



Faculty of
Pharmaceutical Medicine

HORIZON SCANNING

ANNUAL REPORT

2026

**EMERGING RISKS
AND TRENDS IN
PHARMACEUTICAL
MEDICINE OVER
THE NEXT FIVE
YEARS**

JULY 2026



About pharmaceutical medicine

Pharmaceutical medicine is the medical specialty concerned with the research, development and monitoring of new medicines and other health interventions.

Pharmaceutical physicians can be involved at every stage of the development pipeline of all medicinal products, using their expertise to advance pioneering treatments, and help ensure they are safe and effective for patients.

The specialty is at the intersection of medicine, science, regulation and public health. It offers doctors the opportunity to contribute to medical progress at scale by helping shape the development, evaluation and appropriate use of treatments that may benefit patients around the world.

About the Faculty of Pharmaceutical Medicine

The Faculty of Pharmaceutical Medicine (FPM) is a professional membership organisation, registered charity and standard-setting body for the specialty in the UK.

It is a faculty of the three Royal Colleges of Physicians of the UK and exists to advance the science and practice of pharmaceutical medicine.

FPM supports the specialty through education, training, examinations, revalidation support, professional standards, events, and membership. It is the professional home for physicians who advance health through medical innovation.



Executive Summary

This report provides a forward-looking assessment of the major trends and emerging risks expected to shape pharmaceutical medicine over the next five years. It highlights a period of increasing complexity, driven by geopolitical instability, economic constraints, rapid technological advancement, and evolving public health needs. Horizon scanning plays a critical role in enabling the sector to anticipate these changes and respond proactively, ensuring that innovation continues to deliver safe, effective, and accessible medicines.

Global instability is placing growing pressure on medicine supply chains. Geopolitical tensions, trade disruptions, and ongoing conflicts are increasing the risk of shortages and delays, particularly affecting complex logistics such as cold chain systems. As a result, there is an increasing focus on strengthening supply chain resilience, including localisation strategies and improved approaches to equitable global access.

At the same time, economic pressures are intensifying across healthcare systems. Rising costs associated with advanced therapies, combined with inflation, constrained public funding, and ageing populations, are placing significant strain on affordability and sustainability. This is accelerating a shift toward value-based pricing models, greater reliance on health economics evidence, and increased emphasis on efficiency, including the use of artificial intelligence to reduce costs and improve productivity.

Public health challenges are also evolving. The continued risk of pandemics and emerging infectious diseases, alongside the impact of climate change on disease patterns, is reinforcing the need for robust preparedness, vaccine development, and rapid-response capabilities. At the same time, patients are becoming more actively involved in healthcare decisions, supported by greater access to digital information. However, the growing spread of misinformation presents a significant risk to public trust, potentially affecting engagement with healthcare services and uptake of medicines and vaccines.

Demographic change and persistent inequalities are further shaping the landscape. Ageing populations and increasing prevalence of chronic disease are driving demand for long-term care and prevention-focused approaches, while disparities in access to advanced therapies and limited diversity in clinical research remain key concerns. These challenges are increasing scrutiny on health equity and requiring more inclusive research practices and better use of representative data.

In response to these pressures, there is a growing shift toward prevention, early detection, and population health management. This includes increased investment in vaccines, screening, and lifestyle interventions, alongside greater use of patient-reported outcomes and real-world data. At

the same time, the pharmaceutical workforce is undergoing significant transformation, with increasing demand for skills in areas such as artificial intelligence, data science, genomics, and health economics, while workforce shortages and reduced academic capacity pose ongoing risks.

Technological innovation remains the most powerful driver of change across the sector. Artificial intelligence is transforming all aspects of the pharmaceutical lifecycle, from drug discovery to clinical development and patient care, offering significant gains in speed and efficiency while raising important ethical and governance considerations. Advances in personalised medicine, diagnostics, and data integration are enabling more targeted and effective treatments, while advanced therapies such as gene and cell therapies offer the potential for curative outcomes but introduce challenges around cost, regulation, and long-term monitoring.

At the same time, regulatory and legal frameworks are struggling to keep pace with the speed of innovation. This creates uncertainty, particularly in areas such as AI, advanced therapies, and digital health, but also presents an opportunity for the sector to play a more active role in shaping adaptive and future-ready regulatory standards. Increasing use of health data is also raising important questions around privacy, governance, and ethical use, requiring robust frameworks to maintain public trust.

Finally, environmental pressures are becoming increasingly significant. Climate change is influencing disease patterns, placing additional strain on healthcare systems, and introducing new risks to medicine stability and supply chains. Alongside this, there are growing expectations for the pharmaceutical sector to reduce its environmental footprint and adopt more sustainable practices across research, development, and manufacturing.

Overall, pharmaceutical medicine is at a pivotal point. The sector must balance rapid innovation with affordability, equity, and sustainability, while maintaining public trust and adapting to a highly dynamic global environment. The ability to respond effectively to these interconnected challenges will determine its success in delivering improved health outcomes over the coming years.

Introduction

Horizon scanning is the process which helps identify emerging themes, trends, and risks that will impact the future of pharmaceutical medicine. The purpose of horizon scanning is to help FPM understand long-term shifts and view potential future developments to enable proactive decision making and strategic planning.

Pharmaceutical medicine operates on the frontier of innovation. As such it needs to be responsive to instability and changes in the following areas:

Political: including the direction of UK and global governmental policies.

Economic: including economic forecast, global trade agreements, governmental spending, and company spending and investments.

Social and health: including changes to the health of the population, evolving demographics, and lifestyles that redefine behaviours.

Technological: including advancements in innovation, technology, and new medicines.

Legal: including changes to laws and regulations.

Environmental: including the effects of climate change, sustainability, and resource challenges.

Understanding these trends enables us to adapt, innovate, and improve how we create positive outcomes. We use horizon scanning to inform our policy and strategic decisions, by providing foresight into how the sector may evolve.

Horizon scanning is about preparing for the future, ensuring that pharmaceutical medicine can continue to evolve in a way that meets the needs of the population, regardless of the challenges ahead.

The trends are based on the best evidence available at the time of publication in 2026 ranging from insights with the FPM membership, Expert Groups and Forums, external journals, political analysis, and policy/research papers.

The implications and possible impact of the trends are intended to present a high-level view, and not an exhaustive list of possibilities. The term 'pharmaceutical medicine' has been used as an overarching term to reflect the breadth of practice of pharmaceutical medicine in a range of settings, including industry.

Pharmaceutical medicine is the medical specialty concerned with the research, development and monitoring of new medicines, digital health technologies, vaccines, medical devices, precision therapies, and diagnostics.

Pharmaceutical physicians work in a range of settings from pharmaceutical, biotech and health technology companies, health regulators, consultancies, and academia.

FPM is the trusted home for pharmaceutical physicians. We set the highest scientific and ethical standards to help unlock the full potential of new medicines and make sure they are as safe as possible for patients.

Political

Geopolitical instability and supply chain resilience

Geopolitical instability, trade deal tensions, and globalisation risks will continue to threaten medicine availability. The pharmaceutical industry will be expected to ensure continuity of supply while managing cost pressures.

Wars in the Middle East region will continue to disrupt pharmaceutical supply routes via the Gulf. Cold chain logistics will be strained, costs will rise, and delays risk compromising critical treatments.

Global conflicts will continue to disrupt healthcare infrastructure, impact the cost of fuel, and in turn drive higher manufacturing and transport costs.

Potential impact on pharmaceutical medicine

- Increased focus for the industry on supply chain resilience and localisation
- Pressure to support equitable global access strategies
- Need to manage risks from market instability and disrupted distribution

Economic

Economic pressures and cost of medicines

Rising healthcare and advanced therapy costs, alongside payer constraints, inflation, and ageing populations, will intensify pricing pressures.

There will be budget tensions between innovation, affordability, and sustainability of healthcare systems.

Decreasing research and investor funding and pressure to “do more with less” are creating sector wide long-term concerns.

Concerns will continue to be raised around maintaining financial incentives for precision medicine and small-population therapies.

Potential impact on pharmaceutical medicine

- Greater emphasis on health economics and outcomes evidence
- Pricing models may shift toward value-based and outcomes-based agreements
- Risk to commercial viability and investment in precision and rare disease therapies
- Increased reliance on AI to improve efficiency and reduce costs
- More portfolio prioritisation and risk-sharing partnerships
- Industry consolidation and lower infrastructural investment
- Potential slowdown in early-stage innovation without alternative funding models
- Increasing interest in repurposing of existing medicines and exploration of previously “shelved” assets

Social and health

Pandemics and emerging diseases

Expectations of future pandemics, outbreaks, and global health threats will remain high. Preparedness, vaccine development, rapid response capabilities, and resilient supply chains are essential to mitigating these risks.

Climate change is expected to drive new disease outbreaks and alter epidemiology while vaccine scepticism and reduced overseas aid funding increase susceptibility.

Potential impact on pharmaceutical medicine

- Increased demand for vaccines and infectious disease preparedness strategies
- Need for rapid-response research and development platforms
- Strategic focus on global surveillance and preparedness
- Need for evidence-based easily understandable healthcare communication

Patient engagement

Patients will continue to be more involved in trial design, outcome selection, and treatment decisions.

The continued proliferation of medical misinformation will continue to be a challenge for public health. It sometimes leads to lack of engagement with healthcare professionals and opting out from therapy (e.g. alternative medicine instead of approved treatments) or prevention (the anti-vax movement).

Potential impact on pharmaceutical medicine

- Increased self-care, digital engagement, and access to online information (including AI and social media) will require pharmaceutical physicians to adapt communication and engagement models
- Ongoing efforts are needed to engage patients meaningfully in the design and delivery of clinical trials

Health equity, diversity and inclusion

Further increase of unequal access to advanced therapies, lack of diversity in clinical trials, data bias, and global health disparities, are expected.

It may be that revised regulator guidelines make sex- and gender-disaggregated data and data on diversity harder to collect, particularly in the US. However, evidence gaps relating to gender, ethnicity, age, and geography in clinical datasets are a persisting global concern as they affect the generalisability of findings from development programmes and post-marketing surveillance.

Potential impact on pharmaceutical medicine

- Pressure to improve diversity and representation (from patients, advocates, regulators and research funders and payors) in clinical trials
- Increased scrutiny on health equity strategies
- Requirement to address data bias and diversity of outcomes using AI and genomics

Preventative medicine and population health

Growing emphasis on prevention, vaccines, screening, lifestyle interventions, and longevity medicine, will continue.

Prevention is a system-level priority shared across medical specialties. Addressing the wider determinants of health alongside medical approaches will be critical to realising the benefits. Prevention is harder to fund and deliver compared with treatment, despite its long-term economic and societal benefits.

The proportion of people aged 65 and over is growing across all high-income countries. Multimorbidity, polypharmacy and frailty result in higher healthcare utilisation with impacts for prescribing, adherence, and pharmacovigilance. Expansion in obesity drugs (e.g. GLP-1s), oncology, and chronic disease prevalence will reshape demand.

Vaccine scepticism is a growing trend not only amongst the public, but also with some governments, for example the US.

A move toward self-care, prevention and lifestyle interventions are evident and will continue to grow.

Potential impact on pharmaceutical medicine

- Growth in long-term treatment markets
- Increased investment in preventative therapeutics and vaccines
- Rising demand for early detection and screening-linked interventions
- Greater integration of patient-reported outcomes
- Expansion into preventative and lifestyle-linked therapies coupled with improvements in health literacy education
- Need for advances in regulatory science to support preventative approaches
- Registries, databases/databanks and decentralised trials will need to play a bigger role to facilitate data collection from wider populations
- Need for pharmaceutical physicians to increase their knowledge of how the role of vaccines, therapeutics and other health technologies will support prevention

Workforce shortages, training, and skills for future pharmaceutical physicians

Pharmaceutical physicians will need to adapt, change, and upskill to stay competitive. Including in AI, data science, genomics, digital health, ethics, health economics, strategy, leadership, and regulatory science to remain relevant and credible.

Maintaining a strong patient-focused approach is central to safe and effective working.

Many clinical-academic physicians will continue to leave both the NHS (and health services globally) and academia due to lack of available funding. This leads to a decrease in the number of doctors with extensive expertise, clinical-academic/clinical educators, and available mentors.

Potential impact on pharmaceutical medicine

- Demand for new skillsets (in AI, data science, and commercial acumen)
- Redefinition of medical affairs and physician roles
- Redefinition of where specialist medical skills and knowledge are needed
- Increasing need for ethical expertise to support the use of and development of new technologies
- Potential workforce disruption and talent shortages

Misinformation, disinformation, and trust

The spread of misinformation via social media and AI threatens trust in science and pharmaceutical medicine. This growing trend poses a great threat to global population health.

Potential impact on pharmaceutical medicine

- Pharmaceutical physicians are increasingly expected to engage more actively in education and credible communication
- Need for pharmaceutical physicians to help build trust through ethical practice
- Need for stronger scientific communication and transparency
- Increased role of medical affairs in education and engagement
- Risk of reduced uptake of medicines and vaccines
- Need for physicians to be able to identify and address AI-generated health misinformation

Technological

Artificial Intelligence across the pharmaceutical lifecycle

AI is the most transformative force in pharmaceutical medicine, affecting drug discovery, molecular design, clinical trials, diagnostics, pharmacovigilance, medical writing, regulatory submissions, HTA, and patient management. This trend and reliance on AI is expected to grow.

Potential impact on pharmaceutical medicine

- While AI offers efficiency and acceleration, there is a need for critical human oversight, realistic expectations, and clarity on where AI adds value versus where it should not replace human judgement
- Significant acceleration of drug discovery and development timelines
- Improved clinical trial design and operational efficiency
- Risk of over-reliance and ethical concerns (e.g. amplification of bias)
- Need for human-AI collaboration frameworks
- Enabling digital therapeutic innovations and interventions

Personalised medicine

There is a strong trend toward therapies targeted by genetic, molecular, biomarker or phenotypic characteristics. This includes pharmacogenomics, biomarker-driven oncology, personalised dosing, and tailored prevention strategies.

Potential impact on pharmaceutical medicine

- Data sets must be representative and biases must be acknowledged
- There will be a need for aligned incentives and removal of access barriers
- Shift toward stratified and personalised treatment approaches, with potentially more targeted, smaller and faster clinical development studies
- Increased need for companion diagnostics
- Commercial challenges due to smaller patient populations and targeted personalised pricing and reimbursement, driving investment decisions

Advanced therapies

Gene therapy, cell therapy, mRNA, CRISPR, antisense oligonucleotides, radioligands, ADCs and regenerative medicine are expected to expand into more common diseases. These therapies challenge traditional development, manufacturing, regulation, reimbursement, and long-term safety monitoring.

Potential impact on pharmaceutical medicine

- Potential for curative treatments and a paradigm shift away from chronic therapies, even for chronic and lifestyle diseases
- Complex manufacturing and regulatory challenges
- High cost and reimbursement barriers

Diagnostics

There is a growing importance of diagnostics and digital therapeutics as devices (imaging, genomic testing, biomarkers, companion diagnostics) to enable targeted treatment. Imaging, AI-supported diagnostics, and genomic screening are increasingly critical to development and clinical practice.

With AI-read diagnostic tests and with the increasing number of tests and biomarkers, there is a risk of over-diagnosis and iatrogenic harm due to clinical interventions for conditions that might have not manifested clinically during a patient's lifetime.

Potential impact on pharmaceutical medicine

- Physicians will have to ensure that their knowledge and expertise remain up to date
- Physicians will need to increasingly ensure that new medicines and diagnostic pathways align to best serve patient needs

Clinical trial innovation

Novel clinical trial design and preclinical model development, alongside decentralised and hybrid trials, use of AI, real-world evidence, non-traditional trial sites, trial recruitment settings, and patient-reported outcomes are reshaping development. These approaches promise speed and inclusivity but raise regulatory, quality and data-integrity challenges.

Increased complexity of recruitment, not just based on speed but also availability, as trials often seek to recruit a specific population.

Potential impact on pharmaceutical medicine

- Maintaining safe and ethical standards is essential to effective and fair clinical trials
- Faster recruitment and greater patient accessibility is a key desirable
- Increased complexity in trial oversight and data integrity
- Requirement for more adaptive and efficient development pathways

Data and Real-World Evidence

The increasing use and reliance of real-world data, utilisation of electronic health records, and a drive towards integrated datasets, is expected to persist.

Potential impact on pharmaceutical medicine

- Enhanced evidence generation beyond clinical trials
- Transformation of HTA and reimbursement decisions
- Need for robust data governance and interoperability
- Increased privacy concerns

Shifting regulatory landscape for advanced therapies, medical devices, and AI

A concern that regulation and governance will lag behind technological advances over the coming years.

Key issues include validation of AI tools, regulatory uncertainty around AI and advanced therapies, and regulatory uncertainty around medical devices. Uncertainty represents challenges to the oversight of safe and effective devices in these markets.

Well-intended regulatory initiatives may stifle innovation if not adaptive, particularly in the early development of diagnostics, AI, and advanced therapies.

Increased complexity is set to continue around the regulation and classification of AI tools and apps as medical devices, their ethical use, accountability, and the risks of unintended consequences.

Potential impact on pharmaceutical medicine

- The need for pharmaceutical physicians to help shape evolving regulatory frameworks rather than react to them
- Need for proactive regulatory engagement, collaboration, and influence
- Risk of innovation slow-down if frameworks are overly restrictive
- Opportunity to shape global standards for AI and precision medicine
- Need to adapt to new regulatory pathways
- Potential delays in market access for AI-enabled tools
- Opportunity to define pharmaceutical standards
- Need for new intellectual property and exclusivity frameworks

Use of health data and privacy

Increased use of self-testing and user health monitoring across genomics, biomarkers, wearable technology, apps, digital therapeutics, drug-device combinations, and AI-enabled medical devices will continue to raise regulatory, ethical, and data-quality questions, alongside opportunities for monitoring and adherence.

Emerging concerns around consent, data ownership, secondary use, privacy, cybersecurity, and equity, are becoming more prevalent.

Potential impact on pharmaceutical medicine

- Physicians must ensure that they understand the consent and data protection requirements before using patient data
- Physicians must understand data governance frameworks applicable to real-world evidence generation and use
- Risk of public backlash if trust is breached
- Need for ethical AI frameworks

Environmental

Climate change and sustainability

Climate change is increasingly linked to worsening health outcomes, changing disease patterns, migration, and health system pressures. The continued rising ambient temperatures driven by climate change also threaten medicine stability, compounding supply risk.

There will be stronger expectations for the pharmaceutical industry to reduce its own carbon footprint, adopt sustainable research and development practices, reduce the carbon footprint of production, and reduce the environmental impact of supply chains.

Potential impact on pharmaceutical medicine

- Physicians will need to embed climate adaptation into pharmaceutical development to ensure new medicines are relevant in a climate-impacted world
- Increased scrutiny on the carbon footprint of research and development and manufacturing, with increased reporting requirements on environmental impacts
- Opportunity for green innovation leadership
- Adoption of green chemistry and sustainable practices
- Redesign of clinical trials and operations to reduce emissions
- Growth in digital and decentralised solutions to minimise travel

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