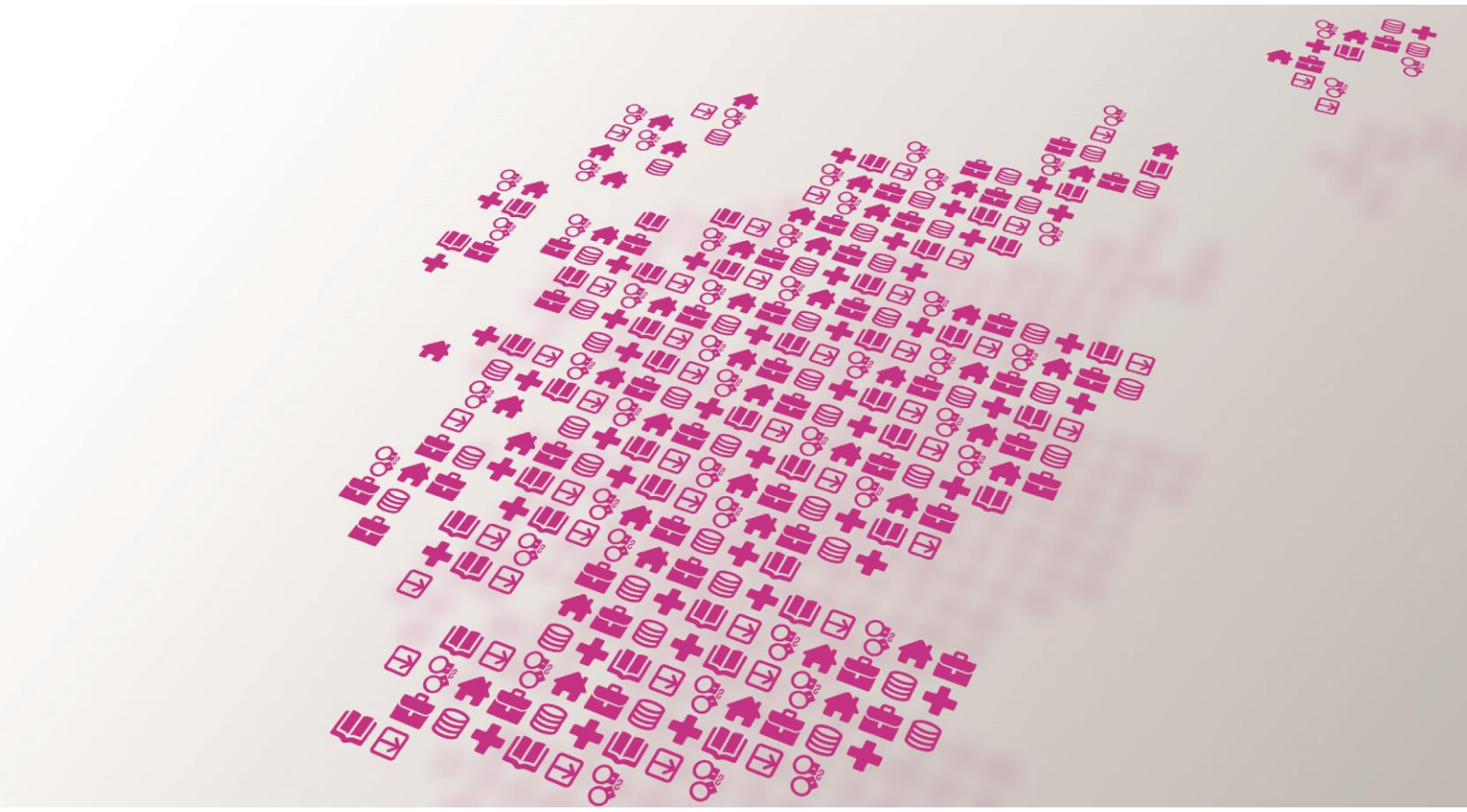
simd Scottish Index of Multiple Deprivation



SIMD16 Technical Notes

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Introduction

The Scottish Index of Multiple Deprivation (SIMD) 2016 is the Scottish Government's official tool for identifying concentrations of deprivation in Scotland. SIMD16 is the Scottish Government's fifth edition since 2004. SIMD is based on work conducted by Oxford University in 1999.

The SIMD16 Technical Notes provide more information for researchers for using SIMD16 data, which is available online at www.gov.scot/SIMD. It contains information that is useful for understanding how SIMD is constructed and as a reference when conducting further research or analysis based on SIMD and the associated data.

The following information is provided in the publication:

- Methodology – the methods used to identify deprivation in Scotland and to calculate SIMD
- Indicator details – key facts about each of the indicators used in SIMD

The methods and practices used in constructing SIMD were evaluated by the UK Statistics Authority (UKSA) and designated with 'National Statistics' status in 2010. To ensure that SIMD16 maintains this high quality, the following documents give more detail of the work that was undertaken:

- Quality Assurance Report[1] – detailed information about the quality of statistics used in SIMD, the methods used to quality assure all data, and techniques used to improve the quality of data
- Quality Assurance of Administrative Data Framework Report[2] – Steps taken to ensure the quality of administrative data for the purposes of constructing SIMD

There have been some changes to the methodology in constructing SIMD16. Two groups have supported the SIMD team when changes were necessary and approved these changes where required.

- Measuring Deprivation Advisory Group (MDAG) – this group of users and experts meet twice a year to advise the SIMD team
- Peer Collaboration Group – a group of statisticians who advised the SIMD team on matters of quality assurance, indicators and other aspects of methodology

SIMD is one of four indices that cover the whole of the UK. The Scottish index differs from the other indices in the UK by following a slightly different methodology in constructing the overall index. The following are the key differences:

- SIMD is based on data zones which are smaller geographical units compared to the Lower Super Output Areas used in the other indices.
- The data sources are different for Health, Education, Crime and Housing domains.

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[1]To be published on www.gov.scot/simd

[2]To be published on www.gov.scot/simd

- SIMD includes a specific domain on Geographic Access to Services.

Methodology Overview

The Scottish Index of Multiple Deprivation (SIMD) combines seven different domains (aspects) of deprivation:

- Income
- Employment
- Health
- Education, Skills and Training
- Geographic Access to Services
- Crime
- Housing

These domains are measured using a number of indicators to form ranks for each domain. Data zones are ranked from 1 being most deprived to 6,976 being least deprived. Each of the seven domain ranks are then combined to form the overall SIMD. This provides a measure of relative deprivation at data zone level, so it tells you that one data zone is relatively more deprived than another but not how much more deprived.

The methodology used to construct SIMD remains fundamentally the same as that used to construct the previous versions of SIMD in 2004, 2006, 2009 and 2012. It is based on the methodology developed by Oxford University to produce the Scottish Indices of Deprivation in 2003[3]. The Scottish Government produced the first SIMD in-house in 2004. As the methodology used has remained consistent in each subsequent update, these technical notes provide a summary of how the SIMD is constructed and details of the domains and indicators included in SIMD16. Full details of the individual methods for creating the domains and overall index are described in the SIMD 2004 Technical Report[4].

Constructing SIMD

SIMD16 is built up from a total of 38 indicators covering the seven domains. A list of the indicators included in each domain is provided in the following domain chapters. The indicators for each domain were selected on the basis that they are:

- domain-specific and appropriate for the purpose (as direct as possible measures for the given type of deprivation)
- up-to-date
- capable of being updated on a regular basis
- statistically robust

[3] www.scotland.gov.uk/Publications/2003/02/16377/18194 downloaded on 25/8/2016

[4] www.scotland.gov.uk./Publications/2004/10/20089/45173 downloaded on 25/8/2016

- measure major features of a given type of deprivation (not conditions just experienced by a very small number of people or areas).

The domains are calculated differently depending on the type of data used in each one. This is explained in more detail below and illustrated visually on page 9.

Constructing the domains

The Income, Employment and Housing domains are created by summing counts of people and dividing by the appropriate population denominator (taken from the Census or Small Area Population Estimates (SAPE). The Crime domain and some indicators in the Health and Education domain also use SAPE.

Error in the NRS population estimates

In October 2015, National Records of Scotland reported errors in the mid-year population estimates for 2002 to 2014.

The errors mainly affected the age distribution of the estimated population in Scotland, particularly in the age range 17 to 25. In percentage terms, the largest underestimate in the total estimated population of Scotland for mid-2014 was 1.28 percent at age 21 and the largest overestimate was 2.28 percent at age 18[5].

The SIMD team undertook impact analysis on SIMD12 data to ascertain the scale of the problem from this error[6]. Following discussions with the SIMD Peer Collaboration Group and the Measuring Deprivation Advisory Group, it was decided that the indicators in SIMD16 should use the unrevised population estimates[7].

It is unlikely that using the unrevised estimates will have much effect on the data zone rankings, and the effect is mainly confined to areas where there are large migrant student populations. It is unlikely that there will be any effect on the local authorities' national or local share of deprivation.

The **Employment domain** is constructed by counting the number of people claiming relevant benefits, and dividing by the working age population taken from the 2014 SAPE. The domain score is a simple percentage.

The **Income domain** is constructed by counting the number of people claiming relevant benefits, and dividing by the total population from the 2014 SAPE. Thus the domain score is a simple percentage.

The **Housing domain** is the sum of people in households that are overcrowded or have no central heating, divided by the total household population from the 2011 Census. The domain score is a simple percentage.

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5 http://www.nrscotland.gov.uk/files//statistics/population-estimates/mid-15-cor-12-13-14/cumulative-net-errors-correction-2012-2014-mye.xlsx downloaded on 25/8/2016

6 http://www.gov.scot/Topics/Statistics/Browse/Social-Welfare/scotstat/mdagmeetings/MDAG1601-7 downloaded on 26/8/2016

7 http://www.gov.scot/Topics/Statistics/Browse/Social-Welfare/scotstat/mdagmeetings/MDAG1601-8 downloaded on 26/8/2016

The **Crime domain** is a count of selected recorded crimes called 'SIMD crimes', divided by the 2014 SAPE total population. It is shown as a rate of SIMD crime per 10,000 population rather than a percentage of the population.

The **Health, Education and Access domains** are created by ranking the indicators and transforming them to a standard normal distribution. This standardisation process is necessary because the indicators in these domains may be measured in different ways and on different scales. A statistical technique called factor analysis is then used to create a weight for each indicator. Next, the indicators are combined to produce a domain score which is then ranked.

Calculating SIMD

Once the individual domain scores are calculated, they are combined to create the overall SIMD. The overall SIMD is a weighted sum of the seven domain scores, with different domains given different weights. The weighting is based on the original research conducted by Oxford University when the original Scottish Indices of Deprivation were first produced, and it also takes into consideration how up to date and robust the indicators within each domain are.

A review of the weighting was undertaken when preparing for SIMD16. This topic was discussed with the SIMD Peer Collaboration Group. The group concluded that the changes to data quality and methodology were not enough to justify a change of weightings, and recommended to maintain the same weightings as in SIMD 2006, 2009 and 2012.

The weights for each domain are as follows:

Domain	2016 Weight	Percentage of overall SIMD
Income	12	28%
Employment	12	28%
Health	6	14%
Education, Skills and Training	6	14%
Geographic Access to Services	4	9%
Crime	2	5%
Housing	1	2%

Prior to the weighting, the domains are standardised by ranking the scores. The ranks then undergo exponential transformation to avoid high ranks in one domain cancelling out low ranks in another. The resulting scores for the overall SIMD are then ranked from 1 (most deprived) to 6,976 (least deprived) to create the final index.

The flow diagram below graphically summarises the SIMD16 methodology.

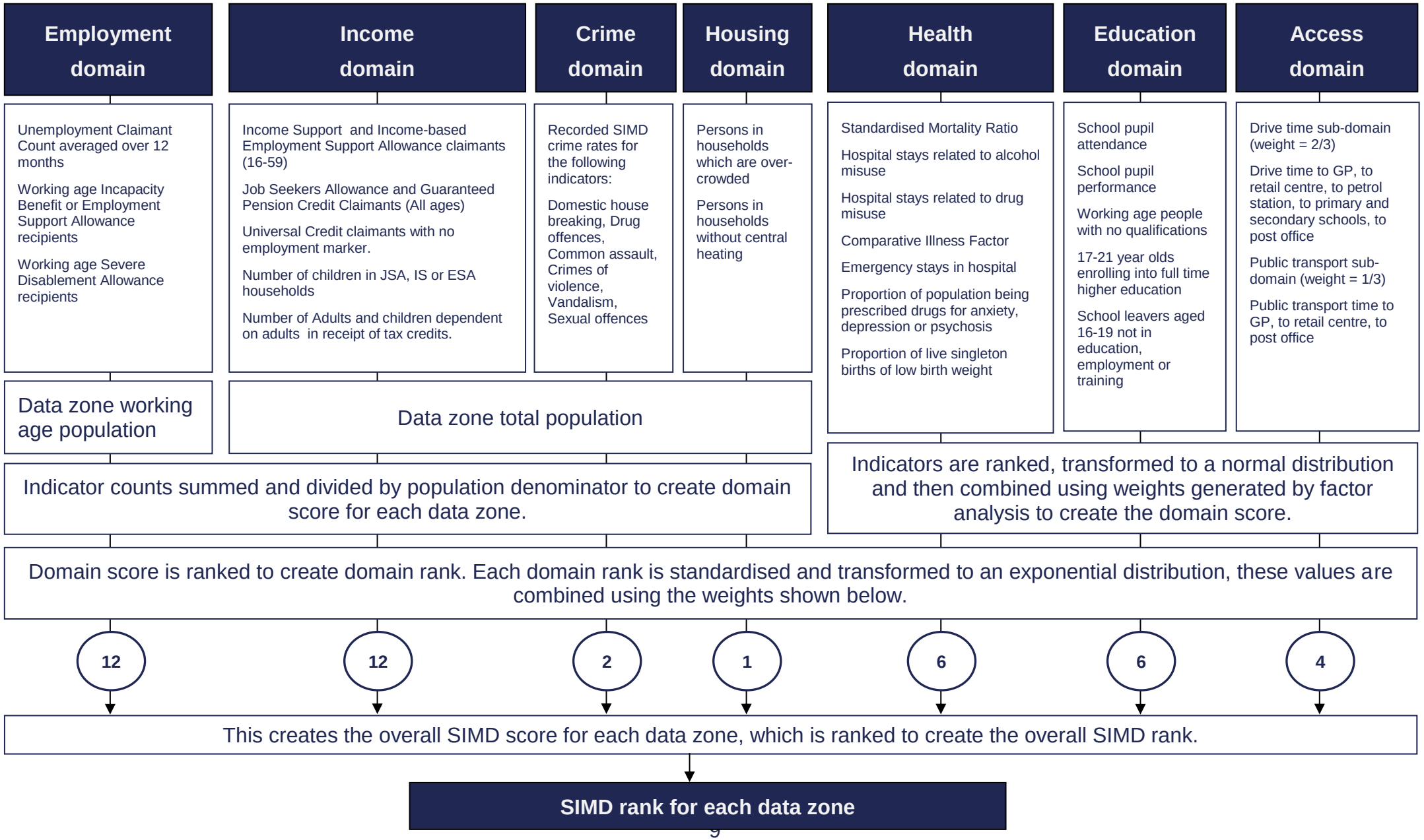
Data providers

The following organisations provided data for the construction of SIMD16:

- Department for Work and Pensions (DWP)
- Her Majesty's Revenue and Customs (HMRC)

- National Records of Scotland (NRS)
- Police Scotland
- Scottish Qualifications Authority (SQA)

SIMD16 Methodology



Changes to SIMD16

Data zone changes

SIMD16 is calculated based upon the 2011 Data Zone boundaries. These data zones are based on the 2011 Census and were introduced in November 2014. 2011 Data Zone boundaries differ from the 2001 Data Zones which were used for previous SIMD editions. Therefore, direct comparisons of indicators between 2016 and previous years are not possible.

Indicator changes

For SIMD16, changes have been kept to a minimum to ensure consistency with the previous SIMD 2012 publication. The indicators included in each domain have been updated to include the latest data available at the time of release. There has, however, been the need to make some minor changes to the indicators included in SIMD16 to reflect the introduction of Universal Credit, changes to the school examination system, and improvements in data quality. The box below summarises the main changes made within each domain. Full details of the indicators included in each domain are provided in the **Domains and Indicators** section.

Summary of changes to SIMD16 domains and indicators

Income domain

Eligibility criteria of certain benefits have changed, and Universal Credit was introduced. The number of people claiming income related benefits and credits are now determined through the Universal Credit system.

Employment domain

No changes.

Health domain

Instead of estimating the 'Proportion of the population being prescribed drugs for anxiety, depression or psychosis', the indicator was improved. The new indicator counts the number of people who have been prescribed the drug within the specified year, whereas the previous indicator was an estimate of the average number of people taking it on any one day during the year.

The 'Hospital stays related to alcohol misuse' indicator now includes the additional ICD10 category K852 (Alcoholic Induced Acute Pancreatitis (AIAP)).

Education domain

Two out of the five indicators in the education domain have changed considerably, and one indicator slightly changed.

The 'School pupil attendance' indicator was improved by only including pupils with high attendance, rather than an average absence level for all pupils.

The 'Attainment of school leavers' indicator replaces the previous average SQA score. The data for the SQA score is no longer available due to changes in the examination system. The new indicator considers the highest level of qualification pupils leave school with.

There were small changes in the 'Working age people with no qualifications'

indicator. Age bands and age range for standardisation have changed. And due to a changed wording of the Census question, the SIMD16 indicator counts people who have no qualifications, while the indicator in previous SIMD editions also included people whose qualifications were not listed in the response options.

Geographic Access to Services domain

The software used to calculate journey times has changed since SIMD 2012. As a result, most journey times are shorter and more accurately reflect true travel times for SIMD16.

Crime domain

The indicators included in the crime domain have remained the same between SIMD 2012 and SIMD16. However, new crime codes under the 'Recorded crimes of violence' category with 'Offences relating to Serious Organised Crime', and 'Causing serious injury etc. by culpable and reckless conduct' are now included in SIMD16.

Housing domain

No changes. The indicators included in the housing domain have been updated using 2011 Census data.

Domains and Indicators

Income Domain

Indicators included in the domain:

SIMD16 indicators	SIMD 2012 indicators	Summary of change
Number of adults (aged 16-59) receiving Income Support (IS) or income-based Employment and Support Allowance (ESA), and the number of adults (all ages) receiving Jobseeker's Allowance (JSA) Source: DWP, August 2015	Number of adults (aged 16-59) receiving Income Support or Income-based Employment and Support Allowance DWP, August 2011	Eligibility criteria of certain benefits have changed, and Universal Credit was introduced.
Number of adults (aged 60 plus) receiving Guaranteed Pension Credit DWP, August 2015	Number of adults (aged 60 plus) receiving Guaranteed Pension Credit DWP, August 2011	No change
Number of children (aged 0-15) dependent on a recipient of Income Support, Jobseeker's Allowance or Employment Support Allowance DWP, May 2015	Number of children (aged 0-15) dependent on a recipient of Income Support, Jobseeker's Allowance or Employment and Support Allowance DWP, May 2011	Eligibility criteria of certain benefits have changed, and Universal Credit was introduced.
Number of adults (all) not in paid employment receiving Universal Credit DWP, August 2015		Universal Credit was introduced between collecting data for SIMD12 and SIMD16. The roll-out initially included uncomplicated cases for single adults with no dependent children. More complicated cases were piloted in two areas in Inverness and Livingston.
Number of adults and children in Tax Credit families on low incomes HMRC, 2013/14	Number of adults and children in Tax Credit families on low incomes HMRC, August 2010	No change

Notes on the construction of the Income domain

The Income domain is calculated by adding all five indicators and dividing them by the (unrevised) 2014 mid-year population estimate (source: NRS).

Missing data

In two data zones, S01010206 and S01010227, the resident population was zero in the year considered, and income rates could not be determined. Missing rates are denoted by '*'. To provide a domain ranking for all data zones, these data zones were treated as follows:

S01010206 was given the same rank as the least deprived data zone.

S01010227 was given one rank less than the least deprived data zone because some income deprived people were identified here. These cases mainly arise from out-of-date address data.

The following tables give more detailed information on each of the indicators in the Income domain used in constructing SIMD16. However, SIMD16 datasets only report the combined totals for the whole domain.

Number of adults (aged 16-59) receiving Income Support, or Income-based Employment and Support Allowance and the number of adults (all ages) receiving Jobseeker's Allowance

General description of indicator	The number of people aged 16 to 59 receiving Income Support or Income-based Employment and Support Allowance and the number of adults (all ages) receiving Jobseeker's Allowance
Indicator type	Count
Time period	August 2015
Data source	DWP
Method of construction of indicator	The data were extracted from the Work and Pensions Longitudinal Study (WPLS) and the domain was constructed by DWP.
Key decisions on methodology	There are no methodological changes to this indicator. However, other changes, including those to the welfare system means that the underlying dataset has changed.
Comparison with 2012 indicator	Data zone level indicator scores cannot be compared due to changed data zone boundaries and changes to the eligibility criteria of certain benefits.
Implications of comparing this indicator with the one used in SIMD 2012	Data zone level indicator scores cannot be compared due to changed data zone boundaries.
Other data quality issues	The population estimate for the data zones S01010206 and S01010227 was zero in 2014, therefore a rate could not be determined. This is denoted by '*'.
Disclosure control	Counts were rounded to the nearest 5. Rates were rounded to the nearest whole number.
Geo-referencing	See Annex A for explanation of geo-referencing of DWP data.
Availability of data	The individual datasets used to construct the income domain are not available. Instead, a combined count and a combined rate per population of all indicators is available at www.gov.scot/SIMD.

Number of adults (aged 60 plus) receiving Guaranteed Pension Credit

General description of indicator	The number of adults aged 60 and over receiving Guarantee Pension Credit
Indicator type	Count
Time period	August 2015
Data source	DWP
Method of construction of indicator	The data were extracted from the Work and Pensions Longitudinal Study (WPLS) and the domain was constructed by DWP.
Key decisions on methodology	Indicator remains the same as SIMD 2012
Comparison with 2012 indicator	Data zone level indicator scores cannot be compared due to changed data zone boundaries.
Implications of comparing this indicator with the one used in SIMD 2012	Data zone level indicator scores cannot be compared due to changed data zone boundaries.
Other data quality issues	The population estimate for the data zones S01010206 and S01010227 was zero in 2014, therefore a rate could not be determined. This is denoted by '*'.
Disclosure control	Counts were rounded to the nearest 5. Rates were rounded to the nearest whole number.
Geo-referencing	See Annex A for explanation of geo-referencing of DWP data.
Availability of data	The individual datasets used to construct the income domain are not available. Instead, a combined count and a combined rate per population of all indicators is available at www.gov.scot/SIMD.

Number of children (aged 0-15) dependent on a recipient of Income Support, Jobseeker's Allowance or Employment and Support Allowance

General description of indicator	The number of dependants (aged 0 -15) of recipients of Income Support, Jobseeker's Allowance or Employment and Support Allowance
Indicator type	Count
Time period	May 2015
Data source	DWP
Method of construction of indicator	Income Support claimants were taken from the '100% Sure Start' dataset, and dependants were matched to claimants from the Child Benefit Scan.
Key decisions on methodology	There are no methodological changes to this indicator. However, other changes, including those to the welfare system means that the underlying dataset has changed.
Comparison with 2012 indicator	Data zone level indicator scores cannot be compared due to changed data zone boundaries.
Implications of comparing this indicator with the one used in SIMD 2012	Data zone level indicator scores cannot be compared due to changed data zone boundaries.
Other data quality issues	The population estimate for the data zones S01010206 and S01010227 was zero in 2014, therefore a rate could not be determined. This is denoted by '*'.
Disclosure control	Counts were rounded to the nearest 5. Rates were rounded to the nearest whole number.
Geo-referencing	See Annex A for explanation of geo-referencing of DWP data.
Availability of data	The individual datasets used to construct the income domain are not available. Instead, a combined count and a combined rate per population of all indicators is available at www.gov.scot/SIMD.

Number of adults not in paid employment receiving Universal Credit

General description of indicator	The number of people receiving Universal Credit
Indicator type	Count
Time period	August 2015
Data source	DWP
Method of construction of indicator	Not Available. Further information will be made available in due course.
Key decisions on methodology	Not available.
Comparison with 2012 indicator	This is a new indicator.
Implications of comparing this indicator with the one used in SIMD 2012	This is a new indicator.
Other data quality issues	The population estimate for the data zones S01010206 and S01010227 was zero in 2014, therefore a rate could not be determined. This is denoted by '*'.
Disclosure control	Counts were rounded to the nearest 5. Rates were rounded to the nearest whole number.
Geo-referencing	See Annex A for explanation of geo-referencing of DWP data.
Availability of data	The individual datasets used to construct the income domain are not available. Instead, a combined count and a combined rate per population of all indicators is available at www.gov.scot/SIMD.

Number of adults and children in Tax Credit families on low incomes

General description of indicator	The number of adults and children (aged 0 -15) in in-work families claiming Working or Child Tax Credit with an income of less than £228 per week.
Indicator type	Count
Time period	2013/14
Data source	HM Revenue and Customs
Method of construction of indicator	The data were extracted from the HMRC Tax Credit system and supplied to DWP where the domain was constructed.
Key decisions on methodology	Only those households with a standardised weekly income of less than 60% of the median (£228) were included in the indicator, as this cut-off is used to identify those families on low incomes.
Comparison with 2012 indicator	Data zone level indicator scores cannot be compared due to changed data zone boundaries.
Implications of comparing this indicator with the one used in SIMD 2012	Data zone level indicator scores cannot be compared due to changed data zone boundaries.
Other data quality issues	The population estimate for the data zones S01010206 and S01010227 was zero in 2014, therefore a rate could not be determined. This is denoted by '*'.
Disclosure control	Counts were rounded to the nearest 5. Rates were rounded to the nearest whole number.
Geo-referencing	See Annex A for explanation of geo-referencing of DWP data.
Availability of data	The individual datasets used to construct the income domain are not available, instead a combined count and a combined rate per population of all indicators is available at www.gov.scot/SIMD.

Employment Domain

Indicators included in the domain:

SIMD16 indicators	SIMD 2012 indicators	Summary of change
Working age unemployment claimant count averaged over 12 months Source: NOMIS, 2014	Working age unemployment claimant count averaged over 12 months NOMIS, 2011	No change
Working age Incapacity Benefit recipients or Employment and Support Allowance recipients DWP, August 2015	Working age Incapacity Benefit recipients or Employment and Support Allowance recipients DWP, August 2011	No change
Working age Severe Disablement Allowance recipients DWP, August 2015	Working age Severe Disablement Allowance recipients DWP, August 2011	No change

Notes on the construction of the Employment domain

The Employment domain is calculated by adding all three indicators and dividing them by the (unrevised) 2014 mid-year working age population estimate (source: NRS).

Missing data

In two data zones, S01010206 and S01010227, the population was zero in the year considered, and employment rates could not be determined. Missing rates are denoted by '*'. To be able to provide a domain ranking for all data zones, these two data zones were given the same rank as the least deprived data zone.

The following tables give more detailed information on each of the indicators in the Employment domain used in constructing SIMD16. However, SIMD16 datasets only report the combined totals for the whole domain.

Working age unemployment claimant count averaged over 12 months

General description of indicator	The unemployment claimant count records the number of people claiming Jobseeker's Allowance (JSA) and National Insurance credits at Jobcentre Plus local offices. This is not the official measure of unemployment based on the ILO definition, but is the best measure of unemployment at small area level.
Indicator type	Count
Time period	January – December 2014 (monthly averaged)
Data source	NOMIS (a web-based database of labour market statistics, managed by Durham University on behalf of the Office for National Statistics[8])
Method of construction of indicator	The Office for National Statistics provided data averaged over 12 months using the unrounded NOMIS data.
Key decisions on methodology	The same method was used to calculate the SIMD16 indicator as was used in SIMD 2012.
Comparison with 2012 indicator	This indicator remains the same as in the SIMD 2012 employment domain. However, data zone level indicator scores cannot be compared due to changed data zone boundaries.
Implications of comparing this indicator with the one used in SIMD 2012	This indicator is comparable with the SIMD 2012. However, data zone level indicator scores cannot be compared due to changed data zone boundaries.
Other data quality issues	The population estimate for the data zones S01010206 and S01010227 was zero in 2014, therefore a rate could not be determined. This is denoted by '*'.
Disclosure control	Counts were rounded to the nearest 5. Rates were rounded to the nearest whole number.
Geo-referencing	Data is reported at the data zone level.
Availability of data	The individual datasets used to construct the employment domain are not available, instead a combined count and a combined rate per population of all indicators is available at www.gov.scot/SIMD.

[8] www.nomisweb.co.uk

Working age Incapacity Benefit recipients or Employment and Support Allowance recipients

General description of indicator	The number of working age Incapacity Benefit (IB) recipients or Employment and Support Allowance recipients
Indicator type	Count
Time period	August 2015
Data source	DWP Work and Pensions Longitudinal Study (WPLS) which is has 100% coverage and is not subject to any sampling error.
Method of construction of indicator	The data were extracted from the WPLS and the domain was constructed at DWP.
Key decisions on methodology	Indicator remains the same as SIMD 2012.
Comparison with 2012 indicator	This indicator remains the same as in the SIMD 2012 employment domain. However, data zone level indicator scores cannot be compared due to changed data zone boundaries.
Implications of comparing this indicator with the one used in SIMD 2012	This indicator is comparable with the SIMD 2012. However, data zone level indicator scores cannot be compared due to changed data zone boundaries.
Other data quality issues	The population estimate for the data zones S01010206 and S01010227 was zero in 2014, therefore a rate could not be determined. This is denoted by '*'.
Disclosure control	Counts were rounded to the nearest 5. Rates were rounded to the nearest whole number.
Geo-referencing	See Annex A for explanation of geo-referencing of DWP data.
Availability of data	The individual datasets used to construct the employment domain are not available. Instead, a combined count and a combined rate per population of all indicators is available at www.gov.scot/SIMD.

Working age Severe Disablement Allowance recipients

General description of indicator	The number of working age Severe Disablement Allowance (SDA) recipients
Indicator type	Count
Time period	August 2015
Data source	DWP Work and Pensions Longitudinal Study (WPLS) which is a 100% data source that is not subject to any sampling error.
Method of construction of indicator	The data were extracted from the WPLS and the domain constructed at DWP.
Key decisions on methodology	Indicator remains the same as SIMD 2012
Comparison with 2012 indicator	This indicator remains the same as in the SIMD 2012 employment domain. However, data zone level indicator scores cannot be compared due to changed data zone boundaries.
Implications of comparing this indicator with the one used in SIMD 2012	This indicator is comparable with the SIMD 2012. However, data zone level indicator scores cannot be compared due to changed data zone boundaries.
Other data quality issues	The population estimate for the data zones S01010206 and S01010227 was zero in 2014, therefore a rate could not be determined. This is denoted by '*'.
Disclosure control	Counts were rounded to the nearest 5. Rates were rounded to the nearest whole number.
Geo-referencing	See Annex A for explanation of geo-referencing of DWP data.
Availability of data	The individual datasets used to construct the employment domain are not available, instead a combined count and a combined rate per population of all indicators is available at www.gov.scot/SIMD.

Health Domain

Indicators included in the domain:

SIMD16 indicators	2016 Weight	SIMD 2012 indicators	2012 Weight	Summary of change
Standardised mortality ratio Source: ISD, 2011-14	0.07	Standardised mortality ratio ISD, 2007-10	0.09	No change
Hospital stays (Continuous Inpatient Stays [CIS]) related to alcohol misuse: standardised ratio ISD, 2011-14	0.10	Hospital episodes related to alcohol use ISD, 2007-10	0.15	The indicator now includes the additional ICD10 category K852 (Alcoholic Induced Acute Pancreatitis (AIAP)).
Hospital stays (CIS) related to drug misuse: standardised ratio ISD, 2011-14	0.06	Hospital episodes related to drug use ISD, 2007-10	0.07	No change
Comparative illness factor: standardised ratio DWP, August 2015	0.37	Comparative illness factor: standardised ratio DWP, August 2011	0.14	No change
Emergency stays (CIS) in hospital: standardised ratio ISD, 2011-15	0.22	Emergency stays (CIS) in hospital: standardised ratio ISD, 2007-10	0.47	No change

Proportion of population being prescribed drugs for anxiety, depression or psychosis ISD, 2014-15	0.15	Estimated proportion of population being prescribed drugs for anxiety, depression or psychosis ISD, 2010	0.05	The new indicator counts the number of people who have been prescribed the relevant drugs within the specified year. The previous indicator estimated the average number of people taking drugs for anxiety, depression or psychosis in the year. See SIMD 2012 Technical Notes for more information[9]
Proportion of live singleton births of low birth weight ISD, 2011-14	0.02	Proportion of live singleton births of low birth weight ISD, 2006-09	0.02	No change.

Notes on the construction of the Health domain

Missing data

For some (but not all) indicators, the population was zero in some data zones during the time period considered, and therefore indicator rates and ranks could not be determined. Missing rates and ranks are denoted by '*'.

To calculate the overall rankings for the Health domain, the normalised scores for these data zones were set to zero before combining the indicators. As a result, the indicators with missing values moved the overall domain ranking of these data zones towards a middle ranking.

Weights

The weightings of the individual indicators in the Health Domain are rounded and may therefore not add up to 100 per cent.

Age-sex standardisation

Five of the seven indicators in the Health domain are indirectly standardised ratios.

The aim of standardisation is to provide a summary 'adjusted' rate to take into account underlying differences (for example age, sex, deprivation) of a study population relative to a 'reference' population.

Indirect age-sex standardisation is based on a comparison of observed to expected numbers of events or cases, achieved by applying age-specific rates from a 'standard population' to the population of interest. For example, if the study

[9] www.gov.scot//SIMD/BackgroundMethodology/MethodologyVisual2012 downloaded on 25/08/2016

population is within a data zone of residence then the standard population might be taken as Scotland.

For more information on direct and indirect standardisation techniques please refer to the NHS guidance[10]

The following tables give more detailed information on each of the indicators in the Health domain used in constructing SIMD16.

[10] http://www.scotpho.org.uk/downloads/Standardisation_Guide_June_2011(3).doc downloaded on 25/08/2016

Standardised Mortality Ratio

General description of indicator	Indirectly age-sex standardised ratio for deaths of all ages registered from all causes between 2011 and 2014. Data standardised by 5-year age band and sex.
Indicator type	Indirectly standardised ratio: four-year period
Time period	2011-2014
Data source	National Records of Scotland
Denominator used	Expected events (calculated from indirect standardisation to Scotland)
Data source of denominator	National Records of Scotland 2011-2014 mid-year population estimates (unrevised) and mortality information
Method of construction of indicator	For each data zone, the sum of observed all-cause deaths by sex and 5-year age band was divided by the corresponding sum of expected deaths. For further details, please see methodology section (2.3) of SIMD 2006 technical report[11].
Key decisions on methodology	Indicator methodology remains the same as SIMD 2012.
Comparison with 2012 indicator	This indicator is the same indicator as in SIMD 2012. However, data zone level indicator scores cannot be compared due to changed data zone boundaries.
Implications of comparing this indicator with the one used in SIMD 2012	Indirectly standardised ratios have limitations for drawing comparisons. For example: In comparing one data zone between different SIMD releases, if it had a ratio of 100 in SIMD 2012 and 110 in SIMD16, you could say that the data zone has got worse **relative to Scotland**. However, you cannot say whether the data zone has actually worsened – only that it has worsened relative to Scotland. In comparing two data zones for the same SIMD release (e.g. SIMD16), if one data zone had a ratio of 110 and another a ratio of 115, you could say that both data zones are worse than the Scottish average (100), but for statistical reasons you **cannot** say that the data zone with the ratio of 115 is worse than the one with the ratio of 110. The raw data for this indicator for SIMD 2012 and SIMD16 have not been published.

[11] http://www.scotland.gov.uk./Publications/2006/10/13142913/0 downloaded on 26/8/2016

Other data quality issues	Given the legal requirements around death registrations, it is expected that this data does not have data quality issues.
Disclosure control	N/A
Geo-referencing	All postcodes are validated at source. Data excludes people where no match to a data zone was possible e.g. homeless, incomplete postcode information.
Availability of data	The standardised ratio is available on www.gov.scot/SIMD.

Hospital stays (CIS) related to alcohol misuse: standardised ratio

General description of indicator	Indirectly age-sex standardised ratio of observed to expected stays in acute NHS hospitals in Scotland with a diagnosis of alcohol-related conditions (based on any of six possible diagnoses), both sexes, all ages. These figures are based on the continuous inpatient stay (CIS). Individual SMR01 (acute hospital) episodes for each patient are linked together using probability matching to create "linked" patient histories and CISs (continuous stays in hospital regardless of whether or not this involves transfer between hospitals or between specialties within the same hospital).
Indicator type	Indirectly standardised ratio: four-year period
Time period	2011-2014
Data source	NHS Scotland Information Services Division (ISD), Scottish Morbidity Record (SMR)01
Denominator used	Expected stays – calculated by indirect standardisation
Data source of denominator	ISD SMR01, and NRS mid-year resident population estimates (unrevised)
Method of construction of indicator	For each data zone, the sum of observed CISs by sex and 5-year age band was divided by the corresponding sum of expected CISs. For further details, please see methodology section (2.3) of SIMD 2006 technical report[12]. Alcohol-related conditions are defined using the International Classification of Diseases Volume 10 (World Health Organization) (E244, E512, F10, R780, Y90, Y91, Z714, Z502, Y573, T510, T511, T519, X45, X65, Y15, O354, Q860, P043, Z721, G621, G721, K860, I426, K70, K292, G312, K852).
Key decisions on methodology	SIMD16 includes the additional ICD10 category K852 (Alcoholic Induced Acute Pancreatitis (AIAP)).
Comparison with 2012 indicator	This indicator is not the same indicator as in SIMD 2012 as it includes an additional ICD10 category. Furthermore, data zone level indicator scores cannot be compared due to changed data zone boundaries.

[12] http://www.scotland.gov.uk./Publications/2006/10/13142913/0 downloaded on 26/8/2016

Implications of comparing this indicator with the one used in SIMD 2012	Indirectly standardised ratios have limitations for drawing comparisons. For example: In comparing one data zone between different SIMD releases, if it had a ratio of 100 in SIMD 2012 and 110 in SIMD16, you could say that the data zone has got worse **relative to Scotland**. However, you cannot say whether the data zone has actually worsened – only that it has worsened relative to Scotland. In comparing two data zones for the same SIMD release (e.g. SIMD16), if one data zone had a ratio of 110 and another a ratio of 115, you could say that both data zones are worse than the Scottish average (100), but for statistical reasons you **cannot** say that the data zone with the ratio of 115 is worse than the one with the ratio of 110.
Other data quality issues	There were 119 data zones with no CISs related to alcohol misuse in the time-period used, and therefore the ratios and ranks will be identical in these cases. Caution is necessary when interpreting these figures. Recording of alcohol misuse may vary from hospital to hospital. Where alcohol misuse is suspected but unconfirmed it may not be recorded.
Disclosure control	N/A
Geo-referencing	All postcodes are validated at source. Data excludes people where no match to a data zone was possible e.g. homeless, incomplete postcode information.
Availability of data	The standardised ratio is available on www.gov.scot/SIMD.

Hospital stays (CIS) related to drug misuse: standardised ratio

General description of indicator	Indirectly age-sex standardised ratio of observed to expected stays in acute NHS hospitals in Scotland with a diagnosis of drug misuse conditions (based on any of 6 possible diagnoses), both sexes, all ages. These figures are based on the continuous inpatient stay (CIS). Individual SMR01 (acute hospital) episodes for each patient are linked together using probability matching to create "linked" patient histories and CISs (continuous stays in hospital regardless of whether or not this involves transfer between hospitals or between specialties within the same hospital).
Indicator type	Indirectly standardised ratio: four-year period
Time period	2011-2014
Data source	NHS Scotland Information Services Division (ISD), Scottish Morbidity Record (SMR)01
Denominator used	Expected stays - calculated by age-sex standardisation
Data source of denominator	ISD SMR01, and NRS mid-year resident population estimates (unrevised)
Method of construction of indicator	For each data zone, the sum of observed CISs by sex and 5-year age band was divided by the corresponding sum of expected CISs. For further details, please see methodology section (2.3) of SIMD 2006 technical report[13]. Drug-related conditions are defined using the International Classification of Diseases Volume 10 (World Health Organization) (F11, F12, F13, F14, F15, F16, F18 and F19).
Key decisions on methodology	The same list of drugs was used as for SIMD 2012.
Comparison with 2012 indicator	This indicator is the same indicator as in SIMD 2012. However, data zone level indicator scores cannot be compared due to changed data zone boundaries.

[13] http://www.scotland.gov.uk./Publications/2006/10/13142913/0 downloaded on 26/8/2016

Implications of comparing this indicator with the one used in SIMD 2012	Indirectly standardised ratios have limitations for drawing comparisons. For example: In comparing one data zone between different SIMD releases, if it had a ratio of 100 in SIMD 2012 and 110 in SIMD16, you could say that the data zone has got worse **relative to Scotland**. However, you cannot say whether the data zone has actually worsened – only that it has worsened relative to Scotland. In comparing two data zones for the same SIMD release (e.g. SIMD16), if one data zone had a ratio of 110 and another a ratio of 115, you could say that both data zones are worse than the Scottish average (100), but for statistical reasons you **cannot** say that the data zone with the ratio of 115 is worse than the one with the ratio of 110.
Other data quality issues	There were 2,666 data zones with no CISs related to drug misuse in the time-period used, and therefore the ratios and ranks will be identical in these cases. Caution is necessary when interpreting the figures. Recording of drug misuse may vary from hospital to hospital. Where drug misuse is suspected but unconfirmed it may not be recorded by the hospital. Further, where drug misuse is recorded, it may not be possible to identify which drugs were involved.
Disclosure control	N/A
Geo-referencing	All postcodes are validated at source. Data excludes people where no match to a data zone was possible e.g. homeless, incomplete postcode information.
Availability of data	The standardised ratio is available on www.gov.scot/SIMD.

Comparative illness factor: standardised ratio

General description of indicator	The CIF is a combined count of the total number of people receiving one or more of Disabled Living Allowance (DLA), Attendance Allowance, Incapacity Benefit (not receiving DLA), Employment Support Allowance and Severe Disablement Allowance.
Indicator type	Indirectly standardised ratio
Time period	August 2015
Data source	Department for Work and Pensions (DWP), Work and Pensions Longitudinal Study (WPLS).
Denominator used	Expected frequency of claiming the selected benefits, calculated during age-sex standardisation (see SIMD 2006 technical report[14] for details)
Data source of denominator	NRS Small Area Population Estimates 2014 (unrevised), DWP and WPLS
Method of construction of indicator	The observed number of benefit recipients was divided by the expected number for each data zone to provide a ratio. For further details of the standardisation method see the SIMD 2006 technical report.
Key decisions on methodology	Indicator remains the same as SIMD 2012.
Comparison with 2012 indicator	This indicator is the same indicator as in SIMD 2012. However, data zone level indicator scores cannot be compared due to changed data zone boundaries.
Implications of comparing this indicator with the one used in SIMD 2012	This indicator is the same indicator as in SIMD 2012. However, data zone level indicator scores cannot be compared due to changed data zone boundaries.
Other data quality issues	After calculating the standardisation there are cases where division by zero occurs due to population estimate of data zone being zero. Such cases are marked "*".
Disclosure control	Figures are rounded to the nearest 5. Derived figures less than 2.5 are given a value of ‘0’. All benefit figures for each geography breakdown have also had a ‘blurring’ factor applied in line with the DWP data disclosure policy.
Geo-referencing	See Annex A for explanation of geo-referencing of DWP data.

[14] http://www.scotland.gov.uk./Publications/2006/10/13142913/0 downloaded on 26/8/2016

Availability of data	The standardised ratio is available on www.gov.scot/SIMD.

Emergency stays (CIS) in hospital: standardised ratio

General description of indicator	Indirectly age-sex standardised ratio of observed to expected emergency stays in acute NHS hospitals in Scotland, both sexes and all ages. These figures are based on the continuous inpatient stay (CIS). Individual SMR01 (acute hospital) episodes for each patient are linked together using probability matching to create "linked" patient histories and CISs (continuous stays in hospital regardless of whether or not this involves transfer between hospitals or between specialties within the same hospital).
Indicator type	Indirectly standardised ratio: four-year period
Time period	2011/12-2014/15
Data source	NHS Scotland Information Services Division (ISD), Scottish Morbidity Record (SMR)01
Denominator used	Expected stays - calculated by age-sex standardisation
Data source of denominator	ISD SMR01, and NRS mid-year resident population estimates (unrevised)
Method of construction of indicator	For each data zone, the sum of observed CISs by sex and 5-year age band was divided by the corresponding sum of expected CISs. For further details, please see methodology section (2.3) of SIMD 2006 technical report[15].
Key decisions on methodology	There are no methodology changes when comparing against SIMD 2012.
Comparison with 2012 indicator	This indicator is the same indicator as in SIMD 2012. However, data zone level indicator scores cannot be compared due to changed data zone boundaries.

[15] http://www.scotland.gov.uk./Publications/2006/10/13142913/0 downloaded on 26/8/2016

Implications of comparing this indicator with the one used in SIMD 2012	Indirectly standardised ratios have limitations for drawing comparisons. For example: In comparing one data zone between different SIMD releases, if it had a ratio of 100 in SIMD 2012 and 110 in SIMD16, you could say that the data zone has got worse **relative to Scotland**. However, you cannot say whether the data zone has actually worsened – only that it has worsened relative to Scotland. In comparing two data zones for the same SIMD release (e.g. SIMD 2012), if one data zone had a ratio of 110 and another a ratio of 115, you could say that both data zones are worse than the Scottish average (100), but for statistical reasons you **cannot** say that the data zone with the ratio of 115 is worse than the one with the ratio of 110.
Other data quality issues	In Dumfries and Galloway some patients may access healthcare from NHS England. Data from NHS England is not collected for SIMD. The number of emergency stays in hospital for affected areas was imputed from the unaffected local authority average figures. This affects Langholm and Eskdale, Annandale East, and Gretna. The analysis of data zones along the English border showed that there were no other areas significantly affected by this effect.
Disclosure control	N/A
Geo-referencing	All postcodes are validated at source. Data excludes people where no match to a data zone was possible e.g. homeless, incomplete postcode information.
Availability of data	The standardised ratio is available on www.gov.scot/SIMD.

Proportion of population being prescribed drugs for anxiety, depression or psychosis

General description of indicator	This indicator is the proportion of patients being prescribed anxiolytic, antipsychotic or antidepressant drugs. This is derived from paid prescriptions data at patient level.
Indicator type	Proportion
Time period	April 2014 to March 2015
Data source	ISD Prescribing Information System (PIS). All data held in PIS is sourced from Practitioner Services Division (PSD) within NHS National Services Scotland who are responsible for the remuneration and reimbursement of dispensing contractors within Scotland.
Denominator used	Small area population estimates 2014 (unrevised)
Data source of denominator	National Records of Scotland (NRS)

Method of construction of indicator	The Prescribing Team within ISD maintains a detailed database of all NHS prescriptions dispensed in the community in Scotland. Anxiolytic, antipsychotic and antidepressant drugs can be identified through the British National Formulary (BNF) Codes 4.1.2 (Anxiolytics), 4.2 (Antipsychotics), and 4.3 (Antidepressants). Patient based analysis is now possible because comprehensive patient identifiable data is available in the prescribing dataset. All NHS patients have a unique Community Health Index (CHI) number; this makes it possible to identify which prescription items have been dispensed for individual patients. Prior to April 2009, the proportion of prescriptions with a valid CHI number recorded was not high enough to make patient based analysis possible. For medicines used in mental health the CHI capture / completeness rates are now high enough to permit accurate patient analyses. In 2014/15, the CHI capture rate for anxiolytic, antipsychotic and antidepressant drugs is 97.9%. The data zone attributable to each patient with a valid CHI number has been derived from the address recorded on CHI as at the time that the latest prescription for anxiolytic, antipsychotic and antidepressant drugs in 2014/15 was processed by the Data Capture Validation and Pricing system in PSD. The proportion of the population being prescribed drugs for anxiety, depression or psychosis in each data zone was estimated by dividing the aggregated count of patients per data zone by the data zone population estimates for 2014.
Key decisions on methodology	In the past, the number of daily maintenance doses dispensed was used to produce an estimate of the proportion of the population making daily use of these drugs. For example, 10 Defined Daily Doses (DDDs) per 1,000 population per day correspond to a daily use of the drug by 1% of the population. This is an estimate based on the assumed daily maintenance dose and so does not show the actual proportion of the population being prescribed a particular medicine. Due to the improvement of CHI capture, it is now possible to carry out accurate patient based analyses, thereby making available information on the actual number of patients who have been dispensed a particular drug during a specified period.

Comparison with 2012 indicator	It should be noted that patient counts and DDDs are measuring different things. The new patient based figure counts the number of people who have been prescribed the drug within the specified time period (in this case a year), whereas the DDD is an estimate of the average number of people taking it on any one day during the year. Furthermore, data zone level indicator scores cannot be compared due to changed data zone boundaries.
Implications of comparing this indicator with the one used in SIMD 2012	The patient based figure will usually be higher compared to the indicator in SIMD 2012, since some people might only be on the drug(s) for a short period or at a low dose.
Other data quality issues	There is an issue with extracting data from PIS by patient geography which NSS IT continues to work on resolving. An estimate of up to 1-2% of records may have an out of date postcode. This issue does not appear to affect any one geographic area more than any other. The CHI capture rate for these medications is 98%. Figures are not adjusted to account for this. The population estimate for the data zones S01010206 and S01010227 was zero in 2014, therefore a proportion could not be determined. This is denoted by '*'.
Disclosure control	N/A
Geo-referencing	All postcodes are validated at source. Data excludes people where no match to a data zone was possible e.g. homeless, incomplete or redundant postcode information.
Availability of data	The proportion of the population being prescribed drugs for anxiety, depression or psychosis is available on www.gov.scot/SIMD.

Proportion of live singleton births of low birth weight

General description of indicator	Proportion of live singleton births with low birth weight (less than 2,500 grams), where birth figures exclude home births and births at non-NHS hospitals; and a singleton is a baby from a pregnancy resulting in only one live or still birth. No account is taken of gestational age. The year shown refers to the year of discharge from hospital.
Indicator type	Proportion
Time period	2011-2014 (four-year aggregate)
Data source	NHS Scotland Information Services Division (ISD), Scottish Morbidity Record (SMR)02 (maternity records)
Denominator used	All live singleton births
Data source of denominator	ISD SMR02
Method of construction of indicator	For each data zone, the number of low birth weight live singleton births was divided by the total number of live singleton births.
Key decisions on methodology	This is the same indicator as used in SIMD 2012.
Comparison with 2012 indicator	This indicator is the same indicator as in SIMD 2012. However, as these are very small areas be aware of the effect of small numbers and potential zeros. Furthermore, data zone level indicator scores cannot be compared due to changed data zone boundaries.
Implications of comparing this indicator with the one used in SIMD 2012	See comments above; please take care in drawing conclusions about time trends as the proportions by data zone are generally small and not robust. Also, data zone level indicator scores cannot be compared due to changed data zone boundaries.
Other data quality issues	N/A
Disclosure control	N/A
Geo-referencing	All postcodes are validated at source. Data excludes births where no match to a data zone was possible e.g. homeless, incomplete postcode information.
Availability of data	The proportion of live singleton births of low birth weight is available on www.gov.scot/SIMD.

Education, Skills and Training

Indicators included in the domain:

SIMD16 indicators	2016 Weight	SIMD 2012 indicators	2012 Weight	Summary of change
School pupil attendance Source: SG, 2012/13, 2014/15	0.21	School pupil absences SG, 2009/10-2010/11	0.23	The 2016 indicator now looks at pupils with high attendance, whereas the 2012 indicator calculated an average absence level for all pupils.
Attainment of school leavers SG, 2011/12-2014/15	0.23	Pupil performance on SQA at stage 4 SG, 2008/9-2010/11	0.23	The 2016 indicator considers the highest qualification a pupil leaves school with, whereas the 2012 indicator looked at the average SQA score at stage 4.
Working age people with no qualifications: standardised ratio 2011 Census	0.29	Working age people with no qualifications 2001 Census	0.28	Age bands and age range for standardisation have changed. Due to a changed wording of the Census question, the SIMD16 indicator counts people who have no qualifications, while the indicator in previous SIMD editions also included people whose qualifications were not listed in the response options.
17-21 year olds enrolling into higher education HESA 2012/13 - 2014/15	0.15	17-21 year olds enrolling into higher education HESA 2008/9 – 2010/11	0.15	No change

People aged 16-19 not in full time education, employment or training School Leavers 2012/13-2013/14, DWP 2013 and 2014	0.12	People aged 16-19 not in full time education, employment or training School Leavers 2009/10-2010/11, DWP 2010 and 2011	0.11	No change

Notes on the construction of the Education domain

For some (but not all) indicators, the population of the considered age group was zero in some data zones during the time period considered, and indicator rates and ranks could not be determined. Missing rates and ranks are denoted by '*'.

To calculate the overall rankings for the Education domain, the normalised scores for these data zones were set to zero before combining the indicators. As a result, the indicators with missing values moved the overall domain ranking of these data zones towards a middle ranking.

The following tables give more detailed information on each of the indicators in the Education, Skills and Training domain used in constructing SIMD16.

School pupil attendance

General description of indicator	This indicator provides the percentage of pupils who attend school 90% or more of the time for each data zone in Scotland. The indicator includes pupils who attend publicly funded primary, secondary and special schools.
Indicator type	Percentage of pupils with attendance of 90% or above over a two year period
Time period	School years 2012/13 and 2014/15
Data source	Data is provided to the Scottish Government by the local authorities and managers of mainstream grant-aided schools
Denominator used	Total number of pupils
Data source of denominator	Data is provided to the Scottish Government by the local authorities and managers of mainstream grant-aided schools
Method of construction of indicator	Information is received at pupil level. Data is aggregated over two years, with the intention of reducing the impact of fluctuations from one year to the next due to a small number of pupils per data zone.
Key decisions on methodology	The methodology used to construct the indicator was improved to only consider high attendance levels rather than all half-day absences. A small proportion of pupils with high attendance contributes to an education deprived ranking.
Comparison with 2012 indicator	The 2016 attendance indicator methodology is different from the methodology of the SIMD 2012 absence indicator. The 2012 indicator considered average absence of all pupils, whereas the 2016 indicator only includes pupils with high attendance. A high score in the 2016 indicator contributes to a less deprived ranking in the education domain.
Implications of comparing this indicator with the one used in SIMD 2012	The 2012 and 2016 indicators are not comparable.

Other data quality issues	This indicator can be sensitive to small numbers in some data zones where the number of school-age children is small. The pupil population for the data zones S01010206 and S01010227 was zero in the school years considered, therefore a rate could not be determined. This is denoted by '*'.
Disclosure control	N/A
Geo-referencing	Pupil home postcode is one of the indicators collected for each pupil in the annual pupil census. Postcodes were known for about 99% of pupils in publicly funded schools. Data used in the formulation of this indicator do not include pupils with a missing or invalid postcode.
Availability of data	Percentages are available at www.gov.scot/SIMD. National data is published in the Scottish Government statistical publication[16].

[16] http://www.scotland.gov.uk/Topics/Statistics/Browse/School-Education/PubAttendanceAbsence downloaded on 26/8/2016

Attainment of school leavers

General description of indicator	This indicator provides a score for the average highest level of the qualification pupils who attend publicly funded secondary schools leave school with.
Indicator type	Average score (three year average)
Time period	School years 2011/12 to 2013/14
Data source	Attainment data from Scottish Qualifications Authority (SQA), pupil numbers from the pupil census.
Denominator used	Total number of school leavers
Data source of denominator	Pupil census
Method of construction of indicator	Using the SCQF qualifications data for school leavers, the score is calculated by identifying the best level of qualification each leaver exits school with. The score is calculated by multiplying the highest qualification level achieved by each pupil by a corresponding factor. Level 3 qualifications are multiplied by three, level 4 by four, level 5 by five and level 6 by six. This indicator looks at the highest qualification attained by each pupil, not the number of qualifications attained. So one pupil who leaves school with four level 3 qualifications will score three, whilst a pupil leaving school with one level 5 qualification will score five. The total score is then divided by the total number of school leavers in each data zone who sat exams in that year.
Key decisions on methodology	This indicator has been constructed to replace the Tariff Score Indicator used in previous SIMDs. This method had a high correlation with the previous indicator and was chosen because of its similarity to the previous indicator. Data is based on the last 3 years and includes all school leavers in secondary schools and special schools. Data from independent schools have been excluded for a number of reasons. There is a lack of data zone level information and independent schools may choose to sit GCSE's or other English qualifications for which we have no information.
Comparison with 2012 indicator	The 2012 and 2016 indicators are not comparable as they measure attainment differently. Furthermore, data zone level indicator scores cannot be compared due to changed data zone boundaries.

Implications of comparing this indicator with the one used in SIMD 2012	The 2012 and 2016 indicators are not comparable.
Other data quality issues	In some data zones, there were no school leavers in the school years considered, therefore a rate could not be determined. This is denoted by '*'.
Disclosure control	N/A
Geo-referencing	Pupil home postcode is one of the indicators collected for each pupil in the annual school census. Valid postcodes were submitted for about 99% of pupils in publicly funded secondary schools. Data used in the formulation of this indicator do not include pupils with a missing or invalid postcode.
Availability of data	This indicator is available for download at www.gov.scot/SIMD.

Working age adults with no qualifications: standardised ratio

General description of indicator	The indicator shows the percentage of working age adults (aged 25-64) that responded in the 2011 Census to have no qualification.
Indicator type	Ratio (indirectly standardised)
Time period	2011
Data source	NRS, 2011 Census
Denominator used	Expected number of people with no qualifications (calculated during indirect age-sex standardisation)
Data source of denominator	2011 Census
Method of construction of indicator	The observed number of people with no qualifications was divided by the expected number for each data zone to provide a ratio.
Key decisions on methodology	The official source for data on the proportion of people with no qualifications is the Labour Force Survey (LFS). As the LFS is a survey, reliable data are not available at data zone level. For this reason the only viable source for this indicator at data zone level is the 2011 Census.
Comparison with 2012 indicator	The same methodology was used, but the age bands for standardisation have changed from 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59 for women and an additional age band 60-94 for men in 2012 to 25-34, 35-49, 50-64 for both men and women in 2016. Furthermore, the Census question has changed. The 2011 question included three additional 'other' qualifications categories so that respondents (including those with foreign qualifications) could more easily identify appropriate responses. There was also an additional 2011 category for 'No qualifications', to replace the 2001 'None of these' category. These categories cannot be considered comparable as it is possible that a person will have responded differently in 2011 and 2001 for the same qualification. For example, a respondent who had foreign qualifications which were not listed in categories in 2001 may have ticked 'None of these', whereas, in 2011, they will likely have chosen an appropriate 'other' category of qualifications rather than ticking 'No qualifications'. And finally, data zone level indicator scores cannot be compared due to changed data zone boundaries.

Implications of comparing this indicator with the one used in SIMD 2012	Direct comparisons between the two sets of 2001 and 2011 Census results as used in SIMD 2012 and SIMD16 are not possible. The SIMD16 indicator counts people who have no qualifications, while the indicator in previous SIMD editions also included people whose qualifications were not listed in the response options. Therefore, the absolute number of people with no qualifications measured in the SIMD16 indicator is much lower than in the SIMD 2012 indicator.
Other data quality issues	N/A
Disclosure control	This indicator may have been disclosure controlled using either or both of these techniques: - targeted record swapping; - restriction of detail particularly at low level geographies Visit the 'National Archives' website for further details.[17]
Geo-referencing	No geo-referencing issues
Availability of data	The standardised ratio can be downloaded at www.gov.scot/SIMD. Census data is also published by NRS[18].

Age-sex standardisation

The aim of standardisation is to provide a summary 'adjusted' rate to take into account underlying differences (for example age, sex, deprivation) of a study population relative to a 'reference' population.

Indirect age-sex standardisation is based on a comparison of observed to expected numbers of events or cases, achieved by applying age-specific rates from a 'standard population' to the population of interest. For example, if the study population is within a data zone of residence then the standard population might be taken as Scotland.

For more information on direct and indirect standardisation techniques please refer to the NHS guidance[19].

[17] http://webarchive.nationalarchives.gov.uk/20160105160709/http:// ons.gov.uk/ons/guide-method/census/2011/census-data/2011-census-user-guide/quality-and-methods/methods/statistical-disclosure-control-methods/index.html downloaded on 18/08/2016

[18] http://www.scotlandscensus.gov.uk/

[19] http://www.scotpho.org.uk/downloads/Standardisation_Guide_June_2011(3).doc downloaded on 25/08/2016

Proportion of 17-21 year olds entering in to full time higher education

General description of indicator	The indicator shows the percentage of 17-21 year olds who enrolled in a first degree course in each data zone. The indicator considers the number of 17-21 entrants to first degree courses domiciled before the start of their course in each data zone and the total number of 17-21 year olds resident in the data zone over the same period.
Indicator type	Percentage (over three years)
Time period	2012/13 to 2014/15
Data source	Higher Education Statistics Agency (HESA)
Denominator used	2012-2014 Small Area Population Estimates of 17-21 year olds (unrevised), adjusted to account for large student populations (see note on data quality below)
Data source of denominator	NRS
Method of construction of indicator	The number of 17-21 year olds who entered a first degree programme between 2012/13 and 2014/15 from each data zone was divided by the total population estimate of 17-21 year olds in the data zone in the same time period. This gives a percentage of 17-21 year olds in each data zone that entered a first degree course.
Key decisions on methodology	Actual enrolments to first degree courses using data supplied to HESA was used as the numerator for SIMD 2016. This is the same methodology as in SIMD 2012. Study at degree level has been chosen as this level provides the highest gains in future earning potential and reduces double counting of students that progress from HND to degree.
Comparison with 2012 indicator	This indicator is the same indicator as in SIMD 2012. However, data zone level indicator scores cannot be compared due to changed data zone boundaries.
Implications of comparing this indicator with the one used in SIMD 2012	Data zone level indicator scores cannot be compared due to changed data zone boundaries.

Other data quality issues	The count of students relates to home address before study. The denominator population includes students at their term-time address which affects a small number of data zones, e.g. those containing student halls. These data zones were adjusted to take account of large numbers of 17-21 year olds. For the adjustment, we compared the ratio of the number of 16 year olds (before university) and the number of 17-21 year olds in each data zone. Where this ratio was below the average ratio and the 17-21 year old population was larger than 150, the population was adjusted to an expected population given the number of 16 year olds in this data zone. 114 Data zones were adjusted in this way. In some data zones, there were no 17-21 year olds in the years considered, therefore a rate could not be determined. This is denoted by '*'.
Disclosure control	N/A
Geo-referencing	Data excludes people where no match to a data zone was possible e.g. homeless, incomplete postcode information. This affects 0.3% of the students.
Availability of data	This indicator can be downloaded at www.gov.scot/SIMD.

People aged 16-19 not in education, employment or training

General description of indicator	The indicator shows the proportion of 16 to 19 year-olds who are not in full-time education, employment or training
Indicator type	Percentage (over 2 years)
Time period	2012/13-2013/14
Data source	DWP WPLS Careers Scotland ScotXed
Denominator used	2014 Small Area Population Estimates of 16-19 year olds (unrevised)
Data source of denominator	NRS
Method of construction of indicator	DWP took snapshots of all 18 and 19 year olds claiming NEET benefits (combined count of people on the following benefits: Jobseeker's Allowance; Income Support; Employment Support Allowance, Incapacity Benefit (excluding claimants on Severe Disability Allowance unless they are also claiming Income Support)) at November 2013 and November 2014 and added these figures together. These were then added to the school leavers in negative destinations data supplied by SG Education Analytical Services. The total was divided by two to create the numerator. The numerator for each data zone was divided by the 2014 small area population estimates for 16-19 year olds to calculate a rate.
Key decisions on methodology	Data were aggregated over two years, with the intention of reducing the impact of fluctuations from one year to the next due to small numbers per data zone.
Comparison with 2012 indicator	This indicator is the same indicator as in SIMD 2012. However, data zone level indicator scores cannot be compared due to changed data zone boundaries.
Implications of comparing this indicator with the one used in SIMD 2012	Data zone level indicator scores cannot be compared due to changed data zone boundaries.
Other data quality issues	Data should be treated with caution as some of the percentages are calculated using very small numbers. In some data zones, there were no 16-19 year olds in the years considered, therefore a rate could not be determined. This is denoted by '*'.

Disclosure control	Percentages are rounded to the nearest integer. All benefit figures for each geography breakdown have also had a 'blurring' factor applied in line with the DWP data disclosure policy.
Geo-referencing	Data on leavers destinations is matched to data from the pupil census on the basis of combinations of Scottish Candidate Number, School, gender, date of birth and post code (see Destinations of Leavers from Scottish Schools publication[20]). Data zones are derived from pupil's home post codes.
Availability of data	The percentage can be downloaded at www.gov.scot/ SIMD.

[20] http://www.scotland.gov.uk/Topics/Statistics/Browse/School-Education/PubDestinationLeavers downloaded on 26/8/2016

Geographic Access to Services Domain

Indicators included in the domain:

SIMD16 indicators	2016 Weight	SIMD 2012 indicators	2012 Weight	Summary of change
Drive time sub-domain (weight in Access domain: 2/3)				
to GP Surgery	0.24	to GP Surgery	0.20	No changes
to Post Office	0.15	to Post Office	0.15	No changes
to Retail Centre	0.21	to Retail Centre	0.23	No changes
to Primary School	0.11	to Primary School	0.12	No changes
to Secondary School	0.15	to Secondary School	0.16	No changes
to Petrol Station	0.14	to Petrol Station	0.15	No changes
Public transport sub-domain (weight in Access domain: 1/3)				
to GP Surgery	0.47	to GP Surgery	0.48	No changes
to Post Office	0.28	to Post Office	0.24	No changes
to Retail Centre	0.25	to Retail Centre	0.28	No changes

Notes on the construction of the Access domain

Sub-domain weighting

The drive time sub-domain scores receive a higher weight in the overall access domain because the data is more robust and consistent across Scotland and the domain takes into account access to six services whereas the public transport sub-domain only takes into account three different services. As with SIMD 2012, it was not possible to include public transport times to primary and secondary schools as there is no consistent time table information available on school buses.

Changes to the software

The software used to calculate journey times has changed compared to SIMD 2012. As a result, most journey times are shorter and more accurately reflect true travel times for SIMD16. Detailed information on the background and methodology for the access domain can be accessed at www.gov.scot/SIMD[21].

The following tables give more detailed information on each of the indicators in the Geographic Access to Services domain used in constructing SIMD16.

[21] http://www.gov.scot/Topics/Statistics/SIMD/docs downloaded on 26/8/2016

Drive time sub-domain

- Average drive time to a primary school
- Average drive time to a secondary school
- Average drive time to a GP surgery
- Average drive time to a post office
- Average drive time to a retail centre
- Average drive time to a petrol station

General description of indicator	Population weighted average time taken to reach key services by driving
Indicator type	Population weighted average drive time in minutes
Time period	2015
Data source	Road network: Ordnance Survey Integrated Transport Network (ITN), April 2015 Road speed: INRIX Road Speed Data, April 2015 Public Transport timetable / route data: Traveline National Dataset and Associate of Train Operating Companies data (October 2015) Service locations: Secondary schools, primary schools, petrol stations and GP surgeries: PointX, March 2015 Retail centres: CACI Retail, 2015 Post Offices : Royal Mail, 2015 Census output area population grid references: National Records of Scotland, 2011
Denominator used	2013-15 average primary school population (for drive time to primary schools) 2013-15 average secondary school population (for drive time to secondary schools) 2011 Total population (for all other indicators)
Data source of denominator	Scottish Government pupil census, 2013-15 2011 Census
Method of construction of indicator	For each census output area, the closest trip to each destination was calculated. The results were aggregated to data zone level to provide an average drive time for each data zone. Further details are available in the GI-SAT report on the construction of the SIMD16 Geographic Access domain.[22]

[22] http://www.gov.scot/Topics/Statistics/SIMD/docs downloaded on 26/8/2016

Key decisions on methodology	Drive times were calculated using Basemap TRACC software. The software searches for the closest of each type of destination to every origin, and its drive time. Where drive times may include a ferry journey, calculation was schedule-based (same day/times as public transport times – see below) and averaged in order to take account of the actual ferry timetable data and variability of services throughout the day. Thirty minute wait times at ferry terminals were included. Passenger ferry routes were excluded from drive time calculations. The origin of any trip is the population weighted census output area centroid. Road speeds are based on observed road speeds at different times of the day. Post Office locations reflect post office services at a fixed location available for 6 hours or more per week. Primary and secondary school populations were used to weight primary and secondary school drive times.
Comparison with 2012 indicator	The services used are the same as for SIMD 2012, however there have been improvements to the methodology in SIMD16 including: The new software calculates journey times slightly differently, leading to shorter journeys which more closely match the real journey times likely to occur. Data zone level indicator scores cannot be compared due to changed data zone boundaries.
Implications of comparing this indicator with the one used in SIMD 2012	The improvements to the methodology may result in drive times not being directly comparable to SIMD 2012. Furthermore, data zone level indicator scores cannot be compared due to changed data zone boundaries.

Other data quality issues	Drive times have been imputed to 190 minutes for at least some output areas in each of the following eleven data zones (for one or more services) as there was either no car ferry connection within the time window considered, or the journey was longer than the maximum journey time of 180 minutes: S01007284 Mull, Iona, Coll and Tiree (retail centre, secondary school) S01007287 Mull, Iona, Coll and Tiree (GP, retail centre, petrol station, secondary school) S01007289 Oban South (all services) S01007324 Whisky Isles (secondary school) S01010504 Lochaber West (GP, retail centre, petrol station, secondary school) S01010506 Lochaber West (GP, retail centre, petrol station, secondary school) S01011831 Isles (Orkney) (all services) S01011832 Isles (Orkney) (retail centre, primary and secondary school) S01012387 Shetland South (GP, retail centre, petrol station, secondary station) S01012414 North and East Isles (Shetland) (retail centre) S01012416 North and East Isles (Shetland) (GP, retail centre, petrol station, primary school)
Disclosure control	N/A
Geo-referencing	All service locations were geo-referenced.
Availability of data	Drive times can be downloaded on a data zone level at www.gov.scot/SIMD.

Public transport sub-domain

- Public transport travel time to a retail centre
- Public transport travel time to a GP surgery
- Public transport travel time to a post office

General description of indicator	Population weighted average travel times to selected services using public transport (bus, train, underground, ferries) and/or walking.
Indicator type	Population weighted average public transport travel time in minutes
Time period	2015
Data sources	Road network: Ordnance Survey Integrated Transport Network (ITN), April 2015 Public Transport timetable / route data: Traveline National Dataset and Associate of Train Operating Companies data (October 2015) Service locations: GP surgeries, petrol stations, primary and secondary schools : Landmark PointX, March 2015 Retail centres: CACI Retail, 2015 Post Offices: Royal Mail, 2015 Census output area population grid references: National Records of Scotland, 2011
Denominator used	2011 Total population
Data source of denominator	2011 Census
Method of construction of indicator	For each census output area, the closest trip to each destination was calculated. The results were aggregated to data zone level to provide an average public transport time for each data zone. Further details are available in the GI-SAT report on the construction of the SIMD16 Geographic Access domain.[23]

[23] http://www.gov.scot/Topics/Statistics/SIMD/docs downloaded on 26/8/2016

Key decisions on methodology	Average public transport travel time calculated at Census output area level from four trips (two outbound and two inbound) throughout the day in order to reflect changes in public transport availability throughout the day. Outbound times calculated for Tuesday (7 am – 11 am) and (12 pm – 4 pm). Inbound times calculated for (12 pm – 4 pm) and (5 pm – 9 pm). A three hour maximum journey time cut off was applied to all trips. Twenty minute wait times at ferry terminals were included where journeys included a ferry trip. Post Office locations reflect post office services at a fixed location available for six hours or more per week.
Comparison with 2012 indicator	The services used are the same as for SIMD 2012, however there have been improvements to the methodology in SIMD16 including: The new software calculates journey times slightly differently, leading to shorter journeys which more closely match the real journey times likely to occur.
Implications of comparing this indicator with the one used in SIMD 2012	The improvements to the methodology result in public transport times not being directly comparable to SIMD 2012. Furthermore, data zone level indicator scores cannot be compared due to changed data zone boundaries.
Other data quality issues	For some data zones, where a public transport time could not be calculated for all output areas within the data zone, travel times were estimated using drive times.
Disclosure control	N/A
Geo-referencing	All service locations were geo-referenced.
Availability of data	Public transport travel times can be downloaded on a data zone level at www.gov.scot/SIMD.

Crime Domain

Indicators included in the domain:

SIMD16 indicators	SIMD 2012 indicators	Summary of change
Recorded Crimes of Violence Source for all: Police Scotland 2014/15	Recorded Crimes of Violence Source for all: Police Forces, 2010-11	New crime codes 11/008: Offences relating to Serious Organised Crime and 4/001: Causing serious injury etc. by culpable and reckless conduct were introduced in 2010-11
Recorded Sexual Offences	Recorded Sexual Offences	No change
Recorded Domestic housebreaking	Recorded Domestic Housebreaking	No change
Recorded Vandalism	Recorded Vandalism	No change
Recorded Drugs Offences	Recorded Drugs Offences	No change
Recorded Common Assault	Recorded Common Assault	No change

Notes on the construction of the Crime domain

Consistency with published sources

The chosen methodology involves calculating a rate of total SIMD crime (by summing the crimes included in the indicators) per 10,000 of population, using 2014 small area population estimates (unrevised). Total SIMD crimes are based on geo-referenced data provided by Police Scotland based on the 2014-15 recorded crime totals held by the Scottish Government Justice Analytical Services Division.

Police station bias

In order to reduce bias against areas that contain a police station, crimes that have been identified as being recorded within 50 metres of the centre of a police station have been excluded.

Weighting of crime types

There is no official methodology to differentiate between the severity of different types of crimes, therefore, we have not applied weights and have added SIMD crimes together for each data zone and divided by the total population.

Crimes excluded from the crime domain

The SIMD crime domain does not include all types of crime or offence recorded by the police. Certain crimes have been excluded because of data quality issues, or because they are less meaningful in terms of deprivation at a neighbourhood level.

For example, some crime types were excluded because they are directed at businesses and/or concentrated in centres of retail activity rather than neighbourhoods – examples include shoplifting and non-domestic housebreaking. Other crime types are harder to locate geographically – examples include fraud and speeding offences.

Other crimes might be thought suitable for exclusion, but where such crimes formed part of a recognised group (e.g. violence, vandalism) and accounted for very small numbers, they were not explicitly excluded.

Geographical coverage

Police Scotland were requested to provide all available geographical / address information, in particular postcodes for each crime recorded. Where possible, they provided postcodes plus map references and address details. The exact postcode is not necessarily required to geo-reference a crime as long as there is sufficient information to allocate the crime to a data zone. Where a force could only provide address details, the Scottish Government imputed postcodes and / or map references so that data zones could be identified for the majority of the crimes.

Crimes that could not be geo-referenced were allocated to the council area based on the information provided. The remaining SIMD crime count was grossed up to the council area total.

Population denominators

There may be some bias in data zones that fall in town centres, where the resident population may be small compared with the daytime or night-time populations. Day and night populations are not available at the small area level, and so total resident population was used for the construction of these indicators. Also special events such as music festivals or sporting events may occur in an area with the accompanying temporary increase in population, which is not reflected in the small area resident population estimates. Such changes to the population of a data zone should be considered when comparing SIMD crime rates in different areas.

Missing data

In two data zones, S01010206 and S01010227, the population was zero in the year considered, and crime rates could not be determined. Missing rates are denoted by '*'. To be able to provide a domain ranking for all the data zones, data zone S01010206 was treated like other data zones with a crime rate of zero. There were three recorded crimes in S01010227, and so it was ranked one place below (more deprived) than the data zones with zero crime records.

The following tables give more detailed information on the crime indicators and the constituent offences which are used in constructing SIMD16.

Recorded crimes

General description of indicator	Recorded crime rate of selected crimes of violence, sexual offences, domestic housebreaking, vandalism, drug offences and common assault. The overall indicator is a sum of each SIMD crime per 10,000 population.
Indicator type	Rate per 10,000 people
Time period	2014-15
Data source	Police Scotland
Denominator used	Total Population 2014
Data source of denominator	NRS 2014 mid-year population estimates (unrevised)
Method of construction of indicator	Crimes happening within 50 metres of a police station were removed from the data. This was to ensure that crimes recorded as happening in a police station did not mask the level of crime happening in the neighbourhood of the police station. The total SIMD crime rate was constructed by summing the selected crime counts and dividing the total by the total data zone population and multiplying by 10,000 to obtain the rate per 10,000 people.
Key decisions on methodology	The indicators remain the same as those used in SIMD 2012 covering the financial year period.
Comparison with 2012 indicator	The indicator is unchanged. However, data zone level indicator scores cannot be compared due to changed data zone boundaries.
Implications of comparing this indicator with the one used in SIMD 2012	Data zone level indicator scores cannot be compared due to changed data zone boundaries.
Other data quality issues	When looking at crime domain ranks and rates of SIMD crimes, the type of area and resident population should be considered. Some areas such as town centres, areas around football stadia will see large numbers of people in an area at a particular time of day or day of the week or year and an associate increase in crime. 253 crimes happening at the T in the Park festival were excluded. A small number of crimes where the location of the crime was recorded outside of Scotland were omitted from the results.

	The population estimate for the data zones S01010206 and S01010227 was zero in 2014, therefore a rate could not be determined. This is denoted by '*'. However, the data zone S01010227 has a crime count of three. Therefore, it was ranked one rank more deprived compared to all data zones with zero crime records. Crime rates were rounded to the nearest integer after grossing the counts (see geo-referencing).
Disclosure control	Data Zones where the crime count is less than 3 have been suppressed.
Geo-referencing	There was a lack of full address information for some crimes/ offences. In these cases, partial addresses were geo-referenced manually. Crimes that could not be geo-referenced were allocated to the council area based on the information provided. The remaining SIMD crime count was grossed up to the council area total based on the information provided.
Availability of data	The crime counts and rates can be downloaded at www.gov.scot/SIMD.

SIMD crime codes

The Crime domain consists of categories of recorded crimes or offences which are grouped into five indicators. Certain crimes which form part of recognised groups, such as violence, and account for very small numbers, are included for ease of comparison with published totals, even though they may not seem entirely relevant to SIMD.

Crime Group Name	Crime Code	Crime / Offence name
Crimes of Violence	1/000	Murder
	2/000	Attempted murder
	3/001	Culpable homicide (common law)
	3/002	Causing death by dangerous driving
	3/003	Death by careless driving under the influence of drink or drugs
	3/004	Causing death by careless driving
	3/005	Illegal driver, disqualified/unlicensed etc involved in fatal accident
	3/006	Corporate homicide
	4/000	Serious assault
	4/001	Causing serious injury etc. by culpable and reckless conduct
	6/000	Robbery and assault with intent to rob
	7/000	Threats and extortion
	8/001	Cruelty to and unnatural treatment of children
	8/002	Child stealing (plagium)
	8/003	Exposing child under 7 to risk of burning
	9/000	Abortion
	10/000	Concealment of pregnancy
	11/001	Possess a firearm with intent to endanger life, commit crime etc.
	11/002	Abduction
	11/003	Ill treatment of mental patients
	11/004	Cruel and unnatural treatment of an adult
	11/005	Drugging
	11/006	Chemical weapon offences
	11/007	Female genital mutilation
	11/008	Offences relating to Serious Organised Crime
Sexual Offences	13/001	Illegal homosexual acts
	13/002 and 18/021	Bestiality (Change to crime code only)
	13/003	Assault to commit unnatural crimes
	14/000	Rape (Offence prior to 1 December 2010)
	14/001	Rape of male (16+)
	14/002	Rape of female (16+)
	14/003	Rape of older male child (13-15 years)

	14/004	Rape of older female child (13-15 years)
	14/005	Rape of young male child (Under 13)
	14/006	Rape of young female child (Under 13)
	15/000	Attempted rape (Offence prior to 1 December 2010)
	15/001	Attempted rape male (16+)
	15/002	Attempted rape female (16+)
	15/003	Attempted rape older male child (13-15)
	15/004	Attempted rape older female child (13-15)
	15/005	Attempted rape young male child (under 13)
	15/006	Attempted rape young female child (under 13)
Crimes of Dishonesty	19/004	Theft by housebreaking domestic property (dwelling)
	19/005	Theft by housebreaking domestic property (non-dwelling)
	19/007	Housebreaking with intent to steal domestic property (dwelling)
	19/008	Housebreaking with intent to steal domestic property (non-dwelling)
	19/010	Attempted housebreaking with intent to steal domestic property (dwelling)
	19/011	Attempted housebreaking with intent to steal domestic property (non-dwelling)
Vandalism	32/001	Fire-raising excluding muirburn
	32/003	Muirburn
	33/001	Vandalism, reckless damage and malicious mischief
	33/002	Reckless conduct with firearms
	33/003	Flying aircraft to the danger of life or property
	33/004	Endangering rail passengers
	33/005	Reckless driving at common law
	33/006	Culpable neglect of duty
	33/007	Endangering ship by breach of duty, obtain ship by misrepresentation
	33/010	Computer Misuse Act 1990
	33/011	Culpable and reckless conduct (not with firearms)
	33/012	Vandalism
	33/013	Reckless damage
	33/014	Malicious mischief
Drug Offences	44/001	Illegal importation of drugs
	44/002	Production, manufacture or cultivation of drugs
	44/003	Supply, possession with intent to supply etc of drugs
	44/004	Possession of drugs
	44/005	Drugs, money-laundering offences
	44/099	Drugs, other offences
Common Assault	47/001	Common assault
	47/006	Common assault of an emergency worker

Housing Domain

Indicators included in the domain:

SIMD16 indicators	SIMD 2012 indicators	Summary of change
Persons in households that are overcrowded Source: 2011 Census	Persons in households that are overcrowded Source: 2001 Census	No change
Persons in households without central heating Source: 2011 Census	Persons in households without central heating Source: 2001 Census	No change

Notes on the construction of the Housing domain

The SIMD16 housing domain uses 2011 Census data.

The housing domain is constructed by simply summing the two indicators together. Although there is a chance of some overlap between indicators, this has been accepted as it was thought that people living in a household with both of these attributes are more deprived than those with only one.

The following tables give more detailed information on each of the indicators in the Housing domain used in constructing SIMD16.

Persons in households that are overcrowded

General description of indicator	This indicator provides a measure of material living standards and gives the proportion of household population that live in overcrowded housing based on the occupancy rating. This compares the actual number of rooms in the house to the number of rooms which are required by the household, based on the relationships between them and their ages. Overcrowding is defined to mean households with an occupancy rating of -1 or less. This means that there is at least one room too few in the household.
Indicator type	Percentage of household population
Time period	2011
Data source	NRS, 2011 Census
Denominator used	2011 Census household population
Data source of denominator	NRS, 2011 Census
Method of construction of indicator	The indicator is a simple proportion of the number of people living in overcrowded households, divided by the 2011 household population.
Key decisions on methodology	The methodology used to construct the indicator was the same as that used for previous editions of SIMD.
Comparison with 2012 indicator	The 2012 and 2016 indicators are comparable. However, data zone level indicator scores cannot be compared due to changed data zone boundaries.
Implications of comparing this indicator with the one used in SIMD 2012	Data zone level indicator scores cannot be compared due to changed data zone boundaries.
Other data quality issues	There has been some criticism that the Census measure of overcrowding (the occupancy rating) is not as sophisticated as the ‘bedroom standard’ which is generally used to assess overcrowding, and tends to overstate. For example, on the Census definition a one person household can have an occupancy rating of -1.

Disclosure control	This indicator may have been disclosure controlled using either or both of these techniques: - targeted record swapping; - restriction of detail particularly at low level geographies Visit the 'National Archives' website for further details.[24]
Geo-referencing	No geo-referencing issues
Availability of data	The data is available on the SIMD website www.gov.scot/SIMD. 2011 Census data is available on the Scottish Census website[25].

[24] http://webarchive.nationalarchives.gov.uk/20160105160709/http:// ons.gov.uk/ons/guide-method/census/2011/census-data/2011-census-user-guide/quality-and-methods/methods/statistical-disclosure-control-methods/index.html downloaded on 18/08/2016

[25] http://www.scotlandscensus.gov.uk/

Persons in households without central heating

General description of indicator	This indicator provides a measure of material living standards and gives the proportion of household population that live in a house that is centrally heated. A household's accommodation is described as 'with central heating' if it has central heating in some or all rooms (whether used or not). Central heating includes gas, oil or solid fuel central heating, storage heaters, and solar heating.
Indicator type	Percentage of household population
Time period	2011
Data source	NRS, 2011 Census
Denominator used	2011 Census household population
Data source of denominator	NRS, 2011 Census
Method of construction of indicator	The indicator is a simple proportion of the number of people living in households with no central heating, divided by the 2011 household population.
Key decisions on methodology	The methodology used to construct the indicator was the same as that used for previous editions of SIMD.
Comparison with 2012 indicator	The 2012 and 2016 indicators are comparable. However, data zone level indicator scores cannot be compared due to changed data zone boundaries.
Implications of comparing this indicator with the one used in SIMD 2012	Data zone level indicator scores cannot be compared due to changed data zone boundaries.
Other data quality issues	The Census question on central heating does not distinguish between whole and partial house central heating.
Disclosure control	This indicator may have been disclosure controlled using either or both of these techniques: - targeted record swapping; - restriction of detail particularly at low level geographies Visit the 'National Archives' website for further details.[26]

[26] http://webarchive.nationalarchives.gov.uk/20160105160709/http: //ons.gov.uk/ons/guide-method/census/2011/census-data/2011-census-user-guide/quality-and-methods/methods/statistical-disclosure-control-methods/index.html downloaded on 18/08/2016

Geo-referencing	No geo-referencing issues
Availability of data	The data is available on the SIMD website www.gov.scot/SIMD. 2011 Census data is available on the Scottish Census website[27].

[27] http://www.scotlandscensus.gov.uk/

ANNEX A

DWP data geo-referencing

A large scale exercise has been carried out by Department for Work and Pensions to produce a single address for every individual at any point in time. This single address (DWP) is based on the latest address that has been notified to the department in respect of any of the key benefits within WPLS.

Geographic referencing was carried out by the DWP using the ONS Official Neighbourhood Statistics (NeSS) Address Matching and Reference Tool (Matchcode) and where applicable the relevant Post Code Directories as well. In accordance with NeSS Geography Policy each record was allocated to a fixed geographical area, namely Census Output Area and then all other higher geographies built up from this building block. Assigning a record to a 2001 Census Output Area (COA) is done in a number of iterative stages:

Stage 1 – The NeSS Address Matching and Reference Tool (Matchcode) allocates an address to a COA, or the full 7-character postcodes (e.g. ZZ11 0ZZ) are matched against the geographic reference data to obtain a COA.

Stages 2, 3 and 4 – Where postcodes are partially completed, if the first 4, 5 or 6 characters of the postcode matched and were wholly contained within the same COA, then they were allocated to that COA.

Stages 5 and 6 – Remaining cases were allocated to Local Authority (LA) to aim to get them in the right area and then randomly, but proportionally, assigned to a COA in that LA. Care is taken to exclude cases that are resident overseas as some benefits can be claimed by people who are now resident abroad.

Conversion to 2011 COA

The COA2001 data was matched to COA2011 and counts were then aggregated up into caseloads at Data zone level.

In a small number of data zones there were no COA matches. These data zones were assigned cases according to a deprivation ratio calculated using other SIMD data not affected by this issue. There was no data loss or gain in imputing these values.