University of Leicester
AIM studentship project 2026

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Section 2 – *Project Information*

Project Title	Maximising clinical evidence for flexible synthesis of time-to-event and continuous outcomes: Applications to lung cancer and post-operative pain

Project Summary

This PhD is all about using big data to answer important questions in healthcare research. You'll work at the intersection of medicine and data science, figuring out how to appropriately combine results of clinical trials with real-world health records to answer one big question: *Which treatments work best for patients?*

You'll focus on two important areas: lung cancer (where outcomes such as survival are measured over time) and post-operative pain (where pain scores and morphine use change daily). Current methods for analysing these types of data often over-simplify assumptions about data, missing the full picture. Your research will help to resolve these issues, so that organisations like the National Institute for Health and Care Excellence (NICE) can make smarter decisions and improve patient care.

You will learn advanced statistical modelling, data analysis, and R programming. You'll work with large health datasets, build models that handle complex, changing outcomes, and create visuals that make your findings easy to understand. The supervisory team includes academics and clinicians from the Universities of Leicester and Nottingham and you will have the opportunity to collaborate with an industry partner to make sure your work has real-world impact.

References

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6. Monnickendam G, Zhu M, McKendrick J, Su Y. Measuring survival benefit in health technology assessment in the presence of nonproportional hazards. *Value in Health* 2019; 22: 431
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