

**RESPIRATORY MEDICINE RESEARCH IN THE UK:
RAISING THE PROFILE**

**A report from the Workshop held on 17 October 2005 at the Royal College of
Physicians of London**

**Principal Sponsors: Medical Research Council, British Thoracic Society, British Lung
Foundation and Asthma UK**



BRITISH LUNG FOUNDATION



| CONTENTS | Page |
|---|-------------|
| Purpose of the Report | 3 |
| Background to the Workshop | 3 |
| VIEWS FROM THE FUNDERS | |
| Medical Research Council | |
| Wellcome Trust | |
| Department of Health | |
| Plenary discussion | |
| VIEWS FROM THE RESPIRATORY COMMUNITY | |
| Barriers to Research – COPD as an exemplar | |
| Priority Areas – Basic Science | |
| Priority Areas – Clinical Research | |
| Plenary Discussion | |
| THE WAY FORWARD | |
| Key messages | |
| APPENDICES | |
| Workshop Programme | |
| Attendance List | |
| The Burden of Lung Disease | |

Purpose of the Report

The report aims to summarise the main points to be presented and discussed at a Workshop held on 17 October 2005 to discuss the current standing and future of respiratory medicine research in the UK. It has been sent to the sponsors and other funding agencies, to all who attended the Workshop or who sent apologies and it will also be available via the websites of the sponsoring bodies.

www.mrc.ac.uk

www.brit-thoracic.org.uk

www.lunguk.org

www.asthma.org.uk

Background

Professor John Gibson chaired the morning session. The idea for the Workshop had arisen from discussions at the Physiological Systems and Clinical Sciences Board (PSCSB) of the Medical Research Council (MRC) in the spring of 2005. These discussions mirrored the debate that had been taking place among researchers in respiratory medicine over the previous year at bi-annual meetings hosted by the British Thoracic Society (BTS). Debate at these meetings focussed on the establishment of Clinical Research Networks (CRNs) in other disciplines by the Department of Health (DoH). These were accompanied by funding streams linked to government priorities. BTS had called the meetings to try to find out and then disseminate information about what was happening nationally in relation to these initiatives. Respiratory researchers were keen to lobby for the establishment of a Respiratory CRN and associated funding, and some work had taken place to identify the process by which respiratory research priorities might be defined in the event of such a development.

At the same time, Professor Stephen Holgate, a member of the MRC Council, had been raising issues about funding and capacity within the specialty with the MRC, reflecting the unease of colleagues in respiratory medicine. A debt of gratitude was due to Professor Holgate for providing the spark that had led to the development of the Workshop, and he had been a significant bridge between the sponsors throughout. A planning team from MRC, BLF, BTS and AUK had met in April and July to develop the programme and BTS had provided the necessary administrative support. Appendix A is the final programme for the day. Senior individuals working in various aspects of respiratory research in the UK, both clinical academics and non-medical scientists, were invited, together with members of the MRC's PSCSB. A list of those who attended is attached at Appendix B.

Professor David Strachan provided the background to the day's discussions by presenting an overview of the disease burden. With his kind permission this is reproduced in Appendix C.

VIEWS FROM THE FUNDERS

The three speakers had been asked to address the following issues in particular: -

- the amount and type of support currently given for respiratory research, and whether this was likely to change in future;
- whether respiratory medicine/science is under active consideration by their Committees – and, if not, what the respiratory community might do to influence this;
- any specific initiatives that are being developed which would be especially relevant to the respiratory community;
- their policy on the balance between basic, applied and clinical research and between capacity building, programmes and responsive funding; *and*
- the existence of any plans or prospects for joint initiatives between major funding agencies.

Each of the three keynote speakers made a presentation, took brief questions and comments immediately thereafter, followed by a Panel discussion.

Medical Research Council

Professor Colin Blakemore, Chief Executive of the MRC, began by reflecting on the examination that the MRC had made of its recent funding record in respiratory medicine following discussions with Professor Holgate and others. Since 1997, MRC had received 297 applications for respiratory research projects. It had supported 103 of these (35%). There are currently 33 active MRC funded respiratory projects, total value of which is around £24 million.

| <i>Area of Respiratory Research</i> | <i>Total value of current awards £</i> | <i>Current grants</i> |
|-------------------------------------|--|-----------------------|
| Tuberculosis | ~ 9 million | 9 |
| Asthma | ~ 4 million | 7 |
| Cystic Fibrosis | ~ 2 million | 2 |
| Pneumonia | ~ 250 k | 1 |
| Emphysema | 0 | 0 |
| RSV infections | ~500 k | 1 |
| Lung Cancer | 0 | 0 |
| Other lung disease | ~ 4 million | 5 |
| Other lung injury | ~ 2 million | 2 |
| Air pollution | 20 k | 1 |
| Other lung | ~ 1 million | 3 |
| COPD | ~ 1 million | 2 |
| Total | ~ 24 million | 33 |

The MRC had spent £476 million in 2004/5 on scientific research. This was split between Universities and Units. Support had been given last year to 1,200 post-graduate students and 350 Fellowships. Respiratory research funding falls largely within the remit of the MRC's Physiological and Clinical Sciences Board, which had received 15% of available MRC funds.

Professor Blakemore gave details of how the MRC formulates its funding strategy, by drawing on advice from the research community, the MRC Board, and Government and public priorities. Workshops such as this can be a key part of this process and the outcome will be referred to the PSCSB and Strategy Portfolio Overview Group (SPOG) for further consideration as the Spending Review Bid is being prepared. MRC's mission is:

- to encourage and support high quality research with the aim of maintaining and improving human health;
- to produce skilled researchers, and to advance and disseminate knowledge and technology to improve the quality of life and economic competitiveness in the UK; *and*
- to promote dialogue with the public about medical research.

He highlighted the disciplines and approaches that were pertinent for respiratory research in MRC's current funding priorities:-

- animal models and/or human models
- longitudinal studies
- collaborative research
- clinical and non-clinical training

and emphasised that the PSCSB would welcome innovative proposals from the respiratory community for increasing understanding of the mechanisms for disease, that cover all areas of respiratory disease, and that underpin the development of new diagnostics and therapeutics.

Funding opportunities exist for research grants, collaboration grants, fellowships, NIAs, clinical trials grants, Experimental medicine and, possibly, biomarkers.

The MRC challenge to the Workshop was as follows:-

There is an **urgent need** to identify gaps and opportunities –

- are there any bottlenecks in the “translation pathway”? if so, what are they and how might they be removed?
- Is there insufficient collaborative or inter-disciplinary research?
- Is the infrastructure present, or does it need improving, and if so, how?
- What is the capacity and/or training need of young researchers/the next generation?
- Which barriers are tractable?
- What are the milestones for change for the next 5,10, and 15 years?
- What are the likely benefits and the prospects for making an impact on patient care?

Wellcome Trust

Professor Mark Wallport, Director of the Wellcome Trust, gave a brief overview of the history of the Trust and its mission, which is “to foster and promote research with the aim of improving human and animal health”. He was very happy to participate in the Workshop, and hoped to provide valuable information as well as a challenge for the afternoon session, when next steps would be discussed.

Respiratory related research in the period 2001-05 was > £110 million, quite a small proportion of the total. In the next 5 years, the Trust expects to spend over £2 billion to foster bio-medical research. In doing so, it wishes to ensure that :-

- the single biggest element of its funding supports investigator-led research and career initiatives
- it will retain around 10% of funding each year to respond flexibly to unanticipated opportunities
- it remains a major UK funder with a strong international presence; *and*
- it will continue to support the Wellcome Trust Sanger Institute as a world-leading centre for genomics research

The Trust will continue to expand support in its priority areas of

- clinical research and training
- activities to develop and use knowledge for health benefit
- international research
- public engagement

Professor Wallport suggested that the main opportunities in the sector in the years to come would be in relation to Wellcome Strategic Awards and Fellowship Funding, and suggested that the directions of travel might be:-

- opportunities for postdoctoral training
- career mobility
- strengthening collaboration between basic and clinical scientists
- facilitating interdisciplinary research, e.g. mathematical biology; chemical biology
- enabling large thematic programmes
- strengthening *in vivo* physiology
- Capacity building in specific areas
- Developing country research, neglected and emerging diseases.

Department of Health

Professor Sally C Davies, Director of Research & Development at the Department of Health, began by saying how pleased she was to be able to address the Workshop and provide information and some discussion points. The DOH does not have a single identifiable “pot” of funding for any disease except in the (rare) occasions when Ministers might announce a special project (for example, for prostate cancer). The Department policy is to fund applied and practice-based research with a direct focus on people and their health and well-being which is designed to answer the real questions that face health professionals, policy-makers, patients and the public

In recent years the DoH had funded a number of studies in respiratory medicine. Topics have included air pollution, smoking & tobacco dependence, TB, evaluation of pneumococcal conjugate vaccine in elders, follow up on ECMO, lung cancer awareness, total funds > £6.9m. The Department is also supporting 22 lung cancer & mesothelioma trials (+5 in set-up phase) through the NCRN.

Professor Davies reported that there are definite pressures within the Department that are currently driving change:-

- how can basic research be better translated to benefit society?
- how can we improve health and health care?
- how best to maximise industry investment in UK?
- what is the role of Health R&D in the “knowledge economy” and wealth creation?

and there is now also a worldwide recognition of the need for ‘new’ model for clinical R&D.

Markers of these changes in recent months had included:-

- DoH Working Party Report – Research for Patient Benefit
- Academy of Medical Sciences Report – Strengthening Clinical Research
- Bioscience 2015 Report – Improving National Health, Increasing National Wealth
- PICTF, HITF & Industry lobby
- Wanless 2 Report
- Research Governance
- Increased regulation
- “Follett”

Professor Davies acknowledged that interpretations of the recent EU Directive in relation to research governance had not been helpful, and she hoped that the situation would ease following further guidance from the Department.

There was now very much a shared vision within the Department:-

- to establish the position of the UK as a world leader in clinical research by harnessing the power of the NHS
- to benefit the public and patients by improving **national health** and increasing **national wealth**
- to work effectively with all partners, including industry

This was being backed up by the March 2004 Budget announcement of a £100m increase in NHS R&D funding by 2008 which will bring the combined budget for medical research to £1.2billion by that year. Its purpose will be to achieve effective and efficient translation of scientific advances into patient care.

Funding was only one part of the picture, however, and the infrastructure changes that were being put in place were of equal importance. **The UK Clinical Research Network** (UKCRN) structure provides for the development of “Managed Networks” led by a national subject specialist and/or local enthusiast. Networks provide the opportunity for shared processes & paperwork, Standard Operating Procedures for Good Clinical Practice, pharmacovigilance etc, as well as a national data capture system, training support and a network of ‘regulatory expertise’ & advice. Working with industry a key part of the UKCRN.

Professor Davies confirmed that there would be no more disease-specific CRNs. Instead, generic CRNs would be developed, and bids respiratory research would have to compete within the opportunities thus offered.

Other elements of building up a world-class infrastructure will involve developing Experimental Medicine.

In relation to developing academic medical careers, Professor Davies highlighted the recommendations in the March 2005 Report from the Academic Careers Subcommittee of the UKCRC and Modernising Medical Careers. Related developments include:-

- New funding from HDs, HEFCE etc.
- Competition announcement October 2005:
- Institutions bid for new training programmes
- Phase 1 Academic Clinical Fellowships (25%)
- Phase 2 The Clinical Lectureship (50%)
- 2005/2006 – specialties/flexibility
- New Blood Senior Lectureships
- ACS to continue and monitor

Professor Davies’ concluding remarks outlined the next steps and highlighted areas for further discussion in the afternoon sessions. The Department is currently consulting on a new R&D Strategy for England (closing date 21 October 2005). The consultation, “Best Research for Best Health: a new National Health Research Strategy” aims to ensure transparent funding to NHS for R&D and, following consultation, the transition arrangements will start in April 2006.

The proposed new **National Institute for Health** research aims “to position the NHS as a world-class research organisation focused on the needs of patients and the public”. It will operate as –a “Virtual Institute” guided by an Advisory Board chaired by the DoH Director of R&D and will remain the responsibility of Department of Health R&D.

Professor Davies indicated that there will be support for researchers through the creation of a National Institute for Health Research Faculty. Senior Investigators will be an elite, identified from the academic clinicians currently funded by the NHS directly or through the universities. There will be Faculty Associates - all NHS employees who make a significant contribution to research. Junior Investigators will be all research training fellows and clinical lecturers doing patient based research.

In terms of the systems envisaged in the NIH consultation, the aim, therefore was:-

- to establish optimum systems to support research
- to provide support for Patient Research
- to develop a transparent system where funding reflects research activity
- to provide incentives for individuals and organisations to carry out research
- by developing research Networks, to enable wide-scale participation in research
- to establish Academic Medical Centres to serve as the nation’s premier research hospitals
- to develop technology platforms
- to support cutting-edge health research in selected research-intensive hospitals
- to bust bureaucracy
- to simplify and harmonise the processes that use up researchers’ time

Professor Davies suggested that the challenge for the respiratory community was to work together to seize the opportunities offered by these far-reaching proposals.

Plenary Discussion

The main response from the floor during the Panel discussion was grave disappointment that there appeared to be no possibility in the future of a separate Clinical Research Network for respiratory research. However, this was tempered with a determination from those present that the community must now work together to position itself to be in “pole position” for access to the opportunities offered in the new generic Networks and all funding opportunities and offers of support for capacity building so that high quality research can take place for the benefit of patients with respiratory disease.

Delegates also welcomed the DoH proposals for “busting bureaucracy” and freeing up some of the barriers to research within the NHS.

Colleagues also observed that paediatric respiratory research was a key element in the picture. While it was not the primary focus of the day’s discussions, it was heartening to note that there was a tradition of adult and paediatric respiratory physicians working closely together in research fora and projects.

Other points raised included the need for the UK respiratory community to continue to lobby, with colleagues from the European Respiratory Society, for the Commission to recognise the burden of respiratory disease in the EU and make it an explicit priority in EU Framework Programme 7 (2007-1013). BTS members had been very active in this regard over the summer, and a further campaign would be launched later that week.

Several speakers from the floor and the panel reflected that the Respiratory community could perhaps be more supportive of colleagues when assessing grant applications as peer reviewers.

Reflecting the plea from the floor for recognition of the “lost tribe”, i.e. scientists who train Clinical Fellows, panel members agreed that these had been regarded as costly elements in grant applications in the past. Perhaps the new NHS arrangements could take this into account and provide incentives in future for this important part of the research infrastructure.

Recognising that BTS has a good reputation for facilitating multi-centre trials, it was felt that participation in any such trials in future might also receive recognition from the NHS under the proposed infrastructure changes. However, the key to future funding would be the excellence of the proposals. Similarly, delegates were interested to hear that difficulties in relation to translational research were experienced by all specialties.

The afternoon session had been structured to start the process of identifying how the respiratory community might best respond to the challenges offered in the three presentations that follow.

VIEWS FROM THE RESPIRATORY COMMUNITY

Professor Stephen Holgate chaired the afternoon session, during which speakers had been asked to make brief presentations from their own work and experience as lead respiratory researchers on the barriers to research, and also to highlight priority areas. He explained that one difficulty about the specialty is its breadth- respiratory medicine covers several major disease areas (8-10, depending on how they are classified) which presents challenges about where to focus the main attention, at least in clinical research (although this was less of a problem, perhaps, in basic research where common mechanisms are involved). It had been decided to use COPD as an example for the first three presentations, not because other areas were less important, but because of the size of the disease burden, as discussed earlier in the day, and because many significant conclusions could be drawn by looking at barriers to research in COPD.

BARRIERS TO RESEARCH

COPD- Molecular Genetic Approaches – Professor Peter Barnes

Professor Peter Barnes presented some highlights from his recent research. Details are not recorded in this report, although can be obtained by contacting BTS at the address at the end of the Report.

Professor Barnes' conclusions about some of the barriers and opportunities for research such as his included:-

Very common disease – large populations available
“Normal” smoker controls: susceptibility genes
Careful phenotyping necessary

Abnormal cell responses: monocytes, macrophages
Availability of cells: blood, sputum, BAL, resected lung

Abnormalities in COPD not predicted by animal models
Essential to work with patient material

Major unmet need in therapy
No treatment shown to reduce progression
Targetting cellular abnormalities e.g. steroid resistance

Translational Biology – Professor Chris Haslett

The presentation from Professor Haslett, the Director of the MRC-funded Centre for Inflammation Research in Edinburgh, is also available upon request. This is the MRC's major group working in this area and receives £4 million p.a.. It has 9 major groups and 180 bench researchers. Professor Haslett gave some other insights into the barriers to research in his area of interest. Imaging is one major area in which he

and colleagues have had to be inventive. He felt that the Centre had succeeded because of:-

- a strong patient base e.g.
 - *cystic fibrosis; COPD; lung fibrosis*
 - *acute lung injury; ventilator-associated pneumonia (VAP)*
 - *glomerulonephritis, vasculitis, arthritis, IBD*
 - *liver disease; transplantation*

- a strong commitment to translational research e.g.
 - *acute lung injury*
 - *experimental cell therapy in VAP*
 - *biomarkers in COPD (NIH funded)*
- - *mass spec markers of lung inflammation; microarrays*
 - *genetics of inflammatory bowel disease/osteoporosis*

- Strong commitment to novel imaging approaches
 - *national e-Science centre*

Clinical Research – Professor Peter Calverley

Professor Calverley had kindly agreed to make this presentation on behalf of Professor Bill MacNee, who had been unable to attend because of circumstances outwith his control. Professor Calverley highlighted the following issues from the clinical work outlined in Professor MacNee's presentation, and which had been addressed by some of the speakers in the morning session:-

Infrastructure issues:-

- Clinical research facilities need to be close to the patient and accepted by the clinical community
- Identifying clinically important questions – not just testing translational concepts in a clinical population
- Clinical networks working to common protocols are currently lacking

Research Process:-

- Career pathways for MD, PhD or MD/PhDs – uncertainty corrodes the soul; not easy to be the servant of 2 masters
- Timing of grant funding and the lack of an iterative process
- Limited funding sources –NHS research by whom?
- Ethical review complexity and its impact on pilot work –the precautionary principle

Conclusions:-

- Barriers exist to clinical research
- Great opportunities exist to make clinically important advances that influence disease management and understanding

Priority Areas – Basic Science

Professor Moira Whyte gave a brief summary of the resources and capacity available in the respiratory research community. She felt that there was no evidence of a specialty-specific block on research. On the contrary, there has been success in achieving grant funding, as had been demonstrated earlier, the international standing of respiratory research is very high, the lung is accessible to study, and there can be direct delivery of therapies.

As Chair of the BLF Scientific Committee, Professor Whyte reported that she had been involved in a recent exercise to identify 5 important questions in respiratory research. While these were of course open to debate, and Professor Neil Barnes would be explaining how he was undertaking a more systematic exercise (see below), she offered them as a starting point for discussion:-

- what is the basis of susceptibility to COPD?
- which allergic people develop asthma and why?
- “scarred for life”: how do our genes interact with the environment before birth, in infancy and childhood to affect lung health lifelong?
- how can we diagnose lung cancer earlier?
- what are the causes of pulmonary fibrosis?

Priority Areas – Clinical Research

Professor Neil Barnes made a brief presentation about the work that he had started to in the summer of 2005, with the aim of developing a system by which respiratory research priorities could be identified and agreed. He had been mandated to do this at the meetings of respiratory researchers convened by BTS as described earlier. In doing so, he was able to build on the work he had undertaken with Asthma UK leading to the publication in October 2004 of its document “Shaping the Future of Asthma Research”.

His overall research strategy in the Asthma UK work, which he built upon for the wider task, had been informed by the maxim “Evidence based Guidelines produce evidence-based questions”. The BTS/SIGN Asthma Guidelines subject groups had been asked to identify key research topics that had arisen from a review of the evidence when the Guidelines were being produced. This in turn led to a detailed period of discussion and peer review of projects, which had been identified and discussed at a conference in October 2003 and subsequently with a range of colleagues.

Prof. Barnes indicated that he had learned from the Asthma UK exercise and would undertake several things differently in the current work

- More patient involvement
- Publish the outcome more rapidly

He had therefore asked Chairs of current BTS Guideline Groups to identify research questions from the work they had done in developing the Guideline, and had also identified key individuals who had been BTS representatives on NICE Guideline Groups to do the same. He was now ready to start the next stage of the exercise (wider consultation, including with patient groups) but had waited until the outcome of the Workshop to begin. However, from the replies that he had received to date, it was possible to suggest the following *opportunities for translational research*:-

- the pre-school child
- the wheezy smoker
- pulmonary fibrosis

and for *improving diagnosis*:-

- children under 5
- older adults who smoke

His recommended next steps, therefore, were as follows:-

1. Obtain a list of research questions from each major guideline
2. Small group to sift and sharpen
3. Each disease area convenes a meeting to reach an overall priority based on:-
 - Is it an important question
 - Is the background science mature enough
 - Are research methodologies available
 - There should be no results of important studies awaited
 - Being able to identify opportunities for translational research

Having got each area's research questions, it would then be possible to determine overall priorities for respiratory medicine, with input from BTS, GPIAG, BPRS, BLF, AUK, and NHS. There is a need to balance common diseases such as asthma and COPD and less common and under-researched areas e.g. pulmonary fibrosis

Plenary Discussion

At the short plenary discussion following these presentations, there was widespread acceptance that the community should take the reins into its own hands, and build on its obvious strengths to tackle some of the challenges ahead, especially if no specific Clinical Research Network will be available for respiratory medicine. It would be important to have the full support of the charities concerned. As there were no representatives of the biggest source of research funds present at the Workshop, i.e. the biomedical industry, it would be important to open a dialogue should also be opened with that sector. Work was also needed to inform a members of the public about the importance of clinical trials and their participation in these activities.

THE WAY FORWARD

Professor Stephen Holgate summarised the discussions to date and offered his own vision for the future. He began by summarising the history of research in the specialty, from its origins in the treatment of tuberculosis and the ground-breaking work in respiratory physiology in the 1950s.

He was keen to emphasise the contributions to date of all concerned, including the respiratory charities, which had been very supportive and deserved reciprocal support in their efforts to re-focus their activities and raise more funds for research.

Barriers that had been identified, and which the respiratory community needed to address were :-

- the pulmonary community tends to be inward looking & reticent to take on new challenges.
- the pulmonary community is fragmented e.g. coexistence of BTS & BALR (Because basic scientists do not feel valued in BTS?),
- few if any research networks in lung disease exist & limited funding opportunities has led to disproportionate competitiveness.
- inadequate development of the basic science base e.g. animal models that fail to reflect chronic disease, low uptake of gene-manipulation in mice & low use of cell & molecular biological tools.
- Lack of engagement with other areas of expertise e.g. microbiology (virology), endocrinology (gender effects), neuroscientists (brain imaging), engineers, physicists, mathematicians, chemists, social scientists.
- Lack of opportunity for the majority of young clinicians to experience any research during specialist clinical training or before.
- A decay in research workforce due to multiple pressures including NHS work & desire for consultant status ASAP, paperwork overload & bureaucracy , mentorship & opportunities for career progression.
- Lack of engagement of the NHS laboratory scientists e.g. lung function personnel.
- Identification, but lack of use of, research priorities.
- Lack of coordination between funding bodies in driving lung research – leading to small projects selected almost by ‘lottery’ despite attempts at peer review.

The substrate

Professor Holgate suggested that the respiratory research community needs at the very heart of its future endeavours:-

- The means to meet major unmet clinical needs – Asthma, COPD, viral infections, pulmonary fibrosis, bacterial disease (resistance).
- A strong clinical base.
- academic centres in most universities.
- a sense for the need to change.
- opportunities for multi-disciplinarity.

- a number of funding bodies that have identified a need for more effective lung research.
- an industrial sector with a need for novel targets, therapies & diagnostics.
- a NHS with substantial commitment & opportunity for research that will make a difference to patients.

He outlined **five principals for effective research:-**

- a research base motivated by imagination commitment & enthusiasm.
- recognition for the need to focus on priorities without losing the opportunity for innovation.
- opportunities for research training - both clinical & non-clinical.
- appropriate facilities.
- funding of the best science.

Actions required:-

- **Greater collaboration between research groups across the UK.**

Recent successful examples include the MRC Centre for Inflammation in Edinburgh and the MRC Development Centre at Imperial College and KGT. Creative research networks require a strong desire to pool resources so that the combined result is greater than the sum of the component parts (e.g. clinical trials in specific disease areas; tissue biobanks; new animal models; genetic biobanks; experimental medicine; new models of service delivery). There should also be greater interaction between the funding bodies, professional societies, researchers (basic and applied), and clinicians. *Does the UK Clinical Research Consortium have a role as a catalyst for change?*

- **An increase in research capacity (human capital) to conduct high quality research.**

Effective research is about people. There needs to be a recognition that research is an important part of clinical specialty training outside those who have opted for an academic careers (very few). Often, young trainees do not realise their aptitude, enjoyment and ability to contribute to knowledge. A dedicated push is needed to fund and recruit young researchers across the full range of lung research from the most basic to the most applied. This has to be done recognising the career needs of the individual and the priorities that need to be worked on. *A joint initiative involving the different funding bodies will mean a uniform standard is applied and agreement achieved about funding.*

Research requires time, and therefore there needs to be greater engagement of clinical staff including health professionals allied to medicine and NYS scientific and technical staff.

Research must be viewed as a valued activity by NHS Trusts – there is a need for “Champions”. Support for workshops to promote translational research is needed. *Consideration should be given to establishing research bursaries to*

enhance the understanding between research and clinical communities (cf Cancer Research UK)

- **Establish clear priorities form research and act upon them**

Priority setting should involve a wide range of input (including the public and patients and those interested in the health of children and elderly people). Priorities should include clinical, basic and translational research. The process should engage scientists and clinicians from other specialties (e.g. rheumatologists, cardiovascular scientists, endocrinologist etc) as well as disciplines outside of medicine. There have to be long term as well as short-term priorities, and a strong focus on understanding the causes of disease, prevention (e.g. vaccines) and cure. *Can priority setting be used by more than one funding agency to create joint ownership and enhanced support?*

Asthma UK's BARS and CARS consultations have thrown up many priorities. Are there too many? What has been the effect of priority setting in the past? (e.g. the NHS/ National Asthma Campaign initiative). *Is there a mechanism for using priorities to establish more joint working involving multiple research groups e.g. birth cohorts, biobanks and DNA?*

- **There is much to be gained by encouraging more and high quality basic research in areas where knowledge is low or applications from other fields has not taken place.**
- **There is an urgent need to break down the barriers between clinical and basic research**

e.g. address the need for two Societies (BTS and BALR)

- **There is a need to be pro-active to interface with other key fields of science**

Microbiology and virology; developmental biology; regenerative medicine (e.g. stem cell biology)

- **It is increasingly important to seek opinions from and involve patients**
- **While competition is important to help dive innovation and maintain quality, members of the lung research community need to be more supportive of each other.**

Working together and greater collaboration will generate its own energy and lead to further enhancement of research, greater opportunities and real progress in areas of medicine where there is considerable need.

Professor Holgate concluded his overview with the observation that as the British Lung Foundation celebrates its twentieth birthday, it was worth remembering that the main motivating force for Professor Malcolm Green was to seek more support for research into lung diseases as well as helping patients.

NEXT STEPS

The Chairman indicated that sponsors would meet within the following two weeks to review the outcomes of the Workshop and discuss next steps in detail. Proposals would then be forwarded to all concerned, with a further opportunity for reflection and consultations possibly being available during the BTS Winter Meeting in December.

Professor Holgate thanked all speakers and delegates for their contributions to what had been a challenging and valuable day.