

Pharmacogenomics Delivery Plan for Wales: ‘Transforming Patient Care in Wales through Pharmacogenomics’

Consultation of Draft Actions: July 2025

Principle	Three-year aim	Deliverable identified	Potential drafted actions for this principle	Benefit/ impact
<p>Principle 1: <i>Establish a robust <u>national governance network</u> in Wales</i></p>	<p>Ensure an MDT, coordinated national approach with defined clinical and academic contributions to the development and implementation of pharmacogenetic services in Wales.</p>	<p>A comprehensive governance pathway for reporting to the Welsh Government through the National Pharmacogenomic Group (NPGG)</p>	<ul style="list-style-type: none"> • Define and implement clear reporting and accountability structures for the delivery of pharmacogenomic services in Wales, ensuring appropriate oversight by Welsh Government. • Establish a national strategic pharmacogenomics network to lead and coordinate developments in genomic informed medicines optimisation across Wales. • Integrate development of pharmacogenomic services within NHS Wales Planning Framework and Delivery Plans, ensuring that decision-making is informed by clinical and implementation realities. 	<p>Establishes national leadership and accountability, ensuring consistent, coordinated pharmacogenomic delivery across Wales.</p>
<p>Principle 2: <i>To ensure <u>sustainable and scalable pharmacogenomic testing</u> across Wales</i></p>	<p>Evaluate and validate the most appropriate testing technologies and enhance the capacity for sustainable pharmacogenomic testing across NHS Wales.</p>	<p>Comprehensive and robust pharmacogenomic testing capabilities through coordinated efforts with national UK and local stakeholders.</p>	<ul style="list-style-type: none"> • Collaborate with partners to assess the feasibility of introducing an equitable pharmacogenomic panel for patient profiling across Wales. • Engage with key stakeholders within and beyond Wales to evaluate the cost-effectiveness and clinical impact of pharmacogenomic testing, informing future commissioning decisions. • Establish an All-Wales Clinical Implementation Network with appropriate representation from precision medicine, to support consistent and coordinated rollout of pharmacogenomic testing across health boards/trusts. • Develop a standardised funding and delivery ecosystem to support the equitable integration of pharmacogenomic testing into routine clinical practice. • Assess the need for a national forecasting model to estimate initial investment, ongoing operational costs, and 	<p>Enables equitable, cost-effective access to pharmacogenomic testing, supporting safer, personalised care and long-term sustainability.</p>

			<p>projected long-term savings from pharmacogenomic implementation.</p> <ul style="list-style-type: none"> • Design and disseminate implementation toolkits to guide local teams, covering clinical pathways, consent procedures, and reporting standards. • Integrate pharmacogenomic testing into value-based healthcare planning, linking implementation to measurable outcomes such as reduced adverse drug reactions and improved treatment efficacy. 	
<p>Principle 3: <i>Enhancing <u>patient awareness and co-production</u> of pharmacogenomic delivery</i></p>	<p>Incorporate patient input in all facets of pharmacogenomic development to improve patient awareness and ensure a patient-centred pharmacogenomic service.</p>	<p>Patient groups and representatives to have increased awareness of pharmacogenomics through all available channels and promote co-production.</p>	<ul style="list-style-type: none"> • Design and implement a targeted public engagement campaign to raise awareness of pharmacogenomic testing, its purpose, benefits, and implications, using inclusive language and a variety of communication channels to reach all communities across Wales. • Embed co-production as a core principle by actively involving patient representatives in the design, governance, and evaluation of pharmacogenomic services through structured mechanisms such as patient panels, sounding boards, and advisory groups. • Collaborate with public engagement partners to gather insights into the concerns, needs, and lived experiences of diverse communities, ensuring pharmacogenomic services are developed in a way that are inclusive, equitable, and culturally sensitive. • Promote ethical and transparent use of pharmacogenomic data by developing and promoting clear guidance on patient consent, data usage, and privacy, aligned with national and international standards. 	<p>Patient centred services are developed, building trust and inclusivity by embedding patient voices and raising awareness of pharmacogenomic benefits.</p>
<p>Principle 4: <i>Developing a <u>pharmacogenomic literate workforce</u> to support the delivery of</i></p>	<p>Ensure widespread understanding and application of pharmacogenomic</p>	<p>Pharmacogenomic training and educational resources tailored to the professional roles of healthcare providers.</p>	<ul style="list-style-type: none"> • Develop and implement a Pharmacogenomics Workforce Development Toolkit and Capability Framework to equip the wider NHS Wales workforce with 	<p>Equips healthcare professionals with the skills to deliver pharmacogenomic</p>

<p><i>pharmacogenomics across NHS Wales</i></p>	<p>principles among healthcare providers.</p>		<p>the knowledge and skills needed to maximise the benefits of pharmacogenomics.</p> <ul style="list-style-type: none"> • Undertake a comprehensive review of existing pharmacogenomics education and training provision to assess its relevance, identify gaps, and inform the development of new or updated learning resources. • Expand the HEIW Genomics Learning Hub to provide targeted education and training programmes, offering tailored content for prescribers, pharmacists, nurses, and other healthcare professionals involved in pharmacogenomic service delivery. • Collaborate with Higher Education Institutions (HEIs) to embed pharmacogenomics into undergraduate and postgraduate curricula, ensuring future healthcare professionals are prepared to integrate pharmacogenomic testing into clinical practice. 	<p>confidently and consistently, supporting service readiness.</p>
<p>Principle 5: <u><i>Embedding pharmacogenomics within day-to-day clinical practice</i></u></p>	<p>Ensure the broader healthcare workforce is equipped to integrate pharmacogenomics into their practice as standard.</p>	<p>A skilled workforce capable of supporting pharmacogenomic testing and implementation within clinical practice.</p>	<ul style="list-style-type: none"> • Identify pharmacogenomics leads within each health board/trust, across relevant professions and directorates, to champion implementation and provide local leadership that supports both strategic direction and operational delivery of pharmacogenomic services. • Develop structured career pathways in pharmacogenomics, including enhanced, advanced, and consultant-level roles for pharmacists and other key professionals, to build long-term capacity and expertise. • Strengthen local and national pharmacogenomic capability by establishing communities of practice and peer support networks that facilitate knowledge exchange and foster a culture of continuous learning across Wales. • Enhance clinical decision-making by ensuring pharmacogenomic results are integrated into clinical systems and supported by decision support tools that guide safe and effective prescribing and treatment choices. 	<p>Integrates pharmacogenomics into routine clinical practice, enhancing prescribing safety while fostering local leadership and clinical ownership.</p>

			<ul style="list-style-type: none"> • Integrate pharmacogenomics into public health surveillance systems to enhance population health outcomes, in alignment with the Pathogen Genomics Delivery Plan. 	
<p>Principle 6: <i>Developing and supporting <u>research and innovation</u></i></p>	<p>Scope and deliver clinical implementation research projects whilst also evaluating pharmacogenomic testing currently commissioned within clinical practice in Wales through the NHSE National Genomics Test Directory (NGTD).</p>	<p>Explore and assess the application of pharmacogenomic testing across various clinical healthcare settings to inform practice and service delivery.</p>	<ul style="list-style-type: none"> • Establish a national pharmacogenomics research community across different sectors e.g. academia and the NHS to lead, coordinate and grow clinical implementation research and innovation across Wales and the UK, aligned with the Genomics Research Plan. • Design and deliver a portfolio of clinical research projects that evaluate the feasibility, effectiveness, and impact of pharmacogenomic testing in routine care, prioritising studies that inform service design, commissioning, and value-based healthcare. • Expand research capacity and capability by promoting interdisciplinary research opportunities and supporting the development of pharmacogenomics expertise from undergraduate through to consultant level across NHS and academic settings, aligned with the Genomics Research Plan. • Promote the ethical and transparent use of patient pharmacogenomic data for research by demonstrating how anonymised data can support innovation, attract external partnerships, and inform future pharmacogenomic commissioning decisions in line with value-based healthcare principles. 	<p>Generates real-world evidence to inform service design and attracts research partnerships to grow pharmacogenomic expertise in Wales.</p>
<p>Principle 7: <i>Horizon scanning for pharmacogenomic testing</i></p>	<p>Ensure a unified approach within NHS Wales for horizon scanning to support the advance planning of a standardised and equitable</p>	<p>Clear channels within NHS Wales for horizon scanning in the delivery of pharmacogenomic testing</p>	<ul style="list-style-type: none"> • Coordinate a national approach to horizon scanning through the National Pharmacogenomics Governance Group (NPGG), enabling NHS Wales to identify and assess emerging pharmacogenomic tests and technologies to support proactive planning and equitable implementation across health boards/trusts. 	<p>Supports proactive planning and prioritisation of pharmacogenomic tests, aligning with new medicines and national health priorities.</p>

	implementation process.		<ul style="list-style-type: none"> • Collaborate with the All-Wales Therapeutics and Toxicology Centre (AWTTC) and other relevant partners to align pharmacogenomic horizon scanning with new medicines assessment and commissioning pathways, and other horizon scanning activities beyond Wales. • Develop a five-year pharmacogenomics implementation roadmap, outlining priority tests for adoption, aligned with Welsh Government priorities, and including indicative timelines and funding requirements. • Embed horizon scanning within pharmacogenomic governance structures, ensuring outputs inform strategic decision-making are integrated with service planning, workforce development, and digital infrastructure initiatives. 	
Principle 8: <i>Pharmacogenomic testing pathway governance and commissioning</i>	Ensure governance structures are in place for various pharmacogenomic testing methods, such as point-of-care testing (POCT), and promote equitable access to these tests. This will help to achieve a more standardised and fair implementation process.	Robust governance channels within NHS Wales to oversee the delivery of pharmacogenomic testing.	<ul style="list-style-type: none"> • Establish a clinical reference group to provide oversight, ensure clinical relevance, and support governance of pharmacogenomic testing pathways across all clinical disciplines. • Develop and implement clear governance frameworks within NHS Wales to oversee the delivery of pharmacogenomic testing, including both point-of-care testing (POCT) and laboratory-based services. • Collaborate with AWMGS to ensure access to specialist commissioning genomic tests in line with the NHSE National Genomics Test Directory (NGTD). • Collaborate with the POCT leadership network in Wales to ensure robust governance, quality assurance, and equitable access to pharmacogenomic POCT technologies across health boards/trusts. • Develop national commissioning guidance to ensure equitable access to pharmacogenomic testing, including POCT, across all health boards/trusts, embedding equity into all commissioning decisions. 	Ensures safe, standardised, and equitable pharmacogenomic service delivery through clear governance and responsive commissioning.

			<ul style="list-style-type: none"> • Explore commissioning pathways for pharmacogenomic tests that are not currently included in the National Genomics Test Directory (NGTD), ensuring that identified clinical needs can be met through appropriate national or local mechanisms, and aligned with value-based care principles to maximise patient benefit in Wales. 	
<p>Principle 9: <i>To establish a reliable digital infrastructure</i></p>	<p>Implement a comprehensive digital solution for managing and utilising pharmacogenomic data.</p>	<p>A digital infrastructure to support pharmacogenomic data.</p>	<ul style="list-style-type: none"> • Engage with pharmacogenomic international data standard development with other UK nations and international countries as a solution for digital interoperability • Ensure pharmacogenomic data is securely stored within national data repositories in Wales which can be made available for research purposes when appropriate access approvals • Embed pharmacogenomic result into e-prescribing platforms to enable advanced clinical decision support • Establish business capability for digital solutions to support future need e.g. pharmacogenomic test requesting and results reporting, genomic lab testing • Establish a transitional roadmap to ensure pharmacogenomic result are available in e-prescribing platforms to support advanced decision support • Ensure the ability to deliver pharmacogenomics is aligned with the national target architecture for medicines 	<p>Enables secure, interoperable pharmacogenomic data use, supporting clinical decision-making and alignment with national digital strategy.</p>