DEPARTMENT OF HEALTH CONSULTATION ON THE FUTURE OF THE HEALTHCARE SCIENCE WORKFORCE: MODERNISING SCIENTIFIC CAREERS, THE NEXT STEPS

EVIDENCE SUBMITTED BY THE SOCIETY FOR GENERAL MICROBIOLOGY (SGM)

Introduction

The Society for General Microbiology, founded in 1945, is an independent professional scientific body dedicated to promoting the 'art and science' of microbiology. It has now established itself as one of the two major societies in the world in its field, with some 5,000 members in the UK and abroad.

General Comments

The thrust of the document is a restructuring and standardisation of training for healthcare scientists across all the areas in which they work. The aim is to create a flexible workforce, capable of responding to and implementing new techniques and methods as they are developed. The benefit to the public is intended to be one of faster response times and improved diagnostics. The healthcare scientists themselves would have clear training pathways and the prospect of advancing within the healthcare system.

Some of the current staffing problems within diagnostic laboratory services stem from differences in training schemes, lack of clarity regarding professional advancement and lack of obvious links between the different staffing grades. In addition, the overall profile of healthcare scientists within the service needs raising.

A formal structure such as is suggested should eventually come up with an ideal staffing mixture in terms of qualifications and position on the 'escalator' which should set the pattern for future workforce planning, recruitment and training. However, the issue is how we manage those already in the system in terms of aspirations, assessment for advancement along current and evolving pathways and training for the future.

If the vision set out in chapter 3 – to raise the profile of healthcare scientists with equity of access and offer new opportunities for career progression - is realised then this would represent a significant advance for all concerned.

Biomedical Scientists represent one of the largest and most effective groups in healthcare science in the National Health Service today. Outside of the disciplines of clinical biochemistry and less so clinical cytogenetics, scientists certified and registered under the 'Clinical Scientists' job title with the Health Protection Council (HPC) represent a small minority of the workforce. However, within the other pathological specialities clinical scientists have appropriate job descriptions including recognition of their specialist expertise (up to 'Consultant Scientist' titles). They also have career structures.

However, a substantial group of scientists do not appear to be well served by these proposals. They are graduates (many at doctoral level) working in

specialist institutions such as government reference and standards facilities, research centres and university departments. They originate from a wide range of disciplines and may be engaged in providing reference laboratory tests and epidemiological surveillance services to the NHS or be employed to work on basic scientific mechanisms often involving advanced molecular biology expertise. In these centres and institutes there is often little incentive or indeed encouragement to broaden one's horizons beyond the requirements for the post and few would be reading extensively outside their area of expertise. For example a reference laboratory scientist working in a specific area which generates a number of quality peer reviewed publications per year would be focussed in a relatively small topic area, the direct benefit of which to patients might not be apparent. Nevertheless, they would most often be familiar with the wider aspects of their discipline and many would be active in pursuing some form of continuing professional development (CPD) if only for their laboratory accreditation. If they were to seek to submit their career portfolio as evidence for appointment to the modernising scientific careers (MSC) model of senior or accredited specialist health care scientist, they would be greatly disadvantaged in comparison with their counterparts who have come through the majority route. Indeed, current experience of HPC registration suggests that a bright, hard working research scientist in a medical microbiological area needs at least 3 months secondment to the clinical interface to have a reasonable chance of passing the Association of Clinical Scientists qualifying viva examination. Many employers while recognising the need for broader training of the workforce might find it difficult to allow an individual the necessary study leave to fulfil such a commitment. Some managers try to support further training through informal contacts and arrangements, but without established structures these efforts are at best helpful to only a few individuals. It appears there is considerable interest shown by the reference laboratory workforce in receiving wider training as they realise that 'knowing a great deal about a little' is not the best basis for career advancement, particularly if one's employer has signed up to the MSC model. There is therefore a danger that a large number of science graduates working in areas vital for the development of assays, drugs, and epidemiological analysis of communicable disease, might find themselves disenfranchised without a defined career path leading to a loss of talent as they seek careers elsewhere. For many the motivation to enter public health or other medical disciplines stems from a desire to contribute to scientific knowledge and perhaps make a difference to the lot of humanity. They should not be overlooked because they are difficult to categorize and quantify.

Specific Comments

- In the current proposal there is a lack of clarity as to how existing staff will fit into the scheme and how people enter the various levels.

- Concomitant with the emphasis on training is the need for an increase in senior staff (HCS) with specific teaching roles. Current workloads and staffing levels mean that it is often difficult to incorporate training into the daily routine. Training staff should be available, at least locally, for all levels of scientist. For continuing education to succeed, dedicated staff (or at least dedicated time) will be required.

- It is not clear how this is all to be funded; this needs to be spelt out in the proposal document.

- Whilst higher degrees are desirable, it is particularly unclear as to where funding for PhDs and MBAs would be coming from, despite the fact that these are mentioned as part of the potential career progression.

- Having training from the Healthcare Science Assistant level upwards offers the opportunity for rethinking how staff receive their post A level education. Currently, Biomedical Science degrees are offered by a range of universities, many of them former further education colleges or polytechnics. The courses are very varied. Having core training sites situated at the larger healthcare centres may present the chance to develop custom made courses run jointly by larger universities and the NHS or other healthcare bodies. Good degree courses would result in well prepared staff and aid in recruitment.

- The document defines a range of curricula and these will require constant updating as fields progress. If this training is in the hands of local ‘polytechnics’ there will be a problem in defining and monitoring appropriate standards across the UK.

- In the future there would need to be an assessment or measure of how the restructured training was working in different countries and regions. This could be performed by the IBMS, ACM, etc.

- If training is to be standardised and education to be flexible, then facilities such as lecture rooms and possibly teaching labs ought to be made available. In even the largest hospitals, such facilities are often woefully inadequate.

- In order to encourage standardisation across regions and countries, there should be an improved networking system and exchange of ideas. Some already exist, such as the Health Protection Agency’s ’Molecular Diagnostics Forum’, however similar fora would be needed for all areas of laboratory diagnostics.

- It is still not clear from the document how the interface between biomedical research and routine diagnostics would work. Incorporation of specific Higher Specialist Scientist positions into key regional laboratories should be aimed at facilitating this process. These could feed into and deliver the networks mentioned above.

- Assessments for state registration are still in the hands of the 'professional bodies'; what will the arrangements be in the future? The document points out that only the biomedical scientists and the clinical scientists are regulated by statute and that other scientists in health care are not subject to the same rigour; this document is a blueprint to bring other scientist groups up to the same standards as laboratory scientists.

- The foundation degree or diploma or BSc which will become the entry requirement for a healthcare scientist practitioner training programme (PTP), feels very much like 'dumbing down' of the proper BSc degree in Microbiology. It has to be ensured that the existing 'classical' degrees remain fully recognized and that any new degree is properly introduced and agreed with all stakeholders involved.

- Under point 44 (page 15) it is noted that the Scientist Training Programme will be concluded by obtaining a Master degree whilst entry is open to individuals with various degrees of previous training (BSc, MSc, PhD). There appears to be room for reconciliation of entries from different degrees of training.

- Indicative Rotational Scientist Training Programme (page 17): for the Health Protection Agency, other subjects would need to be added (bioinformatics and epidemiology).

- Location and Support for training: to support this structure there will be a need to recognise that training is an important function and that additional staff or dedicated time of current staff must be recognised to provide this.

- What is the accredited specialist expertise (ASE)? There is no definition and the implication on page 18 is that some of this is 'on the job experience', running in parallel with specific higher specialist training. It does not describe how this might fit with membership of other professional bodies (FRCPath or FFPH)?

- Chapter 6. The educational framework is still underdeveloped, and the chapter comes over as thin compared to some of the other chapters.

- The structure is good - the implementation (page 21) is the major concern. There is a risk of ending up with more 'administration' jobs to support this structure than real scientists' jobs. Education commissioners, training providers, NHS schools of health care sciences, National Leadership and Innovation Agency for Health, Health care scientist sub committee of Medical Education England, UK extending Professional Regulation

Working Group, Council for Healthcare Regulatory Excellence are all mentioned in this document. A proliferation of QANGOs?.

- The vital interaction with other stakeholders in the NHS (clinical workforce [doctors, nurses, physiotherapists, etc], patients, administration, ancillary staff, etc.) is hardly mentioned. Only under point 73 (page 21) is it noted that ‘Consideration is being given as to how this may be more closely aligned with medical education and training arrangements’, and in chapter 7 ‘timely communication with stakeholders’ is mentioned as an implementation issue. This topic merits wider consideration.

Sources

This evidence has been prepared on behalf of SGM by Dr Elizabeth Boxall, (HPA & Birmingham Heartlands Hospital), Dr Sara Burton (University of Exeter), Dr Ulrich Desselberger (Department of Medicine, University of Cambridge), Dr Jane Greatorex (Addenbrooke’s Hospital, Cambridge) and Dr Tyronne Pitt (Health Protection Agency, London).

About the SGM

Society membership is largely from universities, research institutions, health and veterinary services, government bodies and industry. The Society has a strong international following, with 25% of membership coming from outside the UK from some 60 countries.

The Society is a 'broad church'; its members are active in a wide range of aspects of microbiology, including medical and veterinary fields, environmental, agricultural and plant microbiology, food, water and industrial microbiology. Many members have specialized expertise in fields allied to microbiology, including biochemistry, molecular biology and genetics. The Society's membership includes distinguished, internationally-recognised experts in almost all fields of microbiology.

Among its activities the Society publishes four high quality, widely-read research journals (*Microbiology*, *Journal of Medical Microbiology*, *Journal of General Virology* and *International Journal of Systematic and Evolutionary Microbiology*). It also publishes a highly respected quarterly magazine, *Microbiology Today*, of considerable general educational value. Each year the Society holds two major scientific meetings attended by up to 1500 microbiologists and covering a wide range of aspects of microbiology and virology research.

The governing Council of the SGM has a strong commitment to improving awareness of the critically important role of microbiology in many aspects of human health, wealth and welfare. It has in this connection recently initiated a 'Microbiology Awareness Campaign' aimed at providing information to the government, decision makers, education authorities, media and the public of the major contribution of microbiology to society.

An issue of major concern to the Society is the national shortage of experienced microbiologists, particularly in the field of clinical microbiology and in industry. To attempt to improve this situation long-term, the Society runs an active educational programme focused on encouraging the teaching of microbiology in university and college courses and in the school curriculum, including primary schools. Some 570 schools are corporate members of SGM.

Society for General Microbiology
Marlborough House
Basingstoke Road
Spencers Wood
Reading RG7 1AG, UK

Telephone: 0118 988 1812
Fax: 0118 988 5656
Web: www.sgm.ac.uk

Contact: Dr R S S Fraser, Executive Secretary (e-mail: r.fraser@sgm.ac.uk)

Appendix 1 – Questionnaire responses

The Challenges of Modern Healthcare

1) Are there any other challenges that have not been outlined that the Healthcare Science (HCS) workforce face?

- Epidemiology
- Emerging infectious diseases
- Bioterrorism

The Healthcare Science Workforce: The Case for Changing Training and Careers

2) Please rank the issues in terms of how pressing they are for you, where 1 = Important, 2 = Neutral and 3 = Least Important:

- Workforce planning *2*
- Education and Training *1*
- Transparent Career Pathway *1*
- Other (*Equity between disciplines*) *1*

3) Are there specific problems in Workforce Planning which need to be addressed?

- How qualifications obtained previously can be best integrated into the recruitment scheme
- How transferable the new HCS degrees would be (they should be fully recognized as equivalent with other degrees of comparable complexity)
- Standardisation of training across countries and regions
- Retention of good, trained staff
- How can people make informed decisions on career path information at an early stage?

Undergraduate training – a simple, easy identification of suitable courses (if accreditation is required) through integration of this information with UCAS. Graduate recruitment via a simplified transparent route for final year students in relevant disciplines. [Currently final year undergraduate students looking for these career pathways are very confused about where and when to find the best information – a central electronic portal with a year long programme of information and actions required for student preparation to be successful in applying for graduate positions may be useful.]

The Vision for Healthcare Science

4) Are there any other potential benefits that have not been outlined that can be achieved by modernising the Healthcare Science (HCS) workforce?

- Retention of staff
- Morale boosting
- Profile raising
- The integration of translational research into scientist training is vitally important. The scientific training needs will change rapidly alongside the technologies which emerge. There is a need to be rapidly responsive to this challenge within the plans to modernise this workforce. Thus Continuing Professional Development (CPD) may be a useful vehicle over the medium/long term.

The envisaged benefits can be high if proper communication and collaboration with all stakeholders is maintained at all stages of the development. Interaction with clinical staff is vital throughout.

The Modernising Scientific Careers Programme

5) Are there any additional overarching principles you would add, in modernising the Healthcare Science (HCS) workforce?

The envisaged new career path will be attractive if the new degrees are equivalent with those acquired by other avenues of higher education.

The Proposed Training and Career Pathways

6) How can we make careers in Healthcare Science under Modernising Scientific Careers as attractive as possible for:

- Healthcare Science Assistants (HCSA)?
  Raise prospects, increase working flexibility and make good, well-planned training part of the routine.

- Healthcare Scientist Practitioners (HCSP)?
  As above plus good pay to make the jobs competitive.

- Healthcare Scientists (HCS)?
  As above.

7) Do these proposals enable sufficient flexibility for the workforce to meet the anticipated changes in:

- Delivering high quality patient care: yes/no. Please comment.
  Yes. The funding of this proposal needs careful planning.

- Technology and scientific advances in the disciplines: yes/no. Please comment.
  Yes. Again, funding will be required so that research can be carried alongside the routine work.

- New models of care: yes/no. Please comment.
  It is unclear to what extent the new system will support this.

- Skills mix arrangements: yes/no. Please comment.
  Yes. Would need careful planning within the various sectors. Skills development, which includes generic scientific communication and research evaluations, will aid flexibility in modern, evolving multiple disciplines.

8) Do you agree with the proposal for Healthcare Science Assistants (HCSA) to have the opportunity to gain formal awards and qualifications?
Yes/no. Please comment.

Yes. Appropriate awards (degrees, leadership chances, recognition of special achievements) are essential and vital for the success of the whole scheme. HSAs, like the other grades, need to be able to achieve recognised qualifications. However, is it envisaged that professional bodies will offer accreditation? Have these professional bodies been identified for all disciplines – including microbiology?

9) To support the Practitioner Training Programme (PTP), should there be greater provision of Higher Education/ Further Education academic programmes with NHS-funded workforce placements aligned to the outcomes of the Practitioner Training Programme?
Yes/no. Please comment.

Yes. This is an opportunity for the NHS to work with good universities to create new improved qualifications for the healthcare workforce, standardised across the countries. The design of the Bachelor of Clinical Sciences degree programme is a model that may be used for development of such workplace integration into degree programmes. Other academic programmes and design, with specific work placements, will add skills development and generic skills training value to academic training.

10) How can Further Education contribute to the learning and development of Healthcare Science Assistant (HCSA) and Healthcare Scientist Practitioner (HCSP)?

FE & HE both need to be involved in the design and implementation of training for healthcare workers.

11) In the Practitioner Training Programme (PTP) should trainees undertake workplace based training in one discipline (focussed PTP e.g. only in biochemistry) or in related disciplines (broad-based PTP, e.g. in biochemistry and haematology)?

- Life Sciences: Focused PTP/ Broad-based PTP

Opinion was equally divided between focused and broad-based PTP.

- Physiological Sciences: Focused PTP/ Broad-based PTP

Opinion was equally divided between focused and broad based PTP

- Physical Sciences and Engineering: Focused PTP/ Broad-based PTP

Opinion was equally dividied between focused and broad-based PTP

Any comments.

"Skills flexibility will aid workforce flexibility. This may allow personal development of proficiencies and confidence for future employability".

12) Do you agree with the broad indicative themes laid out for the Scientist Training Programme (STP)?
Yes/no. Please comment.

Yes. Although, it is not clear how all the levels are entered.

13) Do you agree with the proposals for Higher Specialist Healthcare Scientist Training (HSST) programmes?
Yes/no. Please comment.

Clarity is still required on how Higher Specialist Healthcare Scientists will be trained and enter the scheme. Also, careful thought should be given to the integration the new training programmes into existing ones.

14) Are there existing programmes that could be used for Accredited Specialist Expertise?
Yes/no. Please comment.

Yes. Some specialties already have existing training schemes that work very well. Within the HPA there is good progression from MLA to BMS to CS. SGM would consider to support training for the intended new degrees. However, as a learned society, SGM does not have accreditation issues as its direct remit.

Implementation Issues

15) How important are the following areas for the development of the existing workforce, where 1 = Vitally Important, 2 = Important, 3 = Not Very Important and 4 = Least Important:

- Leadership skills *1*
- Management skills *1*
  Care should be taken to find the right balance between the practical application of specialist expertise and management activities which often go far beyond. Alienation from the science of the specialty should be avoided.
- Further Specialist Scientist Expertise *2*
- Higher Specialist Healthcare Scientist Training (HSST) *2*
- Other (please specify)

Changes in technology including molecular microbiology are so rapid that further training by already experienced scientists is vitally important for the adoption of new technologies and the success of translational research.

Responder's Comments
Do you have any further comments?