



Vibe coding for Pharmacy analysis with open data

Overview

Predictive AI model for NHS Pharmacy operational stability (national and regional analysis).

Data Sources

- **API:** [NHSBSA Open Data Portal](#)
- **Dataset:** [Consolidated Pharmaceutical List](#)
- **Coverage:** 12 quarters of data (2021-2025)
- **Geographical Mapping:** NHS England region mapping based on postcode prefixes

Core Analysis

- **Individual Pharmacy Analysis:** Analyses 10,000+ pharmacies for supervision requirements and staffing
- **National Summary:** Country-wide trends and multi year staffing analysis
- **Regional Summary:** NHS regional breakdown with geographical insights

Total pharmacies analyzed: 10,522
Average weekly hours: 51.92
Average items per hour: 34.96
Total annual dispensing: 992,916,387

Supervision Requirements Distribution:

- 1 pharmacist: 1,192 pharmacies (11.3%)
- 2 pharmacists: 7,776 pharmacies (73.9%)
- 3 pharmacists: 1,456 pharmacies (13.8%)
- 4 pharmacists: 98 pharmacies (0.9%)

1	2	3	4	5	6	7	8	9
1	ph_region	pharmacy_count	percentage_of_total	avg_weekly_hours	total_weekly_hours	avg_pharmacist_required		
2	London	3025	28.74733334012	53.48122597064	162787.3	2.0838154764417		
3	Midlands					19		
4	South					7		
5	North					15		
6	North							
7	South					19		
8	East of England	570	5.4222062648	53.44079473641	30501.25	2.0481280717544		
9	National Total	10522	100	51.91672818828	549241.0000000	2.047176544885		

Demo use only

AI-Powered Features

- **Pharmacy Finder:** Find nearest pharmacies with Google Maps integration
- **Predictive Analysis:** AI-powered accessibility prediction and trend forecasting
- **Interactive Agent:** Comprehensive AI analyst for detailed insights

#HACA2025

Pharmacy First

Allows community pharmacists to provide advice and treatment for seven common conditions without the need for a GP appointment.

Initiatives: AI Agent for the public

- (1) What's the current date and time?
- (2) Where is the closest open pharmacy?
- (3) Based on regional trends, how likely is this pharmacy to be open next quarter or next year?

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Run Demo – Proof of Concept in development

```
# Run complete analysis
pharmacy-analysis
```

```
# Find nearest pharmacy with Google Maps integration
pharmacy-finder "M15 6JA"
```

```
54 print("🎉 Demo completed!")
55 print()
56 print("💡 Key Features Demonstrated:")
57 print(" • Pharmacy name (trading name)")
58 print(" • Full address with postcode")
59 print(" • Clickable Google Maps search URL")
60 print(" • Regional analysis and trends")
61 print(" • Opening hours and status")
62 print()
63 print("🔗 To use: python src/applications/tools/pharmacy_finder.py [POSTCODE]")
```

GitHub repository:
<https://github.com/chaeyoonyunakim/pharmacy-analysis-with-open-data>
(building with Cursor)

My principles in vibe coding for this example

- (1) Start with small size, reliable data
- (2) Explore the data for basic statistics first, before further prompt AI
- (3) Format and package the codes in house style (ref: [NHS England](#))

Reminder – human in the {modelling} loop!

A human who understands the distinctions between **contextual** and **context-free** processing can effectively govern *modelling*.