



## Dataset Guide: Deprivations tables

### Summary

This document is a guide which sets out the general characteristics of the Index of Multiple Deprivation (IMD) tables available in the CASREF01 IMD schema.

### Introduction

Historically, the cancer analyst team at NDRS have used equal population weighted income domain quintiles (or quintiles that are equal in terms of their population size) in analysis. Income domain, as opposed to full Index of multiple deprivation (IMD), was used to prevent a possible circular [or multiplying] effect of including health (and cancer in particular) effects when stratifying health statistics by deprivation [quintiles]. There are four tables that hold deprivation quintiles based on the income domain in the IMD schema:

- ID2015
- LSOA\_INCOME\_QUINTILES
- LSOA01\_INCOME\_QUINTILES
- LSOA11\_INCOME\_QUINTILES

Documentation for last two tables is [here](#) on the SVN.

However, recently, there has been discussion about the limitations of using deprivation measures based solely on the income domain (see [this document](#)). Deprivation defined solely by the income domain may not truly reflect the deprivation experienced by individuals who may suffer from other forms of deprivation measured by the other six domains (employment deprivation; education, skills and training deprivation; health deprivation and disability; crime; barriers to housing and services; living environment deprivation). Also, cancer doesn't contribute much to the derivation of the health domain deprivation.

Deprivation quintiles/deciles can be weighted so that quintiles/deciles are equal in terms of their population size. Quintiles/deciles can also be weighted so that quintiles/deciles are equal in terms of the number of LSOAs. The rest of the public health world uses the Index of multiple deprivation (IMD) which is equally weighted by LSOAs.

To look at the impact of using different deprivation measures, we carried out comparisons using age-standardised rates for six cancer groups by sex for the following deprivation measures:

- Income domain - equal weighted populations (what we use currently until 2021)
- Index of multiple deprivation - equal weighted populations



- Income domain - equal weighted LSOAs
- Index of multiple deprivation - equal weighted LSOAs (what the rest of the public health world uses).

We found minor differences in the ASRs when comparing between the deprivation measures for both 2019 quintiles and deciles (see [html for comparisons](#)). Therefore, for consistency, we have decided to align with the rest of the public health world. All our future work is to be carried out using the IMD equal LSOA weighted deprivation measures, unless a specific project requires an alternative.

### **1) Information Governance (IG)/rules**

There are no highly sensitive data fields in these tables. Analysts with level 2 access can use the deprivation tables.

### **2) Accessing the data**

Alongside the income deprivation tables, the IMD deprivation tables sit in the CASREF01 connection in the IMD schema. The five IMD tables include:

1. IMD2004\_EQUAL\_LSOAS
2. IMD2007\_EQUAL\_LSOAS
3. IMD2010\_EQUAL\_LSOAS
4. IMD2015\_EQUAL\_LSOAS
5. IMD2019\_EQUAL\_LSOAS



### 3) Data dictionary

Table 1 shows the list of variables and corresponding descriptions for the five IMD tables.

**Table 1: Variables in IMD deprivation tables**

Table	Variable	Description	Completeness
imd2004_equal_isoas	lsoa01_code	LSOA 2001 code	100%
	imd04_rank	IMD 2004 rank, 1 (most deprived) to 32482 (least deprived)	100%
	population_my2001	mid-year population estimates for 2001	100%
	imd04_decile_isoas	IMD 2004 deciles, 1 - most deprived to 10 - least deprived	100%
	imd04_quintile_isoas	IMD 2004 quintiles, 1 - most deprived to 5 - least deprived	100%
imd2007_equal_isoas	lsoa01_code	LSOA 2001 code	100%
	imd07_rank	IMD 2007 rank, 1 (most deprived) to 32482 (least deprived)	100%
	population_my2005	mid-year population estimates for 2005	100%
	imd07_decile_isoas	IMD 2007 deciles, 1 - most deprived to 10 - least deprived	100%
	imd07_quintile_isoas	IMD 2007 quintiles, 1 - most deprived to 5 - least deprived	100%
imd2010_equal_isoas	lsoa01_code	LSOA 2001 code	100%
	imd10_rank	IMD 2010 rank, 1 (most deprived) to 32482 (least deprived)	100%
	population_my2008	mid-year population estimates for 2008	100%
	imd10_decile_isoas	IMD 2010 deciles, 1 - most deprived to 10 - least deprived	100%
	imd10_quintile_isoas	IMD 2010 quintiles, 1 - most deprived to 5 - least deprived	100%
imd2015_equal_isoas	lsoa11_code	LSOA 2011 code	100%
	imd15_rank	IMD 2015 rank, 1 (most deprived) to 32844 (least deprived)	100%
	population_my2012	mid-year population estimates for 2012	100%
	imd15_decile_isoas	IMD 2015 deciles, 1 - most deprived to 10 - least deprived	100%
	imd15_quintile_isoas	IMD 2015 quintiles, 1 - most deprived to 5 - least deprived	100%
imd2019_equal_isoas	lsoa11_code	LSOA 2011 code	100%
	imd19_rank	IMD 2019 rank, 1 (most deprived) to 32844 (least deprived)	100%
	population_my2015	mid-year population estimates for 2015	100%
	imd19_decile_isoas	IMD 2019 deciles, 1 - most deprived to 10 - least deprived	100%
	imd19_quintile_isoas	IMD 2019 quintiles, 1 - most deprived to 5 - least deprived	100%



#### **4) Things you should know before using deprivation tables**

- 1) Previously, for the income domain measures, we used to associate quintile 1 as least deprived and 5 as most deprived. With the IMD deprivation measures, this is reversed to align with what is being used more widely so 1 is most deprived and 5/10 is least deprived.
- 2) The recommended practice is to use the appropriate index with the closest match between the year of the underlying deprivation data (i.e. data used to derive the income score) and the diagnosis year: That is:
  - Use 2019 quintiles (based on 2015 data) for diagnosis years 2014 to current
  - Use 2015 quintiles (based on 2012 data) for diagnosis years 2010 to 2013
  - Use 2010 quintiles (based on 2008 data) for diagnosis years 2007 to 2009
  - Use 2007 quintiles (based on 2005 data) for diagnosis years 2003 to 2006
  - Use 2004 quintiles (based on 2001 data) for diagnosis years 1999 to 2002

If you have been requested to look at trends of deprivation outside of this time period, please contact your line manager for further advice.

- 3) IMD measures are only available for England



### 5) Example sql

```
select
  d.imd19_decile Isoas
  ,count(*) as case_count
from
  analysisncr.at_tumour_england@cas2105 att
inner join
  analysisncr.at_geography_england@cas2105 atg
  on att.tumourid=atg.tumourid
inner join
  imd.imd2019_equal Isoas@casref01 d
  on atg.Isoa11_code=d.Isoa11_code
where
  att.diagnosisyear = 2018 -- Years of interest
  and substr(atg.Isoa11_code,1,1) ='E' -- England residents using country code
  -- These cover the CAS SOP recommendations on counting cases
  and att.statusofregistration ='F' -- Finalised cases
  and att.dedup_flag=1 -- Excluding duplicates, note quality
issue in text above
  and att.age between 0 and 200 -- Sensible age
  and att.sex in (1,2) -- Known sex
  -- sex exclusion C codes
  and ((att.sex = '2' and att.site_icd10_o2_3char not in ('C60','C61','C62','C63'))
  or (att.sex = '1' and att.site_icd10_o2_3char not in
('C51','C52','C53','C54','C55','C56','C57','C58'))) -- Sex doesnt agree with tumour site
  -- site filter
  and substr(att.site_icd10_o2_3char,1,1) = 'C'
  and att.site_icd10_o2_3char != 'C44'
group by
  d.imd19_decile Isoas
order by
  1
;
```

If you have any queries, please email [Jennifer Lai](#), and/or [Chloe Bright](#).