

Keele Core Sets of SNOMED CT Concept IDs: MIDAS MSK-Relevant Primary Care Referrals and Processes of Care (Adult). Supporting Documentation

Version: 1.0; Date: 2023-03-31

**Authors:** Kelvin Jordan, James Bailey, Simon Wathall, Jonathan Hill, Emma Parry, George Peat

**Correspondence to:** [j.bailey4@keele.ac.uk](mailto:j.bailey4@keele.ac.uk)

# PURPOSE

To define a series of lists of SNOMED CT Concept IDs suitable for practical application in UK primary care data for identifying potentially MSK-relevant primary care referrals and related processes of care in adults with a musculoskeletal pain condition.

# SCOPE

MSK-relevant referrals and processes of care defined using codes frequently recorded in primary care.

The full list of code lists produced and a link to downloadable versions can be found in Appendix A.

# METHODS

The information below provides details of the steps followed to derive the code lists. Figure 1 provides a summary.

## Templates

Simon Wathall of the Keele Clinical Trials Unit extracted the SNOMED codes associated with the pre-defined templates which were specified in the study. This included First Contact Physician (FCP) template, MSK-HQ, Start MSK and STarTBack.

## Referral and Process of care code lists

## Independent search of NHS digital SNOMED Concept ID national usage 2019-20 & 2020-2021

Using the NHS digital SNOMED Concept ID national usage 2019-20 & 2020-2021, JH and JB searched for key words related to each of the referral and processes of care. They saved any instance to be included in the combined code lists.

## Reducing the number of Concept IDs for practical application

The number of Concept IDs remaining was felt to be impractical to apply in practice, and was likely to include a large proportion of codes infrequently used in practice. A stepwise methodology was undertaken to reduce the number of codes identified in the final code lists.

For each code lists any duplicate Concept ID’s were removed. Utilising the NHS digital SNOMED national usage data the usage rate was calculated per 10,000 persons in England, this rate was linked to each of the identified SNOMED Concept ID’s. To be included in the final lists the Concept ID had to have a rate of ≥0.5/10,000 persons. This reduced the lists to the penultimate version.

## Finalising the Core Set

For each of the code lists, a final relevance check was performed by GP, EP and JH. Prior to the check any instances where the Concept ID included descriptive terms including ‘(observable entity)’, ’(regime/therapy)’, ‘(environmental)’, ‘(occupation)’, ‘drug induced’, ‘(finding)’, ‘(situation)’, ‘(procedure)’ or ‘family history’ were highlighted and specific instances were indicated for retention with the remaining instances removed.

The final lists of the sets of SNOMED CT Concept IDs and the number of codes within each listis provided in Appendix A.

Downloadable versions and the process for creating each of the lists can be found at:

[GitHub](https://github.com/JTB1983/MIDAS)

[OSF](https://osf.io/e542w/)

[Keele](https://www.keele.ac.uk/mrr/codelists/) University Data Repository (Link to be added)

# USING THE CODELISTS

Keele University is a member of the [UK Reproducibility Network](https://www.ukrn.org/) and committed to the principles of the [UK Concordat on Open Research Data](https://www.ukri.org/wp-content/uploads/2020/10/UKRI-020920-ConcordatonOpenResearchData.pdf). We have a longstanding commitment to sharing data from our studies to improve research reproducibility and to maximise benefits for patients, the wider public, and the health and care system.

We encourage the use of the codelists with appropriate citation and acknowledgement. The codelists are covered by an open source MIT License.

MIT License

Copyright (c) 2021 Keele University

Permission is hereby granted, free of charge, to any person obtaining a copy

of this software and associated documentation files (the "Software"), to deal

in the Software without restriction, including without limitation the rights

to use, copy, modify, merge, publish, distribute, sublicense, and/or sell

copies of the Software, and to permit persons to whom the Software is

furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all

copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR

IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,

FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE

AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER

LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,

OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE

SOFTWARE.

# ACKNOWLEDGEMENTS

The MIDAS project has been funded by the Nuffield Foundation and Versus Arthritis (OBF/43990), but the views expressed are those of the authors and not necessarily the Foundation or Versus Arthritis. Visit [www.nuffieldfoundation.org](http://www.nuffieldfoundation.org)

 NHS Digital SNOMED usage data was used to develop the final code lists used in this study, the data can be located at <https://digital.nhs.uk/supplementary-information/2022/snomed-code-usage>

Figure 1.Process of selecting Keele Core Sets of SNOMED CT Concept IDs: MIDAS MSK-Relevant Primary Care Referrals and Processes of Care (Adult).

Search of NHS Digital usage data 2019-20, 2020-2021

Codes with a usage rate in England of less than 0.5/10,000 persons removed

Relevance check performed by Keele Academic HCPs and Epidemiologists

Code list PATHWAY

Template PATHWAY

Existing templates code lists extracted by Simon Wathall (Keele CTU)

## **APPENDIX A.** Keele Core Sets of SNOMED CT Concept IDs: MIDAS MSK-Relevant Primary Care Referrals and Processes of Care (Adult). Version 1.0, 2023-03-31

|  |  |
| --- | --- |
| Code lists | Number of SNOMED Concept ID’s |
| Referral to Emergency department | 7 Concept IDs |
| First Contact Physician (FCP) template | 75 Concept IDs |
| Referral to Physiotherapy Musculoskeletal (MSK) | 19 Concept IDs |
| Seen by Physiotherapist | 20 Concept IDs |
| Referral to Orthopaedics | 12 Concept IDs |
| Referral to Rheumatology | 4 Concept IDs |
| Referral to Pain Clinic | 7 Concept IDs |
| Referral to Pharmacy | 2 Concept IDs |
| Referral to Neurology | 17 Concept IDs |
| Referral to Occupational therapist | 10 Concept IDs |
| Referral to Podiatrist | 19 Concept IDs |
| Referral to Prosthetics and orthotics | 2 Concept IDs |
| Advice education and self-management | 31 Concept IDs |
| Referral to Social Prescribing | 7 Concept IDs |
| Work, vocational and occupational status and assessment | 30 Concept IDs |
| MSK-HQ | 18 Concept IDs |
| Start MSK | 17 Concept IDs |
| STarT Back | 5 Concept IDs |
| Imaging (MRI, Xray, etc.) | 165 Concept IDs |