



## ■ EDITORIAL

# Trauma and orthopaedic research is being driven by priorities identified by patients, surgeons, and other key stakeholders

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Some musculoskeletal research has been criticized in the past for a failure to meet the clinical priorities of patients or clinicians.<sup>1,2</sup> In order to address this, those who fund research have placed increasing importance on ensuring the extensive engagement of all stakeholders when commissioning research. Clinical research will now only be funded once researchers are able to demonstrate relevance to the end-user (patients and the public). This approach to funding will apply to both translational and clinical effectiveness research.

The methods by which the opinions of stakeholders can be obtained range from the cursory to the comprehensive. While the former was accepted in the past, this is no longer the case. Funding will be declined, even for studies with high methodological quality, if there is a perceived lack of engagement with the end-user during the inception, design, conduct, and dissemination of the study.

Trauma and orthopaedic researchers have been responsive to this change. During the past six years, extensive efforts have been made to fund and conduct research that prioritizes questions which have been obtained by involvement with the public and patients. The best established methodology for this involvement is through a James Lind Alliance Priority Setting Partnership (JLA PSP), although other pathways of prioritizing research questions using patient and public involvement (PPI) have been successfully used.<sup>3-6</sup> The JLA is a non-profit making organization which was established in 2004. It brings together patients, carers, and clinicians to identify and prioritize the top ten research questions that are important and unanswered. Since its inception, the JLA has supported over 100 priority setting partnerships in the UK and increasingly around the world. There have been 14 such partnerships involving musculoskeletal topics which have been completed to date.<sup>7-10</sup>

The various methodologies used in prioritization exercises have been critically appraised,<sup>2</sup> and while a panacea to balanced prioritization has not yet been found, the processes recently applied appear robust and proportionate.

The details of the JLA process are described elsewhere,<sup>11</sup> but in brief, it involves many phases. The scope and purpose of the survey is agreed by a group consisting of a JLA advisor, the clinical lead, information specialist, and representatives from the key stakeholder groups (patients, caregivers, and healthcare professionals). A national scoping survey is generated as a questionnaire, which asks a wide range of respondents to submit their research uncertainties. Responses are amalgamated into a smaller number of research questions using common themes and the existing evidence is searched to ensure that they have not already been answered and are not being currently addressed. A second national survey asks respondents to prioritize the unanswered research questions. The top 25 prioritized questions are taken to a multi-stakeholder workshop, where a consensus is reached on the top ten. This final setting of priorities is done in a face-to-face workshop, using small and whole group discussions, and care is taken to ensure that the choice of participants is balanced. Domination by any one person or group is avoided and consensus is reached when there may have been disagreement.

The top ten priorities, representing the considered views of the patients and professionals caring for them, are disseminated to the National Institute for Health Research (NIHR) research prioritization group, who have the ability to commission research to address the uncertainties.

While a JLA PSP is the gold standard method of research prioritization, there are a number of barriers to conducting this work. The JLA currently advise applicants that a prioritization exercise is likely to cost between £15,000 and £25,000. These costs account for the need for an independent JLA facilitator, compensation costs for the representatives of patients, workshop costs, and, where needed, the employment of an 'information specialist' to conduct literature searches and amalgamate questions into common themes. In addition, there is a considerable commitment of time for the steering group, and the process has typically taken approximately 18 months for previous trauma and orthopaedic JLA exercises.

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**Table 1.** Examples of the priorities identified through the Patient and Public Involvement process for trauma and children's orthopaedics, and subsequent funding awarded.

Priority question identified	Resultant commissioned research
What is the best surgical management for an upper limb fracture in people over 50? (e.g. incision, technique, metalwork, technology) <sup>14</sup>	Humeral Shaft fracture trial (HUSH) <sup>15</sup>
What is the best way to prevent surgical site infection in adults undergoing surgery for fragility fractures of the lower limb? <sup>16</sup>	WHITe 8 COPAL Cement <sup>17</sup>
What is the best weightbearing regime following treatment (with or without surgery) for fragility fractures of the ankle? <sup>16</sup>	Weightbearing in ankle fractures (WAX) <sup>18</sup>
What are the most important outcomes after an upper limb fracture in people over 50 including physical, psychological, and financial effects? <sup>14</sup>	Improving clinical outcome measurements of fracture treatment <sup>19</sup>
Which type of brace is most effective in the treatment of a) early onset scoliosis and b) adolescent idiopathic scoliosis? <sup>20</sup>	Night-time Only Bracing in Adolescent Idiopathic Scoliosis Trial (NOBAIST) <sup>21</sup>
What is the optimal management for severe stable slipped upper/capital femoral epiphysis (SUFE/SCFE)? <sup>22</sup>	British Orthopaedic Surgery Surveillance (BOSS) Study (BigBOSS Study) <sup>23</sup>
Royal College Surgeons - NIHR Trauma Priority Setting Exercise <sup>6</sup>	Children's Radius Acute Fracture Fixation Trial (CRAFT) <sup>24</sup>
What is the best weightbearing regime following treatment (with or without surgery) of fragility fractures of the ankle? <sup>16</sup>	Ankle Fracture Treatment: Enhancing Rehabilitation (AFTER) <sup>25</sup>
What are the key components of a rehabilitation pathway for adults with dementia/cognitive impairment following a fragility fracture of the lower limb? <sup>16</sup>	HIP HELPER - Improving patient recovery following hip fracture through caregiver support: a feasibility study. <sup>26</sup>

So is this effort and cost worth it? From a societal perspective, we know that medical research is integral to shaping the provision of healthcare. The influence of trauma and orthopaedic research in the development of national guidelines, commissioning, and standards of care is well demonstrated through agencies such as NICE<sup>12</sup> and BOAST.<sup>13</sup> The high-quality commissioned research in arthroplasty,<sup>14</sup> paediatric orthopaedics, and trauma since 2015 can largely be seen to relate directly to the priorities set during the Patient and Public Involvement (PPI) process (Table 1).

The largest funder of trauma and orthopaedic research in the UK is the NIHR. The NIHR has many funding streams, but the two most common targets for trauma and orthopaedic research are the Health Technology Assessment (HTA) and Research for Patient Benefit (RfPB) panels.

HTA research is undertaken when some evidence already exists to show that a technology can be effective, and this needs to be compared with the current routine intervention to see which works best. HTA funding can either be “researcher-led”, which offers researchers the opportunity to submit proposals on topics or research questions of their choice, or “commissioned”, which invites applications to address specific questions. Researcher-led questions will need evidence of PPI support and prioritization, while commissioned calls have already been recognized by the NIHR as being a priority but will still require integral PPI.

RfPB has a broad remit, with a focus summarized as “research that is concerned with the day-to-day practice of health service and social care staff”. All research funded through RfPB is “researcher-led”, and therefore requires PPI prioritization to justify the claimed importance of the topic.

Finally, and perhaps most significantly, following extensive work by the trauma and orthopaedic research community, the NIHR have designated a recent themed call across all their funding programmes to ‘injuries, accidents, and urgent and emergency care’.<sup>27</sup> This means that researcher-led applications in this area will be given relative priority when considered by assessment panels across all the NIHR funding streams.

Moving forward, the focus on PPI in the design and conduct of research is an opportunity and a challenge. The opportunity comes from the ability to refer to the prioritization work previously conducted to decide upon an area of research, and justify that decision to funders. The challenge comes from the need for the research community to support PPI groups, and importantly to continue to truly engage with these groups as core members of the team throughout the inception, design, conduct, and dissemination of the study. Trauma and orthopaedic researchers have been leaders in the conduct of PPI activity to date, often using a JLA PSP framework. In order to ensure that this is maintained and that the process is further embedded as ‘comprehensive’ rather than ‘cursory’, clinicians and researchers will need to continue to recognize the importance of this process. This will enable us to improve the likelihood of obtaining funding, and to ensure that we deliver relevant and important research. In order to deliver these objectives, seed-funding will need to be available to support JLA and other patient-centred research prioritization projects. *Bone & Joint Publishing* will continue to publish protocols for these studies, and disseminate the resulting research priorities to strengthen the evidence base within our profession.<sup>16,20</sup>

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