

# Health Research Board

# Drugs and alcohol data

Analysis by geographical area and deprivation indicators

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**A supplement to the Winter 2023 issue of *Drugnet Ireland***

# Resource allocation and Irish health service reform

**The Sláintecare report by the all-party Committee on the Future of Healthcare<sup>1</sup> and the Sláintecare Implementation Strategy<sup>2</sup> are the key policy documents outlining the Irish Government's commitment to a system of universal healthcare and the mechanisms by which it is to be implemented.**

A key part of this reform is a radical shift in the allocation of resources to support an integrated model of care in place of the current heavy reliance on acute hospitals. This shift must also be matched by greater equality in the geographical distribution of resources. Historically, health resources in Ireland are allocated based on existing level of service patterns, which makes it difficult to match the quality of care provided with those countries that apply more robust mechanisms of resource allocation. The Irish health reform programme has driven considerable academic and research interest in identifying the most appropriate mechanisms of resource allocation to create a more equitable health system. This article looks at some Irish research and commentary in this area.

## Regionalisation and resource allocation

As part of Ireland's development of a universal healthcare system, health policymakers are considering the approach to population-based resource allocation (PBRA) based on the six regional health areas (RHA) established under the Sláintecare health reform programme in 2017. RHAs will be regional divisions within the Health Service Executive (HSE) with the objective of aligning hospital and community care services and promoting innovation, integrated care, efficiency, clinical and corporate governance, and accountability. PBRA policies can facilitate the decentralisation process by allocating healthcare resources in a way that is sensitive to local population profiles and regional variation. Implementing a population-based health funding model would link expenditure to population characteristics to estimate future need for healthcare and could improve transparency and predictability in the allocation of funding. This could allow for greater ability to forecast required healthcare expenditure over the medium and longer term.

## Resourcing non-acute hospital health services in Ireland

Implementing an effective system of resource allocation needs careful consideration of current resourcing of health services, particularly in the non-acute area. A 2019 report by Smith *et al.* on the supply of, and the need for, non-acute care in Ireland found that there were significant inequalities in the supply of primary, community, and long-term care services across Irish counties.<sup>3</sup> The authors state that this inequality can partially be explained by the absence of any formal resource allocation system and the persistence of historical budgeting for community-based care. The report was commissioned to inform policymakers planning non-acute services and building capacity in the context of the Sláintecare reforms. When judging whether there was an inequitable supply of care across regions, the report took into account demographic differences, such as age, disability, and chronic illness rates, as these have a significant bearing on healthcare need. The supply per capita, based on identifying services in a

particular area, is adjusted based on healthcare need indicators in that area. Inequity can be established by the extent to which supply did not meet need in some areas, or exceeded it in others. The results of the report's analysis consistently show that needs adjustment does not remove inequities in supply. Some regions are significantly under-resourced in terms of supply of non-acute healthcare services.

## Availability of information and health service reform

Smith *et al.* collated and combined available data to provide a detailed profile of the supply of non-acute health services across regions. This represents the most comprehensive account of non-acute care supply in Ireland that has been prepared to date. While this is a valuable new information resource, reform of allocation mechanisms will be impeded if there are not improvements in the accuracy and timeliness of data on both the demand for and the current supply of health services. Greater integration in the Irish health and social care system faces the challenges of insufficient evidence on the capacity of the non-acute sector to meet current and future demand. The report identifies a historic failure to invest in surveillance and survey-level data. Developments such as the Growing Up in Ireland survey, The Irish Longitudinal Study on Ageing (TILDA), and the Healthy Ireland Survey have aided health policy decision-making, but significant gaps remain.

## Resource allocation models

Despite a lack of consensus on the approach to modelling, many health systems favour PBRA models as they are seen to promote equity in outcomes, support reform, and encourage stakeholder involvement and support. Two reviews published in 2021 looked at the impact and implementation of PBRA models in a number of countries. In the models studied in these reviews, resource allocation is determined largely by the profile of local populations, based on the entire range of determinants of health and wellbeing, and on the measurement of the population's health needs.

## Review of international PBRA models

The first review by Johnston *et al.* summarised recent evidence and found that all the models studied used population size as a starting point for determining resource allocation requirements, adjusting in different ways for direct and indirect factors such as age, gender, morbidity or, less commonly, ethnicity and rurality.<sup>4</sup> These models used different variables to account for population need. However, they shared several guiding principles with regard to the nature of the variables selected. The review found that PBRA models promote technical efficiency and equity in terms of health outcomes and access, but care must be taken to ensure that funding aligns with policy objectives especially when undergoing a regionalisation or decentralisation process. PBRA is viewed as a valuable policy lever to promote equity in health outcomes and access to services. It is essential that the selection of the model be based on clearly defined objectives, whether it is equity in outcomes, matching needs or regional equality. Important contextual considerations for the implementation of a PBRA model in Ireland include the proportion of funding covered by the model, the range of services covered, compensation for regional differences, and determinants of costs.

Reliable data on the factors relevant to modelling health needs and robust information on cost are essential for describing this context accurately. The collection, management, and analysis of these data in turn require expertise in several disciplines and well-supported analytical capacity. Successful implementation of a PBRA model will require decisions to be made regarding regional delegation, including workforce planning and recruitment and support in using funding effectively.

## Department of Health spending review

Building on the Johnston *et al.* review, a Department of Health spending review considered what is the most appropriate PBRA model to be implemented as part of the Sláintecare reform programme.<sup>5</sup> The Department of Health report investigated reviewing policy and technical documents related to PBRA in a sample of formulae from six countries, selected partly on the basis that they use a similar funding for their health systems as Ireland is hoping to implement under Sláintecare.

One of the study's considerations is how the different systems established the relationship between need indicators and healthcare costs, which can then be used to account for differences in geographical areas and estimate expenditure. Population size, age and sex, socioeconomic status or deprivation, ethnicity, and standardised mortality ratio (SMR) or mortality were indicators common to all the formulae studied. Less common were geographical area/place of residence (geographical) (rural versus urban), ethnicity, and cross-boundary flows.

Selecting indicators is a complex and potentially contentious process. It is also contingent on the extent and quality of data available, for instance on morbidity, which is an indicator closely related to healthcare needs, and the availability of relevant and recent research on needs factors. The linkage between needs factors is often difficult to determine and there are usually historical political and administrative practices that should be considered. Age, with the higher need for healthcare in early and later stages in life, and sex, because of the different healthcare needs of men and women, are demographic indicators common to all the PBRA formulae examined. Methods of disaggregation of ages vary between countries. Various measures of socioeconomic status or deprivation are included in all of the models examined, with ethnicity used in countries with large indigenous populations such as Canada and New Zealand, and unmet needs sometimes used as an indicator to divert resources to population centres that have a high level of poor health outcomes. Geographical impacts on the cost of delivering health services and rurality or remoteness are common indicators.

## Role of data in designing PBRA models

Data availability on healthcare costs, the distribution of needs, and healthcare supply is the factor that most limits the choice of resource allocation model. Some countries support comprehensive data systems that record individual healthcare costs which can be linked to other databases providing information on other indicators. However, most countries rely on non-administrative sources of information such as health surveys. The lack of a unique health identifier means that Ireland is not yet in a position to pursue the type of approach taken in countries that can match utilisation and costs with other indicators such as socioeconomic status.

Linberg *et al.*'s investigation of a sample of PBRA formulae from the countries reviewed helped to inform the selection of Irish data sources to support a potential PBRA model.<sup>5</sup> The Central Statistics Office (CSO) Census of Population and the Department of Health's Healthy Ireland Surveys were found to be the most useful and reliable data sources for the purposes of designing a PBRA model. Census data provide valuable demographic information and support the examination of regions by socioeconomic, ethnicity, health status, and rurality/urbanity variables. There are limitations to using Census data for this purpose but initiatives like the HP Deprivation Index, a combination of 10 key indicators, serves as a proxy for deprivation across regions. The Department of Health's Healthy Ireland Survey of health and health behaviours is conducted annually and provides data for several of the indicators typically used by PBRA models. The review presents comparable data under a number of variables as a demonstration of the potential of both of these information sources to support the development of a PBRA in Ireland.

## Conclusion

In this supplement to the 2023 Winter issue of *Drugnet Ireland*, geographical analyses of indicators of drug use are presented in various articles. Treatment demand mapped to Small Areas (SA)<sup>6</sup> and population prevalence to Electoral Divisions (ED) demonstrates the geographical distribution of these indicators and current need for responses in these areas. In addition, by mapping treatment data to the levels of deprivation in Small Areas, which is calculated using the HP Deprivation Index, the socioeconomic determinates of drug use are clearly demonstrated. Treatment demand is a response to problematic drug use, but also serves as a reliable proxy indicator of prevalence. It will be possible to extend the range of these indicators to include data on consequences of substance use, such as drug-related deaths, and on problematic drug use to develop more detailed population-based pictures of the drug situation.

The reviews referred to above emphasise the difficulties presented by the lack of availability of the data required to build a regional profile of healthcare needs, an essential part of an effective resource allocation model. Ireland has a well-resourced and highly efficient system for monitoring substance use and a supply of timely, comparable, and detailed data in this area. By integrating data from this system with the kind of detailed population-based information and analysis provided by the deprivation model, it is possible to more accurately devise a measurement of needs for interventions designed to prevent, treat or reduce the harms associated with drug use.

### Brian Galvin

- 1 Houses of the Oireachtas Committee on the Future of Healthcare (2017) *Houses of the Oireachtas Committee on the Future of Healthcare: Sláintecare report*. Dublin: Houses of the Oireachtas. <https://www.drugsandalcohol.ie/27369>
- 2 Department of Health (2018) *Sláintecare implementation strategy and next steps*. Dublin: Government of Ireland. <https://www.drugsandalcohol.ie/29415>
- 3 Smith S, Walsh B, Wren M-A, Barron S, Morgenroth E, Eighan J, et al. (2019) *Geographic profile of healthcare needs and non-acute healthcare supply in Ireland*. Research Series No. 90. Dublin: Economic and Social Research Institute. <https://www.drugsandalcohol.ie/30828>
- 4 Johnston BM, Burke S, Kavanagh PM, O'Sullivan C, Thomas S and Parker S (2021) Moving beyond formulae: a review of international population-based resource allocation policy and implications for Ireland in an era of healthcare reform. *HRB Open Res*, 4: 121. Available from: <https://hrbopenresearch.org/articles/4-121>
- 5 McCarthy T, Lindberg, C and O'Malley C (2022) *Towards Population-Based Funding for Health: Evidence Review & Regional Profiles*. Spending Review 2022
- 6 Small Areas are areas of population comprising between 80 and 120 dwellings created by the National Institute for Regional and Spatial Analysis (NIRSA) on behalf of Ordnance Survey Ireland (OSi) in consultation with the CSO. Small Areas were designed as the lowest level of geography for the compilation of statistics in line with data protection and generally comprise either complete or part townlands or neighbourhoods. There is a constraint on Small Areas that they must nest within Electoral Division boundaries. Small Areas were used as the basis for the enumeration in Census 2016. Available from: <https://www.cso.ie/en/census/census2016reports/census2016boundaryfiles/>

# Analysis of the relationship between addiction treatment data and geographic deprivation in Ireland

## Introduction

The Pobal HP Deprivation Index, developed by Haase and Pratschke in 2017, uses 2016 Census data to determine relative scores of disadvantage or affluence for Ireland's 18,488 Small Areas (SA).<sup>1,2</sup> This index is Ireland's primary social gradient tool used regularly for the allocation of State resources to target community-level disadvantage.

SAs sit within Electoral Division boundaries and are the lowest level of geographic boundary in Ireland. They correspond to between 80 and 120 dwellings, relating to townlands or neighbourhoods. They were created by the National Institute for Regional and Spatial Analysis on behalf of Ordnance Survey Ireland in consultation with the Central Statistics Office (CSO).<sup>3</sup>

The National Drug Treatment Reporting System (NDTRS) is an epidemiological database of drug and alcohol use treatment in Ireland maintained by the Health Research Board (HRB) on behalf of the Department of Health. The national drug and alcohol strategy, *Reducing Harm, Supporting Recovery: a health-led response to drug and alcohol use in Ireland 2017–2025*, requires all publicly funded drug and alcohol services to complete the NDTRS for all people who use services (Action 5.1.47).<sup>4</sup> The NDTRS includes cases (or episodes) treated in all types of services: outpatient, inpatient, low threshold, general practitioners, and those treated in prison.

The concept for a project to analyse the relationship between addiction treatment data and geographic deprivation in Ireland, arose from discussions between Pobal and the HRB. Both organisations were looking to maximise the use and impact of their data in such a way that better leverages decisions from a policy and operational planning perspective.

## Research aims and methodology

The aim of this small-scale research project was to demonstrate the potential for geographic analysis of the HRB addiction (alcohol and other drugs) treatment data when mapped onto area-based disadvantage using the Pobal HP Deprivation Index.<sup>1</sup> This research can be viewed as complementary to the 2017 work of Haase and Pratschke<sup>2</sup> in that it seeks to further demonstrate the empirical relationship between deprivation and addiction treatment and/or prevalence. It should be noted that the metric of addiction treatment represents a response to drug use, but can be used as a proxy indicator for prevalence, which is the estimation of drug use within a population.

Using anonymised addiction treatment data, this paper presents findings on the relationship between addiction treatment and geographic deprivation, as categorised by the Pobal HP Deprivation Index.

## Datasets used in analysis

As mentioned previously, the analysis used two datasets:

- **NDTRS:** Three years of anonymised NDTRS data on alcohol and drug treatment episodes (2019, 2020, and 2021) were included in the analysis.
- **Pobal HP Deprivation Index:** The Deprivation Index used a series of data points from the Census to ascertain levels of disadvantage under the three domains of demographic profile, social class composition, and labour market situation at the level of Small Area. The data underpinning the Deprivation Index used in the analysis is drawn from the 2016 Census. The Deprivation Index bands are based on a normal distribution curve, where the majority of individuals in the State live in areas that are marginally above average and marginally below average. Only around 15% of individuals live in deprived (or very/extremely deprived) areas, with a similar percentage living in affluent (or very/extremely affluent) areas.

## Preliminary analysis of data

The aim of the project was also to undertake a preliminary analysis of the data, using a relatively straightforward methodology of first-order descriptive analytics. An anonymised dataset was provided by the HRB to Pobal for geospatial analysis. This dataset included the SA identity (ID) related to where the case resided 30 days prior to treatment. Other variables provided included the unique centre code; gender; problem (alcohol, opioids, cocaine, cannabis, and other drugs); year treated; treatment status (never or previously treated); and number of times treated in that centre in that calendar year. Pobal joined the SA ID with the Pobal HP Deprivation Index, as well as mapping the data spatially using ArcGIS software.

Following an initial analysis of the treatment data with Deprivation Index scores, it was decided that the national analysis required a reconceptualisation and reorientation of the data. This needed to be undertaken in such a way that also facilitated an assessment of SAs where there were no treatment records, so that these could be compared and analysed against areas that did include treatment episodes. This led to the creation of a dataset beginning with a list of all SAs, to which the sum total of drug treatment episodes, by episode type, was added. This allowed for a more comprehensive analysis of disadvantage characteristics associated with drug treatment episodes.

## Coverage of Small Areas in NDTRS treatment data

In 2016, the NDTRS moved to a new online data entry portal. Since then, treatment records have included the SA associated with the residence of the treated case as part of routine data collection, through an arrangement with the Health Service Executive's Health Atlas Ireland. The changeover of services from a paper-based system to the new online system took some time, so only data from 2019 onwards was included in the analysis to ensure that the best coverage of SA in the treatment data was included. In total, 70% of relevant addiction services participate in the NDTRS.

For the period 2019–2021, 91.5% of NDTRS treatment episodes had an associated SA. Missing SAs were due to a number of issues, but often because the address was unknown or unavailable, mostly in relation to homelessness.



## Results

In total, 48,638 drug and alcohol treatment episodes with a SA code for the years 2019–2021 were provided for analysis, of which 46,004 (95%) could be associated with the necessary geographic information needed for categorisation under the Pobal HP Deprivation Index. Table 1 provides the number of drug and alcohol treatment episodes by deprivation category.

If there were no relationship between deprivation and drug and alcohol treatment, it would be expected that the number of episodes in very disadvantaged areas (n=3943) should be similar to the number in very affluent areas (n=555). However, there are substantially more treatment episodes recorded in disadvantaged areas than in affluent ones.

Table 2 presents the percentage of drug and alcohol treatment episodes by deprivation band compared with the percentage breakdown of the Pobal HP Deprivation Index in the overall population. For example, while 2.8% of the population live in SAs classified as ‘very disadvantaged’, 8.6% of all drug and alcohol treatment episodes are reported from these areas. This is even more pronounced when looking at drugs. Some 11.03% of all opioid treatment episodes are reported from very disadvantaged areas, but only 2.8% of the population live in these areas.

Putting drug and alcohol treatment data alongside the distribution of deprivation for the general population allows for the comparison and identification of which areas are under-represented and over-represented in terms of the number of treatment episodes. The proportion chart in Figure 1 shows a more visual representation of the distribution of opioid treatment by deprivation band in the population, as outlined in Table 2.

Table 2 also highlights that while the number of drug and alcohol treatment episodes reported from very affluent areas are low, they comprise a greater share of opioid drug treatments than for any other drug type. This may be attributable to codeine products rather than heroin or methadone or variations in reporting to the NDTRS, but it needs to be investigated further.

**Table 1: Number of NDTRS treatment episodes, by drug type and Pobal HP Deprivation Index band, 2019–2021**

Deprivation band	All drug types	Alcohol	Cannabis	Cocaine	Opioids	Other drugs
Extremely disadvantaged	84	20	11	18	12	23
Very disadvantaged	3943	1237	473	768	1035	430
Disadvantaged	12 202	4214	1631	2290	2929	1138
Marginally below average	13 741	6291	1874	2131	2400	1045
Marginally above average	11 052	5080	1526	1642	1908	896
Affluent	4422	1921	519	599	930	453
Very affluent	555	187	51	102	168	47
Extremely affluent	~	~	0	0	0	0
<b>Total</b>	<b>46 004</b>	<b>18 955</b>	<b>6085</b>	<b>7550</b>	<b>9382</b>	<b>4032</b>

~ Cells with five cases or fewer



**Table 2: NDTRS treatment episodes, by percentage drug type and general population, and Pobal HP Deprivation Index band, 2019–2021**

Deprivation band	Population (%)	All drugs types (%)	Alcohol (%)	Cannabis (%)	Cocaine (%)	Opioids (%)	Other drugs (%)
Extremely disadvantaged	0.09	0.18	0.11	0.18	0.24	0.13	0.57
Very disadvantaged	2.81	8.57	6.53	7.77	10.17	11.03	10.66
Disadvantaged	11.45	26.52	22.23	26.80	30.33	31.22	28.22
Marginally below average	31.52	29.87	33.19	30.80	28.23	25.58	25.92
Marginally above average	37.10	24.02	26.80	25.08	21.75	20.34	22.22
Affluent	15.24	9.61	10.13	8.53	7.93	9.91	11.24
Very affluent	1.75	1.21	0.99	0.84	1.35	1.79	1.17
Extremely affluent	0.05	0.01	0.03	0.00	0.00	0.00	0.00
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

**People living in disadvantaged communities are far more likely to access drug treatment for opioids than those living in more affluent areas.**



**Figure 1: NDTRS opioid treatment episodes, by Pobal HP Deprivation Index band, 2019–2021**

Figure 1 clearly demonstrates the relationship between deprivation and opioid treatment. While 14% of the population are from all areas of disadvantage, 42% of all opioid treatments are reported from these areas. While it is correct that there appears to be a relationship between area-based disadvantage and treatment uptake, it is not correct to say that drug and alcohol treatment is provided only to those from disadvantaged areas. Indeed, almost one-third of all treatment episodes are reported from areas of above average affluence, although this figure varies greatly by drug type.

For the purpose of this analysis, the metric of treatment episodes per 10,000 population was calculated for each Deprivation Index band for the three-year period of 2019–2021. The number of treatment episodes per 10,000 population in the bands ‘very and extremely disadvantaged’, as well as in ‘disadvantaged’, is considerably higher than for average and affluent areas (see Table 3). Of note, the data suggest that the difference between the three bands, ‘marginally above average’, ‘affluent’, and ‘very and extremely affluent’, is minimal. This requires further investigation. The slightly higher rate, 66 per 10,000 population, in the ‘very and extremely affluent’ band appears to be attributable to the higher number of treatments for alcohol, especially in rural areas of high affluence.

The same data in Table 3 are also presented in Figure 2, which visually demonstrates the relationship between Deprivation Index score and the rate of treatment episodes per 10,000 population.

A further analysis was completed by drug type using the CSO’s urban and rural classification, per 10,000 population (see Figure 3). Within urban areas, the linear trend of higher-reported drug and alcohol treatment episodes in disadvantaged areas can be observed across all drug types. However, in rural areas the rate of drug and alcohol treatment episodes for all drug types, apart from alcohol, is quite low across all deprivation bands.

**Table 3: NDTRS treatment episodes per 10,000 population, by Pobal HP Deprivation Index band, 2019–2021**

Deprivation band	Treatment episodes (per 10,000 population)
Very and extremely disadvantaged	293
Disadvantaged	225
Marginally below average	92
Marginally above average	63
Affluent	61
Very and extremely affluent	66

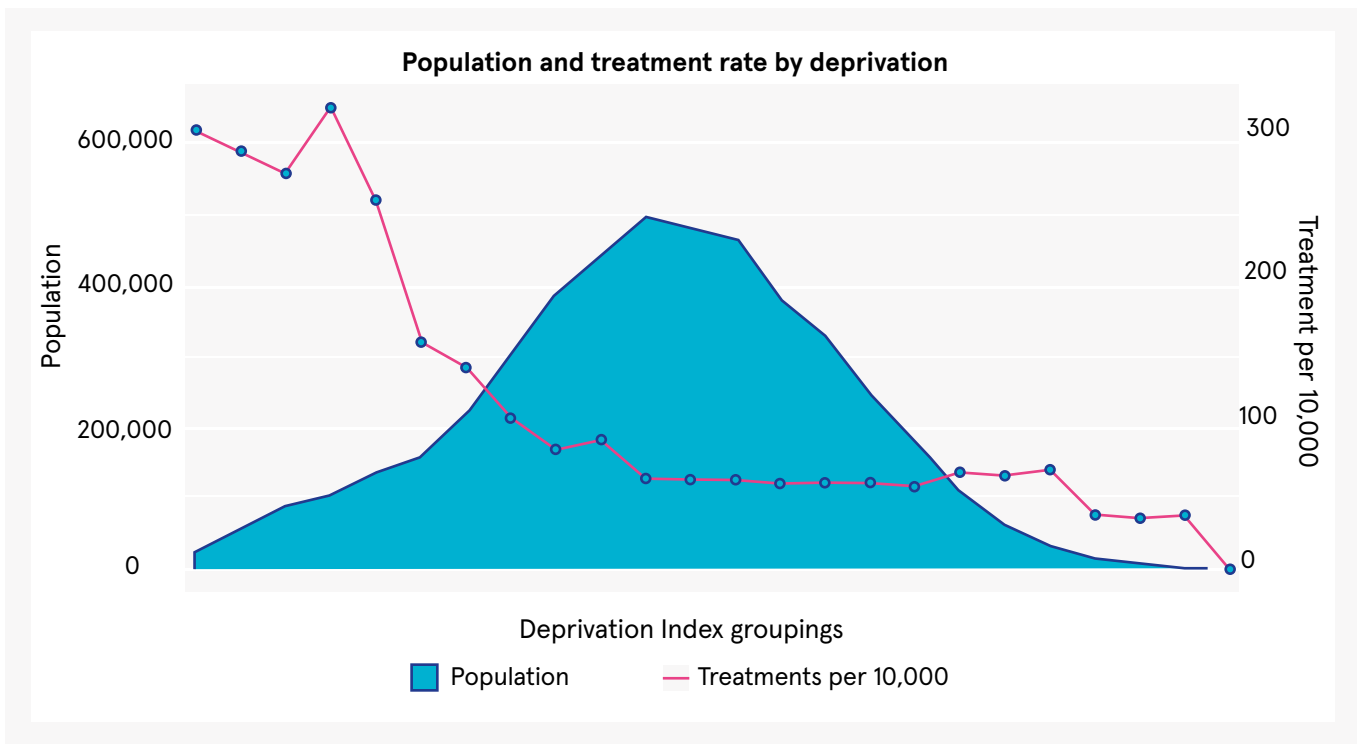


Figure 2: NDTRS treatment episodes per 10,000 population, by Pobal HP Deprivation Index, 2019–2021

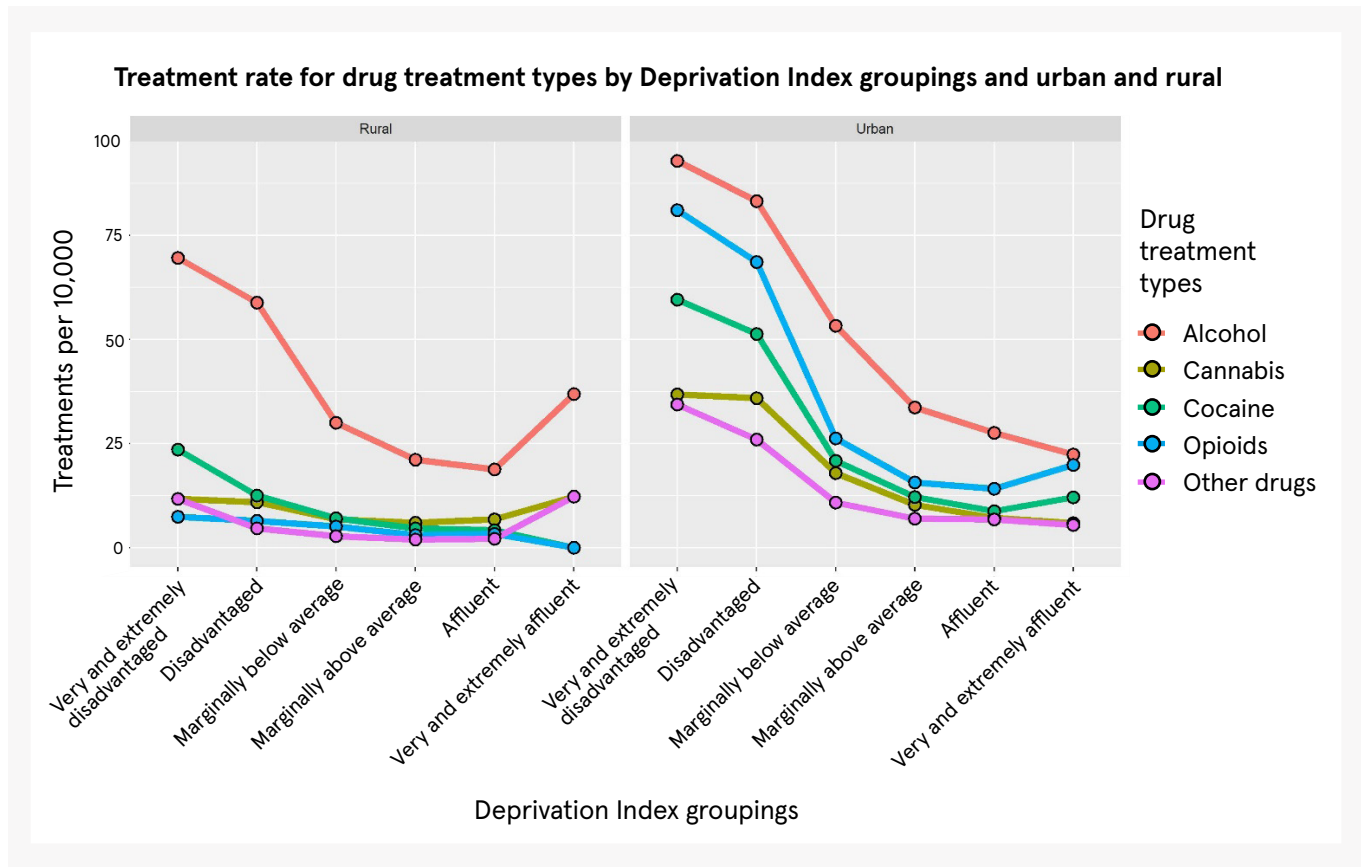


Figure 3: NDTRS treatment episodes per 10,000 population, by Pobal HP Deprivation Index band, urban/rural classification, and drug type, 2019–2021

## Conclusion

Health policy is increasingly framed in terms of furthering healthy outcomes and positive wellbeing. The Sláintecare programme envisages a radical shift from acute hospital settings to community health supports with greater emphasis on self-care and prevention.<sup>5,6</sup> This will entail a more targeted distribution of resources to ensure services are provided where they are most needed. Substance use is an area where the social determinants of certain behaviours and outcomes is very apparent. This project demonstrates that it is possible and useful to map drug and alcohol treatment to the Pobal HP Deprivation Index. It demonstrates a relationship between area-based disadvantage and the prevalence of drug and alcohol treatment episodes. The analysis found, for example, that while just 14% of the national population come from the areas classified as disadvantaged on the Pobal HP Deprivation Index, 42% of drug treatment episodes, where opioids were the primary drug type, were reported from these areas.

When calculated as a measure of treatment episodes per 10,000 population, the relationship between disadvantage and drug and alcohol treatment is evident, with 293 treatments per 10,000 in very and extremely disadvantaged areas, while the rate ranged from 61 to 66 in all areas of above average affluence.

Treatment episodes for all drugs had a relatively linear relationship with deprivation, that is, higher in more deprived areas. However, this appears largely driven by urban areas. In rural communities, the overall rate of drug treatment episodes is lower for all drug types, apart from alcohol, and the relationships with area-based deprivation are less pronounced. This type of analysis may provide an opportunity to identify the communities where the need for prevention, treatment, harm reduction and rehabilitation services are most likely to be greater.

The analysis shows that there is the potential to use Deprivation Index data as a means of objectively understanding or predicting levels of drug and alcohol treatment demand (i.e. drug prevalence). However, other factors, such as age profile and drug use patterns, and in particular the availability of treatment places and options, may also influence this relationship and should be considered alongside the data points presented above for any future analysis.

The analysis has raised a number of questions for further consideration. For example, the greater share of opioid drug treatments than any other drug type is reported from very affluent areas. Further analysis, along with the introduction of other factors, is likely to provide important perspectives on the demand for and allocation of drug and alcohol treatment services.

An impact analysis of the missing SA values in the NDTRS was not undertaken to ascertain if this could in any way introduce bias in the data analysis. If further more in-depth analysis is required, particularly at a more local level, then the impact of the missing values would need to be considered, especially in relation to non-participation in the NDTRS.

There is also the potential to expand the project to include other relevant data sources, for example, the National Drug and Alcohol Survey and the National Drug-Related Deaths Index. Some consideration could be given to the development of interactive maps of results and provide them to relevant stakeholders. In the meantime, the HRB will continue to work to improve the coverage of SAs in the NDTRS.

## Next steps

The project will require additional input from a broader range of partners to progress this work of conducting further and more in-depth analyses of the relationship between addiction treatment and deprivation. This could be facilitated by an initial stakeholder workshop to consider findings and to identify areas for further investigation.

**Patrick Collins (Pobal), Anne Marie Carew (HRB), Sarah Craig (HRB), Brian Galvin (HRB), Suzi Lyons (HRB) and Martin Quigley (Pobal)**

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- 1 Haase T (2016) *The 2016 Pobal HP Deprivation Index (SA)*. Dublin: Trutz Haase Social and Economic Consultants. Available from: <http://trutzhaase.eu/deprivation-index/the-2016-pobal-hp-deprivation-index-for-small-areas/>
- 2 Haase T and Pratschke J (2017) *A performance measurement framework for drug and alcohol task forces*. Dublin: Trutz Haase Social and Economic Consultants. <https://www.drugsandalcohol.ie/27488/>
- 3 Central Statistics Office (CSO) (2016) *Census 2016 Boundary Files*. Dublin: CSO. Available from: <https://www.cso.ie/en/census/census2016reports/census2016boundaryfiles/>
- 4 Department of Health (2017) *Reducing Harm, Supporting Recovery: a health-led response to drug and alcohol use in Ireland 2017–2025*. Dublin: Department of Health. <https://www.drugsandalcohol.ie/27603/>
- 5 For further information on Sláintecare, visit: <https://www.gov.ie/en/campaigns/slaintecare-implementation-strategy/>
- 6 Department of Health (2021) *Sláintecare implementation strategy & action plan 2021–2023*. Dublin: Government of Ireland. <https://www.drugsandalcohol.ie/34321/>

# Analysis of national drug and alcohol data by regional health area

This article presents the most recently available drug and alcohol data on treatment demand, general population prevalence, and opioid prevalence analysed by regional health area in Ireland.

## 1. Alcohol and drug treatment by regional health area

### Background

Sláintecare is the Irish Government's 10-year programme for transforming how healthcare is delivered in Ireland.<sup>1</sup> It aims to give equal access to services, with a vision of a universal health service, under the banner of *Right Care, Right Place, Right Time*. Part of this process is the creation of new healthcare areas that are based on population data, including on how people currently access services, in addition to being informed by a public consultation. In total, there are now six regional health areas (RHA) (see Box 1), encompassing 96 Community Health Networks (CHN).

#### Box 1: Regional health areas

- Area A: North Dublin, Meath, Louth, Cavan, Monaghan
- Area B: Longford, Westmeath, Offaly, Laois, Kildare, parts of Dublin and Wicklow
- Area C: Tipperary South, Waterford, Kilkenny, Carlow, Wexford, Wicklow, part of South Dublin
- Area D: Kerry and Cork
- Area E: Limerick, Tipperary North, Clare
- Area F: Donegal, Sligo, Leitrim, Roscommon, Mayo, Galway

Ensuring that the National Drug Treatment Reporting System (NDTRS) can provide data for the new Sláintecare areas will support the current Sláintecare reform programmes.<sup>2</sup>

- **Programme 1:** Improving Safe, Timely Access to Care and Promoting Health and Wellbeing is focused on integration, safety, prevention, shift of care to the right location, productivity, extra capacity, and achieving Sláintecare waiting time targets.
- **Programme 2:** Addressing Health Inequalities is focused on a journey towards universal healthcare.

## Methods

The NDTRS is the national epidemiological surveillance database that records and reports on treated problem drug and alcohol use in Ireland. Established in 1990, the NDTRS is maintained by the National Health Information Systems (NHIS) of the Health Research Board (HRB) on behalf of the Department of Health. Treatment for problem alcohol and drug use in Ireland is provided by statutory and non-statutory services, including residential centres, community-based addiction services, general practices, and prison services. The NDTRS records cases of treatment, as there is currently no national system-wide unique identifier in the Irish health system. In any given year, individuals may appear more than once if treated in different centres or if they return to treatment in the same centre.

NDTRS data are recorded on LINK, an online reporting tool. LINK utilises Health Atlas Ireland to record geographical markers automatically as cases are entered. Through Health Atlas, the NDTRS currently records small area (SA), community healthcare organisation (CHO), local health office (LHO), electoral division (ED), county, and task force area (TFA). Using a mapping guide provided by the Central Statistics Office (CSO), and existing geographical markers in LINK, it was possible to derive RHA and CHN from the current and historical NDTRS data. NDTRS data were then analysed using RHA to describe the national treatment data based on where the client resided in the 30 days prior to treatment.

The population for each RHA varies, ranging from 390,000 (Area E) to 1,080,000 (Area A) (see Box 2). Rates of treatment cases per 100,000 population for both alcohol (see Table 4) and drugs (excluding alcohol) (see Table 5) as main problems were analysed using Census 2016 population data for each RHA.

### Box 2: Regional health area population\*

Area A: 1,080,000

Area B: 1,000,000

Area C: 900,000

Area D: 690,000

Area E: 390,000

Area F: 710,000

\* Census 2016 figure rounded

## Results

Between 2016 and 2021, Area A (North Dublin, Meath, Louth, Cavan, Monaghan) accounted for the highest proportion (24.9%) of treatment episodes (drugs and alcohol) nationally (see Table 1). The lowest proportion of episodes (7.8%), where RHA is known, occurred in Area E (Limerick, Tipperary North, Clare) (see Table 1). A small proportion of episodes (3.3%) could not be attributed to an RHA, either because the client address was not known (3.0%) or the client resided outside of Ireland (0.3%).

Over the period 2016–2021, Area C (Tipperary South, Waterford, Kilkenny, Carlow, Wexford, Wicklow, part of South Dublin) accounted for the highest proportion (21.6%) of cases reporting alcohol as a main problem nationally, followed by Area A (19.3%) (see Table 2). Area E had the lowest proportion of such cases (7.0%).



**Table 1: Number of cases treated for drugs or alcohol as a main problem, by RHA and year, NDTRS 2016–2021**

Area	2016		2017		2018		2019		2020*		2021	
	n	%	n	%	n	%	n	%	n	%	n	%
All cases	16 870		16 272		17 738		18 210		15 526		17 628	
Area A	3778	22.4	3822	23.5	4356	24.6	4397	24.1	4006	25.8	5065	28.7
Area B	3509	20.8	3257	20.0	3844	21.7	4003	22.0	3322	21.4	4075	23.1
Area C	3137	18.6	3189	19.6	3422	19.3	3337	18.3	2849	18.3	3116	17.7
Area D	2617	15.5	2295	14.1	2462	13.9	2506	13.8	1950	12.6	1910	10.8
Area E	1286	7.6	1236	7.6	1379	7.8	1421	7.8	1263	8.1	1342	7.6
Area F	1853	11.0	1807	11.1	1739	9.8	2004	11.0	1644	10.6	1697	9.6
Area unknown	618	3.7	602	3.7	476	2.7	508	2.8	450	2.9	366	2.1
Outside Ireland	72	0.4	64	0.4	60	0.3	34	0.2	42	0.3	57	0.3

\* Treatment figures impacted by the Covid-19 pandemic.

**Table 2: Number of cases treated for alcohol as a main problem, by RHA and year, NDTRS 2016–2021**

Area	2016		2017		2018		2019		2020*		2021	
	n	%	n	%	n	%	n	%	n	%	n	%
All cases	7643		7350		7464		7546		5824		6859	
Area A	1399	18.3	1360	18.5	1350	18.1	1417	18.8	1181	20.3	1548	22.6
Area B	1356	17.7	1281	17.4	1273	17.1	1257	16.7	957	16.4	1278	18.6
Area C	1509	19.7	1619	22.0	1697	22.7	1609	21.3	1296	22.3	1474	21.5
Area D	1411	18.5	1240	16.9	1293	17.3	1290	17.1	943	16.2	971	14.2
Area E	507	6.6	487	6.6	536	7.2	570	7.6	424	7.3	483	7.0
Area F	1210	15.8	1154	15.7	1151	15.4	1306	17.3	928	15.9	1027	15.0
Area unknown	196	2.6	166	2.3	115	1.5	71	0.9	64	1.1	44	0.6
Outside Ireland	55	0.7	43	0.6	49	0.7	26	0.3	31	0.5	34	0.5

\*Treatment figures impacted by the Covid-19 pandemic.

Over the period, Area A accounted for the highest proportion (28.8%) of cases of drug treatment (excluding alcohol), followed by Area B (Longford, Westmeath, Offaly, Laois, Kildare, parts of Dublin and Wicklow) (24.5%). Area F (Donegal, Sligo, Leitrim, Roscommon, Mayo, Galway) had the lowest proportion (6.7%) of drug treatment cases (see Table 3).

**Table 3: Number of cases treated for drugs (excluding alcohol) as a main problem, by RHA and year, NDTRS 2016–2021**

Area	2016		2017		2018		2019		2020*		2021	
	n	%	n	%	n	%	n	%	n	%	n	%
All cases	9227		8922		10 274		10 664		9702		10 769	
Area A	2379	25.8	2462	27.6	3006	29.3	2980	27.9	2825	29.1	3517	32.7
Area B	2153	23.3	1976	22.1	2571	25.0	2746	25.8	2365	24.4	2797	26.0
Area C	1628	17.6	1570	17.6	1725	16.8	1728	16.2	1553	16.0	1642	15.2
Area D	1206	13.1	1055	11.8	1169	11.4	1216	11.4	1007	10.4	939	8.7
Area E	779	8.4	749	8.4	843	8.2	851	8.0	839	8.6	859	8.0
Area F	643	7.0	653	7.3	588	5.7	698	6.5	716	7.4	670	6.2
Area unknown	422	4.6	436	4.9	361	3.5	437	4.1	386	4.0	322	3.0
Outside Ireland	17	0.2	21	0.2	11	0.1	8	0.1	11	0.1	23	0.2

\*Treatment figures impacted by the Covid-19 pandemic.

**Table 4: Number of cases treated for alcohol as a main problem per 100,000 of RHA population, by RHA and year, NDTRS 2016–2021**

Regional health area	2016	2017	2018	2019	2020*	2021
Area A	129.5	125.9	125.0	131.2	109.4	143.3
Area B	135.6	128.1	127.3	125.7	95.7	127.8
Area C	167.7	179.9	188.6	178.8	144.0	163.8
Area D	204.5	179.7	187.4	187.0	136.7	140.7
Area E	130.0	124.9	137.4	146.2	108.7	123.8
Area F	170.4	162.5	162.1	183.9	130.7	144.6

\*Treatment figures impacted by the Covid-19 pandemic.

In 2021, the number of alcohol treatment cases per 100,000 population at RHA-level ranged from 123.8 (Area E) to 163.8 (Area C) (see Table 4). All areas experienced a substantial drop in treatment figures in 2020, due to the Covid-19 pandemic. In 2021, many of the areas had not yet returned to pre-pandemic numbers accessing treatment.

In 2021, the number of drug treatment (excluding alcohol) episodes per 100,000 population at RHA-level ranged from 94.4 (Area F) to 325.6 (Area A) (see Table 5). Treatment figures for 2020 were impacted by the Covid-19 pandemic in almost all areas. However, most areas had returned to pre-pandemic levels in 2021.

**Table 5: Number of cases treated for drugs as a main problem per 100,000 of RHA population, by RHA and year, NDTRS 2016–2021**

Regional health area	2016	2017	2018	2019	2020*	2021
Area A	220.3	228.0	278.3	275.9	261.6	325.6
Area B	215.3	197.6	257.1	274.6	236.5	279.7
Area C	180.9	174.4	191.7	192.0	172.6	182.4
Area D	174.8	152.9	169.4	176.2	145.9	136.1
Area E	199.7	192.1	216.2	218.2	215.1	220.3
Area F	90.6	92.0	82.8	98.3	100.8	94.4

\*Treatment figures impacted by the Covid-19 pandemic.

## Discussion

NDTRS episode-based addiction treatment data for RHAs and CHNs can assist with developing a population-health approach for service planning and funding in addiction services, monitor access to addiction services by socially excluded groups, and inform any population-based resource allocation funding model.

The NDTRS has a coverage of over 70% of all applicable services, but this analysis did not take into account the impact of those services that do not participate in the NDTRS. At the higher RHA level, the impact is likely to be minimal, but at a CHN level the variation in participation could hinder efforts to understand addiction treatment service needs and potential inequalities in access. Greater cross-organisation communication between the HRB, funders and stakeholders, and services would assist in addressing this gap.<sup>3</sup>

## 2. Analysis of 2019–20 National Drug and Alcohol Survey by regional health area

### Introduction

In 2018, the HRB commissioned IPSOS MRBI to conduct the fifth Irish National Drug and Alcohol Survey (NDAS). The 2019–20 NDAS followed best practice guidelines recommended by the European Monitoring Centre for Drugs and Drug Addiction. The questionnaire, based on the European Model Questionnaire, was administered in face-to-face interviews with respondents aged 15 years and older. A sample comprising all households throughout Ireland was randomly selected to participate. To facilitate comparisons between the 10 regional drug and alcohol task force (RDATF) areas, sampling was undertaken by RDATF area to enable the estimation of drug use prevalence in each area and to allow for monitoring of drug prevalence trends over time. Fieldwork began in February 2019 and was completed in March 2020. Of the household members contacted, 5,762 agreed to take part. The sample was weighted by sex, age, and region to ensure that it was representative of the general population. A more comprehensive description of the NDAS methodology is provided in the survey's technical report.<sup>4</sup>

## Alcohol use

Almost three-quarters (74.2%) of respondents were current drinkers (defined as those who had used alcohol in the last year). This ranged from 68.1% in Area E to 77.3% in Area B (see Table 6). Hazardous drinking was measured using the World Health Organization's Alcohol Use Disorders Identification Test-Concise (AUDIT-C) screening tool. Among the whole sample, 37.9% met the criteria for hazardous drinking, which ranged from 32.3% in Area E to 41.1% in Area C. Alcohol use disorder (AUD) was measured using the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5). There was considerable variation in the prevalence of AUD, from 8.2% in Area D (Kerry and Cork) to 17.5% in Area A. The overall prevalence of AUD in Ireland was 14.8%.

**Table 6: Prevalence of current drinking, hazardous drinking, and alcohol use disorder, by RHA**

Alcohol use	Ireland (%)	RHA A (%)	RHA B (%)	RHA C (%)	RHA D (%)	RHA E (%)	RHA F (%)
Respondents (unweighted) (n)	5762	991	1332	1093	574	467	1305
Current drinker	74.2	76.1	77.3	73.8	73.6	68.1	71.6
AUDIT-C	37.9	39.4	38.4	41.1	35.1	32.3	36.6
Alcohol use disorder	14.8	17.5	15.3	16.7	8.2	12.1	15.4

## Illegal drug use

In Ireland, 7.4% of adults reported use of any illegal drug in the previous year (see Table 7). Last-year prevalence of any illegal drug was lowest in Area E (6.1%) and highest in Area B (8.7%). There were differences in the types of drug use across RHA. In Area F, last-year prevalence of cannabis was relatively low (4.7% vs 5.9% nationally) and it also had the lowest prevalence of cocaine use (0.9% vs 1.9% nationally). However, it had the highest prevalence of ecstasy use (4.0% vs 2.2% nationally) and LSD use (2.8% vs 0.9% nationally).

**Table 7: Prevalence of last-year drug use, by drug type and RHA**

Drug type	Ireland (%)	RHA A (%)	RHA B (%)	RHA C (%)	RHA D (%)	RHA E (%)	RHA F (%)
Any illegal drug	7.4	6.5	8.7	7.8	6.2	6.1	7.3
Cannabis	5.9	6.1	7.4	6.5	5.8	2.1	4.7
Ecstasy	2.2	1.0	3.2	1.3	1.3	2.5	4.0
Cocaine	1.9	2.2	2.2	2.2	1.0	1.9	0.9
LSD	0.9	0.2	1.0	0.2	0.4	0.8	2.8
Magic mushrooms	0.4	1.1	0.0	0.3	0.6	0.9	0.3
Amphetamines	0.8	0.3	1.4	0.0	0.6	0.0	2.5
Poppers	1.4	0.7	2.2	0.1	0.9	0.7	3.7
New psychoactive substances	0.6	0.1	1.0	0.2	0.6	0.0	1.8
Solvents	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Crack	0.2	0.0	0.2	0.1	0.0	0.4	0.5
Heroin	0.0	0.0	0.1	0.0	0.0	0.0	0.0

**Table 8: Prevalence of last-year cannabis use disorder, by RHA**

Cannabis use	Ireland (%)	RHA A (%)	RHA B (%)	RHA C (%)	RHA D (%)	RHA E (%)	RHA F (%)
Cannabis use disorder	1.2	1.8	1.1	1.0	0.8	0.7	1.2

Last-year prevalence of cannabis use was 5.9% in Ireland, ranging from 2.1% in Area E to 7.4% in Area B. The prevalence of ecstasy use ranged from 1.0% in Area A to 4.0% in Area F. There was less variation in the prevalence of cocaine use; last-year prevalence was low in Area D and Area F (1.0% and 0.9%, respectively) and ranged from 1.9% to 2.2% in the four other RHA areas.

Cannabis use disorder (CUD) was defined as any cannabis abuse or dependence in the 12 months prior to the survey and was measured using an instrument called the Munich-Composite International Diagnostic Interview (M-CIDI). The last-year prevalence of CUD was 1.2% in Ireland and ranged from 0.7% in Area E to 1.8% in Area A (see Table 8).

### Use of prescribable drugs

Last-year prevalence of opioid pain relievers was 32.2% in Ireland, ranging from 17.3% in Area D to 37.6% in Area A. There was less variation in the prevalence of sedatives or tranquillisers; last-year prevalence nationally was 5.5%, ranging from 4.2% in Area D to 6.8% in Area C (see Table 9).

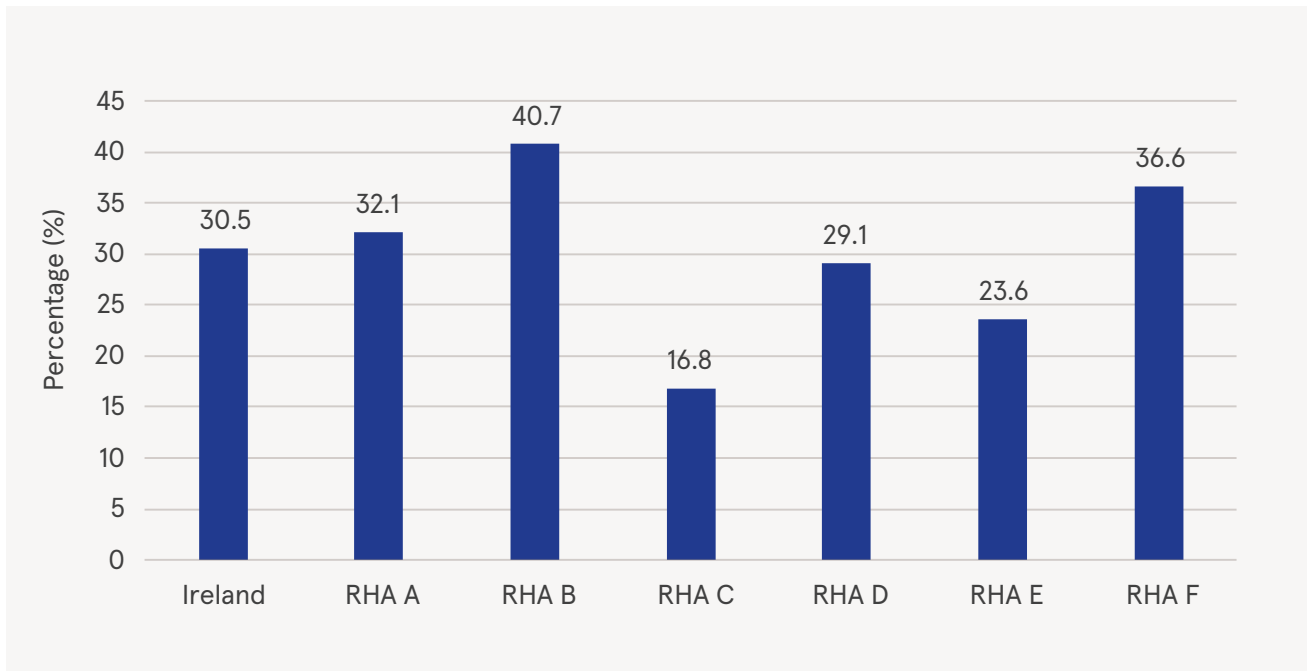
**Table 9: Prevalence of last-year use of prescribable drugs, by drug type and RHA**

Drug type	Ireland (%)	RHA A (%)	RHA B (%)	RHA C (%)	RHA D (%)	RHA E (%)	RHA F (%)
Opioid pain relievers	32.2	37.6	36.3	30.7	17.3	28.6	35.4
Sedatives or tranquillisers	5.5	5.5	5.2	6.8	4.2	5.3	4.9
Anabolic steroids	0.1	0.2	0.0	0.0	0.2	0.3	0.1
Methadone	0.0	0.1	0.0	0.0	0.1	0.0	0.1

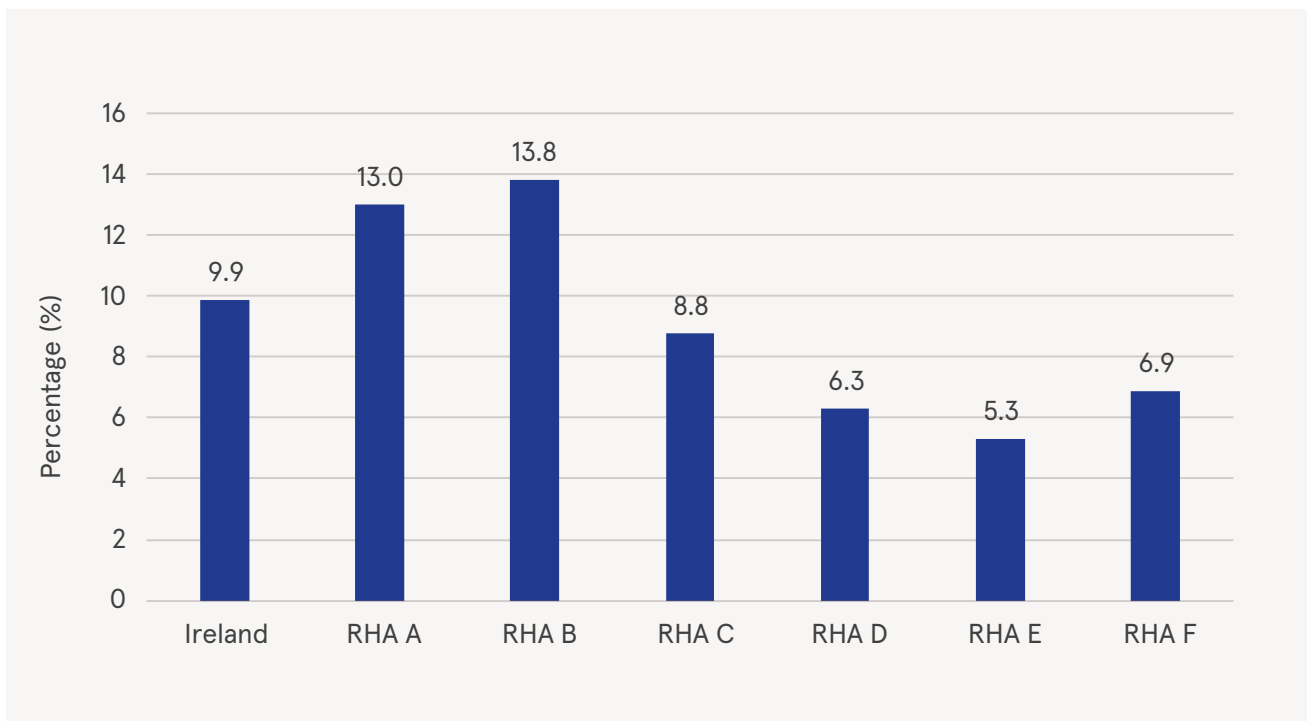
### Impact of drug use on local communities

Questions about the impact of drug use on local communities and drug-related intimidation were included in the 2019–20 NDAS for the first time. Three in 10 (30.5%) of respondents reported that there was a very big or fairly big problem with people using or dealing drugs in their local area (see Figure 1). People living in Area B were most likely to state that this was a big or fairly big problem (40.7%).

One in 10 respondents (9.9%) had either personal experience of drug-related intimidation or knew somebody who had been intimidated. People living in Area A (13.0%) and Area B (13.8%) were most likely to report an experience of drug-related intimidation (see Figure 2).



**Figure 1: Proportion of respondents reporting that people using or dealing drugs was a very big or fairly big problem in their local area, by RHA**



**Figure 2: Proportion of respondents reporting experience of drug-related intimidation, by RHA**

### 3. Estimates of problematic opioid use, 2019, by regional health area

Data on opioid use for the years 2015–2019 were collected from four sources: treatment clinics, general practitioners (GPs), the Irish Prison Service, and the Probation Service<sup>5</sup>. Employing the capture–recapture (CRC) method, Poisson log–linear models were applied to the overlap data to find the model with the best fit in order to estimate the hidden population not identified by any of the data sources. Source–by–source interaction terms were tested by adding them to the base model in all possible combinations. The best model for estimating the size of the hidden population was determined by comparing the deviance to the chi-squared distribution and the Akaike information criterion (AIC) value. The simplest model with the lowest AIC value that provided a credible estimate was used (see Table 10).

**Table 10: Estimates of the number of problematic opioid users, by RHA and rates per 1,000 population aged 15–64 years, 2019**

Regional health area	Known (n)	Estimate (n)	95% CI	Rate	95% CI
Area A	4156	6255	5946–6797	8.69	8.27–9.45
Area B	4009	6548	6146–7579	10.24	9.61–11.85
Area C	2455	3877	3643–4583	6.37	5.99–7.53
Area D	838	1543	1400–1889	4.27	3.87–5.23
Area E	520	1046	915–1409	4.19	3.66–5.64
Area F	334	606	516–895	1.54	1.31–2.27
<b>Total</b>	<b>12 312</b>	<b>19 875</b>	<b>19 522–21 608</b>	<b>6.68</b>	<b>6.57–7.27</b>

**Derek O’Neill, Ita Condrón, Cathy Kelleher, Suzi Lyons, Deirdre Mongan and Seán Millar**

- For further information on Sláintecare, visit: <https://www.gov.ie/en/campaigns/slaintecare-implementation-strategy/>
- Department of Health (2021) *Sláintecare implementation strategy & action plan 2021–2023*. Dublin: Government of Ireland. <https://www.drugsandalcohol.ie/34321/>
- LINK, the NDTRS online data entry portal, will be updated by mid-2023 to automatically include these RHA and CHN, along with the existing geocodes. In the meantime, specific analysis requests can be provided on request by the NDTRS team at [ndtrs@hrb.ie](mailto:ndtrs@hrb.ie).
- Ipsos MRBI (2022) *The 2019–20 Irish National Drug and Alcohol Survey: technical report*. Dublin: Health Research Board. <https://www.drugsandalcohol.ie/36492/>
- Hanrahan MT, Millar SR, Phillips KP, Reed TE, Mongan D and Perry IJ (2022) *Problematic opioid use in Ireland, 2015–2019*. Dublin: Health Research Board. <https://www.drugsandalcohol.ie/35856/>



# New online regional data resource created by HRB

The Health Research Board (HRB) National Drugs Library has a new online resource that provides regional data on alcohol and other drugs.<sup>1</sup> There are nine Community Healthcare Organisations (CHOs) in Ireland whose services are delivered through the Health Service Executive (HSE) and its funded agencies (see Figure 1). Each CHO operates through an average of 10 primary care networks, which serve a population of approximately 50,000.

A data factsheet has been created for each CHO area with information on drug use and treatment. Prevalence data are from the National Drug and Alcohol Survey (NDAS) and the Problematic Opioid Use in Ireland, 2015–2019 study. Treatment data are from two HRB information sources: the National Drug Treatment Reporting System (NDTRS) and the National Psychiatric In-patient Reporting System (NPIRS).

For easy comparison across areas, an overview factsheet with all CHO data is provided.<sup>2</sup>

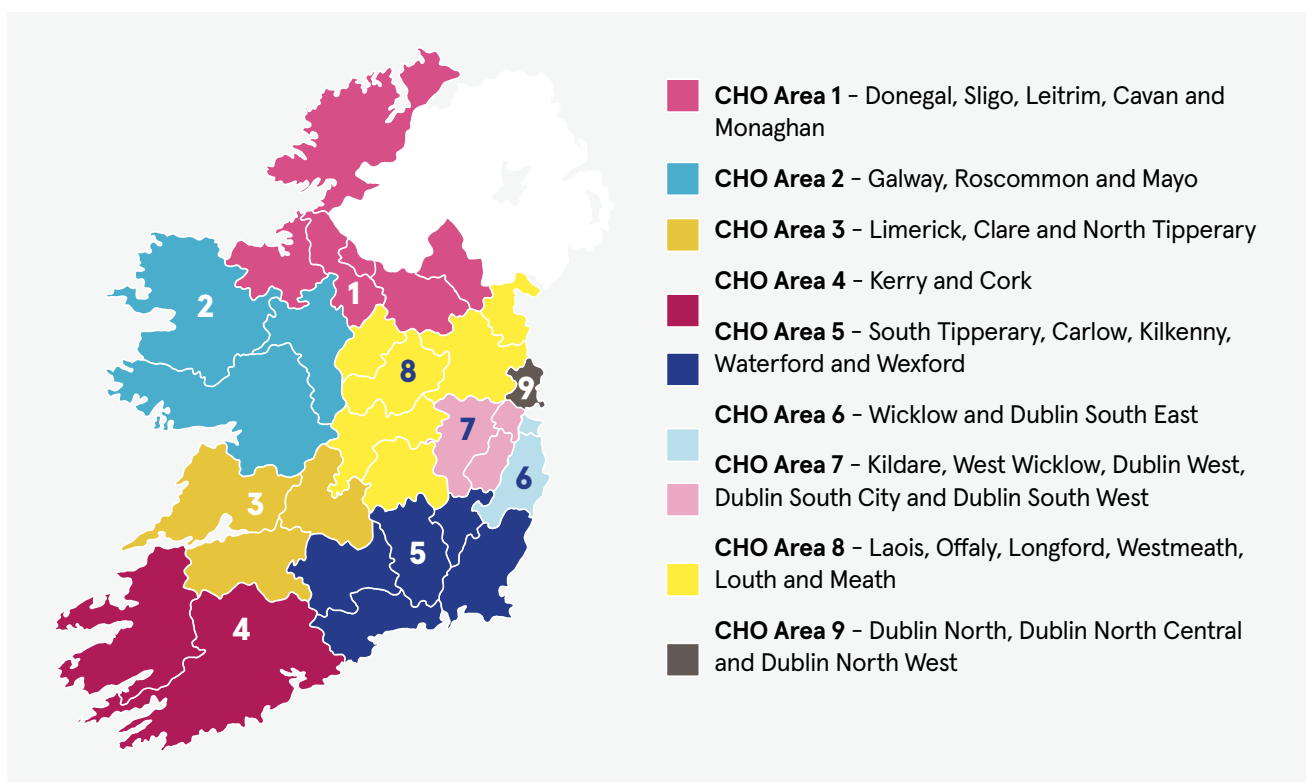


Figure 1: Map of Community Healthcare Organisation areas in Ireland

Mary Dunne

1 To access the HSE CHO area data, visit: [https://www.drugsandalcohol.ie/hse\\_cho\\_area\\_data](https://www.drugsandalcohol.ie/hse_cho_area_data)

2 HRB National Drugs Library (2022) *Drugs data factsheet: all CHO areas*. Dublin: Health Research Board. <https://www.drugsandalcohol.ie/37510/>



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**Health Research Board**  
Grattan House  
67–72 Lower Mount Street  
Dublin 2  
D02 H638

T: 01 234 5168  
E: [drugnet@hrb.ie](mailto:drugnet@hrb.ie)  
W: [www.hrb.ie](http://www.hrb.ie)