

EPOS RESEARCH PRIORITY SETTING PROTOCOL

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PRINCIPAL INVESTIGATOR

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INTRODUCTION

The purpose of this protocol is to set out the aims, objectives and commitments of the EPOS Research Priority setting project (EPOS-PSP) and will be reviewed by the EPOS-PSP Steering Committee.

Paediatric orthopaedic surgery remains an area of practice that is not always based on high quality evidence. Treatment decisions are often experiential or based on lower-level evidence rather than based on good quality research. Practice is highly varied, and outcomes are influenced by a multitude of factors not limited to the premorbid conditions, growth, development, and treatment choices. High quality well-conducted studies to better understand the natural history of conditions is lacking, and comparative clinical effectiveness research urgently needed.

EPOS has recognised the need for research and the importance of setting the priorities for research in our specialty. In a relatively small specialty, funding for high quality research must be placed with studies researching clinically and scientifically important subjects. Setting the research priorities of the society identifies these important topics aiding researchers to access funding and funders to identify clinically important questions.

AIMS AND OBJECTIVES

The aim of the EPOS-PSP is to identify the important and unanswered research questions from both clinical and basic sciences perspectives in children with orthopaedic problems and prioritise those that are most important. Elective, traumatic, and basic sciences questions will be included.

Objectives:

1. To work with clinicians to identify important clinical uncertainties within Europe relate to paediatric orthopaedic surgery.
2. To work with clinicians to identify key areas for basic science research in paediatric orthopaedic surgery.
3. To agree, by consensus, a list of priorities for research uncertainties
1. To use the results of this research to inform commissioning bodies for consideration of funding future research in paediatric orthopaedic surgery.

STEERING GROUP

The steering group will be formed by representative from the Scientific Committee from the European Paediatric Orthopaedic Society (EPOS) and will include:

Jan Rölfing (jan.rolfing@rm.dk)
 Dan Perry (daniel.perry@ndorms.ox.ac.uk)
 Christian Wong (christian.nail.entierp-wong@regionh.dk)
 Flossie Carpenter (flossie.carpenter@bristol.ac.uk)

METHODS

The methods used will be agreed by members of the steering committee throughout the process. The methods will be guided by the aims and objectives of the study. The process will be iterative and guided by the findings in previous stages.

STAGE 1: ONLINE SURVEY

Previous work was done by the British Society of Children’s Orthopaedic Surgery (BSCOS) to identify research priorities for clinical effectiveness research in children’s orthopaedic surgery. Using a Delphi technique, they identified ten elective and five trauma research priorities, with the highest ranked relating to slipped capital femoral epiphysis, Perthes’ disease and bone infection.

Table 1. includes these previously identified research priorities(1).

Table 1: Taken from “A consensus exercise identifying priorities for research into clinical effectiveness among children’s orthopaedic surgeons in the United Kingdom”, Perry et. Al.

Rank	Question	Mean score (max 5)
Elective care		
1	Is ‘acute correction of deformity’ more clinically effective than ‘a strategy of pinning <i>in situ</i> with later correction if required’ for the treatment of severe stable Slipped Capital Femoral Epiphysis?	4.6
2	Is ‘surgical containment’ more clinically effective than ‘non-surgical care’ in the treatment of Perthes’ disease of the hip?	4.5
3	Is ‘a short course of antibiotics’ as clinically effective as ‘an extended course’ in the treatment of childhood bone and joint infections?	4.5
4	Is ‘prophylactic fixation’ more clinically and cost effective than ‘a strategy of active monitoring’ in the treatment of the opposite hip in stable Slipped Capital Femoral Epiphysis (SCFE)?	4.3
5	What are the current approaches to the surgical management of children with ambulant Cerebral Palsy (CP), and how may differences in treatment choices influence outcomes?	4.3

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Rank	Question	Mean score (max 5)
6	Is 'nationwide selective screening' more clinically and cost-effective than 'universal ultrasound screening' in the detection of hip dysplasia in the newborn?	4.3
7	What are the current approaches used in the management of late presenting hip Dysplasia in infants, and how may differences in treatment choices influence outcomes?	4.2
8	Is 'active monitoring' as clinically effective as 'treatment with a neonatal hip splint' in the treatment of babies with centred, but sonographically immature hips?	4.2
9	What are the current approaches used in the surgical management of hip disease in children with Cerebral Palsy, and how may differences in treatment choices influence outcomes?	4.0
10	Is 'operative intervention' more clinically effective than 'best non-operative care' in the management of children with patella instability.	4.0
Trauma care		
	Not prioritized (already prioritized by a funding body).	
	Is 'surgical fixation' more clinically effective than 'non-operative care' in the management of children with medial epicondyle fractures of the elbow?	4.0
1	What is the clinical and cost-effectiveness of intramedullary nails <i>versus</i> plate fixation for the treatment of adolescent femoral fractures?	3.5
2	What is the clinical and cost-effectiveness of intramedullary nails <i>versus</i> plate fixation <i>versus</i> external fixation for the management of tibial shaft fractures in children?	3.5
3	Is 'anatomical reduction +/- fixation' more clinically effective than 'outpatient functional reduction' in the management of younger children with displaced distal radius fractures (either at the metaphysis or the physis)?	3.5
4	Is 'surgical fixation' more clinically effective than 'non-operative care' in the management of children with minimally displaced fractures of the distal tibial physis?	3.3
5	Is 'a strategy of buried wire fixation and removal as required' more clinically effective than 'a strategy of percutaneous fixation and early removal' for the treatment of children with lateral condyle fractures of the elbow?	3.3

An online survey will be developed using "SurveyXact" (Rambøll Management Consulting)[FC].(2)This survey will be composed of three parts:

1. The first part will include the previously developed research priorities from above and ask respondents: "Considering the research priorities displayed above and your own clinical practice, do believe any questions should be removed from this list? If so, indicate why the question should be removed (i.e. the question has been adequately answered, or the question is no longer relevant)")

2. The second question asked will be: “Considering your clinical practice in paediatric orthopaedic surgery and the list provided, do you think that there are any other important clinical research questions that need addressing?” Responses will be encouraged in a Population, Intervention, Comparator and Outcome (PICO) format.
3. The third question asked will be: “Considering your clinical practice in paediatric orthopaedic surgery, what are the most important basic science research questions relating to paediatric orthopaedic surgery that need addressing?”

EPOS members will be invited to participate in the priority setting survey and responses will be collected anonymously. Participants will not be limited in their responses. The survey will be open for four weeks and members of EPOS will be reminded about the survey before it's closure. The study will be promoted using appropriate email correspondence and social media outlets to EPOS members.

STAGE 2: REFINEMENT

A list of research questions will be compiled using the survey responses and grouped by clinical topic area and basic sciences questions. Questions will be reviewed by an expert panel from the Steering Committee to ensure the appropriateness of the questions [DP, JR, CW]. Similar or duplicate questions will be combined, and all questions will be grouped according to clinical topic and basic science questions.

Published work and guidelines will be checked to ensure that the questions developed remain unanswered (i.e. there are no large definitive trials that address the uncertainty). Questions for which there may be adequate previous research will be reviewed by the Steering Committee and a unanimous decision must be made to warrant exclusion.

STAGE 3: DELPHI ROUND 1

A survey, using SurveyXact, will be sent to all EPOS members, regardless of whether the member responded to the Stage 1 survey [FC].(2) Members will be asked to review each of the questions and rank their top 10 research questions from the list provided.

The survey will be available for completion for four weeks, and a reminder email will be sent after one week, and 24 hours before the survey closes. Participants will be invited to submit additional questions and suggest refinements to the existing questions. These will be reviewed by the Steering Committee to ensure their relevance and that there are no duplicates.

STAGE 4: DELPHI ROUND 2

Respondents to the first Delphi round will be further contacted to re-score /re-rank the questions. A summary of the results from the first round will be provided for respondents to review. Participants will be asked to re-score/re-rank the questions with the knowledge of the group responses.

STAGE 5: ANALYSIS

Responses from the second consensus round will be ranked based on the overall mean score per question. The Steering Committee will review the scores and compile a list of questions in an order of priority, grouped based on clinical topic and basic science questions.

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DISSEMINATION OF FINDINGS

The findings will be disseminated to EPOS members and published externally. An academic paper will also be prepared from the findings from the study and submitted to the Journal of Paediatric Orthopaedics [FC, JR]. The results of the study will be presented at appropriate conferences, including the EPOS annual conference [FC].

TIMEFRAME

Task	Time (months)						
	1	2	3	4	5	6	7
Steering group invitations							
Survey and email development							
Survey 1							
Analysis 1							
Survey							
Analysis 2							
Survey 3							
Final analysis							

APPENDIX

DRAFT EMAILS AND INSTRUCTIONS

Email invitation 1.1

Dear EPOS members,

The EPOS Scientific Committee would like to invite you to take part in a research priority setting exercise. We wish to develop a list of the key research priorities that members of EPOS believe remain unanswered in Children's Orthopaedics. This will involve completing three surveys over the next few months. The Scientific Committee will use a Delphi format to produce this list and your participation in this process is vital to ensure that the results represent the majority of EPOS.

The aim is to produce a list that clinicians and scientists can use to secure funding for important research studies within Children's Orthopaedics.

A link to the first survey is included here. All responses will be anonymous and your participation in this survey does not mandate participate in further surveys. Thank you in advance for our help with this.

Yours,

Email invitation 1.2

Dear EPOS members,

There is now one week to complete the EPOS research priorities setting survey!

The aim of this survey is to produce a list that clinicians and scientists can use to secure funding for important research studies within Children's Orthopaedics.

A link to the first survey is included here. All responses will be anonymous and your participation in this survey does not mandate participate in further surveys. Thank you in advance for our help with this.

Yours,

Email invitation 1.3

Dear EPOS members,

There is now only 24 hours remaining to complete the EPOS research priorities setting survey! Please click the link below to have your opinion included; if you have not already!

Thank you in advance for our help with this.

Yours,

Email invitation 2.1

DRAFT SURVEY

Survey 1

Thank you for agreeing to take part in this survey. The aim of this survey is to gather your opinions about the most important unanswered clinical and basic science research questions in Paediatric Orthopaedics to develop an up-to-date list of research priorities for EPOS.

This survey comprises of three questions below:

1. A previous study to set research priorities from the UK, developed a list of unanswered research questions in paediatric orthopaedics. Consider these and click to include any that you think remain important regarding your own clinical practice.

(The full UK study can be found [here](#)).

[Clickable list of BSCOS research priorities]

1. Considering your clinical practice in paediatric orthopaedic surgery and the list provided, do you think that there are any other important clinical research questions that need addressing? If possible, try to format your question using the Population, Intervention, Comparator and Outcome (PICO) format (though the research committee will help providing you supply lots of information).

[text box]

2. Considering your clinical practice in paediatric orthopaedic surgery, what are the most important basic science research questions relating to paediatric orthopaedic surgery that need addressing?

[text box]

3. Demographics
 - a. Country of practice
 - b. Grade
 - c. Age
 - d. Sex
 - e. Ethnicity

REFERENCES

1. Perry D, Wright J, Cooke S, Roposch A, Gaston M, Nicolaou N, et al. A consensus exercise identifying priorities for research into clinical effectiveness among children's orthopaedic surgeons in the United Kingdom. *Bone Joint J.* 2018;100(5):680-4.
2. Consulting RM. [Available from: <https://www.surveymxact.com/>].