

COVID-19

High risk shielded patient list identification methodology

Version: 2.0

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Version history

Version	Publication Date	Summary of changes
1.0	3 rd April 2020	
2.0	7 th May 2020	Following a second phase of central searches which: Increased search period for APC searches Amended ICD10/OPCD code set Amended immunosuppressant search for consistency Inclusion of additional data sources E.g. GP data through Audit+

Introduction

The Chief Medical Officer (CMO) for England, working with the CMOs of the devolved nations and other senior clinicians, commissioned NHS Digital to produce a list of people at “high risk” of complications from COVID-19, who should be shielded for at least 12 weeks.

<https://digital.nhs.uk/coronavirus/shielded-patient-list/>

The CMO for Wales commissioned a collaboration of national bodies in Wales (NWIS, DU, NWSSP, PHW) to identify “high risk” people for the Welsh population, based largely on the NHS Digital methodology.

This list is referred to as the Shielded Patient List (SPL). The “high risk” list was defined as a subset of a wider group of people who may be “at risk”. Specific advice applies to these groups, currently this advice is:

- “At Risk” – large group normally at risk from the flu - should practice strict social distancing
- “At high risk” – a smaller sub-group (circa 70k), defined by CMO – should practice complete social “shielding”

NHS Digital have described the methodology that has been used to identify patients who meet the high risk criteria due to their inclusion in one or more of the disease groups. As there are differences in some of the systems used across the devolved nations, nuanced differences in application and interpretation of CMO guidance, this document describes the Welsh methodology.

Clinical assurance

Where possible, the Welsh approach has been to use the NHS Digital methodology and codes to support the identification of patients but where systems and access to alternative data are different, NHS Wales has sought clinical advice in relation to the application of methods. This process included clinical input from the Wales Cancer Networks, Welsh GPs, the Welsh Analytical Prescribing Support Unit, the Congenital Anomaly Register & Information Service and from Intensive Care clinicians.

Whilst a systematic approach to generation of the list of shielded patients was undertaken in a manner consistent to that being followed across the home nations, it is recognised that this approach does have limitation. These include:

- the use of centrally held administrative data to identify patients
- the inaccuracy of the underlying data
- the incompleteness of the underlying data
- the speed at which the list was required
- evolving intelligence and understanding

It is also worth highlighting that where categories are based on the coding within APC data, NHS Wales has a 95% coding completeness within 3 months.

It was agreed that these limitations would be mitigated by enabling primary care clinicians to be able to add to the list locally.

Data used

In an attempt to reduce burden on primary and secondary care services, the identification of patients for inclusion in the SPL involved interrogation and analysis of multiple national datasets collected by NHS Wales. These include:

- Patient Episode Database for Wales (PEDW) namely Admitted Patient Care (APC)
- Prescription Pricing Service (PPS)
- Welsh Demographics Service (WDS)
- Maternity Services Dataset (MSDS)
- Cancer Network Information System Cymru (CaNISC)
- Congenital Anomaly Register & Information Service (CARIS)
- Using searches deployed via Audit+ (Audit+)
- Critical Care Dataset (CC)
- Hospital Pharmacy
- Office for National Statistics Daily Death Notifications
- Electronic Master Patient Index (eMPI)

List of health issues, which put people at a very high risk (rule logic):

Category	PEDW	Medication	GP Audit+	Specialist systems
<p>1. Solid organ transplant recipients</p> <p>(this category is to identify immune-compromised patients. The non-Welsh provider query is in lieu of non-Welsh provider searches for immunosuppressants)</p>	<p>Patient with ANY ICD-10/OPCS code falling within this disease group since 01/04/2006 (appendix 1)</p> <p>OR</p> <p>Patient with ANY ICD-10/OPCS code falling within this disease group since 01/04/2006 for non-Welsh providers (appendix 1)</p>			
<p>2a. People with cancer who are undergoing active chemotherapy or radical radiotherapy for lung cancer</p>	<p>Patient with ANY ICD-10 code falling within this disease group AND coded with chemotherapy treatment within last 12 months (appendix 2)</p> <p>OR</p> <p>Patient coded with neoplasm of lung AND radiotherapy within same episode of care since 1999 (appendix 2)</p>		<p>Patient has SNOMED code falling within this disease group in the last 12 month AND chemotherapy treatment within last 12 months (as identified in PEDW) (appendix 9)</p>	<p>CaNISC: Patient identified as having drug-therapy of chemotherapy or radiotherapy since April 2018 (appendix 2)</p> <p>OR</p> <p>CaNISC: Patient identified as having chemotherapy for lung cancer since April 2015 (appendix 2)</p> <p>OR</p>

				CaNISC: Patient identified as having radiotherapy for lung cancer since April 2004 (appendix 2)
2b. People with cancers of the blood or bone marrow such as leukaemia, lymphoma or myeloma who are at any stage of treatment	Patient with ANY ICD-10 code falling within this disease group within last 24 months (appendix 2)		Patient has SNOMED code falling within this disease group in the last 12 month (appendix 9)	
2c. People having immunotherapy or other continuing antibody treatments for cancer				CaNISC: Patients identified as having immunotherapy since April 2015
2d. People having other targeted cancer treatments, which can affect the immune system, such as protein kinase inhibitors or PARP inhibitors				List of identified patients supplied by regional cancer networks using local hospital / network systems
2e. People who have had bone marrow or stem cell transplants in the last six months, or who are still taking immunosuppression drugs.	Patient with ANY ICD-10 code falling within this disease group within last 5 years (appendix 2)			

<p>3. People with severe respiratory conditions including all cystic fibrosis, severe asthma and severe Chronic Obstructive Pulmonary Disease (COPD)</p>	<p>Patient coded with ANY ICD10 for specific respiratory conditions (Cystic Fibrosis etc...) since 1 April 2006 (appendix 3)</p> <p>OR</p> <p>Patient coded with ANY ICD10 within this wider respiratory disease group since 1 April 2017 AND corresponding ITU/HDU stay within the same episode (appendix 3)</p>	<p>Please see Annex A below</p> <p>For Asthma, those who have been prescribed a LABA or LABA/ICS or leukotriene over the past six months AND who have had four or more prescriptions for prednisolone over the six months (appendix 3a)</p> <p>OR</p> <p>For COPD, those patients who are prescribed “triple therapy” inhalers and/or roflumilast (appendix 3b)</p>	<p>Patient has SNOMED code falling within this specific respiratory conditions disease group (appendix 9)</p>	<p>CARIS: Children up to the age of 18 with Cystic Fibrosis (appendix 8)</p>
<p>4. People with severe single organ disease (e.g. Liver, Cardio, Renal, Neurological)</p>	<p>Patient coded with ANY ICD10 within this wider disease group since 1 April 2017 AND corresponding ITU/HDU stay within the same episode (appendix 4)</p>			<p>List of identified patients supplied by regional renal networks using local hospital / network systems</p>
<p>5. People with rare diseases and inborn errors of metabolism that significantly increase the risk of infections (such as Severe Combined Immunodeficiency (SCID), homozygous sickle cell)</p>	<p>Patient with ANY ICD-10/OPCS code falling within this disease group since 01/04/2006 (appendix 5)</p>		<p>Patient has SNOMED code falling within this disease group (appendix 9)</p>	

<p>6. People on immunosuppression therapies sufficient to significantly increase risk of infection, including:</p>	<p>Patient with ANY ICD-10/OPCS code falling within this disease group since 01/04/2015 (appendix 6)</p>	<p>High dose steroid Prednisolone (or equivalent) prescribed for at least 4 weeks (appendix 6a)</p> <p>OR</p> <p>At least one immunosuppressant prescribed from the identified list (appendix 6a)</p>	<p>Patient has Read code falling within this medication group (appendix 6b)</p>	
<p>7. People who are pregnant and children up to the age of 18 with significant heart disease, congenital or otherwise</p>	<p>Patient with ANY ICD-10 code within this disease group since 1 April 1999 (appendix 7)</p> <p>AND</p> <p>Having an estimated date of delivery of greater than, or equal to, the date of data extraction excluding (where possible) live births, terminations, stillbirths, and miscarriages (in MSDS)</p>			<p>CARIS: Children up to the age of 18 with congenital heart disease (appendix 8)</p> <p>OR</p> <p>Patients who are pregnant and identified as having heart disease – as identified by local hospitals</p>

Exclusion criteria

As this piece of work relied heavily on data linkage, the NHS Number was used as the main linkage, or index, key for the included datasets. If a patient's NHS Number was not validated, the record was excluded from extracts to avoid false matching. In addition, deceased patients were identified and removed from the final composite patient list using official registered daily death notifications from the ONS, plus death notifications received directly from NHS hospital and GP systems, via the electronic Master Patient Index service – one or both of these “informal” and “formal” notifications of death were accepted.

Assurance

All extracts were validated, back to source (raw) data to ensure that integrity had been maintained. However, given that data predominantly used in this exercise are administrative and intended for only Secondary Uses, the final patient list will be influenced by how data are recorded in supplier systems at point of care, and also how data are processed and transformed during data collection from data providers. As a result, it is accepted that a small proportion of collected data may not be representative of the patient's actual medical record.

It is recognised that the combination of codes and linkages (i.e. this methodology) could itself add errors.

These risks however, were balanced against the need to try to protect the groups of identified patients from significant complications of the COVID-19 pandemic and were tolerated.

Further information

Further information about coronavirus, including the latest guidance is available on the Welsh Government and Public Health Wales websites:

<https://gov.wales/coronavirus>

<https://phw.nhs.wales/topics/latest-information-on-novel-coronavirus-covid-19/>

Annex A: Medicines data

Given the respiratory nature of the condition additional detail is provided below of the methodology used to identify these patients. This process uses codes available in Appendix 5 and is based on the NHS Digital methodology: <https://digital.nhs.uk/coronavirus/shielded-patient-list/methodology/medicines-data>

The PPS dataset includes a defined sub-set of NHS prescriptions dispensed data, with the exception of prescriptions which are dispensed in prisons, hospitals and private prescriptions. It does not include items not dispensed and disallowed. The data only included items prescribed via WP10 forms and dispensed by NHS dispensing contractors. WP10 forms are the green forms patients receive. Therefore, it did not include: Hospital prescribing or Medicines supplied over the counter. Patient NHS numbers cannot be captured from every prescription and in general are available for around 94% of prescription forms (as of December 2019). However, this proportion can differ for individual drugs and prescribing organisations. The data set provided all record level data below the British National Formulary classification (BNF code) levels requested. The data is partially limited as there is no indication data i.e. reason for prescribing. Some medicines have more than one indication for use.

This rule is to identify patients with severe asthma Patients or severe Chronic Obstructive Pulmonary Disease (COPD). Identification of patients with severe asthma was defined as taking regular or continuous courses of prednisolone, alongside ICD-10 coding. The usual medicines prescribed for patients with asthma are classified under BNF sections 3.1, 3.2 and 3.3. Many of the medicines within these BNF sections are also prescribed for patients with Chronic Obstructive Pulmonary Disease (COPD). Since PPS data does not include indication for prescribing, it is not possible to differentiate all prescribing within BNF 3.1 and 3.2 between asthma and COPD.

Patients likely to have severe asthma were identified, using medicines data, by the following methodology:

(a) Patients with asthma were identified as being prescribed Long acting beta₂-agonist (LABA) as either a LABA or in combination with an inhaled corticosteroid (LABA/ICS) OR prescriptions for a leukotriene receptor antagonist (e.g. montelukast).

Sub paragraph	BNF code
Leukotriene Receptor Antagonists	030302

A list of LABA and LABA/ICS medicines (presentations) used in the analysis is detailed in Appendix 5a. Formulations indicated only for COPD were excluded (Indacaterol; Olodaterol).

(b) From the above list of patients, those who had been dispensed 4 or more prescriptions for prednisolone between July 2019 and December 2019 were identified and considered to have severe asthma.

Chemical substance	BNF code
Prednisolone	0603020T0

Due to time constraints more detailed analysis of the quantities of prednisolone per prescription (such as number of tablets) was not possible.

Whilst PPS data does not include medicines prescribed and supplied by secondary care there can be a reasonable assumption that the majority of the management of asthma and COPD is undertaken in primary care via WP10 prescriptions.

In order to identify regular or continuous prescribing of prednisolone (defined as 4 or more prescriptions), analysis of the full 6 months data was necessary. Patients who commenced regular or continuous prednisolone recently (for example, October onwards) may not be included.

Because of the method of identifying patients with asthma, the data will include patients who have COPD and have also received 4 or more prescriptions for prednisolone. However, removing the patients identified in COPD analysis will have reduced the number (see below).

Patients who were likely to have severe COPD were identified, using medicines data, by

(a) Prescriptions for a Long Acting Beta Agonist (LABA) and a Long Acting Muscarinic Agonist (LAMA) and an inhaled corticosteroid (ICS) in either November and/or December 2019.

NB: prescribed as either 3 separate medicines, combinations of single and dual / combination medicines or as triple therapy.

A list of medicines used in the analysis is detailed in Appendix 5b

OR

(b) Patients who have had a prescription for Roflumilast most recently in November 2019 and/or December 2019.

Chemical substance	BNF code
Roflumilast	0303030B0

For more details on the methodology see the [Gold COPD resource](#)