



Using Data to Improve MSK Medicine

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HDR UK MIDLANDS – TUE 4TH NOVEMBER 2025

GOAL: “Using data to improve outcomes, patient experience, equity, and care-quality at a fair cost, with lower carbon emissions.”

The MSK problem: common, costly... and mostly invisible

THE STATE OF MUSCULOSKELETAL HEALTH 2024

Arthritis and other musculoskeletal conditions in numbers

DATA VERSUS ARTHRITIS

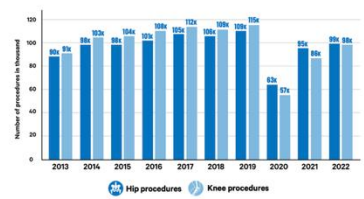


ACCESS TO CARE

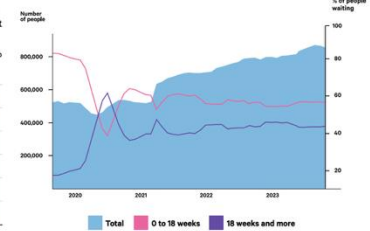
Joint replacements and waiting times

An important treatment for osteoarthritis, when other less invasive interventions have not worked, is joint replacement surgery. Typically, this will be a replacement of the hip or knee.

The number of hip and knee replacements conducted each year from 2013-2022⁴⁰



Number of people waiting for treatment in England⁴¹



In England the waiting list for Trauma and Orthopaedic treatment contains **857,307** people, **6%** have waited over a year for treatment (November 2023 data)⁴² **284,148** (31%) people on the list are waiting with a decision to be admitted to a hospital bed, **13%** of these people have waited over a year (November 2023 data)⁴³ At the waiting list's peak, in March 2021 in England, **17%** of those on the list had been waiting over a year.⁴⁴

In Wales **38,386** people are waiting for Trauma and Orthopaedic treatment with **30%** waiting over a year and **7%** waiting over two years (November 2023 data).⁴⁵

ACCESS TO CARE

In Scotland **88,818** people are waiting for Trauma and Orthopaedic inpatient and outpatient treatment with **14%** waiting for a year (September 2023 data).⁴⁶

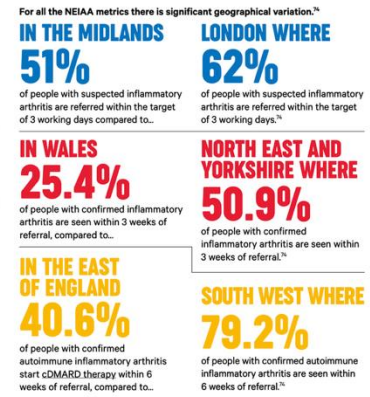
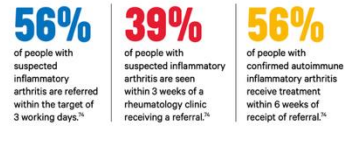
In Northern Ireland **48,845** people are waiting for Trauma and Orthopaedic inpatient and outpatient treatment with **50%** waiting over a year (September 2023 data).⁴⁷

Joint replacement and health inequalities

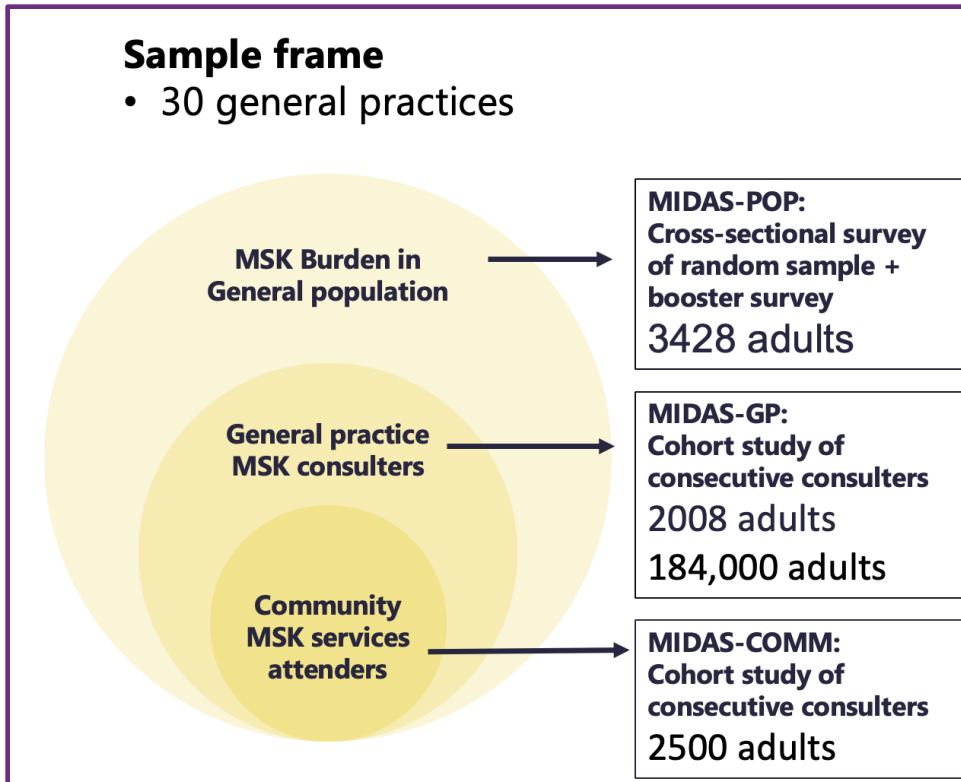
People who experience the most deprivation across England and Wales are more likely to need a hip replacement than those experiencing less deprivation.⁴⁸ Yet those living in deprived areas are less likely to receive an NHS funded hip replacement than those in more affluent areas.⁴⁹

National inflammatory arthritis waiting times

These data come from the National Early Inflammatory Arthritis Audit (NEIAA) which collects data from England and Wales.⁵⁰



MIDAS GP: building a data spine



MIDAS Team

Chief Investigator
George Peat

Co-Investigators

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M-E-L Research Ltd

Accurx

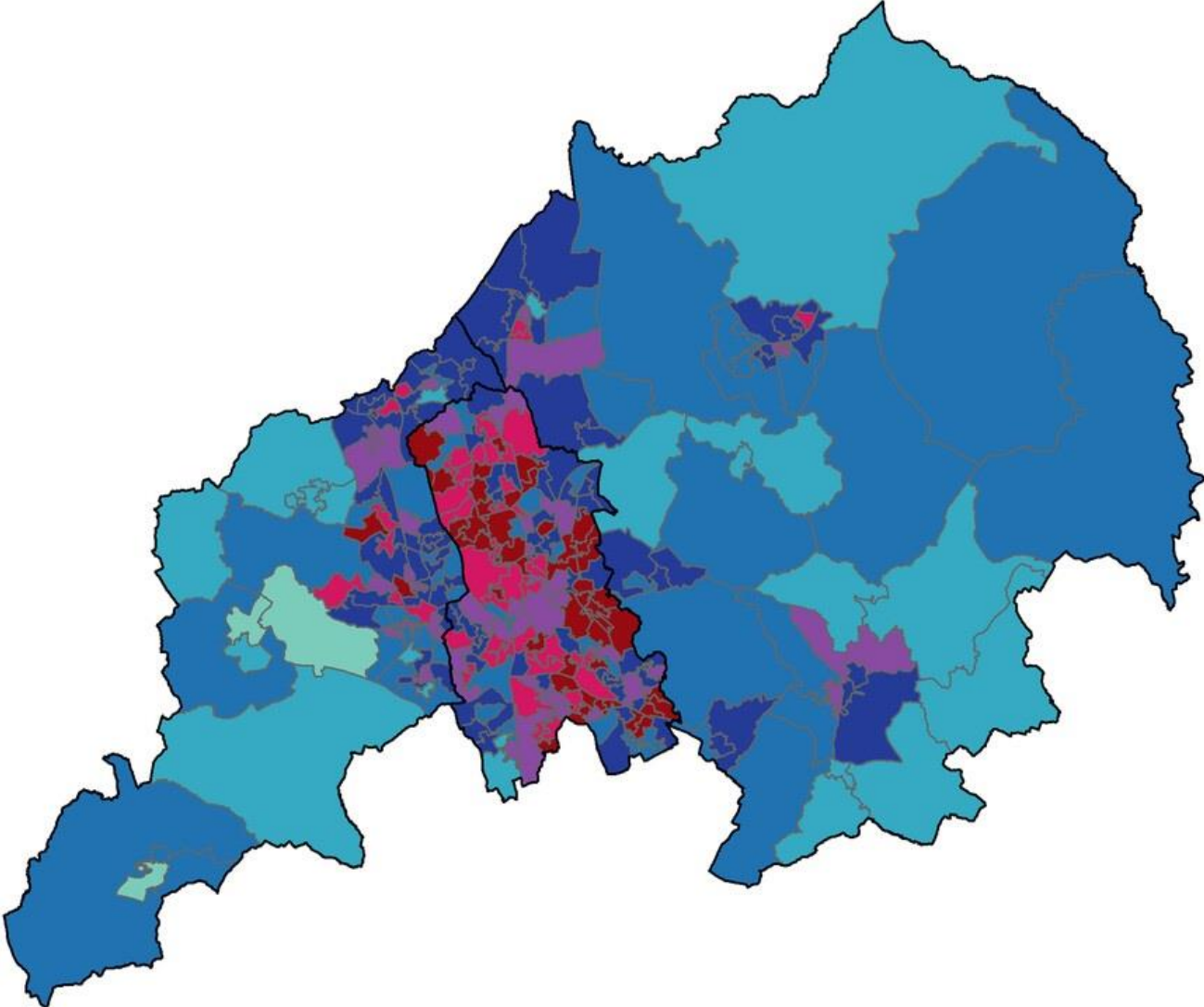
MJog



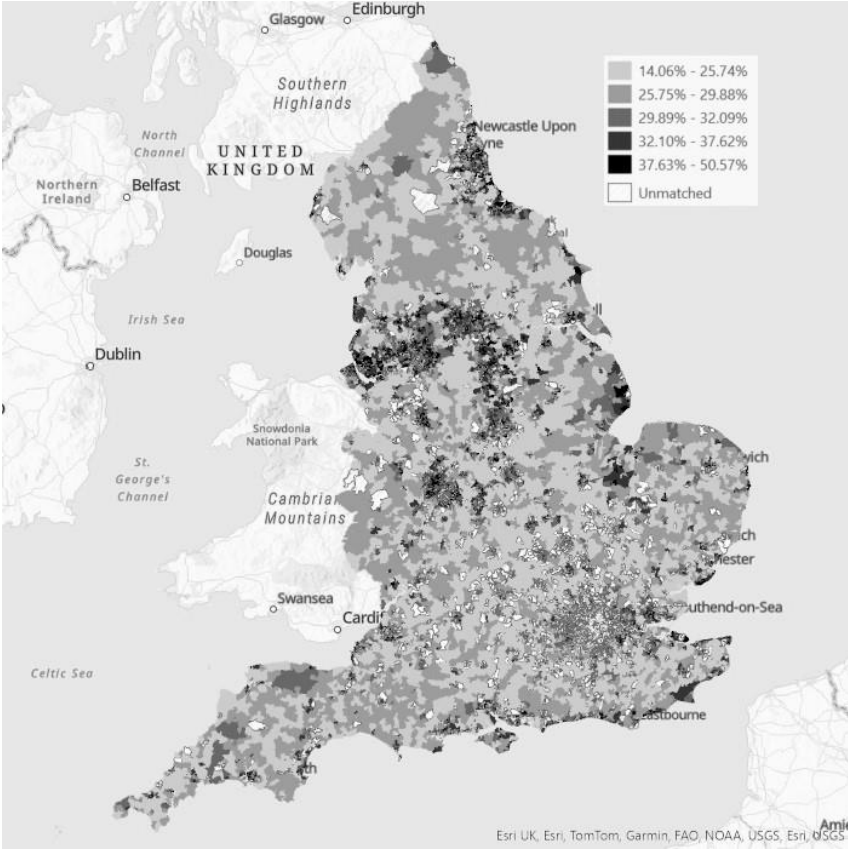
The MIDAS project is funded by the Nuffield Foundation and Versus Arthritis (OBF/43990), but the views expressed are those of the authors and not necessarily the funders. Visit www.nuffieldfoundation.org and www.versusarthritis.org



1. Marked geographical variation



Lynch et al. Eur J Pain 2023

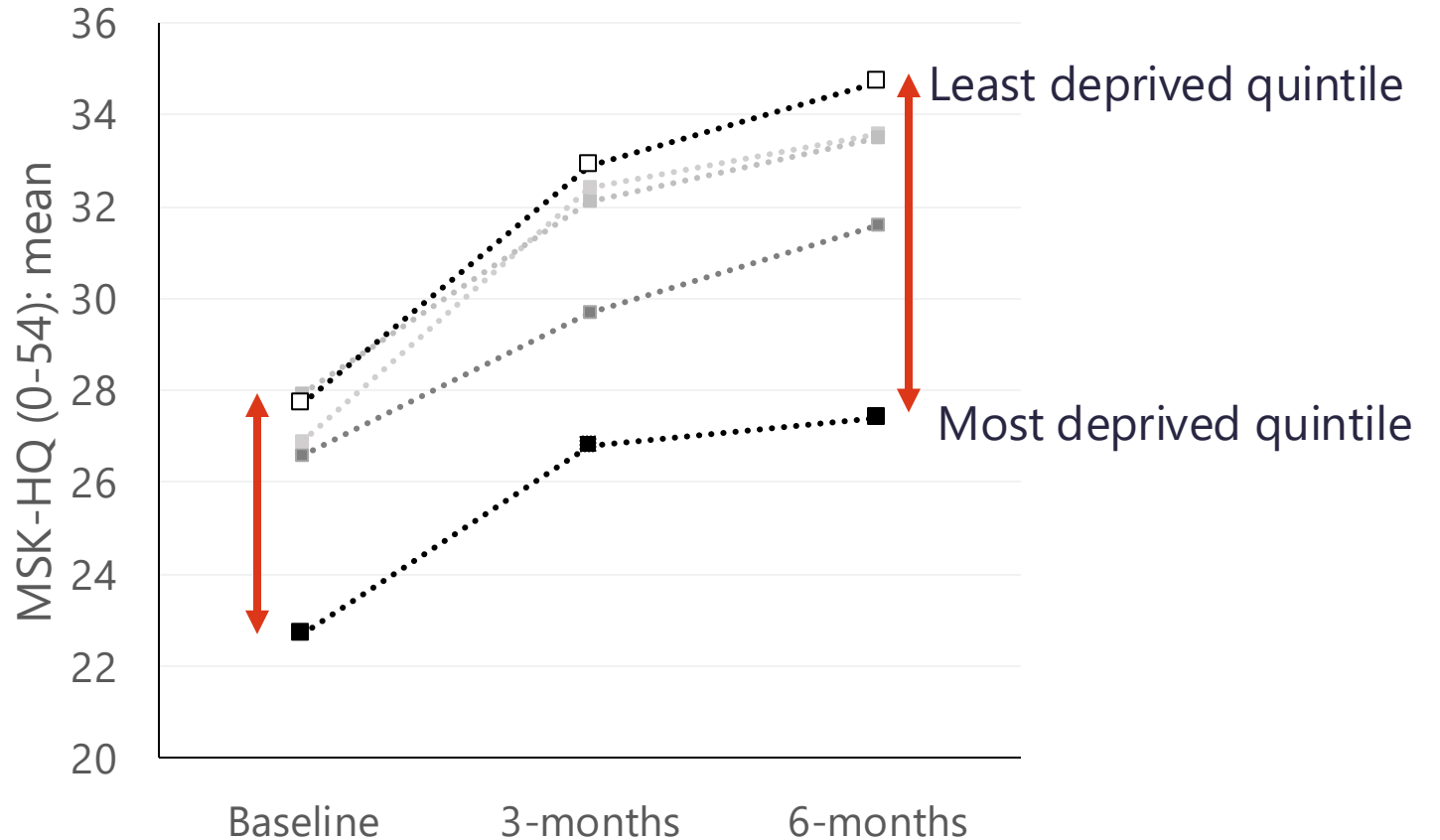


Quinn et al. J Public Health (Oxf) 2024

2. Inequalities persist

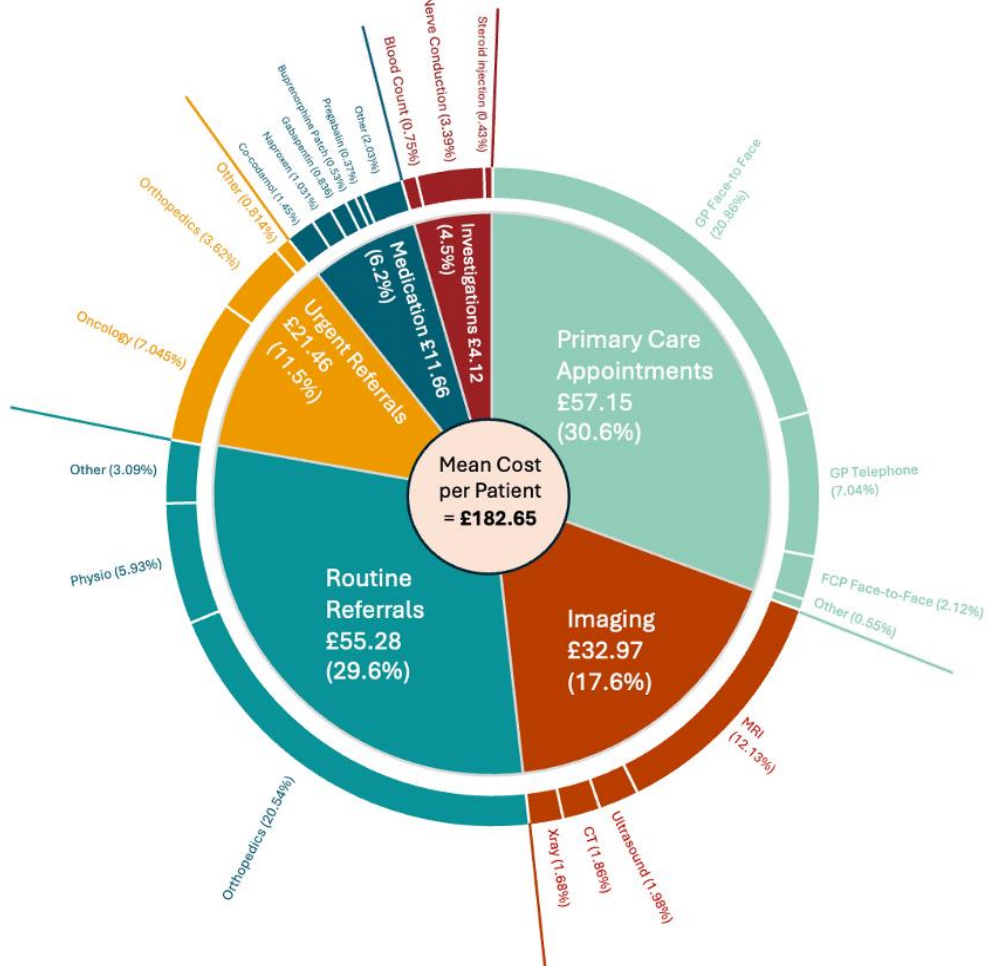
Musculoskeletal Health Questionnaire
Hill et al 2016

| | | | | | |
|---|--|---|--|---|--|
| 1. Pain/stiffness during the day How severe was your usual joint or muscle pain and / or stiffness overall during the day in the last 2 weeks? | Not at all <input type="checkbox"/> 4 | Slightly <input type="checkbox"/> 3 | Moderately <input type="checkbox"/> 2 | Fairly severe <input type="checkbox"/> 1 | Very severe <input type="checkbox"/> 0 |
| 3. Walking How much have your symptoms interfered with your ability to walk in the last 2 weeks? | Not at all <input type="checkbox"/> 4 | Slightly <input type="checkbox"/> 3 | Moderately <input type="checkbox"/> 2 | Severely <input type="checkbox"/> 1 | Unable to walk <input type="checkbox"/> 0 |
| 5. Physical activity levels How much has it been a problem for you to do physical activities (e.g. going for a walk or jogging) to the level you want because of your joint or muscle symptoms in the last 2 weeks? | Not at all <input type="checkbox"/> 4 | Slightly <input type="checkbox"/> 3 | Moderately <input type="checkbox"/> 2 | Very much <input type="checkbox"/> 1 | Unable to do physical activities <input type="checkbox"/> 0 |
| 6. Work/daily routine How much have your joint or muscle symptoms interfered with your work or daily routine in the last 2 weeks (including work & jobs around the house)? | Not at all <input type="checkbox"/> 4 | Slightly <input type="checkbox"/> 3 | Moderately <input type="checkbox"/> 2 | Severely <input type="checkbox"/> 1 | Extremely <input type="checkbox"/> 0 |
| 8. Needing help How often have you needed help from others (including family, friends or carers) because of your joint or muscle symptoms in the last 2 weeks? | Not at all <input type="checkbox"/> 4 | Rarely <input type="checkbox"/> 3 | Sometimes <input type="checkbox"/> 2 | Frequently <input type="checkbox"/> 1 | All the time <input type="checkbox"/> 0 |
| 9. Sleep How often have you had trouble with either falling asleep or staying asleep because of your joint or muscle symptoms in the last 2 weeks? | Not at all <input type="checkbox"/> 4 | Rarely <input type="checkbox"/> 3 | Sometimes <input type="checkbox"/> 2 | Frequently <input type="checkbox"/> 1 | Every night <input type="checkbox"/> 0 |
| 12. Understanding of your condition and any current treatment Thinking about your joint or muscle symptoms, how well do you feel you understand your condition and any current treatment (including your diagnosis and medication)? | Completely <input type="checkbox"/> 4 | Very well <input type="checkbox"/> 3 | Moderately <input type="checkbox"/> 2 | Slightly <input type="checkbox"/> 1 | Not at all <input type="checkbox"/> 0 |
| 13. Confidence in being able to manage your symptoms How confident have you felt in being able to manage your joint or muscle symptoms by yourself in the last 2 weeks (e.g. medication, changing lifestyle)? | Extremely <input type="checkbox"/> 4 | Very <input type="checkbox"/> 3 | Moderately <input type="checkbox"/> 2 | Slightly <input type="checkbox"/> 1 | Not at all <input type="checkbox"/> 0 |



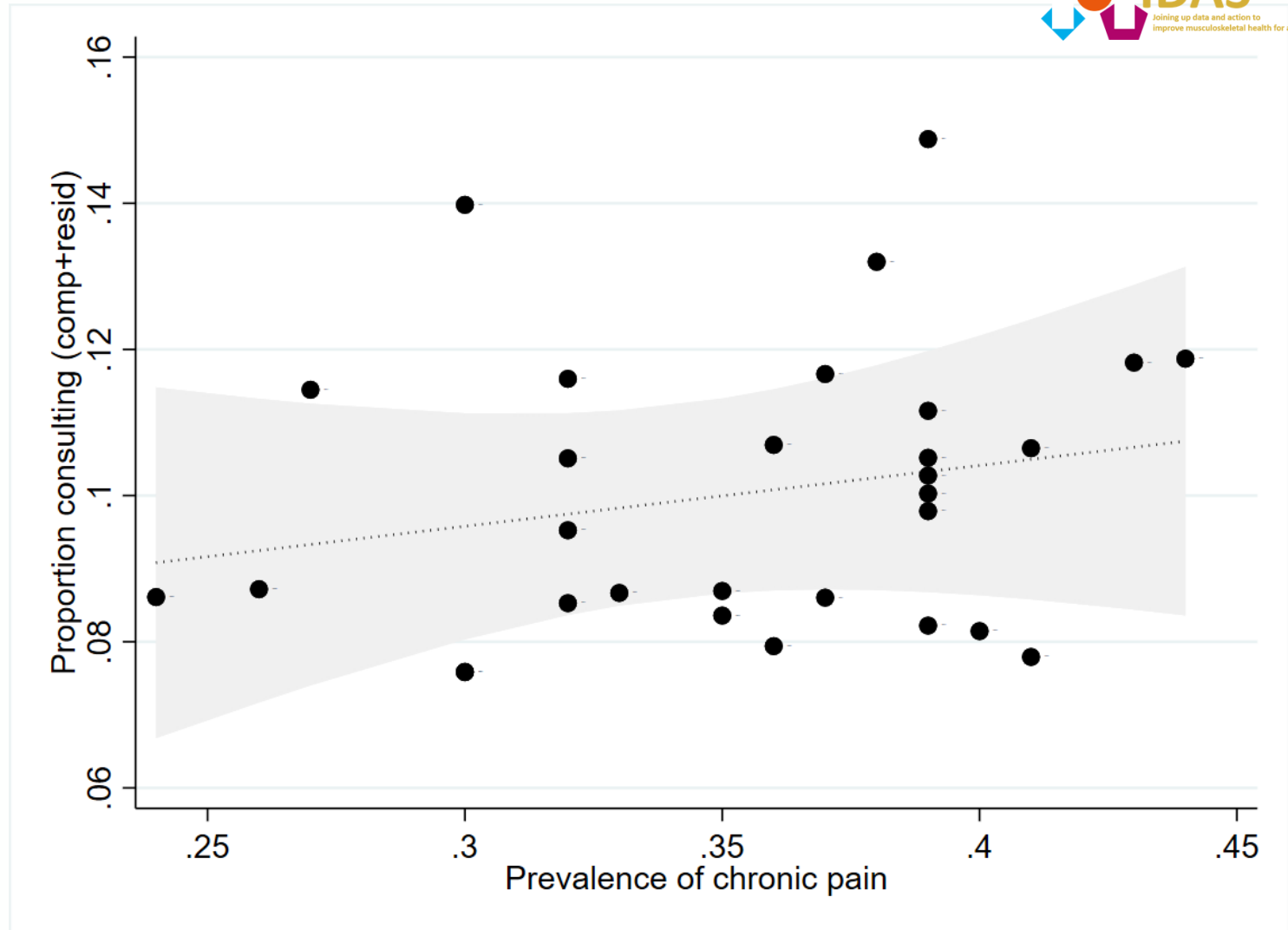
Peat et al., 2025

3. Cost and carbon are not the same



4. Unmet need signal:

**‘Unexplained’
variation in
consultation rates
between GP practices**



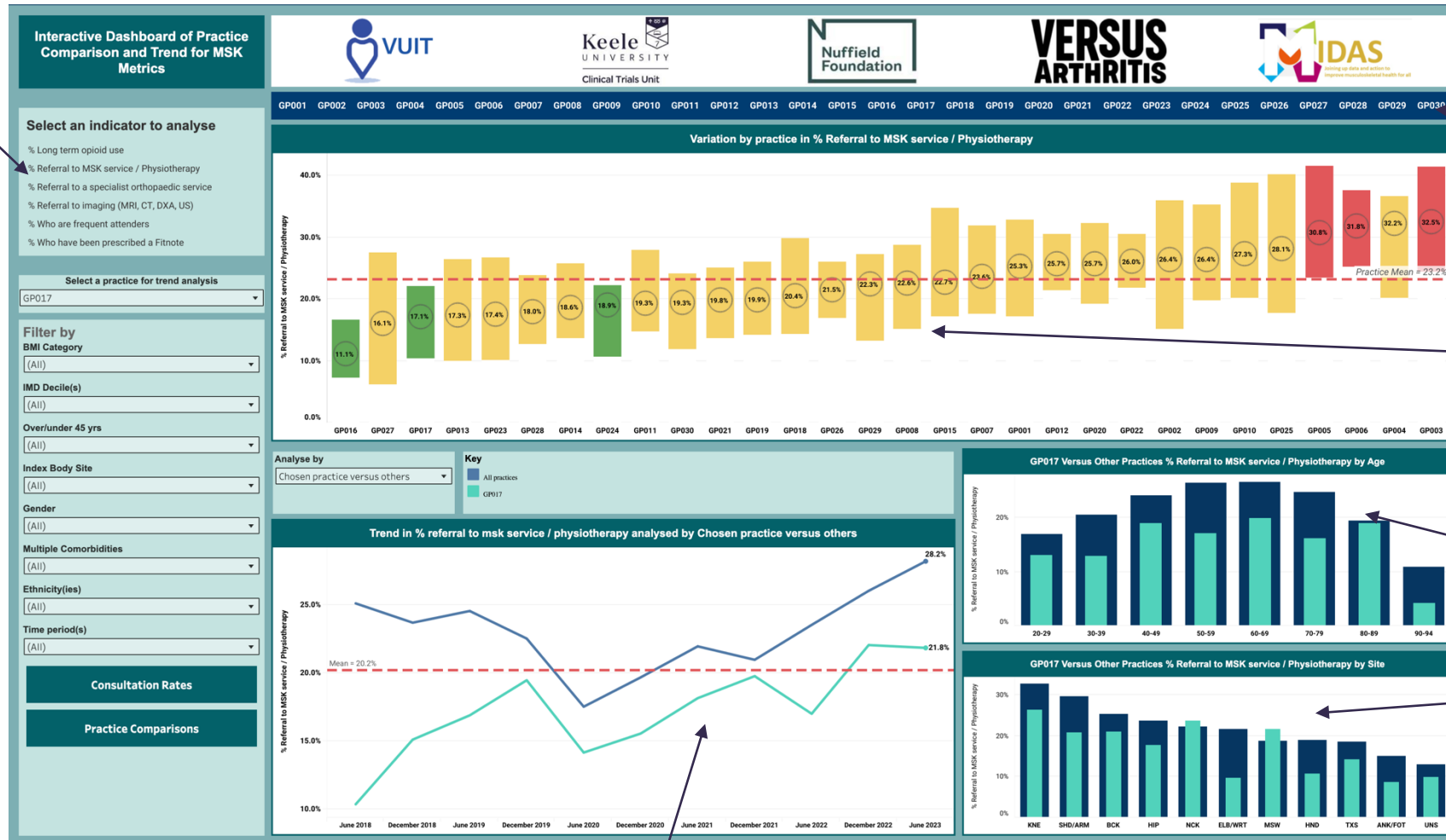
adjusted for length of recruitment period, live in December, % registered adult population female, % registered adult population aged 65+ years

Peat et al., *Prim Health Care Res Dev* (in press)

The MIDAS-GP MSK Dashboard

MSK metrics

Filters



Practices

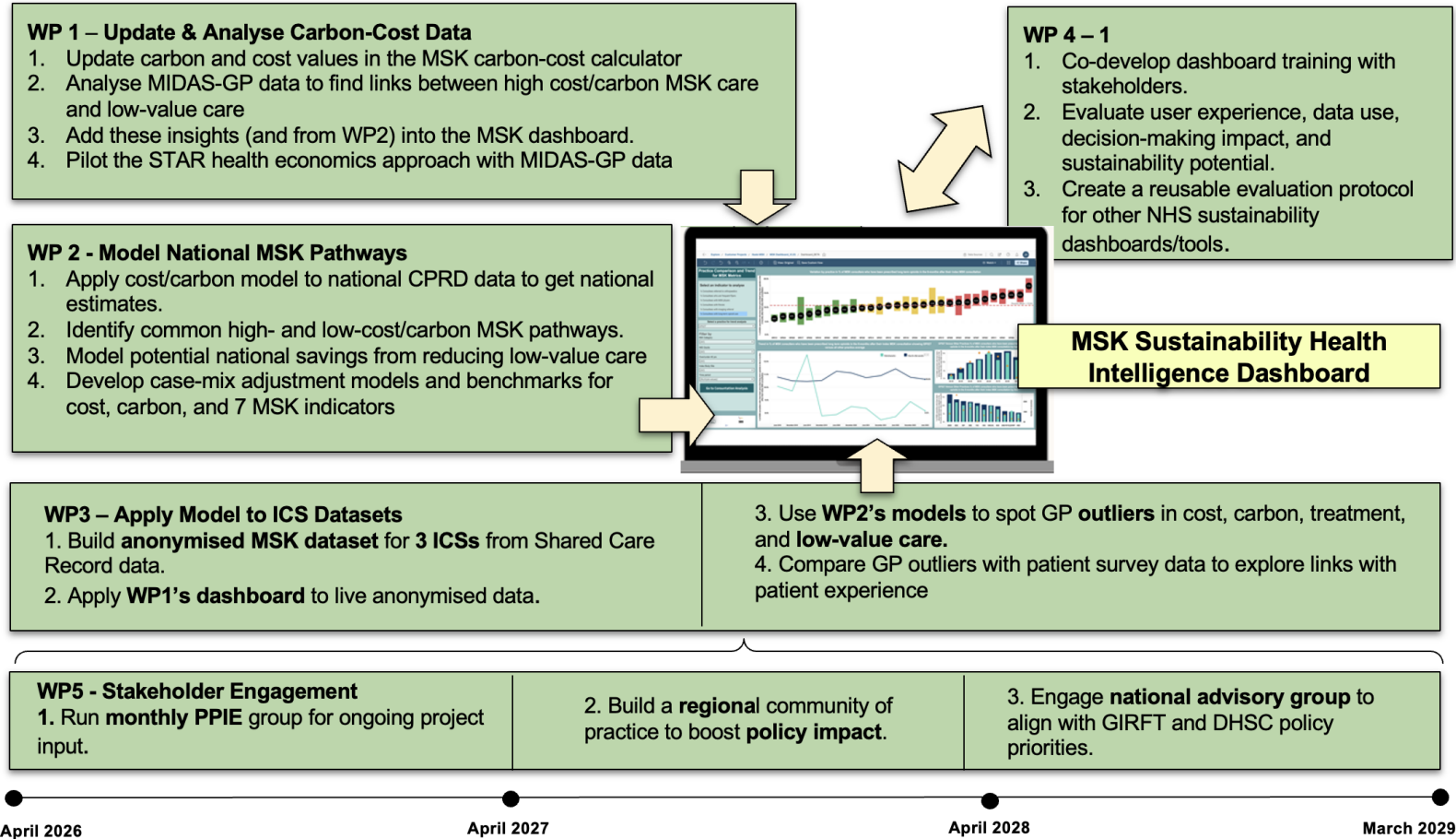
Variation

Age split

Body site split

Trends

The GREEN MSK Project – NIHR decarbonising call



National Community MSK Audit (NHS & private)

NHS

Keele UNIVERSITY EST 1949

Study Research Society Business About

Keele's National MSK Audit Onboarding (online form) Clinical templates FAQs Live sites

Home > Keele's National MSK Audit

Keele's National MSK Audit

The National MSK Audit and Research Database project at Keele University seeks to collate, analyse, and report real-world quality data for musculoskeletal (MSK) community and primary care services (focused on community MSK services and First Contact Practitioner (FCP) primary care services) in order to develop a learning health system approach.

Onboarding (online form) >

This project aims to evaluate the feasibility of a prototype MSK database for providing enhanced health intelligence across community MSK services to improve the quality of care in this setting. It will include real-world patient and clinician inputted data to measure the quality and effectiveness of care provision for patients presenting with common MSK conditions including joint, muscle, or back pain/symptoms.

Private

Keele UNIVERSITY EST 1949

Study Research Society Business About

Data for Impact How to get involved Data collection process Using the DfI platform

Home > Data for Impact

Data for Impact

National MSK database for private practice

Aims of the project

The primary goal of the DfI is to support private MSK physiotherapists in delivering high-quality, evidence-based care. Through systematic data collection and analysis, the project helps clinics to identify best practice and implement data driven quality improvements in patient care.

Project advancements

Established in 2014 at the University of Brighton, the DfI project moved to Keele University in 2024, where it has been aligned with the Keele's National MSK Audit, enabling comparisons across private and NHS settings.

Since moving to Keele University, the DfI project has undergone significant development, with a focus on streamlining the data collection to reduce administrative burden and enhancing the reporting to improve the way in which data is used to inform clinical practice. By integrating automated, standardised data collection and developing secure, user-friendly dashboards, the project aims to deliver meaningful and relevant analysis and benchmarking that supports reflective practice and quality improvement in musculoskeletal physiotherapy.

In parallel, anonymised DfI data is contributing to a national database that enables academic research, with access made available to MSc and PhD students at Keele to support high-quality research and the development of evidence-informed care pathways.

| | |
|-------------------------|--|
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| Principal Investigator: | Dr Shemane Murtagh |
| Co-investigators: | Professor Kelvin Jordan, Dr Roanna Burgess, and James Bailey |

<https://www.keele.ac.uk/nationalmskaudit/>

<https://www.keele.ac.uk/dataforimpact/>

Thank you

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