

Case Study

Pharmacist Saves Doctors 182 Hours Per Year

Lewisham and Greenwich
NHS Trust

Results



182 hours per year saved

by analysing prescription data and optimising the electronic system for clinicians



Improved patient outcomes

by proving a strong correlation between pharmacist headcount and drug screening speed



Alwin Raju

Senior Clinical Informatics Pharmacist at Lewisham and Greenwich NHS Trust

Alwin Raju is a Senior Clinical Informatics Pharmacist at Lewisham and Greenwich NHS Trust, which provides healthcare services to communities in London. As part of a dedicated team, Alwin is responsible for designing and managing the electronic prescribing software that clinicians depend on every day. He specialises in analysing the data gathered by the software to draw insights that lead to improved software design, clinician workflows and ultimately patient outcomes.

Learner profile

Job title: Senior Clinical Informatics Pharmacist

Job function: Information Technology

Organisation: Lewisham and Greenwich NHS Trust

Industry: Healthcare

Organisation Size: ~7,000 employees

Programme: Level 4 Data Analyst

Programme Duration: 14 months

Rethinking apprenticeships

Alwin had been coding in Python to automate tasks long before he considered an apprenticeship. However, it was his gradual shift into more of an information technology role that sparked his interest in advanced data analytics and data science.

When he first learned of Cambridge Spark, he was surprised that publicly funded apprenticeships were offered for advanced subjects such as data science and artificial intelligence. He saw the Data Analyst programme as an opportunity to advance his knowledge and apply it directly to his role, and so he enrolled in May 2022.

"I feel apprenticeships have been stigmatised as a second-rate alternative to a university degree. But having completed a master's degree and now approaching the completion of my apprenticeship, I can confidently say that this mode of education is far better suited to the real-world application of skills. The opportunity to learn through work-related projects, with the guidance of experienced professionals, is invaluable and has exceeded my expectations."

Alwin Raju, Senior Clinical Informatics Pharmacist at Lewisham and Greenwich NHS Trust

More patient-facing time for doctors

Alwin identified an opportunity to improve patient outcomes by leveraging data to optimise the electronic prescription system, which would allow doctors to spend more time with patients instead of being stuck in front of a computer.

The electronic prescribing system used at Lewisham and Greenwich Trust has multiple data entry fields, such as medication name, dose and frequency, etc., which doctors are required to populate when prescribing.

The system also offers search suggestions, similar to those given in search engines like Google, drawing from a catalog of medications and dose regimens based on verified clinical data and guidelines. However, it does not offer suggestions when a doctor wants to prescribe a medication/regimen that's not in the catalog. Instead, the doctor is forced to manually type all the required fields.

Within 4 months of starting his apprenticeship, Alwin applied his learnings of SQL, Python, and Pandas from the programme to extract and clean historical prescription data to identify which fields doctors were manually entering. He and his team then used a data-driven approach to update the catalog in the system, saving clinicians an estimated 182 hours per year as a result of the updates.

"One thing I really like is the fact that you can literally press 'submit' on an assignment and get tailored feedback on your code within seconds. That's really useful because it allows you to do the work in your own time. It could be 2:00am, and you're still getting productive feedback."

Alwin Raju, Senior Clinical Informatics Pharmacist at Lewisham and Greenwich NHS Trust

Optimising care amidst staffing shortages

As a clinical pharmacist for four years, Alwin had first-hand experience with the challenges of providing care in the NHS, particularly given the strain on staffing. In an effort to improve patient care, he decided to correlate staffing levels with the number of drugs screened, in order to highlight to management the benefits

of hiring more staff for the pharmacy department's KPI.

The resulting correlation coefficient of 0.88 established a strong positive relationship between staffing levels and the number of drugs screened. Alwin was able to present this data to senior management, enabling them to make more informed decisions about resource allocation and staffing.

Looking ahead to machine learning

Alwin says his current project involves developing machine learning models to forecast pharmacy staffing levels. He expects this will help inform optimal staffing decisions, including how to best time hiring cycles and annual leave.

He plans to continue advancing his knowledge by enrolling in the Level 7 AI and Data Science programme once he completes the Level 4 Data Analyst apprenticeship.