Case Study

Eye Doctor Identifies Patient Savings of 88,841 km Traveled, 7,500 kg CO₂ Emissions

Moorfields Eye Hospital NHS Foundation Trust **NHS**

Results

88,841 Kilometres
in patient travel saved

£51,918
in patient transportation costs saved

7,500KG of CO2
emissions saved

17.5% lower complication rate
identified for cataract surgeries

Rishi Ramessur
Ophthalmologist at Moorfields Eye Hospital

Rishi Ramessur is an Ophthalmologist and Digital Fellow at Moorfields Eye Hospital, one of the world's leading eye hospitals, which focuses on the treatment and care of NHS patients with a wide range of eye problems. Apart from his role as an eye surgeon, Rishi works in change implementation, helping design and implement safe, inclusive and user-friendly solutions to clinical care challenges.

Learner profile

Job title: Ophthalmologist & Digital Fellow

Job function: Clinical Care

Organisation: Moorfields Eye Hospital

Industry: Healthcare

Organisation Size: ~1,500 employees

Programme: Level 4 Data Analyst

Programme Duration: 14 months

Cutting carbon impact

Within 5-6 months of starting the apprenticeship, Rishi designed a study to investigate the impact of video vs. in-person consultations on patient time, cost, travel distance and carbon emissions.

The outcomes of his analysis have helped inform the sustainable scaling of the hospital's telemedicine services.

His team have presented their findings at national conferences, attracting the attention of other NHS trusts. Such work will become increasingly important as the nation strives to meet its target of delivering a net-zero NHS.

By combining with data from sources like the Department for Rail and Transport, he determined video consultations have the potential to save this sample of patients 88,841 km in travel distance and 7,500 kg of carbon dioxide emissions.

CambridgeSpark

What drew you to learn data science?

"I often felt disempowered seeing so much data around us but not being able to make good use of it. My core motivation has always been to help improve as many lives as I possibly can. A solid understanding of data can help me do just that, on a much larger scale."

Rishi Ramessur, Ophthalmologist & Digital Fellow at Moorfields Eye Hospital

Linking anaesthetic type with cataract surgery complications

Eye surgeons typically rely on the use of one of two types of anaesthetic when performing cataract procedures: injections around the eye and less-invasive eye drops.

Rishi wanted to understand which type led to more incidents of a specific complication.

By analysing data from 170,000 patients over 10 years of surgeries, his team found that anaesthetic eye drops resulted in a 17.5% lower complication rate compared to other forms of local anaesthetic ($p < 0.001$).

Do you think your colleagues would benefit from the programme?

"I have recommended the programme to a few people. Since we're all surrounded by data, it's really important that we understand the concepts, especially when we're contributing to systems that serve patients. The programme has helped me critically appraise data and avoid bias in my thinking and research."

Rishi Ramessur, Ophthalmologist & Digital Fellow at Moorfields Eye Hospital

Looking ahead to a new role

Rishi is currently looking at cataract procedure data over years to spot any trends over time. He is also looking forward to starting a new role as a Fellow in Clinical Artificial Intelligence.

"I'd like to express my appreciation for the support from the Department of Digital Medicine - in particular, Peter Thomas, Chief Clinical Information Officer, and Konstantinos Balaskas, Director of Moorfields Ophthalmic Reading Centre and Clinical AI Lab. Their inspirational leadership and dedicated guidance have been transformative in my career."

Rishi Ramessur, Ophthalmologist & Digital Fellow at Moorfields Eye Hospital