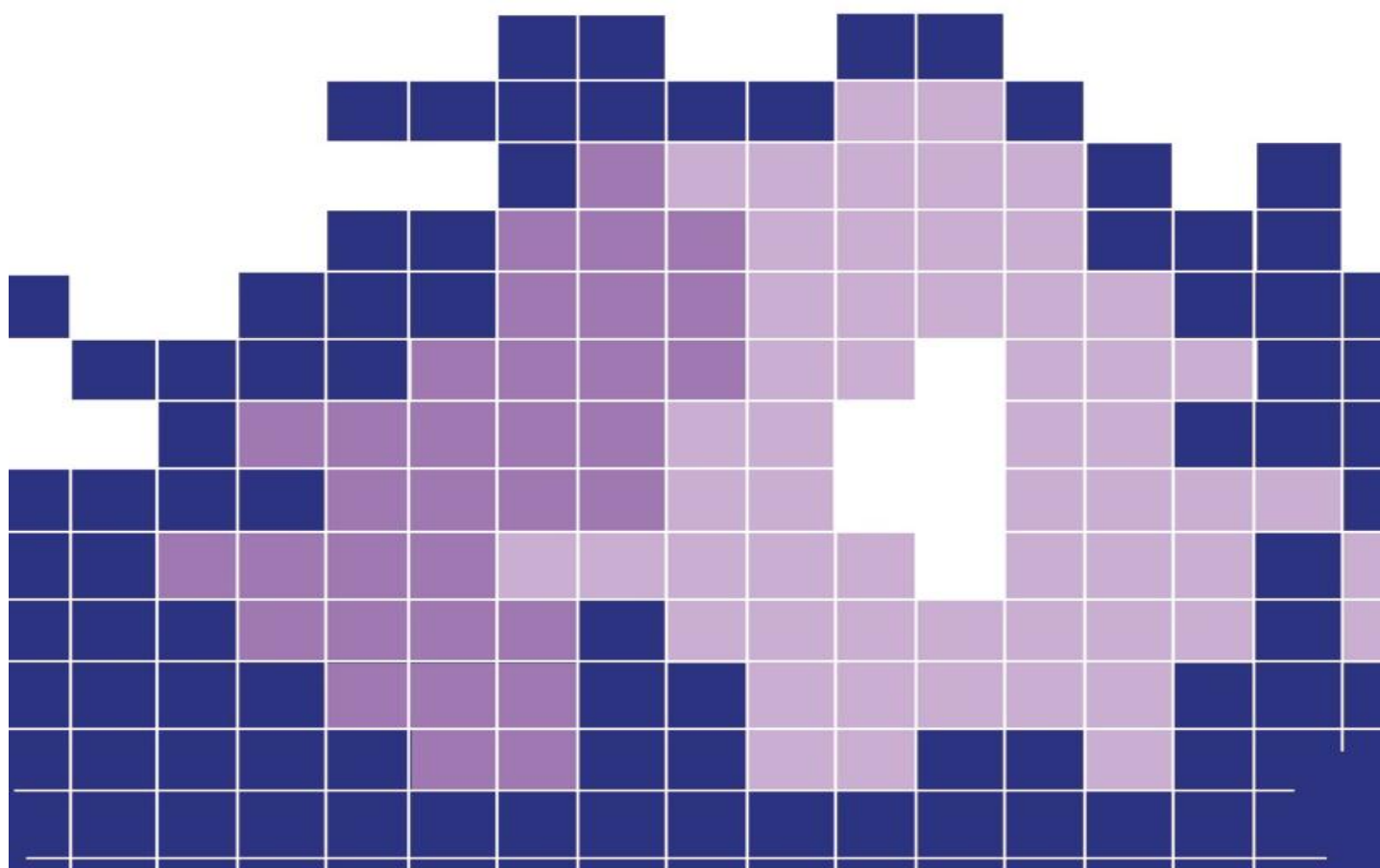


Northern Ireland Registry of Self-Harm

Western Area

Six Year Summary Report 2007–2012

Incorporating Supplement 1: Repetition of self-harm in the
Western Area of Northern Ireland



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1. Foreword

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The recent World Health Organization (WHO) publication *Preventing Suicide – A Global Imperative*¹ highlighted the importance of adopting a Public Health approach to addressing suicide prevention, one which is underpinned by surveillance, ie defining the problem of suicidal behaviour through systematic data collection. The report highlights the need for standardisation of information and recording of self-harm episodes attending emergency departments as one of the basic tasks needed in all countries, in an effort to understand more fully the issue and eventually reduce deaths by suicide. The publication specifically references the model of data collection developed by the National Suicide Research Foundation (NSRF) in Cork as a model of best practice. It is this model of data collection and recording that forms the basis of this report, working in cooperation with the Health and Social Care Trusts.

The model of monitoring self-harm in a consistent and systematic manner has been operational in the Republic of Ireland since 2002. In 2007, a pilot initiative was commissioned as part of the implementation of the ‘Protect Life’ strategy, to test a model of reporting in Northern Ireland.

The Self-Harm Registry was initially piloted in the Western Health and Social Care Trust (WHST) area covering the period 2007–2010. Following the success of the project, the initiative was mainstreamed and rolled out to all five Health and Social Care (HSC) Trust areas in Northern Ireland in April 2012. The Registry now reports data to the Department of Health, Social Services and Public Safety (DHSSPS) and HSC Trusts on a quarterly basis and has commenced work on the retrospective collection of data for all five Trusts.

Critical to good Public Health practice is the appliance of an epidemiological approach that studies the patterns, causes and effects of self-harm in defined populations. Such an approach informs policy decisions and evidence-based practice by identifying risk factors for issues such as self-harm, while also targeting preventive healthcare. The process includes the collection and statistical analysis of data, and interpretation and dissemination of results (including peer review and occasional systematic review), which ultimately informs the development and design of effective services.

Data has now been collected for the WHST area for six full calendar years, which provides sufficient statistics over a significant period of time to begin analysis of trends and highlight key issues in respect of self-harm prevalence in the WHST area. The purpose of this report is to demonstrate how the Registry can be used in the future to define trends in Northern Ireland and allow comparable analysis with data collected in the Republic of Ireland. Given the extensive amount of data that is now available, the Public Health Agency (PHA), in partnership with NSRF, is publishing a number of supplementary reports that will focus on specific issues relating to self-harm.

This first publication gives an overview of the total numbers of presentations in the Western area for the six years from 2007–2012. Perhaps more significantly, the focus for this first report is on the issue of repetition. It is acknowledged that those who repeat the act of self-harm are at higher risk of taking their own lives by suicide, therefore understanding the patterns associated with the acts of repetition can help service planners better meet the needs of those populations at increased risk.

¹ World Health Organisation (2014). *Preventing Suicide – A Global Imperative*. WHO: Luxembourg.

I would like to acknowledge the partnership and support of NSRF in relation to data analysis, technical support and scientific support, the work of the Data Registry Officers in the data collection process, and the staff team within the PHA for the management and production of the report.

This publication and the subsequent supplementary reports shine a light on the problem of self-harm and will be helpful to anyone who has an interest in self-harm, suicide prevention, promoting positive mental health, and the wider social determinants of wellbeing. In responding to the findings of this report, I am confident that collectively, working in partnership, we will bring about tangible benefits for those individuals who self-harm, and their families/carers.

Dr Carolyn Harper

Medical Director/Director of Public Health

Public Health Agency for Northern Ireland

2. Background / Purpose of the Registry

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Numerous studies have found that engagement in self-harm is the strongest predictor of future suicidal behaviour, both fatal and non-fatal. The Registry is a unique health information system for a number of reasons. It provides real-time data on hospital-treated self-harm, which can contribute to identifying patterns of self-harm, such as emerging high-risk groups and self-harm clusters as well as the use of 'new' methods of self-harm.

This will ensure that self-harm patterns occurring in Northern Ireland can be identified and can inform the development of both local self-harm and suicide prevention action plans, and the wider delivery of mental health services.

During the cumulative years of Registry data collection, a considerable amount of useful information has been obtained. The findings to date from the Registry have been used to highlight the incidence of self-harm presentations to emergency departments (EDs), raise awareness of self-harm issues within the health and social care setting, and influence the redesign of services.

While previous reports in Northern Ireland and the Republic of Ireland have focused on in-year data, this is the first report covering the cumulative years from 2007 to 2012 since the pilot stage that began in 2007 in the Western Area of Northern Ireland. This level of area-wide data allows for a robust analysis of long-term trends, highlighting changes in self-harm behaviour and reinforcing the importance of self-harm data collection and analysis.

Finally and most importantly, the data in this report can be used to inform policy and enable resources to be targeted towards improving services to meet the needs of those who engage in self-harm.

The results allow comparison of data with the Republic of Ireland and demonstrate the benefits of collaborative working with NSRF in the Republic of Ireland to examine the issue of self-harm within the island of Ireland. The results can also be used to make comparisons with rates in Britain and elsewhere.

Acknowledgements

The authors would like to acknowledge the support and contribution of all those who assisted in the initial development of the project and subsequent publication of the report, in particular:

- the management and staff of WHSCT for their support and assistance in the data collection process, including the Data Collection Officer;
- Co-operation and Working Together (CAWT) for the establishment of the pilot project in the WHSCT area;
- Professors Keith Hawton and Rory O'Connor for their initial supervision and overview of the project and continued support;

- the legacy Western Health and Social Services Board (WHSSB) for their leadership in establishing the project between 2007–2009, ensuring the foundations for the data collection process;
- members of the initial and current Project Steering Group for their invaluable support and insight.

3. Executive Summary

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This is the fourth report from the Northern Ireland (NI) Registry of Self-Harm since its pilot stage in 2007 and the first report to examine long-term trends. The NI Registry is part of the Northern Ireland suicide prevention strategy *Protect Life: A Shared Vision*.²

The NI Registry operates in collaboration with the National Registry of Deliberate Self-Harm in the Republic of Ireland, which was established in 2000. The NI Registry uses a comparable methodology to that of the National Registry of Deliberate Self-Harm, recording presentations to hospital EDs involving self-harm.

This report is a summary report of the six-year period between 2007–2012 and will be accompanied by a series of supplementary reports, each focusing on a particular aspect of hospital-treated self-harm in the Western Area of Northern Ireland, namely:

1. repetition of self-harm;
2. aftercare of self-harm;
3. methods of self-harm (including alcohol involvement);
4. socioeconomic factors associated with self-harm.

This current report includes Supplement 1: Repetition of self-harm, which explores the complex issue of repeated self-harm and the factors that influence repetition.

Key Outcomes

- Number of attendances

During 2007–2012, there were 8,175 self-harm presentations to hospital, involving 4,733 individuals. Residents of the catchment area accounted for 8,024 (98.2%) of the presentations and 4,618 (97.6%) of the individuals. Female residents accounted for 53.6% (n=4,298) of these presentations and 53.7% (n=2,479) of the individual patients.

- Incidence rates

Respectively, the total, male and female age-standardised incidence rate was 342, 320 and 366 per 100,000 of the population. Derry City Council residents had a much higher self-harm rate than other Local Government Districts (LGDs). The peak rate for women was among 15–19 year olds (837 per 100,000). This rate implies that one in every 119 girls in this age-group presented to hospital with self-harm. The peak rate among men was among 20–24 year olds (809 per 100,000, or one in every 124). The rate of self-harm in 2012 was 6% higher than that in 2007, an increase that was more pronounced for males than females (9% and 3% respectively).

² Protect Life: A Shared Vision - The Northern Ireland Suicide Prevention Strategy 2006-2011

- Methods of self-harm

The most common method of self-harm was intentional drug overdose, which was involved in over two thirds of all presentations and more common among men than women (79% v 70%). Self-cutting was the next most common method of self-harm, used in almost one fifth of all episodes. While rare as a method of self-harm, alcohol was involved in 60% of all presentations.

- Repetition of self-harm

During the period 2007–2012, 4,733 individuals engaged in 8,175 self-harm presentations. Considering the period 2007–2011, which allows for a one-year follow-up, there were 6,706 self-harm presentations by 4,041 patients. The rate of repetition within 12 months was 33.8% based on presentations (2,266 of 6,706) and 18.0% based on persons (726 of 4,041). This implies that over one-third of all presentations were due to repeat acts.

There was variation in the rates of repetition by LGD. The highest rates of repetition were for Derry LGD (19.8%) and Limavady LGD (18.6%). The lowest rate of repetition was recorded in Omagh LGD (13.5%) and this didn't appear to vary across the study period.

The majority of self-harm patients presented to hospital just once during the six-year study period (n=3,455, 73.0%). However, a percentage of individuals repeated self-harm multiple times during this period. In total, 58 individuals repeated 10 or more times. While this is a relatively small group of people, they account for a significant proportion of presentations (12.6%).

Almost one in five individuals (18%) treated for self-harm made at least one repeat presentation to hospital with self-harm within 12 months. Having a previous history of attending the ED with self-harm increased the likelihood of repeating and the risk increased with each subsequent presentation of self-harm.

Self-cutting was associated with an increased level of repetition, with 26% of those who engaged in self-cutting at the time of the index episode making at least one subsequent presentation within 12 months. Risk of repetition was greatest in the days and weeks following a self-harm presentation to hospital. Rates of repetition were highest among those who left the ED without seeing the doctor.

Discussion points

The report highlights the incidence of self-harm in the Western Area of Northern Ireland, with the highest rates being observed among females and young people. In addition, rates were higher in urban areas, which is consistent with international findings. While the rates reported here are higher than those recorded in the Republic of Ireland³ or England⁴, the profile and pattern of self-harm presentations is consistent.

³ Griffin, E. Arensman, E. Wall, A. Corcoran, P. Perry, JJ. (2013) National Registry of Deliberate Self Harm Annual Report 2012. Cork: National Suicide Research Foundation.

⁴ Hawton, K. Bergen, H. Casey, D. Simkin, S. et al (2007). Self-harm in England: a tale of three cities. Multicentre study of self-harm. *Social Psychiatry and Psychiatric Epidemiology*. 42(7):513-21

The impact of the recent economic recession on rates of suicide observed in the European Union (EU)^{5,6} and US^{7,8} has not been reflected to the same extent in the Western Area. Between 2007–2012, there was just a 6% increase in rates of self-harm in the Western area. Rates of suicide in the Western Area showed some evidence of a downward trend during this time.. This evidence that changes in rates of self-harm and suicide in the Western Area were less pronounced than in other European countries may reflect a possible buffering effect of protective factors, which would be important to explore in further detail.

One such protective factor may have been high levels of public sector spending across Northern Ireland, which may have buffered the impact of the recession, potentially reducing the impact on construction and other industries. However there has been a reduction in public spending in more recent years with capital spending reduced by 37% between 2010 and 2014. A further protective factor may have been the implementation of self-harm and suicide prevention initiatives as part of the *Protect Life* strategy. During the period covered by this report, there was investment in two self-harm specific services in the Western Trust area, namely a pilot community-based service known as the Self-Harm Interagency Network (SHINE) and the resourcing of additional staff within the Trust Mental Health services to address the issue of self-harm.

The association between non-fatal self-harm and risk of future suicide has been established internationally and there is also growing evidence that increasing rates of self-harm, particularly among men, are likely to be followed by increasing rates of suicide. This highlights the importance of further research using data linkage studies of self-harm data with suicide mortality data, in order to better understand the predictors of suicide risk in Northern Ireland.

This report incorporates Supplement 1, which examines the issue of repetition among self-harm patients in the Western Area. This information will be of value both to EDs and mental health departments, helping to inform risk assessment and also future service developments. The findings reveal that 18% of all patients who attended EDs in the Western Area with self-harm had a repeat episode of self-harm within 12 months. Overall, 34% of self-harm presentations were due to a repeat act. These figures are within the range of repetition rates reported in the international literature. This highlights the need to address the issue of repeated self-harm in order to improve the lives of people who self-harm as well as minimising the impact on hospital services.

The findings show that risk of repetition was greatest in the first three months following an index episode of self-harm. A number of factors associated with increased risk of repetition were identified in this analysis, in particular self-harm involving self-cutting. Previous research has highlighted increased risk of non-fatal repeated episodes of self-cutting where less extensive medical treatment was required.⁹ Future work should focus on establishing the risk of fatal suicide among those who engage in self-cutting.

⁵ Reeves, A. McKee, M. Stuckler, D. (2014) The Great Recession, unemployment and suicide. *J. Epidemiol. Community Health*, 05(3):246-7

⁶ Stuckler, D. Basu, S. Suhrcke, M. Coutts, A. et al (2011) Effects of the 2008 recession on health: a first look at European data. *Lancet*. 9;378:124-5

⁷ Kaplan, MS. Huguette, N. Caetano, R. Giesbrecht, et al (2014) Economic contraction, alcohol intoxication and suicide: analysis of the National Violent Death Reporting System. *Injury Prevention*. doi:10.1136/injuryprev-2014-041215

⁸ Reeves, A. Stuckler, D. McKee, M. Gunnell, D. et al (2012). Increase in state suicide rates in the USA during economic recession. *Lancet*. 380:1813-4.

⁹ Larkin, C. Corcoran, P. Perry, J. Arensman, E. (2013). Severity of hospital-treated self-cutting and risk of future self-harm: a national registry study. *Journal of Mental Health*. DOI: 10.3109/09638237.2013.841867.

The factor most strongly associated with risk of repetition was the number of self-harm presentations a person had made, further illustrating the ‘dose-response relationship’ between number of presentations and risk of repetition.¹⁰ In addition, the findings highlight that a small number of individuals account for a significant proportion of all presentations. Frequent repetition of self-harm has previously been associated with a high prevalence of personality disorders and there is growing evidence for interventions such as Dialectical Behavioural Therapy for such patients.¹¹

The report has also identified that a relatively large proportion of those who left the ED without being seen were more likely to repeat again within 12 months (26.5%). This underlines the need for uniform assessment and management of self-harm patients in the ED in line with international best practice. It also highlights the need to implement measures that minimise the risk of patients leaving the ED without being seen and ensure appropriate follow-up for those who do leave without being seen.¹²

Additionally, the findings emphasise the importance of implementing and evaluating self-harm awareness training for all ED staff. There is evidence that having a psychosocial assessment following self-harm is associated with lower rates of non-fatal repetition, highlighting the importance of having appropriate services in place to offer psychosocial assessment.^{13,14} The second supplement of the six-year summary report will specifically focus on aftercare of self-harm, and will further explore the outcomes of self-harm patients in terms of the care pathway for those attending the ED with self-harm.

Recent publications

The six year data from the Western Area of Northern Ireland has recently been included in two peer-reviewed papers, one exploring the incidence of hospital-treated self-harm in the area (Corcoran et al, forthcoming) and the other comparing self-harm involving overdose with the Republic of Ireland.¹⁵ Please see Appendix 2 for the abstracts from these papers.

Authors

This report was compiled by NSRF in Cork, with input from Professor Ella Arensman, Dr Eve Griffin, Ms Caroline Daly and Ms Amanda Wall, in collaboration with the PHA in Derry, in particular Mr Brendan Bonner and Dr Denise O’Hagan.

¹⁰ Perry, JJ, Corcoran, P, Fitzgerald, AP, Keeley, HS, et al (2012). The incidence and repetition of hospital-treated deliberate self harm: findings from the world’s first national registry. *PLoS One*. 7(2):e31663. doi: 10.1371/journal.pone.0031663.

¹¹ O’Connell, B, Dowling, M. (2014). Dialectical behaviour therapy (DBT) in the treatment of borderline personality disorder. *Journal of Psychiatric and Mental Health Nursing*. 21(6):518-25.

¹² National Institute for Health and Clinical Excellence. (2011). Self-harm-The short term physical and psychological management and secondary prevention of self-harm in primary and secondary care. <http://www.nice.org.uk/guidance/cg16>

¹³ Bergen, H, Hawton, K, Waters, K, Cooper, J, Kapur, N. (2010). Psychosocial assessment and repetition of self-harm: the significance of single and multiple repeat episode analyses. *Journal of Affective Disorders*. 127(1-3):257-65.

¹⁴ Kapur, N, Steeg, S, Webb, R, Haigh, M, Bergen, H, Hawton, K, Ness, J, Waters, K, Cooper, J. (2013). Does clinical management improve outcomes following self-harm? Results from the multicentre study of self-harm in England. *PLoS One*. 8(8):e70434. doi: 10.1371/journal.pone.0070434.

¹⁵ Griffin, E, Corcoran, P, Cassidy, L, O’Carroll, A, Bonner, B. (2014) Characteristics of hospital-treated intentional drug overdose in Ireland and Northern Ireland. *BMJ Open*, 4(7)

4. Project Management

4. Project Management

A Project Steering Group oversees the project and provides expertise on direction and implementation. The group monitors the progress of the project and ensures adherence to the project plan. It meets quarterly and receives regular updates from the Project Manager.

The initial Project Steering Group was made up of representatives from the DHSSPS, WHSCT, PHA, Health and Social Care Board (HSCB), NSRF and CAWT.

Following the Review of Public Administration in Northern Ireland in 2009, a new regional body was established, the PHA. Responsibility for management of the Registry subsequently transferred over to the PHA and the Project Steering Group was restructured to reflect the regional mainstreaming of the initiative in 2012. The new membership consists of directors and senior managers from the following agencies: the HSCB, five local HSCTs, Police Service of Northern Ireland (PSNI), NSRF, DHSSPS and PHA. The group is chaired by the Assistant Director for Public Health (Health Improvement). The group also reports via sub-groups into the HSCB Mental Health Commissioning Team.

5. Methods of data collection

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Setting, registry coverage and study period

There are five HSCTs in Northern Ireland, and the Western HSCT Area defined the study catchment area for this summary report. It has a population of almost 300,000 (296,610 in 2012), accounting for 16.3% of the total Northern Ireland population (1,823,634 in 2012). The Western Area is made up of the predominantly urban area of Derry City Council (population 108,586 in 2012) and four less densely populated district council areas: Fermanagh (population 62,400 in 2012), Limavady (population 33,760 in 2012), Omagh (population 51,830 in 2012) and Strabane (population 40,033 in 2012). This summary report covers the six year period January 2007 to December 2012.

During the study period, the Western Area was serviced by three hospital EDs – Altnagelvin Hospital (Londonderry), South West Acute Hospital, and Tyrone County Hospital, Omagh. The latter was downgraded from an ED to an urgent care department in March 2009, after which the number of self-harm presentations were greatly reduced and Registry data collection ceased in December 2010. To this end, this report includes data on self-harm presentations to Tyrone County Hospital for the period 2007–2010, and to Altnagelvin Hospital and Erne Hospital for 2007–2012.

Definition of Self-Harm

Many terms have been used in the past to describe self-harming behaviour. Some of these terms can add to the misunderstanding and stigma that often surrounds the issue of self-harm. The National Institute for Health and Care Excellence (NICE) has recommended use of the term ‘self-harm’.

For the purposes of this report, the term ‘self-harm’ is used to refer to acts that were referred to as ‘deliberate self-harm’ in earlier reports from this Registry. The term ‘deliberate self-harm’ itself was a replacement for the word ‘Parasuicide’. The definition of ‘Parasuicide’ was developed by the WHO/Euro Multicentre Study Working Group as:

‘An act with non-fatal outcome in which an individual deliberately initiates a non-habitual behaviour, that without intervention from others will cause self-harm, or deliberately ingests a substance in excess of the prescribed or generally recognised therapeutic dosage, and which is aimed at realising changes that the person desires via the actual or expected physical consequences.’

Inclusion Criteria

The following are considered to be self-harm cases:

- All methods of self-harm, ie. drug overdoses, alcohol overdoses, lacerations, attempted drowning, attempted hanging, gunshot wounds etc, where it is clear the self-harm was intentionally inflicted.
- All individuals who are alive on presentation to hospital following an act of self-harm.

Exclusion Criteria

The following are NOT considered to be self-harm cases:

- Accidental overdoses, eg. an individual who takes additional medication in the case of illness, without any intention to self-harm.
- Alcohol overdoses alone where the intention was not to self-harm.
- Accidental overdoses of street drugs, ie. drugs used for recreational purposes, without the intention to self-harm.
- Acts of self-harm by individuals with learning disability.
- Individuals who are dead on arrival at hospital as a result of suicide.

Data Recording and Case Finding

Two of the three EDs in the hospitals within the Western Area use the same system, called 'Symphony', for collecting data. A basic query is carried out using a keyword search to identify potential self-harm cases. The data collector then checks each of the potential cases and, using the inclusion / exclusion criteria, identifies the actual self-harm cases. Anonymised information on these cases is then entered into a data entry system for analysis. The identification of cases and the detail regarding each episode recorded by the Registry is dependent on the quality of clinical records kept.

Data Items

A minimal dataset has been developed to determine the extent of self-harm, the circumstances relating to the act, and to examine trends by area. Reference numbers and area codes are encrypted prior to data entry to ensure that it is impossible to identify an individual on the basis of the data recorded.

- **Reference Numbers**
Two reference numbers are recorded. One number refers to the ED episode, which is automatically assigned by the ED computer system. The second number refers to the patient's Health and Care number, which is used to highlight repeat attendances. These numbers are encrypted prior to entry and can only be decrypted by the data recorder.
- **Gender**
- **Age**
- **Date and Hour of Attendance**
- **Brought By**
The method of arrival is recorded to identify self-referrals and the use of the three emergency services.
- **Transfer**
This identifies if the presentation was a transfer to / from another hospital.
- **Admission**
Admission details are recorded to identify those who are subsequently admitted to either the general hospital or psychiatric hospital. If the patient is not admitted, the details are also captured on whether it was a planned discharge or whether the patient left the ED against medical advice.

- **Method(s) of Self-Harm**

The method(s) of self-harm are recorded in line with the tenth revision of the WHO's International Classification of Diseases codes for intentional injury (ICD-10 X60-X84). The main methods are overdose of drugs and medications (X60-X64), self-poisonings by alcohol (X65), poisonings that involve the ingestion of chemicals, noxious substances, gases and vapours (X66-X69), and self-harm by hanging (X70), drowning (X71) and sharp object (X78). Some individuals may use a combination of methods, eg. overdose of medications and laceration of wrists. To this end, when methods of self-harm are reported, the numbers refer to presentations where a method was involved, unless otherwise stated.
- **Drugs Taken**

Where applicable, the name and quantity of drugs taken are recorded.
- **Area Code**

The postcode/area code is recorded. Once entered, the postcode is replaced by a ward name to prevent the individual's post code data from potentially identifying them. This is non-reversible and is one of the security mechanisms employed to keep the system anonymised.
- **Seen By**

This identifies cases that were seen/assessed by a clinician and those who leave before receiving any treatment.
- **Card Before You Leave**

The Registry has been modified to record Card Before You Leave. This initiative commenced on 1 January 2010 and is therefore not included in this report.

Confidentiality

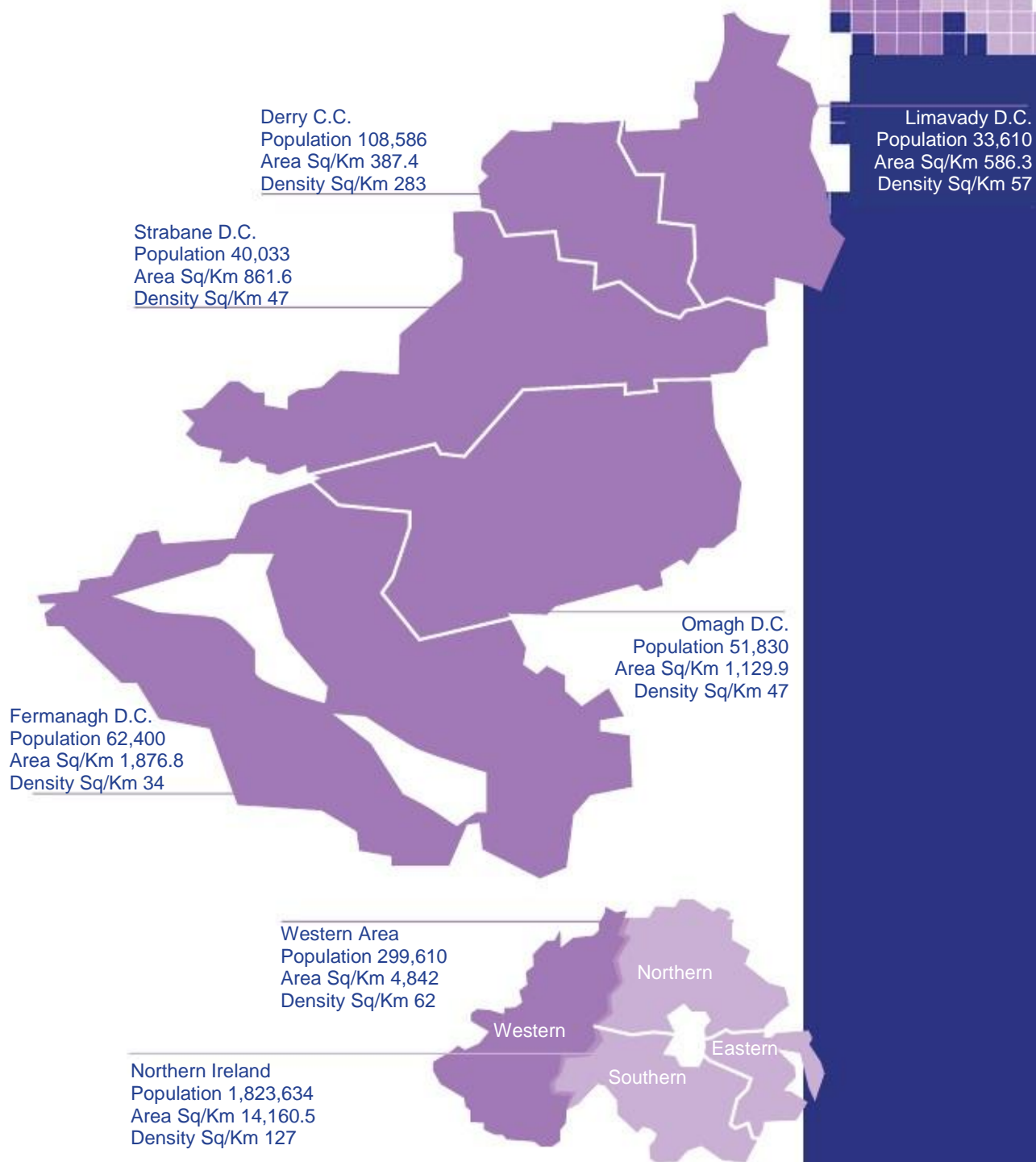
Confidentiality is strictly maintained. The data collector has completed data protection training and is legally required to follow standards of the Data Protection Act and any additional data security policies set out by the WHSCT, HSCB and PHA. No identifiable client information is recorded or used in reports. The data collector is monitored by an appropriately qualified Regional Board Officer and has direct access to this Officer if queries arise in relation to patient level data or data security.

Quality Assurance

A number of audits have been carried out to check the accuracy of the data collection process. The outcome of the audits concluded that the process used was both effective and efficient. A quality assurance exercise involved the data collector applying the same case-finding process to data from another hospital participating in the Registry. The cases identified were compared with those identified by another data collector. The outcome of this provided assurance that both data collectors were working to the same level and applying the criteria correctly.

Map of Local Government Districts in Western Area of Northern Ireland

(Regional population based on 2012 estimates)



Caution

The identification of cases and the detail regarding each episode recorded by the Registry is dependent on the quality of clinical records kept. Where differences between geographical areas are highlighted, it is important to note that these are not necessarily statistically significant. This particularly applies to analyses by gender and age, where the number of cases may be relatively small. Therefore, caution should be exercised in interpreting such findings.

Calculation of Rates

Self-harm rates were calculated based on the number of people resident in the relevant area who presented to a WHSCT hospital as a result of self-harm. Calculations of self-harm rates were confined to areas of the WHSCT, and therefore are limited to residents of the WHSCT only. Crude and age-specific rates per 100,000 of the population were calculated by dividing the number of people who engaged in self-harm (n) by the relevant population figure (p) and multiplying the result by 100,000, ie. $(n/p) \times 100,000$. Calculation of rates has been based on 2010 mid-year estimates of the population of the Western area derived from the 2001 Census. European age-standardised rates (EASRs) are the incidence rates that would be observed if the population under study had the same age composition as a theoretical European population. Adjusting for the age composition of the population being studied ensured that differences observed by gender or area are due to differences in the incidence of self-harm rather than differences in the composition of the populations. EASRs were calculated as follows – for each five year age group, the number of people who engaged in self-harm was divided by the population at risk and then multiplied by the number in the European standard population. The EASR is the sum of these age-specific figures.

Repetition of Self-Harm

Analysis of repetition used a 12 month follow-up period, ie. a self-harm patient repeated if they presented again to one of the three hospital EDs due to self-harm in the 365 days following an index presentation. Therefore, the repetition analysis in section 7 of this report was confined to self-harm patients treated between 2007–2011, which allowed patients the 12 month follow-up period required for the repetition outcome.

Comparisons

Internationally, there is limited routine data available on self-harm presentations to EDs. The Northern Ireland Registry is modelled on the Irish National Registry of Deliberate Self-Harm, which provides a unique opportunity for robust cross-country comparisons. In addition, the approach is similar to that of the Multicentre Study of Self-Harm in England. To this end, comparisons are made in this report with findings from the National Registry of Deliberate Self-Harm in the Republic of Ireland (using data from 2012)³ as well as from the Multicentre Study of Self-Harm in England (using data from 2010).¹⁶ Self-harm data for Northern Ireland available for 2012/13 is also drawn upon.¹⁷

³ Griffin, E. Arensman, E. Wall, A. Corcoran, P. Perry, JJ. (2013) National Registry of Deliberate Self Harm Annual Report 2012. Cork: National Suicide Research Foundation.

¹⁶ Multicentre Study for Self-Harm, England. <http://cebmh.warne.ox.ac.uk/csr/mcm/>

¹⁷ Public Health Agency (2013). Northern Ireland Registry of Self-Harm Annual Report 2012/13. Derry: Public Health Agency

6. Self-Harm in the Western Area

6. Self-Harm in the Western Area

For the period from 1 January 2007 to 31 December 2012, the Registry recorded 8,175 self-harm presentations to EDs in the Western Area, involving 4,733 individuals. The person-based age-standardised rate of individuals presenting to EDs following self-harm during this period was 342 per 100,000 (CI: 334 to 351).

The person-based age-standardised rate of self-harm for men and women was 320 and 366 per 100,000 respectively. During this six year period, 54% of all presentations were made by females and 46% were made by males. The rate of self-harm in 2012 was 6% higher than in 2007, an increase that was more pronounced for males than females (9% and 3% respectively) (Table 1 and Figure 1).

Table 1: Person-based age-standardised rate (EASR) of self-harm, by gender, per 100,000, 2007–2012

Year	Males	% Diff*	Females	% Diff*	Total	% Diff*
2007	315	-	374	-	344	-
2008	310	-1.6%	377	0.8%	343	-0.4%
2009	299	-3.7%	336	-10.9%	317	-7.7%
2010	317	6.2%	395	17.7%	356	12.3%
2011	335	5.5%	333	-15.7%	333	-6.2%
2012	342	2.4%	385	15.6%	364	9.1%
07-12	320		366		342	

* Percentage differences with the preceding year

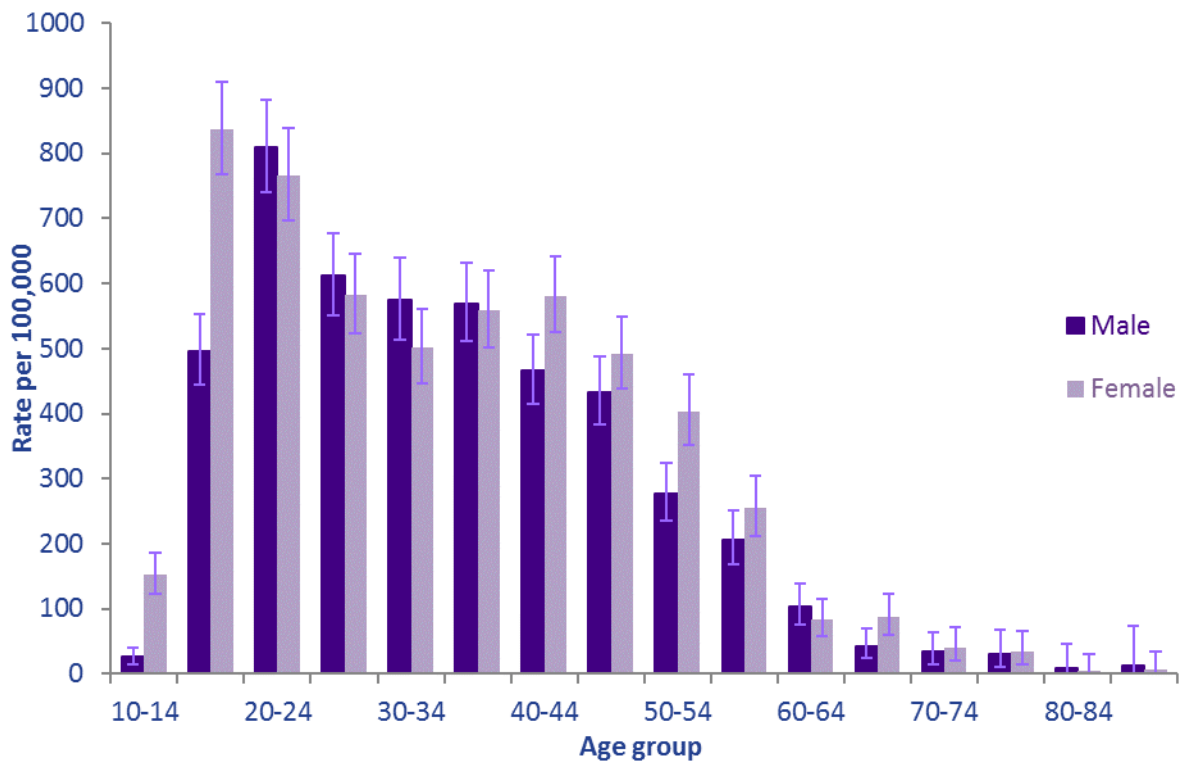
Figure 1: Person-based age-standardised rate (EASR) of self-harm, by gender, per 100,000, 2007–2012



Rates of self-harm presentations were consistently higher among those in younger age groups for both genders. As shown in Figure 2, the self-harm rates peaked among females aged 15–19 years (837 per 100,000). The peak rate for males was among those aged 20–24 years, at 809 per 100,000. Almost half of all presentations (45%) were made by people aged under 30 years and 89% were made by people aged under 50 years. In the majority of age groups, the number of self-harm acts by females exceeded that of males. This was most pronounced in the 10–14 years age group where there were six times more female than male presentations. Similarly, female rates were twice that of males in the 15–19 and 65–69 years age groups.

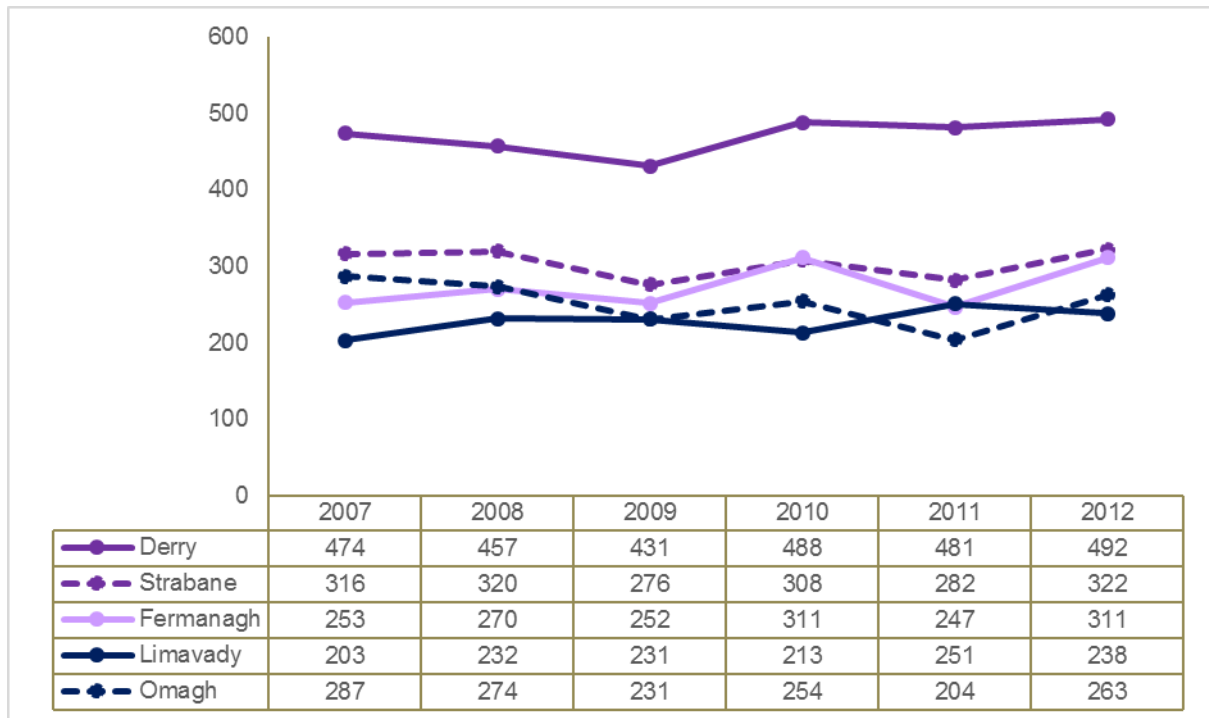
There was some fluctuation between 2007 and 2012 in rates of self-harm according to age group, with largely increased rates in 2012 among those aged 60–64 and 20–24 years (+45.9% and +25% respectively). In contrast, decreases were observed in the age groups 70–74 and 50–54 years (-32.9% and -17.5% respectively) between 2007 and 2012. However, these changes were not significant.

Figure 2: Person-based age-standardised rate (EASR) of self-harm, by age and gender, per 100,000, 2007–2012



Between 2007 and 2012, the highest rates of self-harm presentations occurred in the Derry City Council area, which accounted for almost a third (31%) of all presentations within this period at 470 per 100,000. The lowest self-harm rates were found in Limavady, which accounted for 15% of total presentations (227 per 100,000). Fluctuations in rates of self-harm by local government district (LGD) ranged from an increase of 16.7% in Fermanagh to a decrease of 10.9% in Omagh over the six year period (Figure 3). There was no significant association between gender and changes in rates by LGD over the six years.

Figure 3: Person-based age-standardised rate (EASR) of self-harm, by local government district, per 100,000, 2007–2012



Methods of self-harm

Table 2 details the methods involved in self-harm presentations in the Western Area between 2007 and 2012. The most common method of self-harm was drug overdose, which was involved in three quarters (75%) of all self-harm presentations. Drug overdose was more common among females than males (79% v 70% respectively). Self-cutting was the only other common method of self-harm and was involved in almost one fifth of all episodes (19%).

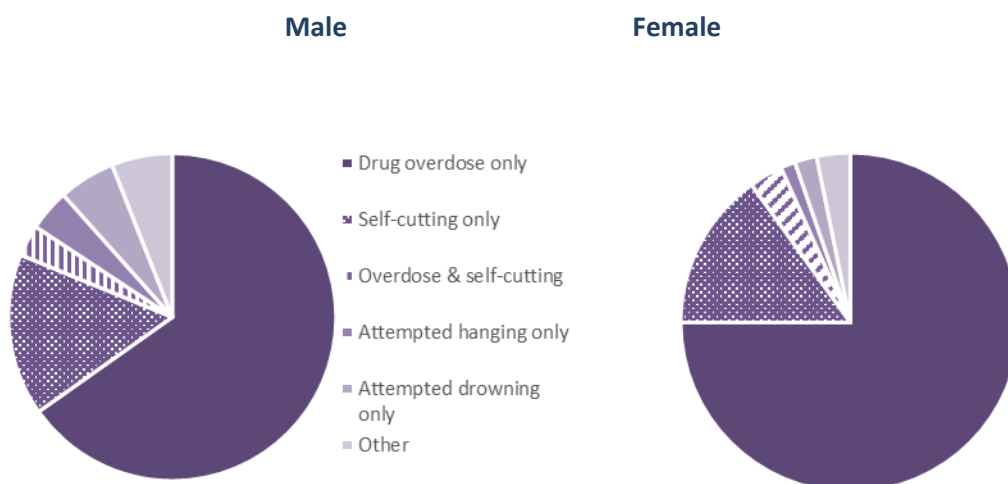
Table 2: Methods of self-harm involved in presentations to hospital, by gender, 2007–2012

	Overdose	Poisoning	Cutting	Drowning	Hanging	Other
Male	2650	61	751	276	193	111
	(70%)	(2%)	(20%)	(7%)	(5%)	(3%)
Female	3450	26	826	121	88	70
	(79%)	(1%)	(19%)	(3%)	(2%)	(2%)
Total	6100	87	1577	397	281	181
	(75%)	(1%)	(19%)	(5%)	(3%)	(2%)

Note: The numbers calculated here are based on a method of self-harm being involved, allowing for multiple methods to be recorded for a single attendance.

Figure 4 illustrates the use of methods, by self-harm by gender. The large proportion of self-harm presentations for drug overdose and self-cutting (only and combined) is evident from these figures. Drug overdose peaked among middle-aged males and females and also among those aged over 65 years. In contrast, self-cutting accounted for a higher proportion of both men and women aged 24–34 years.

Figure 4: Method of self-harm used, by gender, 2007–2012



Alcohol involvement

Although rare as a sole method of self-harm, alcohol was involved in 60% (n=4,883) of all self-harm presentations in the Western Trust between 2007 and 2012. The proportion was higher among men than women (65% v 55%), and among 25–44 and 45–64 year-olds (64% and 65% respectively).

Alcohol involvement was elevated in presentations involving highly lethal methods of self-harm (67% and 68% in attempted hanging and attempted drowning respectively).

Comparison with other areas

The findings from the report indicate that incidence of hospital-treated self-harm in the Western Area of Northern Ireland is over 60% higher than that in the Republic of Ireland (342 versus 211 per 100,000).³ Table 3 shows a comparison of self-harm rates across cities in Northern Ireland, the Republic of Ireland and England, using the most recent data available. These age-standardised rates are for those aged 15 years and over. The highest rates of self-harm were recorded in Limerick city (634 per 100,000). However, the highest rate of self-harm among men was observed in Derry city (623 per 100,000).

Table 3: European age-standardised rate of self-harm (among people aged 15 years and over) for cities in Northern Ireland, Republic of Ireland and England

Incidence rate per 100,000	Males	Females	Total
Limerick	596	671	634
Derry	609	627	623
Belfast	584	545	563
Cork	484	399	442
Derby	322	552	435
Manchester	355	446	398
Waterford	350	406	377
Dublin	338	378	358
Galway	358	381	344
Oxford	248	358	301

Note: The figures presented are based on the most recent year available for a region. As data from some regions were only available for people aged 15 years and over, the rates in this table do not include data for people aged under 15 years and so these rates will be different to those reported elsewhere that refer to all ages.

When all ages are considered, the incidence rate of hospital-treated self-harm for Northern Ireland during the period April 2012–March 2013 was 327 per 100,000 (333 for males and 322 for females), which is slightly lower than that presented for the Western Area in this report. However, the highest rate of self-harm in Northern Ireland was recorded in the Belfast Area at 452 per 100,000.¹⁷

³ Griffin, E. Arensman, E. Wall, A. Corcoran, P. Perry, JJ. (2013) National Registry of Deliberate Self Harm Annual Report 2012. Cork: National Suicide Research Foundation.

¹⁷ Public Health Agency (2013). Northern Ireland Registry of Self-Harm Annual Report 2012/13. Derry: Public Health Agency

Between 2007 and 2012, a 6% rise in self-harm rates was observed in the Western Area. This was less pronounced than that observed during the same period in the Republic of Ireland where despite two successive decreases in the rate of self-harm in 2011 and 2012, the rate in 2012 was still 12% higher than in 2007 (20% and 6% for men and women respectively).³ Likewise increases in the rate of suicidal behaviour in the EU and US during this time were more marked than in the Western area. Therefore it would appear that the effects of the economic recession were less pronounced in the Western Area of Northern Ireland than elsewhere.

The patterns of self-harm by age and gender in this report are consistent with findings in England and the Republic of Ireland. Although in general higher rates of self-harm are observed among women, this gender difference is less pronounced in Western Trust data than in other regions, and similar to some urban areas in Ireland.³

³ Griffin, E. Arensman, E. Wall, A. Corcoran, P. Perry, JJ. (2013) National Registry of Deliberate Self Harm Annual Report 2012. Cork: National Suicide Research Foundation.

⁶ Stuckler, D. Basu, S. Suhrcke, M. Coutts, A. et al (2011) Effects of the 2008 recession on health: a first look at European data. *Lancet*. 9;378:124-5

⁷ Kaplan, MS. Hugué, N. Caetano, R. Giesbrecht, et al (2014) Economic contraction, alcohol intoxication and suicide: analysis of the National Violent Death Reporting System. *Injury Prevention*. doi:10.1136/injuryprev-2014-041215

⁸ Reeves, A. Stuckler, D. McKee, M. Gunnell, D. et al (2012). Increase in state suicide rates in the USA during economic recession. *Lancet*. 380:1813-4.

7. Supplement 1: Repetition of Self-Harm

7. Repetition of Self-Harm

There were 4,733 individuals treated for 8,175 self-harm episodes between 2007 and 2012. Considering the period 2007–2011, which allows for a one-year follow-up, there were 6,706 self-harm presentations by 4,041 patients. The rate of repetition within 12 months was 33.8% based on presentations (2,266 of 6,706) and 18.0% based on people (726 of 4,041). This indicates that just under one in five self-harm patients represented to the ED with self-harm within 12 months of an index episode. Approximately two thirds of all self-harm presentations recorded were due to repeat acts.

The rate of repetition among males was slightly higher than that among females (19.3% v 16.8%). There was variation in repetition rates according to age. The largest proportion of repeat presentations occurred among those aged between 25–44 years (35.7%).

Table 4 details the number of self-harm acts by individuals during the study period 2007–2012 and the proportion of presentations accounted for. The majority of self-harm patients presented to hospital just once during the six year study period (n=3,455, 73.0%). However, a percentage presented multiple times during this period. In total, 176 individuals presented between five and nine times, while 58 individuals presented 10 or more times. Although this is a relatively small group of people, they account for a significant proportion of presentations (13.3% and 12.6% respectively).

Table 4: The extent of repeated self-harm presentations, 2007–2012

Frequency of attendances with self-harm	Persons		Presentations	
	(n=4,733)		(n=8,175)	
	Number of persons	% of total persons	Number of presentations	% of total presentations
1	3,455	73.0	3,455	42.3
2	670	14.2	1,340	16.4
3	232	4.9	696	8.5
4	142	3.0	568	6.9
5–9	176	3.7	1,084	13.3
10 or more	58	1.2	1,032	12.6

As illustrated in Table 5, repetition within 12 months varied according to local government district. Derry had marginally the highest rate of repetition (19.8%) followed by Limavady (18.6%). The lowest rate of repetition was in Omagh (13.5%).

Table 5: Repetition of self-harm, by local government district, 2007–2012

	Derry	Limavady	Strabane	Fermanagh	Omagh	Total
No. of individuals	2,004	312	477	635	517	4,041
No. who repeated	396	58	80	113	70	726
% who repeated	19.8%	18.6%	16.8%	17.8%	13.5%	18.0%

The rate of repetition varied significantly according to the method of self-harm involved (Table 6). Of the commonly used methods of self-harm, self-cutting and drug overdose were associated with increased rates of repeat self-harm.

Approximately one in four people (26.5%) who used self-cutting as a method of self-harm during the index episode made at least one subsequent self-harm presentation within 12 months. Nearly one in five people (17.2%) who engaged in intentional overdose repeated within 12 months.

Almost one fifth of people (19.4%) who used alcohol at the time of their index self-harm episode repeated within 12 months.

Table 6: Repetition of self-harm, by method used in index episode, 2007–2012

	Overdose	Cutting	Drowning	Hanging	Other	Poisoning	Total
No. of individuals	3,196	544	198	144	77	45	4,041
No. who repeated	544	143	47	21	17	<5	726
% who repeated	17.0%	26.3%	23.7%	14.6%	22.1%	8.9%	18.0%

Table 7 shows the aftercare for patients attending the ED and also the percentage of people repeating self-harm within each of these categories. Future supplements will explore the issue of next care in further detail. Many people will have been assessed by the mental health team prior to discharge and future reports will provide more detail on this issue. Over 56% of repeat presentations resulted in an admission to a general ward with a further 7% being admitted to a psychiatric ward. Just over 28% were provided with the appropriate care but did not require an admission. The data shows that more than one quarter of individuals who left before being seen by an ED doctor repeated within 12 months (26.5%). Repetition was also relatively high among those admitted to a psychiatric ward (21.6%).

Table 7: Repetition of self-harm by aftercare, 2007–2012

	General admission	Psychiatric admission	Refused to be admitted	Left without being seen by ED doctor	Not admitted	Total
No. of presentations	2,271	282	121	219	1,148	4,041
No. who repeated	406	61	23	58	178	726
% who repeated	17.9%	21.6%	19.0%	26.5%	15.5%	18.0%

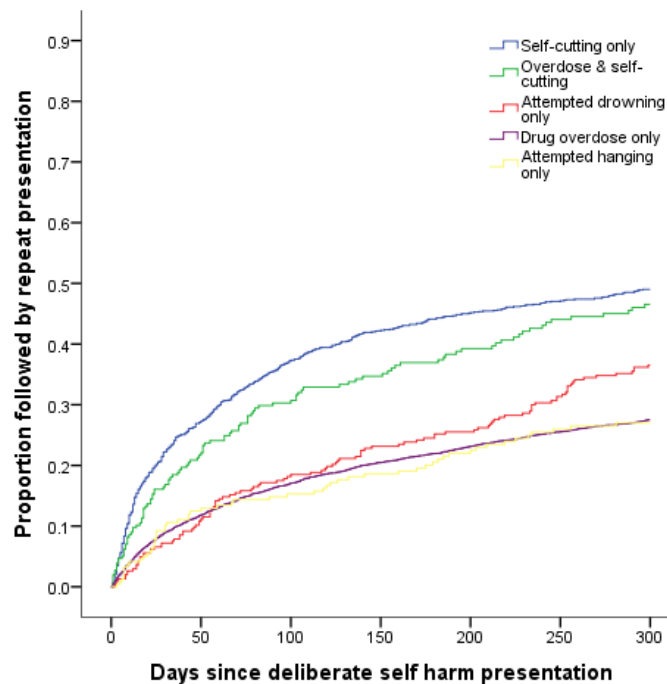
Risk of repetition within three months

Risk of repetition was highest in the short term following a self-harm presentation. Of those presentations made between 2007 and 2012 (n=8,175), 19.8% were followed by a repeat presentation within three months (91 days). The patterns of repetition were examined according to gender, age, method of self-harm, recommended next care, and number of self-harm presentations.

The proportion of presentations followed by a repeat act within three months was the same for men and women but did vary by age group. The proportion was lowest among those aged under 15 years (4.9%) and over 65 years (11.1%), but was relatively high among those aged 25–44 years (22%), 45–64 years (23%) and 15–24 years (14.4%).

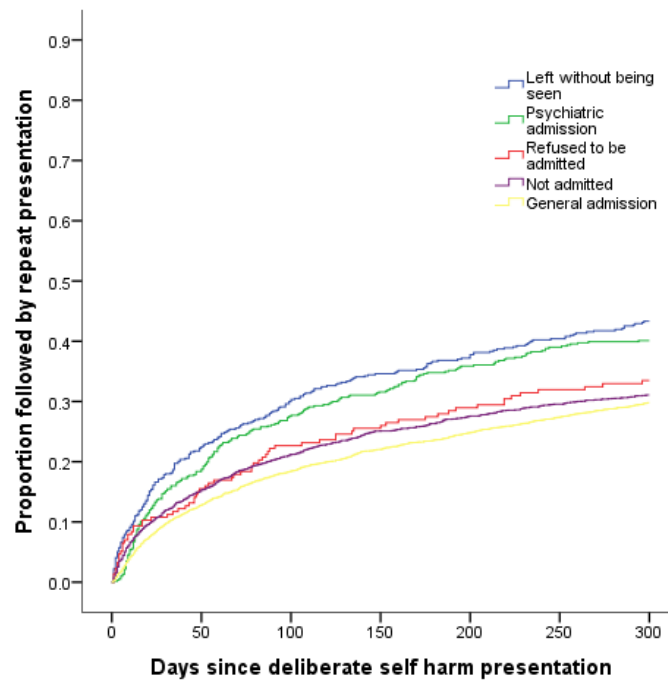
The proportion of self-harm presentations followed by a repeat presentation within three months also varied according to method of self-harm (Figure 5), with the highest rate observed among those who engaged in self-cutting (34.3%). The repetition rates were 15.8% following attempted hanging, 16.9% following poisoning, including chemical substances and drug overdose, and 20.4% following attempted drowning.

Figure 5: Rate of repeated presentation to hospital following a self-harm presentation, by method of self-harm



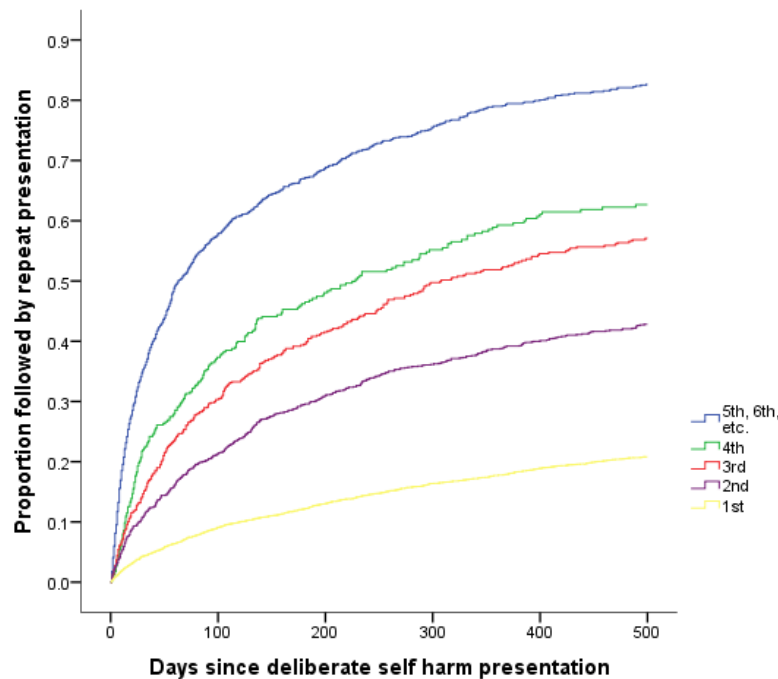
Variation was also observed according to recommended next care following the initial act (Figure 6). Those who were admitted to a general ward had the lowest proportion (18.1%), compared to 19.7% of those who were not admitted, 21.4% of those who refused to be admitted, 23.3% of those who were admitted to a psychiatric ward, and 28.3% of those who left without being seen.

Figure 6: Rate of repeated presentation to hospital following a self-harm presentation, by method of recommended next care



However, the factor with by far the strongest influence on risk of repetition was the number of previous self-harm presentations to hospital (Figure 7). Fewer than 1 in 10 first presentations (8.7%) were followed by a repeat presentation within three months. This proportion increased to 20.7% following second presentations, 32.6% following third presentations, 36.1% following fourth presentations, and 56.8% following fifth or subsequent presentations, which reflects a 'dose-response' relationship.

Figure 7: Rate of repeated presentation to hospital following a self-harm presentation, by number of self-harm presentations



Comparison with other areas

Existing systematic reviews have estimated that approximately 15% of self-harm patients repeat within one year.^{18,19} UK studies have reported one year, person-based repetition rates ranging from 14–23%.^{20,21,22} One year repetition rates reported from analysis of all presentations are higher – 33% and 30% in UK and Irish studies respectively.^{10,22} Person- and presentation-based repetition rates presented in this report are in line with these findings. The repetition rates in the Western Area are also similar to that reported for Northern Ireland for the period April 2012 to March 2013.¹⁷

The findings of this report show the risk of repetition was greatest in the first three months following an index episode of self-harm, which is consistent with other studies.¹⁰ Additional risk factors

¹⁰ Perry, IJ, Corcoran, P, Fitzgerald, AP, Keeley, HS, et al (2012). The incidence and repetition of hospital-treated deliberate self harm: findings from the world's first national registry. *PLoS One*. 7(2):e31663. doi: 10.1371/journal.pone.0031663.

¹⁷ Public Health Agency (2013). Northern Ireland Registry of Self-Harm Annual Report 2012/13. Derry: Public Health Agency.

¹⁸ Owens, D, Horrocks, J, House, A. (2002). Fatal and non-fatal repetition of self-harm. Systematic review. *British Journal of Psychiatry*. 181:193-9.

¹⁹ Carroll, R, Metcalfe, C, Gunnell, D. (2014). Hospital Presenting Self-Harm and Risk of Fatal and Non-Fatal Repetition: Systematic Review and Meta-Analysis. *PlosONE*. 9(2):e89944.

²⁰ Bergen, H, Hawton, K, Waters, K, Cooper, J, et al. (2010). Psychosocial assessment and repetition of self-harm: the significance of single and multiple repeat episode analyses. *Journal of Affective Disorders*. 127(1-3):257-65.

²¹ Kapur, N, Cooper, J, King-Hele, S, Webb, R, et al (2006). The repetition of suicidal behavior: a multicenter cohort study. *Journal of Clinical Psychiatry*. 67(10):1599-609.

²² Lilley, R, Owens, D, Horrocks, J, House, A, et al. (2008). Hospital care and repetition following self-harm: multicentre comparison of self-poisoning and self-injury. *Br J Psychiatry*. 192(6):440-5.

identified for repetition of self-harm in this report (eg. method) are consistent with previous work.^{10,20,22,23}

In the Western Area, there was a high rate of self-harm repetition following presentations where attempted drowning was involved in the index episode, with just under a quarter (23.7%) of patients presenting again within 12 months. This is higher than the reported rate in the Republic of Ireland (11.3%).³ However, relatively small numbers of attempted drowning presentations were recorded in this report, and this area would need to be explored in greater detail in future supplements.

This report found that just under one quarter (23%) of patients admitted to a psychiatric ward following an index episode of self-harm presented again within three months. A similar proportion was reported in the Republic of Ireland, but there is a lack of research exploring the link between hospital aftercare and repetition.³

³ Griffin, E. Arensman, E. Wall, A. Corcoran, P. Perry, IJ. (2013) National Registry of Deliberate Self Harm Annual Report 2012. Cork: National Suicide Research Foundation.

³ Griffin, E. Arensman, E. Wall, A. Corcoran, P. Perry, IJ. (2013) National Registry of Deliberate Self Harm Annual Report 2012. Cork: National Suicide Research Foundation.

¹⁰ Perry, IJ. Corcoran, P. Fitzgerald, AP. Keeley, HS. Reulbach, U. Arensman, E. (2012). The incidence and repetition of hospital-treated deliberate self harm: findings from the world's first national registry. *PLoS One*. 7(2):e31663. doi: 10.1371/journal.pone.0031663.

²⁰ Bergen, H. Hawton, K. Waters, K. Cooper, J. et al. (2010). Psychosocial assessment and repetition of self-harm: the significance of single and multiple repeat episode analyses. *Journal of Affective Disorders*. 127(1-3):257-65.

²² Lilley, R. Owens, D. Horrocks, J. House, A. et al. (2008). Hospital care and repetition following self-harm: multicentre comparison of self-poisoning and self-injury. *Br J Psychiatry*. 192(6):440-5.

²³ Corcoran, P. Arensman, E. Perry, IJ. (2007). The area-level association between hospital-treated deliberate self-harm, deprivation and social fragmentation in Ireland. *Journal of Epidemiology and Community Health*. 61(12):1050-5.

8. Appendices

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Appendix 2: Recent publications

Hospital-treated deliberate self-harm in the Western area of Northern Ireland

Corcoran P, Griffin E, O'Carroll A, Cassidy L, Bonner B. 2014. *Crisis, forthcoming*.

Aims: The study aimed to establish the incidence of hospital-treated deliberate self-harm in the Western Area of Northern Ireland, and to explore the profile of such presentations.

Methods: Deliberate self-harm presentations made to the three hospital EDs operating in the area during the period 2007–2012 were recorded.

Results: There were 8,175 deliberate self-harm presentations by 4,733 individuals. Respectively, the total, male and female age-standardised incidence rate was 342, 320 and 366 per 100,000 of the population. City council residents had a far higher self-harm rate. The peak rate for women was among 15–19 year olds (837 per 100,000) and for men was among 20–24 year olds (809 per 100,000). Risk of repetition was higher in 35–44 year-old patients and where self-cutting was involved, but was most strongly associated with the number of previous self-harm presentations.

Conclusion: The incidence of hospital-treated self-harm in Northern Ireland is far higher than in the Republic of Ireland and more comparable to that in England.

Characteristics of hospital-treated intentional drug overdose in Ireland and Northern Ireland

Griffin E, Corcoran P, Cassidy L, O'Carroll A, Perry IJ, Bonner B. 2014. *BMJ Open*; 4:e005557.

Objectives: This study compared the profile of intentional drug overdoses (IDOs) presenting to EDs in the Republic of Ireland and the Western Trust Area of Northern between 2007 and 2012. Specifically, the study aimed to compare characteristics of patients involved, explore the factors associated with repeated IDO and report the prescription rates of common drug types in the population.

Methods: We utilised data from two comparable registries that monitor the incidence of hospital-treated self-harm, recording data from deliberate self-harm presentations involving an IDO to all hospital EDs for the period 1 January 2007 to 31 December 2012.

Results: Between 2007 and 2012, the registries recorded 56,494 self-harm presentations involving an IDO. The study showed that hospital-treated IDOs were almost twice as common in Northern Ireland as they were in the Republic of Ireland (278 v 156 per 100,000 respectively).

Conclusions: Despite the overall difference in IDO rates, the profile of such presentations was remarkably similar in both countries. Minor tranquillisers were the drugs most commonly involved in IDOs. National campaigns are required to address the availability and misuse of minor tranquillisers, both prescribed and non-prescribed.



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