

Networked Data Lab Wales

Shielding patients during COVID-19.

Methodology Output 1: Demographics of the shielded patients in Wales

Description	Supporting methodological document for the Health Foundation funded Networked Data Lab Wales centralised analysis, Output 1. Summary of methodology used to produce shielding cohort and to determine the demographics of the shielding patients during COVID-19.
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1. Overview

Shielding was introduced in Wales on 23rd March 2020, to protect a section of the population deemed to be clinically vulnerable to the effects of COVID-19.

Those at “high risk”/extremely vulnerable to serious illness if exposed to coronavirus were identified on the Shielded Patient List (SPL) held by NWIS (NHS Wales Informatics Service). Details on how shielded patients were identified are available here:

<https://nwis.nhs.wales/coronavirus/coronavirus-content/coronavirus-documents/covid-19-high-risk-shielded-patient-list-identification-methodology>. The anonymised list of shielded patients was made accessible within the Secure Anonymised Information Linkage (SAIL) Databank to support this analysis. All research conducted has been completed under the permission and approval of the SAIL Independent Information Governance Review Panel project number 1224.

This document provides the methods for Output 1 of the Health Foundation funded Networked Data Lab Wales centralised analysis to determine the demographics of the shielding patients during COVID-19. This should be referred to alongside the Health Foundation *The Networked Data Lab*:

Statistical analysis plan for a descriptive analysis of the shielding patients during COVID-19 (October 2020).

2. Methods

This output was based on the Wales SPL table (listed as “CVSP_SHIELDED_PATIENTS_20201112”) in the SAIL Databank.

The SPL table contains over 174,000 entries of anonymised patient records (including multiple entries per individual) for those identified as at high risk, and the date they were identified and added to the SPL.

Individuals age, gender and address were ascertained from the SPL, or if missing from the Welsh Demographic Service Dataset, after linkage on the unique patient identifier (ALF_pe). To note, the patient address is only provided as Lower Super Output Area (LSOA) code.

Following linkage the actions below were undertaken to clean and de-duplicate the dataset:

Exclude SPL entries with

- missing unique anonymised patient identifier (ALF_PE)
- missing sex and age
- missing date added to the list unless patient added manually by a GP or care team (This is because a manual addition by a GP or care team did not provide date added information).
- where the entry did not meet acceptable levels of data linkage (ALF_STS_CD of 1, 4 or 39¹).

Data cleaning focused on patient address

- If a patient was listed with multiple addresses, the first occurrence of this patient was taken.

The Health Foundation Statistical Analysis Plan stated that the shielded population was to include only those **resident in Wales, alive and identified on a shielding patient on or before the 31st July 2020.**

Therefore we excluded the following;

- patients identified in the SPL **after 31st July 2020**
- patient died **on or before the 31st July 2020**
- patients who had left the address listed on the SPL before 1st March (i.e. they would not have received the notification letter).

This resulted in a cohort of 128,690 patients.

For analysis of the cohort,

- **Age:** patients ages were calculated as of the 01/03/2020
- **Deprivation and Urban/rural classification:** Deprivation quintile and urban/rural classification were assigned to the patient LSOA as of the 1th March 2020, linked to the 2014 Welsh Index of Multiple Deprivation². Where a patient LSOA was unknown they were categorised as unknown for deprivation and urban/rural classification.
- **Reason for shielding (non-exclusive - categories from NHS Digital):** The SAP included 9 pre-defined different categories/reasons for addition to the SPL via the clinical algorithm

(Appendix 1). Those who were *identified by GP* were listed defined as ‘Other’. If a patient was added to the list by a GP and for one or more of the pre-defined shielding reasons, they were categorised as being added through the clinical algorithm only.

- **Reason for shielding multimorbidity:** Patients were grouped into one of the following
 - **1 category** (patients with a single shielding category (1 to 9) identified in the clinical algorithm, and not identified by GP)
 - **more than 1 category** (patients with multiple shielding categories (1 to 9) identified in the clinical algorithm)
 - **unknown** (where there was a lack of certainty on the number of reasons a patient might be added. This included
 - patients with a single shielding category (1 to 9) identified in the clinical algorithm and was *identified by GP* - we do not know whether the GP added this patient to the list for the same reason they were identified in the clinical algorithm.
 - patients only identified by GP - as they may have multiple reasons for shielding.
 - Patients where the method of addition to the SPL and reason for shielding was unknown.

NDL WALES Membership

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References

1. Lyons, R. A., Jones, K. H., John, G., Brooks, C. J., Verplancke, J. P., Ford, D. V., ... & Leake, K. (2009). The SAIL databank: linking multiple health and social care datasets. *BMC medical informatics and decision making*, 9(1), 3.
2. Welsh Government. *WIMD 2014* [Internet]. 2014. Available from: <https://stats.wales.gov.wales/Catalogue/Community-Safety-and-Social-Inclusion/Welsh-Index-of-Multiple-Deprivation/Archive/WIMD-2014> [Accessed 10th December 2020].

Appendix 1: Reasons for shielding using clinical algorithm

Vulnerable Category Number	Reason for Shielding
1	Solid organ transplant
2	Cancer
3	Severe respiratory disease
4	Solid organ disease
5	Rare diseases
6	Immunosuppression therapy
7	Pregnancy with congenital heart disease
8	Renal dialysis
9	Other