

## **Facing the facts, shaping the future: draft workforce strategy. Consultation response from the Clinical Pharmacology Skills Alliance, March 2018.**

### **The Clinical Pharmacology Skills Alliance**

The Clinical Pharmacology Skills Alliance (CPSA) is a partnership formed by the Association of the British Pharmaceutical Industry (ABPI), the British Pharmacological Society (“the Society”), the Faculty of Pharmaceutical Medicine (FPM) and Health Education England (HEE). The purpose of the CPSA is to develop and support a long-term, cross-sector action plan for clinical pharmacology. We aim to improve the clinical pharmacology skills pipeline to support both healthcare and life sciences sectors for the benefit of patients and the UK economy alike.

### **Executive Summary**

#### **Key messages**

1. We welcome the opportunity to give our input to this consultation, and broadly support the suggested approach. We are keen to continue supporting development of the workforce strategy and recommend further consultation on the first full draft.
2. The use of medicines is central to the work of the NHS for the benefit of patients. Over 1.1 billion prescription items are dispensed in the community every year<sup>1</sup>. Although medicines have many proven benefits, 6.5% of all hospital admissions are caused by adverse drug reactions, and 237 million medication errors are made in the NHS each year<sup>2,3</sup>. Clinical pharmacologists are experts in the safe, effective and cost-effective use of medicines. However, to have the greatest impact across the NHS, **the whole workforce must be skilled in the use of medicines**. We envisage a workforce across which clinical pharmacology skills are embedded. To achieve this we must address the current shortage of clinical pharmacologists in the NHS, who can lead upskilling of all healthcare professionals in the system.
3. Development of new medicines is essential to address unmet clinical need, bringing benefit for both society and the UK economy. Supporting innovation that delivers to public needs, such as drugs and therapies for elderly patients and healthier ageing, is part of NHS England’s Research Plan<sup>4</sup> and an NIHR Research Priority<sup>5</sup>. The field of drug development and clinical trials is an important part of the UK’s success in health related innovations, both in industry and in the NHS. To facilitate this, **the workforce must be ‘research ready’**, meaning healthcare professionals must be familiar with

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<sup>1</sup> NHS Digital. (2017) Prescriptions Dispensed in the Community, Statistics for England – 2006-2016 [PAS]. Available at: <https://digital.nhs.uk/catalogue/PUB30014>

<sup>2</sup> British Pharmacological Society. (2016) Clinical Pharmacology and Therapeutics: The case for savings in the NHS. Available at: <https://www.bps.ac.uk/BPSMemberPortal/media/BPSWebsite/Assets/CPT-case-for-savings-in-the-NHS.pdf>

<sup>3</sup> Policy Research Unit in Economic Evaluation of Health & Care Interventions. (2018) Prevalence and Economic Burden of Medication Errors in the NHS in England. Available at: [www.eepru.org.uk/wp-content/uploads/2018/02/medication-error-report-revised-final.2-22022018.pdf](http://www.eepru.org.uk/wp-content/uploads/2018/02/medication-error-report-revised-final.2-22022018.pdf)

<sup>4</sup> NHS England. (2017) NHS England Research Plan. Available at: <https://www.england.nhs.uk/wp-content/uploads/2017/04/nhse-research-plan.pdf>

<sup>5</sup> National Institute for Health Research. (2015) Statement on Areas of Research Interests. Available at: <https://www.nihr.ac.uk/research-and-impact/research-priorities/areas-of-research-interests.htm>

and have some exposure to the disciplines and ethics of clinical research and structured data gathering.

#### **Our recommendations**

4. **Given the importance of medicines to the NHS, the workforce strategy must make explicit reference to the need to develop cross-cutting skills in medicines use and clinical research across the whole workforce.** The development of these skills across the workforce could be led and delivered by clinical pharmacology doctors and healthcare scientists in collaboration with other healthcare professionals, particularly pharmacy. This would support delivery of national priorities including the NHS Five Year Forward View, the Medicines Value Programme and the 2017 UK Life Sciences Industrial Strategy.
5. **The workforce strategy should reference the current and future challenges relating to the use of medicines (e.g. caring for an ageing population, pharmacogenomics) and ensure the wider workforce is equipped to respond to them.** A major challenge for the NHS is that of increasing numbers of older people with multiple long term conditions, requiring prescription of multiple medicines. Further, the NHS will be utilising pharmacogenomics in the next few years, to personalise the use of medicines. It is vital that healthcare professionals are appropriately trained to manage the complex problems that emerge in clinical practice. It is also critical that the UK is able to employ the staff it needs to deliver against these and other pressing needs. The UK must be accessible when it comes to recruiting people from overseas.
6. **The workforce strategy must more explicitly value generalist skills training across the workforce if the NHS is to care effectively for its increasingly elderly and multi-morbid patients.** The shape of training review highlights the need for more doctors to train in general medicine, both to improve the care of patients with multiple long term conditions and to share the service load. We support this and welcome the current changes occurring in relation to the development of the new Internal Medicine Curriculum.
7. **We recommend a focus on investments and public health initiatives that aim to protect people from harm and reduce demand on the NHS.** Clinical pharmacologists are cost saving, with nearly £6 saved for every £1 invested<sup>2</sup> e.g. through decreasing adverse drug reactions, prescribing errors and improved management of poisoning.

#### **What is clinical pharmacology?**

8. Clinical pharmacology is a discipline focussed on the development and use of medicines through education, research, policy and practice. Clinical pharmacologists may be medically qualified and/or scientists. They often have portfolio careers and leadership roles working in one or more of the following areas:
  - **The NHS:** Clinical pharmacologists are doctors focussed on the safe, effective and cost-effective use of medicinal products. Working in partnership with other healthcare professionals, particularly pharmacists, they provide leadership in the optimal use of medicines and support delivery of clinical trials. They provide education, training and assessment to support

safe and effective prescribing by doctors and non-medical prescribers. Sub-specialist roles include leading the National Poisons Information Service and implementation of pharmacogenomics across the NHS.

- **Industry:** Clinical pharmacologists follow new medicinal products throughout their development. This includes running first-in-human trials, designing innovative clinical trials, interpreting trial outcomes, optimising pharmacokinetics and pharmacodynamics, developing biomarkers, making dosing recommendations and leading on regulatory issues. They are experts at working with both clinical trial and real-world data.
- **Academia:** Clinical pharmacologists have expertise across the whole research spectrum from early phase trials to applied research, and contribute widely to the NHS, industry and regulation. They are also experts in translational approaches to developing new drugs and improving the use of existing drugs.
- **Regulation:** Clinical pharmacologists contribute significantly to the regulation of medicinal products and devices by holding leadership roles in the Medicines and Healthcare Products Regulatory Agency (MHRA), the National Institute for Health and Care Excellence (NICE), the Scottish Medicines Consortium (SMC) and the All Wales Medicines Strategy Group (AWMSG).

9. Clinical pharmacologists can help the NHS and the Life Sciences sector deliver their strategic objectives, both through their own work and by leading, educating and developing the practice of the wider workforce. Building expertise in the use of medicines across the NHS should be done in collaboration with pharmacists, who already provide leadership in medicines optimisation<sup>6</sup>. Such a partnership would bring together the complementary skills of clinical pharmacology and pharmacy in a manner essential to the future of the NHS workforce.

### **Answers to consultation questions**

#### **Do you support the six principles proposed to support better workforce planning; and in particular, aligning financial, policy, best practice and service planning in the future?**

10. The CPSA supports the 6 principles proposed to underpin future workforce decisions and is using similar principles in developing its own action plan for clinical pharmacology. Some examples include:

- 10.1 Securing the supply of staff. We have recognised lack of awareness of clinical pharmacology as a potential career amongst medical students and junior doctors as a major threat to our specialty and have started to address this. In 2017 we held an inaugural 'clinical pharmacology month', during which we ran a national medical student competition and events such as grand rounds to showcase clinical pharmacology. We have targeted careers fairs and general medical conferences and are developing 'taster experiences' to encourage junior doctors to consider the specialty.
- 10.2 Education and training to support flexibility and adaptability. We recognise the scope for blending clinical responsibilities between professions for the benefit of both staff and the service. There is considerable opportunity for

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<sup>6</sup> Health Education England. The school of medicines optimisation. Available at: <https://hee.nhs.uk/our-work/medicines-optimisation>

clinical pharmacologists and pharmacists to blend responsibilities, with clinical pharmacologists supporting prescribing training and role development for pharmacists, and working with pharmacists on strategic planning for the use of medicines e.g. through formulary and medicines optimisation committees.

- 10.3 Providing broad pathways for careers in the NHS. Clinical pharmacology offers a wide range of opportunities, such as clinical practice, precision medicine, prescribing education, drug development, clinical trials and medicines policy. Clinical pharmacologists thus develop throughout the whole of their career, and retention in the NHS is high. Encouraging the wider workforce to develop expertise in these areas could broaden career paths, enhancing retention, and increasing productivity. It will also bring direct benefits to patients. To facilitate this, it is essential that training time is included in job plans to allow time away from acute care for personal development.
- 10.4 Widening participation. We support equality, diversity and inclusion and are reviewing and implementing appropriate strategies within our partner organisations.
- 10.5 Inclusive modern model employers. With increasing demands for acute care, diminishing resources and fragmented rotas, staff have to work at a fast pace at the expense of time for reflection and learning and also at the expense of team work. In the modern NHS, more attention should be paid to ensure that all staff have protected time in their job plans to allow for development e.g. of cross-cutting skills such as medicines management and clinical research. This could reduce 'burn out' and increase retention and job satisfaction.
- 10.6 Intertwining service, financial and workforce planning. There are many challenges for the NHS in the use of medicines, including optimising efficacy, reducing harms and errors, improving cost effectiveness, utilising new technologies (such as pharmacogenomics) and developing new medicines. Expanding the clinical pharmacology workforce would address these challenges for the benefit of the NHS. Clinical pharmacologists are cost saving (nearly £6 saved for every £1 invested<sup>7</sup>, e.g. through decreasing adverse drug reactions, prescribing errors and improved management of poisoning), but individual organisations (Trusts, hospitals or CCGs) may find this less attractive than employing e.g. organ based specialists, who are income generating. This short-term view utilised by many employers has the danger of increasing costs in other areas, for example the use of medicines, which should be counter-balanced by cost saving measures. Central workforce and financial planning is therefore needed to support development of clinical pharmacology and delivery of the service.

*What more can be done to help staff work across organisations and sectors more easily?*

**11. There needs to be an explicit reference within the strategy to the development of the important cross-cutting skills required by the workforce.**

We believe that both **effective medicine management** and **supporting the life sciences strategic agenda** are examples of such very important generic skills that

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<sup>7</sup> British Pharmacological Society. (2016) Clinical Pharmacology and Therapeutics: The case for savings in the NHS. Available at: <https://www.bps.ac.uk/BPSMemberPortal/media/BPSWebsite/Assets/CPT-case-for-savings-in-the-NHS.pdf>

require such reference. For clinical pharmacology, collaborative workforce planning and funding e.g. within sustainability and transformation partnerships (STPs) should create posts that support medicines use in both primary and secondary care by diverse professionals including clinical pharmacists and general practitioners. Most important is the support across the primary and secondary care interface, which needs to be developed across the whole country. This would also support other important initiatives such as creation of joint formularies, reducing variation in prescribing practice, improving patient safety and reducing prescribing costs.

**Do you feel measures to secure the staff the system needs for the future can be added to, extended or improved, if so how?**

*What scope is there to extend workforce flexibility using ideas such as credentialing, transferable qualifications, scope of practice and others?*

12. The NHS needs, both now and in the future, staff who are able to use medicines safely and effectively to improve the health of the population.
13. The twin challenges of safe and effective use of medicines and the development of new therapies require the whole workforce to increase their skills and experience in medicines use and to be 'research ready'. There is huge scope to upskill the workforce in these cross-cutting skills, which is not sufficiently articulated in the draft workforce strategy. Initiatives could include:
  - General training in the use of medicines and basic clinical research skills (e.g. good clinical practice training) for the whole workforce
  - Prescribing training and continued professional development for non-medical prescribers
  - Extending scope of practice e.g. programmes to develop clinical pharmacists as advanced practitioners
  - Credentialing in clinical pharmacology e.g. through a specific year of training for doctors in other specialties or advanced practitioners or nurse/pharmacist consultants. This should not be restricted to the "Medical" specialties but should also encompass surgical specialties. An example is Obstetrics and Gynaecology where the evidence base for the use of medicines in pregnant women is sorely lacking, as recently highlighted by the MHRA report in Hormone Pregnancy Tests<sup>8</sup>.
  - Extended study e.g. FPM's Certificate and Diploma in Human Pharmacology<sup>9</sup>. This diploma, which was established using funding and support from the Department of Health and MHRA, comprises a combination of supervised, structured workplace training and taught courses. The FPM also has a joint project with the Royal College of Physicians to develop a Clinical Investigators Diploma. This is aimed at doctors who want to participate in clinical research programmes and obtain a better understanding of the practicalities of running such programmes.

The CPSA would be able to provide leadership in developing and delivering these initiatives.

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<sup>8</sup> Commission on Human Medicines. (2017) Report of the Commission on Human Medicines' Expert Working Group on Hormone Pregnancy Tests. Available at: <https://www.gov.uk/government/publications/report-of-the-commission-on-human-medicines-expert-working-group-on-hormone-pregnancy-tests>

<sup>9</sup> Faculty of Pharmaceutical Medicine. Human Pharmacology Training and Examinations. Available at: [https://www.fpm.org.uk/trainingexams/human\\_pharmacology/human\\_pharmacology\\_landing\\_page](https://www.fpm.org.uk/trainingexams/human_pharmacology/human_pharmacology_landing_page)

**Do you have comments on how we ensure the system is effectively training, educating and investing in the new and current workforce?**

14. The safe, effective and cost-effective use of medicines is the responsibility of the whole workforce. **All clinicians, irrespective of their specialty, should receive training in the cross-cutting skills relating to the use of medicines.** Antimicrobial prescribing is just one example of why the use of medicines is the responsibility of the whole NHS workforce. Appropriate antimicrobial use is essential for the effective treatment of sepsis, to save lives and prevent disability. However restriction of the inappropriate use of antimicrobials is equally important to prevent antimicrobial resistance, which is a major threat to modern healthcare. Good prescribing and antimicrobial stewardship are everyone's responsibility. Clinical pharmacologists can lead development and delivery of appropriate training in the use of medicines such as antimicrobials for the whole workforce, in collaboration for example with microbiologists.
15. Development of new medicines is a cornerstone of the Life Sciences Industrial Strategy and key both to improvements in healthcare and to maintenance of the UK economy after Brexit. **The whole clinical workforce needs to be 'research ready'.** Brexit also presents the UK with many challenges relating to regulation around the development and use of medicines. If we need to develop our own system outside existing European agreements, the need to upskill the workforce in this area will be particularly pressing.

*How does the system ensure it spends what is needed on individual CPD and gets the most effective outcomes from it?*

16. The CPSA is able to provide leadership in developing and delivering continued professional development relevant to the clinical pharmacology skills required by the modern NHS workforce. CPSA members have a strong track record in education and assessment of clinical pharmacology skills. For example the Society, in partnership with the Medical Schools Council, has designed and delivered a national prescribing safety assessment (PSA), which now has to be passed by all newly-qualified doctors at entry to foundation training<sup>10</sup>. This is now being trialled by other professions, such as pharmacists. FPM runs a Diploma in Human Pharmacology. This diploma, which was established using funding from the Department of Health and MHRA, comprises a combination of supervised, structured workplace training and taught courses. The CPSA is championing development of a new curriculum for clinical pharmacology, with shared content across clinical pharmacology and pharmaceutical medicine programmes. This could also support development of appropriate credentialing or extended scope of practice programmes.

**What more can be done to ensure all staff, starting from the lowest paid, see a valid and attractive career in the NHS, with identifiable paths and multiple points of entry and choice?**

*What more can be done to create careers not jobs for all staff, regardless of qualifications, entry level and current skills?*

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<sup>10</sup> Maxwell, SRJ et al. (2017) Prescribing Safety Assessment 2016: Delivery of a national prescribing assessment to 7343 UK final-year medical students. Available at: <http://onlinelibrary.wiley.com/doi/10.1111/bcp.13319/full>

17. We have addressed this in our answers to questions 1, 2 and 3

*What reforms are required to medical education and training to deliver the doctors the system needs in the future but also supports the needs of the system now?*

18. The shape of training review highlights the need for more doctors to train in general medicine, both to improve the care of patients with multiple long term conditions and to share the service load. As clinical pharmacologists, who by definition are 'generalists', we support this and welcome the current changes occurring in relation to the development of the new Internal Medicine Curriculum. Doctors of the future will need training in technological advances such as pharmacogenomics and new treatment modalities. As leaders in prescribing education and assessment, clinical pharmacologists are ideally placed to support this.

**Do you have any comments on how to better ensure opportunities to; and meets the needs and aspirations of; all communities in England?**

*How we better support carers, self carers and volunteers?*

19. People with long term conditions spend <1% of their time with healthcare professionals and >99% of their time managing their own conditions, often with the support of carers<sup>11</sup>. It is essential that patients and carers are supported and empowered to do this well. Regarding medicines, this is not currently the case, with an estimated 50% of patients not taking their medicines as intended<sup>12</sup>. To address this **it is important that the whole workforce is trained in the cross-cutting skills required to support patients and carers in their use of medicines**. The CPSA can provide leadership in promoting these skills in the workforce.

**What does being a modern, model employer mean to you and how can we ensure the NHS meets those ambitions?**

*What more would make it more attractive to work or stay in the NHS as you progress through different careers stages?*

20. The CPSA has consulted on this issue with its members at different career stages. A common theme is the importance of treating all employees with value and respect. A newly-appointed consultant in clinical pharmacology emphasised the importance of '*being treated as a person, rather than a name that fills a rota slot*'.

21. Protected time for training is also very important. A clinical pharmacology registrar commented that '*there should be proper time for training and development in your job plan, not just continuous service provision*'. The CPSA has led the way in addressing these issues through development of a training charter, which identifies the important components necessary for provision of training in the speciality.

22. For trainees considering a career in clinical pharmacology, it is vital that they see '*a realistic prospect of getting a job that has value and reflects their training*'. A senior trainee commented: '*I am keen to become an NHS consultant in Clinical Pharmacology & Therapeutics. We have a responsibility to our patients to ensure medicines are safe, effective and prescribed appropriately. Our unique expertise needs to be championed*'

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<sup>11</sup> NHS England. (2014) NHS Five Year Forward View. Available at: <https://www.england.nhs.uk/publication/nhs-five-year-forward-view/>

<sup>12</sup> Brown, M et al. (2011) Medication Adherence: WHO Cares? Available at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3068890/>

*by healthcare leaders.'* **This needs support through central workforce and financial planning.**

*What should the system do to ensure it is flexible and adaptable to new ways of working differing expectations of generations?*

23. Clinical pharmacology is a great example of a specialty that has adapted and evolved to meet the needs of different times as well as the ways of working and differing expectations of generations. Clinical pharmacology started as mainly a research specialty, discovering and developing new medicines. As the harms of medicines started to become apparent, a regulatory subspecialty developed, for example working with the MHRA. As evidence of an epidemic of prescribing errors emerged, clinical pharmacologists took responsibility for prescribing education and assessment, developing the national Prescribing Safety Assessment. With the emergence of multi-morbidity and polypharmacy and the advent of pharmacogenomics, a new generation of clinical pharmacologists have evolved to realise the value of clinical pharmacology to the NHS. A key feature of this evolution has been a 'change-ready' workforce with a portfolio of adaptable skills.

**Do you have any comments on how we can ensure that our NHS staff make the greatest possible difference to delivering excellent care for people in England?**

*What are the most productive other areas to explore around management and leadership, technology and infrastructure?*

24. A major challenge for the NHS is that of increasing numbers of older people with multiple long term conditions, requiring prescription of multiple medicines. The complexity of the clinical conditions of these patients, combined with overstretched, fragmented primary care increases the risks of medicines-related harm including adverse drug reactions, drug-drug and drug-disease interactions, medication errors and lack of adherence. Medicines related harms are responsible for 6-7% of hospital admissions<sup>13,14</sup>, with sufficient patients admitted due to adverse drug reactions at any one time to fill 10 800-bed NHS hospitals<sup>15</sup>. Hospital admission further increases the risk of adverse reactions and both hospital admission and discharge are hazardous as secondary and primary care try to reconcile medicines use, despite incompatible computer systems. Increasing numbers of hospital admissions increase the number of prescribed medicines, creating a vicious cycle, worsening medicine related harms.

25. We propose that clinical pharmacologists located in sustainability and transformation partnerships (STPs) could work collaboratively with other healthcare professionals, particularly GPs and clinical pharmacists, and provide cross-sector strategic leadership to improve all aspects of this vicious circle.

26. The NHS proposes to implement pharmacogenomics in the next few years, to personalise the use of medicines. Clinical pharmacologists will be needed to support

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<sup>13</sup> British Pharmacological Society. (2016) Clinical Pharmacology and Therapeutics: The case for savings in the NHS. Available at: <https://www.bps.ac.uk/BPSMemberPortal/media/BPSWebsite/Assets/CPT-case-for-savings-in-the-NHS.pdf>

<sup>14</sup> Policy Research Unit in Economic Evaluation of Health & Care Interventions. (2018) Prevalence and Economic Burden of Medication Errors in the NHS in England. Available at: [www.eepru.org.uk/wp-content/uploads/2018/02/medication-error-report-revised-final.2-22022018.pdf](http://www.eepru.org.uk/wp-content/uploads/2018/02/medication-error-report-revised-final.2-22022018.pdf)

<sup>15</sup> Davies, EC. et al. (2009) Adverse Drug Reactions in Hospital In-Patients: A Prospective Analysis of 3695 Patient-Episodes. Available at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2635959/>



this process, train other healthcare professionals and manage complex problems that emerge in clinical practice.