discipline) should receive mandatory training in research methodology and governance; with a competency framework that the RCP and pharma could together define, possibly through the vehicle of the RCP Medicines Forum.

Fourth, to consider the career structure of the research physician. Tackling the future employment prospects for academic trainees was seen to be a priority. Thus, NHS trusts and university partnerships already developed (eg through AHSC, BRC, BRU etc) should with the RCP identify systems (eg clinical academic groupings) in which basic scientists, clinical scientists and clinicians could collaborate to fulfil service, research and teaching needs in optimal circumstances.

Additionally, the RCP should work with the Academy of Medical Sciences, the General Medical Council and other relevant bodies to protect the interests of research-active clinicians as the processes for revalidation emerge and are introduced. Clinicians in training for careers at the academic end of the spectrum of clinical practice must be allowed to develop their potential in parallel according to their individual career requirements and a mentoring system should be developed to facilitate this.

Finally, opportunities for clinician scientists to move sessions between clinical and academic activities (in either direction) as their career advances should be explored. This may involve closer liaison between NHS trusts and universities and would depend upon the maintenance of competencies.

In conclusion, academic medicine in the UK today stands at a crossroads. The danger that basic science and clinical practice will follow divergent paths is great. Forging a new route together will afford the maximum chance of realising the potential foreseen by Cooksey.

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Address for correspondence: Professor TW Evans,
Royal College of Physicians,
11 St Andrews Place, Regent's Park, London NW1 4LE.
Email: t.evans@rbht.nhs.uk

EDITORIALS

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Variation in lung cancer outcomes in the UK and Europe

Ian Woolhouse

Lung cancer is the most common cancer in the world with 1.3 million new cases diagnosed every year.[1] In the last 10 years its incidence in the UK has fallen by 11% reflecting reduced rates of smoking, predominantly among men, but the overall incidence remains high at over 39,000 cases of lung cancer in 2006. Lung cancer has an enormous impact on national mortality and currently accounts for 6% of all deaths and 22% of all deaths from cancer in the UK.[2–4]

Historically, lung cancer outcomes in the UK have not compared well to the rest of Europe. The European cancer registry-based study on survival and care of cancer patients (EUROCARE) project collects and analyses data from over 80 cancer registries across 23 European countries. The fourth report relating to adults diagnosed between 2000 and 2002 demonstrated a range of five-year survival from 9.72% in the UK and Ireland to 13.4% in central Europe.[5] A more recent study comparing lung cancer survival in England, Norway and Sweden between 2001 and 2004 also found that the age standardised five-year survival rates were lower in England at 6.5% for men and 8.4% for women compared to 11.3% and 15.9%, respectively, in Sweden.[6] There is no doubt that these results are a cause for concern, however, they should be interpreted with some caution. Ten of the countries involved in the EUROCARE report were represented by regional registries, which cover only a proportion of the overall population. For example, the registries in Italy were mainly located in the wealthier north of the country and so are unlikely to be representative of the country as whole. The Scandinavian cancer registries do cover the whole population, however, unlike the English registries, they do not all include cases identified by death certification alone which may lead to underreporting of more advanced disease.

Differences in the collection and presentation of data may account for some of the variation, but the consistency of international comparisons suggests that other factors are also at play. Surgical resection offers the only realistic chance of cure for lung cancer. Surgery is only possible for early stage disease in patients with sufficient cardiorespiratory reserve to cope with major lung resection surgery. Cancer registries do not currently include data on stage, performance status and comorbidities, so it has not been possible to carry out case-mix adjusted international

Ian Woolhouse, consultant respiratory physician, University Hospitals Birmingham NHS Foundation Trust

comparisons to take account of these factors. In the study comparing England with Norway and Sweden the difference in the excess risk of dying was predominantly confined to the first year of follow-up. This suggests that patients in England more frequently present at a late stage. National audit data from England and Wales confirm that nearly 80% of lung cancer patients present with advanced, and hence inoperable, disease.[7] Studies examining the reasons for this have found that patients in the UK often fail to recognise a significant change in symptoms (with the exception of haemoptysis) and can wait up to two years before consulting their general practitioner.[8] Interestingly, the time to consultation has been shown to be particularly prolonged in smokers suggesting that these patients may be more tolerant of symptoms, regarding them as 'normal' for smokers.[9] Once patients do seek medical help, referral for investigation and then diagnosis tend to occur relatively quickly, but can take up to eight months is some cases.[8]

In addition to stage at presentation, performance status and co-morbidities are also key determinants of treatment choice and outcomes. The importance of case-mix was demonstrated in a comparative study of two lung cancer populations, one in Teesside (UK) and the other in Varese (Northern Italy).[10] In addition to presenting at a later stage, patients with lung cancer in Teesside had more aggressive types of tumour and had higher levels of co-morbidity than patients in Varese. This type of comparison is crucial to understanding differences in lung cancer outcomes not only at international level, but also within the UK. Previous reports have demonstrated a fourfold difference in five-year survival across health authorities in England and, more recently, one-year survival rates were found to vary by primary care trust from 15.4% to 43.7%.[11,12] The extent to which these different survival rates can be explained by case-mix is being addressed by the national lung cancer audit. Detailed data on lung cancer patients have been collected in England since 2004. This allows outcomes to be adjusted for age, sex, performance status, stage and socioeconomic status. This case-mix adjustment removes some, but by no means all of the variation seen in lung cancer outcomes. For example, median survival by trust in 2008 still varied by threefold following case-mix adjustment.[7] This suggests that differences in management may be responsible and audit data show that considerable variation in active treatment rates exist across England and Wales. For example, National Institute for Health and Clinical Excellence guidelines recommend chemotherapy for patients with advanced non-small cell lung cancer with good performance status,[13] however the proportion of patients in this group who received treatment in 2008 ranged from 13% to 42%, with the variation persisting after case-mix adjustment.[7] These differences in case-mix adjusted treatment rates require urgent explanation. The method of case-mix adjustment used in the national audit may not detect some of the subtle differences in comorbidities between populations, however, this is unlikely to explain away all the variation. The Health Foundation has recently funded a two-year project of local quality improvement work to better understand the variations in outcomes and to reduce them where possible. The results of this project are awaited with interest. In the meantime it is crucial that trusts continue to enter high-quality data into the national lung cancer audit and then use the results to critically appraise their service so that variations in outcomes can be reduced.

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**Address for correspondence: Dr I Woolhouse,
Department of Respiratory Medicine,
Queen Elizabeth Hospital, Birmingham B15 2TH.
Email: Ian.Woolhouse@uhb.nhs.uk**