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Editorial

Use of a modified BAPRAS Delphi process for research priority setting in Plastic Surgery in the UK

The British Association of Plastic, Reconstructive and Aesthetic Surgeons (BAPRAS) aims to raise understanding of the profession, and to promote innovation, education, and research. The latter is the remit of its Research Committee.

Plastic Surgery lags behind other surgical specialties in generating robust scientific evidence to answer many common clinical questions. This may reflect that individual innovation is a core skill for Plastic Surgeons, or the complexity of delivering large clinical studies in a small specialty. Both tracks now require institutional support, and funding within a competitive environment in which surgical research represents less than 5% of the U.K. research budget (<https://www.rcseng.ac.uk/about-the-rcs/support-our-work/funding-surgical-research/>). Funding bodies now prioritise research that addresses patients' and clinicians' priorities (e.g. <https://www.nihr.ac.uk/partnering-with-us/identifying-research-priorities>), in addition to being well designed and deliverable. Research prioritisation also allows professional bodies to best allocate finite research resources to optimise clinical impact. The BAPRAS research committee therefore sought to define these priorities, commencing in 2015.

A research priority setting exercise is critical for Plastic Surgery, in order for professional bodies such as BAPRAS to advise allocation of resources to ensure the greatest potential clinical impact. This has been performed successfully in other UK specialty organisations¹ (http://www.bssh.ac.uk/patients/bssh_james_lind_alliance_partnership.aspx) and worldwide.²

Various methods of priority setting have been described, including that carried out by the James Lind Alliance ([http://www.jla.nihr.ac.uk/downloads/Introduction to the JLAlliance.pdf](http://www.jla.nihr.ac.uk/downloads/Introduction%20to%20the%20JLAlliance.pdf)) and the Delphi process.^{3,4} The modified Delphi process has been used by surgical associations in the USA⁵ and the UK,¹ and was chosen because it is cost-efficient and the organisation's entire membership could be included, which is not possible with the James Lind Alliance

(restricted to 12-30 participants). It employs an iterative series of questionnaires to extract opinions from a group designated as "experts". The individuals first list all topics or questions that should be prioritised, making each one as specific as possible to facilitate comparison and aggregation. These topics are then ranked in priority order, and subsequent rounds of scoring by the same group of experts finalise.

The full membership of the organisation (400 consultant plastic surgeons) was asked by email "Which areas of Plastic, Aesthetic and Reconstructive surgery do you feel are priorities for further research?". Members were advised that hand surgery topics were excluded, as the British Society for Surgery of the Hand (BSSH) was commencing its own James Lind priority setting project at the time. The question was open for six weeks before responses were categorised, and a rank order of topics was created by the authors and ratified by the BAPRAS Research Committee and Chairs of the BAPRAS Specialist Interest Groups (SIG). Conflicts were settled by a vote involving the committee and the SIG chairs. The top ten ranked responses were then circulated to the full membership of BAPRAS by email, with an online survey (<https://www.surveymonkey.net>) open for six weeks to allow respondents to rank each topic by importance on a Likert scale (1-100). Each topic was scored independently, the survey tool providing absolute scores, mean, and rank to the investigators (Figure 1).

Sixty-six of the 400 invited consultants replied, providing 127 topics to categorise. The format and content of the responses was heterogeneous, unsurprisingly given the open question and breadth of our specialty, but there was unanimous approval for the most inclusive methodology. Topics were therefore aggregated (e.g., all suggestions that included "outcome measures" were combined), otherwise three of the top four topics would have been outcome measures in different subspecialty areas of work ("general", "trauma" and "breast").

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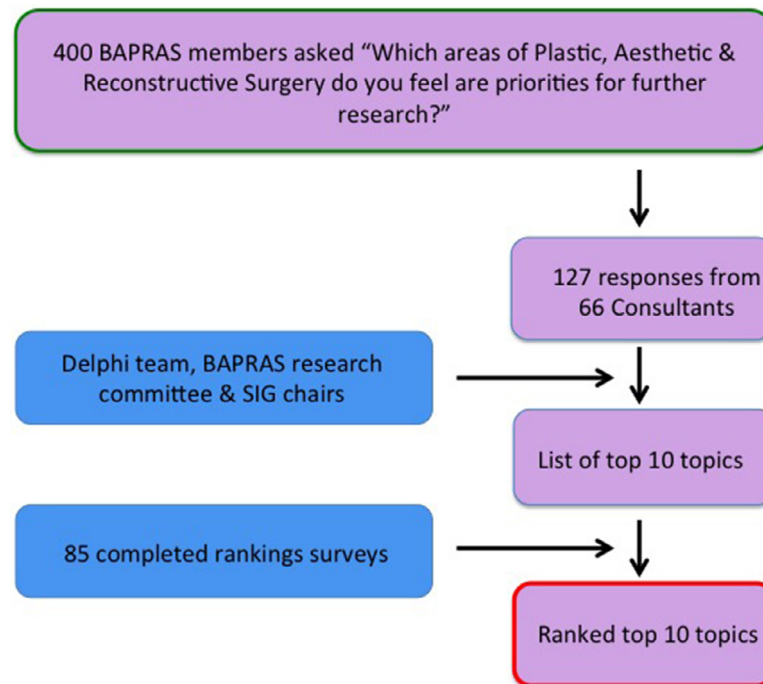


Figure 1 Diagram showing the process of the BAPRAS Delphi priority setting project.

Table 1 The results of the final ranking of topics in the 2017 BAPRAS survey to establish research priorities.

Rank	Topic	Score/100
1	High quality trials (RCTs) and Systematic reviews	74
2	Outcome assessments (all areas especially psychosocial)	66
3	Tissue engineering and biomaterials including genetic engineering/stem cells	62
4	Scar reducing/wound healing treatments (including gene therapy)	55
5	Socioeconomic value of Plastic Surgery	53
6	Genetics of skin cancer/gene therapy	52
7	Transplantation research (including genetic manipulation)	47
8	Fat grafting	41
9	Technical aspects of microsurgery	39
10	Lymphoedema surgery	34

The results of the online survey in which all members could then rank the shortlist of ten topics are shown in Table 1 (Likert scale (1-100); 85 responses received). In the UK, the leading priorities are to undertake higher quality clinical trials; to develop better clinical outcome assessment tools to render those studies more meaningful; to capitalise on the developments in tissue engineering and stem cells; and to identify novel treatments for wound healing/scar prevention.

Work to prioritise these areas within the clinical research environment is already underway with BAPRAS and the UK Reconstructive Surgery Trials Network. Significant progress has been made to facilitate collaboration between surgeons, scientists and clinical trial units, with an increasing

number of systematic reviews and multicentre trials completed and underway. (<http://reconstructivesurgerytrials.net>).

In the preclinical environment, where most tissue engineering, scar reduction and genetics research is delivered by non-clinical scientists, plastic surgeon involvement is critical to apply clinical translational prioritisation and pragmatic awareness, if funding recruitment and translational delivery of novel therapies is to be optimised.

Although this research prioritisation exercise was a U.K. exercise, and will underpin BAPRAS' allocation of their limited research funds, we expect it to influence the research agenda internationally. We call for specialty associations and bodies outwith the U.K., with national and international

103 research remits, to consider our results and conduct similar
 104 priority setting processes for the global benefit of Plastic,
 105 Reconstructive and Aesthetic Surgery.

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