



MEDICAL BUREAU OF ROAD SAFETY ANNUAL REPORT 2023



MEDICAL BUREAU OF ROAD SAFETY, HEALTH SCIENCES
CENTRE, UNIVERSITY COLLEGE DUBLIN, BELFIELD, DUBLIN 4



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DIRECTOR'S FOREWORD



It is my pleasure to write this foreword to the Medical Bureau of Road Safety's Annual Report for 2023 and to present the Bureau's contributions and achievements in its forensic functions in the area of road safety. I commence by expressing my sincere thanks to all the dedicated Staff of the Bureau for their considerable contributions to this public service over the course of the year.

The report presents the activities and outcome performances of the Bureau for the year, collating information, data and figures on driving under the influence of intoxicants from its databases of the forensic analyses during 2023.

The Road Safety Strategy 2021 – 2030 remains the core national policy for integrated actions aiming to reduce deaths and injuries on Irish roads arising from road traffic crashes and incidents. Deaths from road collisions in Ireland tragically increased further to 184 in 2023 from an already unacceptable previous increase in 2022 to 155. The Bureau has a targeted input to Strategy Actions 23 and 119 on the Alcohol Interlock Devices Programme (a priority for 2023); Action 31 on consideration of legislation for Polydrug Traffic Offence penalties; and Action 163 of the programme for procurement and roll out of new Preliminary Drug Testing Devices (completed with the introduction of the Securetec DW6S preliminary drug testing system at the end of 2022 and consolidated in its first full year in 2023).

As has been the case since the first Road Safety Strategy in 1998, the Bureau continues as one of the partners in many other Actions and in its overall implementation through active and contributory participation in the Road Safety Strategy Partnership Board and the Ministerial Committee on Road Safety. It continues to work in close partnership with the Department of Transport, An Garda Síochána, the Road Safety Authority and other national and international bodies.

This report sets out in detail the annual demographics of drivers who provided samples for analysis. In 2023, 22 drivers were arrested three times for intoxicated driving, 243 drivers were arrested twice and one driver was arrested seven times. This issue of repeat and high risk intoxicated driving offenders remains to be addressed legislatively, in the prosecutorial process

and also in medical rehabilitation under Action 23 of the Road Safety Strategy which remains to be completed through a Working Group comprising a number of bodies, including the Bureau.

The number of specimens received in 2023 for alcohol analysis by the Bureau continued at a high level of 5,464 specimens. Specimens received for drugs analysis reached 3,873 with 77 drug types targeted for testing. The Bureau Staff has contributed greatly to improvements in service to the public and in support of An Garda Síochána in their Roads Policing remit. Drug analysis timeframes have decreased through 2023 and this should provide a greater ability to remove unsafe drivers from our roads more quickly. Evidential Breath Alcohol Testing was carried out in Garda Stations nationwide in 3,734 cases.

A major achievement in 2023 was in relation to Action 119 with the scientific assessment programme of Alcohol Ignition Interlock devices. It is planned that the approval of a number of devices will be completed in 2024. The system when installed in a motor vehicle will prevent it from starting if the driver tests positive for alcohol and is already in place on a voluntary basis in several bus and truck fleets in the country. This may well be one of the most significant developments in road safety in decades when rolled out on a statutory basis as in the region of 30% of road traffic crashes have alcohol as a contributory factor.

Alcohol remained the most frequently detected intoxicant in drivers. The median alcohol level in blood was 153mg/100ml and in urine was 196mg/100ml when specimens with no trace of alcohol were excluded. These figures have sadly changed very little over the past 10 years. Alcohol intoxicated driving thus remains a very significant danger on Irish roads with many drivers driving when several times over the legal limits for the different categories of driver, including the lower limits set for the specified drivers (learner, novice and professional or heavy vehicle driver).

For drug intoxicants other than alcohol, the three most commonly detected drugs in 2023 were again cannabis, cocaine and benzodiazepines. The mean level of cannabis found in samples was

6.3ng/ml and of cannabis THC acid was 58.2ng/ml. The mean level of cocaine was 60.5ng/ml and of benzoylecgonine was 1032.9ng/ml. These levels are significantly in excess of the legal limits reflecting the high levels found in drug intoxicated drivers which, like alcohol intoxication, are a major contributory factor to road traffic collisions.

Garda enforcement and detection are prerequisites for reducing this stark danger on the roads and the Bureau's testing, approval and supply of scientific equipment to the Gardaí is an essential component of this public duty. The frequent finding of combinations of drugs and drugs with alcohol remains of enormous concern. The drug intoxicant driver landscape is always changing and the Bureau is committed to keeping abreast of new impairing drugs as they become evident in drivers and to keeping up with technology that will enhance the Gardaí's ability to detect impairment and intoxicant use in drivers.

The Director and Staff of the Bureau continued to attend courses and conferences in 2023 for the purpose of continuing education and to contribute to national and international specialist bodies in forensic scientific testing for driving under the influence of intoxicants.

The Bureau thus had another productive year in 2023. It will continue its ongoing and expert contributions to improve and support road safety measures, particularly in the areas of intoxicant driving and medical aspects of safe and healthy driving for all road users into 2024. This will include the advance preparation for the Phase 2 Action Plan for 2025-2027 within the national Road Safety Strategy 2021-2030 as part of Vision Zero for road traffic deaths and serious injuries by 2050.

**Professor Denis A. Cusack,
Director.**



MISSION

To provide a high quality national forensic service in alcohol and drug (intoxicant) detection in support of the effective operation of the road traffic legislation and contribution to transport safety and medical fitness to drive measures.

VISION

To provide the highest quality national forensic service in alcohol and drug (intoxicant) analysis in support of Road Safety

VALUES

Integrity
Professionalism
Collaboration
Engagement
Service Excellence

FUNCTIONS OF THE MEDICAL BUREAU OF ROAD SAFETY

The responsibility for chemical testing of intoxicants in driving in Ireland rests with the Medical Bureau of Road Safety which is a corporate body established in November 1968 by the Minister for Local Government under Part V of the Road Traffic Act, 1968.

The Minister's title was altered to Minister for the Environment & Local Government on 22nd July 1997. In June 2002, the Medical Bureau of Road Safety came under the aegis of the Minister for Transport under the Transfer of Departmental Administration and Ministerial Functions Order 2002.

From 2011 to September 2020 the Medical Bureau of Road Safety was under the Department of Transport, Tourism and Sport. The Medical Bureau of Road Safety is now under the remit of the Department of Transport. The functions of the Bureau are laid down in the Road Traffic Acts 1968 – 2016.





When the Bureau was established in 1968 it commenced operating for Roadside Alcohol Testing, Blood and Urine Alcohol Analysis, the Issue of Certificates and provision of equipment for the taking of specimens (kits).

There have been many legislative changes such as the introduction of evidential breath alcohol testing (EBT) and driving under the influence of drugs (DUID), specimens provided in hospitals, specimens taken from drivers involved in collisions and mandatory intoxicant testing to include Preliminary Breath Alcohol testing (PBT) and Preliminary Drug Testing (PDT). The Bureau issues certificates under Section 17 of the Road Traffic Act 2010 (as amended 2016), certifying the concentration of alcohol in blood or urine, certifying the presence of a drug or drugs in blood or urine and certifying the concentration of a drug or drugs in blood.

The Road Traffic Act 2018 introduced a more severe penalty for drivers having alcohol levels between 50mg/100ml and 80mg/100ml blood and equivalent in urine or breath, recognising that even at low levels of alcohol driving is impaired.

Statutory Instrument 385 of 2020 provided for the issuing of Certificates under Section 17 of the Road Traffic Act 2010 for the presence of particular drugs rather than the class of drug only. Concentration of drugs for those listed with per se limits under the Road Traffic Act 2016 are issued on the same certificate where appropriate. This has streamlined the reporting process and offers more information to the Driver, An Garda Síochána and the Court.

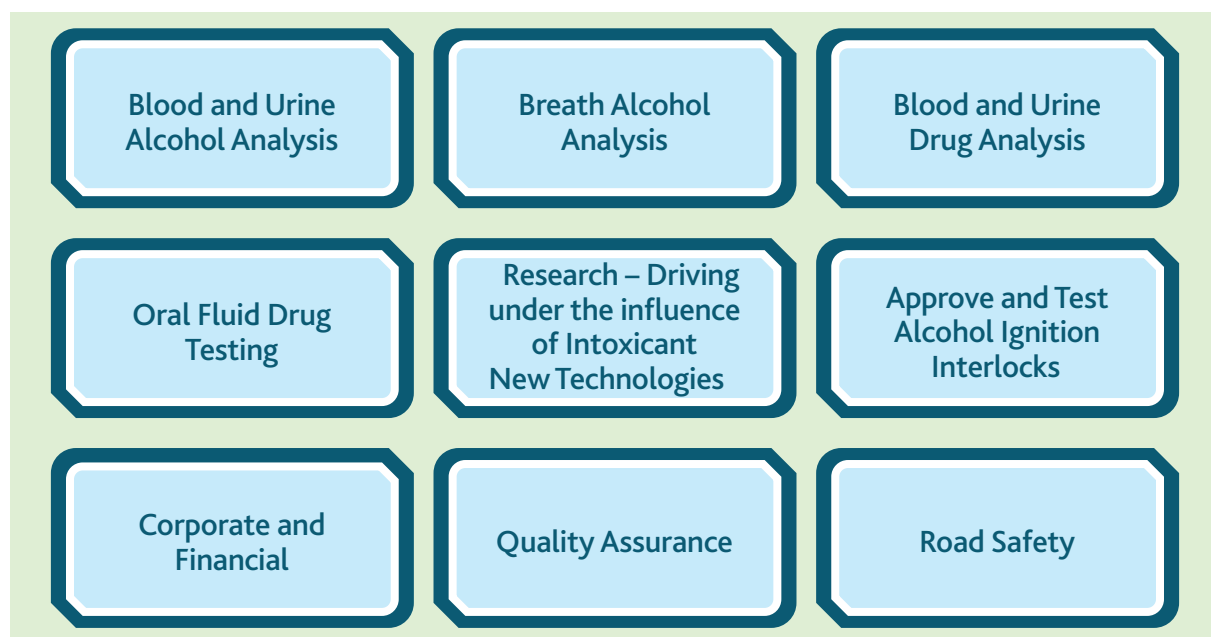
Through 2023 the Bureau continued to focus on its legal responsibilities as set out in the Road Traffic Acts (RTA) and lead in several Actions in the Government's Road Safety strategy 2021- 2030 while playing a collaborative role in other actions lead by the RSA.

The Bureau operates to fulfil the interconnected functions below.

The Bureau continues to keep up to date with technology and use the best methods of analysis. It has kept abreast of innovation in instrumentation in the field of alcohol and drug detection both in the laboratory and outside of the laboratory – roadside and Garda stations.

The Bureau provides a service to the Department of Transport, the Courts, An Garda Síochána, the Aviation Authority of Ireland, defence, prosecution and the public.

The continued successful operation of the Bureau is dependent on the investment in staff training and skill enhancement. The Director is responsible for the day to day running of the Bureau in all of its Statutory functions under the Road Traffic Acts 2010 and 2016 and the Chief Analyst is responsible for the day to day running of the laboratories and their programmes. The Senior Administrator is responsible for the Corporate/ Financial programme and for overall administration within the Bureau.



ACHIEVEMENTS & DEVELOPMENTS DURING 2023

Preliminary Drug Testing

2023 saw the first full year of use of the Securetec DrugWipe 6S by An Garda Síochána for testing drivers' oral fluid for six types of drugs. The Securetec DrugWipe 6S offers Gardaí a convenient method of screening drivers, while being non-intrusive for the driver. Drivers found to be drug positive at the side of the road are brought to a Garda station to have a blood sample taken for testing in the laboratory.

Laboratory Preliminary Drug Screening

The Bureau continues to carry out Preliminary Drug Screening using LC-MS-MS for the analysis of drugs. All specimens which had an alcohol level of less than 100mg/100ml blood or equivalent were screened for the presence of drugs. The LC-MS-MS screening method allows the specific drug or drugs to be identified at this preliminary stage. This test method has been automated to a degree. This feeds into the ongoing efficiencies in the drug testing laboratory. This should lead to further improvements in turnaround times for Drug Certificates being issued.

Laboratory Confirmatory Drug Testing

All specimens that screened positive for a drug or drugs were forwarded for confirmatory analysis. In July 2021 the laboratory limited drug testing to confirm only one drug per specimen. This schedule of testing continued through 2023 which ensured that turnaround times were kept within reasonable times. Full confirmatory testing is resumed for samples received from January 2024. In many cases polydrug use was evident from the screening test. The Bureau certifies the presence of drugs and certifies the concentration of those drugs specified in Schedule 2 of the Road Traffic Act 2016. All laboratory drug testing is carried out in the Bureau's facility in University College Dublin.

Preliminary Breath Alcohol Testing

Preliminary Breath Testing (PBT) devices are provided to An Garda Síochána for use at the roadside to test a driver's breath for the presence of alcohol. The Bureau continues to calibrate these devices twice yearly and there are approximately 1,400 available for use by the force. The Bureau also supplies breath testing devices to The Irish Aviation Authority to facilitate airside cabin crew testing for alcohol.

Alcohol Ignition Interlock

Under Action 119 of the Road Safety Strategy 2021-2030 the Bureau has undertaken the approval of Alcohol Ignition Interlocks. The use of these devices in other jurisdictions is proven to be a valuable Road Safety Measure. Their use in an offender programme is dependent on many factors and is the subject of the working group established under Action 23 of the Road Safety Strategy 2021-2030. Use of alcohol ignition interlocks is already in place in several bus and truck fleets and recognition of their value is increasing.

Evidential Breath Alcohol Testing

Evidential Breath Testing (EBT) instruments are tested twice yearly. The Bureau continued to maintain 87 evidential breath alcohol testing instruments in Garda stations nationwide.

Quality Assurance

Following an audit by INAB (Irish National Accreditation Board) in early 2023, ISO 17025 accreditation was maintained. An extensive schedule of internal audits covering all aspects of the standard was completed in 2023. The majority of the scientific staff are trained as auditors and a high level of quality assurance and compliance is integral to the calibrations and testing carried out in the Bureau. The Bureau's flexible scope allowed method improvements to be added to the scope with ease. The Testing of the Securetec DrugWipe 6S Oral Fluid Testing Cassette was added to the scope.

Health, Welfare and Safety

The Bureau is committed to providing a safe environment for all employees, visiting engineers, Gardaí and others. The Bureau Safety Statement was reviewed and throughout the year Safety Monitors continued to assess and maintain the highest safety standards. University College Dublin's parent Safety Statement is adhered to and staff in the Bureau have access to the full suite of health and wellness offerings made available by the university. There were no reportable or significant accidents or incidents in the year.



Knowledge Sharing and Development

Training of Gardaí by the Bureau continued through 2023. Bureau staff and the Director continued to present at a number of meetings throughout the year. Bureau scientists sit on national and international standards and knowledge sharing committees and working groups including International Organisation of Legal Metrology (OIML), CEN, Eurachem, United Kingdom and Ireland Association of Forensic Toxicologists (UKIAFT) and European Monitoring Centre for Drugs and Drug Addiction (EMCDDA). The work of these committees continued both virtually and in person. (Appendix 1)

Consumables Supply to An Garda Síochána

The Bureau supplies consumables to An Garda Síochána to facilitate enforcement of the Road Traffic legislation with regard to intoxicated driving. Provision of such consumables is demand driven and the Bureau liaises closely with the Garda National Road Policing Bureau having oversight of all requests for stock and replacement devices.

Information Technology

The Bureau continues to heavily rely on its IT systems for all operations and functions.

Over the past year, we have placed significant emphasis on cybersecurity. To help strengthen our defences, an independent third party conducted an external network penetration test. This test simulated external attacks on our network, which is safeguarded by advanced next-generation firewalls. Data collected during testing was then reviewed and any necessary changes implemented. We have also introduced a cybersecurity training program.

All existing staff and new staff members are required to complete mandatory cybersecurity awareness training. A restructuring of the IT function is underway. This reorganization includes realigning core IT operations and primary duties, as well as optimizing management structures and supports. The IT team continues to provide essential day-to-day support for staff and manage the Bureau's substantial IT infrastructure.

Significant progress has been made in developing and embedding the use of Tableau software for data extraction and visualization of key business data. This development has enabled more efficient and insightful analysis, allowing staff to make data-driven decisions with greater accuracy and speed. The recent integration of Tableau software has become a key tool in our data strategy, enhancing our ability to visualize trends and patterns critical to the Bureau's operations.

SPECIMENS RECEIVED IN THE LABORATORY FOR ANALYSIS

In 2023, a total of 5,464 blood and urine specimens were received for alcohol and/or drug testing.

Of these, 3,873 proceeded to Toxicology for further drug screening.

There were 3,734 driver's breath tested on Evidenzers in Garda Stations.

Of all specimens received 17% were urine and 83% were blood.

Table 1: Total Number of Specimens Received within Programmes

Programme	2023	2022	2021	2020
Alcohol Blood & Urine (page 17)	5,464	5,622	5,862	5,967
Toxicology Blood & Urine (page 26)	3,873	3,793	4,321	4,489
Evidential Breath Testing (page 20)	3,734	3,821	3,157	3,278

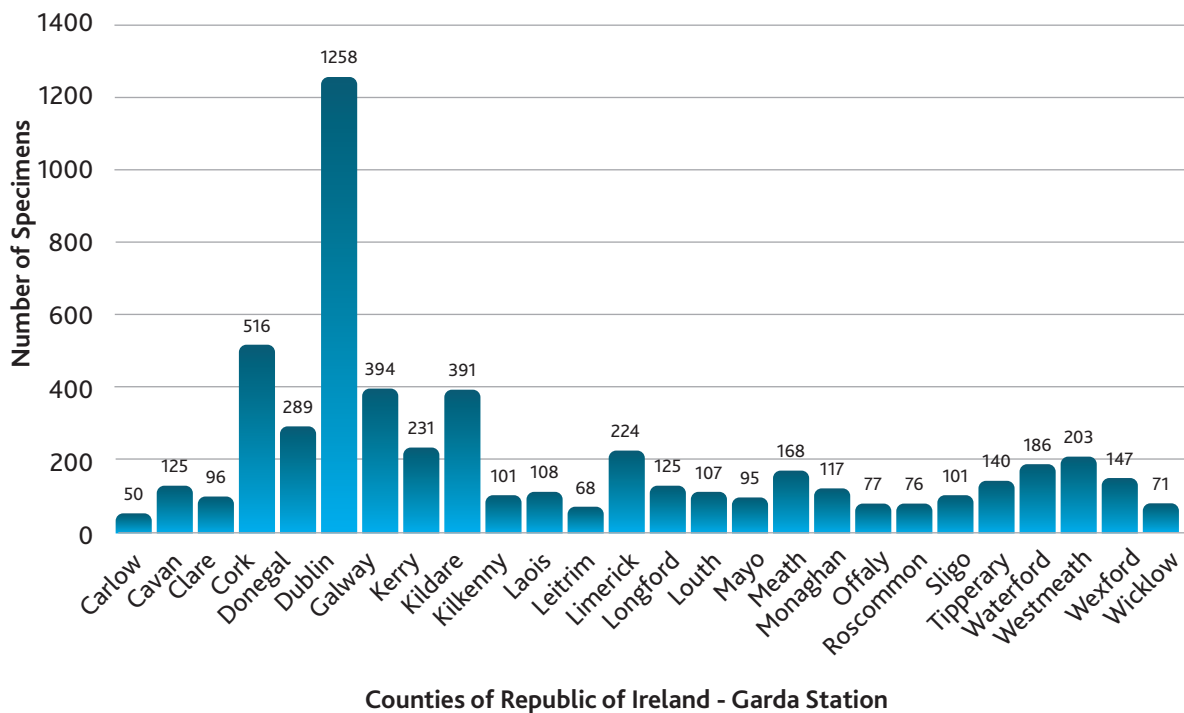


Figure 1: Blood & Urine Specimens received by County of Garda Station

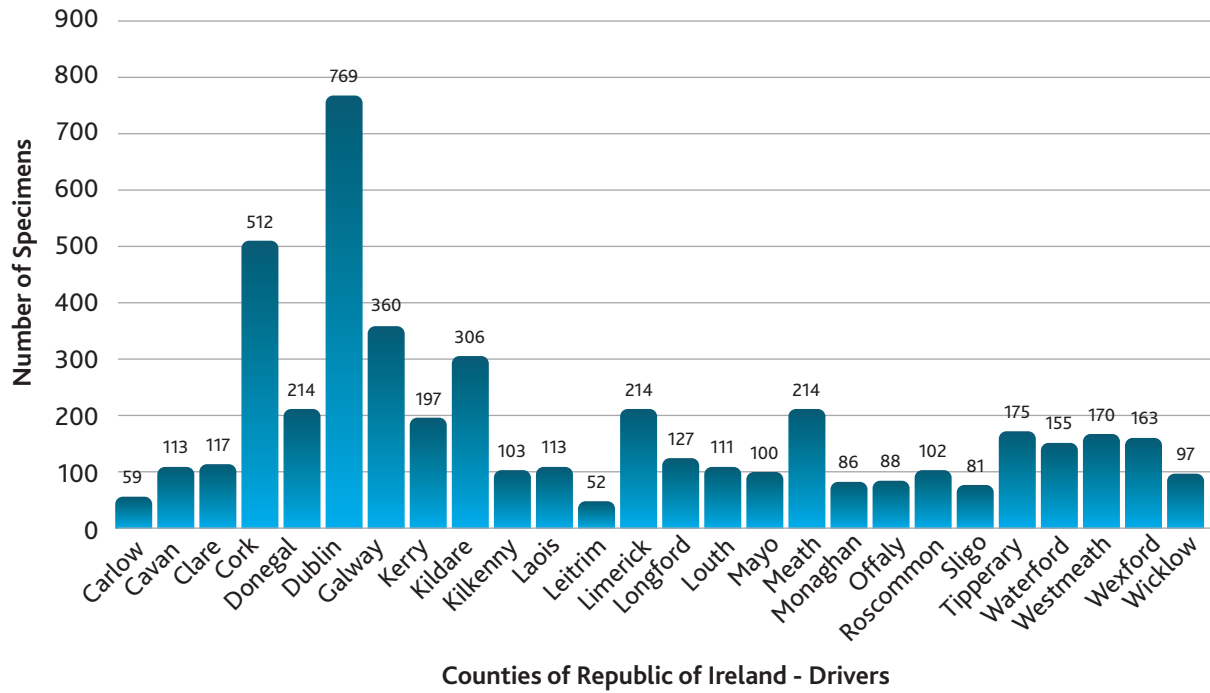


Figure 2: Blood & Urine Specimens - County of residence of Drivers 2023

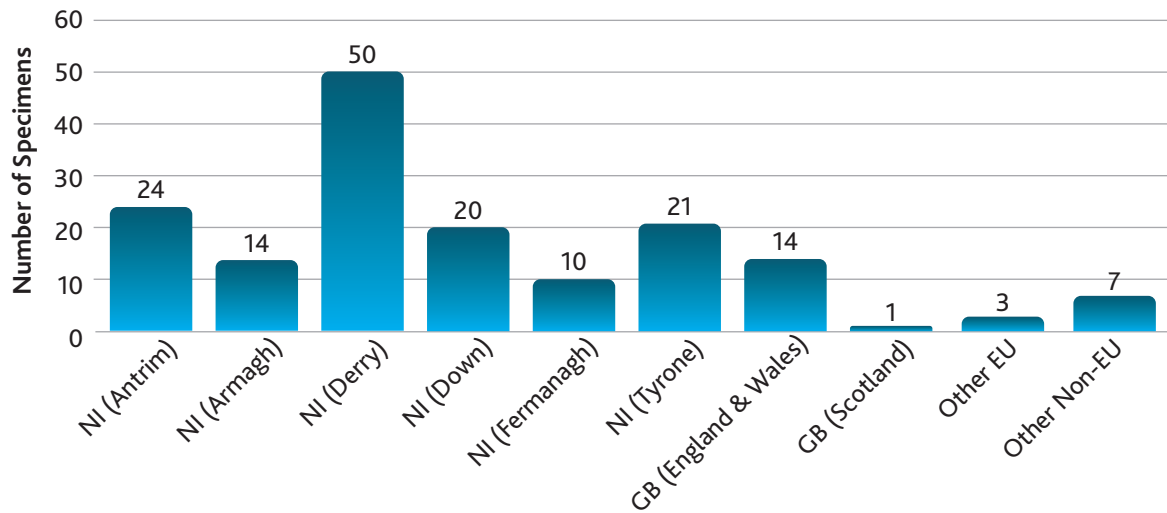


Figure 3: Blood & Urine Specimens - Drivers from outside Republic of Ireland 2023

The most prevalent county/country of residence provided by drivers outside of the Republic of Ireland was Derry, Northern Ireland. This may be due to the proximity to the border county of Donegal with Donegal Garda Stations having the 5th highest number of Blood and Urine Specimens received in 2023.

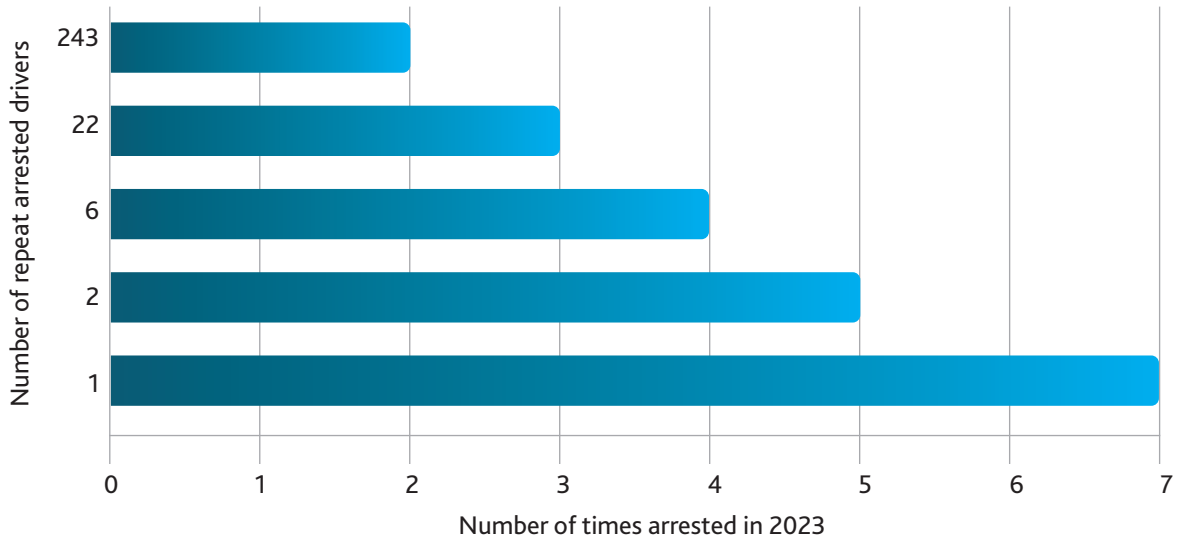


Figure 4: Repeat Arrested Driver Specimens 2023

The level of recidivism detected remains significant with 243 drivers arrested twice in 2023

Analysis of Time

The most prevalent hours for intoxicant drivers are late evening or early morning.

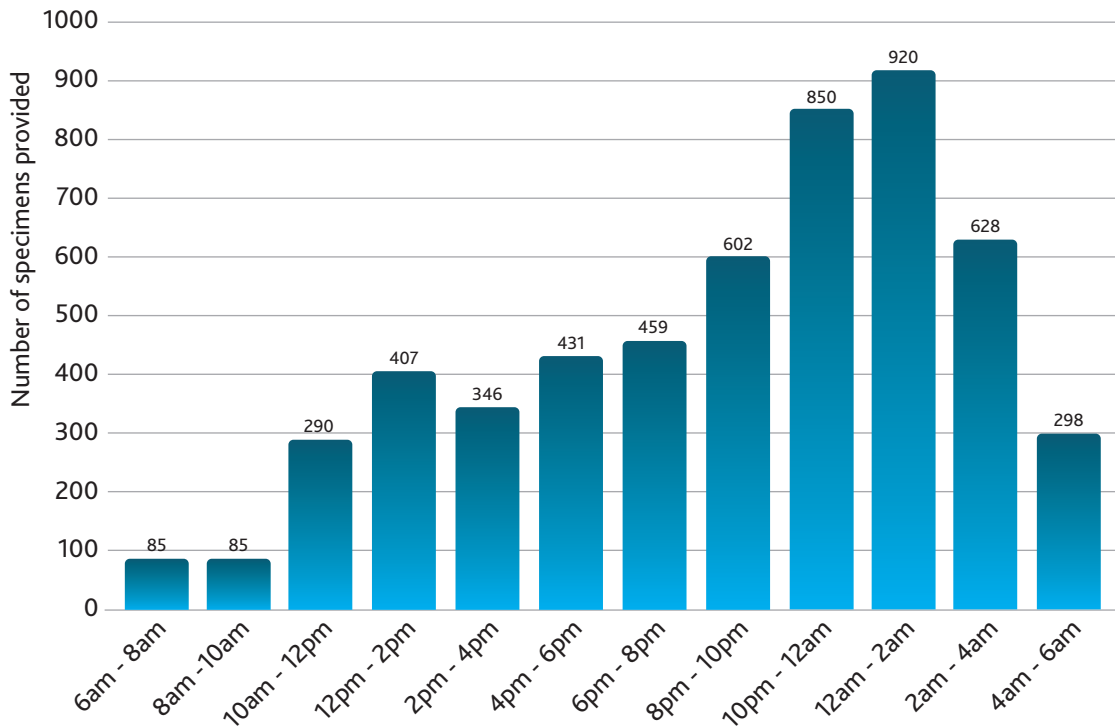


Figure 5: Time Specimen Taken

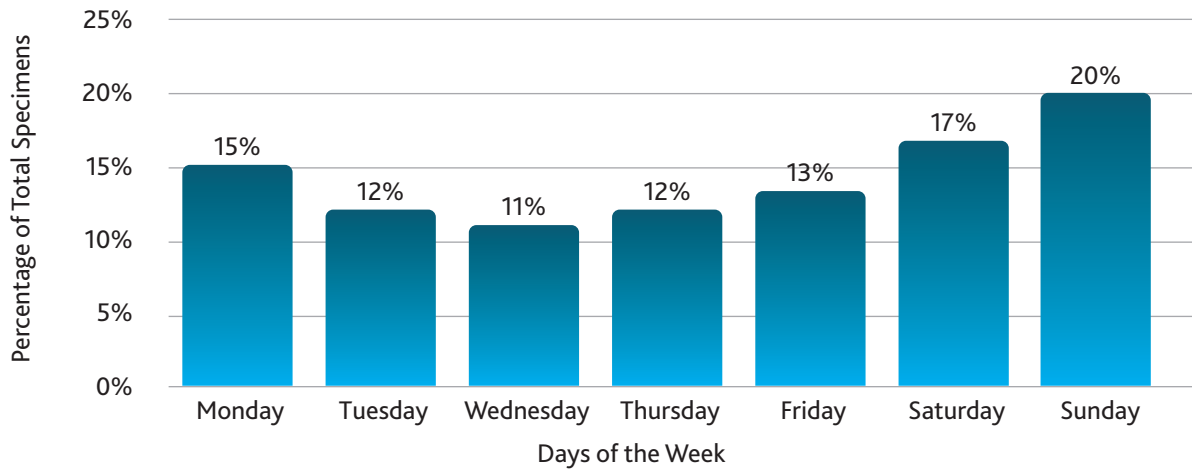


Figure 6: Day of the Week Specimen Provided

More specimens of blood and urine are provided on Saturday, Sunday and Monday than on any other day of the week. The highest numbers of specimens were taken between 10pm on Saturday evenings and 4am on Sunday mornings. The busiest hours for taking of specimens was between 2am - 4am on Sunday morning. However, intoxicated drivers are detected at all times on all days of the week.

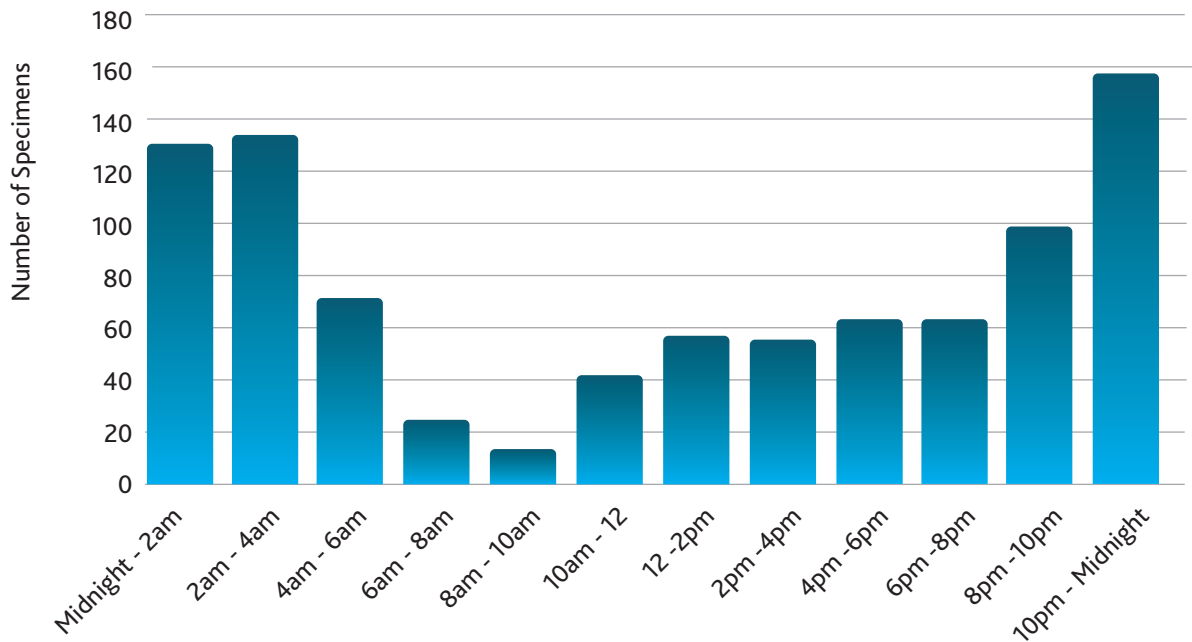


Figure 7: Weekend Hours – Saturday

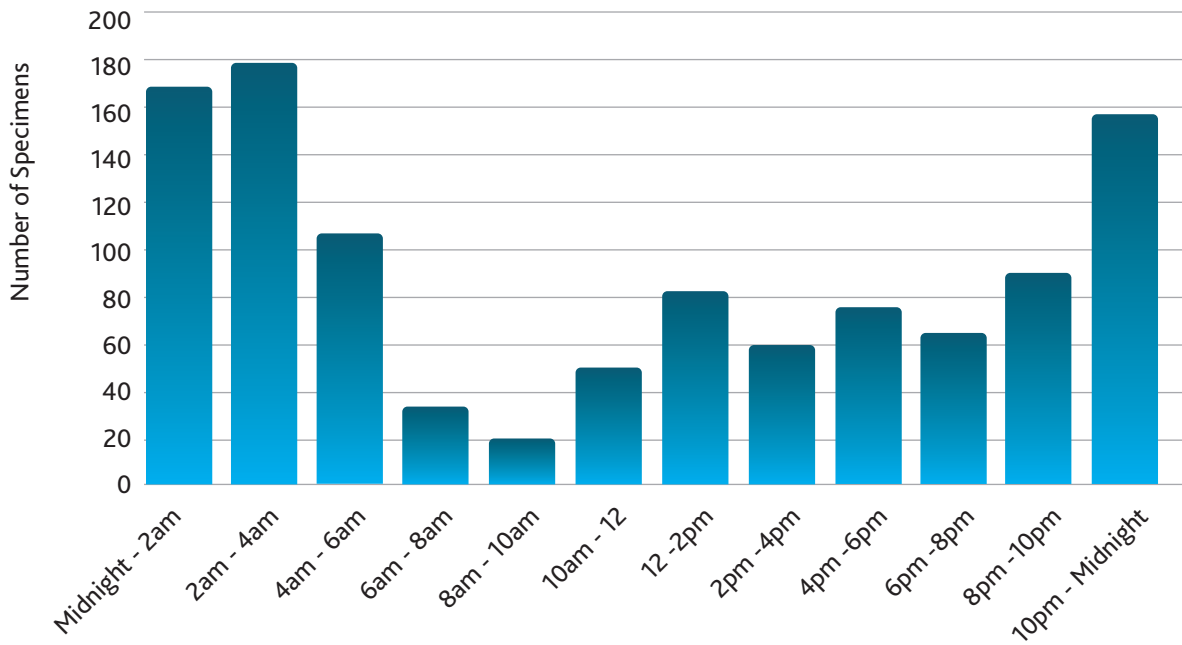


Figure 8: Weekend Hours – Sunday

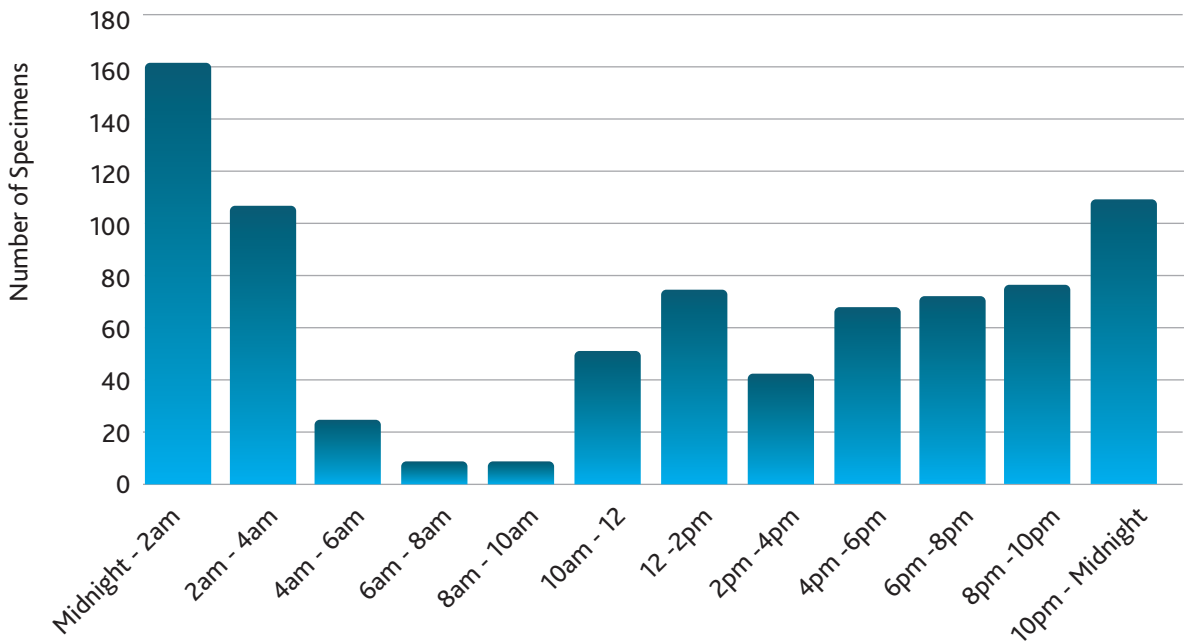


Figure 9: Weekend Hours – Monday



Number of Specimens Provided in Hospitals

In 2023, there were 606 specimens provided in hospitals, this is 11 % of the total blood and urine specimens received. This is on par with specimens provided in hospitals in 2022.

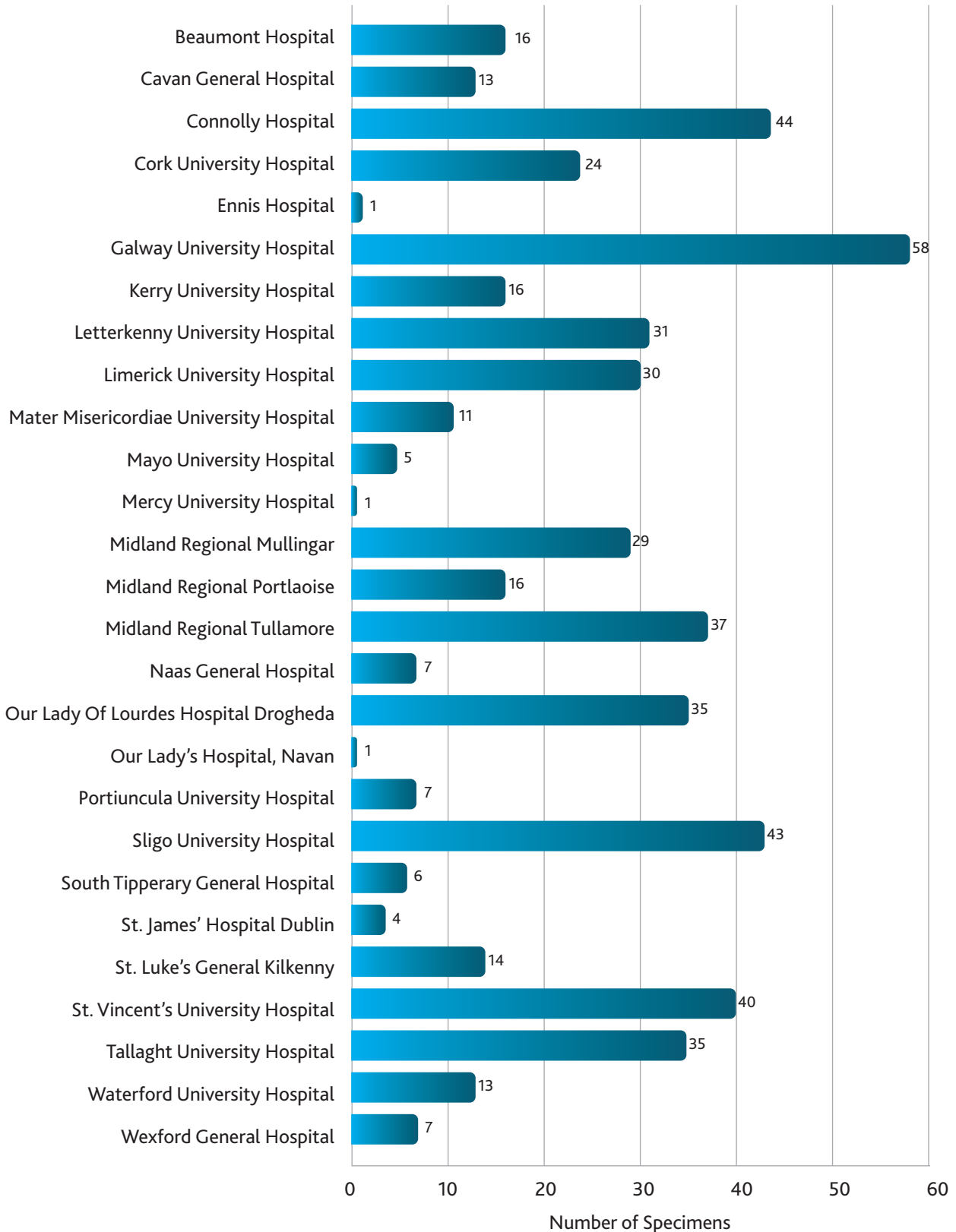


Figure 10: Overview of hospital cases in 2023

Unconscious Drivers

In 2023, six specimens were forwarded to the Bureau for analysis following blood taken from unconscious drivers compared to nine specimens for unconscious drivers received in 2022.

Gender Analysis

The ratio of male to females arrested have remained similar over the past number of years.

Table 2: Gender Profile of Specimens received – Blood & Urine

	2023	2022	2021	2020
MALE	86%	85%	86%	87%
FEMALE	14%	15%	14%	13%

Age Profile

The age profile of drivers providing blood and urine specimens in the 25 to 34-year-old bracket continues to contribute to the greatest percentage of arrested drivers. 79% of total arrested drivers are under 45 years of age. There is a more even spread through the age categories in the female cohort than the male. The youngest arrested driver was 13 years old and the oldest was 90 years old. The youngest male driver was 13 years old and the youngest female driver was 18 years old.

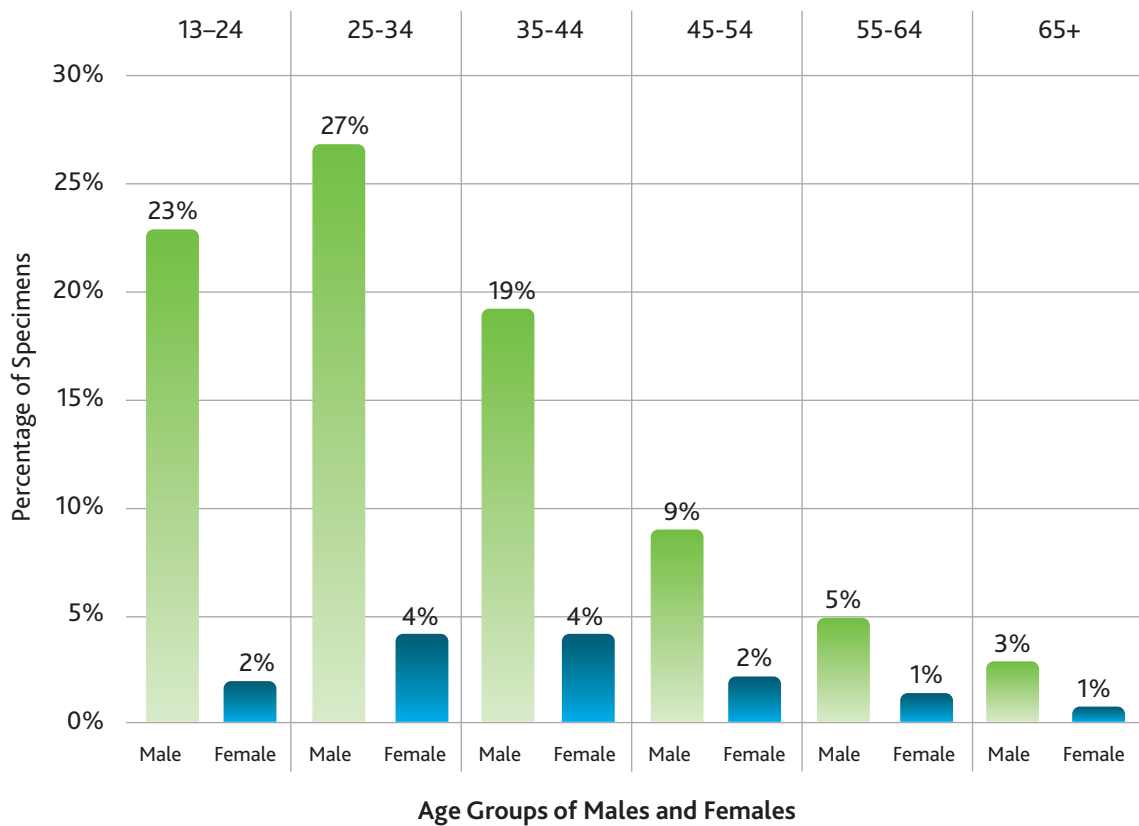


Figure 11: 2023 Age Profile by Gender %

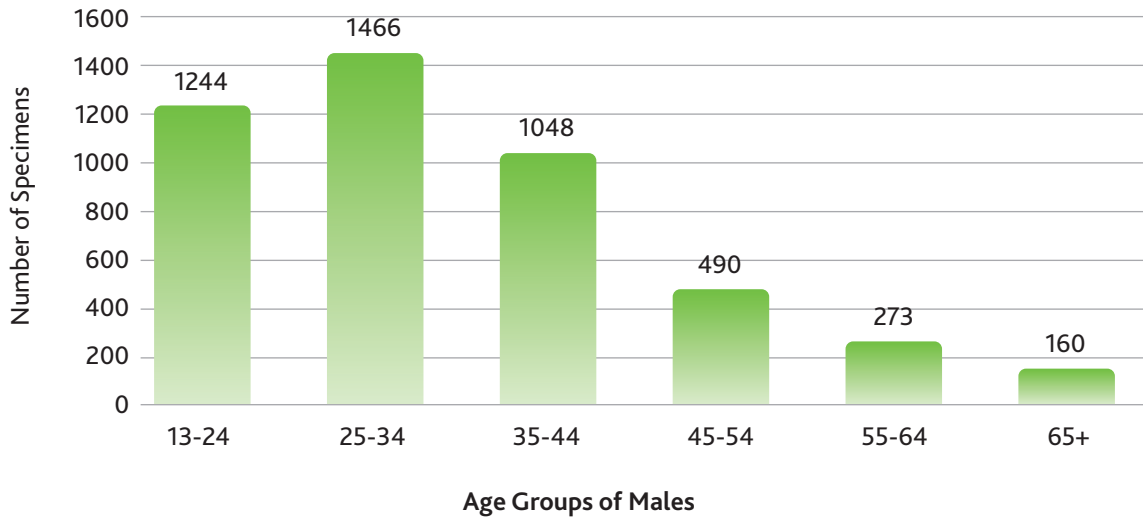


Figure 12: 2023 Age Profile of Males

Of all Male arrested drivers, 80% are under 45 years of age (also 80% in 2022)

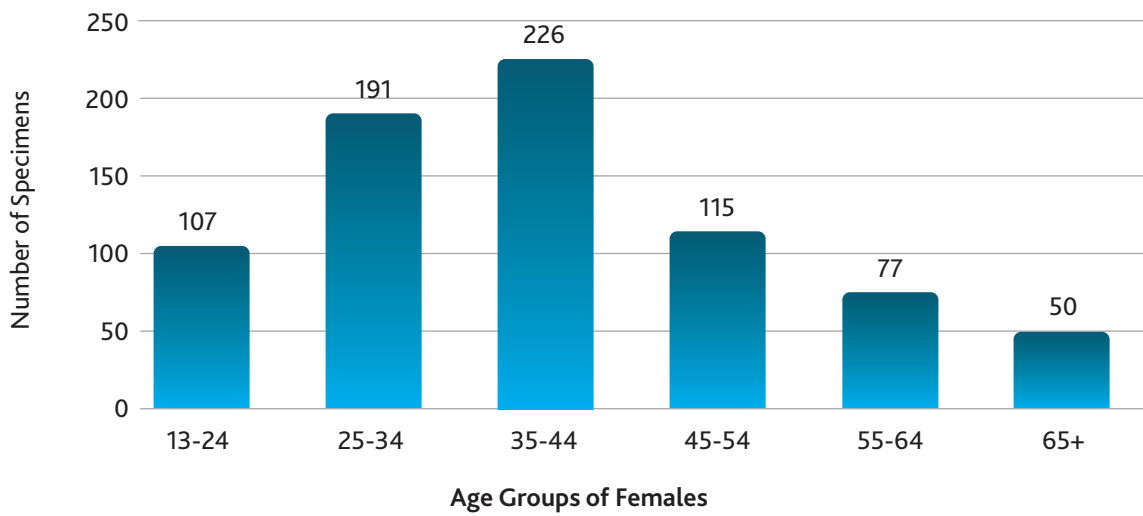


Figure 13: 2023 Age Profile of Females

Of all Female arrested drivers, 68% are under 45 years of age (67% in 2022)



ALCOHOL PROGRAMME: BLOOD & URINE

This programme is led by Principal Analyst, Ms. Louise Lawlor.

The main functions of the Blood and Urine programme are:

- › The receipt and analysis of specimens of blood and urine forwarded to the Bureau
- › The determination of the concentration of alcohol in blood and urine specimens
- › The issue of Certificates of Analysis
- › The testing of spurious specimens
- › Provision of expert assistance to the Courts and the Department of Transport
- › Collection and analysis of data in relation to alcohol tests



Provision of Blood and Urine Kits

Blood and Urine Kits are assembled in house. Blood and Urine bottles for specimen collection are prepared with preservative and anticoagulant and preservative respectively in the laboratory. The kit consists of all items required for the forensic provision of blood and Urine specimens under the Road Traffic Act. Each kit includes matched forms and tamper evident seals which are used to ensure proper chain of custody of the specimen from the point of provision in a garda station or a hospital to receipt in the laboratory by the Analyst.

In the last quarter of 2023, the Bureau issued Urine pots instead of jugs for the collection of Urine specimens. The pots have several benefits over the jugs. The pots are an off-the shelf product which require less preparation time, they use less plastic and have an added temperature strip to reduce mala fide Urine specimens.

The number and ratio of Blood and Urine kits issued reflects the specimens received.



Table 3: Kits Prepared & Issued by the Medical Bureau of Road Safety

	Kits Prepared and Issued		
	2023	2022	2021
BLOOD KITS	5,200	5,200	6,400
URINE KITS	1,932	2,200	1,500
JUGS	1,879	2,780	1,700
URINE POTS	340	-	-



Blood and Urine Alcohol Analysis

Blood and Urine specimens are analysed using Headspace Gas Chromatography with Flame Ionisation Detection (HSGC-FID). Each specimen is analysed at least twice by two different scientists using two different HSGC-FID systems. The results of analyses must concur before issue of a Certificate of Analysis.

A total of 5,464 blood and urine specimens were received for analysis during 2023. 30 specimens were cancelled and did not have a certificate of analysis for alcohol concentration issued for reasons including: specimen clotted, specimen not sealed, insufficient for analysis and received under the 1994 Road Traffic Act.

Median Alcohol reported Level in Blood and Urine

The median alcohol level in blood was 153mg/100ml and in urine was 196mg/100ml for 2023, excluding specimens which had no trace of alcohol.

Maximum Alcohol reported Level in Blood and Urine

The highest alcohol level found in blood was 439mg/100ml and in urine was 533mg/100ml in 2023.

Lower Alcohol Concentration Specimens in Blood and Urine

57% of blood and urine specimens had no trace of alcohol in 2023.

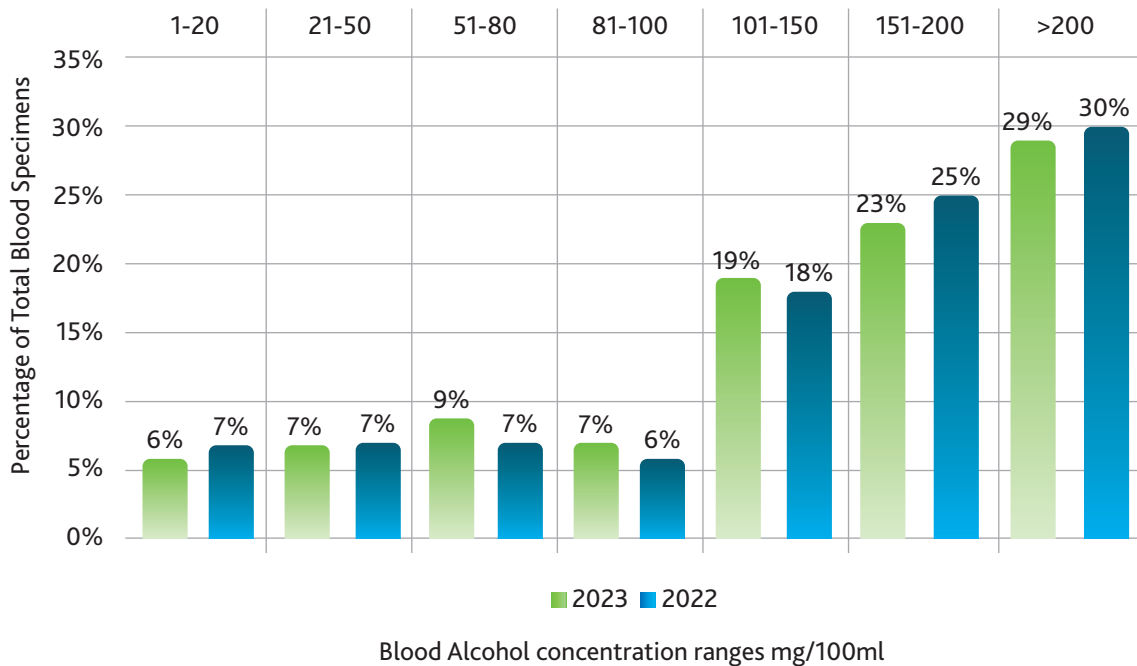


Figure 14: Certified Positive Blood Alcohol Levels 2023 v 2022

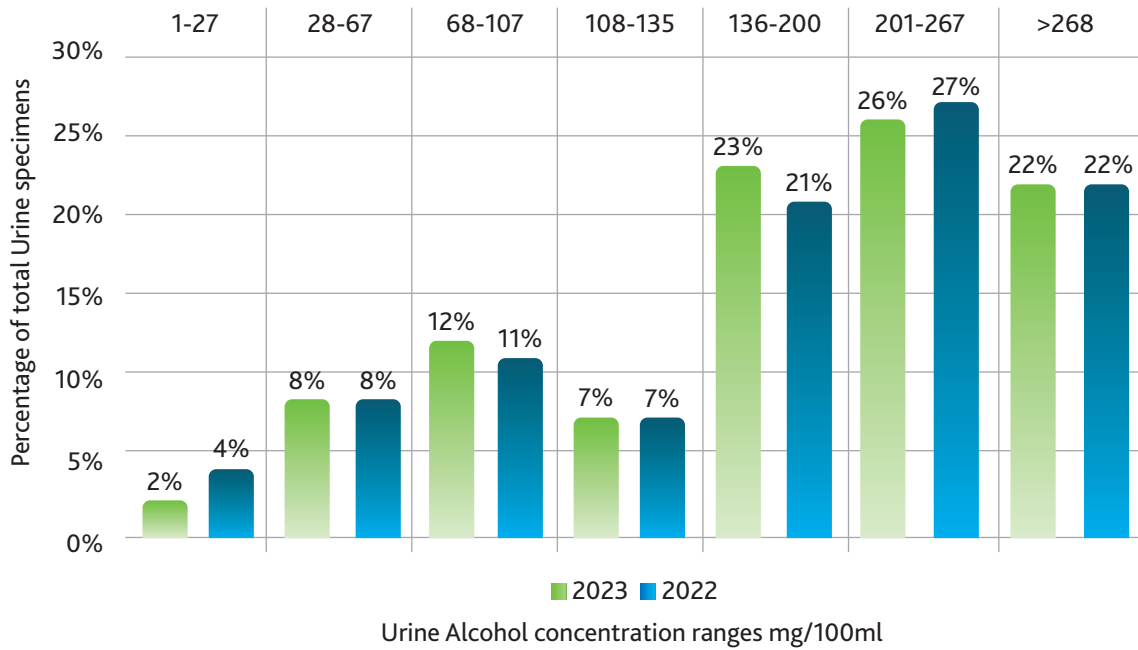


Figure 15: Certified Positive Urine Alcohol Levels 2023 v 2022

The levels stated on Figures 14 & 15 correspond to the graded penalty levels and higher concentrations.

On receipt of specimens for testing, the Bureau does not receive driver classification details, i.e., Drivers versus Specified Drivers (Professional, Learner and Novice Drivers) where the legal limits are reduced.

ALCOHOL PROGRAMME: BREATH

This programme is led by Principal Analyst, Ms. Louise Lawlor. The alcohol breath testing section in 2023 included preliminary breath testing, evidential breath testing as well as the aviation breath testing programmes.

The main functions of the Breath Alcohol programme are:

- The approval, supply and testing of apparatus for indicating the presence of alcohol in the breath (roadside preliminary breath testing devices)
- The approval, supply and testing of apparatus for determining the concentration of alcohol in the breath (evidential breath testing instruments)
- The assessment and approval of Alcohol Ignition Interlock Device (AIID) for use in Ireland
- Provision of expert assistance to the Courts and to the Department of Transport.
- Provision of training courses for EvidenzerIRL Operators and Supervisors.
- Provision of Train the Trainer courses for the Operation of the Dräger Alcotest 7510 device.
- Collection and analysis of data in relation to evidential breath alcohol tests.
- The approval, supply, and testing of apparatus for indicating the presence and concentration of alcohol in breath for use by the Irish Aviation Authority (IAA).
- Provision of training courses for the Operation of the Dräger Alcotest 8610 unit.



Dräger Alcotest 7510 device



Aviation Breath Alcohol Testing

A cornerstone of aviation safety in Ireland lies in the collaborative efforts between the Medical Bureau of Road Safety and the Irish Aviation Authority through a Memorandum of Understanding, both the Bureau & the IAA have Solidified their commitment to ensure the effectiveness of breath testing in Aviation settings. Under this agreement, the Bureau assumes the responsibility of approving, supplying, and rigorously testing the Dräger Alcotest 8610 unit for the IAA's breath testing scheme. This partnership first established in 2021, was reaffirmed through a renewal of the Agreement in 2023, and underscores the shared dedication to upholding the highest standards of aviation safety.

Currently, four Dräger Alcotest 8610 units remain operational within the IAA breath testing scheme, serving as one of the tools in safeguarding air travel integrity.

Testing and calibration of these devices occurs biannually, in adherence to mutually agreed schedules established with the IAA. These calibration procedures, methodically conducted by the Bureau, are accredited by the Irish National Accreditation Board (INAB) under the ISO 17025 standard. This accreditation underlines the quality assurance measures employed in ensuring the accuracy and correct functionality of the breath testing devices. By prioritising precision, reliability, and adherence to international standards, this collaborative partnership remains steadfast in its mission to assist in mitigating risks and promote the safety and well-being of all air passengers and crew members.

Alcohol Ignition Interlock Device (AIID) – Assessment and Approval

Alcohol ignition interlock devices, commonly referred to as interlocks, represent a critical tool in the global effort to lessen the dangers of drunk driving. These devices, installed in vehicles, require drivers to provide a breath sample before starting the engine. If the breath sample registers an alcohol concentration above a predetermined limit, the vehicle remains immobilized, thereby preventing individuals from driving under the influence. The effectiveness of alcohol ignition interlock devices in curbing drunk driving incidents has been extensively documented through research and testing.

Research studies have consistently demonstrated the effectiveness of alcohol ignition interlock devices in reducing alcohol-related accidents and fatalities.

Notably, a study published in the American Journal of Public Health revealed that jurisdictions with mandatory ignition interlock laws experienced significantly lower rates of alcohol-involved fatal crashes compared to those without such regulations. This compelling evidence underscores the deterrent effect of interlocks on impaired driving behaviours, thereby safeguarding public safety.

The European standard EN50436 Alcohol Interlocks establishes comprehensive guidelines for interlock devices, encompassing criteria for testing, installation and use.

Assessment and Approval Process

The Bureau is responsible for the approval and testing of alcohol ignition interlock devices in line with Action 119 of the Road Safety Strategy 2021-2030.

The Interlock Type Approval Route can be categorised into four stages:



Stage 1: Approval Application

In July 2023, the MBRS issued a formal invitation to AIID manufacturers and suppliers to submit their devices for assessment. This call for submissions was published through the E-tenders website, facilitating widespread participation from industry stakeholders – reference UCDOPP5355.

Stage 2: MBRS Device Testing

The assessment process entails a thorough review of applications submitted by manufacturers, encompassing comprehensive documentation and test reports.

Stage 3: Review of Test Reports

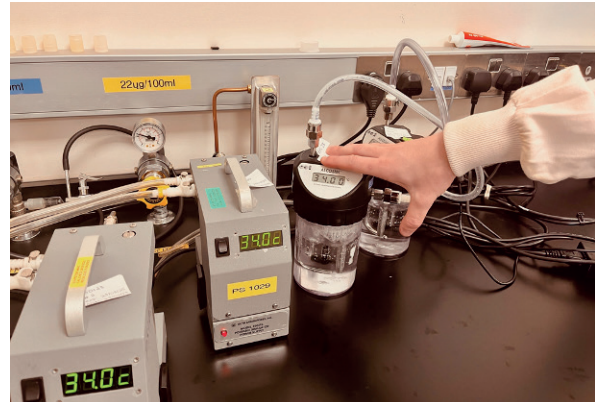
Using the European Standard EN50436 as a benchmark, the MBRS conducts meticulous testing to evaluate the performance and compliance of submitted interlock devices. The primary objectives of the assessment process are twofold: to ascertain compliance with the EN50436 standard and to evaluate the device's performance during MBRS testing.

Stage 4: Add to Approved List

A number of devices were submitted in 2023 and testing was initiated. Approved devices will be published on the MBRS website. The ongoing assessment and approval of alcohol ignition interlock devices underscore Ireland's commitment to enhancing road safety and preventing instances of impaired driving.

Roadside Breath Alcohol Testing

Roadside alcohol breath testing involves the use of an alcohol breath analyser, a device that detects the amount of alcohol present in a person's breath. The breathalyser is a portable device that can be carried by AGS members and used at roadside checkpoints to test drivers for alcohol consumption. When a driver exhales into the device, it measures and then displays a reading of the presence of alcohol in the breath. If the breath alcohol level is over the legal limit, the device will indicate a FAIL, if it is under the limit, the device will indicate a PASS. This is used as a screening device indicating the presence of alcohol in the breath. The Dräger Alcotest 7510 devices are calibrated and tested on a 6-monthly basis by the Bureau. In 2023, a total of 2,589 calibrations were conducted on Dräger Alcotest 7510 breath testing devices. This testing ensures the accuracy and correct functioning of the devices and is accredited by the Irish National Accreditation Board (INAB) under ISO 17025 standard. The programme runs a hot swap system, devices returned to the Bureau for testing and calibration are swapped for recently calibrated devices, thus, minimising downtime. There are 1,400 devices available to An Garda Síochána for operational use.



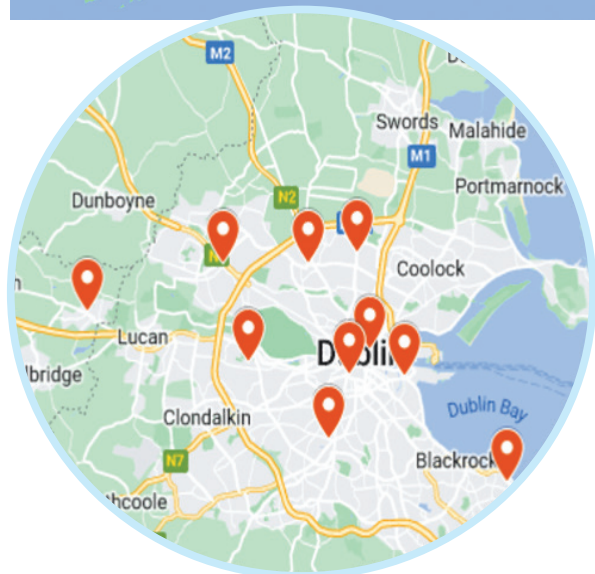
Evidential Breath Alcohol Testing

An evidential breath test instrument is used to analyse a driver's breath and determine the breath alcohol concentration (BrAC), the units of measurement are $\mu\text{g}/100\text{mL}$. The analysis is carried out by measuring the amount of alcohol in the breath specimen provided by the driver into the instrument.

Evidential breath test instruments are accurate, reliable, and used worldwide in road traffic enforcement.

One of the benefits of evidential breath test instruments is that they are non-invasive compared to other techniques such as blood or urine tests. The driver needs to provide two breath specimens into the instrument and the results are provided in real-time.

The Bureau supported and maintained 87 Evidenzer IRL instruments in Garda stations throughout Ireland in 2023, see the map below for approximate locations.



Testing EBT instruments in Garda Stations

In 2023, the Bureau continued its steadfast commitment to maintaining the accuracy and correct functioning of breath alcohol testing conducted within Garda stations through meticulous testing of EvidenzerIRL instruments. Biannually, Bureau scientists conduct comprehensive testing of each EvidenzerIRL instrument installed in Garda stations, encompassing linearity, accuracy, and repeatability (precision) tests.

This testing is accredited by the Irish National Accreditation Board (INAB) under the ISO 75025 standard, it ensures the accuracy and correct functioning of the EvidenzerIRL instrumentation. This onsite testing was carried out on 197 occasions in 2023 (200 in 2022). This testing is an essential element in assuring the quality of breath alcohol test results for evidential purposes.



Training

The EvidenzerIRL training program continued to play a pivotal role in 2023 in equipping Garda members with essential knowledge and skills for alcohol detection and enforcement. The curriculum of the course encompassed a comprehensive blend of scientific theory on alcohol and its effects on the body, road traffic legislation, and practical training in the operation of evidential breath testing instruments.

Seven EvidenzerIRL courses were conducted throughout the year which included comprehensive Operator and Supervisor training. All courses were conducted onsite at the UCD Campus in collaboration with the Garda Training College, the EvidenzerIRL course structure comprised a condensed yet comprehensive format. The Operator course spanned 1.5 days, supplemented by an additional half-day session for Supervisor training. Both courses culminated in rigorous practical and theoretical examinations, ensuring Garda members' proficiency in alcohol detection procedures.

In 2023, a total of 133 Garda members underwent training through the EvidenzerIRL courses, marking a significant return to training activities following the temporary suspension during the pandemic.



Breath Alcohol Statistics

Statistics for breath alcohol are from the period 1st July 2022 to 30th June 2023. Evidential Breath Testing data is collected from each standalone instrument on a six-monthly basis and collated in the laboratory.

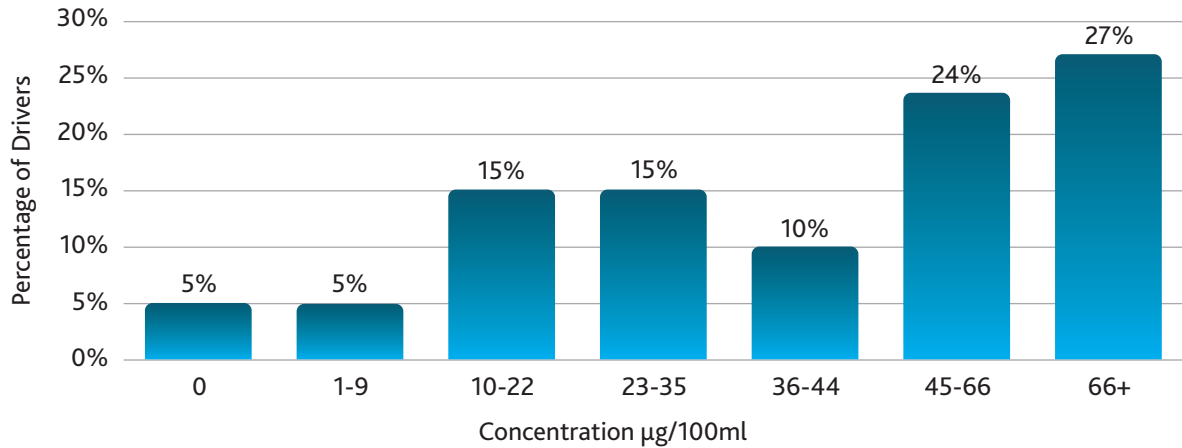


Figure 16: Certified Alcohol Levels 2023 – Breath

Breath Alcohol Analysis

The statistics for this annual report were calculated from evidential breath tests spanning from 1st July 2022 to 30th June 2023, approximately 3,734 drivers were brought to Garda Stations and provided breath specimens for alcohol analysis. In approximately 2.9% of cases the EvidenzerIRL flagged a reason why the Section 13 certificate could not be produced, for example safeguards such as Mouth Alcohol or Breath Difference. Approximately 13.5% of drivers either failed or refused to provide breath specimens. 84% of breath specimens undertaken were successfully completed and a Section 13 certificate issued.

Of all the drivers who successfully provided breath specimens 95% of them registered a final alcohol result above zero.

Median and Maximum Alcohol Level in Breath

Excluding breath specimens which returned a zero alcohol result the median alcohol level in breath was $47\mu\text{g}/100\text{ml}$.

The maximum alcohol level in breath was $157\mu\text{g}/100\text{ml}$.

Analysis of Time

39% of breath specimens were provided between midnight and 4am. The weekend days into Monday morning is the most represented time for Breath specimen provision.

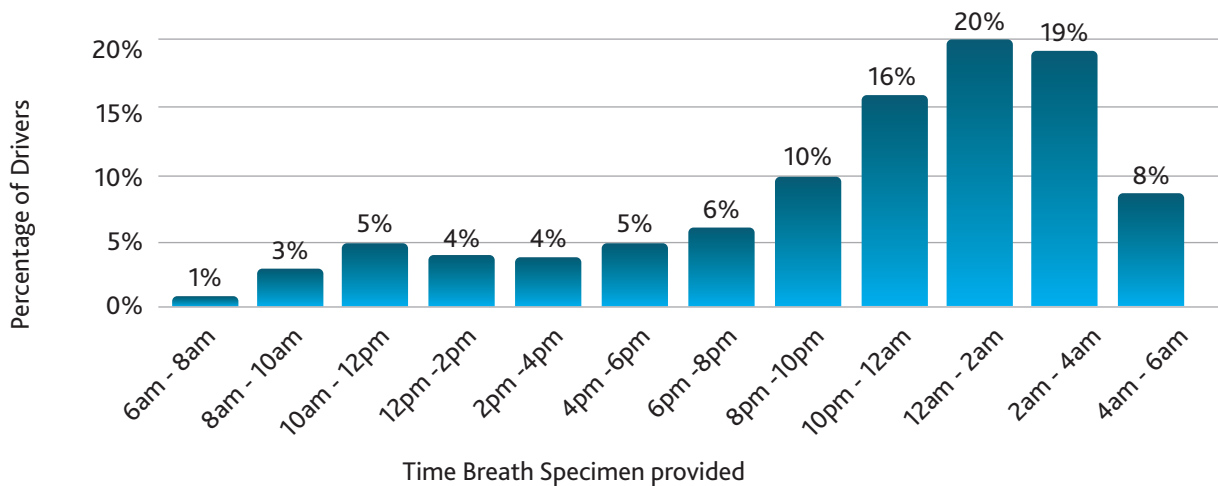


Figure 17: 2023 Time Breath Specimen Provided

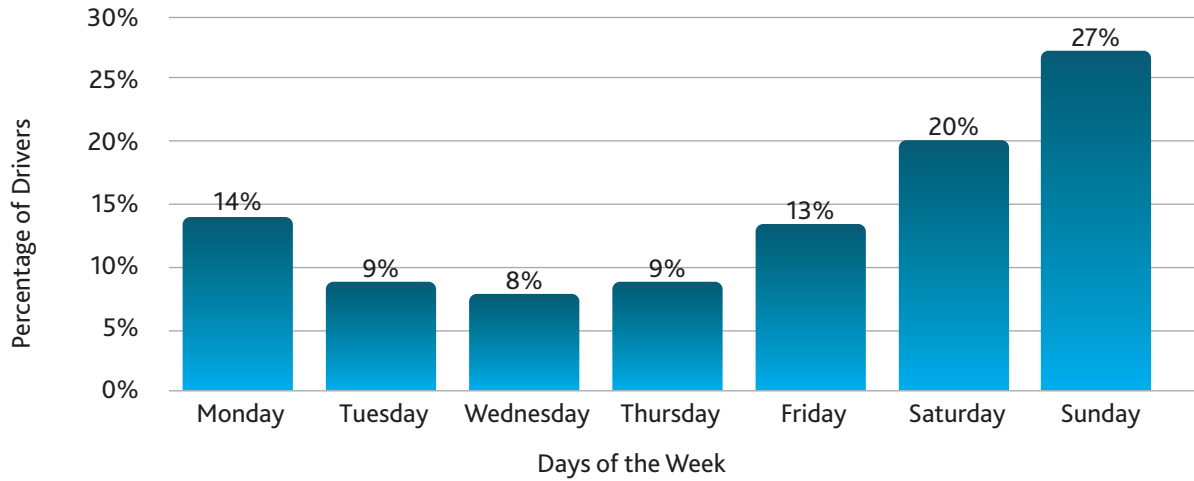


Figure 18: 2023 Day Breath Specimen Provided

Gender in Evidential Breath Testing Specimens

The number of male drivers required to provide a breath specimen far exceeds the number of female drivers, the male to female ratio being approximately 6:1, the gender profile remained similar from previous years, 84.5% male and 15.5% female.

Table 4: 2023 Gender Profile of Breath Specimens provided

	2023	2022	2021	2020	2019
MALE	84.5%	85%	85%	85%	86%
FEMALE	15.5%	15%	15%	15%	14%

Age Profile in Evidential Breath Testing Specimens

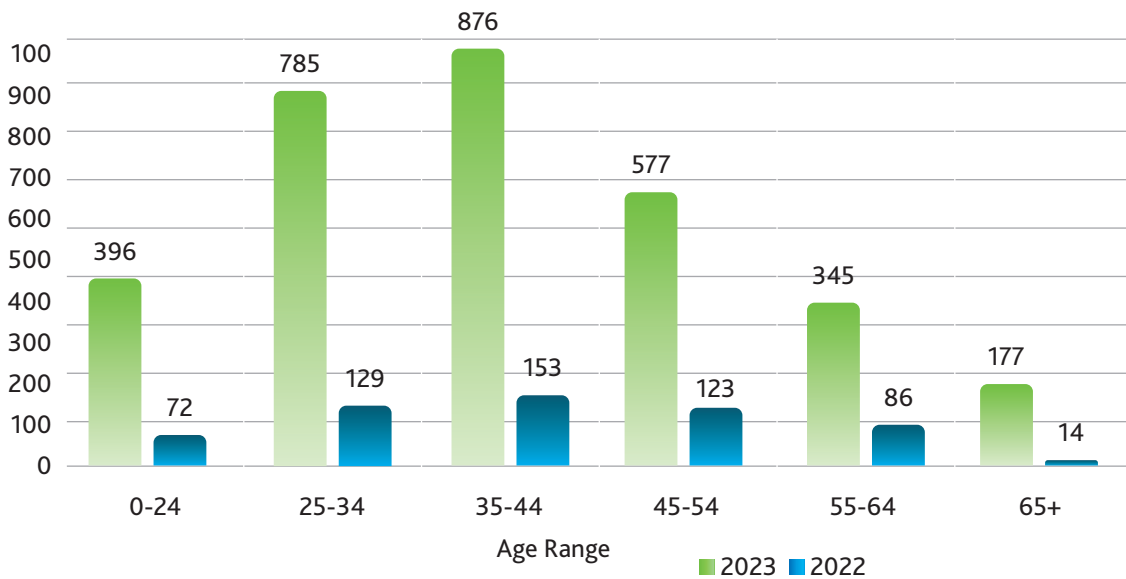


Figure 19: 2023 Age Profile of Drivers Male and Female – Breath

The greatest contribution to the arrested driver numbers providing breath specimen is in the 35–44 years old category.

The youngest driver who provided a breath specimen was 16 years old and the oldest was 83 years.

The median age was 39 years. Twenty drivers under 18 years provided breath specimens in 2023.

TOXICOLOGY PROGRAMME

This programme is led by Principal Analyst, Dr Richard Maguire. The main functions of this programme in 2023 were:

- The analysis of blood and urine specimens for the presence and/or concentration of a drug or drugs.
- The issue of Certificates of Analysis for the presence and/or concentration of a drug or drugs.
- Quality Assurance and provision of Preliminary Drug Testing (oral fluid) Cassettes.
- Analysis of oral fluid for quality control purposes.
- Development of new methods of drug testing and improvement of existing methods.
- Provision of expert assistance to the Courts, the Department of Transport and An Garda Síochána.
- Collection and analysis of data in relation to toxicology tests.
- Research on drugs that cause impairment in drivers.

Roadside/Station Based Preliminary Drug Testing (PDT)

2023 was the first full year where the Securetec DrugWipe 6s (DW6S) oral fluid test was in operation. This analyser could detect cannabis, cocaine, opiates, benzodiazepines and amphetamines/ methamphetamines in oral fluid. In 2023, 30,000 DW6S cassettes were issued to An Garda Síochána. The Bureau also managed the quality control testing of the DW6s cassettes received throughout 2023 to ensure that they met the technical requirements. This involved using Gas Chromatography with tandem Mass Spectrometry (GC-MS-MS) for Cannabis and Liquid Chromatography with tandem Mass Spectrometry (LC-MS-MS) accredited tests to verify the performance of each batch purchased.



Securetec DrugWipe 6S

Oral Fluid Testing and Prevalence 2023

When an oral fluid sample is collected from a driver for testing, and is positive for a drug or drugs, the Bureau requests that An Garda Síochána submit a "Drug Information Form" indicating the results of the test.

Drug Information Form

The drug information form enables a comparison of the performance of the oral fluid testing with laboratory testing.

In 2023, 2,033 specimens (1,606, 2022) were returned with a "Drug Information Form" indicating that an oral fluid Preliminary Drug Test had been carried out. Of these, 2,031(1,603, 2022) indicated a positive drug result for at least one of the drugs that the DW6S can detect. Of the positive cases in 2023, the prevalence of drugs detected by the DW6S is shown in table 5. 2023 was the first year of full use of the Securetec Drug Wipe 6S oral fluid testing device by An Garda Síochána at the roadside. Previous to December 2022 the Draeger Drug Test 5000 had been used for roadside testing.

DRUG INFORMATION FORM

To be returned to Medical Bureau of Road Safety with specimen taken under the Road Traffic Act.

(1) Driver's Name: _____

(2) Was Preliminary Drug Testing carried out? YES NO

Please indicate positive results by ticking the relevant boxes below. Do not tick drugs if negative / not tested.

Cannabis Cocaine Benzodiazepine

Opiate Amphetamines / Methamphetamines

If Alcohol Evidential Breath Testing was carried out in the Garda Station include a copy of the Section 13 printout

Table 5: Prevalence of drugs detected by the Securetec DrugWipe 6S (DW6S)

Drug Class	2023	2022	2021	2020	2019
Cannabis	53%	66%	69%	67%	66%
Cocaine	58%	48%	45%	46%	43%
Opiates	7%	6%	6%	8%	8%
Benzodiazepines	9%	5%	5%	5%	4%
Amphetamines/ Methamphetamines	7%	3%	n/a	n/a	n/a

Prevalence of drugs positives reported on information forms received for the DW6S 2023. Amphetamine testing was introduced in 2022.

Laboratory Testing

Blood and Urine Specimen Overview

There were 3,873 specimens analysed for the presence of a drug or drugs which is a 2.1% increase on the number of specimens analysed in 2022. The numbers analysed in toxicology between 2015 and 2023 is shown below (Figure 20).

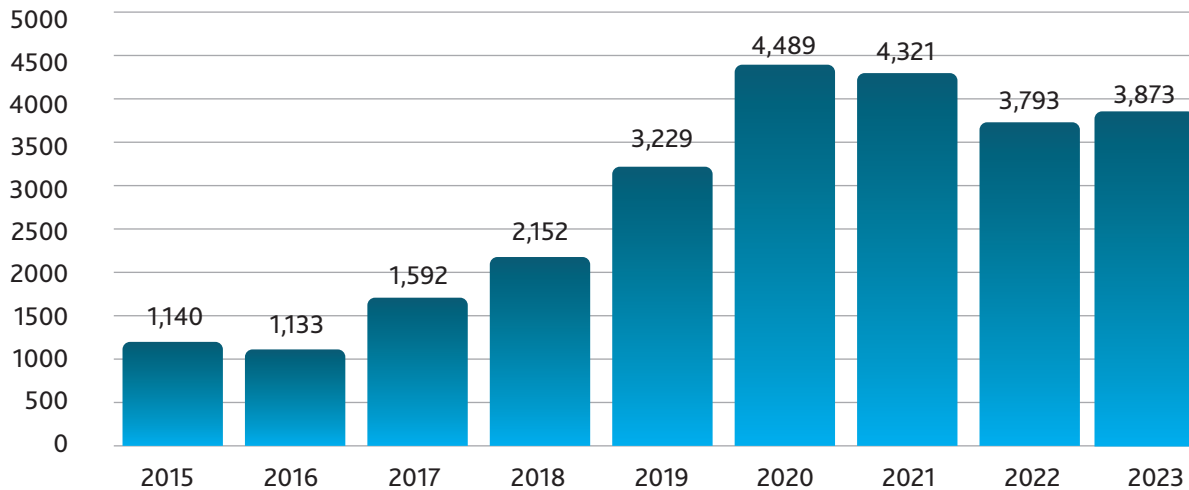


Figure 20: Number of Toxicology Specimens Screened for drugs (2015 – 2023)

Toxicological analysis was required for 70.9% (67.5%, 2022) of all specimens received. The policy since the beginning of 2020 has been to test all specimens for drugs where the alcohol result is under 100mg/100ml in blood or the equivalent 135mg/100ml in urine and this continued in 2023.

There were 28 specimens (14, 2022) over these alcohol concentrations which were specifically requested for drug testing by an Garda Síochána. There were 8 (11, 2022) Evidential Breath Testing alcohol negative specimens sent to the Bureau for drug testing.

The measures introduced in the 2016 Road Traffic Act empowered the Gardaí to take blood where drugs were indicated by a preliminary oral fluid or impairment test. This resulted in a change in the ratio of specimen type towards blood rather than urine with 91% (89%, 2022) of specimens analysed for toxicology being blood and 9.0% being urine (11%, 2022).

Initial screening testing was conducted for cannabis, cocaine, opiates/opioids (e.g. morphine, codeine, methadone and tramadol), benzodiazepines, amphetamines (e.g. amphetamine, methamphetamine, MDA, MDMA) and anti-histamines (diphenhydramine) using Liquid Chromatography with Mass Spectrometry (LC-MS-MS).

Of the 3,873 specimens tested in 2023 (3,793, 2022), 2,764 were found to be positive for at least one drug class on preliminary laboratory drug testing. 1,109 were negative for the drugs targeted by the Bureau at the thresholds, used by the Bureau. This drug positive figure represented 71.4% of Toxicology specimens (75%, 2022) and 50.6% of all specimens received in the Bureau (50%, 2022).

Figure 20 shows the prevalence of the drugs detected in all specimens of blood and urine. As in previous years cannabis remains the most prevalent drug. Cocaine remains the second most prevalent. The continued prevalence of polydrug use is shown in figure 21 and the prevalence of drugs is shown in figure 23.

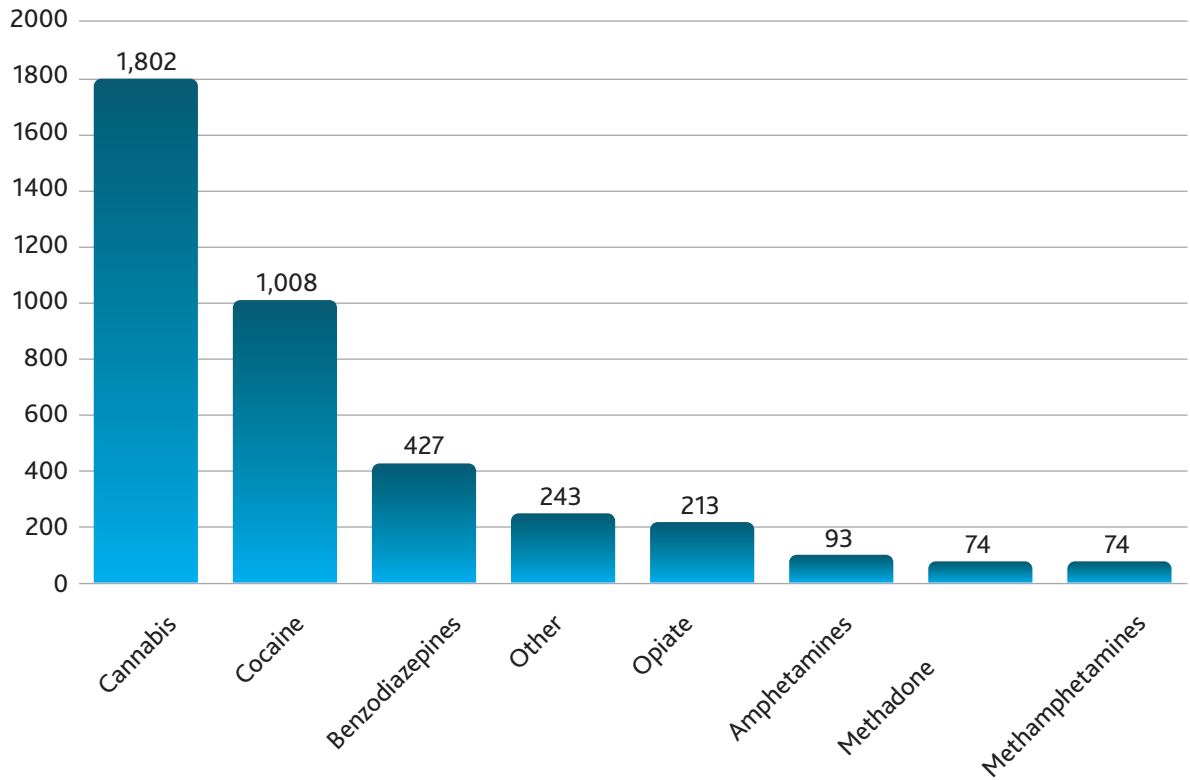


Figure 21: Drug Prevalence Screening 2023

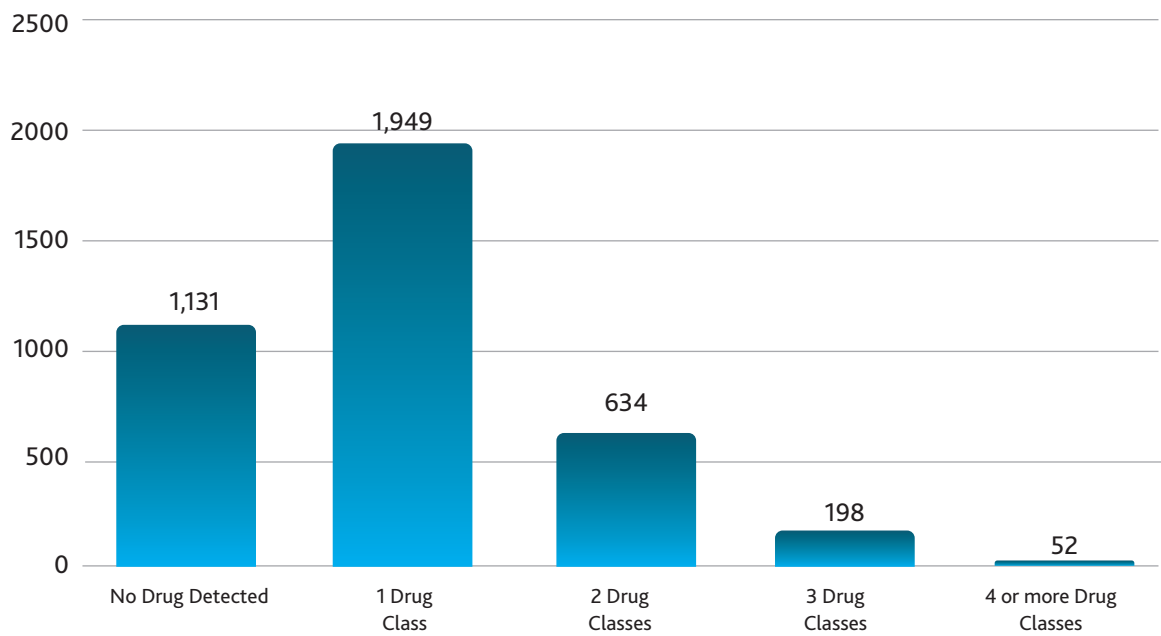


Figure 22: Drug Screening - No. of classes detected per specimen 2023

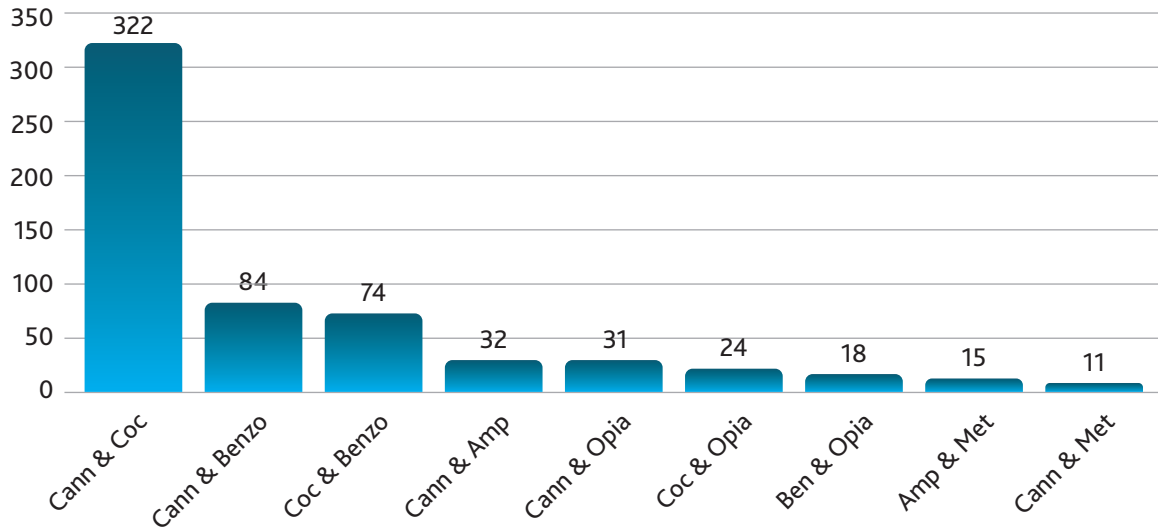


Figure 23: Drug Screening – Prevalence of Combinations where two drugs were detected per specimen 2023

(Cann: Cannabis, Coc: Cocaine, Benzo: Benzodiazepine, Opia: Opiate, Amp: Amphetamine, Met: Methamphetamines)

The gender profile was 88.9% male and 9.7% female (1.4% gender not stated) based on screening positive data which is like the breakdown in 2022 (86.8% male, 12.9% female, 0.3% gender not stated).

The age profile of positive specimens is shown below with 89% being age ≤ 44 and under and 65% under 34.

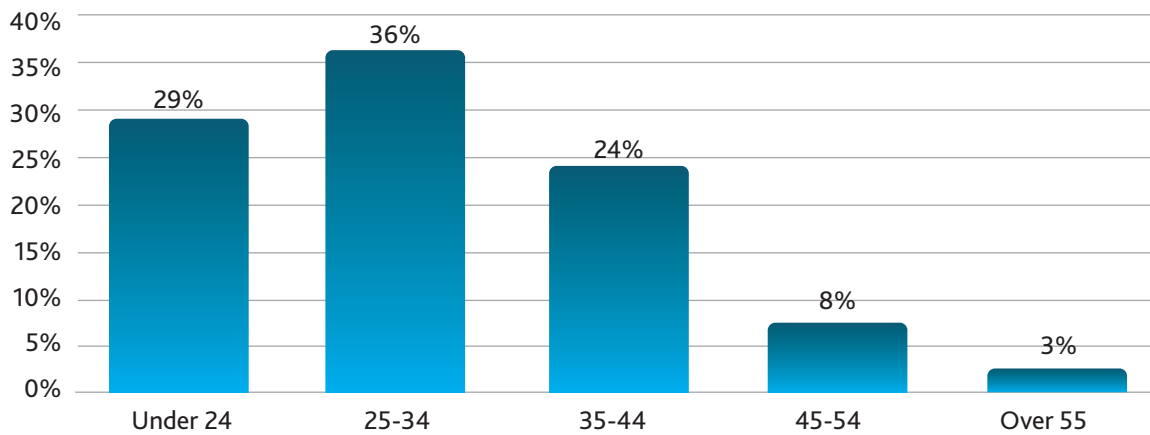


Figure 24: % Total Screening Positive by Age 2023



Confirmatory Analysis

Once a positive specimen is detected at the initial screening test, confirmation is carried out using GC-MS-MS for Cannabis and LC-MS-MS for all other drugs. In 2023, a small number of specimens could not be confirmed due to specimen volume limitations.

Due to the significant increase in the number of specimens received for drug testing since 2017 the policy of confirming all drugs detected at screening

subject to specimen volume was reviewed. This led to a change in policy in 2021 whereby the specimen was forwarded to only one confirmatory test method. This was implemented for specimens received on after the 1st of July 2021 and remained in place throughout 2023. The distribution of confirmatory tests for 2019 to 2023 is shown in table 6 below.

Table 6: Confirmatory testing for the various drugs/classes (Tramadol and Diphenhydramine testing commenced in 2023)

Drug Class	2023	2022	2021	2020	2019
Cannabis	1539	1,949	2,353	2,606	1,747
Benzodiazepines	102	101	369	535	475
Cocaine	895	889	1,239	1,494	852
Opiates/Opioids	177	214	313	453	308
Amphetamine/ Methamphetamine	97	54	107	193	157
Tramadol	18	n/a	n/a	n/a	n/a
Diphenhydramine	3	n/a	n/a	n/a	n/a
Total	2831	3,213	4,388	5,281	3,539

Legal Limits

The 2016 Road Traffic Act (enacted April 2017) introduced per se legal limits for Cannabis, Cocaine and Heroin in whole blood (see table 7).

Drug	Legal Limit
Δ 9-Tetrahydrocannabinol (Cannabis)	1ng/ml
11-nor-9-carboxy- Δ 9-tetrahydrocannabinol (Cannabis)	5ng/ml
Cocaine	10ng/ml
Benzoylcegonine (Cocaine)	50ng/ml
6-acetylmorphine (Heroin)	5ng/ml

Table 7: Per se levels

Mean Per Se Drug Levels

The mean level of Δ 9-Tetrahydrocannabinol (Cannabis) was 6.3ng/ml in 2023 (6.2ng/ml in 2022).

The 11-nor-9-carboxy- Δ 9-tetrahydrocannabinol (Cannabis) level was 58.2ng/ml (65ng/ml in 2022).

The mean level of Cocaine was 60.5ng/ml in 2023 (34.1ng/ml in 2022).

The Benzoylcegonine level was 1032.9g/ml (604.6ng/ml in 2022).

For reporting, an uncertainty of measurement is taken away from the raw analytical figure. The averages presented here are based on raw analytical figures.

The Analytes targeted in Drug testing are listed in table 8.



Table 8: Analytes targeted in LC-MS-MS Screening analysis

#	ANALYTE	Class/Type
1	6-Acetylmorphine	Opioid
2	7-Aminoclonazepam	Benzodiazepines
3	7-Aminoflunitrazepam	Benzodiazepines
4	7-Aminonitrazepam‡	Benzodiazepines
5	Adinazolam	Benzodiazepines
6	Alpha-Hydroxyalprazolam	Benzodiazepines
7	Alpha-Pyrrolidinopentiophenone	Cathinone
8	Alprazolam	Benzodiazepines
9	AM-2201	Cannabinoid
10	Benzoyllecgonine	Cocaine
11	Benzylpiperazine	Cathinone
12	Bromazepam	Benzodiazepines
13	Chlordiazepoxide	Benzodiazepines
14	Clobazam	Benzodiazepines
15	Clonazepam	Benzodiazepines
16	Cocaethylene	Cocaine
17	Cocaine	Cocaine
18	Codeine	Opioid
19	Desalkylflurazepam	Benzodiazepines
20	Demoxepam	Benzodiazepines
21	Diazepam	Benzodiazepines
22	Dihydrocodeine	Opioid
23	Diphenhydramine	Anti-histamine
24	EDDP	Methadone
25	Estazolam	Benzodiazepines
26	Etizolam	Benzodiazepines
27	Fenfluramine	Amphetamine
28	Fentanyl	Opioid
29	Flualprazolam	Benzodiazepines
30	Flubromazepam	Benzodiazepines
31	Flubromazolam	Benzodiazepines
32	Flunitrazepam	Benzodiazepines
33	Fluoxetine	Anti-depressant
34	Flurazepam	Benzodiazepines
35	Gabapentin	Anti-convulsant
36	HU-210	Cannabinoid
37	Hydrocodone	Opioid
38	JWH-018	Cannabinoid

#	ANALYTE	Class/Type
39	Ketamine	Dissociative Anaesthetic
40	Lorazepam	Benzodiazepines
41	Lormetazepam	Benzodiazepines
42	Methylenedioxyamphetamine	Amphetamine
43	Methylenedioxyethylamphetamine	Amphetamine
44	Methylenedioxymethylamphetamine	Methamphetamine
45	Methylenedioxypropylamphetamine	Cathinone
46	Meperidine	Cathinone
47	Mephedrone (4-MMC)	Cathinone
48	Methadone	Methadone
49	Methylphenidate	Cathinone
50	Midazolam	Benzodiazepines
51	Morphine	Opioid
52	N-Desmethylflunitrazepam	Benzodiazepines
53	N-Desmethylzopiclone	Z-drug
54	Nitrazepam	Benzodiazepines
55	Nordiazepam	Benzodiazepines
56	Norfentanyl	Opioid
57	Norketamine	Dissociative Anaesthetic
58	Normeperidine	Cathinone
59	O-desmethyltramadol	Opioid
60	Oxazepam	Benzodiazepines
61	Oxycodone	Opioid
62	Oxymorphone	Opioid
63	Phenazepam	Benzodiazepines
64	Prazepam	Benzodiazepines
65	Pregabalin	Anti-convulsant
66	S-Amphetamine	Amphetamine
67	S-Methamphetamine	Methamphetamine
68	Temazepam	Benzodiazepines
69	Trifluoromethylphenylpiperazine	Cathinone
70	THC	Cannabinoid
71	THCA	Cannabinoid
72	Tramadol	Opioid
73	Triazolam	Benzodiazepines
74	Zaleplon	Z-drug
75	Zolpidem	Z-drug
76	Zopiclone	Z-drug
77	Zopiclone-N-Oxide	Z-drug



QUALITY ASSURANCE

The Bureau has an established Quality Management System which is integral to the work of the Bureau and is accredited to ISO/IEC 17025 (2017) standard (General requirements for the competence of testing and calibration laboratories). The Bureau was assessed twice by INAB (Irish National Accreditation Body) in 2023. In the last quarter of 2022, an application was made to INAB to extend the Bureau's Scope of Accreditation to add the Securetec DrugWipe 6S (DW6S) which replaced the DT5000 Analyzer's as the preliminary drug screening device used by An Garda Síochána at the roadside. This extension to scope was assessed by INAB in January 2023.

The Bureau's yearly surveillance visit occurred in March 2023 to assess compliance of the Bureaus' current scope and a Flexible Scope of Accreditation application to reduce the detection limit, in the Drug Screening Test Method, of THCA (11-nor-9-carboxy- Δ^9 -tetrahydrocannabinol in urine.

Following the INAB assessments, both the extension and flexible scope applications were approved, and the Bureau maintained its Scope for the following tests:

- > Blood and Urine Alcohol Analysis
- > Evidential Breath Testing
- > Preliminary Breath Testing
- > Preliminary Drug Testing
- > Drug Testing in Oral Fluid
- > Laboratory Preliminary Drug Screening
- > Cannabis confirmation in Blood and Urine
- > Benzodiazepine confirmation in Blood and Urine
- > Multidrug confirmation in Blood and Urine
- > Qualitative Drug Confirmation in Blood and Urine

Full details of the Bureaus' Scope of Accreditation is available at:

<https://www.inab.ie/inab-directory/laboratory-accreditation/testing-laboratories/>

PROFICIENCY TESTING

Over the course of 2023 the Bureau continued its involvement in the Proficiency testing schemes outlined in Table 9 and took part in a Pipette Control pilot scheme run by LabQuality. This scheme offered an intermediate performance check of pipettes in between calibration intervals and an individual's performance assessment against a reference measurement value. Performance across all schemes was acceptable.

Table 9: Proficiency Testing Programmes

Programme	Provider	Scheme	No. Specimens	Analytes
General Laboratory	Labquality	Pipette Control	2 specimens	n/a
Toxicology	CAP	Drugs of Abuse in Whole Blood and Urine	8 specimens per annum	Amphetamines & Stimulants Cannabinoids Cocaine & Metabolites Minor Tranquilisers Non - Opiate Narcotics Opiates
	Labquality	Drugs of Abuse in Urine	6 specimens per annum	Amphetamines & Stimulants Cannabinoids Cocaine & Metabolites Minor Tranquilisers Non - Opiate Narcotics Opiates
	LGC Standards Proficiency Testing	Drugs of Abuse in Urine	12 specimens per annum	Over 210 analytes are available including Amphetamines & Stimulants. Cannabinoids Cocaine & Metabolites Minor Tranquilisers Non - Opiate Narcotics Opiates, Creatinine, pH, Specific Gravity
	LGC Standards Proficiency Testing	Toxicology	8 specimens per annum	Amphetamines & Stimulants Cannabinoids Cocaine & Metabolites Minor Tranquilisers Non - Opiate Narcotics Opiates
	LGC Standards Proficiency Testing	Drugs in Oral Fluid	12 specimens per annum	Amphetamines & Stimulants Cannabinoids Cocaine & Metabolites Minor Tranquilisers Non - Opiate Narcotics Opiates
	LGC Standards Proficiency Testing	Toxicology – Benzodiazepines	8 specimens per annum	Diazepam, Nordiazepam, Temazepam, Oxazepam, Nitrazepam
	LGC Standards Proficiency Testing	Toxicology - Z – Drugs	8 specimens per annum	Zopiclone, Zaleplon, Zolpidem
Alcohol in Blood and Urine	Labquality	Blood	8 specimens per annum	Alcohol
	Labquality	Urine Quantitative	4 specimens per annum	pH, Creatinine, Urea & specific Gravity
	LGC Standards Proficiency Testing	Tox - Blood & Tox - Urine	24 specimens per annum	Alcohol
Evidential Breath Testing	CTS, Inc.	568 Breath Alcohol Simulator Solution Analysis	2 solutions per annum	Alcohol



FINANCIAL INFORMATION

The Medical Bureau of Road Safety derives its finances from an Annual Grant from the Department of Transport. The total grant allocation for the Bureau for 2023 was €6,290,000.

CORPORATE GOVERNANCE

The Board of the Medical Bureau of Road Safety was established under the Medical Bureau of Road Safety (Establishment) Order, 1968. The functions of the Board are laid down in the Road Traffic Acts 1968 – 2016 and their regulations. The Board is accountable to the Minister for Transport and is responsible for ensuring good governance and performs this task by setting strategic objectives and targets and taking strategic decisions on all key business issues. The regular day-to-day management, control and direction of the Medical Bureau of Road Safety are the responsibility of the Director and the senior management team. The Director and the senior management team must follow the broad strategic direction set by the Board, and must ensure that all Board members have a clear understanding of the key activities and decisions related to the entity, and of any significant risks likely to arise. The Director acts as a direct liaison between the Board and management of the Medical Bureau of Road Safety.

Board Members

The Board of the Medical Bureau of Road Safety comprises of five members (including the Director) and is appointed by the Minister for Transport.

BOARD MEMBERS		
Name	Position	Attendance Record
Dr. Declan Bedford	Chairman	4 of 4
Professor Denis Cusack	Board Member and Director	4 of 4
Professor Patricia Fitzpatrick	Board Member	4 of 4
Mr. Sean Quigley	Board Member	4 of 4
Ms. Joan O'Brien	Board Member	4 of 4

Bureau Membership and Meetings

During 2023 the Medical Bureau of Road Safety held four meetings. These meetings were held on 9th March, 22nd May, 28th September and 7th December 2023.

Schedule of Fees and Aggregate Expenses paid to Directors during 2023

During 2023 the following fees were paid:

BOARD FEES PAID			
Board Member	Type of Fee	Paid 2023	Paid 2022
Dr. Declan Bedford	Fee for Chairperson of Board of State Body Fee for Non-Executive members of Boards of State Bodies	€8,978	€8,974
Ms. Joan O'Brien	Fee for Non-Executive members of Boards of State Bodies	€5,985	€5,982
Mr. Sean Quigley	Fee for Non-Executive members of Boards of State Bodies	€5,985	€5,983
Professor Patricia Fitzpatrick	No Fee for Non-Executive members of Boards of State Bodies	-	-

Audit and Risk Committee

The Audit and Risk Committee comprises of three Board members. The role of the Audit and Risk Committee (ARC) is to support the Board in relation to its responsibilities for issues of risk, control and governance and associated assurance. The ARC is independent from the financial management of the organisation. In particular, the Committee ensures that the internal control systems including audit activities are monitored actively and independently. The ARC reports to the Board after each meeting, and formally in writing annually. The members of the Audit and Risk Committee are: Mr. Sean Quigley, Chairperson, Dr. Declan Bedford and Ms. Joan O'Brien. There were 4 meetings of the ARC held during 2023.

The Audit and Risk Committee Annual Report is due for completion in early 2024 and will be published on the MBRS website.

Governance Oversight Committee

The role of the Governance Oversight Committee is to support the Board in meeting legal and statutory requirements, as well as adopting good practice. The members of this committee are Representatives from the Department of Transport, the Director, Senior Administrative Officer and Administrative Officer from the Medical Bureau of Road Safety. There were 4 meetings of the Governance Oversight Committee held in 2023.

Compliance

The Board has adopted the Code of Practice for the Governance of State Bodies (2016) and has put procedures in place to ensure compliance with the Code. An Oversight Agreement has been made with the Department of Transport and the Medical Bureau of Road Safety was in full compliance with the Code of Practice for the Governance of State Bodies for 2023.

Disclosure

Section 22 of the Protected Disclosures Act 2014 requires the Publication of an Annual Report each year relating to the number of protected disclosures made in the preceding year and any actions taken in response to such disclosures. Pursuant to this requirement, the Medical Bureau of Road Safety confirms that no protected disclosures were received in accordance with the provisions of the Protected Disclosures Act, 2014 for the period from 1st January 2023 – 31st December 2023.

Statutory Requirements

The Medical Bureau of Road Safety confirms that it complied with its statutory requirements during 2023.

Ethics in Public Office

The members of the Board who held office at the 31st December 2023 had no interests for the purposes of the Ethics in Public Office Acts 1995 and 2001.



External Financial Audit

The Comptroller and Auditor General performed the annual audit of the 2022 Financial Statements during 2023. No issues were raised during the audit. The draft unaudited Financial Statements for 2022 were sent to the Comptroller and Auditor General on 22nd March 2023. The annual audit of the 2023 Financial Statements takes place in 2024.

Internal Audit

The Internal Audit function is a key element in informing the Board on the effectiveness of the system of internal financial control. The internal auditor operates in accordance with the Code of Practice for the Governance of State Bodies. An Internal Audit report was prepared in relation to 2023.

Procurement

Competitive tendering is the normal policy utilised by the Medical Bureau of Road Safety in the procurement process. It affirms that it complied with procurement procedures and relevant EU Directives as set out in the Code of Practice for the Governance of State Bodies during 2023.

Strategic Planning

The Bureau compiled its Annual Strategic Plan for 2024 and its Five-Year Strategic Plan 2024 – 2028 and both strategies were forwarded to the Minister. The Plans set out the Bureau's key objectives over the coming year and years in conjunction with its key actions to achieve these objectives.

Prompt Payment of Account

The Board acknowledges their responsibility for ensuring compliance in relation to the Prompt Payment of Accounts Act. Under an agreement with University College Dublin, suppliers are paid in the first instance by the College which is then reimbursed by the Bureau.

It is the policy of the Medical Bureau of Road Safety to ensure that all invoices are paid promptly. University College Dublin, as a public-sector body, is required to comply with the requirements of the Act in relation to payments to suppliers for the supply of goods or services and therefore has strict procedures in place.

In the case of a small number of suppliers, the Bureau will issue payment by cheque directly to the supplier. The controls in relation to processing of invoices, credit notes and dealing with supplier disputes can only provide reasonable and not absolute assurance against material non-compliance with the Act.

Public Spending Code

The Public Spending Code commenced in September 2013 and updated previous guidelines, circulars and directions in relation to capital appraisal and value for money.

The public spending code is designed to ensure that the State gets the best possible value for the resources at its disposal. The code applies to both capital and current expenditure and outlines what is required of public service managers at different points of the expenditure lifecycle such as appraising, planning, approving, implementing and reviewing.

The Board acknowledges their responsibility to the Public Spending Code and can confirm compliance in 2023.

Professional Witness

The area of road safety traffic enforcement and in particular driving under the influence of intoxicants, alcohol and drugs is one of the most litigated areas in the criminal law sphere in Ireland. The Bureau provides expert witness in cases before the Courts. In 2023 there were 3 court attendances by Bureau staff.

Reports and opinions were provided to both Defence and Prosecution parties to assist the Court in many other cases.

Annual Controls Assurance

Under the Code of Practice for the Governance of State Bodies, the Bureau must complete a formal annual review of the effectiveness of its system of internal controls. The Bureau's Senior Management Team provided the Board and the Audit and Risk Committee with assurance that its specified controls had operated effectively in the Bureau for the reporting period 1st January to 31st December 2023 and had been operated within the risk register and control framework. Where any potential weakness, change or recommendation was applied it was documented.

Equality and Diversity

The Medical Bureau of Road Safety is committed to respecting gender equality, diversity and inclusion for the benefit of its employees, stakeholders, outside agencies and the public and has adopted the UCD Policies and Procedures in this regard.

MEDICAL BUREAU OF ROAD SAFETY

STATEMENT OF INCOME AND EXPENDITURE AND RETAINED REVENUE RESERVES FOR THE YEAR ENDED 31 DECEMBER 2023

	Note	31/12/2023	31/12/2022
		€	€
INCOME			
Oireachtas grants	5	6,700,000	6,290,000
Professional fee income		2,706	4,242
Total Income		6,702,706	6,294,242
EXPENDITURE			
Salaries and pension contributions	15	3,685,474	3,213,579
Board members remuneration	16	20,948	20,939
Direct costs associated with service delivery	6a	1,216,954	997,538
Office and laboratory supplies	6b	720,820	817,633
Administration costs	6c	885,563	854,917
Depreciation	7	890,441	793,774
Total Expenditure		7,420,200	6,698,380
Deficit for the period before appropriations		(717,494)	(404,138)
Transfer from/(to) capital account	8	598,648	183,166
(Deficit)/Surplus for the year after appropriations		(118,846)	(220,972)
Balance brought forward at 1 January		781,471	1,002,443
Balance carried forward as at 31 December 2023		662,625	781,471

The statement of income and expenditure and retained revenue includes all gains and losses recognised in the year.



STATEMENT ON INTERNAL CONTROL

Scope of Responsibility

I, Dr. Declan Bedford, Chairman of the Medical Bureau of Road Safety, acknowledge the Board's responsibility for ensuring that an effective system of internal control is maintained and operated. This responsibility takes account of the requirements of the Code of Practice for the Governance of State Bodies (2016).

Purpose of the System of Internal Control

The system of internal control is designed to manage risk to a tolerable level rather than to eliminate it. The system can therefore only provide reasonable and not absolute assurance that assets are safeguarded, transactions authorised and properly recorded and that material errors or irregularities are either prevented or detected in a timely way.

The system of internal control, which accords with guidance issued by the Department of Public Expenditure and Reform has been in place in Medical Bureau of Road Safety for the year ended 31 December 2023 and up to the date of approval of the financial statements.

Capacity to Handle Risk

The Medical Bureau of Road Safety has an Audit and Risk Committee (ARC) comprising of three Board members. The ARC met four times in 2023.

The Medical Bureau of Road Safety has also established an internal audit function which is adequately resourced and conducts a programme of work agreed with the ARC. The internal audit function has been outsourced to an external company.

The ARC has developed a risk management policy which sets out its risk appetite, the risk management processes in place and details the roles and responsibilities of staff in relation to risk. The policy has been issued to all staff who are expected to work within the Medical Bureau of Road Safety's risk management policies, to alert management on emerging risks and control weaknesses and assume responsibility for risks and controls within their own area of work.

Risk and Control Framework

The Medical Bureau of Road Safety has implemented a risk management system which identifies and reports key risks and the management actions being taken to address and, to the extent possible, to mitigate those risks.

A risk register is in place which identifies the key risks facing the Medical Bureau of Road Safety and these have been identified, evaluated and graded according to their significance. The register is reviewed and updated by the ARC and Board on an annual basis. The outcome of these assessments is used to plan and allocate resources to ensure risks are managed to an acceptable level.

The risk register details the controls and actions needed to mitigate risks and responsibility for operation of controls assigned to specific staff. I confirm that a control environment containing the following elements is in place:

- › procedures for all key business processes have been documented,
- › financial responsibilities have been assigned at management level with corresponding accountability,
- › there is an appropriate budgeting system with an annual budget which is kept under review by senior management,
- › there are systems aimed at ensuring the security of the information and communication technology systems,
- › there are systems in place to safeguard the assets, and
- › control procedures over grant funding to outside agencies ensure adequate control over approval of grants and monitoring and review of grantees to ensure grant funding has been applied for the purpose intended.

Ongoing Monitoring and Review

Formal procedures have been established for monitoring control processes and control deficiencies are communicated to those responsible for taking corrective action and to management and the Board, where relevant, in a timely way. I confirm that the following ongoing monitoring systems are in place:

- key risks and related controls have been identified and processes have been put in place to monitor the operation of those key controls and report any identified deficiencies,
- reporting arrangements have been established at all levels where responsibility for financial management has been assigned, and
- there are regular reviews by senior management of periodic and annual performance and financial reports which indicate performance against budgets/forecasts.

Procurement

I confirm that the Medical Bureau of Road Safety has procedures in place to ensure compliance with current procurement rules and guidelines and that during the year ended 31 December 2023 the Medical Bureau of Road Safety complied with those procedures.

Review of Effectiveness

I confirm that the Medical Bureau of Road Safety has procedures to monitor the effectiveness of its risk management and control procedures. Medical Bureau of Road Safety's monitoring and review of the effectiveness of the system of internal control is informed by the work of the internal and external auditors, the Audit and Risk Committee which oversees their work, and the senior management within the Medical Bureau of Road Safety responsible for the development and maintenance of the internal financial control framework.

I confirm that the Board conducted an annual review of the effectiveness of the internal controls for 2023 on the 28th March 2024.

Internal Control Issues

No weaknesses in internal control were identified in relation to 2023 that require disclosure in the financial statements.

Tax Compliance

The Medical Bureau of Road Safety is committed to compliance with taxation laws and was compliant during 2023.

Breaches in Control

No breaches in control were identified in relation to 2023 that require disclosure in the financial statements.

Material Losses or Frauds

There were no material losses or frauds identified in relation to 2023 that require disclosure in the financial statements.

On behalf of the Board of the Medical Bureau of Road Safety:

Dr. Declan Bedford
Chairman



FREEDOM OF INFORMATION

During 2023 the Bureau received one request which was handled through administrative pathway within the "Other" category of requestor.

STAFFING

The Bureau continued during 2023 to operate within its delegated sanctioned staffing number under the Employment Control Framework. The recruitment process for the additional staff continued throughout 2023 mainly due to the sanction of new posts carried forward from 2022. A number of new scientific and Technical staff commenced in the laboratories.

The Bureau has an orientation process for new staff that assists them to adapt to working in a forensic laboratory and make that transition as easy as possible. Much of the learning for new staff takes place during this period. The Bureau is also dedicated to ensuring that professional development is available to all of its staff either through relevant online, offsite and in-person training (Appendix 1).

Training new and established staff is a constant feature and includes training in scientific techniques,

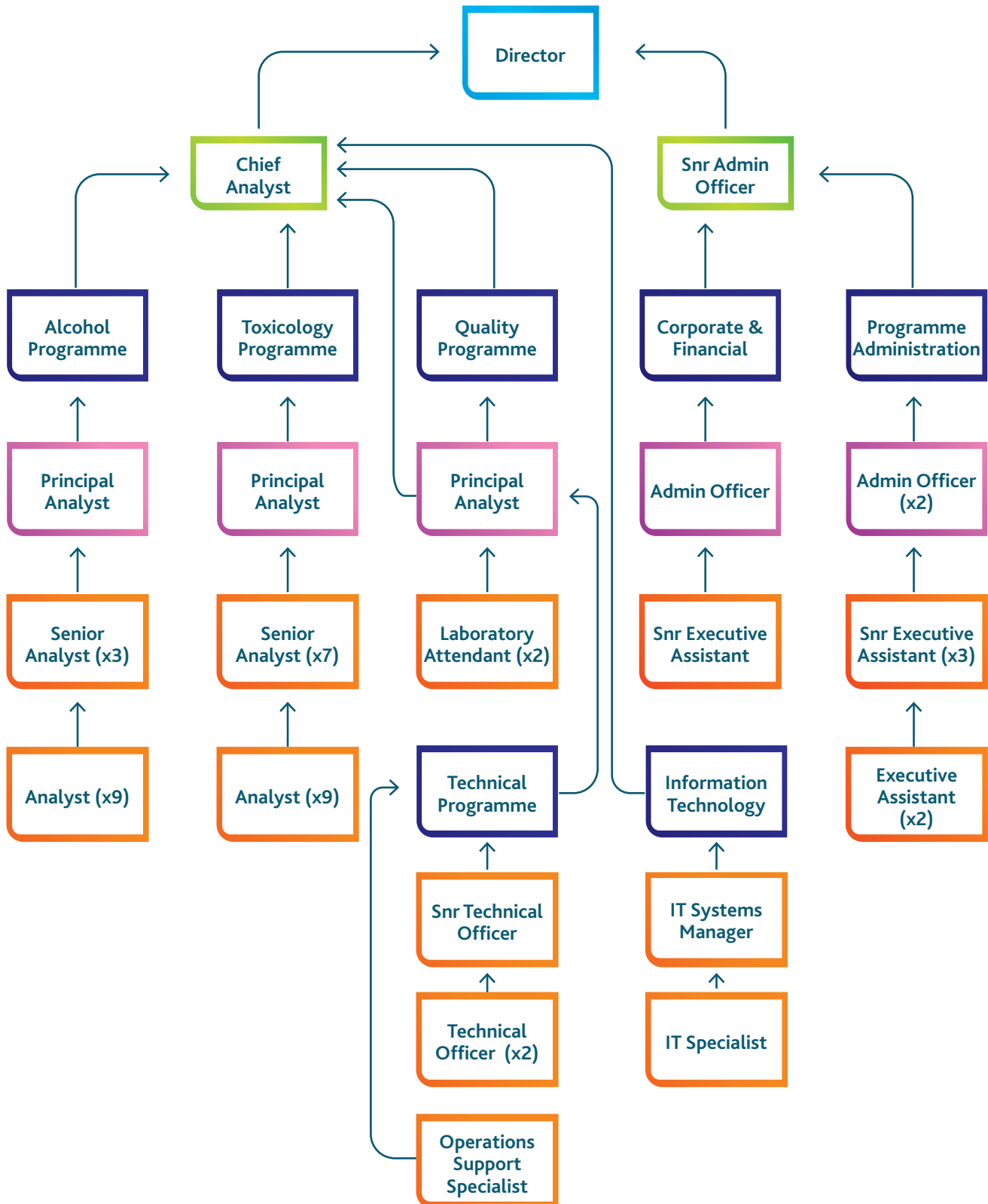
IT skills, Health and Safety and Soft skills.

Supporting the well-being of all staff is of significant importance to the Bureau and it avails of UCD's Employment Assistance programme, and to the many ranges of facilities and offerings made available on the UCD campus.

Bureau staff continue to actively participate and contribute to National and International scientific meetings. The Irish Toxicology Network (IFTOX) was hosted in the Bureau in 2023 and brought together scientists from laboratories in the North and South of Ireland.

MEDICAL BUREAU OF ROAD SAFETY

ORGANISATIONAL CHART





CONFERENCES AND MEETINGS ATTENDED BY THE DIRECTOR IN 2023

Conference	Location	Date
Faculty of Forensic & Legal Medicine Annual Conference	UK	12th and 13th May 2023
Presented at the 53rd Krsek Conference of Forensic Medicine	Slovakia	28th – 30th May 2023
Addressed the Citizens Assembly on Drugs Use, Dublin Oireachtas Committee	Dublin	30th September 2023
Presented at the Road Traffic Training Day Masterclass at the Faculty of Forensic & Legal Medicine	UK	3rd October 2023
Annual Forensic Conference of the Coroners Society of Ireland	Ballina	13th – 14th October 2023
Presented at the First International Conference of Forensic Sciences	UAE	30th October – 1st Nov 2023

Meetings	Location	Date
Medico-Legal Society Meeting	Dublin	26th January 2023
Virtual Meeting of the Medical Advisory Panel on Alcohol, Drugs and Driving	UK	22nd March 2023
Presented at the 28th International Forensic Medicine Meeting	Italy	7th – 9th September 2023
Addressed the Joint Oireachtas Committee on Transport	Dublin	27th September 2023
Presented at a Meeting of the Medical Advisory Panel on Alcohol, Drugs and Driving, UK Department of Transport	UK	18th October 2023
Medico-Legal Society Meeting	Dublin	30th November 2023

COURSES, CONFERENCES AND MEETINGS ATTENDED BY MBRS STAFF IN 2023

Conference	Location	Date
International Association for Chemical Testing (IACT) 2023	USA	16th – 21st April 2023
Irish Mass Spectrometry Society (IMSS) 2023	Dublin, Ireland	10th May 2023
International Association of Forensic Toxicologists (TIAFT) 2023	Rome, Italy	27th – 31st August 2023
Alcohol Interlock Symposium	Norway	17th – 19th September 2023
The Association of Clinical Biochemists in Ireland 45th Annual Conference	Ballina	13th – 14th October 2023
Society of Forensic Toxicologists Conference 2023	USA	29th October – 4th Nov 2023

Seminars, Webinars and Workshops	Location	Date
Department of Transport Energy Steering Committee	USA	16th – 21st April 2023
International Association for Chemical Testing (IACT) Workshop	Dublin, Ireland	10th May 2023
Eurachem workshop on Proficiency Testing in Analytical Chemistry	UK	25th September 2023
United Nations Office on Drugs and Crime (UNODC) Symposium	Online	11th October 2023
How to Drive a Data Culture within the Public Sector	Online	28th October 2023

Meetings	Location	Date
Forensic Toxicology Meeting	MBRS	12th October 2023
United Kingdom and Ireland Association of Forensic Toxicologists (UKIAFT)	Online	25th May 2023
Perkin Elmer User Group Meeting 2023	UK	27th September 2023
Technical Expert Meeting on Synthetic Opioids	Online	27th September 2023



Courses	
MSc. Management Studies	Gas Safety Training
MSc. (Research)	Fire Marshal Training ISO 17025 Internal Auditor Training
Diploma in Management Studies	PAT Training Nautilus Training
Certificate in Facilities Management	Planning and Evaluating Method Validation Studies
Borkenstein Alcohol Course	CSTAR Statistics with SPSS
Analytical Method Validation	Role of the Data Protection Officer
GC-FID HS Onsite Training	Corporate Governance for State and Public Sector Bodies
GC-MS Training	Periodic Critical Reviews for non-commercial State Bodies
GC-MS Spectral Interpretation	Code of Practice for the Governance of State Bodies
HPLC Method Development	Culture, Ethics and Governance for Public Sector Bodies
HPLC Operator	Audit Committee Member Training
Laboratory Safety Training	Revenue Enhanced Reported

MBRS staff also attended a range of training and events offered under the UCD People Development Programme in the areas of:

- > Health and Safety
- > IT
- > Professional Development

ENERGY CONSUMPTION

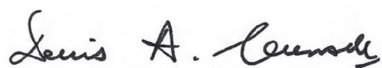
Under the Government's commitment to improve public energy efficiency by 33% the Medical Bureau of Road Safety has registered for and is reporting through the SEAI online system. The Bureau's main energy usage is gas and electricity which is necessary for operating a forensic laboratory and ancillary facilities, e.g. heating and lighting, laboratory equipment, air handling, computers and servers.

The Bureau utilises initiatives to improve energy

efficiency. A Building Management System (BMS) is used to monitor and control heating, air handling units, water boiler (direct hot water supply) and extractor fans. Each of the four floors of the Bureau's premises is managed individually and automatic controls are scheduled accordingly. Energy efficient light bulbs, movement sensors and timer switches are fitted throughout the building to minimise energy consumption.

LEGAL DISCLAIMER

The descriptions and statistics contained within this report are of a condensed and general informative nature only. They should not, by themselves, be relied upon in determining legal rights or other decisions under the Road Traffic Acts. Readers and users are advised to verify with their legal advisors any information on which they may wish to rely.



Professor Denis A. Cusack,
Director.



Dr. Declan Bedford,
Chairman.

MEDICAL BUREAU OF ROAD SAFETY, HEALTH SCIENCES
CENTRE, UNIVERSITY COLLEGE DUBLIN, BELFIELD, DUBLIN 4

