

Cancer screening

Healthier Places

Women's Resource and Development Agency

Blood borne viruses

Needs assessment

Director of Public Health

Annual Report

2016



Public Health
Agency

CLEAR

Reducing inequalities

Deprivation

Hepatitis C

HEALTHY
WOMEN

HIV prevention

Pregnancy

Stillbirths

ARC Healthy Living Centre

Maternal and child health

Cancer screening

Suicide

Healthier Places

Women's Resource and Development Agency

Blood borne viruses

Needs assessment

Informed choice

Resurgam Trust

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Together

Teenage births

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care leavers

SMOKING

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Foreword



 **Dr Carolyn Harper**

“...at almost any level of income, it’s better to live in a more equal place.”

Richard Wilkinson and Kate Pickett, *The spirit level: why equality is better for everyone.*¹

The vision of the Public Health Agency (PHA) is that all people in Northern Ireland can achieve their full health and wellbeing potential.

The health of people in Northern Ireland is improving. However, the improvements are not distributed equally across all areas of our population. Individuals living in the most deprived areas of the region are at higher risk of many health conditions and have shorter life expectancies than those in the least deprived areas of Northern Ireland. These inequalities in health are unfair, and are avoidable.

For some health outcomes, the inequality gap between the most and least deprived areas of Northern Ireland is improving. While the death rate from alcohol-related causes of death, for example, is still higher in the most deprived areas of Northern Ireland, the gap between the most and least deprived areas is becoming smaller over time. In other cases, for example the death rate from smoking-related causes of death, the gap is growing larger.

Inequalities in health are largely a result of the social and economic environments in which we reside. In order to truly address the differences in health outcomes between members of our population, we need to address these determinants of health. Many of these are not the sole responsibility of the health sector. To combat inequalities requires cross-sectoral collaboration and community engagement.

These concepts of working across traditional health and social care boundaries are central to Making Life Better, the strategy for public health in Northern Ireland (2014).² It is centred around six key themes:

‘Giving every child the best start’ and **‘Equipped throughout life’** focus on improving health throughout life. They cover the needs of children and young people, adults and the elderly, and the transitions between these important life stages.

‘Empowering healthy living’ focuses on supporting healthy behaviours and choices, improving health and reducing harm.

‘Creating the conditions’ and **‘Empowering communities’** address the wider social, economic and environmental determinants of health – in homes, communities, the wider environment and at work.

‘Developing collaboration’ focuses on a strategic approach to public health, with a strengthening of working across departments and sectors.

The draft Programme for Government of the Northern Ireland Executive elected in 2016 takes a similar approach to cross-departmental working.³ Under Outcome 3, ‘We have a more equal society’ are actions to be taken forward across all areas of government, not just the Department of Health.

Reducing inequalities has a positive effect on everyone – not only those who are the most deprived. In their 2009 book *The spirit level: why equality is better for everyone*, Richard Wilkinson and Kate Pickett argue that ‘the benefits of greater equality spread right across society, improving health for everyone.’¹ Societies become stronger when inequalities are reduced.

This, the eighth Director of Public Health Annual Report, provides a focus on health inequalities in Northern Ireland, and outlines examples of work undertaken or funded by the PHA to understand and to reduce inequalities in health. By working with government departments, public and private sector bodies, voluntary and community organisations and members of the public, we aim to address health inequalities and to improve health outcomes for the Northern Ireland population.



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Overview



Inequality and health

Reducing inequalities

Overview

Inequality and health

The health of the Northern Ireland population is improving. Life expectancy at birth is increasing and premature mortality rates for many conditions are falling over time. The teenage birth rate has dropped, from 14.7 births per 1,000 population to 10.3 births per 1,000 over a period of four years.⁴ Smoking prevalence has fallen, from 25% in 2004/5 to 22% in 2014/15.⁵

However, improvements in health have not been distributed equally across the population. There is much variation in the prevalence of risk factors for disease, in health conditions and in health outcomes. Much of this variation is associated with deprivation.

It is not just individual factors that determine a person's risk of developing disease, but the wider social and economic environment in which we live. This was illustrated clearly by Barton and Grant, in their health map of the determinants of health and wellbeing.⁶ In addition to the factors that are specific to individuals, health and wellbeing is affected by a person's lifestyle, his or her community, economy, activities and environment and, more widely, by the global ecosystem.

Below are some examples of the gap in health outcomes and in the risk factors of disease, associated with deprivation.

In most of these examples, deprivation has been measured using the Northern Ireland Multiple Deprivation Measure (NIMDM), the official measure of spatial deprivation in Northern Ireland.⁷ The current version was developed in 2010, but a new indicator is due to be published during 2017.

The NIMDM provides an assessment of the relative levels of deprivation within each of the 890 super output areas (SOA) in the region, based on 52 indicators of deprivation, across the themes of income, employment, health, education, proximity to services, living environment and crime and disorder. Super output areas can be ranked into deprivation quintiles, allowing health in the most and least deprived areas to be compared. An SOA typically has a population of about 2,000 people.

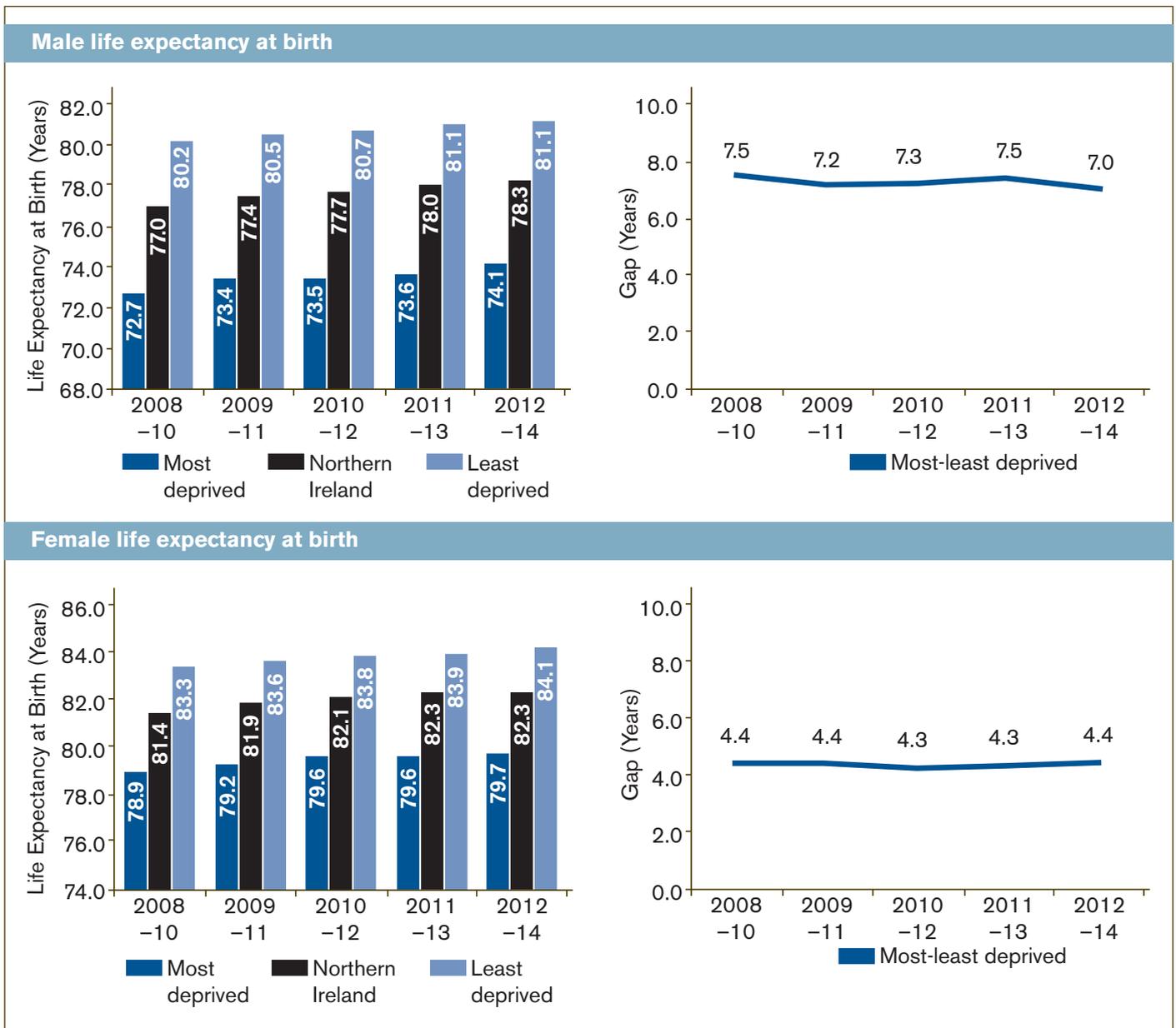
Life expectancy

Life expectancy at birth is improving across all of Northern Ireland. In 2012–2014, for the region as a whole, it was 78.3 years for males and 82.3 years for females.⁴ However, an inequality gap is present between those living in the most and least deprived areas of the region (Figure 1).

In males, this inequality gap is narrowing, as life expectancy is improving faster in the more deprived areas compared to the least deprived areas. For example, the gap in 2012–14 was 7.0 years, compared to 7.5 years in 2008–2010.⁴

However, in females, the gap is remaining constant. In 2012–14, females in the least deprived areas could expect to live for 84.1 years, compared to 79.7 years for those in the most deprived areas, a gap of 4.4 years.⁴

Figure 1: Life expectancy at birth, and the gap in life expectancy associated with deprivation.⁴



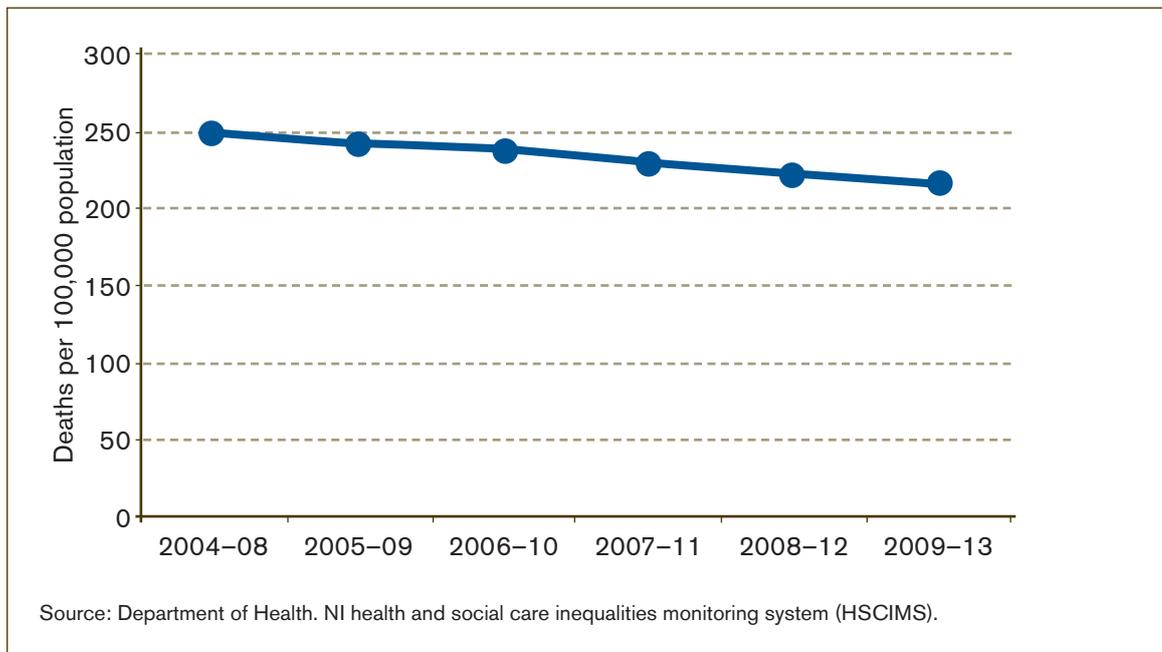
In addition to life expectancy, it is now possible to look at healthy life expectancy (HLE) and disability free life expectancy (DLE). Healthy life expectancy can be defined as the average number of years a person can expect to live in good health. Similarly, disability free life expectancy is the average number of years that a person can expect to live without a disability.

Inequality gaps in HLE and DLE are large and have remained constant over time in Northern Ireland. In 2012–14, males in the most deprived areas had a HLE of 51.2 years, compared to 63.4 years in the least deprived areas, a gap of 12.2 years. For females the gap was 14.6 years, with a HLE of 53 years in the most deprived areas and 68.0 years in the least deprived areas. The deprivation gap for DLE was 11.2 years for males and 11.3 years for females in 2012–14.⁴

Preventable causes of death

The reduction of preventable deaths is an indicator under the Outcomes Framework in the draft Programme for Government of the Northern Ireland Executive elected in 2016.³ Figure 2 shows that there has been a reduction in preventable mortality over time.

Figure 2: Preventable mortality in Northern Ireland, 2004–08 to 2009–13.⁸



However, inequalities still remain in preventable causes of death, including cancers, heart disease and rates of suicide in Northern Ireland. Some examples are discussed in more detail below.

Suicide rates

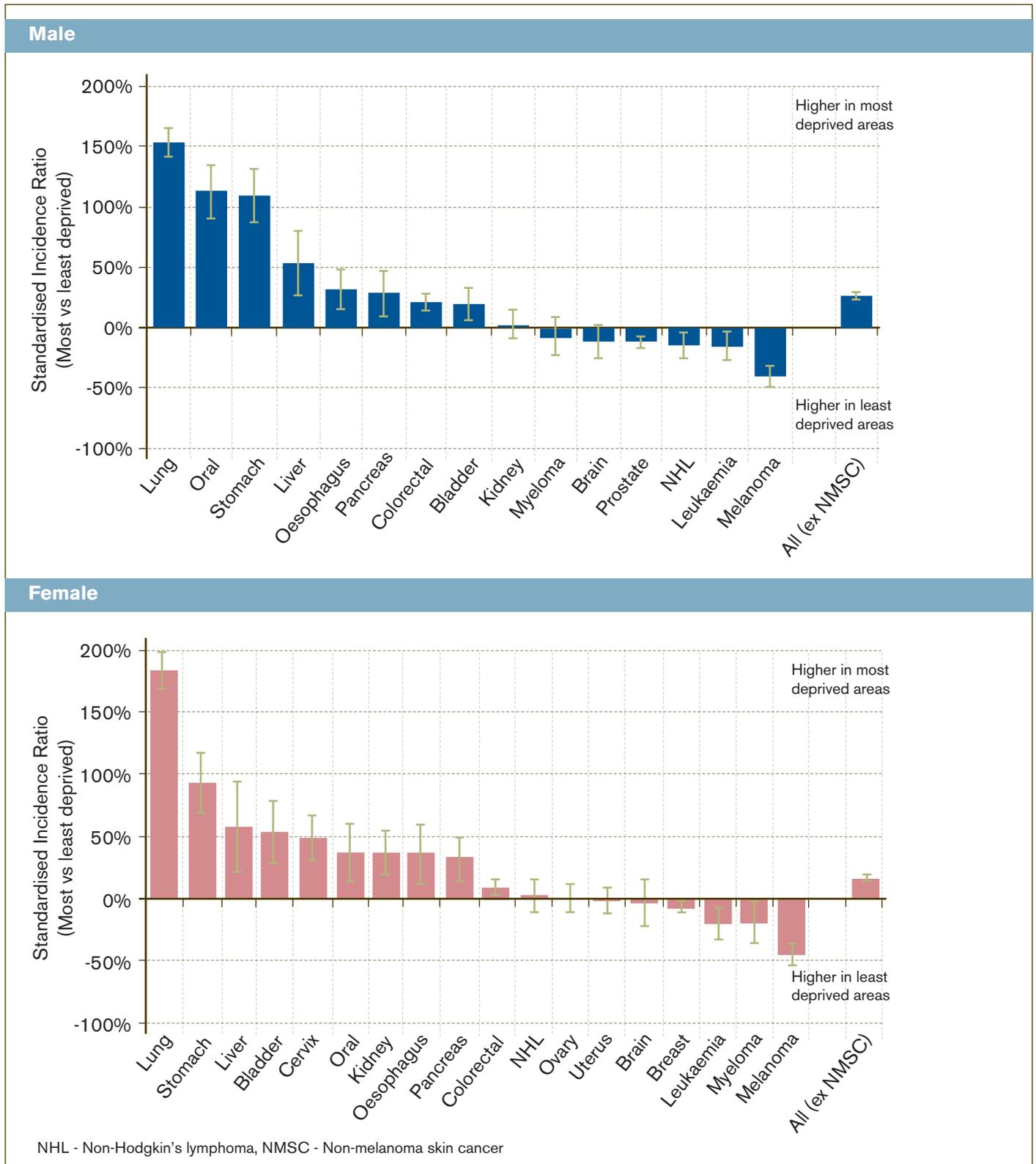
There is a strong deprivation gradient associated with rates of suicide in Northern Ireland. Whilst there has been a narrowing of the inequality gap over time, there is a big difference in the rates in the most and least deprived areas of the region. In the most deprived areas of Northern Ireland the crude suicide rate in 2012–14 was almost three times higher in the most deprived areas of the population compared to the least deprived areas (27.2 deaths per 100,000 of the population compared to 9.2 per 100,000).⁴ Examples of the PHA's work on suicide prevention are covered later in the report.

Cancer

Rates of cancer incidence are often associated with deprivation. From 2004–2013, there was a difference in incidence rates of 27% in males and 17% in females in the most deprived compared to the least deprived areas.⁹

The effect of deprivation varies with the type of cancer (Figure 3). For example, in both males and females, the incidence of lung cancer is much greater in the most deprived areas, compared to the least deprived. In other cancers, for example, melanoma, the trend is reversed.⁹

Figure 3: Standardised incidence ratios comparing incidence in the most deprived and least deprived areas in Northern Ireland by sex and cancer site: 2004–2013.⁹



Some of this gap associated with deprivation may be due to the prevalence of risk factors for cancer within the community. For example, it is well known that tobacco, alcohol and obesity are associated with cancer. These factors are also associated with deprivation.

Work undertaken by the PHA in advance of its 2015 *Be Cancer Aware* campaign indicated that there was a variation in knowledge of and attitudes to cancer and to seeking help for potential cancer symptoms and signs, depending on deprivation.¹⁰ For example, residents living in areas of average deprivation were less likely than those in other areas to say they would contact a doctor immediately if they had an unexplained lump or swelling. Individuals in less deprived areas were more likely to identify 'being scared' as a barrier to going to see their doctor, but less likely to cite a doctor being difficult to talk to, or it being difficult to make an appointment as barriers.

Individuals in less deprived areas were more likely to be aware of the Northern Ireland cancer screening programmes than those living in more deprived areas. For example, 82% of those living in the least deprived areas reported that they were aware of the Breast Screening Programme compared to 73% in the most deprived areas.¹⁰

Behaviours by deprivation

Some behaviours which have an impact on health show a clear link to levels of deprivation. Some examples are outlined below.

Smoking

Smoking prevalence has reduced in Northern Ireland. However, rates vary by deprivation; 13% of people living in the least deprived areas of Northern Ireland are smokers, compared to 36% in the most deprived.⁵

Similarly, there is inequality in incidence of smoking-related illnesses and in death rates from these diseases. The standardised incidence rate for lung cancer in 2008–2014 was 138 per 100,000 in the most deprived areas, compared to 52 per 100,000 in the least deprived areas of Northern Ireland, and the standardised death rate for lung cancer was 115 per 100,000 in the most deprived areas and 43 per 100,000 in the least deprived. In 2010–2014, the standardised death rate for smoking-related illnesses was 255 per 100,000 population in the most deprived areas of Northern Ireland, compared to 111 per 100,000 in the least deprived areas.⁴

Alcohol and drugs

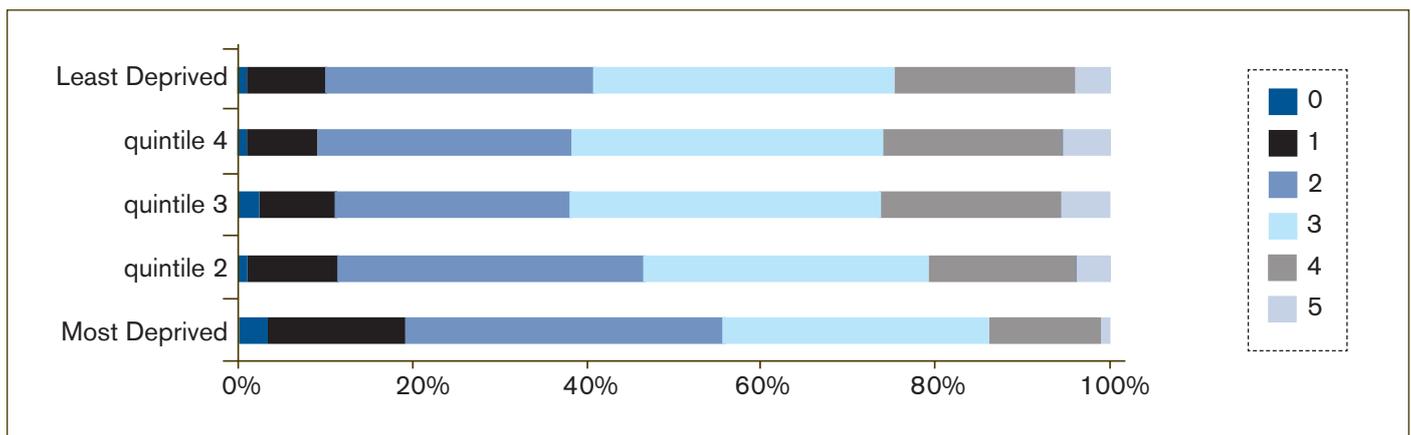
Individuals living in more deprived areas are more likely to be admitted to hospital with alcohol and drug-related causes of illness. From 2012/13 to 2014/15, the standardised admission rate for alcohol-related causes of illness was 1,600 per 100,000 compared to 318 per 100,000 in the most and least deprived areas respectively. A similar pattern is observed with deaths due to alcohol-related illnesses (33 compared to 7.9 per 100,000 in the most and least deprived areas respectively, in 2010–2014).⁴

In 2014/15, 28% of the Northern Ireland respondents to an all-Ireland drug prevalence survey reported ever having used an illegal drug.¹¹ The standardised admission rate associated with drugs was 487 per 100,000 in the most, and 130 per 100,000 in the least deprived areas of Northern Ireland in 2012/13–2014/15. There were similar inequality gaps in rates of death due to drug misuse and in drug-related causes of death.

Combinations of behaviours

Combinations of risk factors are more likely to increase an individual's risk of ill health. Respondents to the Northern Ireland Health Survey in 2010/11 were analysed according to the number of lifestyle choices they met that are associated with good health. These related to alcohol intake, a healthy body mass index (BMI), fruit and vegetable consumption, physical activity and being a non-smoker. Respondents in the most deprived areas of Northern Ireland were more likely to have met none or only one of these lifestyle choices, compared to those in the least deprived areas (Figure 4).¹²

Figure 4: Number of lifestyle choice recommendations met, by deprivation quintile of respondent, Northern Ireland Health Survey 2010/2011.¹²



Maternal and child health

Health inequalities associated with pregnancy and early years can persist into childhood and adolescence. In 2015, there were 24,291 registered births to Northern Ireland residents, a birth rate of 13.1 per 1,000 total population.¹³

In 2014/15, 2.9% of all births in Northern Ireland were to teenage mothers (under 20 years). This proportion was higher in the most deprived areas (5.0% in the most deprived areas of the region compared to 1.3% in the least deprived). The least deprived areas had a higher proportion of births to older mothers aged 40 or over (7.3% compared to 2.6% in the most deprived areas).¹⁴

Earlier gestation at booking for antenatal care is associated with better outcomes in pregnancy. Mothers living in more deprived areas were more likely to book later (9.5% of mothers in the most deprived areas versus 6.3% in the least deprived) in 2014/15.¹⁴

Smoking and obesity are recognised risk factors for complications in pregnancy and ill health in the child. Smoking rates in pregnancy were 26.3% for mothers in the most deprived areas and 6.1% for mothers in the least deprived areas in 2014/15. In the same period, 23.1% of mothers in the most deprived areas and 15.4% in the least deprived areas were measured as obese at booking.¹⁴

Mothers in the least deprived areas are more likely to breastfeed. In 2014/15, 31.5% of mothers in the most deprived areas were breastfeeding at discharge from hospital, compared to 63.4% in the least deprived.¹⁴

Inequality gaps are also present in the proportion of children with increased BMI. In 2014/15, 23.9% of Primary 1 children were overweight or obese in the most deprived areas, compared to 17.5% in the least deprived. This trend persists as children get older. In 2014/15, at Year 8, the proportion of children obese or overweight was 31.5% in the most deprived and 23.2% in the least deprived areas.¹⁴

Reducing inequalities

It is clear that living in an area of deprivation can have adverse impacts on individuals' health.

The Marmot review, *Fair society, healthy lives*, demonstrates the gradient in health associated with socioeconomic circumstances. The paper was published in 2010 in response to a request by the UK Secretary of State for Health. Marmot highlighted the importance of actions to reduce the gradient in health associated with socioeconomic status. He noted that reducing health-related inequalities brings economic benefits, for example through increased productivity, lower absenteeism from work and fewer people requiring the payment of welfare benefits.¹⁵

In Northern Ireland, the importance of reducing inequalities in health has been outlined very clearly in strategic documents.

Making Life Better, the strategy for public health in Northern Ireland (2014) sets out the necessity for cross-sectoral collaboration in reducing inequalities in health. Many of the wide variety of determinants of health are outside the responsibility and remit of the health sector. Improving health should not and cannot be the sole responsibility of the Department of Health and the health sector, but should be an aim of all departments and organisations. Collaboration and community engagement is key to improving health and reducing inequalities.²

This theme has been reinforced in *Delivering Together*, the Health Minister Michelle O'Neill's strategic vision for health and social care in Northern Ireland. This states the need to build capacity in communities and in prevention to reduce inequalities.¹⁶

The next sections provide examples of work undertaken or funded by the PHA, to understand and reduce inequalities in health status.

In keeping with the themes of *Making Life Better*, *Delivering Together* and the draft Programme for Government of the Northern Ireland Executive elected in 2016, many of these projects have not been conducted solely by the PHA.¹⁷ Rather, they involve cross sectoral collaboration with other government departments, public and private sector bodies, voluntary and community organisations and members of the public, to address the determinants of ill health and to improve health outcomes for the population.

Health improvement

A decorative graphic consisting of a horizontal dotted line that curves downwards on the left side, followed by a vertical dotted line that curves to the right at the bottom, framing the text on the right.

Addressing the rates of suicide in our communities

Creating Healthier Places

Improving sexual health and wellbeing

Health improvement

Addressing the rates of suicide in our communities

In 2015, 318 deaths were registered with suicide as the cause of death, an increase from 268 deaths in the previous year. Of the deaths that occurred in 2015, 245 were in males.¹⁸

Suicide rates in Northern Ireland are associated with deprivation. Between 2012 and 2014, the rate of suicide in those living in the most deprived areas of Northern Ireland was almost three times that observed in the least deprived areas.⁴ Suicide accounted for 1.1 years of the gap in life expectancy at birth between males in the most deprived and least deprived areas in Northern Ireland, between 2010 and 2012, and 0.3 years of the gap in females.¹⁹

The PHA leads a programme of work to address this public health challenge, collaborating with stakeholders from a wide range of sectors, including government, community and voluntary groups, religious groups and other public bodies, to address and reduce the suicide rate in Northern Ireland. Inclusive structures and action plans are driven at a local and regional level. Some examples of activity in 2016 include:

- Change Your Mind, a new mental health anti-stigma programme, developed in association with Inspire (formerly the Northern Ireland Association for Mental Health).
- The ongoing public information campaign, featuring advertisements such as *Boxer* and *Fog*, supported by the website www.mindyourhead.info
- The development of the Northern Ireland Registry of Self-Harm with regular reports, and importantly, the development of a new service to address the needs of those who self-harm.
- Work with churches through the Flourish initiative. This is a collaboration between Lighthouse Ireland, clergy from the main Christian churches in Northern Ireland, the Churches Community Work Alliance NI and the PHA. In 2016 Flourish produced a toolkit to promote self-care among clergy, as well as guidance to support clergy dealing with the tragic consequences of death by suicide.
- The PHA small grants scheme, which supports the prevention of suicide and self-harm programmes within the community. This scheme aims to fund innovative projects and help build resilience and capacity in more vulnerable, higher risk groups.
- The launch of ARTiculate, a partnership programme with the Arts Council of Northern Ireland. This three-year programme is jointly funded by the Arts Council and the PHA, and aims to improve the health and wellbeing of young people at risk across Northern Ireland. It engages young people through the medium of the arts, to allow them to articulate their story, challenge stigma and promote mental and emotional wellbeing.

In September 2016, the PHA initiated a process known as Future Search, promoting an in depth review and future focused approach to preventing suicide in the Belfast area. Over two and a half days, 80 stakeholders worked together at the workshop to discover common grounds and actions. Those present provided a whole system approach to tackling suicide. They included representatives

of those personally affected by suicide, crisis and bereavement providers, funders and commissioners, policy makers, politicians, Trusts, community response organisations, advocacy organisations, and the education, training and employment sector.

The workshop led to the development of 11 priority actions to prevent deaths from suicide in Belfast. Common ground in each area was established, and an action plan was developed for each. The actions are around the themes of:

- Culture of care
- Early Years intervention
- Data sharing and collection
- Wrap-around services
- Political leadership and legislation
- Emotionally resilient communities
- Link to drugs and alcohol
- Community development
- Health inequalities
- Funding and procurement
- Technology

These actions will be taken forward by the stakeholders involved. It is intended to hold a review meeting to assess and support the progress that has been made.

Creating Healthier Places

It is recognised that in order to reduce health inequalities, action needs to be taken on the wider determinants of health, the social, economic, political circumstances in which we all live. This was reflected in the draft Programme for Government of the Northern Ireland Executive elected in 2016, which committed to “work with people to empower them to live healthier lives.”³ One action arising from this is the establishment of a Healthier Lives programme, of which one aspect is Healthier Places. The PHA was asked by the Department of Health to be a key delivery agency for the Programme for Government and to lead on the Healthier Places programme.

In December 2016, the PHA held a stakeholder workshop to discuss how to progress the Healthier Places programme. The focus will be on collaborative work, empowering individuals, families and communities to identify their own priorities for action, to co-design programmes and to work together to create Healthier Places.

The workshop was attended by a wide range of stakeholders from the health sector, the community and voluntary sector, the private sector and the public sector.

Presentations were given from three community programmes, the ARC Healthy Living Centre in Irvinestown, the CLARE project in Mount Vernon, Belfast and the Resurgam Trust, in Lisburn. These highlighted the good practice that is already on-going in Northern Ireland.

The ARC Healthy Living Centre, Irvinestown

The ARC Healthy Living Centre was established in 2000. The team is working to address the social determinants of health and wellbeing, and to reduce inequalities through a variety of community initiatives.²⁰ Examples are provided below.

Cherish Sure Start aims to give every child the best possible start in life, working with parents and their pre-school children to promote development through health, play and educational programmes.

The EDGE project contributes to the policy objective of enabling children, young people and adults to maximise their capabilities and have control over their lives. It provides support, training and resources for delivery of youth activity programmes. It promotes resilience, provides support and delivers self-esteem and mental health promotion initiatives.

The Active Allsorts childcare centre includes a crèche, a programme for two year olds and an after school project, and provides day care during school holidays. This gives parents opportunities to return to employment and training.

The SOLACE Project (Supportive Opportunities for Living with Addiction in a Community Environment) is a support service for individuals, families and communities affected by chronic addiction.

ARC CORE projects deliver interventions to improve health. These include community pharmacy services, smoking cessation services, sexual health services and drug and alcohol education and treatment services.

CLARE, Mount Vernon, Belfast

CLARE (Creative Local Action Response and Engagement) is a community-led organisation which operates across inner North Belfast. Its vision is to *“create communities where all people feel supported and engaged, where people look out for each other and where everyone has the opportunity to reach their full potential.”*²¹

It provides support to vulnerable adults and the elderly in the community, to enable them to maintain their independence and to reduce feelings of isolation and loneliness.

Referrals to the CLARE team are made through the Belfast Health and Social Care (HSC) Trust Integrated Care Team. Individuals referred work with a Community Social Work broker to identify the support services and resources that they require to remain independent in their homes. Community Champion volunteers, from within the local community, befriend the individuals, help them engage with the available services and provide help at home.

The Community Champion volunteer scheme gives local residents opportunities to gain experience in volunteering roles, enhancing personal development and employability.

From November 2014 to November 2016, the project received 219 referrals. There were 196 connections made to supporting organisations, 69 community champions were recruited and over 1,800 hours of volunteering were provided.

Although the project currently operates in North Belfast, community engagement events are now being planned to scale the project up on a citywide basis.

The Resurgam Trust, Lisburn

The Resurgam Trust is based in the Old Warren Estate in Lisburn. Its mission is *“to connect individuals and groups and to transform communities to create a sustainable environment within which all are proud to live, learn, play and work.”*²²

It operates programmes around the themes of health and education, community safety, youth, social enterprise and employment and regeneration. The trust has 1,000 members, with 26 member groups and projects and six social enterprises. There are over 100 employees and over 500 volunteers.

Examples of activity under health and education include:

1. A summer lunch club, which provided 579 meals over a 21 day period to 108 children. Of those who completed the section on the registration form, 81% of those attending were eligible for free school meals.
2. Food fayres delivered in the community through the *saferfood* Community Food Initiative.
3. Health interventions and prevention information delivered through the Building Community Pharmacy Partnership with the Community Health Development Network.
4. Links with the Integrated Care Partnership and Healthy Living Alliance to support vulnerable members of the community, with distribution of 200 warm packs and an Arts Care Memory Project for the elderly.
5. The Early Intervention Lisburn partnership, which includes voluntary, political and statutory agencies, aiming to improve opportunities for children and families through a range of programmes.

Improving sexual health and wellbeing

Sexually transmitted infections (STIs)

The most recent sexually transmitted infection (STI) surveillance data available for Northern Ireland is for the calendar year 2015. While there was a 13% decrease in annual numbers of total new STI diagnoses made in Northern Ireland genito-urinary medicine (GUM) clinics, this masked an increase in diagnoses of gonorrhoea and infectious syphilis.²³

The highest diagnostic rates of the common STIs occur in 16–24 year old females and 20–34 year old males; 82% of new STIs occur in people aged 16–34 years old. Men who have sex with men (MSM) are at disproportionate risk of some STIs and account for 75% of male syphilis, 64% of male gonorrhoea, 14% of male herpes and 14% of male chlamydia infections.²³

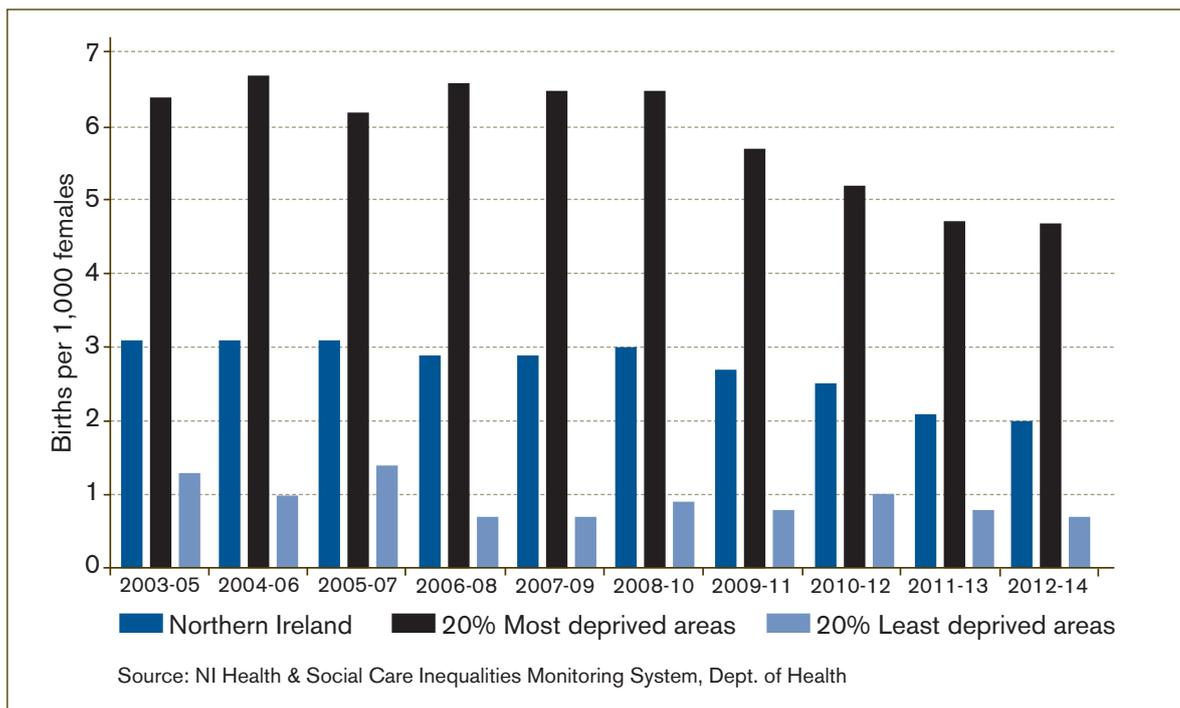
Teenage births

In recent years there has been a decreasing trend in the rate of births to teenage mothers in Northern Ireland. Between 2005 and 2015 the number of births to mothers under 17 has more than halved from 145 to 66 births per year.²⁴

However, there is an inequality gap for teenage births between those living in the 20% most deprived areas compared to the 20% least deprived areas.⁸ In 2012–14, the rate of births to mothers under 17 years was six times higher in the 20% most deprived areas compared to the 20% least deprived areas (4.7 births per 1,000 compared to 0.7 births per 1,000).

The rate of teenage births decreased across Northern Ireland from 2003 to 2014, with a higher rate of improvement observed in the least deprived areas (Figure 5). Data indicates that the inequality gap in teenage birth rate between the 20% most and least deprived areas has widened in the last decade, from 388% in 2003–05 to 597% in 2012–14.⁸ However, it should be noted that gaps are likely to fluctuate due to the small numbers involved, particularly for the 20% least deprived areas, and that it is therefore important to analyse changes in the rates to put the gap into context.

Figure 5: Teenage births (under 17 years), 2003–05 to 2012–14. ⁸



PHA priority areas

The PHA has identified five priority areas to try to improve the sexual health and wellbeing of the population of Northern Ireland. These are:

- Relationship and sexuality education (RSE)
- Early childhood and youth development programmes
- Contraceptive and genito-urinary medicine (GUM) services
- Public information campaigns
- HIV/STI prevention in high risk groups.

Delivery of programmes in these areas is mostly targeted at young people, particularly those who are vulnerable, such as looked after children and those from minority groups. Programmes and services are also targeted at areas of social deprivation and groups who are at increased risk, such as men who have sex with men (MSM).

The PHA funds a range of voluntary organisations to deliver programmes across the five localities – Belfast, Northern, Southern, South Eastern and Western. Programmes are also delivered by HSC staff in the Trusts. Below are some examples of the programmes and activities delivered to address the priority areas listed above. These examples do not include all the work being delivered by all the organisations involved, but illustrate the range of work on-going.

Relationship and sexuality education

Schools have a statutory responsibility for RSE and the PHA role is to work in partnership with the education sector to support schools and teachers. A model of support for RSE is currently being rolled out across the region with the aim of ensuring that schools and teachers have the confidence, the skills and the support required to meet their statutory responsibility.

Through a recent procurement process, PHA awarded contracts to four organisations to provide RSE in community settings. These programmes particularly target vulnerable groups of young people across Northern Ireland.

Early childhood and youth development programmes

Sexual health personal development programmes are a key element of promoting good sexual health and preventing ill health. The aim of these courses is to enable young people to make informed decisions about their personal and sexual relationships. Commissioned by PHA from a number of organisations, the courses increase knowledge about sexual health issues and ensure the availability of support for young people.

Contraceptive and GUM services

The PHA is working in partnership with the Health and Social Care Board (HSCB) and HSC Trusts to take forward the recommendations of the Regulation and Quality Improvement Authority's Review of Specialist Sexual Health Services in Northern Ireland and to consolidate provision of effective, accessible contraceptive and GUM services, particularly for young people.²⁵

The PHA is also working in partnership with further education (FE) colleges to develop and agree models for provision of sexual health services (contraceptive and STI) in all localities in FE college settings.

Public information campaigns

The sexual health campaign 'Choose to protect yourself – always use a condom' was launched by the PHA on 17 June 2015, with the last rerun finishing in March 2017. The core campaign message is 'Have unprotected sex and you could be sleeping with everyone your partner's ever slept with.' The campaign aims to promote good sexual health and contribute to reducing STIs in Northern Ireland. It includes mass media advertising and has been supported by public relations and social media activity as well as a new website www.sexualhealthni.info

HIV/STI prevention in high risk groups

A satellite sexual health clinic for homeless people is being piloted in hostels across the Northern area. The services offered include a full range of family planning and GUM services. The target group is homeless clients who are sexually active or engaging in high risk behaviour and who are also at risk of pregnancy, STIs and blood borne viruses. This target group is not a static population so can be difficult to reach.

Health protection

Health inequalities in TB

A harm reduction package for people who inject drugs, who are at increased risk of hepatitis C: a multi-agency approach

Health protection

The PHA's Health Protection team plays a lead role in protecting the population from infectious and environmental hazards, with core functions including:

- the surveillance, prevention and control of infectious diseases;
- environmental health, emergency planning and response;
- the public health response to chemical, radiation and poison exposures.

Inequalities exist in the incidence and prevalence of infectious diseases, regionally, nationally and at a global level. A wide range of communicable diseases is associated with socioeconomic deprivation. In addition, some populations and communities are more vulnerable to health protection hazards. These include: children, members of the Travelling community, migrants and refugees, drug users, homeless people, looked after children, men who have sex with men, individuals in prison and certain vulnerable ethnic groups.²⁶

There is evidence also that climate change is associated with health inequalities. The effects of climate change include flooding, which is associated with disruption of services, limited access to clean water and an increase in infectious diseases. Poorer communities are at higher risk of the health effects associated with coastal flooding in the UK, although river flooding is more likely to affect more affluent individuals. Climate change may alter the distribution of vectors which carry human diseases. It may lead to changes in human behaviour, for example, with food hygiene, causing increased exposure to infectious diseases.²⁷

To provide a context for cross-border work in reducing health protection inequalities, the PHA's Assistant Director for Health Protection prepared a scoping report, *Health protection inequalities on the island of Ireland*.²⁶ This work was undertaken on behalf of the Institute of Public Health in Ireland, in collaboration with the Health Protection Surveillance Centre and Health Service Executive in the Republic of Ireland. The aim was to facilitate work to document and address health protection inequalities on an all-Ireland basis.

The report provides details of the strategic approaches towards reducing health inequalities on both sides of the border. It displays evidence – global, nationally and regionally – on the existence of health protection inequalities and clearly outlines how individuals in the most deprived communities across Ireland are more affected by health protection issues than those in more affluent areas.

The report highlights the need for a collaborative approach in addressing inequalities in health protection. It outlines a series of recommendations to be taken forward at an all-island level to understand and better address health protection inequalities. Collaboration with colleagues on both sides of the border will be key. The report's recommendations include:

- the establishment of a North/South Leadership Forum on Health Protection Inequalities;
- strengthening prevention in specific health protection areas;
- linking approaches to tackling health protection inequalities to wider work programmes on inequalities;

- strengthening collaboration with existing organisations;
- strengthening of surveillance and monitoring of health inequalities;
- disseminating information and raising awareness among stakeholders including politicians, health services, policy makers, the public and other government sectors.

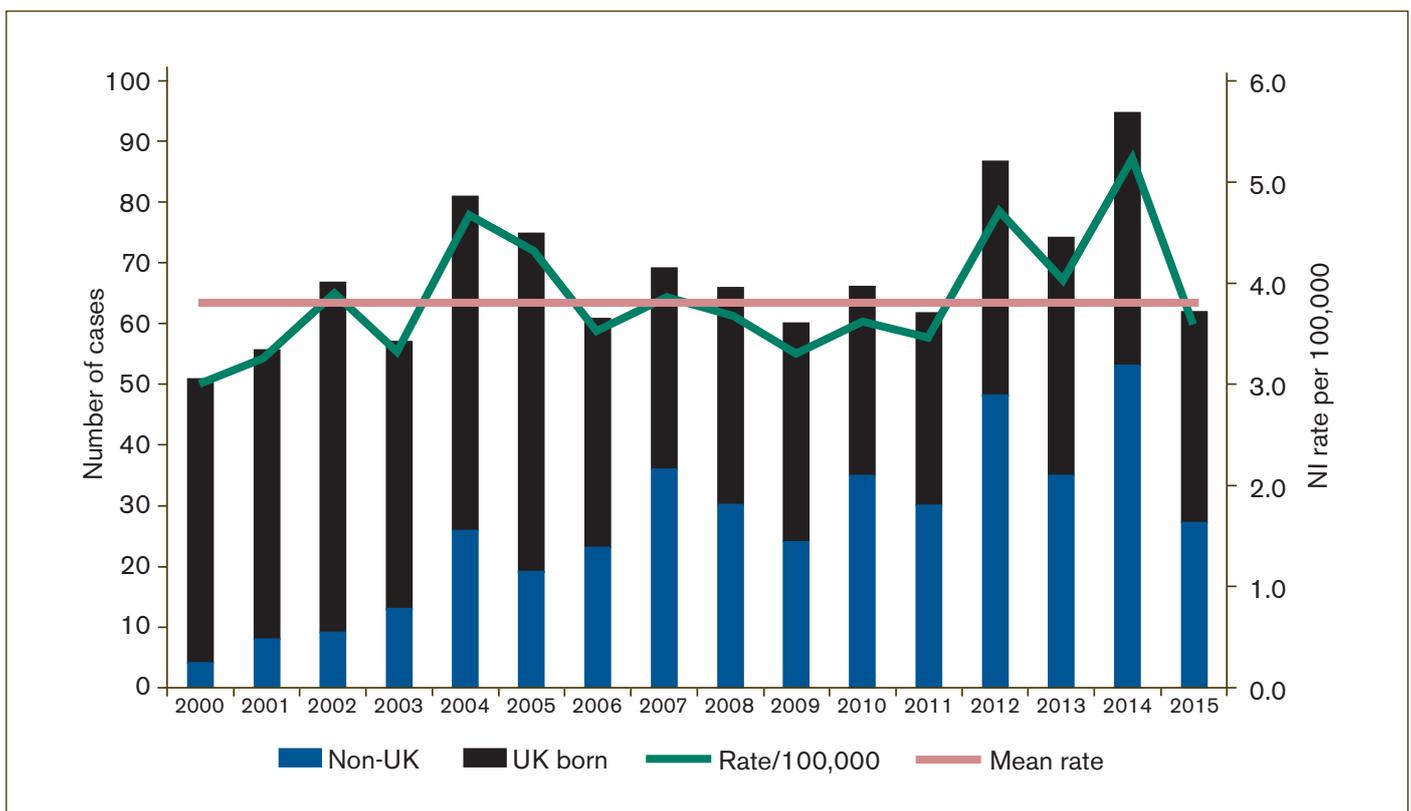
The PHA Health Protection team is taking forward a number of projects aimed at assessing and addressing the needs of vulnerable individuals in our community. Two examples are described below.

Health inequalities in TB

Despite scientific and social advances, a high burden of tuberculosis (TB) still persists worldwide, particularly affecting poor and susceptible populations. TB has long been associated with poverty and with areas of social deprivation. Lifestyle and living conditions increase TB vulnerability and the prevalence of the disease in the wider community.

Incidence rates of TB in Northern Ireland are low, at 4 to 5 cases per 100,000 population, compared to other areas (the overall UK rate was 10.9 cases per 100,000 in 2014).²⁸ However, from 2009 to 2014 there has been on average a small but gradual increase in both numbers of cases and rates of TB in the region, with 2014 having the highest rate of TB since the enhanced surveillance programme began in 2000 (Figure 6). The greatest burden of TB is in the Belfast HSC Trust and Southern HSC Trust areas. TB cases that are born outside of the UK or Ireland account for approximately half of all cases in Northern Ireland.²⁹

Figure 6: TB case reports and rate (per 100,000), Northern Ireland, 2000–2014



In order to investigate cases of TB in more detail, incidence rates from 2008 to 2014 were reviewed. While the rates of TB in the indigenous population remained low (on average 2 cases per 100,000 population, with cases principally in the elderly), the rates of TB in those born outside of the UK or Ireland was much higher – on average 45 cases per 100,000, with 63 cases per 100,000 in 2014. These cases principally occurred in those in the working age group of 15–44 years (Figures 7a and 7b).²⁹

Figure 7a: Northern Ireland TB rates (per 100,000) in the UK born population, 2008–2014

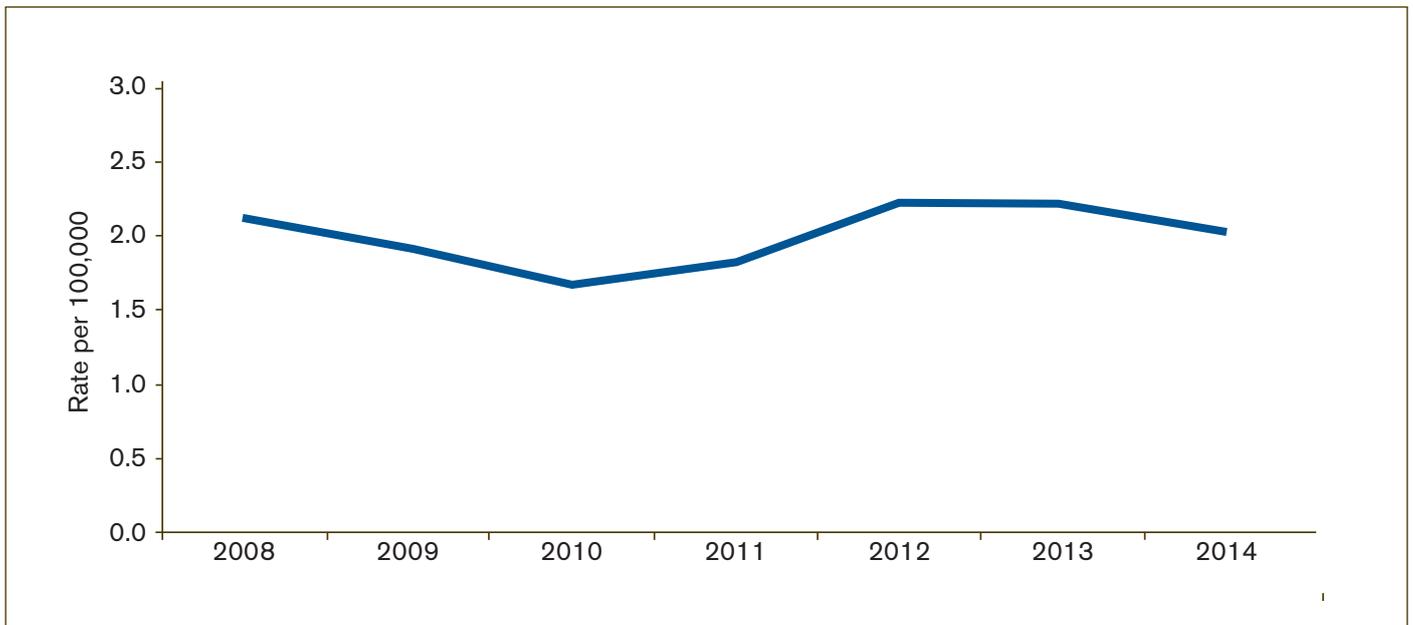
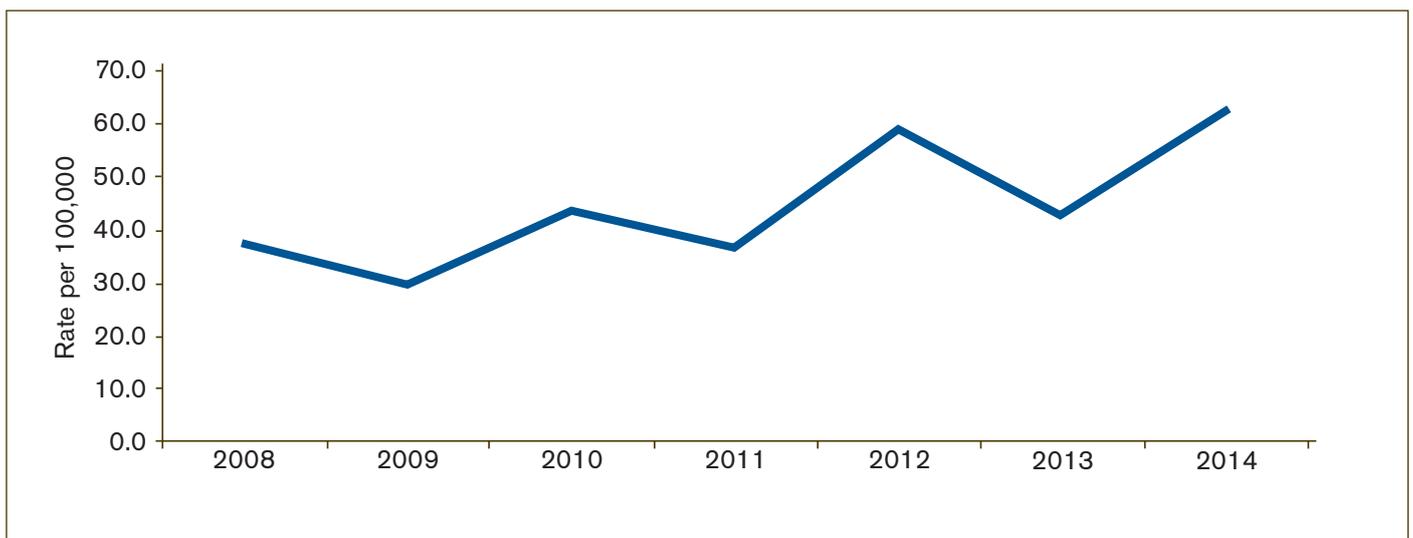


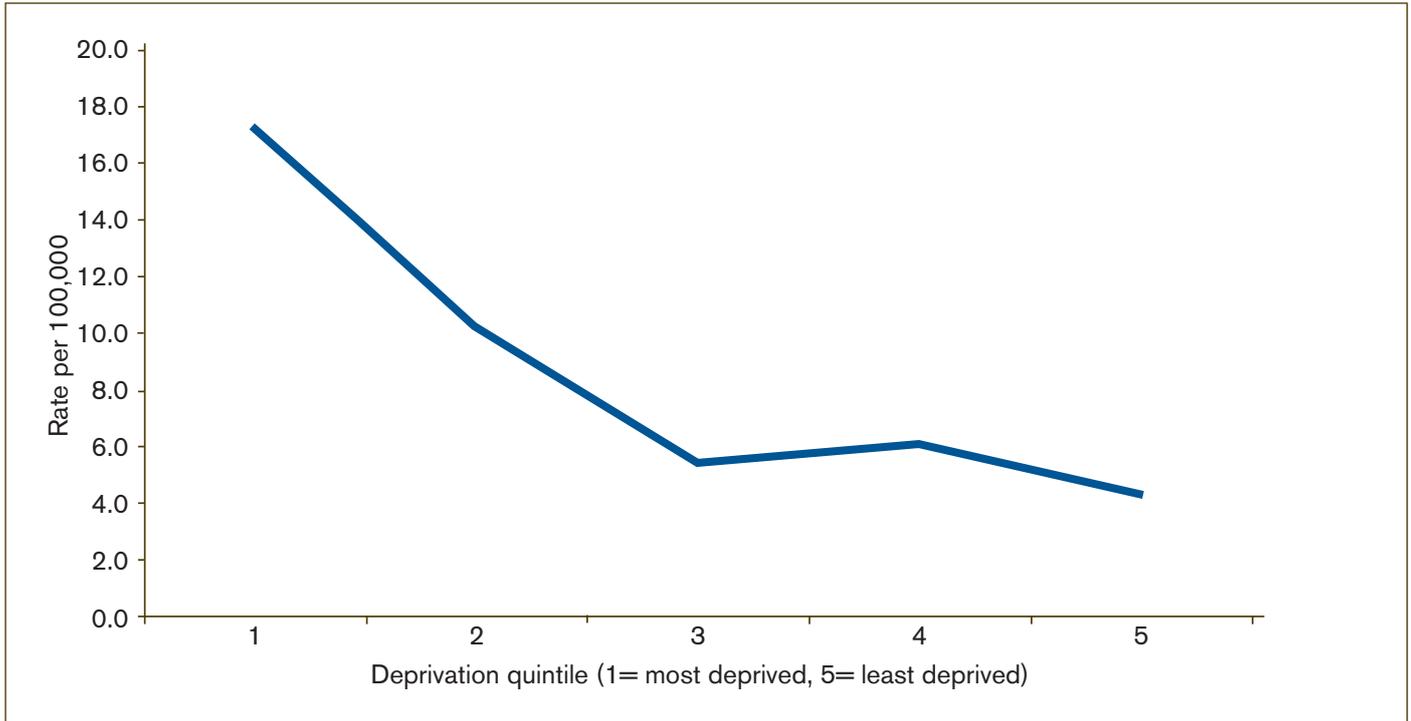
Figure 7b: Northern Ireland TB rates (per 100,000) in the non-UK born population, 2008–2014



A review of the deprivation profile for 2014–2015 TB cases found that rates of TB were much higher in the 20% of the population living in the most deprived areas of Northern Ireland and that the rates of TB generally increased with increasing deprivation (Figure 8).²⁹

Figure 8: Rate of TB by deprivation, Northern Ireland 2014–2015

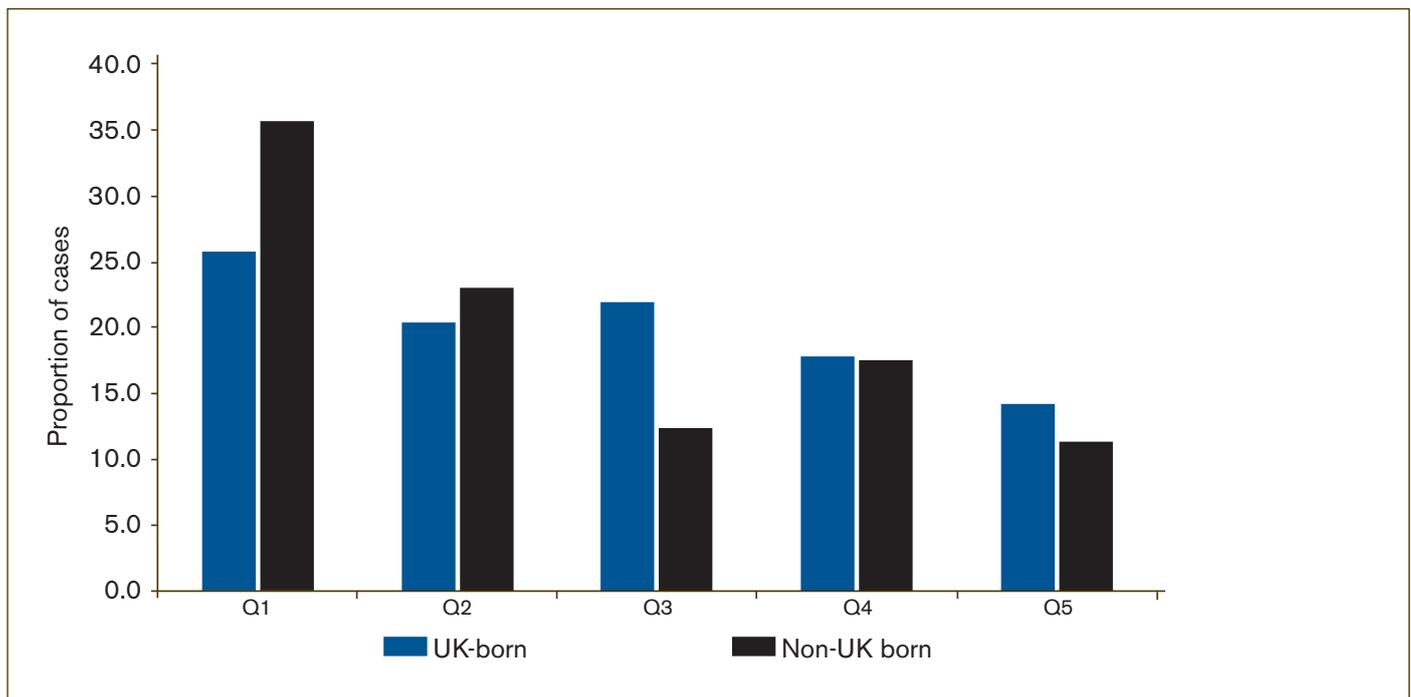
Deprivation calculated using the NIMDM, measured at super output area (SOA) level.



Cases from 2000 to 2015 were analysed by place of birth. While the highest proportion of TB cases, irrespective of where they were born, live in the most deprived areas of Northern Ireland, there is a higher proportion of non-UK born cases with TB residing in the most deprived areas than those from the indigenous population (Figure 9).

Figure 9: Proportion of Northern Ireland TB cases living in each deprivation quintile, by country of birth (n=1063)

Quintile 1 = most deprived, Quintile 5 = least deprived



In the Belfast HSC Trust, most of the cases, regardless of place of birth, resided in the most deprived areas of the Trust. However, in the Southern HSC Trust, the majority of TB cases residing in the more deprived areas were in those born outside of Northern Ireland.

A number of factors may have contributed to this increased localisation of cases. For example, inward-migration increased rapidly in the period following European Union enlargement and it is known that inflows are concentrated in both the Belfast and Southern HSC Trust, with Dungannon the most popular location in the latter. Migrants are also often found to reside in manufacturing areas. The Dungannon and Portadown areas have a high predominance of food processing and engineering factories. Migrant worker households in this area tend to be large, younger, and predominantly male with high employment rates but lower incomes than comparable households in the area.³⁰ The profiles of the TB cases in the Southern HSC Trust were reviewed and it was identified that the majority of cases were employed by two large manufacturers in the area. A high proportion of these cases were originally from areas that had very high incident rates of TB (400 cases per 100,000), placing them in a high risk group for the likelihood of developing active TB.

Details of these cases were examined further, to ascertain the likelihood of TB transmission in the associated factories and consideration was given to the need for additional screening in the workplace.²⁹

A harm reduction package for people who inject drugs, who are at increased risk of hepatitis C: a multi-agency approach

In 2016, the PHA became aware of a cluster of cases of hepatitis C virus (HCV) amongst people who inject drugs (PWID). Some had recently acquired the virus. The individuals were known to reside in local hostels and to have contact with the Trust homelessness team.

Previous or current use of injecting drugs is responsible for the largest proportion of HCV infection in Northern Ireland. PWID can be a marginalised group in society and can have difficulty accessing healthcare for a number of reasons. For example, they may not be registered with a general practitioner, they often live between different addresses, they may have no fixed abode and they may have difficulty engaging with mainstream healthcare services. This can lead to difficulties in completing testing, follow up and referral to treatment for hepatitis C. For these reasons, it is critical to bring the services to the client group and engage with them in an environment in which they are comfortable.

To investigate and provide assistance to this group of people, a multiagency approach was taken, with input from a number of stakeholders, including the PHA, the local Trust's homeless nursing team, the addiction service, voluntary sector services and the hepatology team. Interventions were put in place to provide a network of support to meet the needs of this group. The aim was to offer screening for hepatitis C and to deliver a comprehensive harm-reduction package, which included in-reach clinics, education and support sessions in local hostels.

Enhanced screening for blood borne viruses (BBV) was offered to anyone identified as being linked to the cluster. Blood was tested for HIV, hepatitis B, hepatitis C and syphilis and a full sexual health screen was also completed. Anyone found to be hepatitis C positive or at continuing risk of

infection was tested again after three months. PWID can find that their veins are damaged, leading to reluctance to have blood tests or difficulties for staff in taking bloods. Dry blood spot testing, which allows finger-prick blood samples, was introduced to facilitate testing in response to this cluster. This increased accessibility and compliance with testing.

PWID are known to be at increased risk of acquiring all BBVs, so as part of the response, the PHA provided funding for all clients identified as at risk as part of the cluster to be immunised against hepatitis B virus, in line with national guidelines.

Education and support sessions provided by the Trust and voluntary sector staff were crucial to give clients an understanding of BBVs and how they can be transmitted. Education was provided on safe injecting practice, including not sharing needles or other paraphernalia used for injecting drugs. The use of the needle exchange services was promoted. Users were also given advice to switch to smoking drugs with foil as a safer alternative to injecting, to reduce the spread of BBVs.

A pathway for testing and follow-up has been developed in conjunction with the hepatology service, to assist the homeless team in directing those with a positive hepatitis C result to treatment services.

Moving forward, the client group will be offered continued support, blood testing and vaccination, through multi-agency collaboration to meet their unique needs.

Early detection: screening

Uptake of cancer screening programmes is associated with deprivation

Promoting informed choice in breast screening

Work with the Women's Resource and Development Agency to promote informed choice

Improving cancer screening among individuals in custody

Early detection: screening

Early detection of disease often produces better outcomes for the patient. Treatments may be more effective when delivered earlier, leading to improved health and in some cases reducing premature deaths.

Population screening programmes are one important method through which diseases are detected early. A range of screening programmes is available to the population of Northern Ireland, including three cancer screening programmes: for breast, cervical and bowel cancers. The PHA has a lead responsibility for commissioning, coordinating and quality assuring these programmes

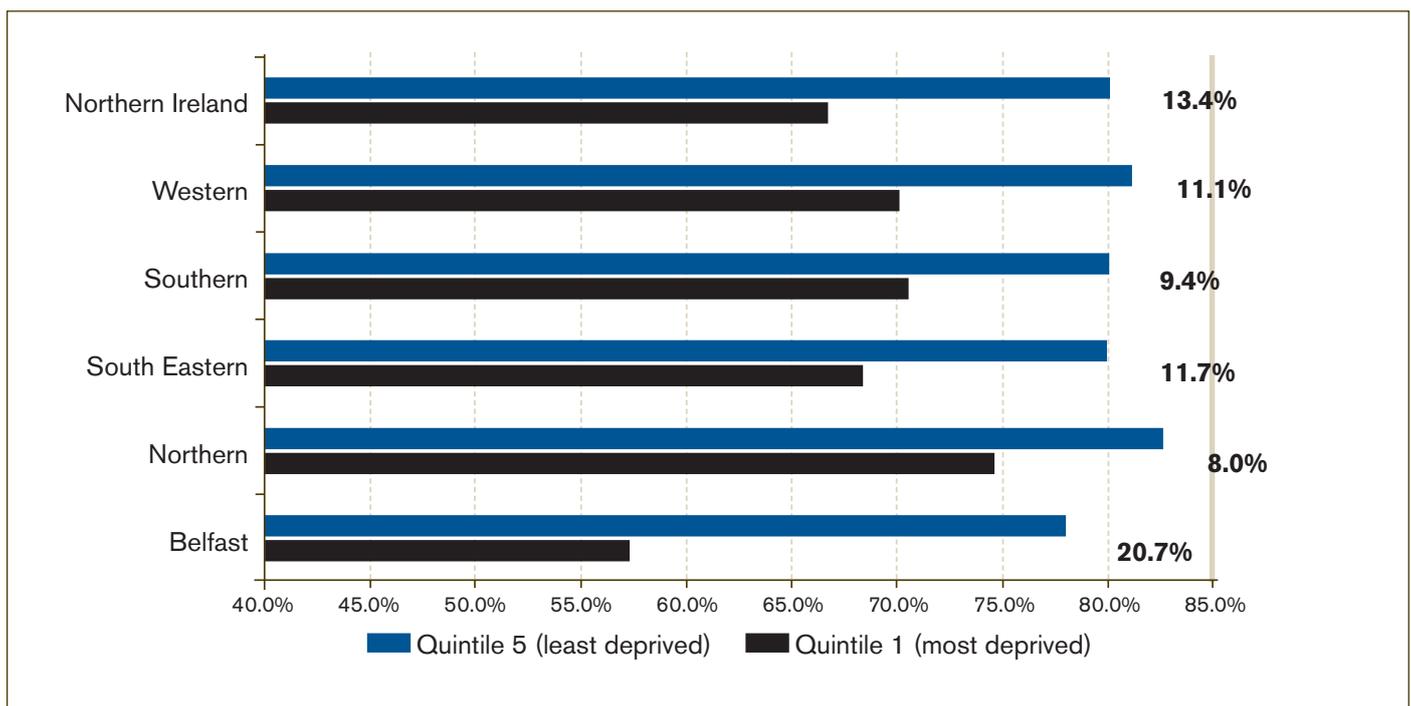
Uptake of cancer screening programmes is associated with deprivation

Northern Ireland has a good uptake of screening for cervical, breast and bowel cancers. In 2015/16, the uptake rate for cervical screening was 77.2% and for bowel cancer 59.8%. The breast screening uptake rate was 76.1% for the three year period from 2013/15 to 2015/16. While these rates are considered good, a substantial proportion of the eligible population is not attending screening.

Research shows that demographic and socioeconomic factors can be associated with poorer uptake and coverage of screening. Individuals in more deprived socioeconomic groups and those in certain ethnic groups may be less likely to attend.^{31, 32}

In 2016, the PHA Health Intelligence Team produced a paper on behalf of the Northern Ireland Breast Screening Programme, analysing the uptake of breast screening in Northern Ireland by the deprivation quintile of the super output area in which the women live.³³ This showed that there was a gradient of deprivation associated with screening uptake (Figure 10).

Figure 10: Northern Ireland Breast Cancer Screening: percentage uptake in the most and least deprived quintiles (super output areas) of each Trust and % gap, 2012/13–2014/15



Within individual trusts, the super output areas with the lowest uptake of screening were identified. The paper has been shared with each Breast Screening Unit in Northern Ireland, and with members of the Quality Assurance Subcommittees which advise on delivery of the Breast Screening Programme in Northern Ireland. Units will use the paper to identify areas in which to focus efforts at promoting informed choice in breast screening.

Promoting informed choice in breast screening

The Quality Assurance Reference Centre (QARC) within the PHA leads the regional group on Promoting Informed Choice in Breast Screening.

The members of this group include Health Improvement and Radiography staff from each of the Breast Screening Units in the region. The group's remit is to identify opportunities to promote informed choice in breast screening. The aim is to ensure that the decision a woman makes is informed, consistent with her values, and behaviourally implemented. Particular focus is given to women from disadvantaged communities in Northern Ireland, women who have learning, physical or sensory disabilities, women from minority ethnic groups, older women and other women considered to have special needs.

The team meets twice yearly, to identify and share good practice relating to promoting informed choice in breast screening and to advise the Northern Ireland Breast Screening Programme on provision of information to the public and to healthcare professionals.

Recent work of the group includes:

- confirming that all units have up to date, relevant information on Trust websites;
- dissemination of breast screening promotional materials for distribution by units;
- development of a poster encouraging women over 70 to attend breast screening;
- preparation of leaflets in audio and large-print format, for women who are blind or partially sighted.

Work with the Women's Resource and Development Agency to promote informed choice

In 2014/15, the PHA commissioned qualitative research to explore barriers to cervical cancer screening. A key recommendation from this work was to use local community groups to promote awareness of cancer screening.

In June 2015, the PHA awarded a three-year regional contract to the Women's Resource and Development Agency (WRDA), a local not-for-profit organisation. The programme of work aims to raise awareness of the breast, bowel and cervical cancer screening programmes and to promote informed choice among individuals from communities and populations who are often hard to reach and historically have low uptake of cancer screening.

The programme recruits and trains peer facilitators who are themselves part of the local community. Peer facilitators then deliver education sessions on the three cancer screening programmes to community groups across Northern Ireland. The contract also provides for the promotion of cancer screening programmes at events such as community health and wellbeing fairs.

Targeted outreach

In their work, the WRDA team gives specific consideration to equality objectives. It uses established community partnerships to identify local needs and perspectives and to ensure wide engagement with deprived, marginalised and hard to reach groups across Northern Ireland.

Recognising the barriers to engagement that these groups may face, the WRDA team employs a targeted outreach approach to promote the screening programmes. It works with specific organisations and groups working in the most deprived areas of the region, with the most vulnerable and hard to reach groups. Examples include survivors of violence (Women's Aid), parents needing support (Home-Start and Sure Start), black and minority ethnic groups (Northern Ireland Council for Ethnic Minorities), lesbian, gay, bisexual and transgender groups, Travellers, and people with learning, physical or sensory disabilities.

Sessions are delivered in locations and at times that are convenient, safe and accessible (including wheelchair accessible) to participants, providing translation services where necessary. Given that literacy difficulties may be an issue, all programmes use experiential learning methods to encourage discussion, sharing of experiences and full participation.

All WRDA's peer facilitators attend training in anti-discriminatory practice as part of their training. This challenges them to assess their own prejudices and beliefs and it highlights their roles as facilitators in creating safe environments for participants.

In 2016:

- **Cervical, breast and bowel screening awareness sessions** – 83 sessions were delivered to groups living in some of the most deprived, marginalised communities across Northern Ireland.
- **Bespoke specialist workshops** – 75 specialist workshops were delivered to 655 participants with additional support needs, including those with learning, physical or sensory disabilities, mental ill health and those who are homeless.
- **Peer facilitators training** – 32 women completed peer facilitator training and obtained a Level 3 Certificate in Learning & Development.
- **Health and wellbeing events** – cancer screening was promoted at 14 community health and wellbeing events.

Quotes from attendees:

“I now realise embarrassment could cost me my life”

“I intend to pass on the information to my mother and sister”

“I now know exactly what is involved; I feel silly for ignoring letters inviting me for a smear”

Initial feedback from questionnaires completed pre and post-delivery of education sessions indicates a positive impact, with attendees indicating an increased understanding of the importance of cancer screening and a commitment to attend for breast and cervical screening, and to use the bowel cancer screening kit, as a result of the programme.

The PHA is currently undertaking an evaluation to determine the impact of the educational awareness sessions. WRDA have also commissioned an external evaluation of the three year programme of work. The contract will run until 2018.

Improving cancer screening among individuals in custody

In order to improve opportunities for individuals in custody to avail of cancer screening, the PHA is working with staff based in the South Eastern HSC Trust to ensure that eligible individuals have the opportunity to receive information on screening, make an informed choice about screening and participate, if they wish.

Offering screening programmes to people in the custody setting has often proved difficult and been delivered on an ad hoc basis. A more robust system for identifying and screening eligible individuals has successfully commenced with bowel cancer screening. PHA staff, in conjunction with the Trust and the Business Services Organisation, are now also developing pathways for breast and cervical cancer screening in this setting. This will ensure that people in custody have the same access to these important public health services as the rest of the population.

Service development

Pregnancy and neonatal outcomes can be affected by deprivation

Factors associated with hospital admission in the first year of life

Epilepsy in pregnancy: geographical inequalities in access to services

Needs assessment of individuals in custody suites

Service development

High quality, safe services are essential for everyone. The PHA works with the HSCB, HSC Trusts and the Department of Health to promote the provision of high quality services that are accessible by all members of the community, to improve health and wellbeing and to reduce inequalities.

Pregnancy and neonatal outcomes can be affected by deprivation

The Northern Ireland Maternal and Child Health (NIMACH) office, based within the PHA, collects and analyses data on maternal, newborn and infant health. The information is used to support UK Clinical Outcome Review Programmes in assessing and improving the quality of care provided to women and their babies.

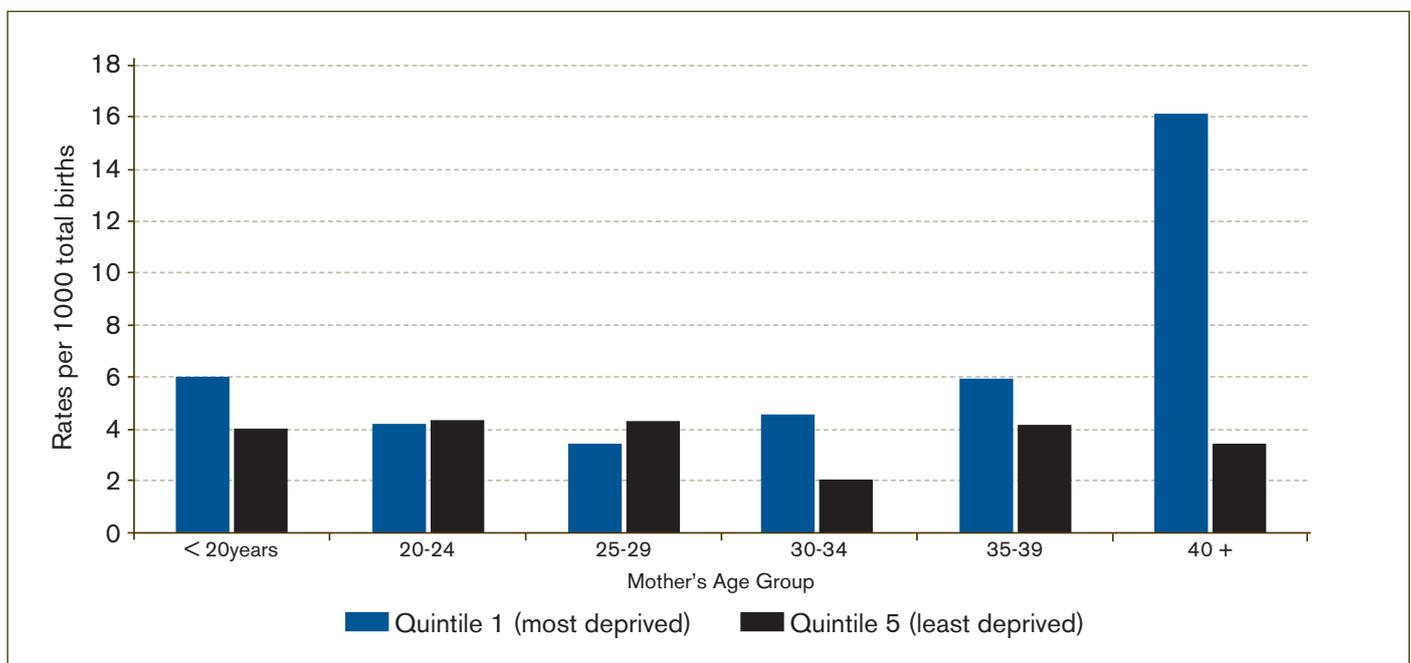
The most recent NIMACH analyses have been conducted on data from 2012 to 2015.³⁴ These highlight inequalities in outcomes associated with deprivation.

Stillbirths

Figure 11 highlights the stillbirth rate in Northern Ireland, by age and by deprivation quintile of the mother's address.

Figure 11: Rates of stillbirth to mothers from the most and least deprived areas by mother's age group: Northern Ireland, 2012–2015

Source: NIMATS, Most and least deprived refer to the upper and lower quintiles of the super output area. Limitations in interpreting rates/numbers due to small numbers and caution is advised.



The numbers of births and deaths are relatively small in Northern Ireland, and so these data must be considered with caution, but this pattern is in keeping with that seen in other areas. The 2009 CMACE report, for example, indicated that in England, mothers in the most deprived areas were 1.6 times more likely to have a stillbirth, and 1.6 times more likely to have a neonatal death, compared to those living in the least deprived areas.³⁵

Risk factors for adverse pregnancy outcome

As seen earlier in this report, mothers in more deprived areas of Northern Ireland are more likely to have a higher BMI at booking and to report that they smoke.

Figure 12 shows the mortality rate by BMI at booking from 2012 to 15, for stillbirth, neonatal death and perinatal death. Stillbirth and perinatal mortality rates were at their lowest in women with a BMI under 25 (defined as underweight or normal weight). The highest rate in stillbirths is to mothers who have a BMI of ≥ 40 at time of booking.

Figure 12: Mortality rate by maternal BMI at booking, 2012–2015

Source: NIMATS and NIMACH. Limitations in interpreting rates/numbers due to small numbers and caution is advised.

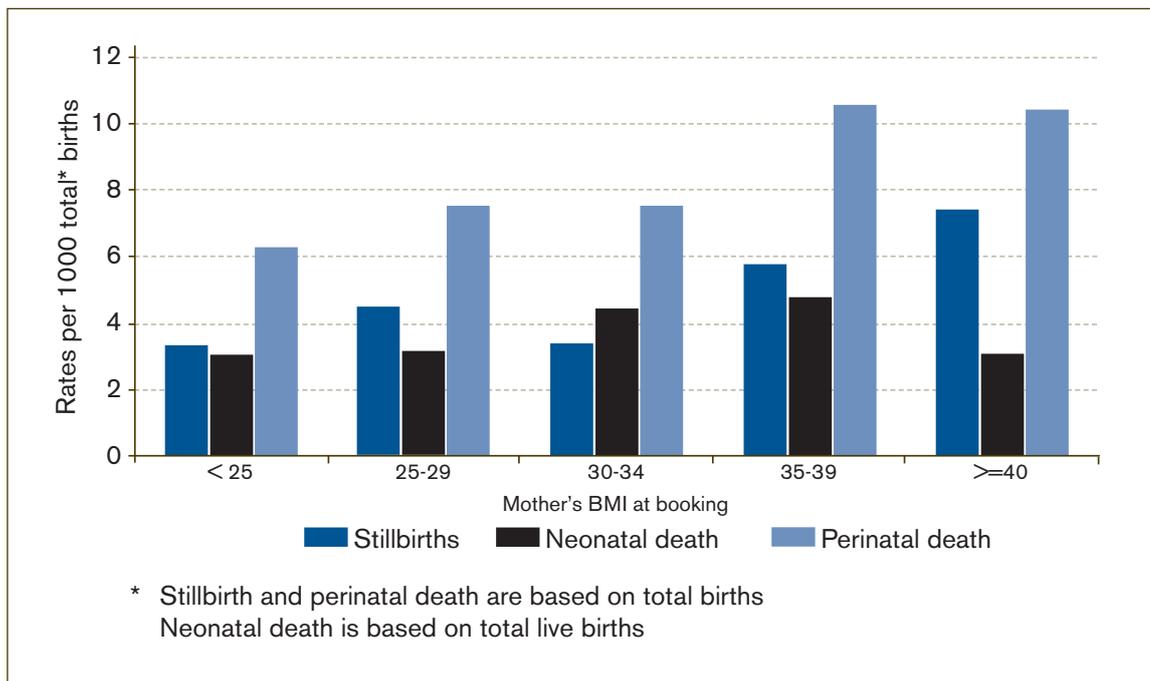


Figure 13: Stillbirth rate by smoking status, 2012–2015

Source: NIMATS and NIMACH. Limitations in interpreting rates/numbers due to small numbers and caution is advised.

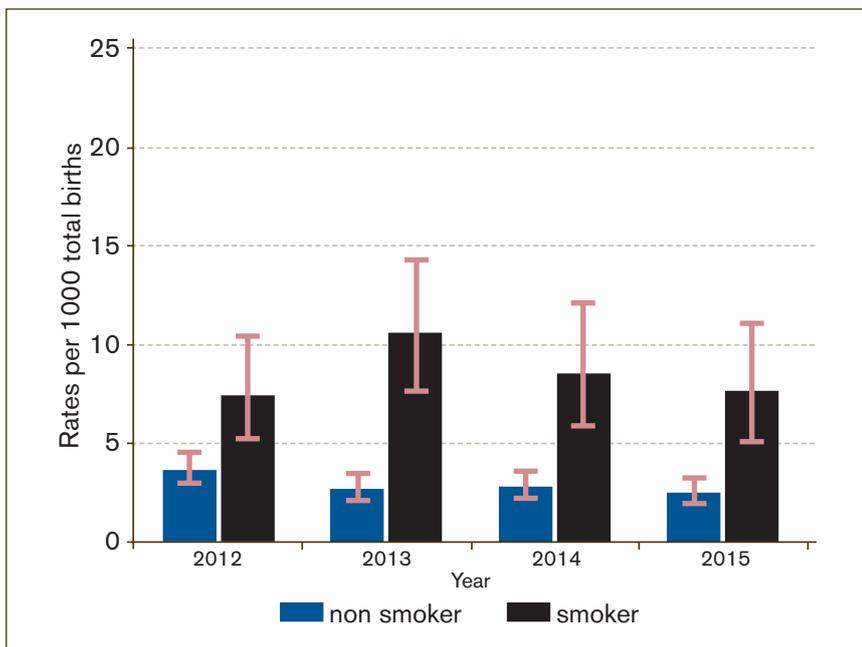


Figure 14: Neonatal death rate by smoking status, 2012–2015

Source: NIMATS and NIMACH. Limitations in interpreting rates/numbers due to small numbers and caution is advised.

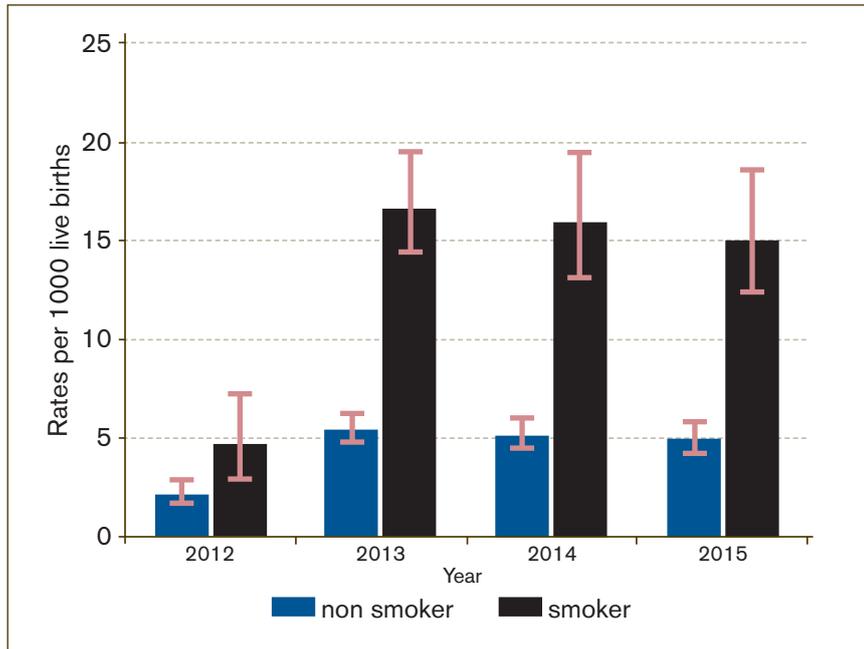
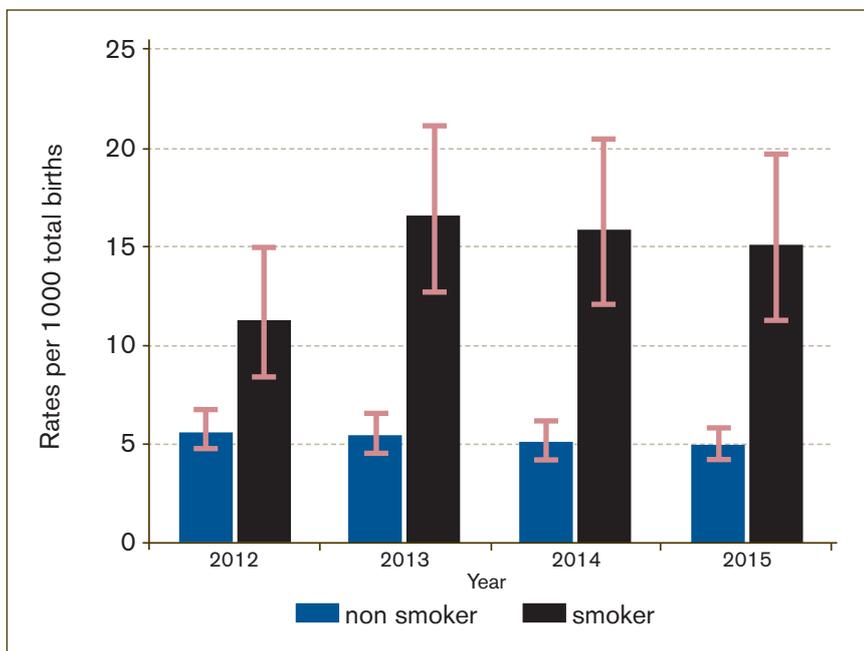


Figure 15: Perinatal death rate by smoking status, 2012–2015

Source: NIMATS and NIMACH. Limitations in interpreting rates/numbers due to small numbers and caution is advised.



In Northern Ireland, mothers who self-reported smoking in 2012 were twice as likely to have a stillbirth or neonatal death than mothers who did not smoke (stillbirth rate 7.5 (CI=95% 2.3–3.0) per 1,000 births for self-reported smokers, compared to 3.7 (CI= 95% 0.7–0.9) for non-smokers).³⁴

Since 2013, figures have consistently shown that mothers who self-reported smoking are now three times more likely to have a stillbirth or neonatal death (Figures 13–15).

As smoking is self-reported, it is not an accurate reflection of the smoking status of mothers during pregnancy. However, in 2016, the PHA facilitated the introduction of carbon monoxide monitoring in pregnancy for all women at their booking visit. This non-invasive test makes it easier to assess exposure to smoke, allowing women to be signposted to appropriate advice and services.

Introduction of carbon monoxide monitoring is in keeping with *NICE Clinical Guideline CG62: Antenatal care for uncomplicated pregnancies*, which recommends discussion about smoking cessation at the first contact with a pregnant woman, and *NICE Public Health Guideline PH26, Smoking: stopping in pregnancy and after childbirth*, which recommends that smoking exposure is assessed through discussion and carbon monoxide testing.^{36, 37} Carbon monoxide monitoring is also recommended in the NHS England 'Saving Babies Lives' care bundle, which Northern Ireland has agreed to adopt.³⁸

Work was undertaken between the PHA Health Improvement team, the midwife consultant and the obstetric lead consultant, to determine how to ensure that all women would be offered a carbon monoxide test at their booking visit. To ensure the testing could begin, a small amount of funding was provided to Trusts for additional midwifery time. The testing commenced in October 2016. From October to December 2016, approximately 4,600 women received the test. Uptake will continue to be monitored in all Trusts.

The impact of this intervention will be measured through monitoring the reduction of smoking in pregnancy. By starting to record smoking status at delivery and postnatally, it will be possible to detect those women who have reduced or stopped smoking.

Factors associated with hospital admission in the first year of life

Successful vaccination programmes mean that fewer babies in Northern Ireland develop serious illnesses, such as measles or whooping cough, which used to be common in childhood. However, in spite of a reduction in these and other serious illnesses, attendances at emergency departments and emergency admissions of children have risen over the past few years.

One baby in five born in Northern Ireland attends an emergency department with an acute illness during their first year of life. One baby in seven is admitted to hospital as an emergency for at least one overnight stay during their first year of life.³⁹

Having to go to the emergency department with a young baby or that baby being admitted to hospital can be a major upset in the lives of these babies and their families. We want to find ways to prevent babies getting sick or needing medical attention. For those babies who do get sick or need medical attention we want to be able to provide this as close to their home and avoid hospital admission if possible.

Hospital and maternity information systems were used to identify factors that increase the chances of a baby being admitted to hospital during their first year of life. The findings showed some things that protected children from hospital admission. They also showed variation in patterns of emergency department attendances and hospital admissions across Northern Ireland that are likely to be influenced by the way services are organised and delivered in those areas:

- **Gender:** Boys are slightly more likely to be admitted to hospital during their first year of life than girls. This pattern is seen in previous studies and other countries. It is probably explained at least in part by a slightly higher incidence of certain conditions in boys.

- **Maternal age:** Babies born to younger mothers are more likely to be admitted to hospital: 22% of babies born to mothers aged under 18 were admitted to hospital compared to 12% of babies born to mothers aged between 35 and 39 years.
- **Deprivation:** Babies living in the more deprived areas are more likely to be admitted to hospital compared to babies living in the most affluent areas in Northern Ireland.
- **Breastfeeding:** Babies who were being breastfed when discharged from the maternity unit were less likely to be admitted to hospital: 11% of breastfed babies were admitted to hospital overnight during their first year compared to 15% of babies who were being fed formula when they left the maternity ward.
- **Maternal BMI:** As a mother's BMI increases, so does her baby's chance of being admitted to hospital during the first year of life: 13% of babies born to mothers with a normal BMI were admitted overnight compared to almost 17% of babies born to mothers whose BMI was greater than 40.³⁹

We would like to reduce the number of babies who have to attend the emergency department or are admitted during their first year of life. This work identifies risk factors for admission which can be targeted with the aim of improving the health of mothers and babies.

Epilepsy in pregnancy: geographical inequalities in access to services

Needs assessment is an important tool in the planning of healthcare services. It involves assessing the level of unmet need in a population, in order that changes can be put in place to address these issues. A needs assessment of women with epilepsy in pregnancy has highlighted that geographical factors can be important in determining access to care.

Epilepsy is the most common serious neurological disorder in the UK, affecting 7–8 per 1,000 people.⁴⁰ Approximately 23% of those with epilepsy are women of childbearing age.⁴¹ Pregnancy can adversely affect seizure control and anti-epilepsy drugs can adversely impact the outcome for the infant, with complications including congenital malformations and adverse psycho-motor development. Due to the complexities of epilepsy in pregnancy, it is recommended that an epilepsy specialist manages care, rather than generalists. Joint care between an epilepsy specialist and obstetrician is currently provided by the regional, but not peripheral, maternity units in Northern Ireland.

To inform service development, the influence of demographic and socioeconomic factors on access to joint obstetric and neurology services for women with epilepsy was investigated. Demographic (age, parity, HSC Trust of residence) and socioeconomic (employment status, deprivation level) data on women with epilepsy delivering their babies between 1 January 2012 and 31 December 2014 were analysed.

Just over half (52%) of all women with epilepsy in Northern Ireland, and 63% outside the regional unit catchment area, do not access the Joint Obstetric/Neurology service. Deprivation level and employment status were not found to be associated with access to the Joint Obstetric/Neurology services.

For women outside the regional unit's catchment area, there was no significant difference in employment status ($p = 0.51$) between women who accessed the Joint Obstetric/Neurology service (70.4% employed, 16.3% unemployed) and women who did not (71.8% employed, 11.5% unemployed).

Similarly, for women outside the regional unit's catchment area, there was no significant difference in proportions by deprivation quintile ($p = 0.67$) between women who accessed the Joint Obstetric/Neurology service (14.3% and 11.9% in the most and least deprived quintiles respectively) and women who did not (18.5% and 11.2% in the most and least deprived quintiles respectively).

However, those from locations geographically distant to the regional unit and those of a younger age were much less likely to access the joint services. Trust residence was the strongest independent predictor of access to the service. Women from adjacent HSC Trusts (South Eastern and Northern) were much more likely to access Joint Obstetric/Neurology services at the regional unit than those from the most distant Trust (Western) ($p < 0.0001$). Maternal age was also an independent predictor of delivery location. Younger women were more likely to deliver at peripheral units ($p = 0.03$).

National recommendations are that care for women with epilepsy during pregnancy is shared between an epilepsy specialist and obstetrician.⁴²⁻⁴⁴ A multi-disciplinary group has developed proposed service models to deliver equal access to the Joint Obstetric/Neurology service for women with epilepsy in Northern Ireland.

Needs assessment of individuals in custody suites

People in contact with the criminal justice system often experience multiple, complex health issues, and have proportionately more risk factors for suicide than the general population, including increased prevalence of mental illness, substance misuse and socioeconomic deprivation.⁴⁵ Custody suites are recognised as an area of significant risk for the Police Service of Northern Ireland (PSNI), and there is a statutory obligation for clinical attention to be provided to individuals detained in custody to ensure safe detention.⁴⁶ This is currently provided by Forensic Medical Officers (FMOs).

The PHA worked with the PSNI to conduct a health needs assessment of individuals detained in PSNI custody suites. This involved analysis of demographic and risk assessment data from the custody record management system, as well as a review of 400 encounters of FMOs with detainees.

Key findings

- There are approximately 27,000 detentions in PSNI custody each year, in 12 custody suites located across Northern Ireland.
- Over 90% of those detained in PSNI custody suites are there for less than 24 hours.
- The vast majority (94%) of individuals in custody see an FMO; the most common reason for this is to assess fitness for detention and/or interview.
- High levels of self-harm, suicidal ideation and mental illness were observed:
 - 18.6% of all detentions in 2015 had an associated 'self-harm' warning and 6.2% had a 'suicidal' warning on the custody record.
 - Approximately 1 in 8 detainees (13.2%) seen by an FMO, reported active suicidal ideation and over 70% had additional risk factors for suicide as defined by the College of Policing.⁴⁷
 - 44.4% of detainees reported a history of depression, and 32.9% were taking anti-depressant medication; this was the most commonly reported medication amongst detainees.

- The levels of self-harm, suicidal ideation and mental health illness were higher than those observed in police custody health needs assessments undertaken in multiple locations in England.
- There were high levels of alcohol and drug use among detained persons, with around 10% having dependence.

The PHA is continuing to support the PSNI with the development of their healthcare provision. This health needs assessment has highlighted the need for clear referral pathways and integration with mental health and substance misuse services, to ensure that individuals in custody are facilitated to access appropriate interventions.

Research and development

A strong association between deaths from suicide and deprivation in Northern Ireland

You only leave once? Transitions and outcomes for care leavers with mental health and/or intellectual disabilities

Research and development

The HSC Research and Development division of the PHA aims to fund research that can secure lasting improvements in the health and wellbeing of the entire Northern Ireland population.

Two examples of work undertaken in the year 2016 are outlined below.

A strong association between deaths from suicide and deprivation in Northern Ireland

The suicide rate for the most deprived areas of Northern Ireland is higher than that in the least deprived areas. While the inequality gap has narrowed over time, there is still a significant difference. In the most deprived areas of Northern Ireland, the rate in 2012–14 was 27.2 deaths per 100,000 of the population. In the least deprived areas this rate was only 9.2 per 100,000.⁴

HSC Research and Development funded a study into deaths by suicide based on analysis of the Northern Ireland Coroner's Database.⁴⁸ Part of this study aimed to examine factors relating to the area within which the person resided at the time of death.

Deaths recorded within the Northern Ireland Coroner's Office from 2005 to 2011 inclusive were analysed in terms of standardised mortality ratios within electoral wards (of which there are 582 in Northern Ireland) and local government districts (LGDs). LGD analysis was based on the 26 LGDs in Northern Ireland which existed prior to the 2015 reorganisation which led to 11 new LGDs.

The study investigated the effects of area deprivation, religious composition and age structure of the population in the area in terms of suicide rates.

The study showed that there was considerable variation between the numbers of recorded deaths by suicide in each analysed area. There was a strong association between deprivation and the number of deaths by suicide in the areas.

When LGDs were examined, it appeared that larger urban areas of the population were most affected, particularly Belfast. The difference was associated with the level of deprivation in the area.

When deaths were analysed by ward, 33 wards (6%) with death from suicide had an excess of 50% more deaths above the societal average; 70% of these 33 wards were in the top 100 areas as ranked by the NI Multiple Deprivation Measure.

The religious composition of the area did not appear to have an impact on the suicide rate in the area. There was also no difference between 16–39 year olds and 40–64 year olds in suicide rates when the number of individuals in each age group in the area was taken into account.

The research team has made recommendations based on their analyses and the wider framework of knowledge. These fall under the areas of Policy and Principles, Services, and Research, and will be used to guide further work in suicide prevention.

You only leave once? Transitions and outcomes for care leavers with mental health and/or intellectual disabilities

The challenge

While most children and young people with disabilities live safely with their birth families, they are still at higher risk of abuse or neglect than other children. They also continue to be over-represented in the population of young people leaving care in Northern Ireland (in 2015/16 it was 15%, compared to 6% in the general population). However, very few studies have specifically examined the characteristics or experiences of care leavers who have disabilities as they transition from care into their young adult lives.

The study

The You only leave once? (YOLO) study addressed this gap in knowledge by investigating transitions and outcomes for care leavers with mental health and/or intellectual disabilities in Northern Ireland.⁴⁹ The PHA funded this research study which was conducted by researchers at Queen's University Belfast. An exciting and progressive aspect of the study was that the research team included four peer researchers. The study had two main parts; first, the team conducted a profiling survey of the 314 care leavers in Northern Ireland on 30 September 2013 who were identified as having mental health needs (57.3%) and/or an intellectual disability (42.7%). They represented 23.5% (314/1,339) of the total number of care leavers on that date. Case study interviews were then conducted with 31 of these care leavers to explore their experiences of leaving care and transitioning from child to adult services.

What it showed

There were a number of key findings for care leavers with mental health and/or intellectual disabilities:

- There are fewer opportunities for these young people to stay with their former foster carers when leaving care, compared to the wider population leaving care. Young people leaving residential care can have abrupt moves at age 18.
- Many of the care leavers experienced financial difficulties. Almost one third were not in education, employment or training and only 1 in 10 were employed.
- Support becomes more limited as young people get older; 16+ services are reduced at age 18 and stop at age 21 for those not in education, employment or training.
- These young people have a low level of engagement in mental health and disability services.
- There are gaps in services and a shortage of long-term supported accommodation and in-patient care.
- The young people experience stigma and discrimination due to their status as care leavers, their disabilities and their mental health.

Next steps

The report has made a range of recommendations for policy and practice to improve the identification, assessment and response to the needs of this important group. A central theme in these recommendations is the importance of recognising that care leavers with mental health and/or intellectual disabilities have complex needs that require coordinated care and support especially at times of transition.

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Further information 

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These tables and further key statistical data relating to inequalities in health are available to download from the PHA website at www.publichealth.hscni.net

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