British Pharmacological Society: supporting safer prescribing

Professor David Webb is president of the British Pharmacological Society (BPS) and Christison professor of therapeutics and clinical pharmacology at the University of Edinburgh. He is also a nonexecutive director of the Medicines and Healthcare products Regulatory Agency (MHRA), and lead clinician at the Edinburgh Hypertension Excellence Centre. He talks to Angela Dowden about his passion for pharmacology and his work guiding the BPS into the future.

After starting his career in medicine, a growing interest in hypertension and the mechanisms behind it led Professor Webb to train in clinical pharmacology. “I wanted to gain the skills in clinical trials that would enable me to undertake research studies with new medicines,” he explains. Subsequently, Professor Webb did the first trials with renin inhibitors and endothelin-receptor antagonists in humans. Many more studies later, one of his most recent contributions – a *Lancet* paper – shows that spironolactone is the best additional treatment for hypertension after a standard combination of ACE inhibitor, calcium-channel blocker and diuretic. “The paper has been cited around a hundred times within the last year and I think that will make a big difference to how we use existing medicine,” he comments.

As a keen mountaineer and rock climber who tackled the Matterhorn and Eiger in his youth, Professor Webb still enjoys finding something craggy to scale in his spare time. Some might muse this is an apt metaphor for being the president of a learned society during economically and politically uncertain times.

**What does he see as the key role of the BPS, and its greatest success?**

Primarily, says Professor Webb, its success is in having a high level of engagement with its members, who shape and enhance...
its peer-reviewed journals, scientific meetings, educational resources and policy initiatives.

“We have very strong journals and they’re of benefit to our members,” notes Professor Webb. One of these is the relatively new Pharmacology Research and Perspectives, launched in 2013, a collaboration with the American Society for Pharmacology and Experimental Therapeutics. “We’re happy to take novel ideas and reliable negative findings, which are sometimes difficult to publish, but crucial for science,” explains Professor Webb.

Overseas members make up 20% of the BPS, which is important for the cross-fertilisation of ideas, according to Professor Webb: “52% of our international members participated in a 2016 survey, which helped shape development of a new network of advisors around the world to support the international work of the BPS.”

Does the BPS need to do more “at the coal face” both in primary and secondary care?

The fact that there are only just over 70 clinical pharmacologists in the UK makes it difficult for the specialty to do much other than at a strategic level. That’s a shame, maintains Professor Webb, because “we believe that clinical pharmacology can substantially save resources and improve patient safety... and if we could have a clinical pharmacologist in every large hospital, we think that would be of substantial benefit.”

To this end, the BPS has been campaigning for an increase in the consultant workforce – through co-ordination with organisations, other professions and policymakers across the entire UK health system – since 2014. “We’re aiming for an increase to 150 consultant-level posts over the next few years,” says Professor Webb.

How could patient engagement be improved with respect to accessing new medicines?

A recent article that Professor Webb co-authored for the Pharmaceutical Journal calls for wider and more detailed research into the preferences of patients, with a view to incorporating the outcomes of that research into revised processes for assessment bodies, like NICE.

It is work that’s much needed, according to Professor Webb “because the underlying decision-making framework around access to new medicines in the UK is based on many untested assumptions about what we value as a society.” However, he adds: “It is not the exclusive role of clinical experts to set this framework, but our collective responsibility as citizens and current or future patients.”

According to Professor Webb, the BPS also does much to promote public engagement on therapeutic issues, with regular attendance at the Edinburgh and Cheltenham science festivals. “We had a lively discussion at Cheltenham in June 2016 about opportunities for improving the cost and affordability of medicines by introducing patient engagement at every stage of development: from sharing real-world NHS data, to selecting clinical trial outcomes.”

What does he see as the future for drug development?

“Although the era of small-molecule medicines isn’t over, much of the profit for the pharmaceutical industry and much of the new development is in highly targeted biological treatments, which are more expensive but can be very effective.

“So, for example, we’re getting [biological] treatments for Crohn’s disease and for rheumatoid arthritis that are so much more effective than the older drugs and I think that sort of development will broaden out for a wider range of conditions.”

As far as personalised medicine and the genetic revolution is concerned, therapeutic benefits seem rarely to have materialised in clinical practice as yet, but Professor Webb remains cautiously optimistic: “I think that we will see growing benefits in the coming years as we refine ‘big data’ approaches and as genotyping becomes cheaper and more widely available.”

He points out that genetic approaches are already successfully used to avoid the serious adverse effects of drugs, and that the benefits of this should not be underestimated. “HLA [human leukocyte antigen] genotyping has become routine in identifying and avoiding potential reactions relating to the drugs abacavir and carbamazepine, and we now know the genotype associated with serious statin myopathy. There are also algorithms for safer and more effective use of warfarin associated with knowledge of genotype that may become routine.”

What are the biggest challenges affecting drug development?

“One of the biggest challenges is the very substantial (and costly) regulatory burden,” notes Professor Webb, adding that some of the biggest issues can occur at the local level in hospital research and development departments. “A drug company trying to set up a research study might have to go to 300 or 400 different hospitals and individually agree how the study would run with them. While this is improving, more work needs to be done as it’s really not cost effective.”

He continues: “Many new medicines are licensed at a price that does not make them cost effective, and there needs to be negotiation on prices to make it feasible for the NHS to pay for them. In other cases, such as with new drugs for hepatitis C, the drugs are cost effective, but are not affordable for the NHS to roll out fully across the UK. These are complex issues that cannot easily be resolved.”
Professor Webb believes we are moving to a regulatory system that is proportionate to the potential risk and that this model, supported by the MHRA, will help ease the financial burden of drug development. “Conditional licensing (and accelerated access), with a shared risk between the manufacturer and regulator, may have an important role in the future,” he remarks.

Shortage of skills is a further issue that could hamper drug development, explains Professor Webb. In the next 12 months, the BPS is seeking to help address this by publishing resources on skills and career pathways.

Are women adequately represented in UK pharmacology?
“Women often leave the profession at the mid-career stage and that’s seen right across the STEM [science, technology, engineering and mathematics] careers.

“Over 12 years ago, the BPS decided to lead the way among learned societies in understanding and overcoming any barriers to women being represented. We set an initial benchmark of 25% of women among our speakers at our meetings and on our committees, and in 2013 we raised that to 30%. We’re committed to monitoring and increasing participation by women across our activities.

“Obviously, for historical reasons, there are more senior male pharmacologists, so it’s really hard to rebalance that in a short time, but we believe the work we are doing will help to redress the balance over the longer term.”

How will Brexit impact on drug development and pharmacology more widely?
Professor Webb says that while drug development has always intrinsically involved a degree of risk, Brexit has undoubtedly introduced greater uncertainty.

“Science is a very collaborative business and it’s really important that the ability to collaborate globally isn’t lost. My view is that for the best science to be done, scientists need to have the freedom to travel and work where best suits their research endeavours.

“The BPS has spoken out on this and we’ve also tried to support the government in relation to its industrial strategy and the higher education and research bill. In short, the UK pharmaceutical industry is still a big player, but in the future will need to work really hard to maintain its competitiveness.”

References
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