 November 2018.	Handoll HGG, Madhok R. Conservative interventions for treating distal radius fractures in adults. Cochrane Database of Systematic Reviews 2003, Issue 2	
Broken Bones of the Upper Limb in People Over 50	50	Does a delay in physical rehabilitation of an upper limb fracture in people over 50 affect outcomes?		Rehabilitation is important to ensure a patient achieves their best possible outcome following an upper limb fracture. Sometimes patients are not able to start this rehabilitation immediately due to factors such as physiotherapy waiting times. This question looks to determine if the delay in starting rehabilitation leads to poorer outcomes for these patients.	03/12/2018	12	Harding P, Rasekaba T, Smirneos L, Holland AE. Early mobilisation for elbow fractures in adults. Cochrane Database of Systematic Reviews 2014, Issue 6	Nash CE, Michka SM, Del Mar CB, Glasziou PP. Resting injured limbs delays recovery: a systematic review. Journal of Family Practice. 2004; 53(9): 706-712	
Broken Bones of the Upper Limb in People Over 50	50	When is the best time to operate on an upper limb fracture in people over 50 and does a delay in surgery influence outcomes?		Some upper limb fractures require an operation, however, we do not know what is the best time to perform this surgery to ensure a patient has the best chance of full recovery. There can be many reasons why this surgery can be delayed but does this delay lead to a patient having a worse recovery?	03/12/2018	13	National Institute for Health and Care Excellence. Fractures (non-complicated): assessment and management (NG33). London: NICE; 2016.	The British Society of Surgery for the Hand. Best Practice for management of Distal Radius Fractures (DRFs). BSSE; 2018	
Broken Bones of the Upper Limb in People Over 50	50	Does when, how and who manipulates an upper limb fracture returns the fractured bone to its normal position influence outcome in people over 50?		Current management of an upper limb fracture involves putting the bones back into their normal positions. This is normally done as soon as possible in the emergency department by a variety of medical professionals. This question looks to determine if a patient's recovery changes depending on who puts the bones back into place, how they do it and when it is done? Would it be better to put the bones back in a trauma clinic rather than in the emergency department? Could we use a special x ray machine to help us line the bones back up in the emergency department?	03/12/2018	14	National Institute for Health and Care Excellence. Fractures (non-complicated): assessment and management (NG33). London: NICE; 2016.	Handoll HGG, Madhok R. Closed reduction methods for treating distal radius fractures in adults. Cochrane Database of Systematic Reviews 2003, Issue 1	

Broken Bones of the Upper Limb in People Over 50	50	Does the way in which rehabilitation is delivered (e.g. individual sessions, group sessions, hydrotherapy) to people over 50 with an upper limb fracture affect outcomes?		Rehabilitation is important to ensure a patient achieves their best possible outcome following an upper limb fracture. However, does the way we deliver this rehabilitation affect the level of recovery for patients? This question looks to determine the best way to deliver rehabilitation to patients to optimise their recovery. Uncertainties included individual versus group sessions; use of hydrotherapy, formal physiotherapy versus information leaflets; use of virtual physiotherapy effectiveness of home exercises programmes; use of online leaflets versus online videos versus apps; and the use of other forms of rehabilitation such as Pilates.	03/12/2018	15	Ryder JM, Striblek JL, Dodd PJ, et al. Prescribed exercise programs may not be effective in reducing immobility and improving activity during upper limb fracture rehabilitation: a systematic review. J Physiother. 2017 Oct;97(4):205-209.	Hendol MHS & Elmer J. Rehabilitation for distal radius fractures in adults. Cochrane Database of Systematic Reviews 2015, Issue 8.
Broken Bones of the Upper Limb in People Over 50	50	What are the best pain-relieving drugs to use at each phase of treatment of an upper limb fracture in people over 50?		Sustaining an upper limb fracture and its subsequent management can be a very painful experience. Medications can help control this pain at each stage of treatment. This question looks to determine what is the best type and amount of pain medication to give a patient and the best way to give it, to optimise a patient's pain relief at each stage of treatment.	03/12/2018	16	National Institute for Health and Care Excellence. Fractures (non-complicated, assessment and management) (NG38). London: NICE; 2016.	The British Society of Surgery for the Hand. Best Practice for management of Distal Radius Fractures (DRF). BSSH; 2016.
Broken Bones of the Upper Limb in People Over 50	50	Can we predict who will do well with rehabilitation after an upper limb fracture in people over 50?		Rehabilitation is important to ensure a patient achieves their best possible outcome following an upper limb fracture. However, is it absolutely necessary for all patients? This question looks to determine if we can tell who will and won't benefit from physiotherapy following their fracture? This could depend on a large number of factors, such as the type of fracture they have.	03/12/2018	17	Truong JL, Doherty C & Suh N. The Effect of Socioeconomic Factors on Outcomes of Distal Radius Fractures: A Systematic Review. Hand (New York, N.Y.) Sep 2018; vol. 13 (no. 5), p. 509-515.	Jack K, et al. Barriers to treatment adherence in physiotherapy outpatient clinics: A systematic review. Manual Therapy Volume 36, Issue 3, June 2019, Pages 210-218.
Broken Bones of the Upper Limb in People Over 50	50	Does compliance with rehabilitation following an upper limb fracture affect outcomes in people over 50 and if so, how can we improve this?		Rehabilitation is important to ensure a patient achieves their best possible outcome following an upper limb fracture. This question looks to determine the best way to ensure a patient does all of their exercises regularly and what is the best way to make sure a patient does their exercises?	03/12/2018	18	Jack K, et al. Barriers to treatment adherence in physiotherapy outpatient clinics: A systematic review. Manual Therapy Volume 36, Issue 3, June 2019, Pages 210-218.	Pichs XJ & Howell DM. A model to increase rehabilitation adherence to home exercise programmes in patients with varying levels of self-efficacy. Musculoskeletal Care. 2018, March; 16(4): 233-32.
Broken Bones of the Upper Limb in People Over 50	50	What is the best way to treat a nerve injury that happens at the same time as an upper limb fracture in people over 50?		When a patient breaks their arm, there is a chance that they can injure their nerves as well. Although the incidence of nerve injuries is low, they can cause significant long term problems for the patient. It is important to spot these injuries early. This question looks to determine the best way to assess for an injured nerve and what is the best way to treat it, if it does occur.	03/12/2018	19	Processed nerve allografts to repair peripheral nerve discontinuities: interventional procedures. PubMed (PMCID) published date: November 2017.	Algeed A, Alshomer F. High resolution ultrasound in the evaluation and management of traumatic peripheral nerve injuries: review of the literature. Oman Medical Journal. 2018, March; 33(1): 50-56.
Broken Bones of the Upper Limb in People Over 50	50	What is the best way to manage upper limb fractures in people over 50 that have not healed properly?		Sometimes an upper limb fracture may not heal properly or may not heal at all, for a variety of reasons. There are several ways we can try to make the fracture heal, either with or without an operation. This question looks to determine what is the best way to manage these fractures and make them heal.	03/12/2018	20	Low intensity pulsed ultrasound to promote healing of delayed union and non-union fractures. Interventional procedures guideline (IPG23). Published date: July 2018.	Griffin XL, Coates MB, Parsons N, Smith N. Electromagnetic field stimulation for treating delayed union or non-union of long bone fractures in adults. Cochrane Database of Systematic Reviews 2011, Issue 4.
Broken Bones of the Upper Limb in People Over 50	50	What is the best form of anaesthetic (medication to stop patients feeling pain) to reduce an upper limb fracture (put it back into its normal position) in people over 50?		When a patient breaks their arm, we try to put it back into the same position as it was before they broke it. This can be a painful procedure and so we give medication to the patient to stop them feeling any pain. This question looks to determine what is the best medication and the best way to give it, to ensure the patient does not feel pain whilst their bone is returned to its original position.	03/12/2018	21	National Institute for Health and Care Excellence. Fractures (non-complicated, assessment and management) (NG38). London: NICE; 2016.	The British Society of Surgery for the Hand. Best Practice for management of Distal Radius Fractures (DRF). BSSH; 2016.
Broken Bones of the Upper Limb in People Over 50	50	Is day surgery (no overnight hospital stay) for upper limb fractures in people over 50 possible and what are the benefits for the patient and the hospital service (eg reduce costs)?		Some upper limb fractures require an operation. Most patients require a stay in hospital following their operation. This question looks to determine if a patient could have an operation and be able to go home the same day? If so, would this benefit the patient and would it benefit the hospital service (eg reduce costs)?	03/12/2018	22	No systematic reviews	
Broken Bones of the Upper Limb in People Over 50	50	Does showing people over 50 with an upper limb fracture their x-rays lead to better outcomes and better patient satisfaction / experience?		All patients who sustain an upper limb fracture have an x-ray, however, not all patients get to see them. Many patients felt that they understood their injury better after they had seen their x-ray and that this helped them to understand what the clinician was telling them. This question looks to determine if patients who see their x-rays have a better experience during their management and whether they engage in their treatment which could lead to a better recovery.	03/12/2018	23	Lindquist B, et al. Tablets in trauma: using mobile computing applications to improve patient understanding and satisfaction. Orthopedics. Mar 2013; vol. 35 (no. 3), p. 205-208.	Nasser FS, et al. Reviewing radiographic images with patients: results of a trial on patient preferences, understanding, and satisfaction. Journal of endourology. Dec 2010; vol. 24 (no. 12), p. 2088-2094.
Broken Bones of the Upper Limb in People Over 50	50	What information should be provided about casts / splints to ensure they work correctly and do not cause any problems to people over 50 with an upper limb fracture? Who should provide this information and how?		Many patients who sustain an upper limb fracture require a cast or splint to help them recover. Knowing how to use these correctly to help their recovery and prevent any problems is essential. There are already some guidelines in the casting standards document released by the British Orthopaedic Association. This question looks to determine if the information in these guidelines is enough or is more information needed and who is the best person to deliver this information.	03/12/2018	24	BOA National Casting Standards. Published November 2015.	The British Society of Surgery for the Hand. Best Practice for management of Distal Radius Fractures (DRF). BSSH; 2016.