

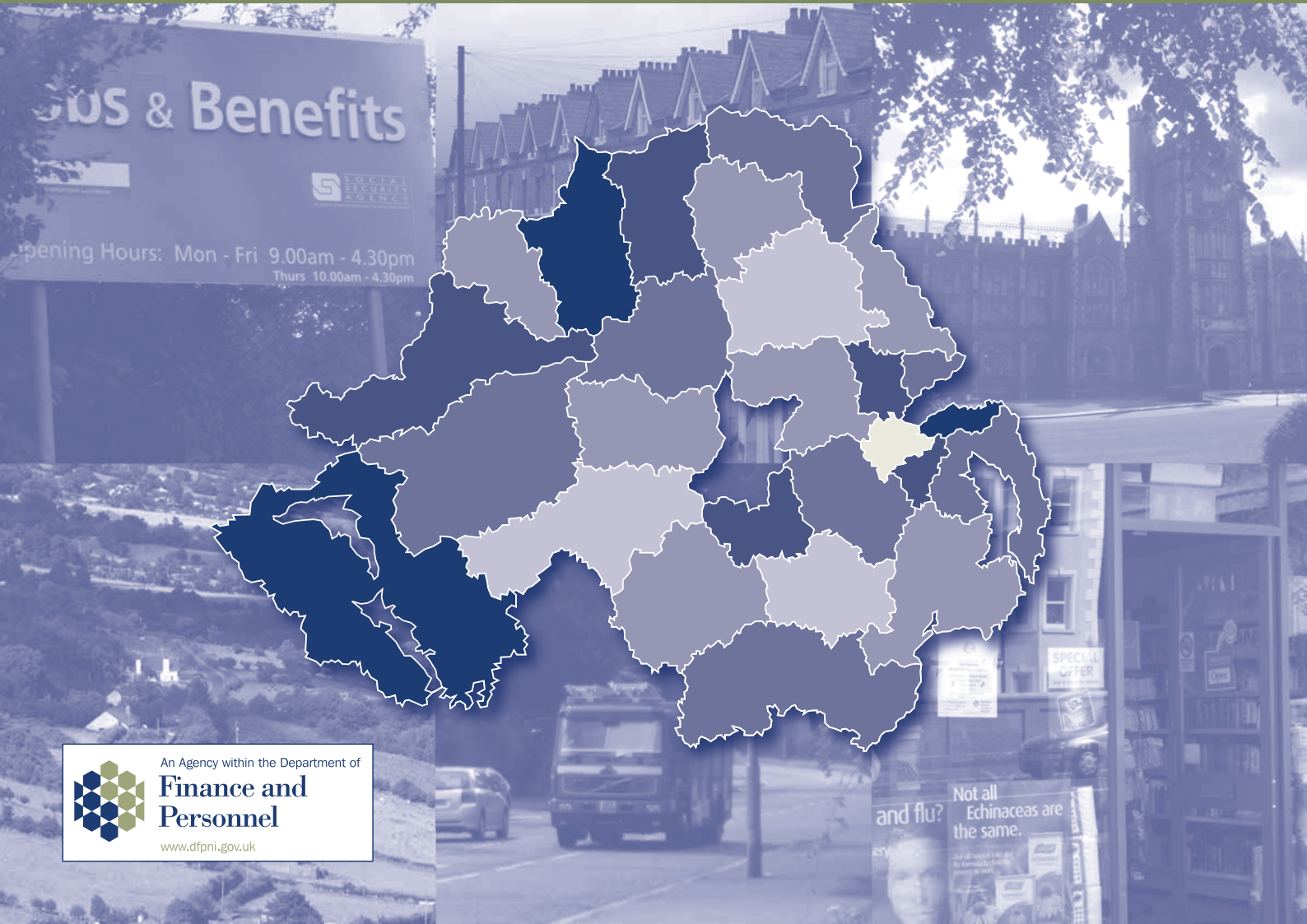


Northern Ireland
**Statistics &
Research**
Agency



Northern Ireland Multiple Deprivation Measure 2010: Blueprint Document

February 2010



The Northern Ireland Statistics and Research Agency

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- Administer the marriage laws and to provide a system for the civil registration of births, marriages, adoptions and deaths in Northern Ireland.

NISRA can be found on the internet at www.nisra.gov.uk

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Consultation

The 'Northern Ireland Multiple Deprivation Measure 2009: Consultation Document'¹ was published in July 2009 seeking views on the proposals to update the Northern Ireland Multiple Deprivation Measure (NIMDM) 2005. The consultation document was circulated widely and available for download on the NISRA² and NINIS³ websites. In total 600 documents were distributed and 550 downloaded.

The associated consultation period ran from 27th July 2009 to 16th November 2009 during which public consultation events were held in Omagh, Lisburn and Belfast. These events were attended by over 100 people and 90 verbal responses were noted. In addition 42 written responses to the consultation were received.

A summary of verbal responses at the public consultation meetings and the written responses are available on the NISRA website.

¹ www.nisra.gov.uk/deprivation/archive/Updateof2005Measures/NIMDM_2009_Consultation_Document.pdf

² www.nisra.gov.uk

³ www.ninis.nisra.gov.uk



Creation of NIMDM 2010

The following blueprint details the indicators that will be included in the Northern Ireland Multiple Deprivation Measure (NIMDM) 2010. The indicators have been selected after considering the **statistical properties** of available data, the **remit** of the update to the deprivation measures, the results of an independent **peer review**, and the **consultation responses**.

As the NIMDM 2010 is a National Statistics product, the decisions taken on its content are free from any political interference.⁴

The update of the Deprivation Measure is also overseen by a Steering Group comprising representatives from each of the NI Government Departments, NI Housing Executive, Rural Development Council, NI Council for Voluntary Action, Society of Local Authority Chief Executives, and the Equality Commission. Statistical experts from government departments and Non-Departmental Public Bodies have also been involved in the update by providing data and advice on the statistical indicators included in each of the domains.

Statistical Properties

Indicators included in the multiple deprivation measures must meet a number of criteria to ensure their accuracy in measuring deprivation.

Each indicator chosen should be **specific** to one of the seven domains of deprivation; Income Deprivation, Employment Deprivation, Health Deprivation and Disability, Education Skills and Training Deprivation, Proximity to Services Deprivation, Living Environment and Crime and Disorder. For example, fuel poverty could not be used as a measure of deprivation within the current domain methodology as it results from an interaction between housing quality and low income; both of which are captured separately in the Living Environment and Income Deprivation Domains.

Within domains indicators have been chosen that represent **major features** of that form of deprivation rather than deprivation affecting a small number of people or areas in Northern Ireland. This allows the degree of deprivation to be identified as opposed to a simple 'present/not present' approach.

In order to provide a *relative* deprivation measure and to allow meaningful area based comparisons indicator data should be available for **all of Northern Ireland** and collected in a consistent form. Similarly bias in the underlying indicator data should not exist, meaning that the ability for indicators to identify equally deprived people should not be determined by their individual or spatial characteristics. Where such a bias is identified the indicator can be corrected for this effect (for example see discussion in Health Deprivation and Disability Domain on the correction of the potential rural bias in the use of an emergency admissions indicator) or omitted.

⁴ For more information on National Statistics please see www.statisticsauthority.gov.uk

Indicators within each domain should be **direct measures** or **good proxies** of that form of deprivation. The majority of indicator data are sourced from administrative systems rather than surveys specifically designed to collect information on deprivation. The main advantage of using administrative data is that it allows the calculation of detailed small area measures whilst sample surveys would not. The main disadvantage to note is that the administrative systems were not designed to collect information on deprivation per se. Although the data from administrative systems are not always direct measures of deprivation, they are excellent proxies, and have the benefit that they allow the calculation of detailed small area statistics.

As the aim of the deprivation measures is to identify concentrations of deprivation it is important that indicators are statistically **robust at the small area** level. Where cases or incidences are low, longer time trends are included to ensure indicators are not dominated by one-off or uncharacteristic events.

Finally statistical indicators should be as **up to date** as possible to provide information on current deprivation.

Remit of Update

As outlined in the consultation document the scope of the update is broadly limited to temporal updating of the indicators and domains used in the NIMDM 2005 research.

This includes revising statistical indicators where explicitly recommended in the NIMDM 2005 report, where indicators are no longer available or where data have been significantly enhanced. Any revisions outside this framework, specifically any fundamental revisions, are not considered in this update.

Following the publication of the small area results of the 2011 Census a fuller methodological review will take place considering alternative indicators and approaches.

Peer Review

In addition to the public consultation process the draft blueprint document was independently peer reviewed by the Social Disadvantage Research Centre in the University of Oxford. Two consultants were also involved in the peer review of the Small Area Population Estimates and the Proximity to Services domain.

The results of the peer review were presented to the Deprivation Steering Group on 16th December 2009 and subsequently agreed.



Consultation Responses and Blueprint

The following sections present the main issues arising during the consultation and the resulting content of the updated deprivation measures. Each domain is dealt with in turn and general issues are summarised in the final section.

A number of consultation responses contained suggestions for future indicators outside the remit of the current update. These suggestions will not be dealt with in detail in the blueprint document. Instead they will be considered in the context of a fuller methodological review and contribute to the recommendations in the final deprivation report.

Income Deprivation Domain

Purpose of the Domain

The purpose of the Income Deprivation Domain is to identify the proportion of the population experiencing income deprivation at the small area level. This proportion is calculated by obtaining a non-overlapping count of individuals living in households in receipt of income related benefits.

Proposed Indicators

Adults and children in Income Support households (2008/09. Source: DSD)

Adults and children in State Pension Credit households (2008/09. Source: DSD)

Adults and children in income based Jobseeker's Allowance households (2008/09. Source: DSD)

Adults and children in income based Employment and Support Allowance households (2008/09. Source: DSD)

Adults and children in Housing Benefit households (2008/09. Source: DSD/LPS)

Income Deprivation affecting Children measure

A stand-alone measure combining the percentage of an Super Output Area's (SOA) children aged under 16 living in families in receipt of Income Support, State Pension Credit, income based Jobseeker's Allowance, income based Employment and Support Allowance or Housing Benefit.

Income Deprivation affecting Older People measure

A stand-alone measure combining the percentage of an SOA's population aged 60 or over and their partners (if 60 and over), living in households in receipt of Income Support, State Pension Credit, income based Jobseeker's Allowance, income based Employment and Support Allowance or Housing Benefit.

Consultation Responses

The proposal to include adults and children in households in receipt of Housing Benefit in the Income Deprivation Domain was detailed in the consultation document and was broadly supported in the consultation responses.

A number of respondents asked for further clarification on the content of the indicator, noting that Housing Benefit can be claimed by those living in social housing or by private tenants, and that Rate Relief was also available for owner-occupiers. Often where the response to include the Housing Benefit data was negative, it was based on the argument that the indicator contained an inherent urban-rural bias as more council estates, and so social rented accommodation, were located in urban areas. This presupposed the Housing Benefit indicator comprised information on social housing only.

In fact information included in the Housing Benefit indicator is supplied from two sources; the Department for Social Development which includes Housing Benefit for social tenants and Local Housing Allowance; and Land and Property Service which includes Housing Benefit for private tenants and Rate Relief for owner-occupiers. Including all of the above sets of information in the indicator will give a fuller measure of those requiring assistance with housing costs and help to alleviate the concerns expressed in the consultation responses.

Three other issues were raised concerning the measurement of income deprivation; the variation in benefit uptake and use of a modelled estimate; the time period of the domain given the effects of the recession; and the lack of information on the working poor.



Variation in Benefit Uptake

Concerns were raised during the consultation process that differences in benefit uptake may exist across Northern Ireland, such that some groups were more likely to be entitled to, but not receiving, benefits (entitled non-recipients) than others. This was raised in relation to perceived differences in benefit uptake by community background, by pensioners and by 'migrants'.

Although the case of variation in benefit uptake by community background was noted in consultation responses, there is no research that provides backing for this theory. As detailed in the consultation document the Northern Ireland Family Resource Survey is currently the only comprehensive data source which can be used to accurately model entitlement to benefits in Northern Ireland. The number of entitled non-recipients assessed from the survey however is low. As such benefit uptake cannot be modelled robustly using this source.

Similarly it was noted that income deprived economic migrants may not be included in the measures due to restrictions on claiming benefits.

It is likely that the consultation responses referring to 'migrants' related to those coming to live and work in Northern Ireland from one of the eight Central and Eastern European accession countries (Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia) following European Union expansion in 2004; the majority of whom are likely to be registered on the Worker Registration Scheme (WRS)^{5, 6}. Those on the WRS are eligible for Housing Benefit and after 12 months of continuous employment are eligible for the same benefits as UK citizens.⁷ The inclusion of a Housing Benefit indicator in the domain will therefore capture those income deprived economic migrants who have resided in Northern Ireland for less than a year. Income deprived economic migrants residing in Northern Ireland for 12 months or more will be counted through the remaining Income Deprivation Domain benefits.

Consultation responses also highlighted the perception that using benefit data to measure income deprived older people would result in an undercount due to low levels of benefit uptake. Again, it is difficult to know the extent of the problem as measuring those that are entitled to but not claiming benefits is difficult as described above and as recognised in the Department for Social Development (DSD)'s recent consultation.⁸ DSD however have many programmes to promote the uptake of benefits by those that are entitled. Such programmes include local promotional activity, publication of leaflets and the provision of assistance and advice in Social Security Agencies; all of which should help to minimise the number of entitled non-recipients and consequently the potential for undercount in the Income Deprivation Domain.

In a small number of responses the use of modelled income estimates was supported as an alternative to a benefit-based Income Deprivation Domain due to the perception of differing benefit uptake rates.

The creation of small area income estimates was commissioned by NISRA and produced by the University of Essex following recommendations in the 2005 NIMDM report. To calculate the small area income estimates the Family Resource Survey in 2003/04 and 2004/05 was modelled to the small area level using population characteristics as reported in the 2001 Census.

The peer review team were asked to consider the merits of using a modelled Income Deprivation Domain as opposed to the proposed benefit-based domain. Noting that the report by the University of Essex recognised that any modelling approach which used Census as an important constituent data source will become less reliable as time increases from the Census date, they recommended that the Income Domain should continue to be based on benefit data.

⁵ Pg 7 Long Term International Migration Estimates for Northern Ireland (2004-05)- Sources and Methodology [http://www.nisra.gov.uk/archive/demography/population/migration/NI_Migration_Report\(2005\).pdf](http://www.nisra.gov.uk/archive/demography/population/migration/NI_Migration_Report(2005).pdf)

⁶ For more information on the Worker Registration Scheme see <http://www.ukba.homeoffice.gov.uk/workingintheuk/eea/wrs/>

⁷ For more information on Benefits for non-UK Nationals please see <http://www.nidirect.gov.uk/index/money-tax-and-benefits/benefits-and-financial-support/beginners-guide-to-benefits/information-for-non-uk-nationals.htm>

⁸ The Department for Social Development commenced a public consultation on the 3rd of September 2009 on plans to withdraw the annual National Statistic on estimates of benefit uptake for Northern Ireland. The results of the consultation are currently under consideration.

Recession

Clarification was also sought on the time period to which the Income Deprivation Domain data will relate, given that the economic downturn impacted on different parts of Northern Ireland at different stages. It was advised by the Department of Enterprise Trade and Investment to use the most up to date data, to more accurately reflect the impacts of the recession. Balancing the need for the most up to date statistics given the impact of the recession, and the date to which small area population estimates relate, the 2008/09 indicator data will cover the period April 2008 to March 2009.

Measurement of the 'working poor'

At the time of production of the consultation document the supply of HMRC Tax Credit data was thought unlikely. A large number of written and verbal responses expressed concern at the inability to secure data relating to the 'working poor' (as measured by those in receipt of Working Tax Credit and Child Tax Credit whose household income is below 60% of the NI median income).

The effect of the omission of Tax Credit was considered by the peer review team. After analysing the components of the English Multiple Index of Deprivation 2007 they concluded that the inability to obtain Tax Credit data should not prevent the domain being constructed but recommended that every effort should be made to obtain the information from HMRC.

Given the importance of the Tax Credit data shown through the consultation responses, and in line with the peer review recommendation, NISRA and DSD have engaged in significant discussions with HMRC. Subsequently HMRC have agreed to carry out research on behalf of NISRA for inclusion in the Income Deprivation Domain. Children and adults living in households in receipt of Working Tax Credit and Child Tax Credit whose household income is below 60% of the NI median income will therefore be included in the Income Deprivation Domain.

NIMDM 2010 Indicators and Method of Combination**Income Deprivation Domain 2010**

Adults and children in Income Support households (2008/09. Source: DSD)

Adults and children in State Pension Credit households (2008/09. Source: DSD)

Adults and children in income based Jobseeker's Allowance households (2008/09. Source: DSD)

Adults and children in income based Employment and Support Allowance households (2008/09. Source: DSD)

Adults and children in Housing Benefit households (2008/09. Source: DSD/LPS)

Adults and children in Working Tax Credit households whose equivalised income (excluding housing benefits) is below 60% of the NI median before housing costs (August 2008. Source: HMRC)

Adults and children in Child Tax Credit households whose equivalised income (excluding housing benefits) is below 60% of the NI median before housing costs (August 2008. Source: HMRC)

**Income Deprivation affecting Children measure**

A stand-alone measure combining the percentage of an Super Output Area's (SOA) children aged under 16 living in families in receipt of Income Support, State Pension Credit, income based Jobseeker's Allowance, income based Employment and Support Allowance, Housing Benefit or Working Tax and Child Tax Credit whose equivalised income is below 60% of the NI median before housing costs.

Income Deprivation affecting Older People measure

A stand-alone measure combining the percentage of an SOA's population aged 60 or over and their partners (if 60 and over), living in households in receipt of Income Support, State Pension Credit, income based Jobseeker's Allowance, income based Employment and Support Allowance, Housing Benefit or Working Tax and Child Tax Credit whose equivalised income is below 60% of the NI median before housing costs.

Method of Combination

The data sources will be combined and duplicates removed to create a non-overlapping count of people receiving income related benefits/credits.

The Income Deprivation Domain will count all adults and children in income deprived households. The Income Deprivation Affecting Children measure will include only children under 16 years of age living in income deprived households, while the Income Deprivation Affecting Older People will count those aged 60 and over living in income deprived households.

Each of the three measures will be expressed as a rate of the relevant population. The income domain score can therefore be interpreted as the percentage of income deprived people in an area.

Employment Deprivation Domain

Purpose of the Domain

This domain measures employment deprivation defined as involuntary exclusion of the working age population from work.

Proposed Indicators

Unemployment claimant count of women aged 18-59 and men aged 18-64.
(2008/09. Source: DSD)

Incapacity Benefit claimants women aged 18-59 and men aged 18-64.
(2008/09. Source: DSD)

Severe Disablement Allowance claimants women aged 18-59 and men aged 18-64.
(2008/09. Source: DSD)

Carer's Allowance claimants women aged 18-59 and men aged 18-64.
(2008/09. Source: DSD)

Employment and Support Allowance claimants women aged 18-59 and men aged 18-64.
(2008/09. Source: DSD)

Consultation Responses

The consultation document did not contain any specific questions relating to the Employment Deprivation Domain as any differences in the proposed domain from the NIMDM 2005 were as a result of changes in the benefit system and government employment programmes. Consultees were asked to comment on whether, given the recommendations and changes to data available, the proposed updated domain was acceptable.

Concerns raised during the consultation centred on two main issues; the lack of a specific measure of hidden unemployment and the inability to include data relating to the Steps Work Programme. A number of responses related to the potential for variation in benefit uptake, particularly regarding economic migrants. These issues have been dealt with in the Income Deprivation Domain.

Hidden Unemployment

In general hidden unemployment refers to people who are not actively seeking employment but who would like to work. This type of unemployment is often 'hidden' in unemployment statistics as the unemployed are defined as not working but available to work.

The Employment Deprivation Domain comprises a range of benefit data to capture the number of working age adults at the small area who would like to work but are unable to. Those who are available to work are recorded via the Jobseeker's Allowance indicator while those who cannot work due to an illness or disability are counted through the Incapacity Benefit, Severe Disablement Allowance or Employment and Support Allowance measures. After consultation in 2004 an indicator relating to carers was also included in the NIMDM 2005 as it was argued that carers were not voluntarily out of the labour market.

The inclusion of Incapacity Benefit, Severe Disablement Allowance, Employment and Support Allowance, and Carer's Allowance recipients in the Employment Deprivation Domain goes some way to include people who are classed as the 'hidden unemployed' rather than focussing purely on active job seekers. There are however others who are not eligible for the above benefits who would like to work but are *unavailable* for work. Mothers who are not working due to high child care costs are an often cited example.

The NIMDM 2005 recommended further research to ascertain whether the Labour Force Survey and the Family Resource Survey could be used to create a measure of the hidden unemployed. Due to the nature of sample surveys and the small number of people who are likely to be identified in this category, results could not be modelled robustly to the small area level.

Concerns were expressed in the consultation responses that such a measure could not be included. It should be noted however that the current Employment Deprivation Domain contains indicators beyond those normally included in unemployment related measures to help include those that may be described as the hidden unemployed.



Steps to Work

The 2005 NIMDM included measures of those on the New Deal employment programme. As detailed in the consultation document DEL's new flexible approach to helping people find work, the Steps to Work programme, was introduced at the end of September 2008, subsuming the New Deal programme. As the Steps to Work Programme had not been in operation across Northern Ireland and the quality assurance of the initial data was underway, a Steps to Work indicator was not proposed for inclusion in the updated domain.

It is now possible to include a Steps to Work indicator in the Employment Deprivation Domain. The Employment Deprivation Domain covers the period April 2008 to March 2009, while the Steps to Work indicator will cover the first six months following its introduction (October 2008 to March 2009). Although the first six months of the domain will not include data relating to government employment programmes this is likely to have only a minimal impact on the calculation of relative employment deprivation as it is only those on Step 2 strand or New Deal Options who will be omitted from the domain. At the end of September 2008, before Steps to Work was introduced, less than 1,800 people were on New Deal Options. This should be compared with approximately 139,000 people who were receiving at least one of the five benefits included in the Employment Deprivation Domain in the same month.

NIMDM 2010 Indicators and Method of Combination

Employment Deprivation Domain 2010

Unemployment claimant count of women aged 18-59 and men aged 18-64.

(2008/09. Source: DSD)

Incapacity Benefit claimants women aged 18-59 and men aged 18-64.

(2008/09. Source: DSD)

Severe Disablement Allowance claimants women aged 18-59 and men aged 18-64.

(2008/09. Source: DSD)

Carer's Allowance claimants women aged 18-59 and men aged 18-64.

(2008/09. Source: DSD)

Employment and Support Allowance claimants women aged 18-59 and men aged 18-64.

(2008/09. Source: DSD)

Steps to Work or New Deal Participants women aged 18-59 and men aged 18-64.

(October 2008 – March 2009. Source: DEL)

Method of Combination

The data sources will be combined and duplicates removed to create a non-overlapping count of people receiving employment related benefits.

The non-overlapping count will be expressed as a rate of the relevant population and the resulting score can therefore be interpreted as the percentage of employment deprived people in an area.

Health Deprivation and Disability Domain

Purpose of the Domain

The Health Deprivation and Disability Domain identifies areas with relatively high rates of premature deaths and areas where relatively high proportions of the population's quality of life is impaired by poor health or who are disabled.

Proposed Indicators

Years of Potential Life Lost
(2004 to 2008. Source: GRO)

Comparative Illness and Disability Ratio
(Non-overlapping count of Income Support claimants in receipt of disability premium, State Pension Credit claimants in receipt of severe disability premium, Attendance Allowance, Severe Disablement Allowance, Disability Living Allowance, Incapacity Benefit and Employment and Support Allowance.
2008/09. Source: DSD)

A combined measure of three indicators

- i) Individuals suffering from mood and anxiety disorders, based on prescribing data (2008/09. Source: BSO)
- ii) Suicides (1999 to 2008. Source: GRO)
- iii) Mental health inpatient stays (2003/04 to 2007/08. Source: DHSSPS)

People registered as having cancer (excluding non-melanoma skin cancers)
(2003 to 2007. Source: Northern Ireland Cancer Registry)

Emergency Admission Rate
(2007/08. Source: DHSSPS)

Low Birth Weight
(2004 to 2008. Source: Child Health System)

Children's Dental Extractions
(2006/07 to 2008/09. Source: BSO and DHSSPS)

Consultation Responses

The inclusion of four additional indicators to the Health Deprivation and Disability Domain was proposed in the consultation document. The indicators related to Emergency Admissions, Mental Health Hospital Admissions, Children's Dental Health and Low Birth Weight.

The Low Birth Weight indicator was supported through the consultation responses and the majority of respondents also agreed with the inclusion of a children's dental extraction indicator. A small number of responses expressed concerns with using data relating to extractions as extractions may be needed for orthodontic treatment, and suggested instead including information on dental registrations.

It is recognised that a number of extractions may be as a result of such treatment, however a dental registrations indicator would be an imperfect measure as it does not necessarily equate to poor oral health and may also be intertwined with access issues. Extractions are thought a more appropriate indicator of dental health as it measures an outcome of severe dental disease rather than a contributory factor, such as a low number of visits to a dentist.

Concerns were also raised on the inclusion of an Emergency Admissions Indicator and a Mental Health Admissions Indicator.

Access to an A&E hospital

As detailed in the Consultation Document 2009⁹ concerns were raised during the consultation period for the NIMDM 2005 over the inclusion of an Emergency Admissions Indicator. Specifically the concern was that an indicator based on hospital admissions would contain a rural bias, such that for a given level of health need emergency admissions would be less in rural areas than in urban areas due to ease of access to Accident and Emergency Units in urban areas. Due to the perceived rural bias, an Emergency Admissions Indicator was not included in the 2005 measures.

⁹ www.nisra.gov.uk/deprivation/archive/Updateof2005Measures/NIMDM_2009_Consultation_Document.pdf



For the update to the NIMDM 2005 statisticians in the Department of Health, Social Services and Public Safety (DHSSPS) have carried out significant research into this hypothesis. Their findings show that there is a small negative correlation between spatial rural-related variables (e.g. population density) and emergency admission rates. Modelling standardised emergency admission rates whilst controlling for health need showed that although there was no discriminatory rural effect, there was a small but significant distance to Accident and Emergency hospital effect. As the effect disappeared completely when admissions with a length of stay of three or fewer nights were removed, it was advised that only emergency admissions of four nights or more were included in the indicator.

The argument above was presented in the Consultation Document 2009 but was met in some cases with doubt that the method described would rule out the perceived rural bias.

The peer review team also considered the arguments for and against the Emergency Admissions Indicator. Drawing on internal research conducted for the NIMDM 2005, the peer review team indicated that using a cut-off to the number of nights stay resulting from an Emergency Admission may highlight 'real' health deprivation differences between areas rather than reflecting ease of access to A&Es. Employing a cut-off would also result in a change in focus to admissions for serious conditions only, removing cases of attendance at A&Es for minor conditions. Focusing on serious conditions is in keeping with the measurement of health deprivation and is similar to the English Index of Multiple Deprivation 2007¹⁰ which contains an indicator relating to acute health problems, calculated by considering hospital episodes greater than one day in length that began as an emergency admission.

Given the peer review recommendation, the research carried out by DHSSPS, and the consultation responses recognising the importance of a measure of admissions to hospital due to emergencies, an emergency admissions indicator considering admissions resulting in a stay of four nights or more shall be included in the Health Deprivation and Disability Domain.

Access to a Mental Health Unit

The expansion of the mental health indicator as recommended in the 2005 report was consulted upon. The mental health indicator in the 2005 Health Deprivation and Disability Domain consisted of two measures: individuals suffering from mood and anxiety disorders based on prescribing information, and the suicide rate. It was proposed that the updated mental health indicator would also include a measure of admissions to mental health units.

Mental health indicators were first included in the NIMDM 2001 after consultation showed that it was viewed as an important aspect of health deprivation, particularly as it may capture some of the long-term psychological costs of the Troubles.¹¹ The consultation in 2009 also showed support for measures of mental health.

It is recognised however that the measurement of mental health deprivation is not without its difficulties. Concerns were raised that prescription habits may vary between GPs, that admissions to a mental health unit would be driven in part by access, and that using three measures could lead to a double or triple count of those with mental health problems.

At this point it is worth detailing the methods that will be used to create the mental health indicator which may help to allay the concerns described above. The proposed indicator comprises three sources of information on mental health deprivation. The intention is not to create a count of the number of people who suffer from mood and anxiety disorders by simply summing these, but to use several sources of information that are all thought to occur as a result of one underlying factor – mental health deprivation.

Each of the three sources is likely to measure mental health deprivation with some error. Although it is difficult to know the degree to which, for example, accessibility issues play a part in determining who is admitted to a mental health unit and so how large or small the error is, it is assumed that the errors associated with each of the three data sources are not correlated and therefore a combined measure would create a stronger indicator than one source.

¹⁰ English Index of Multiple Deprivation 2007
<http://www.communities.gov.uk/communities/neighbourhoodrenewal/deprivation/deprivation07/>

¹¹ Northern Ireland Multiple Deprivation Measure 2005 Pg 13

Similarly, there may be errors associated with using prescription data as a proxy for a measurement of those suffering from mood and anxiety disorders. The error in this measure associated with the differences in prescribing habits are likely to be small as two monitoring systems are currently in place to examine prescribing behaviours. Firstly Health and Social Care Board prescribing advisors regularly monitor prescribing activity of practitioners and visit GP Practices to discuss good practice in this area; and secondly the COMPASS service which a) provides quarterly reports to each practice benchmarking it within its peer group and b) provides professional advice to practitioners about effective prescribing.

Both of the above should help to minimise the variation in prescription habits between GPs, and so the error associated with this measure. The combination of this measure with prescription data and suicide rates should further improve the measurement of mental health.

The peer review team also considered the concerns raised regarding the composition of the mental health indicator and were in support of the inclusion of three sources of mental health information. They further recommended the use of factor analysis to determine the weights of the constituent indicators rather than assigning equal weights as proposed in the consultation document.

The NIMDM 2010 mental health indicator will therefore comprise measures of those suffering from mood and anxiety based on prescribing information, admissions to mental health units, and suicide rates, with associated weights determined by factor analysis.

Other Concerns

Concerns were raised around the measurement of disability within the Health Deprivation and Disability domain. In particular it was noted that the measurement of disability at the small area level is based solely on benefit data while not every disabled person receives benefits and also that disability is not co-terminus with health deprivation.

Both points are recognised. The construction of the Health Deprivation and Disability Domain will go some way to alleviate the concerns.

The domain will comprise seven indicators, each relating to a different type of health deprivation or disability, for example premature death or children's health. The aim of the domain is not to create a count of health deprived or disabled people, as in the income and employment domain, as clearly it is possible that one person may be admitted to hospital in an emergency as well having a separate non-related disability. Instead the analysis supposes that there is an underlying factor to which each of the imperfect measures is related.

The seven measures are *indicators* of health deprivation and disability and do not profess to be perfect measures of health deprivation and disability itself. As detailed in the construction of the mental health indicator, each indicator will contain errors to greater or lesser degrees; the use of prescribing data may include errors, so too may the use of benefit data to measure disability.¹²

It is implicit within the factor analysis methodology that the indicators are imperfect measures but it is assumed they are correlated with health deprivation and disability; the underlying factor that we seek to measure. Those indicators most correlated with the underlying factor will be given most weight in the overall domain, determined by factor analysis.

¹² Other sources on disability prevalence, such as from the Northern Ireland Survey of Activity Limitation and Disability, were considered but results could not be modelled robustly to the small area level.



NIMDM 2010 Indicators and method of combination

Health Deprivation and Disability Domain 2010

Years of Potential Life Lost
(2004 to 2008. Source: GRO)

Comparative Illness and Disability Ratio
(Non-overlapping count of Income Support claimants in receipt of disability premium, State Pension Credit claimants in receipt of severe disability premium, Attendance Allowance, Severe Disablement Allowance, Disability Living Allowance, Incapacity Benefit and Employment and Support Allowance.
2008/09. Source: DSD)

A combined measure of three indicators

- i) Individuals suffering from mood and anxiety disorders, based on prescribing data (2008/09. Source: BSO)
- ii) Suicides (1999 to 2008. Source: GRO)
- iii) Mental health inpatient stays (2003/04 to 2007/08. Source: DHSSPS)

People registered as having cancer (excluding non-melanoma skin cancers)
(2003 to 2007. Source: Northern Ireland Cancer Registry)

Emergency Admission Rate
(2007/08. Source: DHSSPS)

Low Birth Weight
(2004 to 2008. Source: Child Health System)

Children's Dental Extractions
(2006/07 to 2008/09. Source: BSO and DHSSPS)

Method of Combination

The three mental health measures will be combined using factor analysis to form one indicator. All indicators will be ranked and their ranks transformed to a standard normal distribution, and combined using factor analysis.

Education, Skills and Training Deprivation Domain

Purpose of the Domain

The purpose of the domain is to measure the extent of deprivation in education, skills and training at the small area level for both children and working age adults.

Proposed Indicators

Sub-Domain: Primary School

Key Stage 2 Teacher Assessments for English and Maths (and Irish in Irish medium schools)
(2006/07 to 2007/08. Source: DE)

Proportions of pupils attending Special Education Needs Schools or attending primary school with Special Education Needs
(2006/07 to 2007/08. Source: School Census, DE)

Absenteeism at Primary Schools (all absences)
(2006/07 to 2007/08. Source: DE)

Sub-Domain: Post Primary School

Key Stage 3 Teacher Assessments for English and Maths (and Irish in Irish medium schools/units)
(2006/07 to 2007/08. Source: DE)

GCSE or equivalent qualifications points score
(2005/06 to 2007/08. Source: School Leavers Survey, DE)

Proportions of those leaving school aged 16, 17 and 18 and not entering Further Education or Training
(2003/04 to 2007/08. Source: School Leavers Survey, DE)

Proportions of 18-21 year olds who have not enrolled in Higher Education courses at Higher Education or Further Education establishments
(2004/05 to 2007/08. Source: HESA and FESR, DEL)

Proportions of pupils attending Special Education Needs Schools or attending post primary school with Special Education Needs
(2006/07 to 2007/08. Source: School Census, DE)

Absenteeism at Secondary Schools (all absences)
(2006/07 to 2007/08. Source: DE)

Sub-Domain: Working Age Adults

Proportions of working age adults (25-59) with no or low levels of qualification
(2001 Census. Source: NISRA)

Consultation Responses

Consultation responses were broadly in support of the proposed changes to the Education, Skills and Training Domain. Consultees were invited to comment on the following proposals:

- The replacement of 'the proportions of children aged 11 and 12 not attending grammar school' indicator with Key Stage 2 performance data;
- The inclusion of primary school level absenteeism rates;
- The inclusion of a primary school level Special Education Needs indicator;
- The expansion of the destination of school leavers indicator to include those not entering Further Education or training; and
- The introduction of three sub-domains.

The majority of responses recognised the merit in the creation of three equally weighted sub-domains to decrease the reliance on Census 2001 data and give more weight to children's educational outcomes within the domain. Similarly there was recognition of the improvements to the domain resulting from the availability of primary school level data.

The consultation document proposed the expansion of the indicator relating to the destination of school leavers from counting those not entering further education to those not entering further education or training. It was thought that including those not entering training was more in keeping with the aim of the domain. Such a change was accepted in the consultation responses.

Following discussions with Department of Education statisticians and the results of the independent peer review, it has been decided to further expand this indicator to measure those not entering *employment*, education or training. Without this change the indicator would measure those school leavers who gain employment or become unemployed, while the revised indicator measures school leavers whose destination was recorded as unemployed or unknown. Insofar as 'on-the-job' training is included in employment, this indicator would be a fuller measure of those school leavers who are deprived in terms of education, skills and training.

Three main issues arose concerning the Education, Skills and Training Domain proposals.



Comparability of Special Education Needs Assessments

A number of consultation responses showed concern that special education needs scores were not applied/awarded consistently across Northern Ireland. If this is the case the measures would include a bias and so would not be an appropriate indicator of real educational need or education deprivation.

Special Education Needs (SEN) stages range from 1 to 5 (in increasing order of severity) and on advice from statisticians in the Department of Education it has been decided to include only pupils at stages 3 - 5 on the SEN Code of Practice in the primary and post-primary SEN indicators. Pupils at those stages have been subject to formal assessment of their needs by specialists from the Education and Library Boards or other statutory providers. Including those at stages 3-5 will measure those pupils with the highest level of special education needs and minimise the potential for inconsistencies across schools and areas.

Comparability of Absenteeism Rates

Similarly some concern was raised about the recording of Absenteeism sessions across schools with a view that schools differed in their criteria for assigning an absence as 'authorised' or 'unauthorised'. In keeping with the NIMDM 2005 and the Department of Education's reporting of absence statistics¹³ both authorised and unauthorised sessions will be used in the primary and post-primary absenteeism indicators.

Comparability of Key Stage 2 Assessments

The proposal to replace the 'proportions of children aged 11 and 12 not attending grammar school' indicator included in NIMDM 2005 with Key Stage 2 Teacher Assessments gained broad support. One response however questioned the degree to which assessments were monitored across primary schools.

The specific indicator measured is the proportion of pupils attaining the expected level in English, Maths and Irish (in Irish medium schools) at Key Stage 2. This indicator is also included as one of the Department of Education's Public Service Agreements targets and is endorsed within the Department as the most reliable measure of primary level performance across Northern Ireland.

Other concerns

Written and verbal responses sought further clarification on the calculation and apportionment of the Key Stage 2 and Key Stage 3 indicators given that schools have wide catchment areas.

Apportioning school results to areas requires two pieces of information; school level assessment data and school information on the residence of its pupils. School level results are assigned to individual pupils and pupil results are summed on an area basis. This implicitly takes into account that pupils living in the same area may not attend the same school, and also that pupils do not necessarily live in close proximity to their school.

Responses also pointed to the lack of a measure relating specifically to 'migrant' children, such as the number of children with English as an additional language.

The Education, Skills and Training Deprivation Domain aims to measure deprivation through educational outcomes, such as attainment at Key Stage 2, Key Stage 3 and GCSE level. Having English as an additional language does not lead to poor educational attainment per se and so a measure of the number of children with English as an additional language is not included. This is not to say that children with English as an additional language will be excluded from the domain. Children who have English as an additional language who are also deprived in terms of education will be captured in the domain through low attainment in the assessments listed above.

Similarly the lack of a 'Free School Meals' indicator was questioned. A child's entitlement to free school meals is determined by their household income through their parents or guardians eligibility for income related benefits. Children living in income deprived households will be included in the income domain which is intended solely to measure this form of deprivation. Children who receive free school meals and perform poorly at school will be included in the domain via the outcome indicators.

¹³ 'Attendance at grant-aided primary, post-primary, and special schools 2007/08: Detailed Statistics' http://www.deni.gov.uk/school_attendance_-_statistical_press_release_200708.pdf

NIMDM 2010 Indicators and method of combination**Education Skills and Training Deprivation Domain 2010****Sub-Domain: Primary School**

Key Stage 2 Teacher Assessments for English and Maths
(and Irish in Irish medium schools)
(2006/07 to 2007/08. Source: DE)

Proportions of pupils attending Special Education Needs
Schools or attending primary school with Special
Education Needs Stages 3-5
(2006/07 to 2007/08. Source: School Census, DE)

Absenteeism at Primary Schools (all absences)
(2006/07 to 2007/08. Source: DE)

Sub-Domain: Post Primary School

Key Stage 3 Teacher Assessments for English and Maths
(and Irish in Irish medium schools/units)
(2006/07 to 2007/08. Source: DE)

GCSE or equivalent qualifications points score
(2005/06 to 2007/08. Source: School Leavers Survey, DE)

Proportions of those leaving school aged 16, 17 and 18
and not entering Further Education, Employment or
Training
(2003/04 to 2007/08. Source: School Leavers Survey, DE)

Proportions of 18-21 year olds who have not enrolled in
Higher Education Courses at Higher Education or Further
Education establishments
(2004/05 to 2007/08. Source: HESA and FESR, DEL)

Proportions of pupils attending Special Education Needs
Schools or attending post primary school with Special
Education Needs Stages 3-5
(2006/07 to 2007/08. Source: School Census, DE)

Absenteeism at Secondary Schools (all absences)
(2006/07 to 2007/08. Source: DE)

Sub-Domain: Working Age Adults

Proportions of working age adults (25-59) with no or low
levels of qualification
(2001 Census. Source: NISRA)

Method of Combination

Indicators in the Primary and Post-Primary Sub-Domains will be combined using weights determined by factor analysis. The Working Age Adults Sub-Domain is expressed as a rate.

The three Sub-domain scores are ranked, transformed to a standard normal and combined with equal weights to form the overall Education, Skills and Training Domain.



Proximity to Services Domain

Purpose of the Domain

The purpose of this domain is to measure the extent to which people have poor geographical access to key services, including statutory and general services.

Proposed Indicators

Fastest road travel time from each Census Output Area (COA) to:

Proximity to Services Deprivation

- GP premises (2009, Source: BSO)
- Accident and Emergency hospital (2009, Source: DHSSPS)
- Other Primary Health Care Services (2009, Source: BSO)
- Job Centre or Jobs and Benefits Office (2008, Source: DEL)
- Post Office (2008, Source: Post Office Ltd)
- Supermarket / Food Store (2007, Source: Experian)
- Large Service Centre (2007, Source: DSD)
- Council Leisure Centre (2009, Source: DCAL)
- Financial Services (2007, Source: Experian, Credit Union Register)
- Other general services (2007, Source: Experian)

Consultation Responses

The consultation document included proposals to include cross border services, general services, council leisure centres and financial services. It was also proposed that the food shop indicator would be expanded to include convenience stores; that dentists, opticians and pharmacists were combined into a single indicator; and service centres would be based on service provision rather than population. The consultation document also proposed that proximity to services be based on time rather than distance.

Responses were broadly in support of proposals to include indicators relating to general services, council leisure centres and financial services; and also agreed that service centres should be based on service provision rather than population size.

Issues arising during the consultation period centred on the difference between *access* and *proximity* to services; the inclusion of convenience stores in the Food Shop indicator; the inclusion of cross border A&Es and service centres; and the creation of a single Primary Health Care indicator comprising Dentists, Pharmacies and Opticians. A small number of responses also sought clarification on the use of travel time to calculate proximity to services rather than road distance.

Proximity not Access

During consultation, a number of general concerns were expressed, highlighting the fact that proximity does not equate to access. These centred on availability of public transport for those lacking access to a car; the difficulty of cross-community movement (both physical and psychological); physical problems of the elderly and disabled; and high costs associated with using convenience stores or cross-border services.

It is recognised that these (and other) factors are indeed likely to impact on the ability and wish of people to access services that are in relatively close proximity on the basis of estimated car travel time. Obtaining the data to take account of the difference between proximity and access has, however, already proved difficult for some aspects (in respect of public transport) and it would be massively more difficult for other matters eg taking account of preferred shopping venue for the residents of every small area in Northern Ireland. Nonetheless, it seems preferable to produce a basic measure of proximity, basically similar to previous work, which can serve as a foundation for improvements as and when the data becomes available.

Food Shops

The proposal for including smaller food shops in the Food indicator met with some objections on the basis that supermarkets were usually cheaper and offered a better range of healthy foods. It should, however, be noted that the previous version of the measure actually referred to supermarkets with 50 or more employees, the great majority of which stores are found in service centres. This means that to a large extent, the indicator is duplicating another indicator. Furthermore, large supermarkets are apt to devote a greater proportion of their floor space to non-food items, compared with the smaller supermarkets within their own chain. In general, whilst accepting that cheap food is preferable to dear food, dear food remains preferable to no food. There is some evidence from England that sales of food in convenience stores increased during the snowy period of 2009-2010, when access to supermarkets was restricted by the weather. Accordingly, the proposed extension of the indicator seems justified.

Cross Border Services

In addition to concerns about the possibility that, regardless of proximity, services in the Republic of Ireland may be more difficult of access or of lower quality, it was suggested that the deprivation measures should be restricted to services provided by Northern Ireland for Northern Ireland. Given that cross-border movement is possible and does in fact occur, it seems inappropriate to ignore services in the Republic of Ireland where data is available on them i.e. Service Centres and Accident and Emergency Services.

Primary Health Care

Respondents were content that proximity to pharmacies, opticians and dentists should continue to be monitored but most preferred that they be shown separately rather than combined. Accordingly, this has been done.

Travel Time

There was general agreement with the proposed change from travel distance to travel time as a measure of proximity, but some concerns were expressed about the applicability of assumptions concerning achievable speeds on various kinds of road. These concerns related to impact of weather, state of road repair and traffic congestion. Factors such as these, however, impact with equal force on travel distance itself, since the use of distance is equivalent to an implicit assumption that all roads allow equal speed. Monitoring of such matters is likely to prove difficult and again, it seems preferable to make use of the data that is available now, until such time as improved data becomes available.



NIMDM 2010 Indicators and Method of Combination

Proximity to Services Deprivation 2010

- GP premises (2009, Source: BSO)
- Accident and Emergency hospital (2009, Source: DHSSPS)
- Dentists (2009, Source: BSO)
- Pharmacists(2009, Source: BSO)
- Opticians (2009, Source: BSO)
- Job Centre or Jobs and Benefits Office (2008, Source: DEL)
- Post Office (2009, Source: Post Office Ltd)
- Supermarket / Food Store (2007, Source: Experian)
- Large Service Centre (2007, Source: DSD)
- Council Leisure Centre (2009, Source: DCAL)
- Financial Services (2007, Source: Experian, Credit Union Register)
- Other general services (2007, Source: Experian)

Method of Combination

Travel time is determined by the quickest road route between the location of a service and the location of the population. The location of a Northern Ireland-based service is deemed to be at the population-weighted centroid of the COA where it occurs.

For each COA, a travel time to each of the services is available. This is adjusted to take account of the average travel time that would be anticipated, given the number of locations at which the service is available, thus preventing less commonly available services from dominating the final result simply by virtue of the fact that they are less common and so travel times are greater to reach them (the effect of clustering of particular services in certain parts of Northern Ireland is not removed by this technique). An average overall travel time for all services is calculated, giving double weight to Accident and Emergency Services to reflect their perceived importance, in line with previous analysis.

Living Environment Domain

Purpose of the Domain

The aim of the Living Environment Domain is to identify small areas experiencing deprivation in terms of the quality of housing, access to suitable housing, and the outdoor physical environment. As such the Living Environment Domain comprises three sub-domains.

Proposed Indicators

Sub-Domain: Housing Quality

SOA level Decent Homes Standard
(2006. Source: NIHE, modelled NI House Conditions Survey)

SOA level Housing Health and Safety Rating System
(2006. Source: NIHE, modelled NI House Conditions Survey)

Sub-Domain: Housing Access

Homelessness Acceptances under the homelessness provisions of the Housing (Northern Ireland) Order 1988 and the Housing (Northern Ireland) Order 2003
(2005/06 to 2007/08. Source: NIHE)

Sub-Domain: Outdoor Physical Environment

SOA Local Area Problem Score
(2006. Source: NIHE, modelled NIHCS)

Consultation Responses

The consultation document contained three proposed changes to the Living Environment Domain. Specifically consultees were invited to comment on the inclusion of Decent Home Standard and Housing Health and Safety Rating System indicators and the removal of the Census 2001 Overcrowding indicator.

The majority of responses were in support of the proposed improvements to the Living Environment Domain.

Measurement of Overcrowding

In general consultation responses recognised that although overcrowding is an important issue and form of deprivation, to use data relating to Census 2001 would be an inaccurate measure of the current spatial distribution of overcrowding in Northern Ireland. In particular it was noted that the significant migration taking place in Northern Ireland following the accession of eight Central and Eastern European countries to the EU was likely to have an effect on which areas experienced overcrowding. Many respondents however asked that such an indicator was included in future measures when the small area results of the 2011 Census become available.

As detailed in the consultation document an alternative source, the House Conditions Survey which also records information on overcrowding, was considered. Following advice from the Northern Ireland Housing Executive (NIHE) it was decided not to use this information source as only a small number of migrant houses were likely to be covered by the survey and so would not be a solution to the problem described above.

The use of information on 'Houses in Multiple Occupation' (HMO) was suggested as an alternative indicator of overcrowding in the consultation responses. The peer review team was asked to consider whether the HMOs recorded by the NIHE could be used as an indicator of overcrowding, or if there were alternative sources of information on overcrowding that could be employed.

The peer review team recommended that HMOs were not included in the Living Environment Domain as it measures a different phenomenon to overcrowding. Specifically the definition of an HMO is 'a house occupied by more than 2 qualifying persons, being persons who are not all members of the same family'.¹⁴ As such the HMO data could include a student household but exclude a large family living in overcrowded conditions.

¹⁴ www.nihe.gov.uk/index/yh-home/renting_privately/hmo/definition.htm



The peer review team recommended further investigation into the application of overcrowding time trends as shown in the Continuous Household Survey to the small area Census data recorded in 2001.

The Continuous Household Survey (CHS) collects information on overcrowding as defined by the bedroom standard¹⁵ and shows a decrease in the level of overcrowding in Northern Ireland from 4.1% in 2000-01 to 2.0% in 2008-09. The published results from the Census 2001 include a measure of overcrowding based on occupancy ratings¹⁶ and show that 7.3% of households were classed as overcrowded in 2001. Analysis at Health Board Level showed that the two measures were not consistent in the relative degree of overcrowding between Health Boards. (i.e. Census data recorded the Western Health Board with the highest percentage of overcrowded households and Northern Health Board the lowest, while the CHS recorded Western Health Board and Southern Health Board as highest and lowest respectively.) If the two measures differed in definitions of overcrowding but agreed on the relative differences between areas i.e. overcrowding was consistently higher in one area than another, it would be possible to apply the change in overcrowding from the CHS to the small area results of the Census. As the results from the two sources differ it would not be appropriate to apply such a technique.

The peer review team also considered the options if the CHS and Census proved incompatible. They note that retaining the Census 2001 indicator has the disadvantage that it is out of date, and the advantage that it maintains consistency with the NIMDM 2005. However as the Housing Health and Safety Measure includes a measure of overcrowding, and the majority of consultation responses were in favour of dropping the indicator they conclude that it may be unnecessary to have a separate overcrowding indicator.

Therefore, following recommendations from the peer review and in light of the support from the consultation responses, a measure of overcrowding based on the 2001 Census will not be included in the updated Living Environment Domain.

Other Concerns

Other responses expressed disappointment at the lack of a road quality indicator as recommended in the 2005 NIMDM report. As detailed in the consultation document the Department for Regional Development holds information on road type, not quality, and thought this would not be an accurate reflection of deprivation. A road quality indicator of this type will therefore not be included in the domain. A number of responses also gave suggestions for the fuller review of the measures post 2011, including indicators relating to litter, quality of open space, interface areas and perception of safety.

NIMDM 2010 Indicators and Method of Combination

Living Environment Domain 2010

Sub-Domain: Housing Quality

SOA level Decent Homes Standard (2006. Source: NIHE, modelled NI House Conditions Survey)

SOA level Housing Health and Safety Rating System (2006. Source: NIHE, modelled NI House Conditions Survey)

Sub-Domain: Housing Access

Homelessness Acceptances under the homelessness provisions of the Housing (Northern Ireland) Order 1988 and the Housing (Northern Ireland) Order 2003 (2005/06 to 2007/08. Source: NIHE)

Sub-Domain: Outdoor Physical Environment

SOA Local Area Problem Score (2006. Source: NIHE, modelled NIHCS)

Method of Combination

Indicators will be ranked and transformed to a normal distribution. In the Housing Quality Sub-Domain indicators will be combined with equal weights to produce the sub-domain score.

The resulting sub-domain scores will be ranked and transformed to an exponential distribution and combined with equal weights.

¹⁵ A dwelling will be overcrowded where the number of bedrooms available to the occupiers is less than the number of bedrooms allocated to them in accordance with a simple formula based on the age and sex of occupants

¹⁶ The overcrowded indicator provides a measure of under-occupancy and overcrowding. For example, a value of -1 implies there is one room too few and that there is overcrowding in the household. The occupancy rating assumes that every household, including one person households, requires a minimum of two common rooms (excluding bathrooms).

Crime and Disorder Domain

Purpose of the Domain

The Crime and Disorder Domain measures the rate of crime and disorder at the small area level. This includes recorded crime, deliberate fires and incidents of anti-social behaviour.

The Crime and Disorder Domain consists of two sub-domains; the Crime Sub-Domain and the Disorder Sub-Domain.

Proposed Indicators

Sub-Domain: Crime

Violence, robbery and public order
(2004/05 to 2008/09. Source PSNI)

Burglary
(2004/05 to 2008/09. Source PSNI)

Vehicle Theft
(2004/05 to 2008/09. Source PSNI)

Criminal Damage
(2004/05 to 2008/09. Source PSNI)

Sub-Domain: Disorder

Deliberate Primary Fires
(2004/05 to 2008/09. Source: NIFRS)

Anti-Social Behaviour Incidents
(2006/07 to 2008/09. Source: PSNI)

Consultation Responses

The Crime and Disorder Domain as proposed in the consultation document 2009 contained no changes to indicators from the NIMDM 2005 domain. Consultees were asked to comment on whether, given the recommendations and changes to data available, the proposed updated domain was acceptable.

Three main issues were noted during the consultation.

Reporting Rates

The main concern expressed in the consultation responses was the reliance on reported crime data from the PSNI in the Crime Sub-Domain. As there is a perception that reporting of crime varies by area with deprivation itself decreasing the likelihood of reporting a crime, a number of consultation responses expressed disappointment that the results of the Northern Ireland Crime Survey (NICS) could not be used in the Crime Sub-Domain.

It is recognised that there is a perception that reporting rates vary. The most up-to-date research carried out by the NIO using the NICS 2007/08 however gave inconclusive results on the relationship between deprivation and reporting rates. As such, the recorded crime rates for Violence, Robbery and Public Order, Burglary, Vehicle Theft and Criminal Damage will be included in the Crime Sub-Domain without adjustment.

Secondary Fires

The lack of an indicator relating to 'Secondary Fires' was also queried during the consultation period. The original proposal was to include only 'Primary Fires'; broadly defined as involving buildings and structures, and other property such as vehicles, storage, plant and machinery; fires involving casualties, rescues or escapes; and fires where significant fire and rescue service resources are employed. Secondary fires do not involve casualties, rescues or escapes and include fires in derelict buildings and refuse containers, but also result in action from the Fire and Rescue Service.

Subsequent discussions with the Northern Ireland Fire and Rescue Service (NIFRS) gave support for the inclusion of secondary fire data, as the majority of fires occurring in Northern Ireland are classed as 'secondary'. Although the definition of fires differs for NIFRS reporting purposes, a fire in a neighbourhood regardless of its classification is likely to represent some degree of disorder.

The peer review team was also asked to consider the inclusion of Secondary Fires data in the Disorder Sub-Domain. Noting that secondary fires were not included in the 2005 NIMDM as robust data were not available, they recommended including the additional information.

In light of the consultation response, advice from the NIFRS and the peer review, secondary fires will be included alongside primary fires in the Disorder Sub-Domain.



Hate Crimes

Other consultation responses suggested the inclusion of a hate crime indicator. Although a separate indicator is not included, it is worth noting that any crimes motivated by 'hate' resulting in violence or criminal damage, for example, will be captured in the Crime Sub-Domain through the listed recorded crime indicators.

NIMDM 2010 Indicators and Method of Combination

Crime and Disorder Domain 2010

Sub-Domain: Crime

Violence, robbery and public order
(2004/05 to 2008/09. Source PSNI)

Burglary
(2004/05 to 2008/09. Source PSNI)

Vehicle Theft
(2004/05 to 2008/09. Source PSNI)

Criminal Damage
(2004/05 to 2008/09. Source PSNI)

Sub-Domain: Disorder

Deliberate Primary and Secondary Fires
(2004/05 to 2008/09. Source: NIFRS)

Anti-Social Behaviour Incidents
(2006/07 to 2008/09. Source: PSNI)

Method of Combination

Within the Crime Sub-Domain each of the indicators will be converted to rates of the at risk population before ranking and standardising to a normal distribution. The standardised values will be added with equal weights, resulting in the Crime Sub-Domain score.

Similarly the two indicators in the Disorder sub-domain will be converted to rates, ranked and transformed to a normal distribution. The two indicators will be combined with a 60% weight for Anti-Social Behaviour Incidents and a 40% weight for Deliberate Primary and Secondary Fires as in the NIMDM 2005. The resulting value is the Disorder Sub-Domain score.

The Crime and Disorder sub-domain scores will be ranked and transformed to an exponential distribution to give additional weight to the most deprived areas in each sub-domain. The values for each sub-domain will be combined in a 60:40 ratio for Crime and Disorder respectively resulting in the Crime and Disorder Domain Score.

General Issues

The main issues arising during the consultation that were not domain specific related to the effective use of the measures, the geographical level at which they will be produced, and the creation of a bespoke MDM for children.

Responses broadly recognised that the NIMDM 2010 is intended as an update to the NIMDM 2005 and suggested additional domains and indicators for future measures. Such suggestions are outside the remit of the current update and so are not detailed in the blueprint but will be considered in future fuller methodological reviews.



Dissemination of Results

A number of consultation responses recognised that NISRA itself does not implement or devise deprivation related policies but called for NISRA to ensure that the results of the update to the deprivation measures are used effectively.

As with the multiple deprivation measures 2001¹⁷ and 2005¹⁸, NISRA intends to produce a User's Guide containing guidance on the use of the measures. Similarly dissemination events will be planned and training on the use of small area statistics will continue to be offered through NINIS workshops and seminars.

Following the publication of the NIMDM 2010 results a change over time analysis will be produced showing the difference in the spatial distribution of deprivation between the 2005 and 2010 measures. An Equality Outcomes Analysis showing the characteristics of people in the most deprived areas as per the Section 75 categories will also be produced. The Census 2001 will be used as the source of information on the Section 75 characteristics of each small area.

¹⁷ http://www.nisra.gov.uk/deprivation/archive/deprivation_measure_2001.pdf

¹⁸ http://www.ninis.nisra.gov.uk/mapxtreme_deprivation2005/viewData/NIMDM2005_User_Guide.pdf

Geography

Clarification was sought on the implication of the Local Boundary Review i.e. the changing Local Government District Boundaries, on the production of the updated deprivation measures.

The main output geography for the NIMDM 2005 is the Super Output Area (SOA). Summary results are also available for wards, District Councils and Parliamentary Constituencies, and an Economic Deprivation Measure comprising three of the deprivation domains at Output Area (OA) level.

The 890 SOAs were created with an approximate population of 2,000 people (in 2003) as a uniform geographical unit to aid small area comparisons. The SOAs are deemed 'statistical' geographies, built from OAs but nesting within the existing administrative boundaries of wards and Local Government Districts. 5,022 OAs were calculated using the results of the 2001 Census, and represent geographies with an approximate population of 350 people.

As detailed above the 890 SOAs are the main output geography for the current measures and were developed as a statistical geography. The Local Boundary Review (which at the time of publication had not been ratified by the NI Assembly) proposes changes to the 26 Local Government District and 582 ward boundaries developed in 1992. As the SOAs and OAs are statistical geographies they do not fall within the remit of the Local Boundary Review.

The NIMDM 2010 will therefore be produced on the SOAs and OAs as used in the 2005 measures. As the wards and Local Government Boundaries were not agreed upon at the time of data collection for the measures, the summary measures will be based on the 1992 ward and Local Government Boundaries.

Following the finalisation of the ward and Local Government Boundaries it may be possible to recreate the summary measures using approximation techniques.

Consultation responses also requested the production of OA measures to further identify pockets of deprivation. It is recognised that such an approach is beneficial to the identification of small pockets of deprivation and so NISRA will endeavour to produce more domains than the current three at the OA geography. However, it will be necessary to examine each domain in terms of statistical quality and robustness before such results can be released.



Child Specific MDM

Although a number of improvements have been made to the measurement of deprivation affecting children in the NIMDM 2010 through the additional indicators relating to children's health and education, responses often included support for a bespoke MDM for children.

When considering the creation of a child specific MDM multiple issues should be examined as not all types of deprivation relate to children or affect children in the same way as adults; for example Employment Deprivation or Proximity to Services. Also careful consideration should be given to the geographical units at which the results would be published, as areas with equal populations may vary in the number of children they contain.

The creation of a child specific measure would therefore warrant a separate consultation exercise to examine the issues effectively and develop an appropriate methodology. This is currently outside the remit of the current update but will be considered for future reviews.

Annex A: Indicator Summary

	Source	Year
Income Deprivation Domain		
Adults and children in Income Support households	DSD	2008/09
Adults and children in State Pension Credit households	DSD	2008/09
Adults and children in income based Employment and Support Allowance households	DSD	2008/09
Adults and children in income based Jobseeker's Allowance Households	DSD	2008/09
Adults and children in Working Families' Tax Credit households ¹⁹	HMRC	2008/09
Adults and children in Child Tax Credit households ¹⁹	HMRC	2008/09
Adults and children in Housing Benefit households	LPS and DSD	2008/09
Employment Deprivation Domain		
Unemployment claimant count of women aged 18-59 and men aged 18-64	DSD	2008/09
Incapacity Benefit claimants women aged 18-59 and men aged 18-64	DSD	2008/09
Severe Disablement Allowance claimants women aged 18-59 and men aged 18-64	DSD	2008/09
Carer's Allowance claimants women aged 18-59 and men aged 18-64	DSD	2008/09
Employment and Support Allowance claimants women aged 18-59 and men 18-64	DSD	2008/09
Steps to Work or New Deal Participants women aged 18-59 and men aged 18-64	DEL	2008/09 (6 months)
Health Deprivation & Disability Domain		
Years of Potential Life Lost	NISRA/GRO	2004 – 2008
Comparative Illness and Disability Ratio	DSD	2008/09
A combined measure of three indicators: i) individuals suffering from mood and anxiety disorders, based on prescribing data ii) suicides iii) mental health inpatient stays	BSO NISRA/GRO DHSSPS	2008/09 1999 – 2008 2003/04 – 2007/08
People registered as having cancer (excluding non-melanoma skin cancers)	NICR	2003 – 2007
Emergency Admission Rate	DHSSPS	2007/08
Low Birth Weight	DHSSPS	2004 – 2008
Children's Dental Extractions	BSO/DHSSPS	2006/07 – 2008/09

¹⁹ whose equivalised income (excluding housing benefits) is below 60% of median before housing costs.



	Source	Year
Education, Skills and Training Deprivation		
Sub-Domain: Primary School		
Key Stage 2 Teacher Assessments for English and Maths (and Irish in Irish medium schools)	DE	2006/07 – 2007/08
Proportions of pupils attending Special Education Needs Schools stages 3-5 or who are attending primary school with Special Education Needs stages 3-5	DE	2006/07 – 2007/08
Absenteeism at Primary Schools (all absences)	DE	2006/07 – 2007/08
Sub-Domain: Post Primary		
Key Stage 3 Teacher Assessments for English and Maths (and Irish in Irish medium schools/units)	DE	2006/07 – 2007/08
GCSE or equivalent qualifications points score	DE	2005/06 – 2007/08
Proportions of those leaving school not entering Further Education, Employment or Training	DE	2003/04 – 2007/08
Proportions of 18-21 year olds who have not enrolled in Higher Education Courses at Higher Education or Further Education establishments	DE	2004/05 – 2007/08
Absenteeism at Secondary Schools (all absences)	DE	2006/07 – 2007/08
Proportions of pupils attending Special Education Needs Schools stages 3-5 or who are attending post primary school with Special Education Needs stages 3-5	DE	2006/07 – 2007/08
Sub-Domain: Working Age Adults		
Proportion of working age adults (25-59) with no or low levels of qualification	Census	2001
Proximity to Services Domain		
GP premises	BSO	2009
Accident and Emergency hospital	DHSSPS	2009
Dentists	BSO	2009
Opticians	BSO	2009
Pharmacists	BSO	2009
Job Centre or Jobs and Benefits Office	DEL	2008
Post Office	Post Office Ltd	2009
Supermarket / Food Store	Experian	2007
Large Service Centre	DSD	2007
Council Leisure Centre	DCAL	2009
Financial Services	Experian	2007
Other general services	Experian	2007

	Source	Year
Living Environment Domain		
Sub-Domain: Housing Quality		
SOA level Decent Homes Standard	NIHE	2006
SOA level Housing Health and Safety Rating System	NIHE	2006
Sub-Domain: Housing Access		
SOA level homelessness acceptances	NIHE	2005/06 – 2007/08
Sub-Domain: Outdoor Physical Environment		
SOA level local area problem score	NIHE	2006
Crime and Disorder Domain		
Sub-Domain: Crime		
Violence, robbery and public order	PSNI	2004/05 – 2008/09
Burglary	PSNI	2004/05 – 2008/09
Vehicle Theft	PSNI	2004/05 – 2008/09
Criminal Damage	PSNI	2004/05 – 2008/09
Sub-Domain: Disorder		
Deliberate Primary and Secondary Fires	NIFRS	2004/05 – 2008/09
Anti Social Behaviour Incidents	PSNI	2006/07 – 2008/09



Annex B: Deprivation Steering Group Members

Name	Department / Organisation
Robert Beatty (Chair)	NISRA
Alex Boyle	DOE
Carmel Colohan	DHSSPS
Ian Davidson	DCAL
Gary Ewing (Secretary)	NISRA
Joe Frey	NIHE
Stephanie Harcourt	DETI
Margaret Langhammer	DRD
David Marshall	NISRA
Martin Mayock	DRD
Ruth McAreavey	RDC
Cathryn McBurney	NISRA
Frances McCandless	NICVA
Alan McClelland	OFMDFM
Karen McCullough	DE
Tony McKibben	DSD
Darren McKinstry	Equality Commission
Daniel McSorley	SOLACE
Malcolm Megaw	DARD
Martin Monaghan	DETI
Keith Morrison	DARD
Dave Rogers	DEL
Philip Spotswood	DCAL

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UK Statistics Authority
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