PM Healthcare
PROGRESS THROUGH PARTNERSHIP

JOURNAL

Incorporating *The Journal of Pharmacy Management* and *The Journal of Medicines Optimisation*

Autumn 2025 | Issue 14

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Editorial

In our autumn issue of PM Healthcare Journal we have an eclectic and interesting range of articles to read as the days shorten and we wonder quite where we are with ongoing reforms and ICB reiterations.

William Horsley provides an expert insight into specialised commissioning, charting its development and likely trajectory as reforms to the system bed in.

Faiza Khan and Stuart Dark explore the impact of working from home on clinical pharmacist productivity, job satisfaction and sustainability within Frimley Health NHS Foundation Trust.

Asif Mukhtar, Consultant Pharmacist and the founder of PharmBot AI takes a deep dive into AI, exploring from his own experience and insights the many opportunities and challenges that exist for what may well be the most significant gamechanger in healthcare.

Emily Kennedy tackles the important subject of sustainability in healthcare and how pharmacy professionals can materially contribute to the creation of a more sustainable and climate-conscious NHS.

And Richard Shearer describes how community pharmacy provision in Scotland is continuing to develop through initiatives such as NHS Pharmacy First Plus, the Health and Social Care Service Renewal Framework, the Community Pharmacy Scotland 2026 Manifesto, and pharmacy graduate prescribers.

Our objective is to provide you with insights that translate into examples of best practice and real-world experience. If you have an idea for an article that you would like to share, then please get in touch.

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Integrated Specialised Commissioning Pharmacy Teams

William Horsley,
Pharmacist, NEY Regional
Specialised Commissioning Team.

Introduction and background

Specialised commissioning as it is structured today was established in April 2013 when NHS England came into being with the realisation of the 'Lansley reforms' (driven by then Health Secretary Andrew Lansley). This effectively established a single national approach to specialised services, with about 130 diverse services, each described by an accompanying specification.

In essence, specialised services are those which, historically, were unsuitable to commission on smaller footprints such as those of a single Primary Care Group or Primary Care Trust. By necessity, this means that specialised services cover a range of rarer and complex conditions. Alongside many of those services is a long list of high-cost drugs which are excluded from NHS tariffs (i.e. tariff-excluded drugs). It is this list of drugs which are the primary concern of specialised commissioning pharmacy teams.

The specialised commissioning spend

The NHS spend on specialised drugs has grown at almost 9 % per annum for the last 10 years, a greater rate of growth than the overall NHS or specialised commissioning budget. In the financial year 2013-14 the drugs bill for specialised commissioning was around £3 billion within an NHS (in England) budget of around £110 billion, and a total specialised commissioning budget of £12 billion. By 2023-24 the specialised commissioning drugs bill stood at about £6.3 billion, against an NHS England budget of £180 billion and an overall specialised commissioning spend of £25 billion.

Increased expenditure has been seen in almost all specialised drug categories, with just a few exceptions, but without a doubt the greatest growth has been in cancer therapies. The gains and advances which can be directly attributed to the use of specialised drugs are spectacular, with one of the best examples being the programme for access to cystic fibrosis transmembrane conductance regulator (CFTR) modulators in patients with cystic fibrosis.

> **"Conditions which had previously been life-limiting or associated with significant disability are being transformed into long-term conditions where patients can now expect to live full and healthier lives. These are successes which should be more widely acknowledged and celebrated."**

The introduction of these medicines has necessarily required negotiations and national tendering exercises, with more locally focused discussions around networks, referral pathways and clinically led multi-disciplinary teams. Despite headlines which give a different impression, the NHS as a whole, and specialised commissioning, will far more often say 'yes' to a new drug or indication than any other response.

The regions and specialised commissioning pharmacy teams

From inception, NHS England and specialised commissioning within it was set up with national

leadership and regional teams. Initially there were 10 regions, or hubs, which have gone through a number of iterations to where we are today, with seven well-established regions (South West, South East, London, East of England, Midlands, North West, and North East & Yorkshire).

Some specialised services, especially those in the highly specialised setting, are few and far between across England, in some cases existing at a single centre of expertise. Consequently, the distribution of commissioned services is not evenly spread across England, and this means that the specialised drug spend is also skewed. For example, London accounts for a level of specialised drug spend far in excess of what might be expected based on population head count alone.

Each region has a specialised commissioning pharmacy team consisting of pharmacists and technicians. The individual regional specialised pharmacy teams work independently of each other to a certain degree, but are in frequent contact, sharing successes and hurdles. A high degree of consistency is sought and achieved for equity and to ensure that commissioners are not compromised in delivering change.

Specialised commissioning pharmacy teams are required to deliver across multiple fronts on behalf of regional and national teams and for providers and patients. The regional specialised commissioning pharmacy teams have a strong track record in delivering and supporting many functions such as:

- Clinical networks and MDTs
- Budget planning and reporting
- Improving value and system efficiencies
- Contributing to national drug tenders and implementation of frameworks
- Implementing demand management plans and other measures to counter drug shortages or supply issues
- Communicating new policies and changes to commissioning arrangements

Balancing sometimes competing needs or demands requires skill and experience to carry all parties to a shared goal. Common success traits amongst specialised commissioning pharmacy teams will

come as no surprise and are equally generalisable to other commissioning roles and other pharmacy commissioning teams, for example:

- Early engagement with a dual focus on both the operational and clinical aspects of implementation
- Clear instructions relating to required actions and agreeing realistic ambitious targets
- Demonstration of existing support and funding commitments
- Willingness to advocate for providers and obtain additional support & resources where necessary
- Forming relationships across pharmacy sectors, but especially with provider pharmacy teams
- Recognising which objectives are best to pursue and concentrating efforts on the greater gains, without forgetting other opportunities
- Taking innovative approaches and novel practices, and sharing successes and failures with colleagues in other regions
- Taking a longer-term view with a mix of both short-term (in-year) and longer-term projects
- Ensuring benefits and goodwill are reciprocated: if a provider is able to deliver strongly in key areas then commissioners can be more flexible
- Listening to providers, developing and realising provider-initiated plans, learning from best practice and challenging others to achieve the same
- Ensuring successes are recognised and celebrated, and front-line delivery is acknowledged across the system and in the higher tiers of NHS management

A number of features of specialised commissioning greatly facilitate the work of regional pharmacy teams. For example, and in no particular order:

- A single national lead pharmacy voice to represent and advocate for specialised commissioning
- Strong network of pharmacists in regular contact via online meetings, face to face meetings (less often now), and electronic communications (mail, chat, forums)
- Single national consistent timely and regular communications known as specialised services circulars (SSC)
- A single set of 'rules' backed by a consistent national data handling and validation process, the use of the same prior approval platform (aka BlueTeq™) for all specialised commissioning treatments (primarily in routine commissioning and the Cancer Drugs Fund)
- Pharmacy teams are fully integrated into regional specialised commissioning teams and work alongside colleagues in finance, contract management, quality improvement, service specialists and others
- Pharmacists in regional and sub-regional specialised commissioning teams are core members of regional leadership groups and senior management teams
- Pharmacists across NHS England Specialised Commissioning undertake key roles and functions within the national team and functions such as with the programme of care boards, policy working groups, and individual funding request processes

"Specialised commissioning pharmacy technicians have developed and honed skills in data handling, manipulation and validation. Over time the volume of data relating to specialised drugs has grown substantially and in complexity. Whilst some of this handling can be automated and undertaken by non-pharmacy personnel, a familiarity with pharmacy, drug names, groups, indications, and dispensing procedures provides a valuable insight that cannot be obtained outside of the profession."

The data verification process is designed to permit the greatest payment possible to providers whilst also assuring NHS management, and by extension the taxpayer, that all costs are accurate and legitimate. The specialised drugs data is used to track trends in expenditure, such as growth across categories of drugs, impact on the roll out of best value medicines, levels of unused 'waste' chemotherapy, tracking individual (anonymised) treatment pathways (i.e. the sequence of therapies, and time on each), investigating dosing intervals, and budget planning amongst many other uses. Data is often used to provide insight for clinical networks and track the effectiveness of commissioning initiatives and plans.

The future

Many specialised services have already been delegated to integrated care boards (ICBs), currently about 70 of the 150 services which are within the specialised services remit. Whether popular or not, delegation is underway and the direction of travel is only going to be one way.

There are many services which can make real gains from delegation, for others the benefits are less obvious, but there are also unlikely to be any disbenefits. Of the remaining 80 services which have not yet been delegated, it is likely that many will follow suit, but there will be some (an as yet unknown number but a reasonable guess might be half) that will simply not be suitable for anything other than a national commissioning function. So whilst the national specialised services commissioning function can be extensively trimmed, with delegation to ICBs, it cannot be removed entirely.

As with any change programme, initially there will be a transition period; and indeed we have entered that already with the first phase or two of delegation now underway. Crucially for pharmacy, the specialised drugs have not yet been delegated. For many specialised services this makes little to no difference as the service does not involve much, or may even consist of nil use, of specialised drugs.

But equally, there are some services where the care provided and costs are dominated by the use of specialised drugs, e.g. HIV, chemotherapy, blood disorders, cystic fibrosis, etc. This does create the somewhat incongruous situation where the responsible commissioner, the ICB, is not responsible for the majority of the cost of the service. It remains to be seen how involved the ICBs will be, or wish to be, until the drugs are also delegated. Again, timelines for further delegation, including drugs, are not confirmed but April 2026 is now looking less likely, so that April 2027 could be the next significant step in the delegation journey.

There is, as of October 2025, still a lot of uncertainty about future structures. The most likely model is that groups of ICBs will come together to

take ownership of regional specialised commissioning teams, including the pharmacy functions. These will sit alongside other regional functions which will also include pharmacy, although these may well be directly linked to the Department of Health and Social Care and not under an ICB umbrella. In this respect, at a local (regional) level, one would expect the same personnel to be managing provider contracts. This should ensure continuity for all parties and enable existing relationships to continue.

The main point of disruption could therefore be the relationship between the regional specialised commissioning teams and the national commissioning functions. The aim of having national specialised service specifications delegated to ICBs and overseen by regional specialised commissioning teams has an in-built tension between national instruction and local ICB-led decision making. Any impacts on specialised commissioning are likely to be gradual over time as new structures take hold and local demands emerge. However, in respect of specialised drugs and pharmacy commissioning, some aspects which might change or could be varied by ICBs include:

- Timing of adoption and implementation of new policy positions or statements, including NICE technology appraisals
- Amendments to treatment pathways which could include additional criteria or a specific sequencing of treatments
- Changes to established networks which could contract or more likely expand the number of providers where treatments are available
- Communication of important information: the future scope of national Specialised Services Circulars remains uncertain
- Contractual data submission requirements including, crucially, whether a prior approval process (e.g. BlueTeq™) will be retained, expanded or adapted
- Convergence of handling, processing and funding of dispensing & associated provider on-costs, between specialised and non-specialised high-cost drugs; e.g. outpatient dispensing, homecare, and supporting administrative costs

"Despite the differentiated approach to the delegation of specialised drugs, specialised commissioning pharmacy teams are well placed to serve, be that local systems (ICBs) or the national specialised services commissioning function. The approach of regional teams to date has been focused on achieving the best outcomes for the structures and networks established, aiming to at least maintain the current access routes which serve our patients so well."

Given the strong record on delivery across multiple dimensions of the commissioning function, and the likely retention of the various supporting structures, the specialised commissioning pharmacy teams may be tasked with leading a joined-up approach to the commissioning of all high-cost drugs, both specialised and non-specialised.

If there is one constant in the NHS it is change and specialised commissioning pharmacy teams are ready to show their resilience and capabilities again.

(Views and opinions expressed are those of the author and do not represent official policy or positions.)

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Does Working from Home Impact Clinical Pharmacist Productivity?

Faiza Khan, *Chief Pharmacist*
Email: faizakhanh@gmail.com
LinkedIn: linkedin.com/in/faizakhan

Stuart Dark,
Deputy Chief Pharmacist – Frimley Health

Author Bio

Faiza Khan is the Chief Pharmacist at Worcestershire Acute Hospitals NHS Trust. She has extensive experience in clinical pharmacy leadership and workforce transformation. Her work conducted whilst working as the Chief Pharmacist at Frimley Health focuses on improving service delivery, staff well-being, and sustainability in healthcare through innovative models such as hybrid working.

Introduction

As the healthcare landscape continues to evolve, questions of productivity, job satisfaction, and sustainability have come sharply into focus for clinical pharmacy teams. The ability to adapt to remote working is no longer a speculative luxury but an operational necessity, especially in the aftermath of the pandemic. This shift has presented both concerns and possibilities: How does remote work influence the efficiency of clinical pharmacists? What are the implications for team cohesion, morale, and the broader environmental agenda?

The COVID-19 pandemic triggered a seismic shift in working practices across healthcare. As organisations adapted to remote and hybrid models, hospital pharmacy services faced unique challenges and opportunities. With the widespread adoption of Electronic Patient Records (EPR), clinical pharmacists gained the ability to perform key tasks remotely, prompting a re-evaluation of traditional work structures.

This article explores the impact of working from home (WFH) on clinical pharmacist productivity, job satisfaction, and sustainability within Frimley Health NHS Foundation Trust. Drawing on practitioner research and theoretical frameworks, it offers insights into how hybrid working can be effectively implemented in hospital pharmacy settings.

Background and Context

Frimley Health NHS Foundation Trust comprises two acute sites: Frimley Park Hospital and Wexham Park Hospital. The pharmacy department, led by the Chief Pharmacist, includes over 260 staff across various roles. Clinical pharmacists are central to the delivery of patient-centred care, responsible for reviewing medications and optimising therapy.

> **"Post-pandemic, the department faced recruitment and retention challenges, with staff seeking greater flexibility. A PESTEL and SWOT analysis revealed that the workforce was fatigued and increasingly attracted to roles in primary care and other sectors offering remote work options. In response, a WFH policy was introduced for clinical pharmacists, enabling remote access to EPR and other digital tools."**

The study aimed to answer three key questions:

1. Has there been a change in productivity with pharmacists working from home?
2. Does WFH impact staff satisfaction?
3. Is there an impact on the green agenda?

Literature Review

Remote Work and Productivity

Research on remote working presents mixed findings. The Office for National Statistics linked London's productivity decline to remote work, citing reduced motivation and collaboration (Business Matters, 2025). Conversely, Bloom et al. (2015) found increased productivity among remote workers in a Chinese telecoms firm, attributing gains to extended work hours and fewer distractions.

Bergeaud et al. (2023) suggested that optimal productivity occurs when employees work remotely one to two days per week. Similarly, Pabilonia & Redmond (2024) reported productivity improvements across 61 industries in the U.S. as remote work adoption rose.

In healthcare, Kusoski et al. (2022) found that inpatient pharmacists preferred hybrid models, citing increased productivity. Pharmacy Times (2021) reported that medication history technicians completed more tasks when working remotely.

Job Satisfaction and Organisational Commitment

Remote work has been associated with improved job satisfaction and organisational commitment (Charalampos et al., 2019). Bloom et al. (2015) observed lower turnover among remote workers. However, other studies highlight challenges such as isolation, stress, and communication barriers (Sivaprakash & Venkatesh, 2023; Bailey & Kurland, 2002).

Choudhary & Jain (2023) identified job autonomy and work-life balance as key drivers of engagement, while Hall et al. (2023) emphasised the need for organisational support to mitigate mental health risks.

Environmental Impact

Remote work offers potential sustainability benefits. Tao et al. (2023) found that remote workers had a 54% lower carbon footprint due to reduced commuting. However, Caros et al. (2023) cautioned that increased use of flexible workspaces could offset these gains.

Methodology

The study employed a practitioner-researcher approach using secondary data:

- **EPR Reports:** Productivity metrics (e.g., in-basket requests, medication verification).
- **Pilot Feedback Forms:** Qualitative responses from pharmacists during the initial WFH trial.
- **Self-Reported Productivity Logs:** Daily task tracking under the WFH policy.

Data were analysed using Herzberg's Two-Factor Theory and the Service-Profit Chain (SPC) framework. Themes were coded and categorised into motivators (e.g., autonomy, achievement) and hygiene factors (e.g., communication, infrastructure).

Findings

Productivity Analysis

Data from 11 pharmacists over a six-week period showed:

- 36% of WFH days had higher productivity than average.
- 41% were similar.
- 23% were lower.

> **"This suggests that WFH either maintained or improved productivity. Tasks such as medication verification and in-basket requests were completed efficiently, with minimal disruption."**

Self-reported logs indicated that pharmacists were able to complete more clinical reviews and non-clinical tasks (e.g., SOP updates, formulary work) while working remotely. Meetings and communications were effectively managed via digital platforms.

Staff Satisfaction

Feedback from the pilot phase revealed strong support for WFH:

- **Positive themes:** Improved well-being, reduced stress, better work-life balance, fewer distractions.
- **Challenges:** Reduced contact with colleagues, difficulty with urgent clinical queries, IT limitations.

Herzberg's theory highlighted that motivators (e.g., autonomy, recognition) were enhanced by remote work, while hygiene factors (e.g., communication, infrastructure) required attention.

Environmental Impact

Respondents reported driving 11–48 fewer miles per week, resulting in lower fuel costs and emissions. This supports the NHS's sustainability goals and contributes to the green agenda.

Discussion

Application of Herzberg's Two-Factor Theory

Remote work enhanced intrinsic motivators such as autonomy and achievement. Pharmacists reported greater control over their workflow and improved focus. However, extrinsic hygiene factors—such as IT support and communication—were critical to maintaining satisfaction.

Application of Service-Profit Chain (SPC)

- **Internal Service Quality:** Improved through focused remote work and reduced administrative burden.
- **Employee Satisfaction:** Boosted by flexibility and reduced commuting stress.
- **Employee Loyalty:** Potentially enhanced through career development and recognition.
- **Employee Productivity:** Maintained or improved, as evidenced by EPR metrics and self-reported data.
- **External Service Value:** Some concerns about reduced ward presence and urgent clinical tasks.
- **Customer Satisfaction:** Not directly measured but inferred through continuity of care.

The SPC model, while useful, requires adaptation for remote healthcare settings. It assumes high-quality infrastructure and direct customer interaction, which may be limited in remote pharmacy roles.

Recommendations

1. **Develop a Structured Hybrid Working Model**
   Embed a formal policy allowing pharmacists to work remotely for non-patient-facing tasks. Define eligibility criteria and maintain core on-site hours for clinical duties.

2. **Enhance IT Infrastructure and Support**
   Provide hospital-grade equipment, secure VPN access, and remote prescribing tools. Ensure ward staff can contact pharmacists remotely via EPR and messaging platforms.

3. **Improve Communication and Team Integration**
   Introduce virtual check-ins, peer learning sessions, and handover protocols to maintain team cohesion and service quality.

4. **Monitor and Evaluate Productivity Metrics**
   Use EPR and self-reported data to track performance. Include qualitative feedback from staff and stakeholders to refine policies.

5. **Promote Staff Well-being and Work-Life Balance**
   Offer flexible scheduling, mental health resources, and guidance on maintaining boundaries between work and personal life. Pharmacists have professional registration and have both clinical and personal aptitude.

6. **Provide Training and Development**
   Equip staff with remote work competencies, including time management, digital communication, and virtual collaboration.

7. **Support the Green Agenda**
   Track travel reductions and environmental benefits. Promote remote work as part of the Trust's sustainability strategy. This should include the ability to hot desk when on site.

8. **Ensure Equity and Inclusion**
   Extend WFH opportunities to junior pharmacists and other suitable roles. Regularly assess inclusivity through staff surveys and feedback mechanisms. Junior pharmacists could be argued as more tech savvy and used to remote working through experience during their education.

Conclusion

This study demonstrates that remote working, when strategically implemented, can enhance productivity, improve staff satisfaction, and support environmental sustainability in hospital pharmacy. A structured hybrid model offers a viable solution to workforce challenges, enabling flexibility without compromising service quality.

"Applying Herzberg's Two-Factor Theory and the Service-Profit Chain framework provides a robust foundation for evaluating remote work policies. By addressing both intrinsic motivators and extrinsic hygiene factors, organisations can create a supportive environment that fosters engagement, efficiency, and retention."

As the NHS continues to modernise its workforce models, hospital pharmacy departments must embrace adaptive strategies. Remote work, supported by technology and thoughtful policy design, can be a key component of future service delivery and staff well-being. It should also be applied to all departments, divisions and sectors where remote working is applicable.

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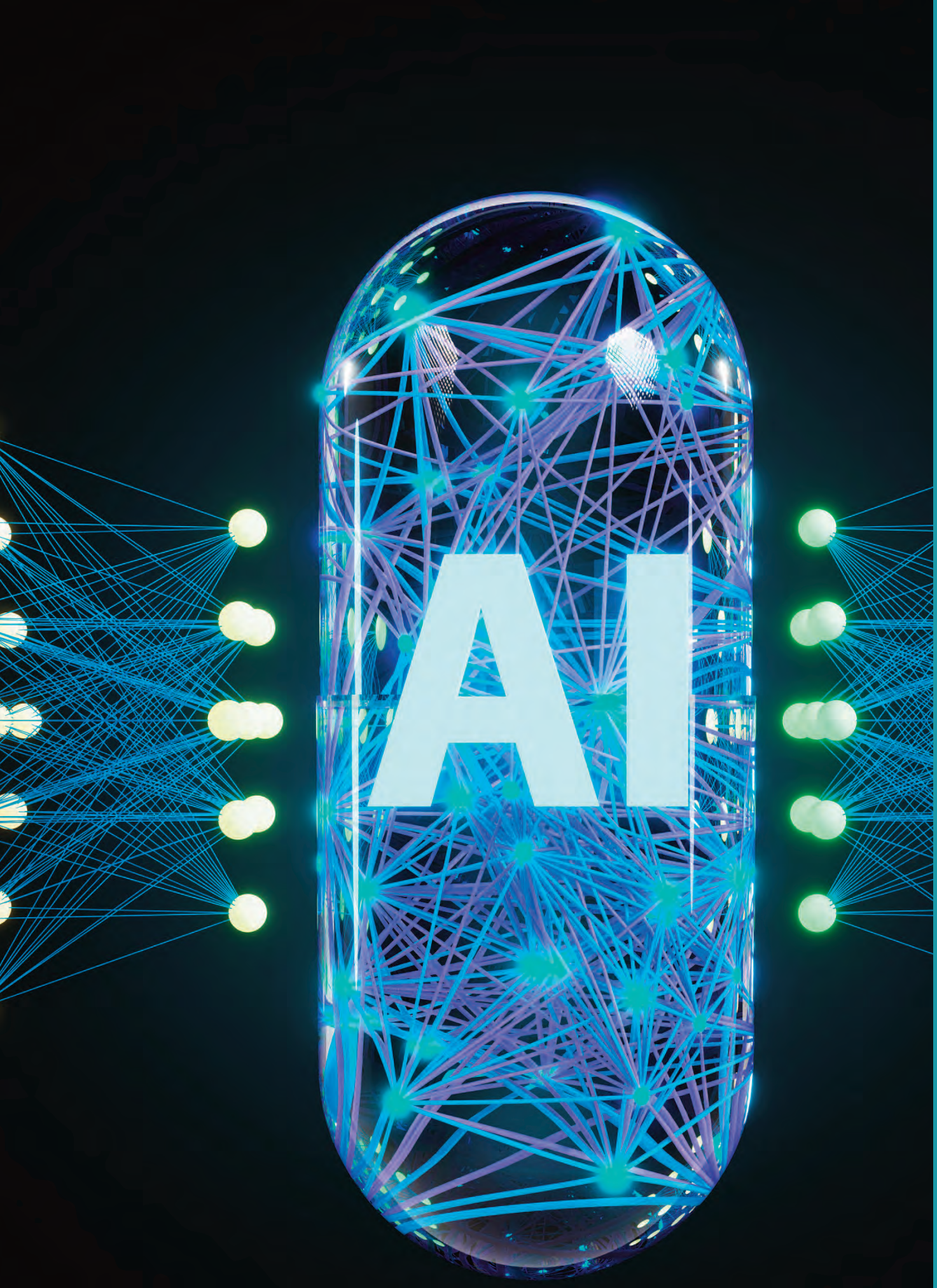
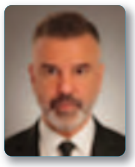

AI

The NHS Landscape for AI

Bringing AI into Pharmacy: My Journey with PharmBot AI and AIVAe, and the NHS Challenge



Asif Mukhtar,
website: www.pharmbotai.com
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Introduction

I began my career in pharmacy with a simple goal: to make a difference to patients. Over the years, I have seen first-hand how the pressures on our profession have grown. Prescriptions are increasing year on year, services are expanding, and expectations of what pharmacy can deliver have never been higher. Yet the resources available to us both in terms of workforce and technology often feel stuck in the past.

Day after day, I found myself asking the same question: how can pharmacists continue to provide safe, high-quality care when we are stretched to the limit? It was this question that led me to explore how artificial intelligence might support us. Not to replace pharmacists, but to stand alongside us, taking on some of the routine, repetitive work so we can focus on what really matters: our patients. The ultimate measure of success must always be patient outcomes and workforce sustainability.

"This is how PharmBot AI, and eventually AIVAe, was born. AIVAe is more than just a tool; it represents the possibility of a different future for pharmacy. One where technology gives us breathing space, reduces risk, and allows pharmacists to practise at the top of their expertise."

But developing AIVAe has also exposed me to the bigger reality: technology alone is not enough. The NHS faces fundamental questions about readiness. Do we have the infrastructure, the regulatory clarity, and the confidence across the workforce to embed safely? My journey so far has shown both the immense potential and the very real barriers.

In this article, I want to share that journey, the lessons learned, the obstacles faced, and why I believe the conversation about AI in pharmacy is not just about innovation, but about the future of our profession.

The NHS Landscape for AI

When I speak to colleagues across the NHS, there is no doubt about the appetite for innovation. Most pharmacists I meet recognise that our current ways of working are unsustainable and that digital tools, including AI, will be essential if we are to keep up with demand. The NHS itself has made strong commitments to digital transformation, from the creation of the NHS AI Lab to targeted funding for projects that promise to improve patient outcomes and efficiency.

But from my perspective on the ground, the reality looks very different. AI readiness is not just about having access to exciting new technologies; it is about whether our systems, processes, and people are prepared to adopt them. In pharmacy, that readiness still feels some way off.

Many community pharmacies still operate on legacy patient medication record (PMR) systems that do not easily integrate with wider NHS infrastructure. Data is often siloed and attempts to connect different platforms can feel more like workarounds than seamless interoperability.

Under development

Without reliable, connected systems, the value of AI is severely limited it cannot make safe, data-driven recommendations if the data itself is fragmented or incomplete.

Regulation is another critical factor. The NHS has rightly put in place frameworks like DTAC (Digital Technology Assessment Criteria) and MHRA's AI-Airlock to ensure new tools are safe, effective, and ethical. But for small innovators, navigating these processes can feel daunting. When I first applied to the AI-Airlock programme, our focus was on prescription verification. It was a valuable experience but also revealed how challenging it can be to move an idea from concept to clinical reality in the NHS.

And then there is the workforce. While younger pharmacists and students often show strong interest in AI, confidence in using these tools in daily practice is much lower. Training in digital literacy has not kept pace with the rapid development of AI. This aligns with findings from the RPS report on digital readiness, which highlighted limited confidence among pharmacists in applying AI tools, despite recognition of their potential benefits. NHS England should embed AI literacy into undergraduate curricula and CPD frameworks. Without national investment in education, even the best technologies will remain underused or mistrusted.

So, while the ambition is there, and I believe strongly that the NHS wants to embrace AI, the gap between vision and reality remains wide. Surveys of pharmacy undergraduates and early-career pharmacists suggest digital health and AI literacy are underrepresented in curricula, creating a clear skills gap. Readiness is patchy, inconsistent, and dependent on local champions. For innovators like me, this means progress can be slow, even when the technology itself is ready to go.

Challenges and Obstacles

Developing AIVAe has been one of the most rewarding parts of my career, as well as one of the most challenging. At each stage I've been reminded that creating a piece of technology is only part of the journey; the real test lies in working with the NHS to ensure adoption in a way that delivers meaningful impact for patients, staff, and services.

The first major obstacle has been regulation. The NHS rightly has a duty to ensure any AI entering the health system is safe, effective, and trustworthy. Our first application to the MHRA AI-Airlock, focused on prescription verification, was unsuccessful. The feedback was useful, but it highlighted the need for MHRA to provide clearer, tiered regulatory pathways for small innovators. Without reforms that make the AI-Airlock more accessible, frontline solutions risk being trapped in perpetual pilots instead of safely scaling into NHS practice.

The second obstacle is integration. AIVAe can provide value only if it connects with the systems pharmacists already use. But pharmacy IT remains fragmented. PMR systems lack enforced interoperability, data standards vary, and access to national APIs is restricted. NHS England should mandate interoperability standards in PMR contracts. Without this, innovators will continue to rely on fragile workarounds, and adoption will remain slow.

"A third challenge is culture and perception. AI still feels like a threatening term to many. I have had conversations with pharmacists who worry that tools like AIVAe are designed to replace them. This concern is not unique to pharmacy. Studies across medicine and nursing report mixed perceptions of AI, with professionals citing both optimism about efficiency gains and fears of deskilling or replacement. These insights are highly relevant to pharmacy, where similar anxieties exist."

In reality, my vision is the opposite: to reduce the burden of repetitive, administrative work so pharmacists can focus on the patient-facing aspects of care that only humans can provide. Overcoming this fear requires time, trust, and most importantly, education. Unless we invest in digital and AI literacy for the pharmacy workforce, adoption will always be slower than it needs to be.

Funding is another recurring obstacle. The NHS has shown willingness to fund pilots, but scaling successful innovations remains much harder. Too often, projects stall because procurement and funding models do not support spread across regions. NHS England should reform procurement to create clear pathways from pilot to regional and national adoption. Without this, innovators face a cycle of short-term projects with no sustainability.

Finally, there is the obstacle of credibility. As a pharmacist, I bring clinical understanding, but I am not a global tech company with endless resources. Convincing decision-makers that an innovation from within pharmacy is as valuable as one from a multinational requires persistence. Recognition through programmes like DigitalHealth.London RADIANT-CERSI has been invaluable in building credibility, but the challenge remains.

These obstacles are not insurmountable, but they are real. They explain why, despite the potential of AI, adoption in NHS pharmacy is still limited. Without addressing regulation, integration, culture, funding, and credibility, innovations like AIVAe risk remaining stuck in pilots instead of transforming everyday practice.

Opportunities and Collaboration

For all the challenges I have faced on this journey, I remain convinced that the opportunities AI presents for pharmacy are extraordinary. In fact, it is those very obstacles that have convinced me how transformative the right technology, implemented in the right way, can be.

The first and most immediate opportunity is time. Pharmacists spend huge portions of their day on repetitive administrative tasks: verifying prescriptions, documenting interventions, and checking for interactions. These are essential activities, but they consume time that could be spent on direct patient care. AIVAe has shown how AI can act as an extra pair of hands automating the repetitive while still leaving the clinical decision

with the pharmacist. In our initial pilot sites, pharmacists reported time savings of up to 15-30 minutes per service episode when routine tasks were supported by AIVAe. While unpublished, these findings mirror those of other pilot evaluations of AI-enabled clinical decision support, which showed measurable reductions in documentation burden.

A second opportunity is safety. Human error is inevitable when teams are working under pressure. AI is not infallible, but it can provide a consistent layer of support: flagging potential interactions, prompting double checks, and offering structured guidance. For example, AI-driven clinical decision support tools have been shown to reduce prescribing errors and improve adherence to safety protocols in hospital settings (Schwalbe & Wahl, 2020; Choudhury et al., 2020). By doing this reliably, AI reduces the chance of mistakes slipping through and strengthens confidence in the safety net pharmacists provide.

Third, AI opens the door to personalised care. In the current model, much of our work is reactive: we respond to prescriptions as they come in. With AI, we can start to identify patterns, the patient who is late for refills, the individual whose medicines could be simplified, or the person whose profile suggests a higher risk of non-adherence. AIVAe is already exploring how predictive analytics could help pharmacists be more proactive, reaching out before problems arise rather than after. Evidence from chronic disease management has shown that AI-supported risk stratification can reduce unplanned GP visits and hospitalisations, suggesting potential for pharmacy-led preventative care.

Another area of opportunity lies in service delivery. Pharmacy is increasingly being recognised as a clinical destination, from vaccinations to minor ailment management to long-term condition reviews. But these services bring documentation, follow-up, and outcome tracking, all of which take time. AI can support workflow by suggesting next steps, generating structured clinical notes, and signposting to guidelines. While this moves beyond purely administrative support and raises important considerations around safety, accountability, and clinical oversight, pilots have shown that pharmacists found it reassuring to know AIVAe could help them stay 'on track,' especially when services were being delivered at pace. By keeping the pharmacist in control, AI can act as an assistive tool rather than a replacement, reinforcing confidence in clinical practice. This approach aligns with international guidance that stresses the importance of human oversight in AI-enabled health tools.

"Finally, the greatest opportunity may be redefining the role of pharmacy in the wider health system. By embracing AI, pharmacy can demonstrate not only its willingness to innovate but also its ability to lead. We have the potential to show the NHS how AI can be embedded responsibly into frontline practice, with patient safety and professional autonomy at the core. That is a powerful message at a time when the health system is urgently searching for ways to modernise."

These opportunities are not abstract, they are real, tangible, and within reach. The challenge now is ensuring we create the conditions in which they can be realised at scale. For me, the story of AIVAe has always been about more than technology. It is about what pharmacy can become if we allow innovation to work with us, not against us.

Learning from Global Leaders

One of the most striking parts of my journey with AIVAe has been looking beyond the NHS to see how other countries are approaching AI in healthcare and pharmacy. The contrast is both inspiring and challenging.

China is perhaps the most advanced in this space. AI-powered robots already operate in hospital and community pharmacies, dispensing medicines with

speed and precision while pharmacists focus on clinical roles. Decision-support systems powered by machine learning are being used to review prescriptions, predict stock shortages, and monitor patterns of medicine use across whole populations. This is not to say the Chinese model can be transplanted wholesale into the NHS, but it does demonstrate what is possible when a system invests at scale and aligns policy, technology, and workforce development.

In the Middle East, progress has also been rapid. Saudi Arabia and the United Arab Emirates have both made AI a cornerstone of their national health strategies. Large-scale investment in digital infrastructure, combined with clear government ambition, means that AI-enabled healthcare is moving from theory to practice at pace. Pharmacies in these countries are increasingly exploring automation and digital decision-support, with strong backing from policymakers who see AI not as an optional extra, but as essential to meeting future healthcare demand.

By comparison, the NHS is moving more cautiously. There are understandable reasons for this, the scale of the service, the complexity of regulation, and the need to ensure public trust. But the lesson from global leaders is clear: ambition matters. Where there is a clear national vision, backed by investment and infrastructure, AI adoption accelerates. Where there is hesitation, progress slows, and opportunities are missed.

The UK has world-class pharmacy professionals and a strong track record of innovation. But without a bold approach to AI, we risk falling behind. Watching the speed of developments internationally has convinced me that if the NHS wants to remain at the forefront of safe, modern healthcare, we cannot afford to wait.

A Physical Symbol of AI in Pharmacy

When I first unveiled the PharmBot AI prototype, it was never intended to be a finished product. Instead, it was a symbol of a way of making the future of pharmacy tangible. Too often, AI is spoken about in abstract terms. By building a physical robot, I wanted to give colleagues, regulators, and policy makers something they could see, touch, and respond to.

The prototype was not designed to replace pharmacists but to spark a conversation about what is possible when we combine clinical

The future?

expertise with cutting-edge technology. For me, it represented the idea that AI should stand alongside pharmacists, supporting them in their daily work, ensuring safety, and freeing them to spend more time with patients.

What made the process even more meaningful was the collaboration involved. The design drew on input from the Digital Innovation Hub, robotics engineers, and AI specialists who worked with me to translate a vision into reality. This experience reinforced a simple truth: innovation in healthcare cannot succeed in isolation. It requires diverse expertise, shared goals, and a willingness to experiment.

"The impact of the prototype has already been felt. Showcasing it at innovation events and discussions with NHS leaders opened doors, sparking curiosity and serious conversations about pharmacy's role in the AI-driven future of healthcare. It proved that sometimes the most powerful way to communicate a vision is not with words or data, but with something physical that people can experience for themselves."

Looking ahead, I see the prototype not as an end point but as a starting line the first step toward a pharmacy of the future where AI and robotics take on routine, repetitive tasks so that pharmacists can focus on personalised, patient-centred care.

Recommendations for the NHS

My journey with AIVAe has shown me both the immense promise of AI in pharmacy and the real barriers that stand in the way of progress. If the NHS is serious about embracing AI, then a shift in approach is needed. From my perspective as both a pharmacist and an innovator, there are several key steps that would make the biggest difference. This aligns closely with the NHS Long Term Workforce Plan (NHS England, 2023), which highlights the role of technology in improving capacity and productivity, and with the Royal Pharmaceutical Society's AI policy (RPS, 2025), which calls for safe, transparent, and accountable adoption of AI to support pharmacy services.

1. **Invest in AI literacy for the pharmacy workforce.**

   Technology is only as effective as the people who use it. At present, most pharmacists receive little formal training in AI or digital health beyond the basics of electronic prescribing. NHS England should invest in AI literacy by embedding digital and AI training into undergraduate pharmacy curricula and CPD. Professional bodies (e.g. RPS) and employers should reinforce this with structured AI training across the workforce.

2. **Reform procurement to support scaling, not just pilots.**

   Too many promising digital projects succeed in small-scale pilots but never expand. This creates fatigue among innovators and frustration for pharmacy teams who see solutions come and go. NHS England should reform procurement frameworks to reward scaling, not just pilots, ensuring that proven innovations move from pilot to regional and national adoption.

3. **Create interoperability standards for pharmacy IT.**

   Without connected systems, AI cannot function effectively. National standards for pharmacy data, and a requirement for PMR systems to be interoperable, would transform the digital landscape. This would reduce the reliance on workarounds and allow AI tools like AIVAe to integrate seamlessly into workflows.

4. **Provide clearer regulatory pathways for innovators.**

   Safety and efficacy must always come first, but the current regulatory environment is difficult to navigate. The AI-Airlock is a positive step, but we need more support for small innovators to engage with regulation effectively. MHRA

should expand the AI-Airlock into a structured, tiered pathway, with tailored support for SMEs and frontline clinician-innovators, ensuring safety while accelerating adoption.

5. Foster collaboration between the NHS and innovators.

Pharmacy has always thrived on collaboration. The same should be true for digital health. Too often, innovators are kept at arm's length until late in the process. NHS England should involve innovators earlier in service design and evaluation, embedding collaboration from the outset rather than late-stage consultation

Ultimately, these recommendations are not about technology for its own sake. They are about creating the conditions in which pharmacists can thrive. If we get this right, AI can give us back the time and headspace to focus on the parts of care that truly matter. If we get it wrong, we risk allowing pharmacy to fall behind global peers and miss an opportunity to reshape our profession for the better.

Conclusion

When I first started exploring AI in pharmacy, it was not out of curiosity for new technology but out of necessity. I could see the pressure my colleagues and I were under every day, the constant balance between safety, efficiency, and patient care. I believed there had to be a better way.

Developing AIVAe has been my attempt to answer that question. Along the way I have learned that building the technology is only part of the journey. The harder challenge is building the trust, infrastructure, and readiness within the NHS to use it. That journey has not been straightforward, but it has been deeply worthwhile.

For me, the story of AI in pharmacy is ultimately a story about people. It is about pharmacists who want to do their best for patients but are often held back by outdated systems. It is about patients who deserve safe, timely, personalised care. And it is about innovators who believe that technology can and should support professionals, not replace them. The ultimate measure of success must always be patient outcomes and workforce sustainability.

The question I began this article with still remains: is the NHS truly ready for AI in pharmacy?

My honest answer is not yet. But readiness is not a fixed state, it can be built. With investment in people, commitment to infrastructure, and a willingness to collaborate, I believe the NHS can not only be ready but can lead the way.

The future of pharmacy will not be written by technology alone. It will be written by how we choose to use it.

Asif Mukhtar B.Sc. (Hons), M.Sc., MRPharmS/GPhC 2205980

Asif Mukhtar is a Consultant Pharmacist and the founder of PharmBot AI, where he leads the development of AIVAe, an AI-powered assistant designed to support pharmacists in delivering safe and efficient services. With more than 10 years of experience across community and clinical pharmacy, he has witnessed first-hand the pressures facing the profession and is passionate about using innovation to create solutions that work for both patients and professionals.

Asif has contributed to national discussions on digital health, participated in programmes such as the DigitalHealth.London RADIANT-CERSI Innovator Support Programme, and been recognised through award nominations highlighting his commitment to advancing pharmacy practice. His work brings together clinical expertise and a drive for technological innovation, with a focus on ensuring that AI is used to enhance, not replace, the role of the pharmacist.

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Sustainability in Healthcare: The Evolving Role of Pharmacy Professionals

Dr Emily Kennedy,
Respiratory and Climate Sustainability Lead Pharmacist,
NHS Dumfries and Galloway

"The climate emergency is also a health emergency."

Introduction

The climate crisis represents the greatest global health threat of the 21st century. Global climate change is due to rising atmospheric concentrations of greenhouse gases, including carbon dioxide. The impact of climate change is already being felt around the world, for example, we are witnessing the dreadful impact of extreme weather such as excessive temperatures, wildfires and floods. The World Health Organisation estimates that between 2030 and 2050, climate change is expected to cause approximately 250,000 additional deaths per year, from undernutrition, malaria, diarrhoea and heat stress alone.[1] Changes in climate affect health both directly and indirectly, for example, increasing the incidence of vectors which spread infectious diseases such as Lyme disease or malaria or the effects of extreme heat on conditions such as cardiovascular and respiratory disease.

Every aspect of healthcare contributes to carbon emissions, from procurement and energy use to the manufacture, prescribing, and disposal of medicines. As trusted experts in medicines and patient care, pharmacy professionals are uniquely positioned to lead the transition toward a more sustainable NHS.

The NHS is responsible for around 4% of UK carbon emissions, with medicines accounting for approximately 20% of its total carbon footprint.[2] Propellant gases in the majority of currently available metered dose inhalers (MDIs) make up a significant proportion of the carbon emissions which the NHS controls directly. Figure one

illustrates all emissions associated with NHS activity in NHS England.[2]

"Against this backdrop, the NHS in Scotland has committed to becoming a net-zero health service by 2040,[3] while the UK as a whole is targeting net zero by 2045.[2]"

Sustainability is no longer an optional extra — it is fundamental to delivering safe, effective, and equitable healthcare.

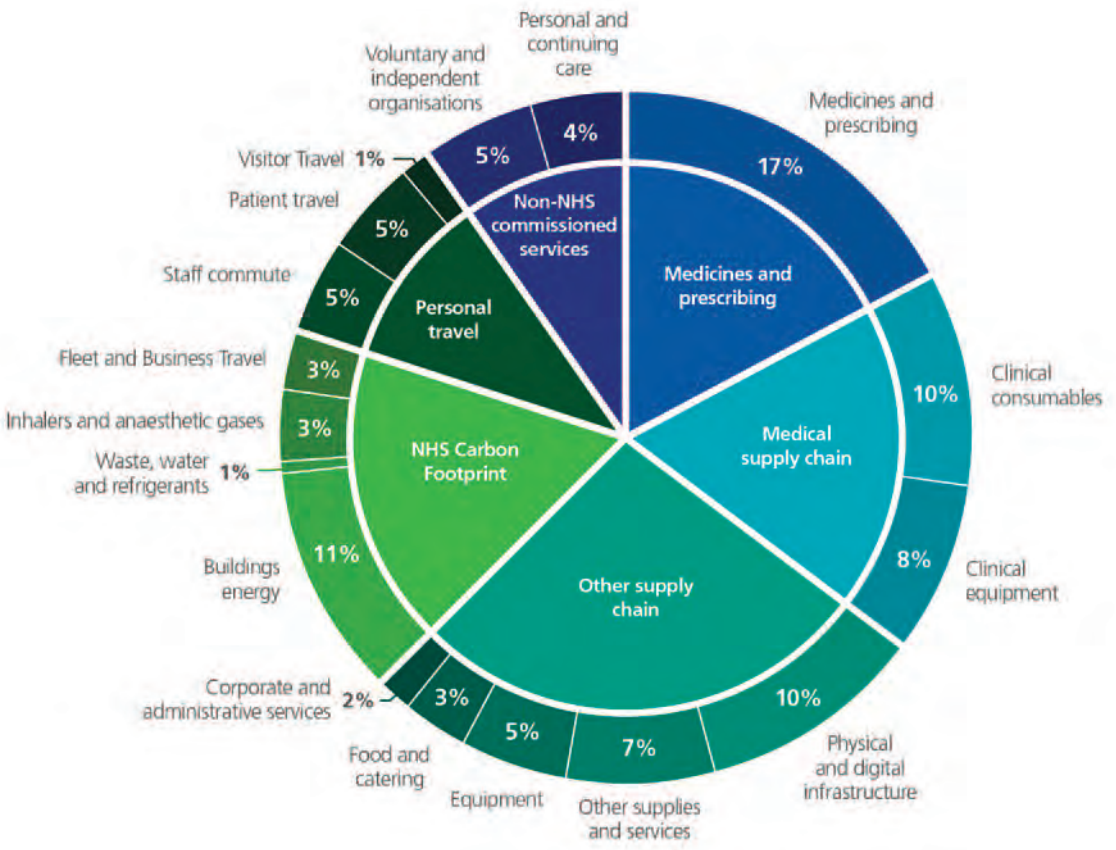


Figure 1: a breakdown of emissions by proportion of the NHS Carbon Footprint Plus, represented as a pie chart

Why Sustainability Matters in Pharmacy Practice

A sustainable NHS is not only about environmental stewardship but also improved patient outcomes. Public Health Scotland has estimated that addressing key sustainability drivers such as air quality, active travel, and diet could save tens of thousands of lives each year. Improving respiratory health, for instance, aligns with reducing reliance on high-carbon inhalers and preventing disease exacerbations that burden both patients and the health system.

Yet, pharmacy teams face growing pressures: workforce shortages, rising demand, and constrained budgets. Integrating sustainability into daily practice must therefore be realistic, evidence-based, and aligned with patient-centred care.

Respiratory Medicines: A Focus for Change

Understanding the Impact

Propellants currently used in MDIs, hydrofluorocarbons (HFCs), have a global warming potential thousands of times higher than carbon dioxide. Indeed, emissions from MDI propellants exceed those from the entire NHS Scotland vehicle fleet and waste operations combined.

In response, NHS Scotland's Climate Emergency and Sustainability Strategy aims to reduce emissions from inhaler propellants by 70% by 2028, by addressing better respiratory medication review as well as through a shift toward lower-carbon alternatives such as dry powder inhalers (DPIs) and soft mist inhalers (SMIs), where clinically appropriate.

The Right Inhaler for the Right Patient

The environmental impact of inhalers must always be considered alongside clinical efficacy and

patient preference. As pharmacy professionals, our role is to ensure that patients receive inhalers they can use correctly, consistently, and confidently. The greenest inhaler is one that a patient can and will use. Review of inhaler technique and selecting the most appropriate inhaler for the individual is imperative.

"Evidence suggests many patients struggle with MDI technique, leading to poor disease control and unnecessary overuse. DPIs, which do not require coordination of actuation and inhalation, may offer improved adherence and therapeutic outcomes for many individuals.[4]"

Inhaler choice should therefore be guided by:

- Inhalation technique - can the patient use it correctly?
- Disease control - are symptoms managed optimally?
- Carbon impact - is a lower-emission option feasible?
- Patient preference and understanding - does the patient feel confident using their device?

Where an MDI is the best option, optimising technique and using a spacer can improve lung deposition and clinical outcomes, reducing the need for rescue medication.

I welcome the introduction of the next generation propellants (NGP) in MDIs, the first of which to be available in the UK is Trixeo® Aerosphere® from Astra Zeneca.[5] The propellant used is HFO-1234ze and has a vastly reduced impact on carbon emissions compared to current propellants. As a wider range of NGP MDIs becomes available, they will enable true patient choice for the most appropriate inhaler device for their needs.

Tackling Over-Reliance on Reliever Inhalers

Short-acting beta agonist (SABA) inhalers, most of which are MDIs, account for around two-thirds of inhaler-related carbon emissions in the UK.[4] High SABA use is also a red flag for poor asthma control and increased risk of exacerbations and mortality, as highlighted in the National Review of Asthma Deaths.[6] The updated BTS/NICE/SIGN asthma guidance[7] published in November 2024 highlighted the importance of treating asthma with an inhaled corticosteroid, and that nobody with asthma should be prescribed a SABA alone. Those with poorly controlled asthma or with newly diagnosed asthma should be commenced on a SABA-free pathway, using either the Anti-inflammatory Reliever (AIR) or Maintenance and reliever therapy (MART) pathways. In NHS England, the Investment and Impact Fund (IIF) for 2021-23 introduced incentives for primary care networks to implement improvements in asthma care and reduce the carbon footprint. There has been major progress since 2020 to reduce NHS Carbon Footprint medicines' emissions in England. Overall, the total emissions from inhalers, nitrous oxide and volatile anaesthetics have reduced by 470 $ktCO^2e$ or 33% since 2019/20.[2]

In order to continue the good progress and implement sustainable respiratory care which results in better patient outcomes, pharmacy professionals should:

- Identify patients with asthma using more than 2 SABA inhalers annually or using SABA alone and flag for clinical review
- Promote adherence to preventer therapy, explaining its role in long-term control.
- Support asthma self-management plans to empower patients and reduce inappropriate reliever use

By improving disease control, we reduce both environmental impact and morbidity.

Example of best practice:

In Scotland, the *Scottish Therapeutic Utility (STU)* tool helps primary care teams identify patients with SABA only use or high SABA use, prioritising them for review. Embedding this data-driven

approach in community and GP pharmacy teams supports targeted, proactive care.

Beyond Inhalers: Wider Sustainable Actions in Medicines Use

Sustainability extends across the medicine's lifecycle, from procurement to disposal. Pharmacy professionals can champion initiatives that promote better health and wellbeing, empowering people to have more control over their health, reduce medicines waste, optimise medicines use, and promote greener alternatives.

1. Medicines Optimisation and De-prescribing

Regular person-centred medication reviews using the evidence-based 7-steps medication review[8] help ensure treatments remain appropriate, effective, and necessary. Reducing inappropriate polypharmacy not only minimises adverse events but also has an impact on manufacturing and waste emissions.

Integrating sustainability into medication review templates or clinical systems helps prompt conversations about deprescribing and non-pharmacological options.

2. Reducing Pharmaceutical Waste

Encourage patients to:

- Understand the purpose and duration of each medicine. Pharmacy team members have a key role to play in this, talking to patients about their medication and identifying those who may benefit from a medication review
- Return unused or expired medicines, including inhalers, for safe disposal. There are some recycling schemes for inhalers being piloted, for example, in Swansea Bay.[9] The Inhaler Recycling Pilot Project funded by the Welsh Government established a contract with Grundon Waste Management and entailed inhaler collection and recapture of the HFA gases which were cleansed and reused in refrigeration. Both the aluminium and plastic casing of the inhalers were also recycled. Where recycling schemes are not available, returned MDIs should be incinerated to safely destroy residual propellants, preventing their release into the atmosphere
- Avoid stockpiling repeat prescriptions. Various NHS campaigns have taken place to encourage people to 'Only order what you need'. NHS Dorset undertook a two month public campaign using a multi-modal communications strategy to reach patients on repeat medications.[10] Following the campaign in 2024, expected prescription growth was negated and fell below baseline by 15,940 compared to the same months of 2023, equalling a total fall in prescribed repeat items of 65,152 over the last two months of the financial year 2023/2024.

3. Sustainable Device Choices

Consider reusable over disposable options, for example:

- Insulin pens, opt for reusable devices where possible
- Vaginal oestrogen applicators, encourage reusables to cut single-use plastics
- Soft mist inhalers: refillable canisters are available, which only require the device to be changed every six months, reducing plastic use.

4. Social Prescribing and Lifestyle Interventions

Pharmacy professionals can signpost or support non-pharmacological interventions, 'green ' and 'blue ' prescriptions, which improve health while reducing medicines dependency:

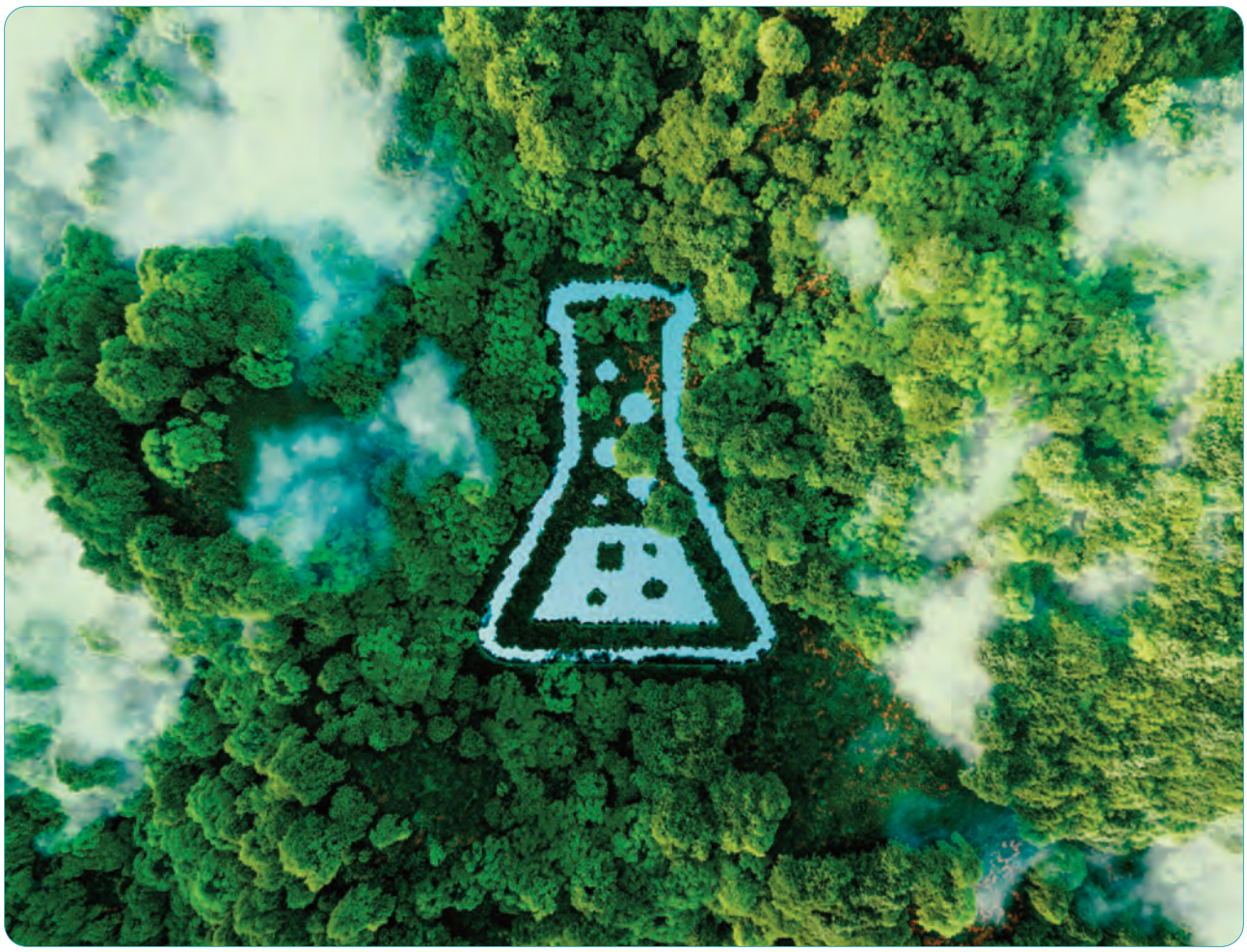
- Smoking cessation interventions
- Healthy, plant-rich diets
- Physical activity and active travel, a great illustration of the co-benefits of sustainable approaches as walking or cycling to work for example, increases physical activity and reduces carbon emissions of the commute compared to a car journey
- Nature-based activities. Utilising green spaces and maximising their benefits to individuals and communities. An example is at the Homerton Healthcare Foundation NHS Trust, where a dedicated horticultural therapist is using the power of nature to transform patient care and staff wellbeing. The therapist works with patients and staff to support a deeper connection with nature to improve mental and physical health.[11]

These interventions can reduce disease burden, improve wellbeing, and contribute to emissions reduction.

Overcoming Barriers to Sustainable Practice

Transitioning to greener pharmacy practice is not without challenges:

Barrier	Potential Solutions / Enablers
Lack of awareness or confidence in discussing sustainability with patients.	Use resources like the RPS Greener Pharmacy Toolkit. Join networks available through the Centre for Sustainable Health and local 'green prescribing ' groups such as Greener practice for peer support.
Perceived conflict between patient care and environmental goals	Emphasise that sustainability complements clinical quality. Better disease control and therapeutic outcomes equal lower emissions.
Limited time in consultations	Embed sustainability prompts into routine reviews; leverage digital tools for patient education.
Patient reluctance to change inhaled therapy	Ensure that therapeutic goals are the priority. Offer tailored education, demonstrate suitable devices, and involve patients in shared decision-making.
Inconsistent data and reporting	Use prescribing dashboards (e.g. Open prescribing, STU) to monitor progress and identify priority areas.



Building a Culture of Green Pharmacy

- Change begins locally at grassroots. A fantastic example is Greener practice, a community interest group which was established by GPs in 2017 and has aims including enabling primary care to take actions towards environmentally sustainable practice and to provide a useful hub of information and resources. Across the UK, pharmacy teams are forming Green Prescribing Groups to share ideas, trial innovations, and integrate sustainability into governance structures.
- The Royal Pharmaceutical Society have produced a Greener Pharmacy Guide and Toolkit which assists pharmacy teams in their sustainability journey. It enables you to assess where you and your practice are and helps to address actions that you can take to reduce your carbon footprint. The RPS also welcome any examples of good practice to help motivate and inform others on their professional sustainability journey.

Simple steps can spark wider transformation.

Examples of local action include:

- A hospital respiratory team introducing DPI-first formularies and patient training.
- Community pharmacies setting up inhaler recycling schemes
- Primary care networks embedding environmental metrics into prescribing audits

Collaboration across sectors: hospital, community, GP, and public health, is essential to maximise impact.

Practical Actions for Pharmacy Teams

Every action counts. Consider these practical steps:

1. Undertake a sustainability self-assessment using the RPS Greener Pharmacy Guide
2. Prioritise education for staff and patients on sustainable prescribing choices
3. Review respiratory prescribing: focusing on SABA use in asthma, reviewing inhaler technique, symptom control and adherence

4. Implement inhaler disposal initiatives, display posters and offer collection points
5. Champion green procurement: favour suppliers committed to net zero
6. Advocate for system-level change include sustainability in formulary discussions and clinical pathways

"We don't need a handful of people doing zero waste perfectly. We need millions doing it imperfectly."
Anne-Marie Bonneau

Conclusion

Sustainability in healthcare is a shared responsibility and pharmacy professionals are at its heart. By improving respiratory care, optimising medicines use, and embracing greener practices, we can protect both patient health and the planet.

As the Tanzanian proverb reminds us, *'Little by little, a little becomes a lot.* ' Every prescription review, every patient conversation, and every small change contributes to a healthier, more sustainable future.

Further Resources:

- Royal Pharmaceutical Society Greener Pharmacy
- Greener Practice (https://www.greenerpractice.co.uk)
- Centre for Sustainable Healthcare Sustainable Healthcare

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VICHY
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How Scotland is making progress with community pharmacy provision

Richard Shearer MFRPSII,
Royal Pharmaceutical Society (RPS) Scottish Pharmacy Board Member
Lead Pharmacist for Pharmacotherapy and Community Pharmacy Services, NHS Lanarkshire

Biography

I qualified as a pharmacist in 2010 following a successful Pre-Registration Training Year in community pharmacy and went on to hold various positions including Pharmacy Manager and Store Manager. I had a passion for community pharmacy from the outset and it was a significantly different backdrop than the more clinically advanced one I see today. After undertaking my Independent Prescribing qualification in 2016, I moved to a role in Primary Care with NHS Lanarkshire and have since held various senior positions in this organisation. I have previously sat on the Antimicrobial Management Committee as well as undertaking work for the General Pharmaceutical Council in relation to Question Writing and Reviewing for the Pre-registration exam. In my current role, I now oversee both General Practice Pharmacy and Community Pharmacy within Primary Care as well as fulfilling my role as a Scottish Board Member with the Royal Pharmaceutical Society.

Let's set the scene

As mentioned in by biography, I left community pharmacy in 2016 to work with NHS Lanarkshire. Why? At the time, I simply did not see the platform to meaningfully use an Independent Prescribing qualification within Community Pharmacy.

Looking at the landscape today, it is considerably better and one which is a significant step in the right direction to fully utilising the skillset of both Pharmacists and Pharmacy Technicians in the community setting. In Scotland, since 2020, there is now an avenue for Pharmacists to clinically assess and prescribe for patients with common clinical conditions, within their own competence and confidence, via Pharmacy First Plus upon successful completion of their independent prescribing. This expands on the Pharmacy First Service which evolved from a successful Minor Ailment Service.

Latterly for Pharmacy Technicians in the UK, the legal path has been paved to use Patient Group Directions to supply and administer selected medicines, albeit widespread practical implementation is yet to occur.

"The current stage is one of success in Scotland, with much more opportunity and potential ahead. In March 2025, I was privileged to attend a roundtable discussion in London with the Royal Pharmaceutical Society titled 'Community Pharmacy – supporting efficient and effective healthcare access across the globe'. It provided a rare opportunity to network with community pharmacy colleagues across the world."

The principle reflection I had from this experience was how far Scotland has come with the development of community pharmacy services, and to some extent, how we have become immune to the success. For context, in some countries represented at the discussion, the presence of a pharmacist in community pharmacies is not currently mandatory by law and

the efforts there are reserved for advocating for the implementation of a minimum number of mandatory pharmacist working hours per week. In this article, I will share my perspective on the progress achieved in Scotland as well as where future opportunity lies.

Pharmacy First Scotland and its evolution from Minor Ailment Service

The Minor Ailment Service in Scotland was introduced in 2006. Under that scheme only certain populations were eligible (e.g. under-16s, under-19s in full-time education, over-60s, people on certain benefits or asylum seekers). A 2014 Scottish Government review highlighted that this only covered approximately 60% of the population. Although significant at the time, it was a narrow list of minor, self-limiting conditions such as headache, cough, colds, hay fever, indigestion, minor skin problems, oral health issues as well as constipation and diarrhoea.

Over time, there was recognition that this was somewhat restrictive and that many common, self-limiting ailments could indeed be managed in pharmacies, reducing pressure on GPs and other NHS services.

Accessibility is the greatest unique selling point of community pharmacy. I often hear us being referred to as the most accessible healthcare professional. It's not without substance as pharmacies are conveniently place within local communities, particularly in hard to reach populations. In July 2020, Scotland replaced the Minor Ailment Service with NHS Pharmacy First Scotland. As with the Minor Ailment Service, Pharmacy First is a core service under the Community Pharmacy Contractual Framework (CPCF) in Scotland meaning it must be provided by every community pharmacy delivering NHS services.

This service fulfilled a commitment in the Scottish Governments' Programme for Government to rollout a redesigned minor ailment and common conditions service to the patients of Scotland. The new service broadened eligibility effectively to anyone living in Scotland / registered with a Scottish GP practice, plus other groups such as temporary residents with a Scottish GP practice. It is important to remember there is no prescription charges in Scotland, therefore this service is free at the point of access. This expanded access to the service to close to 100% of the population. Under Pharmacy First, community pharmacies provide advice, treatment (for example: sore throat,

earache, cold sores, UTIs in females, etc.) or referral onward if needed for many common clinical conditions.

"The aim was to make pharmacies the "first point of contact" for minor ailments and some urgent medication supply issues, freeing up GP time and reducing waiting time for patients with the government and pharmacy profession aligned in maximising the community pharmacy unique selling point of accessibility. In theory great, however does the concept deliver in reality? Well in May 2025, Public Health Scotland published a report on NHS Pharmacy First Scotland, covering the period 1 April 2021 to 30 September 2024."

In the most recent twelve-month period within this report (October 2023–September 2024), it was noted that 1,895,836 people used Pharmacy First Scotland at least once, representing about 35% of the Scottish population. Notably, use of Pharmacy First can be seen across all levels of deprivation in the population. The number of people using Pharmacy First each quarter has increased by ~60% over the three years from Q3 2021 (July–September 2021) to Q3 2024 (July–September 2024). For example, in July–Sept 2021 there were ~464,363 people; in July–Sept 2024 there were ~743,121. With over 1200 pharmacies across the country and 90% of the population visiting a pharmacy at least once a year, this has been a deeply impactful evolution.

As well as offering an approved list of products, there is also a suite of PGDs that exist under Pharmacy First. This element of the service is not dissimilar to the Pharmacy First Service that exists in England which focuses on 7 common clinical conditions. Pharmacy First Scotland includes PGDs for the treatment of five conditions with medicines otherwise only available on prescription: uncomplicated urinary tract infections in non-pregnant females, impetigo, skin infections, shingles and hay fever. In a world where the Independent Prescriber population is still growing, the use of PGDs to prevent these patients presenting in general practice or the acute setting is critical. The Scottish Government published its NHS Operational Improvement Plan in March 2025. This plan states that the Scottish Government will further expand the NHS Pharmacy First Scotland service, enabling community pharmacists to treat a greater number of clinical conditions via PGD and preventing the need for a GP visit – with the first expansion by November 2025. This signals encouraging intent from the government in maximising the role of community pharmacy, the most accessible healthcare professionals.

The Community Pharmacy Unscheduled Supply (CPUS) service compliments Pharmacy First as it enables community pharmacy contractors to provide patients with up to one prescribing cycle of their repeat medicines and appliances, where obtaining a prescription has not been possible, for example during weekends and public holidays where access to primary care is limited. This has been instrumental at again diverting patients from out of hours' services, and in some aspects, in hours' care. Within the aforementioned Public Health Scotland report, it highlights that 11% of the Scottish population (615,430) used CPUS in the most recent 12 months reported (October 2023 to September 2024). This represent a sizeable proportion of the population who may have presented in other areas of the healthcare ecosystem and it has seen a growing trend with a 26% increase when compared to the same 12-month period in 2021/22.

The Crown Jewel?

Pharmacy First has really advanced the equity and range of access for patients across Scotland. In my view, the crowning jewel of this offering exists in the form of Pharmacy First Plus. The NHS Pharmacy First Plus service enables specially trained

community pharmacists to assess, diagnose, and prescribe for a wider range of conditions under their independent prescribing qualification. Essentially, patients presenting in the community pharmacy with a common clinical condition which is beyond the scope of the standard Pharmacy First service and would otherwise require onward referral to another healthcare professional. Introduced in 2020, it was designed to improve access to primary care, reduce GP workload, and make better use of pharmacists' clinical skills. Pharmacist can assess patients, within their scope of practice, and this is dependent on their own competence and confidence. Usage has been increasing rapidly. According to Public Health Scotland data, in 2023/24 around 118,000 consultations were carried out under Pharmacy First Plus, more than double the activity recorded in 2021/22. Since its inception, this service really has elevated the platform for a clinical role within community pharmacy.

I often reflect on the change in landscape over the last 10 years and how this is a completely different reality to the one I left in 2016 as at that time I did not see a way to meaningfully use my independent prescribing within community pharmacy.

Although it has elevated the platform at which community pharmacists can clinically operate, I do feel there is some fine tuning needed with this service in order to make it one which health boards can integrate within their local primary care strategies.

Unlike the Pharmacy First service, Pharmacy First Plus is not a core service, meaning contractors opt in to providing it. This naturally creates geographical variability on where patients can access this service. Within the service specification, contractors who provide the service need to do so 25 hours per week over 45 weeks of the year. Of course this is good coverage, however with the accessible opening hours of community pharmacy, this leaves many hours that this service is not provided.

Contractors are self-directed in when they provide the service as this is dependent on suitable staffing, therefore there may be variability in the days it is provided in one pharmacy compared to another. For individual pharmacists, although they of course do not have the scope of practice we see with general practitioners, we are evolving as a workforce in to this more clinical role.

As such, there is variability in what clinical conditions one pharmacist may see compared to another and a set list of conditions treated within this service does not exist. The clinical isolation pharmacists experience in community is an unfortunate reality and not one which aligns with the environment needed for advancing practice. Personally I would like to see local mechanisms of support for community pharmacists with a high clinical decision making burden. Local support would empower these clinicians to be working at the top of their license with confidence. These issues are broadly unavoidable in a service that is still in its infancy, however it does create a challenging scenario in how this service is articulated to patients and stakeholders alike.

How do we define this service in public messaging? At this stage, the service is not defined to an extent that clear messaging can be directed to the public at a national level. The key ingredients are clearly there and I am confident that with time, this service will evolve in to one that will exist as a key element with NHS Health Boards Primary Care Strategies. This crown jewel has the potential to shine brighter.

Seismic change in 2026

From 2026, all pharmacy graduates in the UK will qualify as independent prescribers at the point of registration. This change, led by the General Pharmaceutical Council, integrates prescribing training throughout the five-year MPharm degree and foundation training year. Currently, pharmacists must complete additional post-registration training to become IPs, but from 2026 this will no longer be needed. New pharmacists will be able to assess, diagnose, prescribe, and manage treatment plans immediately after qualifying.

"This shift is designed to expand pharmacists' clinical role, improve patient access to medicines and care, and reduce pressure on GPs and other prescribers. Existing pharmacists will still need to complete a separate independent prescribing qualification if they want to prescribe."

Currently, UK schools of pharmacy collectively produce around 2,800 – 3,200 pharmacy graduates each year who go on to the foundation training year. So from summer 2026 onwards, this change will mean roughly 3,000 newly registered pharmacists per year will join the workforce already qualified as independent prescribers. Currently there is an active prescriber in over 40% of sites in Scotland, however with this change it is anticipated that close to 100% of sites will have an active prescriber by 2030.

Note that in the context of a growing number of prescribers, PGDs for pharmacists may become obsolete, however a place remains for pharmacy technicians. In terms of Pharmacy First Plus, this influx of prescribers will become a key driver in reducing the geographical variability in sites offering the service as more may now have foundations needed in order to provide the service, assuming of course that this was indeed the rate limiting step. In Scotland the stage is set to embrace this change and maximise the clinical role for prescribing pharmacists.

The Digital Arena

In many areas of the country, community pharmacist access to Clinical Portal has been expanding. This enables pharmacists to view a wealth of helpful clinical information such as hospital discharge summaries, clinic letters as well as some blood results (dependent on setting). This compliments existing services such as Pharmacy First and Pharmacy First Plus where access to such information can reduce the need for onward referral thereby optimising interventions via community pharmacy. Access to Emergency Care Summaries is also an area many boards have progressed thereby enhancing the level of interventions that can be completed within community pharmacy. Through this, pharmacists can view medicines prescribed by the General Practice as well as notes on allergies. In the context of interventions in the out of hours' period, this is of significant value.

Earlier in this article I had mentioned my reflection from attending the Community Pharmacy Roundtable event in London. Whilst this was a great opportunity to see the positive comparison of Scotland to other nations in relation to the clinical role of pharmacists, it really highlighted how behind the curve we are in comparison to other nations globally in the digital arena. Many other nations have some model of electronic transfer of prescriptions as well as greater access to clinical data for community pharmacy colleagues.

My organisation recently engaged in reciprocal hosting of pharmacy colleagues from Uppsala, Sweden. Transitioning from the digital utopia of Sweden to the salmon coloured paper prescriptions of Scotland was one which did generate some amusing conversation. The need to address this in Scotland has of course been identified. The Digital Prescribing & Dispensing Pathways (DPDP) programme was commissioned in 2022 by NHS National Services Scotland (NSS) on behalf of the Scottish Government to replace paper prescriptions with a fully digital workflow: from GP in-hours prescribing through to

community pharmacy dispensing. In theory, it would be a welcomed transition to ditch the pen and move up higher in the digital league table, however progress in terms of tangible outputs observed by pharmacy colleagues in practice has been lacking. I remain hopeful that this programme will yield results.

As we seek progress with DPDP, the early wheels are in motion for a single patient record. In June 2025, Scottish Parliament voted for the creation of an integrated digital patient care record. A welcomed outcome by many. Various government strategies focus on care in the community and the accessibility of the community pharmacy network. This coupled with the influx of prescribers from 2026 and advancing clinical role via services such as Pharmacy First and Pharmacy First Plus highlights the need for pharmacists to be included in this change. The Royal Pharmaceutical Society has launched their 2026 Election Manifesto for Scotland. This manifesto sets out the key issues that need to be addressed to ensure a sustainable, integrated and strong pharmacy profession that delivers high quality, safe and effective care. The first call within this clear and concise manifesto is to ensure that pharmacists in all care settings have read and write access to an integrated digital patient record. This would revolutionise the role of community pharmacists and also compliment the more advanced clinical role by giving them access to improved data to aid person centred decision making.

What does the future look like?

The Health and Social Care Service Renewal Framework launched in June 2025 describes a future role for community pharmacy as a key part of Scotland's shift toward community-based, preventative, and person-centred care. It envisions community pharmacies as accessible "front door" services, expanding their capacity and integration within multidisciplinary teams to reduce reliance on hospital care. Pharmacists will have an expanded role in supporting prevention and early intervention, offering advice to help people manage their own health and providing secondary prevention services such as cardiovascular and diabetes risk management.

There is already alignment with parts of this framework as community pharmacy delivers elements of women's health (emergency contraception, UTI treatment) alongside the Pharmacy First service, whose uptake has grown significantly, especially in deprived areas as outlined earlier. Community pharmacies are expected to play a central role in managing long-term conditions, reducing health inequalities, and enabling care closer to home, supported by digital health records and shared data systems. This enhances continuity of care, speed of access, and frees GP and hospital capacity for more complex needs.

The Community Pharmacy Scotland 2026 Manifesto was launched in September 2025 and very much captures the essence of the national direction outlined within the Renewal Framework. There remains a focus on the prevent, detect and treat ethos and it highlights key areas such as a national NHS weight loss service and targeted diabetes and cardiovascular screening programmes. It also reaffirms the importance and priority of a better digital infrastructure and information sharing, a message which I wholeheartedly echo.

An exciting time lies ahead for community pharmacy in Scotland. There are some strong foundations in place as well as recognition and strong stakeholder consensus on where we need to go from here.

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Published by Pharman Limited
The Stable Yard, Vicarage Road, Stony Stratford, Buckinghamshire MK11 1BN
Tel: 0333 800 2850 Homepage: www.pmhealthcare.co.uk Email: editor@pmpublications.co.uk