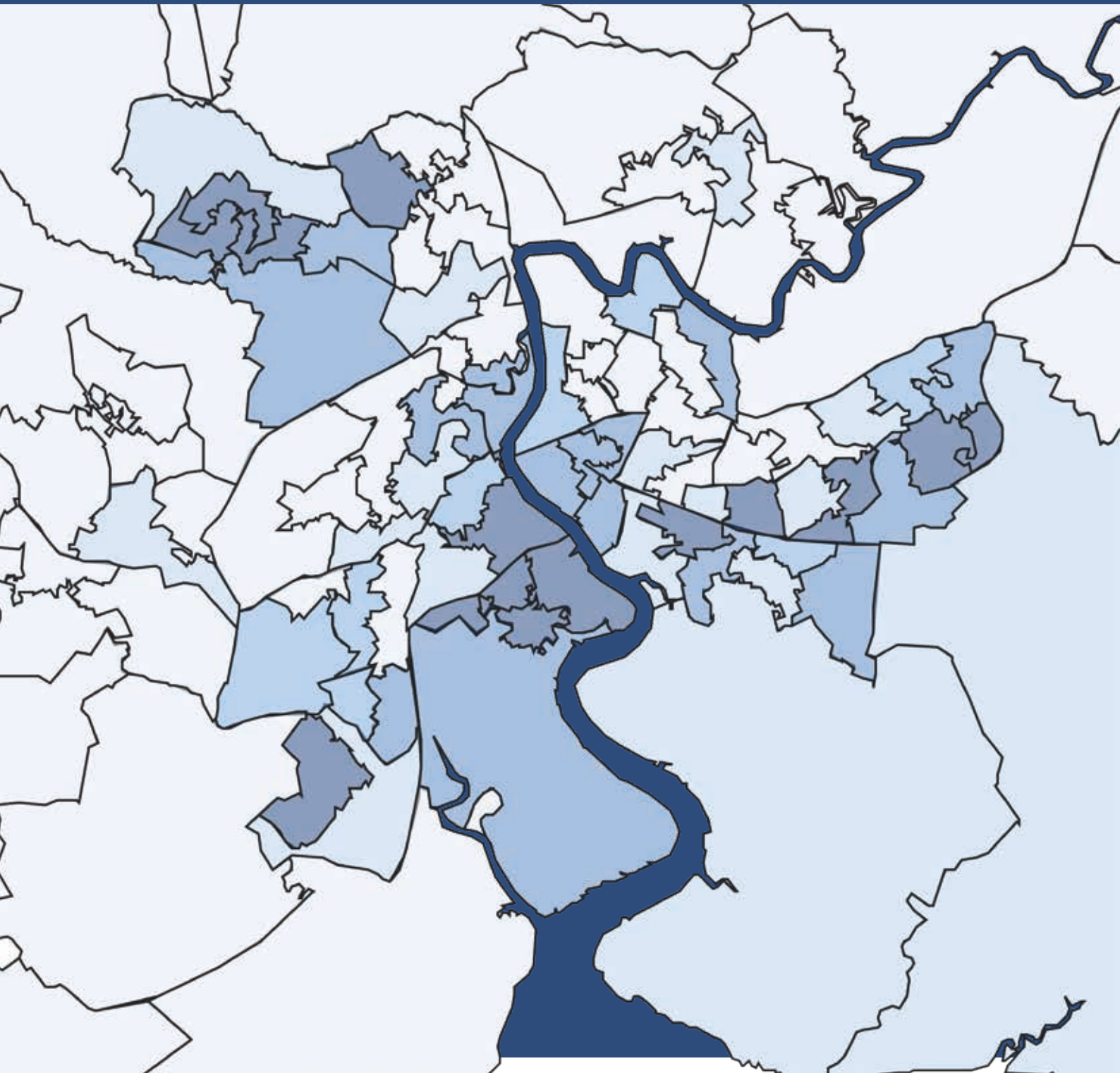


Welsh Index of Multiple Deprivation (WIMD) 2019 Guidance



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1. What is WIMD?

The Welsh Index of Multiple Deprivation (WIMD) is the Welsh Government's official measure of relative deprivation for small areas in Wales. It identifies areas with the highest concentrations of several different types of deprivation. WIMD ranks all small areas in Wales from 1 (most deprived) to 1,909 (least deprived). It is a National Statistic produced by statisticians at the Welsh Government.

The concept of an Index of Multiple Deprivation as we now know it was originally developed by the Social Disadvantage Research Centre of Oxford University, who produced the first WIMD in 2000. Subsequent updates were made in 2005, 2008, 2011 and 2014.

2. How does WIMD 2019 differ from WIMD 2014?

Compared to WIMD 2014, WIMD 2019 uses updated data for all but three¹ of the 47 indicators. The methodology used within WIMD 2019 is broadly the same as for WIMD 2014, with the same eight domains or types of deprivation captured, and the same areas ranked. However there have been some changes to the Index, including:

- changes to individual indicators, or the inclusion of new indicators within the Health, Education, Access to Services, Physical Environment and Housing domains
- small changes to the relative weights applied to the domains (or types) of deprivation

There is more information on these changes in the [WIMD 2019 Results](#) and [Technical Reports](#).

3. What is different in the published material?

There have not been big changes to the range and content of WIMD outputs for 2019 compared to 2014². Some of the changes are:

- More context for the few most deprived areas identified in our Results Report
- Analysis of areas that have been highly deprived for several iterations (deep-rooted deprivation), in our Results Report³
- Improvements to the functionality of the interactive tool, including a postcode search bar on every page, and more detail visible on maps (which are now downloadable)
- Changes to the higher geographies we look at, for example, we have added deprivation profiles for Economic Regions
- Data for the new indicators across several domains

¹ Those three are based on the latest available Census data, from 2011

² This is because we asked our users what they thought in 2016, and found they were broadly content.

³ The data underlying this analysis as well as guidance on its use has been published on the Welsh Government's [StatsWales](#) web pages.

- All our published outputs are bilingual
- Published a Postcode to WIMD rank lookup tool on StatsWales, where users can input a list of postcodes and find deprivation information for those areas
- Provided analysis of protected characteristics by area deprivation for the first time

4. What is an Index?

An index is a group of separate measurements which are combined into a single number. They are designed to show changes in a complicated variable like industrial output, prices or in this case, deprivation. An index then allows comparisons between different values – in the case of WIMD, the comparison is between small areas.

5. What does WIMD measure?

WIMD is a measure of multiple deprivation that is both an area-based measure and a measure of relative deprivation. These key terms are defined more fully below.

Deprivation is the lack of access to opportunities and resources which we might expect in our society. The domains used in WIMD relate to both material and social aspects of deprivation. Material deprivation is having insufficient physical resources – food, shelter, and clothing – necessary to sustain a certain standard of life. Social deprivation refers to the ability of an individual to participate in the normal social life of the community.

Multiple Deprivation refers to more than one type of deprivation. WIMD is calculated from eight different domains (or types) of deprivation, each compiled from a range of different indicators. An area is multiply deprived if, for more than one of the domains, the area has a concentration of people experiencing that type of deprivation. Generally speaking, the greater the number of domains for which there are high concentrations of deprivation then the greater the overall deprivation in an area. This does not necessarily mean that the same people suffer multiple types of deprivation in the area, although we would expect there to be significant overlap.

Area-based measure: WIMD is calculated for all small areas (Lower layer Super Output Areas – LSOAs) in Wales. Following the 2011 Census, 1,909 LSOAs were defined in Wales and they have an average population of 1,600 people. WIMD is based on indicators that consider the aggregate characteristics of the people living in the area and, in some cases, the characteristics of the area itself (for example, in the Physical Environment domain).

Relative measure: The Index provides a way of identifying areas in the order of least to most deprived. It does not provide a measure of the level of deprivation in an area, but rather whether an area is more or less deprived relative to all other areas in Wales. Therefore, we can identify which areas are more (or less) deprived than others, but not by how much. The reason for taking such an approach is to allow the different domains to be combined together.

6. What are the domains that make up WIMD?

WIMD is currently made up of eight separate domains (or types) of deprivation, each compiled from a range of different indicators. The Index is constructed from a weighted sum of the deprivation score for each domain. The weights reflect the importance of the domain as an aspect of deprivation, and the quality of the indicators available for that domain.

The domain weights for WIMD 2019 are shown below, alongside the weights used in 2014. Improvements to data used for the Housing and Health domains led to a decision to make small increases to their weights. To allow for this, weights for the Income and Employment domains were reduced slightly. However those two domains retain the highest relative weights, since they are strong determinants of deprivation.

Spreading a small amount of the weight previously placed on Income and Employment into other domains also reflects the wide range of well-being goals set out in the [Well-being of Future Generations Act \(Wales\) 2015](#).

	<u>WIMD 2019</u> <u>domain weight</u>	<u>WIMD 2014</u> <u>domain weight</u>
Income	22%	23.5%
Employment	22%	23.5%
Health	15%	14%
Education	14%	14%
Access to Services	10%	10%
Housing	7%	5%
Community Safety	5%	5%
Physical Environment	5%	5%

In addition to providing an overall ranking of relative multiple deprivation for small areas in Wales, WIMD also provides ranks for each of the eight different types of deprivation. These “domain ranks” can be used to understand the drivers for deprivation in an area, and identify deprivation patterns between areas. For example, the areas represented in the table below are similar in their WIMD ranks, but the pattern of deprivation across their domains is quite different.

Table 1: WIMD 2019 examples of deprivation patterns across domains

LSOA	Queensway 2	Neath East 1	Bigyn 4
Local Authority	Wrexham	Neath Port Talbot	Carmarthenshire
WIMD 2019 Overall rank	80	82	84
Income rank	44	154	91
Employment Rank	229	65	114
Health rank	182	132	164
Education rank	32	100	28
Access to Services rank	426	616	364
Housing rank	789	568	1102
Community Safety rank	23	213	339
Physical environment rank	1685	81	812

7. What are the deprivation groups used in WIMD analysis?

High ranking areas (LSOAs) can be referred to as the 'most deprived' or as being 'very deprived' to aid interpretation. However, there is no definitive threshold above which an area is described as 'deprived'. WIMD rankings are often grouped into deciles, quintiles and Deprivation Groups for analysis and mapping purposes. Details are shown in the table below.

Table 2: Ranks belonging in different groups

Rank	Decile Group	Quintile Group	Deprivation Group
1 - 191	1 (10% most deprived)	1 (20% most deprived)	1 (10% most deprived)
192 - 382	2 (10-20% most deprived)	1 (20% most deprived)	2 (10-20% most deprived)
383 - 573	3 (20-30% most deprived)	2 (20-40% most deprived)	3 (20-30% most deprived)
574 - 764	4 (30-40% most deprived)	2 (20-40% most deprived)	4 (30-50% most deprived)
765 - 955	5 (40-50% most deprived)	3 (40-60% most deprived)	4 (30-50% most deprived)
956 - 1146	6 (50-60% most deprived)	3 (40-60% most deprived)	5 (50% least deprived)
1147 - 1337	7 (60-70% most deprived)	4 (60-80% most deprived)	5 (50% least deprived)
1338 - 1528	8 (70-80% most deprived)	4 (60-80% most deprived)	5 (50% least deprived)
1529 - 1719	9 (80-90% most deprived)	5 (20% least deprived)	5 (50% least deprived)
1720 - 1909	10 (10% least deprived)	5 (20% least deprived)	5 (50% least deprived)

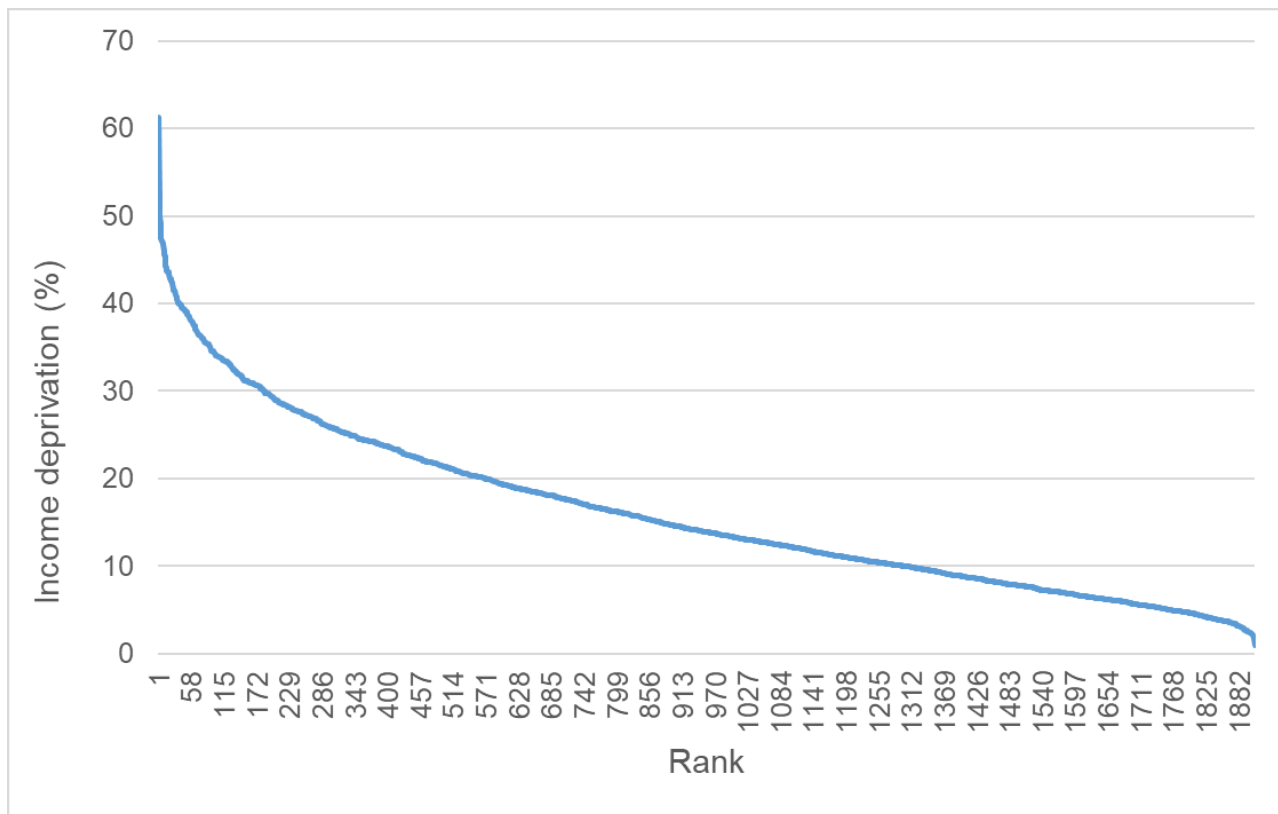
The decile (and quintile) groupings split the areas into 10 (and 5) roughly equal groups. As there are 1,909 LSOAs in Wales, these groups do not have exactly equal numbers of areas within them.

The Deprivation Groups are used within the main WIMD analyses, including maps. They are designed to have smaller groups at the more deprived end of the distribution, where the difference between areas is greater than at the less deprived end. To illustrate this feature of deprivation indicators, the chart below shows how the percentage of income-deprived people is distributed by income domain rank. Note that:

- deprivation rates increase steeply at the most deprived end of the distribution (large changes in the indicator value may only result in small changes to ranks)

- at the less deprived end, the curve is flatter, and small changes to the indicator values could result in large movements in the ranks
- the 's-curve' shape of the distribution is seen to a greater or lesser extent in all the indicators of deprivation

Chart 1: WIMD 2019 Income domain distribution



New analysis of deep-rooted deprivation (which analyses WIMD ranks across five indices since 2005) groups LSOAs into different categories. See [WIMD 2019 results report](#) for the full analysis.

8. What can WIMD be used for?

Knowing how deprivation is distributed across Wales is important when developing area-based policies, programmes and funding. WIMD can be used to inform these decisions and give a greater understanding of deprivation trends within Wales. The [Results Report](#) provides some examples of applications of previous iterations of WIMD. WIMD can be used for:

- Identifying the most deprived small areas
- Comparing relative deprivation of small areas
- Exploring the 8 domains (types) of deprivation for small areas
- Comparing the proportion of small areas within a larger area that are very deprived
- Using indicator data (but not the ranks) to compare absolute change over time

The Index is most useful when used in conjunction with other information, either from the Index indicators, other published data or local information. The rank and indicator data, the latter including data for a range of geographies and some breakdowns by age, are published on [StatsWales](#). References to potentially useful contextual information are included in the Results Report. There are a number of sources of information on local areas that may be useful to users, depending on their specific needs. These include:

- Data on certain Welsh towns and communities made available through the [Understanding Welsh Places](#) resource
- Data on local authorities made available through the [Thriving Places Wales](#) resource
- Labour Market statistics for local areas made available through the Office for National Statistics' [Nomis website](#)

9. What are the limitations of WIMD?

It is important to remember that WIMD is not the only way to measure deprivation. WIMD has been developed for a particular purpose which is; to measure concentrations of several types of deprivation at a small area level.

Quantifying deprivation

WIMD ranks do not give a measure of the amount of deprivation in an area, and do not allow for statements such as “area A is twice as deprived as area B”. The ranks can only be used to say “area A is more deprived than area B”. However the underlying WIMD indicator data represent absolute levels of deprivation on specific measures, and are published on [StatsWales](#).

Comparing absolute deprivation between index iterations

As WIMD is a relative index, change in ranks over time may not mean change in absolute deprivation levels. A change in rank for an area may be due to other areas moving up or down the ranks, rather than any change in the area itself. Conversely, even if an area's rank remains the same, the level of deprivation in that area could have gone up or down but just not enough to affect its position relative to other areas. However the underlying WIMD indicators can sometimes be used to monitor change over time, as explained further in the [indicator guidance article](#).

Comparing relative deprivation between index iterations

WIMD can be used to look at the change in relative deprivation ranks between iterations, for example which areas have left, joined or remained in the most deprived group. This kind of analysis can be seen in section 2.6 of the WIMD 2019 results report (deep-rooted deprivation). However care should be taken in interpreting any changes. In order to produce the best possible snapshot of relative deprivation, for WIMD 2019 we have changed some of the indicators, domain weights, and the ONS have [revised population estimates](#) underlying some WIMD 2014 indicators. These changes may have contributed to an area becoming more (or less) deprived relative to others, rather than underlying shifts in relative deprivation of areas since WIMD 2014. See the [Summary of Index Changes on the WIMD Guidance webpage](#) for details on high-level changes implemented in each index iteration since WIMD 2005.

Deprived individuals

There can be people living in deprived areas that would not be considered deprived, and there can also be people that would be considered deprived living in the least deprived areas. Around 1 in 5 income deprived people live in the 10% most deprived areas. So although deprivation is much more concentrated in some areas than others, 4 out of 5 income deprived people live outside these areas. This is important to remember when targeting resources, as targeting those 'most deprived' areas means including some people in those areas who may not be deprived, and missing many deprived people living in less deprived areas.

Individuals who are deprived in several ways

WIMD does not identify individuals who are deprived in several ways, rather, it identifies areas where there are concentrations of several different types of deprivation. At present, we are not able to link the data included in the Index at an individual person level in order to understand the extent of multiple deprivation for individuals but this may become possible in the future.

Deprivation across the UK

Ranks are not comparable with the Indices of Multiple Deprivation (IMD) from the other UK countries. Further information on the issue of [comparing IMDs across the UK can be found in an article](#) from the Office for National Statistics. This article is due to be updated to reflect more recent

indices, but the key messages around comparability remain valid. Please see section 16 for more detail on comparing WIMD with other UK countries, which also signposts to comparable income and employment domain data for England and Wales.

Affluence

It is important to remember that a lack of deprivation is not the same as being affluent. The least deprived area is not necessarily the most affluent area in Wales. This also means that the ability of WIMD to discriminate effectively between areas is strongest for the most deprived areas and extreme care should be taken in drawing conclusions about the differences between less deprived areas.

10. Deprivation and rural areas

WIMD's purpose is to identify concentrations of deprivation across all parts of Wales, including rural areas. Deprived people in rural areas of Wales tend to be more geographically dispersed than in urban areas. This means that pockets of deprivation in rural areas of Wales tend to be on a considerably smaller scale than even the small scale geography at which WIMD is produced.

People in rural communities can experience many of the same issues as deprived people in other areas. However, some commentators⁴ argue that certain issues can disproportionately affect people in rural areas, for example lack of employment opportunities and access to services. It can also be argued that some deprivation issues can disproportionately affect people in urban areas, such as congestion.

Those with a specific interest in rural or urban deprivation may be interested in the following outputs published as part of WIMD 2014, which explore some of the issues raised. We intend to update these analyses to reflect WIMD 2019 data during 2022:

- A statistical article providing guidance on how WIMD and its indicators can and can't be used to [analyse deprivation in rural areas](#)
- An [analysis of the Access to Services Domain](#) by type of settlement
- [Indicator data](#) aggregated to rural and urban settlement areas

11. What are the deprivation scores?

The overall Index and domain ranks are the main output for WIMD. As part of the process for calculating WIMD ranks, scores (domain and overall) are produced. The WIMD scores are a stage in the construction of the Index and not a product. The scores do not represent a level of multiple deprivation. For example, if area A has twice the score of area B, this does not necessarily mean that area A is twice as deprived as area B. This means that scores do not contain any more

⁴ For example, see the Wales Centre for Public Policy's [2016 Report on Rural Poverty in Wales](#)

information on levels of multiple deprivation than the ranks do. To assess levels of deprivation, underlying indicator data should be used.

The WIMD scores are published for two reasons only:

- For transparency (so that users have access to all stages of construction)
- So that users can experiment with different weighting systems for the Index, if required

12. Aggregating to larger geographies

WIMD is calculated for all small areas (Lower layer Super Output Areas – LSOAs) in Wales. There are two ways of comparing larger geographies:

- a) Calculate the proportion of small areas in a larger geography which are in the most deprived (say) 10% or 20% of areas in Wales. For example, if an area has more than 10% of its small areas in the most deprived 10% in Wales it can be considered relatively deprived. If it has fewer than 10%, then it can be considered relatively less deprived. This has been done for local authorities in our Results Report, and for several other geographies on [StatsWales](#) and our [interactive website](#).
- b) Use the underlying indicator data, which can be aggregated ([as published on StatsWales](#)). The indicators are published not just at the small area level, but also for a range of other useful geographies including local authorities.

It is not valid to aggregate the ranks or scores to larger geographies by taking an average of the values for the small areas. This is because of the way in which the Index is constructed:

- Preceding steps in the calculation of the index (such as factor analysis) would be affected by a change in distribution of the indicators most likely caused by a change in geography.
- Ranks provide no sense of scale of the differences between areas, therefore averaging them is not meaningful.
- Domain scores have been subject to an exponential transformation, which reduces the extent to which deprivation in one domain is cancelled out by lack of deprivation in another. Averaging scores for a group of areas would have the same (unintended) effect across areas. This may not make sense, for example, where two regions with the same proportion of deprived people could have very different average scores due to the spread of those people across the small areas in the region.

It is also not valid to aggregate underlying indicators to larger geographies by taking an average of the values of the small areas. Most indicators are expressed as a rate or proportion of the population, and averaging indicators does not take account of differences in the size of the population.

13. How to adjust the domain weights or remove a domain

Domain scores are published in an [Excel \(OpenDocument\) Spreadsheet](#) on the WIMD website. The scores for individual domains can be combined in a weighted sum to provide overall Index scores, which are then ranked to provide the Index ranks. The weights used for WIMD 2019 are provided in an earlier section of this guidance. But these can be adjusted to place lower or higher weight on a given domain, or to reduce its weight entirely to zero. A new weighted sum of the domain scores can then be calculated to provide adjusted Index scores and ranks. For example, if you are a health researcher interested in the impact of wider deprivation on certain health outcomes, you may want to produce an adjusted set of ranks with the health domain removed.

14. How do I find WIMD data for a specific area?

As well as deprivation ranks, a wealth of additional information on small areas is made available through the underlying WIMD indicator data. The detail contained in these indicators can inform area profiling, and help community groups make the case for improved provision in areas of need. The Index itself is most useful when used with other information, either from the underlying indicators, other published sources or local information. The WIMD Results Report includes more information on such sources.

There are three approaches to finding WIMD data specific to a given area.

[Interactive tool](#): This holds the ranks, but not indicator data, and contains interactive maps. Type a postcode or place name into the search bar, or navigate via the Geographies tab to reach a deprivation profile for a specific area. You will see how the area ranks across the domains and overall Index, and how this compares to neighbouring areas and other areas in that local authority. You can download maps from here.

[StatsWales data](#): Find both ranks and indicator data here, and static maps. You can navigate to reports (tables) [showing area ranks](#), or other reports showing [indicator data](#). If you are starting from a place name or postcode, the Geography lookups (also on [StatsWales](#)) may be helpful in giving you the exact area code and name to look for in the tables. Or you can use the [WIMD interactive website](#) and type in a postcode or place name to find the relevant area code. StatsWales reports can be exported as Excel or comma-delimited text files (csv), and are also available as Open Data.

[Excel \(OpenDocument\) Spreadsheet](#): This contains the ranks for the domains and the overall Index, along with information on which decile, quintile and quartile of deprivation an area falls into. So you can quickly tell if an area is in the most deprived tenth, fifth, or quarter of areas, for example.

15. How to use WIMD to help target resource or activity

WIMD is often used to target activity or resource on the most deprived areas. This is most effective when the underlying issue has a strong geographical concentration, and where the response is best delivered at a small area or community level. For example, where resources are aimed at regeneration of housing or town centres, or a scheme to tackle concentrated unemployment. In some circumstances, a different approach may be more appropriate, such as when the issue is specific to sub-groups of the population, like the elderly. In other scenarios, a combination of approaches may be most effective, and the Index may be useful as a starting point for targeting activity.

It is important to remember that WIMD is not the only way to measure deprivation. The Index is most useful when used with other information, either from the underlying indicators, other published sources or local information, to supplement your understanding of the areas.

If you plan to use WIMD to inform a targeting exercise, start by considering which data are most relevant, as this may not always be the overall Index. For example, it may be more appropriate to use ranks for one of the specific types of deprivation, like Community Safety or Health. The Access to Services domain is often used as a local area measure of sparsity. We have also published [data](#) on areas that have been highly deprived for several iterations of the index (categories of deep-rooted deprivation), which might form suitable target areas.

Remember that the indicator data can also be useful, and are published for a range of geographies and, in some cases, age groups. For example, it is possible to use the indicator data to locate the areas with the highest rates of children living in income deprived families. Our deprivation analysis relating to young children presents analysis that can be done using WIMD indicator data. Our [guide to analysing indicator data](#) is also a useful resource to refer to when conducting indicator analysis.

The data for all small areas in Wales can be accessed in two ways:

[StatsWales data](#): Domain and overall Index [ranks](#) and [indicator data](#) are available here. As a default, as well as the ranks or indicator values, the reports show the local authority that the small areas (LSOAs) belong to. You can use the Geography lookups (also on StatsWales) to find out which other higher geographies the LSOAs lie within, for example, local authority, local health board or constituency. StatsWales reports can be exported as Excel or comma-delimited text files (csv), and are also available as Open Data.

[Excel \(OpenDocument\) Spreadsheet](#): This contains the ranks for the domains and the overall Index, along with information on which decile, quintile and quartile of deprivation an area falls into. So you can quickly tell which areas are in the most deprived tenth, fifth, or quarter of areas across Wales.

16. Comparing WIMD with other UK countries

[England](#), [Scotland](#) and [Northern Ireland](#) all produce their own Indices of Multiple Deprivation (IMD). These datasets are based on the same concept and general methodology, however the following differences mean the indices are not directly comparable:

- they are produced for different geographies (there is no suitable small area geography which is consistent across the four nations)
- there are differences between the indicators and not all data are collected consistently across the UK (for example, the education systems are different from Wales, so some education indicators are not comparable)
- the Indexes have developed according to the policy drivers in each of the countries; as devolution has evolved, these differences have grown
- the Indexes are produced on different timescales, so they do not tend to refer to the same year of data across the UK - again, this is often driven by different policy requirements in the different countries.

[Further guidance on the issue of comparing IMDs across the UK can be found in this article](#) from the Office for National Statistics, which is due to be updated soon.

Welsh Government continue to work with the relevant governments and departments to explore opportunities for alignment where possible, and in December 2020 comparable income and employment domain data for **England and Wales** was jointly published by Welsh Government and the Ministry of Housing, Communities and Local Government. These statistics may be of use to those interested specifically in pan-England and Wales measures of local area deprivation, and are published on the gov.uk website.

17. Further information

The [WIMD area of our Statistics and research website](#) includes previous releases of data as well as latest news and updates. You can also find:

- [WIMD 2019 data summaries](#), including our main Results Report
- WIMD 2019 [Guidance and Technical Reports](#)

WIMD rank and indicator data is available for download from [StatsWales](#). [The interactive mapping website](#) provides a postcode search facility and deprivation profiles for a range of area types.

Relevant Geospatial information can be found on the [Data Map Wales](#) Geo-portal for Wales.

If you would like to attend a [WIMD online information session](#), please email stats.inclusion@gov.wales.