

# ANDREW CHARLWOOD

MPharm, GPhC Registered Pharmacist

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## PROFILE

Healthcare leader combining clinical pharmacy expertise with proficiency in Python, SQL, and data analytics. Self-taught over the past decade through a drive to find root causes in data and build the most efficient solutions to complex problems. Currently leading population health analytics for NHS Norfolk & Waveney ICB, serving a population of 1.2 million. Experienced in leveraging real-world prescribing data at scale to deliver actionable insight via strategic papers or implementing into clinical support tools to inform and support medicines optimisation projects such as pathway development. Proven track record of identifying and prioritising savings programmes worth £14.6M+ through automated, data-driven analysis. Skilled at translating complex clinical, financial, and analytical requirements into clear recommendations for executive stakeholders.

## CORE COMPETENCIES

**Technical:** Python, SQL, JavaScript/TypeScript, Real-world data analysis, dashboard and tool development

**Healthcare Domain:** Medicines optimisation, population health analytics, NICE Technology Appraisal implementation, health economics and outcomes, clinical pathway development

**Strategic & Leadership:** Budget management (£215M), stakeholder engagement, rebate management & negotiation, team development and training, financial modelling, executive level communication

## PROFESSIONAL EXPERIENCE

### Interim Head, Population Health & Data Analysis | NHS Norfolk & Waveney ICB | May–Nov 2025

*Norwich, England | Returned to substantive Deputy Head role following commencement of ICB-wide organisational consultation*

Led strategic delivery of population health initiatives and data-driven medicines optimisation across Norfolk & Waveney ICS, reporting to Associate Director of Pharmacy with presentation accountability to Chief Medical Officer and system-level programme boards.

- Identified and prioritised a £14.6M efficiency programme through comprehensive data analysis; projected to achieve over-target performance as of Jan 2026 through targeted, evidence-based interventions across the ICS.
- Built Python-based switching algorithm using real-world GP prescribing data to automatically identify patients on expensive drugs suitable for cost-effective alternatives. This compressed months of manual analysis into 3 days. This foundational work led to a scheme targeting 14,000 patients with a maximum £2.6M potential annual savings from switches, of which £2M+ is on target for delivery this financial year.
- Creating, planning and deploying a novel GP payment system linking rewards to delivered savings. Supporting delivery with automated analysis available to providers. This approach led to a 30% reduction in targeted prescribing within the first two months of deployment.
- Presented strategy, project progress, and systemic risks to medical director (Chief Medical Officer) on a bimonthly basis.

### Deputy Head, Population Health & Data Analysis | NHS Norfolk & Waveney ICB | Jul 2024–Present

*Norwich, England*

Driving data analytics strategy for medicines optimisation, developing bespoke datasets and analytical frameworks from messy, real-world GP prescribing data to identify efficiency opportunities and address health inequalities across the integrated care system.

- Led internal transformation from team's use of practice-level data to patient-level SQL analytics, enabling targeted interventions and a self-serve model for the wider team
- Managed £215M prescribing budget with sophisticated forecasting models identifying cost pressures and enabling proactive financial planning
- Collaborated with the ICB data engineering team to create a comprehensive medicines data table integrating all dm+d products with standardised strength/cost calculations, morphine equivalent conversions, and anticholinergic burden scoring, providing a single source of truth for all medicines analytics across the system
- Led financial scenario modelling for a system-wide DOAC switching programme, building an interactive dashboard incorporating rebate mechanics, clinician switching capacity, workforce constraints, and patent expiry timelines to quantify risk trade-offs for senior decision-makers.
- Led renegotiation of pharmaceutical rebate terms, securing improved commercial position for the ICB

- Supported commissioning of tirzepatide (NICE TA1026) including financial projections identifying eligible cohorts from real-world data; authored the initial executive paper advocating a primary care delivery model over a specialist provider on cost-effectiveness and accessibility grounds, driving the system's shift to a GP-led model following executive sign-off
- Developed Python-based controlled drug monitoring system calculating oral morphine equivalents across all opioid prescriptions to track patient-level exposure over time, identifying high-risk patients and potential diversion—enabling previously impossible patient safety analysis at population scale
- Educated colleagues on data interpretation and analytics best practices, improving data fluency across the team through training, documentation, and self-serve tools

**High-Cost Drugs & Interface Pharmacist** | NHS Norfolk & Waveney ICB | May 2022–Jul 2024

*Norwich, England*

Led implementation of NICE technology appraisals and high-cost drug pathways across the ICS. Wrote most of the system's high-cost drug pathways—spanning rheumatology, ophthalmology (wet AMD, DMO, RVO), dermatology, gastroenterology, neurology, and migraine—balancing legal requirements to implement TAs against financial costs and local clinical preferences. Engaged clinical leads across all sectors of care to agree pathways and secure system-wide adoption.

- Developed software automating Blueteq prior approval form creation: 70% reduction in required forms, 200 hours immediate savings, and ongoing 7–8 hours weekly efficiency gains
- Integrated Blueteq data with secondary care activity databases, resolving critical data-matching limitations and enabling accurate high-cost drug spend tracking
- Created Python-based Sankey chart analysis tool visualising patient journeys through high-cost drug pathways, enabling trusts to audit compliance and identify improvement opportunities

**Pharmacy Manager** | Tesco PLC | Nov 2017–May 2022

*Great Yarmouth, Norfolk*

Managed all pharmacy operations with full autonomy across a 100-hour contract, leading regional KPI delivery initiatives and contributing to national operational improvements. Served as Local Pharmaceutical Committee representative for Norfolk.

- Identified and shared an asthma screening process that was adopted nationally across the Tesco pharmacy estate (~300 branches), reducing pharmacist time from approximately 60 hours to 6 hours per store per month and enabling the network to claim approximately £1M in revenue
- Led creation of national induction training plan and eLearning modules for all new pharmacy staff, with enhanced focus on leadership development for non-pharmacist team members
- Supervised two staff members through NVQ3 qualifications to pharmacy technician registration; full HR responsibilities including recruitment, performance management, and grievances

## EDUCATION, PROFESSIONAL DEVELOPMENT & REGISTRATION

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**NHS Leadership Academy – Mary Seacole Programme** | 2018 | 78%

*NHS leadership qualification: change management, healthcare leadership, system-level thinking*

**Master of Pharmacy (MPharm), 2:1 Honours** | University of East Anglia | 2011–2015

*Research project on drug delivery and cocrystals: 75.1% (Distinction)*

**A-Levels: Mathematics (A\*), Chemistry (B), Politics (C)** | Highworth Grammar School | 2009–2011

**GPhC Registered Pharmacist** | General Pharmaceutical Council | August 2016 – Present

*References available upon request*