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EDITORIAL

Developing consensus on national respiratory research priorities: Key findings from the UK Respiratory Research Collaborative's e-Delphi exercise

Professional bodies, training organisations, research charities and organisations representing patient groups with an interest in lung health recently joined forces to form a new organisation — the UK Respiratory Research Collaborative (UKRRC) — in an attempt to raise the profile of respiratory research in the UK.[1] Central to these efforts is the need to develop a mechanism through which this committed, but diverse group of organisations can identify and jointly agree research projects of national importance to the UK respiratory research community, which could then be prioritised these with a view to presenting them to prospective national funding bodies.[2,3] This editorial reflects on our experiences of developing a scientifically robust means of undertaking this prioritisation work. In addition, we use this as an opportunity to share key findings from our first research prioritisation exercise conducted in 2007.

Rationale for formal consensus building approaches

Each of the 17 organisations represented on the UKRRC nominates a member of their body to serve on the national collaborative. In addition to these representative members are five academic co-opted members, who have been chosen through a process of nomination and election by representative members. Given this diversity of representation, it is to be expected that there are, depending on individual members experiences, disciplinary background, subject specific methodological expertise and stakeholder group representative, a wide range of perspectives on which questions are most pressing. In such instances of likely divergent opinion, formal consensus building techniques can be used to achieve agreement in a fair, transparent and cohesive manner.[4] Such techniques have the potential advantages of facilitating participation of those reluctant to openly contribute in group settings; additionally, they should reduce the risk that group decision-making is dominated by individuals or vested-interest groups and is as a result of divisive process.

There are a number of formal consensus building techniques, but these tend to share three key components: *anonymity of individual responses* thereby allowing individuals to freely state their opinions in private without fear of the need to bow to peer group pressures; *controlled feedback of summary responses* thereby allowing individuals to reflect on the group perspective; and *iteration*, which allows individuals to re-evaluate their positions in the light of this controlled feedback of the overall group response.[4,5]

Delphi technique

Of these approaches, the Delphi technique is the best known and most widely used formal technique in healthcare

Table 1 Main steps in undertaking a Delphi exercise

- *Expert panel:* Constructing a panel of experts and obtaining their agreement to participate in the experiment.
- *Round 1:* Experts are invited, anonymously, to contribute their ideas on the subject in question (e.g. key research questions for the UK respiratory research community) and these individual responses are then summarised and circulated amongst the panel, typically in the form of a questionnaire.
- *Round 2:* Panel members then individually rank their level of agreement with each statement (or in this case research question) and these individual responses are then summarised and circulated to the panel with a repeat questionnaire.
- *Round 3:* Panel members are then given the opportunity to revise their opinions in the light of the findings of the previous round and these results are again summarised and fed back to the panel.
- *Reaching agreement:* The above-described three rounds are usually sufficient to allow an acceptable degree of agreement to emerge amongst most panel members, but if not a final fourth round can be conducted.

settings.[6,7] Developed by the RAND Corporation in the 1950s, its origins lie in research with the US air force, where it was first used to estimate the least numbers of bombs the US would need to drop on industrial targets in the USSR to seriously incapacitate its munitions capability.[8] The technique takes its name from the Ancient Greek oracle at Delphi, which was believed to forecast future events. The main steps in the Delphi process are summarised in Table 1.

We used the Delphi approach to undertake our prioritisation, but this was, based on our experiences of undertaking similar prioritisation work in other settings, adapted in a few key respects to ensure that this exercise met the needs of the UKRRC, whilst also minimising inconvenience for the Delphi panel.[9,10]

UKRRC e-Delphi exercise

This involved all 22 members of the UKRRC serving as our multi-disciplinary expert panel. At an initial face-to-face meeting of our expert panel, it was agreed that we would, for the first year, seek to focus on research questions in relation to asthma, chronic obstructive pulmonary disease (COPD) and lung fibrosis, with paediatric lung health being a cross-cutting area (the plan is in future years to focus on other respiratory disease areas). Panel members were invited to anonymously identify questions of national importance within these areas, together with a short statement explaining the importance of the proposed work and possible methodological approaches that could be used to undertake the study. In the case of asthma this was greatly helped by a list of priorities already drawn up by Asthma UK, and a list of broader topics identified by the British Lung Foundation.

This initial long-list of questions was then circulated to our expert panel by email, with panel members being invited to score anonymously each of these questions on a five point Likert scale, ranging from ''unimportant'' to ''very important''. Responses were then collated and fed back to the panel members electronically; panel members were then invited to re-score the questions in the light of this feedback. The resulting summary responses from this second e-Delphi round allowed individual questions to be

Table 2 Agreed research priorities

Disease area(s)	What is the research question that needs to be investigated?
Paediatric lung health/asthma	• Is there a causal relationship between obesity and asthma in children and, if so, what is the mechanism through which this relationship is mediated? • Can an intervention to improve cardiovascular fitness and reduce weight in obese children with asthma result in improvements in lung function and/or asthma control?
Paediatric lung health	• Which predisposing genetic loci for severe bronchiolitis can be detected using a genome-wide association study? • Can these genetic factors be correlated to measure differences in biological samples collected from infants with mild and infants with severe disease?
Paediatric lung health/COPD	• Is there a link between early life lung function and the risk of cardiovascular disease? • What factors in childhood are important in the development of COPD in adults?
Asthma/COPD	• What is the optimal health service configuration for patients with: (i) asthma; and (ii) COPD?
Asthma	• What is the optimal treatment strategy for managing patients with asthma who remain poorly controlled despite treatment with inhaled steroids and long-acting beta-agonists? • Specifically, which of the recommended treatment options: (i) higher dose inhaled corticosteroid; (ii) addition of leukotriene receptor antagonists; and (iii) addition of oral theophylline is most likely to be beneficial? • What role do factors such as adherence with medication and the role of possible aggravating factors such as rhinitis have? • Are there particular asthma genotypes or phenotypes that predict a favourable response to one or more of these treatments?
Lung fibrosis	• Can pharmacological therapy with N-acetylcysteine and/or warfarin reduce disease progression in patients with idiopathic pulmonary fibrosis?

ranked and this ranking then formed the basis of a further face-to-face meeting of the expert panel.

Key findings and next steps

We had good engagement with the process as reflected by an initial list of 22 questions being generated and then 73% and 68% of panel members responding to the second and third e-Delphi rounds.

More substantially, through this process we were able to identify key questions on asthma, COPD, lung fibrosis and paediatric lung health. The questions detailed in Table 2 are those that have emerged through this process with high level support from all the major respiratory organisations in the UK; these therefore form a secure basis for a series of important national multi-centre studies that aim to improve lung health.

At the second face-to-face meeting, individuals were invited to join together and work up an outline commissioning brief for each of the questions agreed upon. Several such groups have now been formed and these briefs will in due course be presented to relevant funding bodies, many of whom have already expressed an interest in issuing calls in these areas. We hope that these calls will be issued in 2008.

It is important to note that this represents an early first step in the long road to raise the profile of respiratory research in the UK. We are simultaneously pursuing several other strategies, these include increasing research capacity by having a greater number of fellowships available, seeking to develop joint training programmes with industrial partners and working with major generic funding bodies to create the opportunities to commission the work prioritised by the UKRRC. Clearly it is important that we do not overlook other important respiratory disease areas and questions and given the success of this initial approach, we plan to repeat this prioritisation exercise in 2008 and beyond with a focus on other respiratory disease areas and then, within the fields that formed the substrate for the first prioritisation exercise, to identify further high priority questions.

Overall, we have found the process to be cohesive and it has fostered a spirit of collaborative thinking across a very broad range of organisations and this view is echoed by a recent report in *Nature*, describing its use in relation to policy and research priorities for a broad range of non-communicable diseases.[11] Based on these positive experiences, we recommend this approach to respiratory colleagues and organisations in other countries who may similarly feel a need to identify national research priorities and collaborative working.

Conflict of interest statement

None of the authors have any conflict of interest in relation to this work.

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