GIG CYMRU NHS WALES
Arsyllfa Iechyd Cyhoeddus Cymru
Public Health Wales Observatory

Well-being of Future Generations Act: National Indicator Projections

Technical guide

Contents

1 Introduction

This technical guide accompanies the Public Health Wales Observatory Well-being of Future Generations Act: National Indicator Projections product. The product itself is an on-line interactive Tableau tool, available at www.publichealthwalesobservatory.org/WBFGprojections

The topics within the Tableau tool were chosen to represent the first three (of the 46) National Indicators from the Well-being of Future Generations Act. These three are the only National Indicators for which the Public Health Wales Observatory has access to the raw data necessary to generate projections. More details on the full set of National Indicators is available from http://gov.wales/topics/people-and-communities/people/future-generations-act/national-indicators/?lang=en.

Where to look if you want help with:

- using the Tableau tool - Section 2;
- interpreting the Tableau outputs - Section 3;
- understanding the statistical projection methods - Section 4;
- knowing more about this product's indicators - Section 5;
- knowing more about this product's data sources - Section 6.

The electronic version of this guide is navigable by holding the 'Ctrl' key and left-clicking on contents page sections.

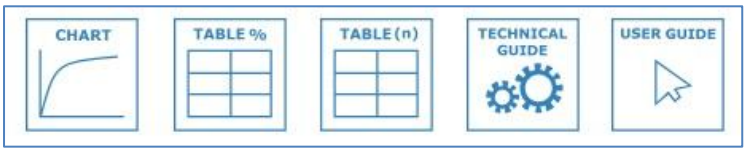
For an unanswered questions or comments, please contact us on
mailto:publichealthwalesobservatory@wales.nhs.uk?subject=WBFG Projections

2 How to use Tableau

This section should help users get the most out of the Tableau Projections product.

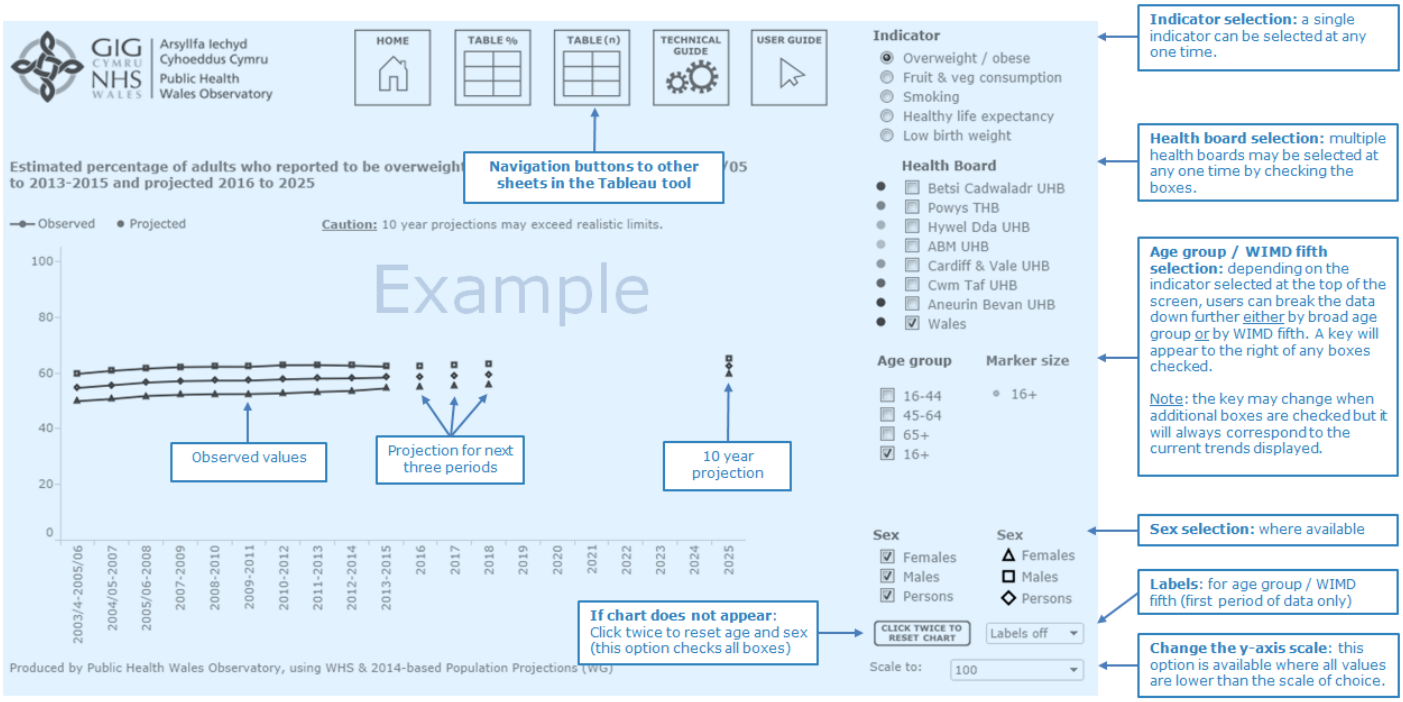
2.1 Navigating around Tableau

The user can navigate between the sheets in the Tableau tool by clicking on the navigation buttons below. There are separate sheets for the chart, tables, technical guide and user guide.



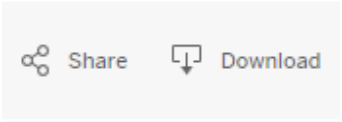
2.2 Making selections in Tableau

Users are able to make a number of chart selections as detailed in the health board version of the Tableau tool below. Similar selections are available in the local authority version of the Tableau tool, however the layout will appear slightly different.



2.3 Exporting images and tables from Tableau

Users are able to either share the tool by selecting the 'Share' button at the bottom of the Tableau tool online, or save a copy of the current selection as a PDF / image to use in documents and presentations by clicking on the 'Download' button.



3 Interpreting the charts and tables

The charts and tables show three distinct but related measures, with different uses and cautions:

i) The observed rates
ii) The short term projected rates (for the next three years)
iii) A longer term projection (ten years from the last observed rate)

The overall purpose of the analysis is to show the historic trend and to indicate potential effects if these trends continued into the future.

3.1 Observed rates

The observed rates give the most up to date estimates for the indicators, taken from official data sources such as the Welsh Health Survey. It is prudent to consider any patterns in the observed rates before assessing the projections. It must be remembered that the observed rates can be influenced by factors such as sampling and natural variation, and that these effects can become magnified in areas with smaller populations i.e. Powys THB and the local authorities.

Changes in observed rates may not always represent changes in the actual situation on the ground and the effects of changes on the ground may not always be reflected in the actual rates. It is very unusual for observed rates to follow a dead straight line so fluctuations in an overall trend are to be expected and may not be attributable to specific causes.

3.2 Short term projections

The short term projection period is generally restricted to around one third of the period for which there are observed data. As such the short term projections are reasonable indications of the direction of travel of the rates over the next three years if the pattern in the observed data persists over that period. There is no certainty that the observed pattern will persist, and no definitive way of anticipating the direction of change if it won't.

However, in the presence of a reasonably stable observed trend, and in the absence of any known or expected change to the rates, the short term forecasts are probably reasonable as a general trajectory, but not as very accurate expected data points. This is because they don't and can't incorporate the natural fluctuation seen in the observed rates.

3.2 Long term projection

The longer term projected rates must be viewed with extreme caution as they are way beyond the safer limit of around one third of the observed data. They are substantially less likely to be close to the actual rates but have been included to indicate the general trajectory if the pattern in the observed data persisted in the long term.

It is certain that there are absolute limits to trajectories, i.e. 0 and 100%, and it is likely that there are practical limits as it may be inconceivable that everyone or nobody will exhibit certain characteristics. As observed trends approach any limit, it is anticipated that the rate of change will slow down and lead to a tailing off. The further in to the future the long term forecast, the more likely it is to cross into tailing off effects.

4 Projection method

4.1 Aim

The aim was to project a set of conditions and behaviours for each health board, local authority and Wales to provide information on possible trajectories for the health of their population.

4.2 Methods

An extrapolated projection method was used which examines trends and cycles in historical data, and then uses mathematical techniques to extrapolate to the future. An extrapolated method assumes that the patterns which existed in the past will continue into the future. While this is often a valid assumption when forecasting in the short term, it can fall short when creating medium and long term forecasts. The further out we attempt to forecast, the less certain we become of the forecast. In many cases it is neither likely nor desirable that the historical trend will continue in the long term. Therefore the longer term forecast not only has greater uncertainty but could also result in adaptive change when the projections indicate that the health goals of the Well-being of Future Generations (Wales) Act aren't going to be met. The accuracy of our forecasts are then modified by the change.

Following extraction of the historical trend, a 1-sample t-test for trend was calculated, with a p-value of <0.05 indicating a significant trend. The result of the test for trend combined with the autocorrelation coefficient was used to determine the method used for extrapolation.

An autocorrelation of <-0.5 indicates that the series depicts a constant upward and downward pattern and fluctuates around an underlying path. A positive autocorrelation depicts an upward or downward pattern, with the trend from the previous period giving no indication as to what the trend will be in the current period.

Where the autocorrelation coefficient wasn't <-0.5, regardless of the test statistic for the hypothesis test for trend, the average trend was calculated over all periods and used to extrapolate for the forecast for future periods.

Where both the autocorrelation was <-0.5 and the p-value for the hypothesis test for trend was <0.05, the equation of the fitted line in the autocorrelation plot was found and used to forecast future periods.

For the lifestyle factors, the historical trend percentages were applied to the mid-year population for those periods to give an estimate of the number of people in the population with the lifestyle behaviour. Likewise, forecasts for future periods were applied to the corresponding population projection to give an estimate of the future population burden.

The difference in national projections between the local authority and health board tools

The two options for producing Wales projections were to treat Wales as a single entity and project its values or to sum the projected values of all its parts. The advantage of the former is that then this would be consistent across products, the disadvantage being that it would not equal the sum of its parts, and vice versa for the latter. On balance we decided that the individual products were best served by summing their parts to get the national value and in doing so both preserving their internal integrity and utilising the detail from the local projections. This was decided to outweigh the lack of a consistent national projection and served to reinforce the key messages that any projection is the outcome of a process,

different processes will yield different outcomes and that there is no definitive single preferred process.

Differences in persons data for overweight / obese, smoking and fruit and vegetable consumption in the local authority and health board tools

Both the local authority tool and health board tool present the observed rates as reported by the Welsh Health Survey for persons. However, the tools used different methods to produce observed counts and projected rates and counts; the local authority tool was entirely based on person-level data while the health board tool used the sex-specific data. The small effect of the different levels of refinement is most apparent in the one area that is both a local authority and a health board, Powys. The Powys value in the health board tool is based on more refined data so is to be preferred over the local authority tool value.

5 Indicator definitions

5.1 Low birthweight

What is being measured?	Percentage of babies born with a low birth weight.
How is this indicator defined?	Babies born weighing less than 2500g as a percentage of all singleton live births for which birth weight is known.
Where does the data come from?	National Community Child Health Database for Wales (NCCHD), NHS Wales Informatics Service (NWIS).[1]
Who does it measure?	Singleton live born babies.
When does it measure it?	2006-2008 to 2013-2015 observed; 2016 to 2025 projected.
What geographical areas does it cover?	Wales, health boards and local authorities
How is it calculated?	The number of singleton live births weighing less than 2500g as a percentage of all singleton live births with a known and valid birth weight.
How accurate and complete will the data be for this indicator? Are there any problems, notes for interpretation or warnings with the data in relation to this indicator?	A small number of births were excluded due to a recorded birthweight of either less than 500g or greater than 6000g. These exclusions represent 0.02% of all records. A small number of birth records were excluded due a materntal age of less than 10 years or greater than 54 years. These exclusions represent less than 0.01% of all records. For further information about NCCHD, see section 6.5 of this technical guide.
References	1. Welsh Government. Births in Wales, 2005-2015: Data from the National Community Child Health Database. Cardiff: Welsh Government; 2015. Available at: http://gov.wales/statistics-and-research/births-national-community-child-health-database/?lang=en

5.2 Healthy Life expectancy

What is being measured?	Healthy Life Expectancy (HLE) at birth
How is this indicator defined?	An estimate of the average number of years that newborn babies could expect to live in good health, assuming that current mortality rates and levels of good health for the area in which they were born applied throughout their lives.
Where does the data come from?	• Public Health Mortality (PHM): Office for National Statistics (ONS) • Mid-year population estimates by LSOA and single year of age (unrounded): ONS • Welsh Health Survey: Welsh Government (WG) • Welsh Index of Multiple Deprivation (WIMD) 2014: (WG)
When does it measure it?	2005-2009 to 2010-2014 observed; 2015 to 2024 projected.
What geographical areas does it cover?	Wales, health boards and local authorities, including by fifths of deprivation
How is it calculated?	• Healthy life expectancy was calculated using the Sullivan method which is the preferred method of the Office for National Statistics for calculating healthy life expectancy at birth[1,2]. • Its calculation involved combining health status data from the Welsh Health Survey with the mortality and population data used for life expectancy. It was produced for each area and for each fifth of deprivation. • The health states were based on the Welsh Health Survey questions asking those aged 16 and over "In general would you say your health is? Excellent, Very Good, Good, Fair, Poor" and asking a parent or guardian "How is the child's health in general? Very good, good, fair, bad, very bad". 'Healthy' was judged to be a response of excellent, very good or good for adults and very good or good for children. • The survey data for children at the Wales level (and by fifths) was used as a proxy for the calculation of HLE at health board level and local authority level, as the sample size was not sufficiently large to break down at sub-national level and fifths. As a result 15 year olds have been excluded from the analysis to avoid having a mix of Wales level and sub-Wales level responses in the 15-19 prevalence calculations. • The percentage of life expectancy lived in good health was calculated by dividing the healthy life expectancy by the life expectancy.
How accurate and complete will the data be for this indicator? Are there any problems, notes for interpretation or warnings with the data in relation to this indicator?	• As all life expectancy calculations are based on current mortality rates, which have been improving for decades, average healthy life expectancy will change over the course of a lifetime irrespective of other factors. These should therefore be considered as comparative population measures of mortality and health status during a period of time rather than as predictions of actual individual healthy life expectancy. • The Welsh Health Survey data is self-reported and may be affected by individuals' perception of their own health.

	• In a few isolated instances there were no survey respondents in the 85+ age group in a particular fifth within an area. When this occurred the results for the 80-84 age group were used as a substitute. • A very small number of records in the Welsh Health Survey were found to have LSOAs which did not match their local authority. These records were removed from all of the HLE calculations. • The survey data for children at the Wales level (and by fifths) was used as a proxy for the calculation of HLE at health board level and local authority level, as the sample size was not sufficiently large to break down at sub-national level and fifths. This is unlikely to have a great effect on the HLE estimates. • The Sullivan method includes an adjustment for people living in communal establishments. As there were no reliable and timely data available, this adjustment was not made in this analysis. • It has recently come to light that the population aged 85+ has been underestimated in some areas by the Office for National Statistics population estimates. In most parts of Wales, the impact of this issue on will be very small; further details are provided in a brief paper available via www.publichealthwalesobservatory.wales.nhs.uk/inequalities
References	1. Jagger, C. *Health Expectancy Calculation by the Sullivan Method: A Practical Guide.* NUPRI Research Paper Series No 68. 1999. Toyko. 2. ONS. *Health expectancies at birth and at age 65, United Kingdom, 2009–11*. 2014. Available at: [Accessed 6th Oct 2015].

5.3 Lifestyle factors

5.3.1 Overweight and obese

What is being measured?	Estimated percentage of adults who reported to be overweight or obese.
How is this indicator defined?	The annual Welsh Health Survey asks adults to report their height and weight. From this the BMI of respondents can be calculated. Persons with a BMI of 25+ and 30+ are defined to be overweight and obese respectively.
Where does the data come from?	Welsh Health Survey (WHS): Welsh Government (WG)
Who does it measure?	Wales' residents aged 16+.
When does it measure it?	2003/04-2005/06 to 2013-2015 observed; 2016 to 2025 projected.
What geographical areas does it cover?	Wales, health boards and local authorities
How is it calculated?	The number of adults whose self reported heights and weights meant they had a BMI of 25+ (and hence were classed as overweight and obese) divided by the total number of adult survey respondents.
How accurate and complete will the data be for this indicator? Are there any problems, notes for interpretation or warnings with the data in relation to this indicator?	Height and weight of respondents are self-reported, and there is evidence to show that some people tend to under report weight and/or over report height resulting in an under-estimation of the prevalence of persons who are overweight or obese. BMI does not distinguish between mass due to body fat and mass due to muscular physique, nor does it take account of the distribution of fat. Ethnicity may affect BMI. The Welsh Health Survey excludes people living in institutions (e.g. care homes, student halls). Therefore, this indicator may not be an accurate estimate for areas with a high proportion of such resudents. Further information on the Welsh Health Survey is in section 6.4 of this technical guide.

5.3.2 Smoking

What is being measured?	Estimated percentage of adults who self reported to be current smokers.
How is this indicator defined?	The annual Welsh Health Survey asks adults to report whether they smoke at all and if so how frequently. Current smokers are defined as those who say they smoke daily or occasionally.
Where does the data come from?	Welsh Health Survey (WHS): Welsh Government (WG)
Who does it measure?	Wales' residents aged 16+.
When does it measure it?	2003/04-2005/06 to 2013-2015 observed; 2016 to 2025 projected.
What geographical areas does it cover?	Wales, health boards and local authorities
How is it calculated?	The number of adults whose self reported smoking daily or occassionaly (and hence were classed as current smokers) divided by the total number of adult survey respondents.
How accurate and complete will the data be for this indicator? Are there any problems, notes for interpretation or warnings with the data in relation to this indicator?	Smoking status from the WHS is self-reported, that is, the survey relies on the respondent's honesty when reporting their smoking status. There may be systematic bias if some groups are less likely to be honest about their smoking status than others, for example across age groups or socio-economic classifications. This is unlikely to have a large impact on the results. However, the overall estimate of prevalence is more likely to be an underestimate rather than an overestimate of the true percentage of people who smoke, since people may prefer not to report themselves as smokers due its perceived social unacceptability. Fluctuations in smoking prevalence over time, especially at sub-national levels, should be interpreted with caution. Changes that are contrary to the overall trend may be due to sampling variation rather than evidence of a sudden change. The Welsh Health Survey excludes people living in institutions (e.g. care homes, student halls). Therefore, this indicator may not be an accurate estimate for general practices with a high proportion of such patients. Further information on the Welsh Health Survey is in section 6.4 of this technical guide.

5.3.3 Fruit and vegetable consumption

What is being measured?	Estimated percentage of adults who reported consuming fewer than five portions of fruit or vegetables on the previous day.
How is this indicator defined?	The annual Welsh Health Survey asks adults about their fruit and vegetable consumption. Respondents are defined as achieving the recommended fruit and vegetable consumption if they consumed five or more portions on the previous day.
Where does the data come from?	Welsh Health Survey (WHS): Welsh Government (WG)
Who does it measure?	Wales' residents aged 16+.
When does it measure it?	2008-2010 to 2013-2015 observed; 2016 to 2025 projected.
What geographical areas does it cover?	Wales, health boards and local authorities
How is it calculated?	The number of adults who self reported comsuming fewer than five portions of fruit or vegetables the previous day divided by the total number of adult survey respondents.
How accurate and complete will the data be for this indicator? Are there any problems, notes for interpretation or warnings with the data in relation to this indicator?	Self-reported data of fruit and vegetable consumption may be prone to respondent bias i.e. overestimating their behaviour to give a more favourable response. Although portion size guidance was provided, interpretation may have been difficult for respondents. Also, the respondents were asked about the previous day's behaviour and so this might not reflect overall eating patterns. The Welsh Health Survey excludes people living in institutions (e.g. care homes, student halls). Therefore, this indicator may not be an accurate estimate for general practices with a high proportion of such patients. Further information on the Welsh Health Survey is in section 6.4 of this technical guide.

6 Data sources

6.1 Population mid-year estimates

What the data tells you?	Mid-year population estimates (as at 30 June each year) provide an estimate of the resident population of an area.
How are the data collected?	Population estimates are based on births, deaths and an estimate of migration since the last census. They are produced using a well established demographic approach called the cohort component method by the Office for National Statistics (ONS). In simple terms, population estimates are calculated by: • Taking the previous years' population estimate • Taking out special population groups • Ageing every person on one year • Adding births and subtracting deaths • Allowing for inward and outward migration Adding back in the special population groups.
How accurate and complete will the data be? Are there any problems, notes for interpretation or warnings with the data?	• The estimated resident population of an area includes all people who usually live there, whatever their nationality[1]. • Members of the armed forces stationed in the UK are included[1]. • UK forces stationed outside the UK are excluded[1]. • Students are taken to be resident at their term time address[1]. • The estimates include long term international migrants (defined as somebody who changes his or her country of usual residence for a period of at least one year)[1]. • The estimates do not include short term migrants (people who come to or leave the UK for less than a year)[1]. • The census and therefore mid-year population estimates are thought to underestimate the population in some areas e.g. areas of multi-occupancy housing. • It has recently come to light that the population aged 85+ has been underestimated in some areas by the Office for National Statistics population estimates. In most parts of Wales, the impact of this issue will be very small; further details are provided in a brief paper available via www.publichealthwalesobservatory.wales.nhs.uk/inequalities Full guidance on the method used by ONS to calculate population estimates can be accessed at: https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/methodologies/methodologyguideformid2015ukpopulationestimatesenglandandwalesjune2016
Who manages the data?	Office for National Statistics (ONS)
Where can you get hold of the data?	Office for National Statistics website available at: http://www.ons.gov.uk/ons/taxonomy/index.html?nscl=Population+Estimates
References	1. Office for National Statistics. *Methods guide for mid-2015 Population Estimates* [Online]. 2016. Available at: https://www.ons.gov.uk/peoplepopulationandcommunity/populati

	onandmigration/populationestimates/methodologies/methodologyguideformid2015ukpopulationestimatesenglandandwalesjune2016 [Accessed 10th August 2016].

6.2 Population projections

What the data tells you?	The 2014-based local authority population projections for Wales, 2014 to 2039 are the official population projections for Wales.[1] They are estimates of the size of the future population, assuming specific future trends in births, deaths and migration.
How are the data collected?	The projections use the estimate of the usually resident population from the 2014 mid-year population estimates as the baseline. To estimate the size of the future population, historic trends and assumptions about future rates of births, deaths and migration are applied to the age and sex specific baseline population.
How accurate and complete will the data be? Are there any problems, notes for interpretation or warnings with the data?	The population projections are indications of what may happen if observed trends continue and assumptions hold true. They cannot account for as yet unknown policy changes or other changes that may affect future population levels. As such, and as with any projection, the further into the future the projection the less certainty there can be over its accuracy. The usually resident population definition includes: • Usual residents temporarily away from home are counted at their home address. • Students are counted at their term-time address. • Migrants are only counted if the change in their country of residence is for 12 months or longer. Therefore short term migrants, for example those moving for seasonal employment purposes, are not included. The default population projection is based on the pattern of migration over the previous five years. Variants projections are also available covering different migration scenarios.
Who manages the data?	The Welsh Government produces and distributes the population projections.
Where can you get hold of the data?	Population projections are available on the StatsWales website at https://statswales.gov.wales/Catalogue/Population-and-Migration/Population/Projections
References	1. Welsh Government. *Local Authority Population Projections for Wales (2014-based)* Cardiff: WG. Available at: http://gov.wales/statistics-and-research/local-authority-population-projections/?lang=en

6.3 Welsh Index of Multiple Deprivation

What the data tells you?	• The Welsh Index of Multiple Deprivation (WIMD) 2014 is a measure of multiple deprivation at small area level. The fifth edition of the Welsh Index of Multiple Deprivation was released in August 2014 and replaced WIMD 2011. WIMD is made up of eight separate domains of deprivation: income; employment; health; education; housing; access to services; environment; and community safety. • WIMD is used to give an overall deprivation rank for each of the 1,909 lower super output areas (LSOA) in Wales and to give ranks for the separate deprivation domains for each of the LSOAs.
How are the data collected?	• Deprivation ranks are calculated for each LSOA in Wales. One area has a higher deprivation rank than another if the proportion of people living there that are classed as deprived is higher. The most deprived area is ranked as one and the least deprived area is ranked as 1,909. • Each of the eight domains are based on a range of different indicators. The domain indices are weighted and combined into an overall index of multiple deprivation. The weighting is the adjustment of the contribution of the domain indices make to the overall index when they are combined. Income and employment are classed as the most important indicators and are given the biggest weighting in the overall index. • To obtain deprivation fifths geographical areas are ranked from highest to lowest by the deprivation rank and then split into five equal bands, ranging from least deprived to most deprived fifth.
How accurate and complete will the data be? Are there any problems, notes for interpretation or warnings with the data?	• The WIMD provides a deprivation rank for each of the 1,909 LSOAs in Wales. • Not everyone living in a deprived area is deprived and not all deprived people live in deprived areas. An area itself is not deprived, it is the circumstances and lifestyle of people who are living there that affects its deprivation ranks. • The WIMD cannot tell you how much more deprived one LSOA is than another. If one area is ranked as the 100th most deprived and another area as the 300th most deprived, you cannot say that one area is three times more deprived than the other. • Deprivation ranks cannot be compared with scores from a previous index. • The WIMD ranks cannot be compared with those from deprivation indices of other UK countries. • There are no official health board and local authority fifths. • WIMD is an ecological measure whereas individuals within an area (LSOA in this instance) may vary. • The overall WIMD index includes a health measure and so it can be argued that assessing health experiences against WIMD can have a circular effect. • Unlike measures of material deprivation some of the factors do not relate directly to material deprivation e.g. access to services. It is important to note that low deprivation does not equate to

	affluence.
Who manages the data?	Welsh Government's Statistical Directorate and the Local Government Data Unit (Wales)
Where can you get hold of the data?	WIMD can be downloaded from the following Welsh Government web pages: http://wales.gov.uk/statistics-and-research/welsh-index-multiple-deprivation/?lang=en

6.4 Welsh Health Survey

What does the data tell you?	The Welsh Health Survey (WHS) provides information about the health of people living in Wales, the way they use health services and their health related lifestyle.
How are the data collected?	The adult survey was established in 2003 and runs all year round. It is being replaced from 2016 onwards by the National Survey for Wales. The WHS is based on a representative sample of people living in private households in Wales, selected using a random sample from the Post Office's Postcode Address File[1]. At each household, all adults and a maximum of two children are eligible for inclusion in the survey. A sample of around 15,000 adults and 3,000 children is aimed for per year, to include a minimum of 600 adults from each local authority area.
How accurate and complete will the data be? Are there any problems, notes for interpretation or warnings with the data?	The Welsh Health Survey is the most comprehensive survey into the health of the population across Wales. However, as with all surveys of a sample of the population it is subject to sampling error i.e. the difference between the estimates derived from the sample and the true population values. Survey data is usually presented at a Wales level. Combining data from more than one year can allow results to be presented at a lower level (e.g. age group, geography) by improving the precision of the estimates due to the larger sample size used. As the survey is based on self-reported data, the results are prone to respondent bias i.e. people may under or over estimate their behaviour to give a more favourable response. The survey results are weighted to ensure that the age and sex distribution of the responding sample matches that of the population of Wales. The Postcode Address File covers more than 99% of private households in Wales; the small percentage of people not covered by the Postcode Address File, for example those living in institutions, were not covered by the Welsh Health Survey. The Welsh Health Survey therefore does not include adults living in institutional settings such as care homes or nursing homes etc. In general terms whereas non-responding adults were more likely than those who responded to be described as having good general health the converse is true for children i.e. children who responded to the survey were more likely to be described as having good general health than non-responding children[2]. The Welsh Health Survey excludes people living in institutions (e.g. care homes, student halls).
Who manages the data?	The data is owned and managed by the Welsh Government. NatCen Social Research (www.natcen.ac.uk) conducts the survey on behalf

	of the Welsh Government.
Where can you get hold of the data?	Welsh Health Survey results are available at: http://gov.wales/statistics-and-research/welsh-health-survey/?lang=en
References	1. Welsh Government. Welsh Health Survey Quality Report. Cardiff: WG; 2015. Available at: http://gov.wales/docs/statistics/2015/150707-welsh-health-survey-quality-report-en.pdf 2. Doyle et al. Welsh Health Survey 2014 Technical Report. National Centre for Social Research; 2015. Available at: http://gov.wales/docs/statistics/2015/150916-welsh-health-survey-technical-report-2014-en.pdf

6.5 National Community Child Health Database for Wales (NCCHD)

What does the data tell you?	The National Community Child Health Database (NCCHD) includes details relating to maternal and child health related indicators such as births, immunisation, screening and safeguarding of children.
How are the data collected?	Each of the 7 health boards in Wales has a Child Health System database which they manage locally. Anonymised records for all children born, resident or treated in Wales and born after 1987 are collated from each of the local databases each quarter to create the NCCHD.[1,2]
How accurate and complete will the data be? Are there any problems, notes for interpretation or warnings with the data?	The NCCHD birth figures are not meant to replace the Office for National Statistics (ONS) birth registration statistics which are the official births statistics for Wales. The NCCHD is usually used when the indicators are not available from the ONS dataset e.g. breastfeeding and gestation.[2] Some key indicators are not useable from this source, primarily due to issues with completeness e.g. details of delivery (e.g. onset of labour, method of delivery) and mothers' characteristics (e.g. whether the mother smokes) are incomplete. NWIS are working with the health boards to try to resolve this issue.[2] The NCCHD is refreshed from local reports and so relies on notifications of immunisations given being returned to local Child Health Offices and entered onto their database.
Who manages the data?	NHS Wales Informatics Service (NWIS)
Where can you get hold of the data?	Data from the NCCHD are published via Stats Wales: https://statswales.gov.wales/Catalogue/Health-and-Social-Care/NHS-Primary-and-Community-Activity/Community-Child-Health and Health Maps Wales: https://www.healthmapswales.wales.nhs.uk/IAS/dataviews/ Immunisation statistics which are calculated using NCCHD are published on the Public Health Wales Health Protection website: http://www.wales.nhs.uk/sites3/page.cfm?orgid=457&pid=54144
References	1. Welsh Government. Births in Wales, 2005-2015: Data from the National Community Child Health Database. Cardiff: Welsh Government; 2015. Available at: http://gov.wales/statistics-and-research/births-national-community-child-health-database/?lang=en 2. Welsh Government. Birth Statistics from the National Community Child Health Database (NCCHD) Quality Report. Cardiff: Welsh Government; 2016. Available at: http://gov.wales/statistics-and-research/births-national-community-child-health-database/quality-report/?lang=en

6 Glossary

Fifths of deprivation

- Geographical areas are ranked from highest to lowest by deprivation score, using the Welsh Index of Multiple Deprivation, and then split into five groups of similar size, ranging from most deprived to least deprived fifth.

Health board

- Health boards are the NHS bodies in Wales responsible for the health of the population within their geographical area. This includes planning, designing, developing and securing the delivery of primary, community, in-hospital care services and specialised services.

Population projections

- Population projections provide an estimate of the size of the future population and are based on assumptions about births, deaths and migration. The assumptions are based on past trends and only indicate what may happen should the recent trends continue.

Public Health Wales NHS Trust

- Public Health Wales was established as an NHS Trust on 1 October 2009. The Trust incorporates the functions and services previously provided by the National Public Health Service for Wales, the Wales Centre for Health, the Welsh Cancer Intelligence and Surveillance Unit and Screening Services Wales.

Tableau

- Tableau is a user-friendly business intelligence tool which helps users to explore, visualise, and understand data.

Well-being of Future Generations (Wales) Act 2015

- The Well-being of Future Generations (Wales) Act 2015 makes public bodies listed in the Act think more long term, work better with people and communities and each other, look to prevent problems and take a more joined-up approach. The Act makes those bodies listed, carry out their tasks in a sustainable way. The Act also establishes Public Services Boards (PSBs) for each local authority area in Wales. Each PSB must improve the economic, social, environmental and cultural well-being of its area by working to achieve the well-being goals. Furthermore, the Act established a Future Generations Commissioner for Wales, whose role is to act as a guardian for the interests of future generations in Wales, and to support the public bodies in the Act to work towards the well-being goals.

Welsh Index of Multiple Deprivation (WIMD)

- WIMD is a measure of multiple deprivation at lower super output area level. A WIMD deprivation score is calculated using eight domains i.e. income, employment, health, education, access to services, housing, physical environment and community safety.