

Supplementary 1

PubMed full search details:

1. dispensing pattern[All Fields] OR prescribing pattern[All Fields] AND ("2020/01/01" [PubDate] : "2021/08/29" [PubDate])
2. prescribing trend[All Fields] AND ("2020/01/01" [PubDate] : "2021/08/29" [PubDate])

Date of search: 27th August 2021

1. Articles retrieved 324
2. Articles retrieved 42

Supplementary 2: Metadata of RRDA_WDDS

The aim of this document is to provide meta-data descriptions for the variables / columns found in the Research Ready Data Asset (RRDA) found in the RRDA_WDDS.

These are a combination of the original variables / columns found in the WDDS data source, as well as additional variables / columns generated as part of the creation of the RRDA_WDDS.

Note: for information on the original WDDS data please see the HDR innovation gateway on (<https://web.www.healthdatagateway.org/dataset/50ef6443-ed4b-40f9-97fb-1cfd53be6579>), the current official source of meta-data and documentation for data sources in the SAIL Databank.

Technical document: Research Ready Data Asset of Welsh Dispensing DataSet (RRDA-WDDS)

We provide here a summary of reproducible code to generate a RRDA for the Welsh Dispensing Dataset (WDDS). The main purpose for creating RRDA version of WDDS was to reach a BNF-mapped linkable version of the data tables from 2016 onward following each update of the underlying WDDS data. The main tables used in generation of RRDA views are: **SAIL0911V.WDDS_DISPENSING** | **SAIL0911V.WDDS_DISPENSING_ALF**. We have also used SNOMED to BNF mapping tables from SAILUKHDV schema as well as those published by NHS Business Analysis Service ([BSA](#)).

Main resources and code syntax

Please note that any previous date versioning should be replaced by the most recent coverage of the data in the code to protect loss of previous versions of tables. For required updates in code search 'Update'

SNOMED(DM+D) to BNF codes

The main data is coded in SNOMED Drugs Medications + Dimensions(DM+D) codes. Reference data published by NHS BSA were used to map these into the BNF codes. You are required to check and compare the date of latest release to existing reference tables in SAIL and import new ones if published.

The updated files need to be stored in *BNF mapping* folder in a csv format and use one of the pre-versions to harmonised column names (copy and paste column names across to the new csv file). The file can then be imported using 00.a.import_ref_tables followed by creating 01a & 01b

Variable/Column name	Variable/Column description	In original WDDS (1) RRDA (2)
ALF_PE	Anonymised Linkage Field	1
DT_PRESCRIBED	Date of prescription as appears on the prescription note	1
PRAC_CD_E	Encrypted General Practice code	1
DMDCODE_PRESCRIBED	DM + D or SNOMED code of prescribed drugs	1
PRODUCT_PRESCRIBED	DM + D or SNOMED Description: name and dosage of drugs	1
QTY_PRESCRIBED	Quantity prescribed	1
QTY_PRESCRIBED_VAL	Quantity prescribed as a volume	1
QTY_UOM_CODE	Quantity Unit of Measurement (UOM) code	1
MONTH_DISPENSED	Month of dispensing	1
DISPENSER_ID	ID code of dispenser pharmacy	1
FORM_NO	Form number	1
DMD_CD_WDDS	DM+D or SNOMED code of prescribed drugs	2
BNF_COMBINED	Mapped BNF codes	2
BNF_COMBINED_DESC	Description of BNF codes	2
The following fields are presented to enable checks on quality of mapping		
DMD_CD_BSA	DM + D codes existing in BSA resource	2
DMD_DESC_BSA	Description of the codes from BSA resource	2
DMD_DESC_UKHDV	Description of DM + D codes from UKHDV schema	2
BNF_NAME_BSA	Description of BNF codes from BSA resource	2
BNF_UKHDV	BNF codes from UKHDV schema-7 character	2
BNF_UPDATED_UKHDV	Edited version of BNF codes from UKHDV	2
BNF_SUBPARAGRAPH	Description of 7 character BNF codes	2
WDDS data info field		
AVAIL_FROM_DT	Available from date of WDDS	1

for creation of single and merged reference tables used in each extract.

Note: 01b code is holding the most recent version of RRDA_REF mapping table and is the latest version of codes used in 01a to generate dated version of merged mapping tables; therefore please ensure any essential updates from 01a is carried over into insert section of 01b script (the creation of table script will stay unchanged).

The single reference tables imported from BSA: some months gets published as one view the dates refers to latest coverage

View name	RRDA_WDDS_REF_BNF_SNOMED_ Coverage of data
_202008	August 2020
_202010	October 2020
_202011	November 2020
_202012	December 2020
_202101	January 2021
_202104	April 2021
_202105	May 2021
_202106	June 2021
_202107	July 2021
_202108	August 2021

The merged reference tables are used to generate RRDA's

View name	RRDA_WDDS_REF_BNF_SNOMED_MERGED_ Coverage of data
_20201230	30th December 2020
_20210101	1st January 2021
_20210531	31st May 2021
_20210630	30th June 2021
_20210831	31st August 2021

RRDA tables

Following each updated extract of the data, the codes in 02a & 02b can be used to create versioned and undated RRDA's. All versions of RRDA's are preserved to support reproducibility of research using older versions; therefore please run any drop statement with extra cautious and checks in advance and if unsure prior to any actions please contact: fatemeh.torabi@swansea.ac.uk.

Note: as the insert to the WDDS mapped linked tables were broken down, following updates of coverage, please review the last lines of insert statements to ensure additional coverage are included.

Short data summary

The most recent version of RRDA_WDDS table, has a coverage range of 2016-01-01 up to 2021-07-27; holding dispensing records of 3,228,092 individuals with 30,103 dispensed drug items coded in DM+D snomed codes which were mapped to 29,479 BNF codes.

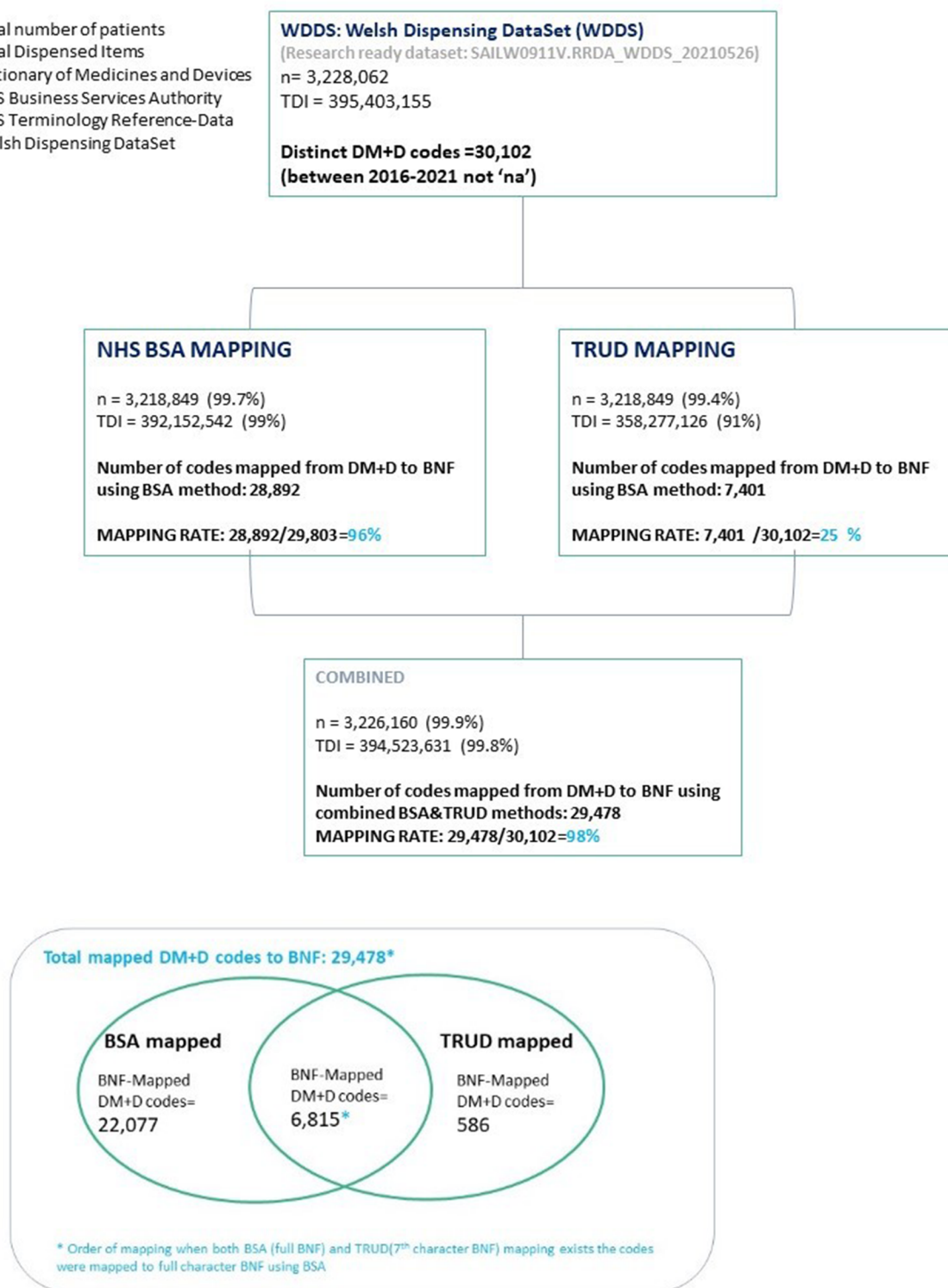
avail_from_dt = 2021-09-14
max_coverage_no_rule=2021-08-31
coverage-70%-rule=2021-07-27

Please see the 'RRDA_WDDS-Meta-data' file for full description of columns in the table.description of columns in the table.

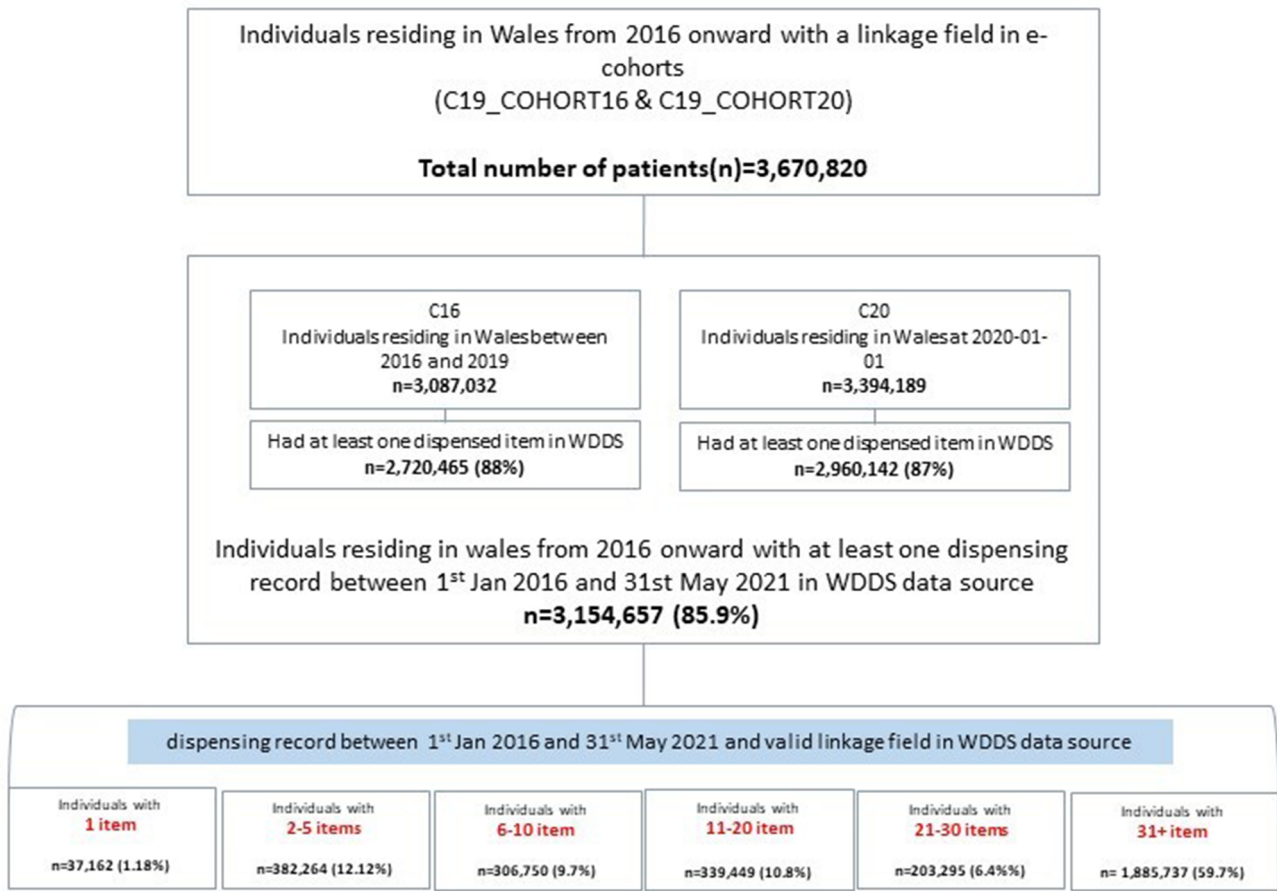
View name	RRDA_WDDS_ Coverage of data
_20210223	23rd February 2021
_20210326	26th March 2021
_20210427	27th April 2021
_20210526	26th May 2021
_20210624	24th June 2021
_20210727	27th July 2021

Supplementary Figure 1a: Mapping of DM + D codes from WDDS to BNF codes

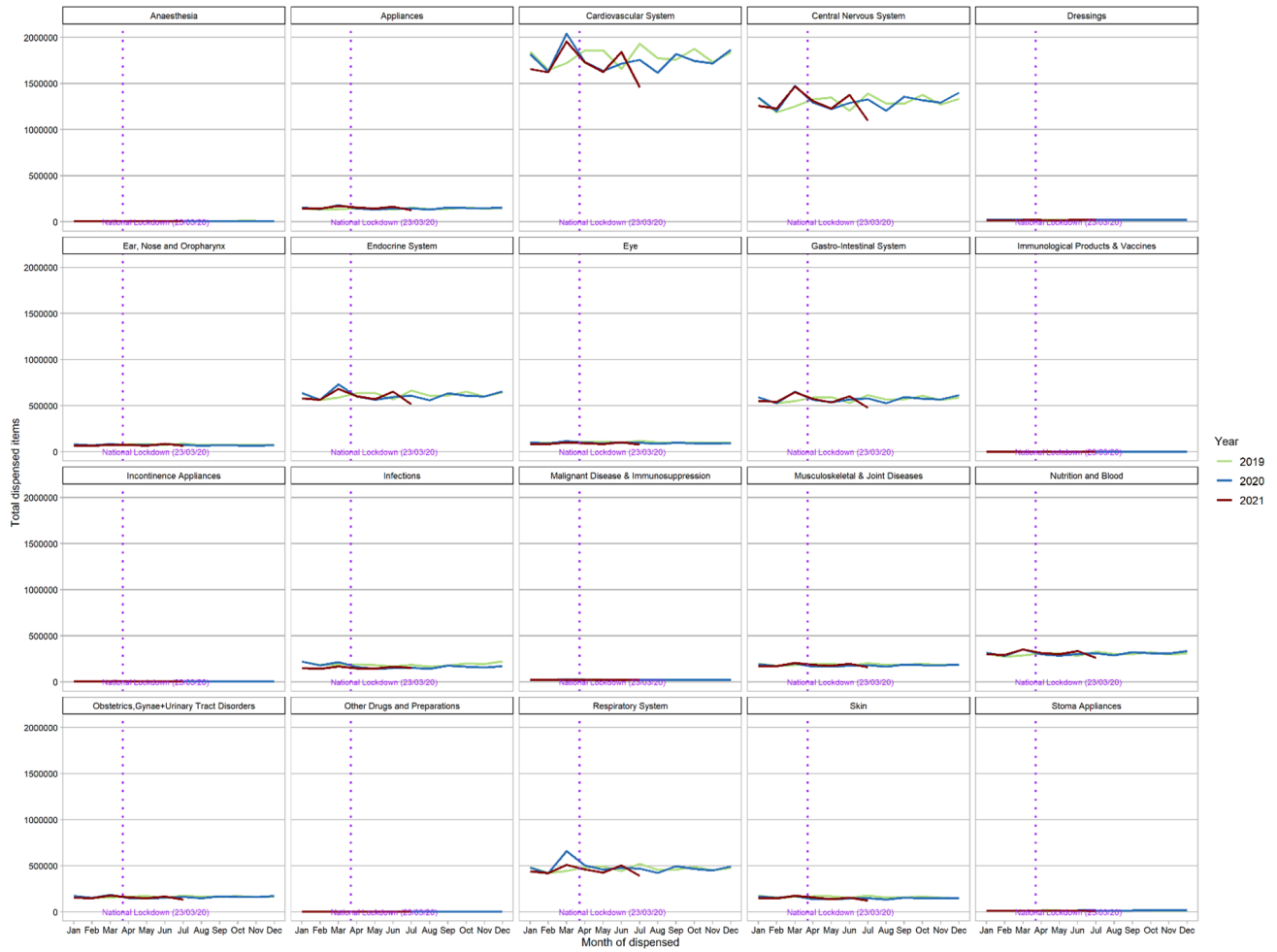
n : Total number of patients
 TDI: Total Dispensed Items
 DM+D: Dictionary of Medicines and Devices
 BAS: NHS Business Services Authority
 TRUD: NHS Terminology Reference-Data
 WDDS: Welsh Dispensing DataSet



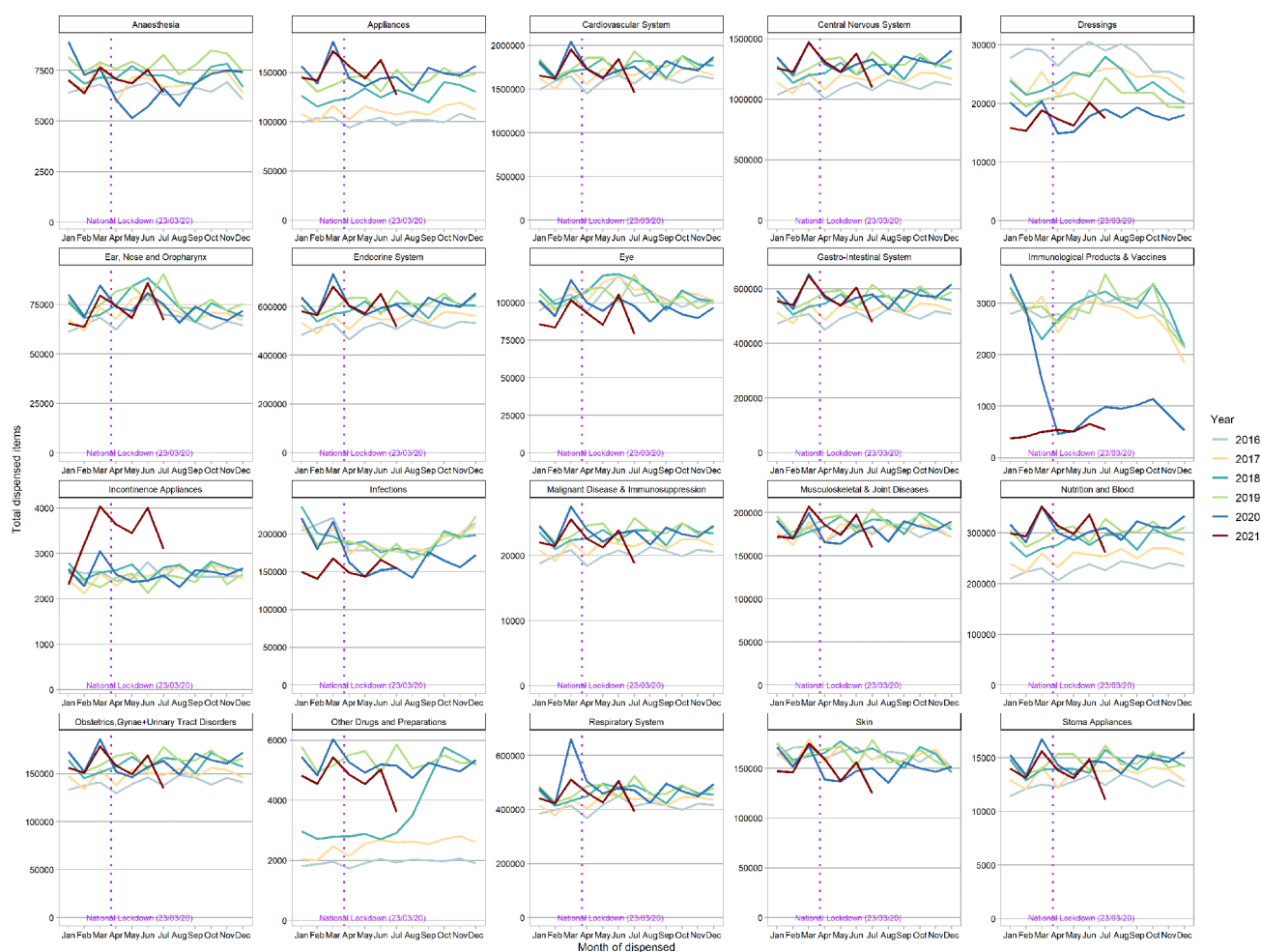
Supplementary Figure 1b: Number of dispensed items for individuals residing in Wales and linked to WDDS



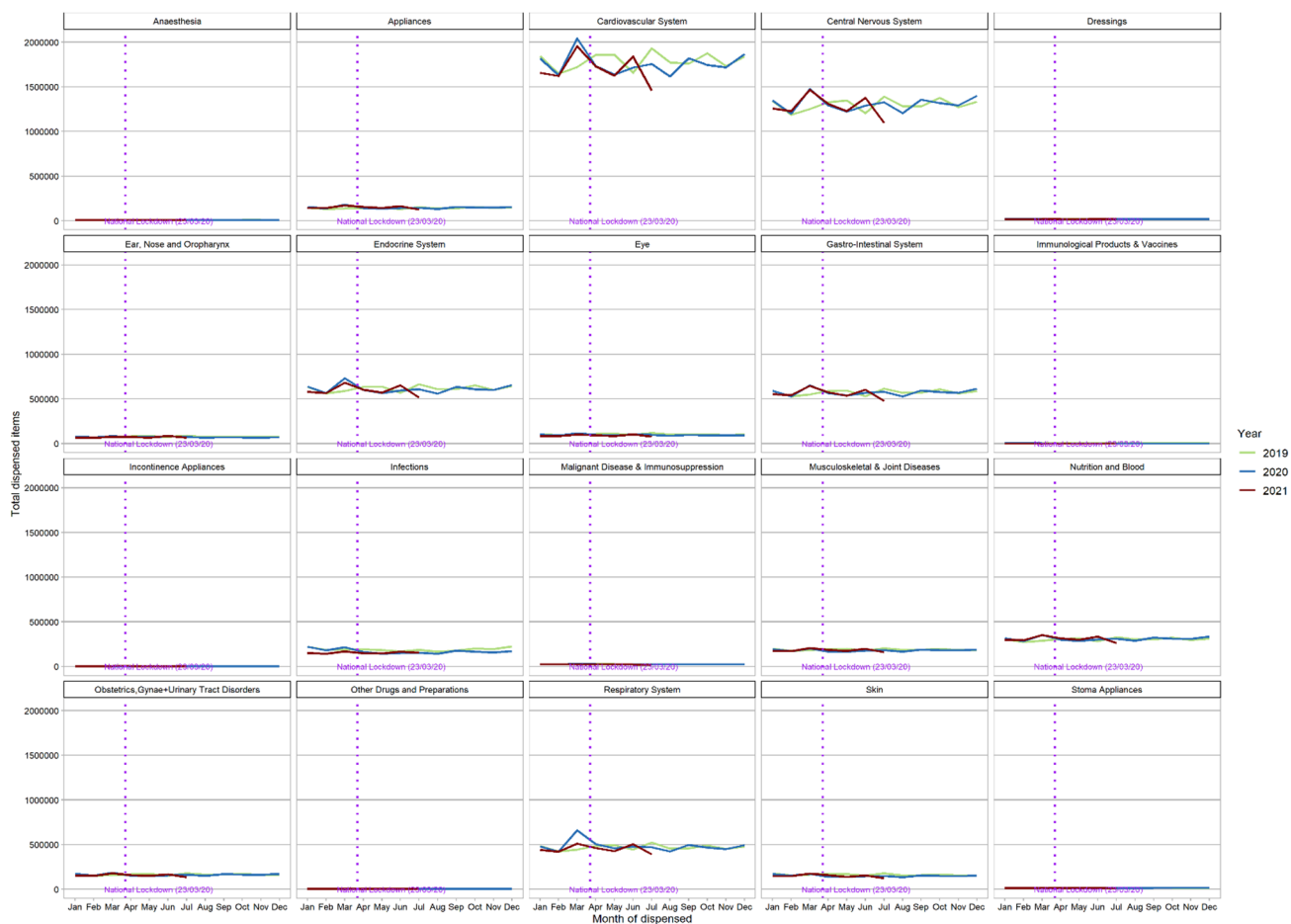
Supplementary Figure 2.1: Number of dispensed items per BNF chapter-2020-21 vs 2019 harmonised scale



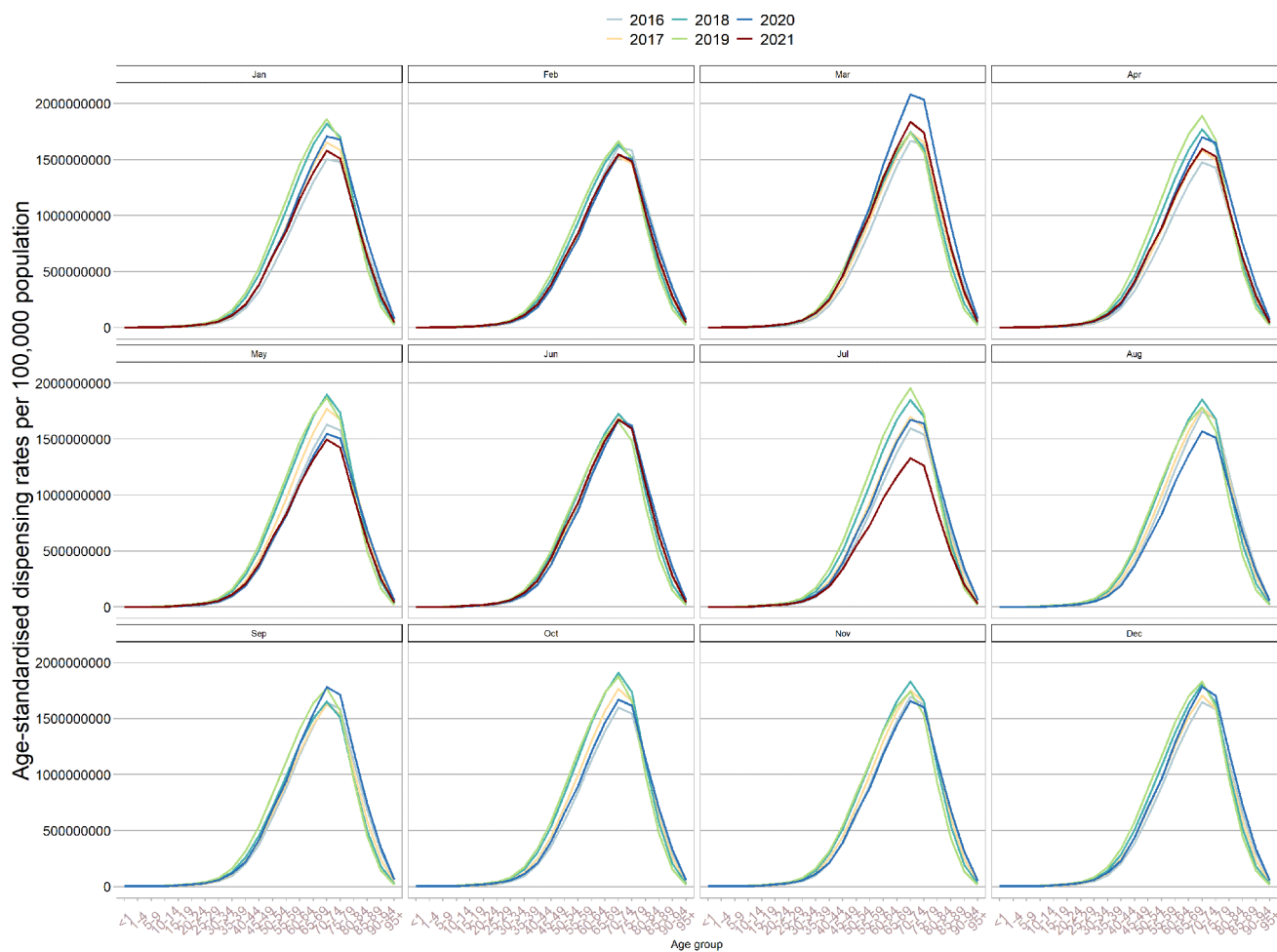
Supplementary Figure 2.2: Number of dispensed items per BNF chapter per month –in all years (numbers of each chapter are individually scaled)



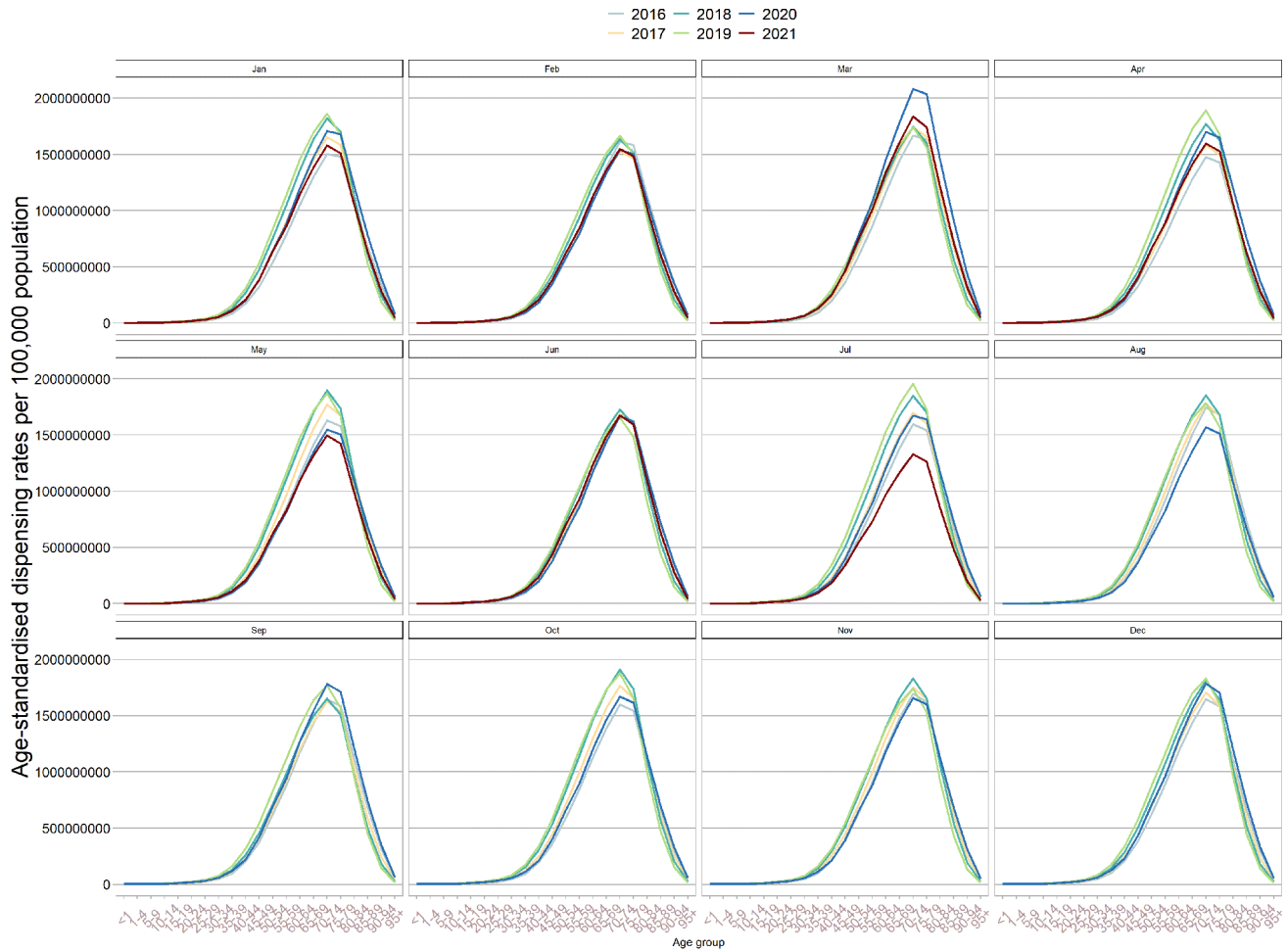
Supplementary Figure 2.3: Number of dispensed items per BNF chapter per month –in all years - harmonised scale



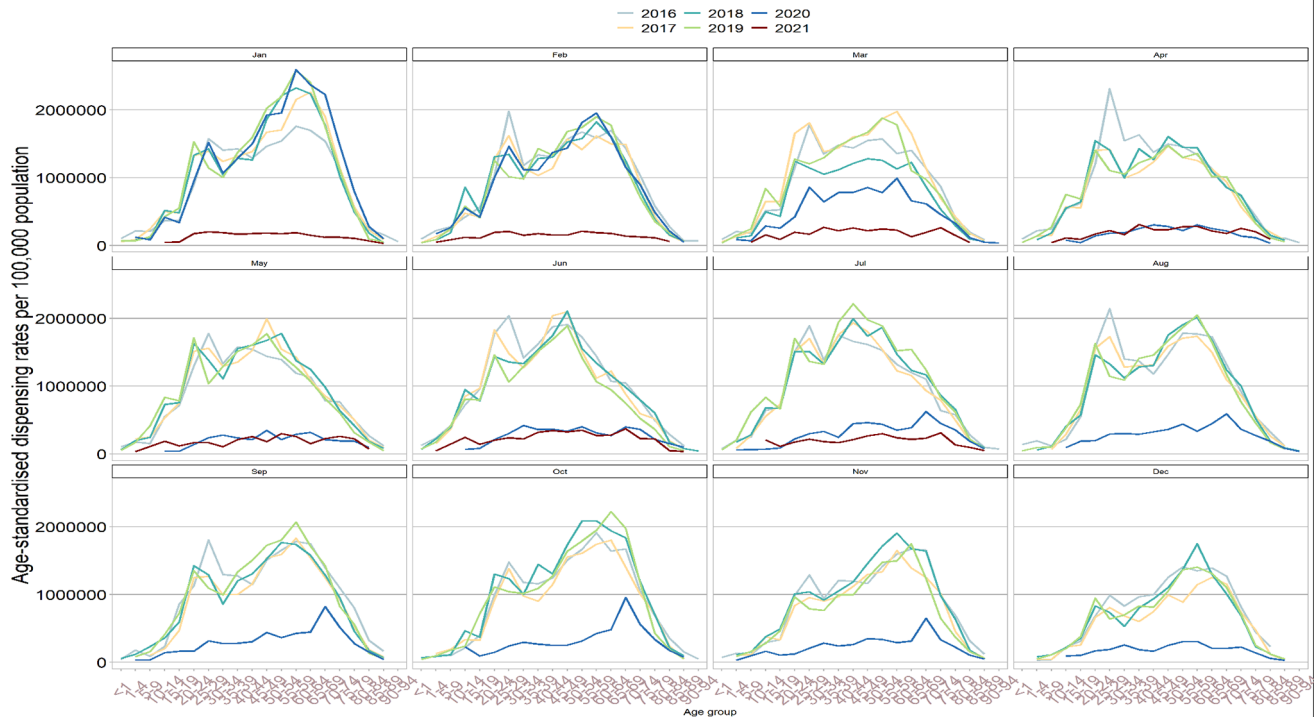
Supplementary Figure 3.1: Age-standardised dispensing rates for *cardiovascular system* in per 100,000 pop'n per year and month



Supplementary Figure 3.2: Age-standardised dispensing rates for *Central Nervous System* in per 100,000 pop'n per year and month



Supplementary Figure 3.3: Age-standardised dispensing rates for *Immunological Products & Vaccines* in per 100,000 pop'n per year and month



Supplementary Figure 4: Timeline of COVID-19 lockdowns in Wales

