MEDICAL BUREAU OF ROAD SAFETY

Annual Report 2024

Medical Bureau of Road Safety, Health Sciences Centre,
University College Dublin, Belfield, Dublin 4


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Table of Contents

Chairman's Statement

Welcome to the Medical Bureau of Road Safety Annual Report 2024. This is a great opportunity to pause and reflect on the many achievements of the Bureau. As you read this report you will get a comprehensive account of the role and the many significant achievements of the Bureau during 2024. Through 2024 the Bureau continued to focus on its legal responsibilities as set out in the Road Traffic Acts and the role it has played in several Actions in the Government's Road Safety strategy 2021- 2030.

The Bureau is responsible for chemical testing for intoxicants (alcohol and other drugs) in drivers in Ireland. Services are provided to An Garda Síochána, the Irish Aviation Authority, the Department of Transport, the Courts, defence and prosecution lawyers, and to the public. It is an unfortunate reality that alcohol and drugs play a huge role in road traffic accidents, in many cases causing fatalities. The Bureau working in collaboration with other key stakeholders plays a vital role by providing 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.

Of vital importance to the work of the Bureau is the accreditation of its laboratory in UCD by the Irish National Accreditation Board (INAB). It has achieved and maintains the ISO/IEC 17025 (2017) standard (General requirements for the competence of testing and calibration laboratories). The Bureau also operates a complete Quality System across its operational activities.

Specimens from across the country are delivered to the Bureau daily for testing. The Bureau also tests and approves Alcohol Interlock Devices, which is of emerging and growing importance in road safety in Ireland as part of the National Road Safety Strategy. The ongoing evaluation and approval of Alcohol Interlock Devices reflect Ireland's commitment to enhancing road safety and reducing instances of impaired driving.

In 2024, a total of 5,900 blood and urine specimens were received for alcohol and/or drug testing. This represented an 8% increase on 2023. 2024 was the second full year where the Securetec Drugwipe 6s (DW6S) oral fluid test was in operation. This system detects cannabis, cocaine, opiates, benzodiazepines and amphetamines in oral fluid. In 2024, 35,000 DW6S cassettes were issued to an Garda Síochána. This is a 16.7% increase on the number of cassettes provided in 2023. In 2024, 2,297 (2,033, 2023) specimens indicated a positive drug result for at least one of the drugs that can detect. Cannabis and Cocaine are two most frequently detected drugs. Our data show that there has been a significant increase in the presence of Cocaine up from 43% in 2019 to 59% in 2024. The presence of Cannabis has dropped to 54% in 2024, down from 66% in 2019.

The Bureau utilises the premises and staff provided by UCD through an ongoing arrangement between UCD and the Bureau. I would like to express the sincere appreciation of the Board to President and Staff of UCD for their ongoing support.

I would like to express on behalf of the Board my appreciation to Professor Denis Cusack, Director of the Bureau, the Senior Management Team and Staff of the Bureau for the successful operation of the Bureau and the discharge of their duties to an exemplary standard.

I would like to thank the Minister for Transport and his officials for their ongoing support. I would like to express my appreciation to Dr, Declan Bedford, who completed his term as Chair of the Board in September 2024.

Finally, I would also like to express my appreciation to my fellow Board members for the significant contribution they have made to the effective governance of the Bureau during 2024.

Sean Quigley
Chairman of the Board

Director's Foreword

It is once more my privilege to write a foreword to the Medical Bureau of Road Safety's Annual Report for 2024 and to set out the contributions and achievements of the Bureau in its forensic functions in road safety. I express my deep thanks to all the dedicated Staff of the Bureau without whose sterling work the considerable inputs to this public service during 2024 could not have been achieved.

The report summarises the activities and outcome performances of the Bureau for 2024 with data and figures for public information and examination from its forensic scientific testing during 2024 on driving under the influence of intoxicants. The core national policy for multi-agency integrated actions aiming to reduce deaths and injuries on Irish roads arising from road traffic crashes and incidents is the Road Safety Strategy 2021 – 2030.

In 2024, 174 lives were tragically lost in road collisions in Ireland. The Bureau has a focused input to the Road Safety Strategy in Actions 23 and 119 on Alcohol Interlock Devices and this was successfully actioned in 2024 by the testing and approval of four such devices. The Bureau continues to work with the Department of Transport on Action 31 on legislation for Polydrug Traffic Offence penalties. It remains in close partnership in all relevant road safety actions with the Department of Transport, An Garda Síochána, the Road Safety Authority and other national and international bodies.

This report details the demographics of drivers who provided samples for analysis. In 2024, 36 drivers were arrested three times for intoxicated driving, 263 drivers were arrested twice and seven drivers were arrested between five and eleven times. The concern around repeat and high risk intoxicated driving offenders remains to be addressed legislatively, in the prosecutorial and judicial process and also in medical rehabilitation under Action 23 of the Road Safety Strategy by the co-operative work of a number of bodies, including the Bureau.

The number of specimens received in 2024 for alcohol analysis continued at a high level of 5,900 specimens. Specimens received for drugs analysis reached 4,348 (3,873 in 2023) with an increased number of 81 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 functions. Drug analysis reporting times were shortened further in 2024 and this supports a greater ability to remove unsafe drivers from our roads more quickly. Evidential Breath Alcohol Testing was carried out in Garda Stations nationwide in 3,580 cases. Quality assurance continued with the Bureau accredited to the ISO/IEC 17025 (2017) standard and participating in external forensic scientific proficiency schemes.

A significant achievement in 2024 was the testing and approval of the first four Alcohol Ignition Interlock devices for Ireland with further devices anticipated in 2025. These devices can be installed in a motor vehicle to prevent it from starting if the driver tests positive for alcohol and are already in place on a voluntary basis in several commercial bus and truck fleets in the country. This has the potential to be one of the most significant and transformational developments in road safety in decades when rolled out on a statutory basis recognizing that in the region of 30% of road traffic crashes have alcohol presence as a contributory or associated factor.

Alcohol remained the most frequently detected intoxicant in drivers. The median alcohol level in blood was 142mg/100ml and in urine was 194mg/100ml when the 59% of specimens with no trace of alcohol were excluded. These figures have sadly changed very little over the past decade. Alcohol intoxicated driving thus remains a very real and 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 learner, novice and professional or heavy vehicle driver.

For intoxicants other than alcohol, the three most commonly detected drugs in 2024 were again cannabis, cocaine and benzodiazepines. The mean level of cannabis found in samples was 6.2ng/ml and of cannabis THC acid was 49.4ng/ml. The mean level of cocaine was 120.3ng/ml and of benzoylecgonine was 749.7ng/ml. These levels are multiples of the set legal limits and continue to reflect 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 their public enforcement duty. In 2024 the Gardaí were supplied with 35,000 roadside drug testing devices, an increase on the 30,000 supplied in 2023. The frequent finding of combinations of drugs and drugs with alcohol remains of enormous concern. The drugs landscape is always changing and the Bureau continues to keep abreast of new and evolving impairing drugs as they become evident in drivers and to keeping pace with technology that will enhance the Gardaí's capacity to detect impairment and intoxicant use in drivers.

During 2024 the Director and Staff of the Bureau continued to attend relevant courses and conferences for the purpose of continuing education but also to contribute to national and international specialist forensic bodies in scientific and medical testing for intoxicants in driving.

It was thus another productive and busy year in 2024 for the Bureau which 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 2025. 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 & Board Member

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
Equality & Inclusion
Teaching & Learning

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.

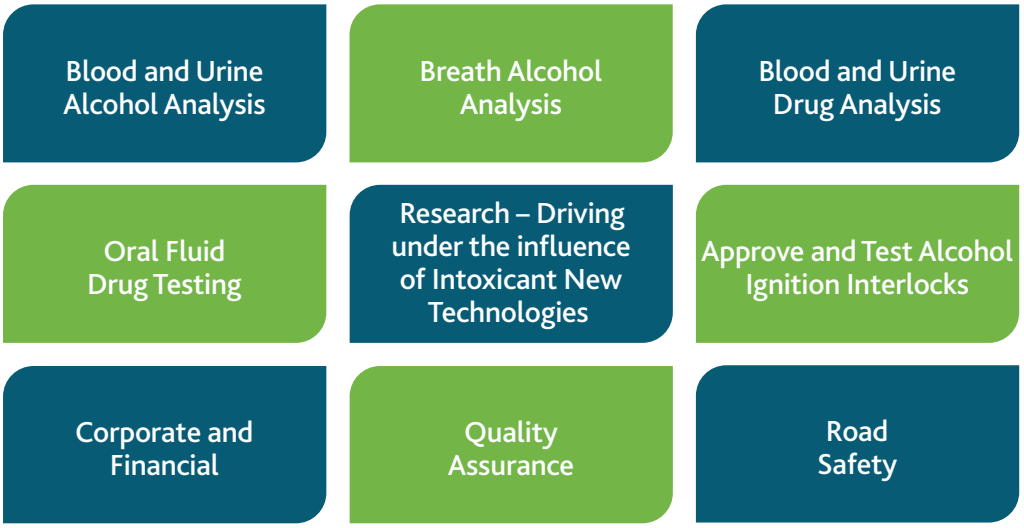
Through 2024 the Bureau continued to focus on its legal responsibilities as set out in the Road Traffic Acts (RTA) and lead in several Actions in the Government's Road Safety strategy 2021- 2030 while playing a collaborative role in other actions lead by the RSA.

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 scientific operations of the laboratories.
The Corporate Secretary is responsible for the administration of Corporate and Financial aspects of the Bureau.



Achievements & Developments During 2024

Preliminary Drug Testing

2024 saw an increase in the demand for Securetec DrugWipe 6S by An Garda Síochána for testing drivers' oral fluid for six types of drugs at the roadside. 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. There was a 12% increase in specimens analysed compared to 2023. 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 adding to the ongoing efficiencies in the drug testing laboratory.

Laboratory Confirmatory Drug Testing

All specimens that screened positive for a drug or drugs were forwarded for confirmatory analysis. 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. The Bureau continued to expand the panel of drugs tested in 2024.

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 airline crew testing for alcohol.

Alcohol Ignition Interlock

Aligned with Action 119 of the Road Safety Strategy 2021–2030, the Medical Bureau of Road Safety (MBRS) is tasked with the assessment and approval of AIIDs in Ireland. As of 2024, four devices have been MBRS approved, with details available on the MBRS website. The ongoing evaluation and approval of AIIDs reflect Ireland's commitment to enhancing road safety and reducing instances of impaired driving.

Evidential Breath Alcohol Testing

Evidential Breath Testing (EBT) instruments are tested twice yearly. In 2024, the Bureau supported and maintained 86 EvidenzerIRL instruments in Garda stations across Ireland. These instruments form a critical component of Ireland's enforcement infrastructure for combating drink driving.

Quality Assurance

The Bureau's yearly audit by INAB (Irish National Accreditation Board) was in March 2024 to assess compliance of the Bureaus' current scope and a number of Flexible Scope of Accreditation applications such as:

- Amalgamate the Benzodiazepine and Qualitative Drug Confirmation Blood Test methods into the Multidrug Confirmation Blood Test Method
- Remove Fenfluramine from the Blood and Urine Tox Screening Test Method
- Introduced a new Head Space Gas Chromatograph for Alcohol quantification and a new Liquid Chromatography Mass Spectrometer for Toxicology drug identification

The flexible scope applications were approved and the Bureau maintained its ISO 17025 accreditation. 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.

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 2024. Bureau staff and the Director continued to attend and 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), The International Association of Forensic Toxicologists (TIAFT), Instituto de Farmacología y Toxicología (IFTOX) 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

Over the past few years, the Bureau has placed significant emphasis on cybersecurity. We have also introduced a cybersecurity training program where all existing and new staff members are required to complete mandatory cybersecurity awareness training. 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 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 2024, a total of 5,900 blood and urine specimens were received for alcohol and/or drug testing.

Of these, 4,348 proceeded to Toxicology for further drug screening.
There were 3,580 driver's breath tested on Evidenzers in Garda Stations.
Of all specimens received 16% were urine and 84% were blood.

Table 1: *Total Number of Specimens Received within Programmes*

Programme	2024	2023	2022	2021	2020
Alcohol Blood & Urine (page 19)	5,900	5,464	5,622	5,862	5,967
Toxicology Blood & Urine (page 28)	4,348	3,873	3,793	4,321	4,489
Evidential Breath Testing (page 22)	3,580	3,734	3,821	3,157	3,278

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

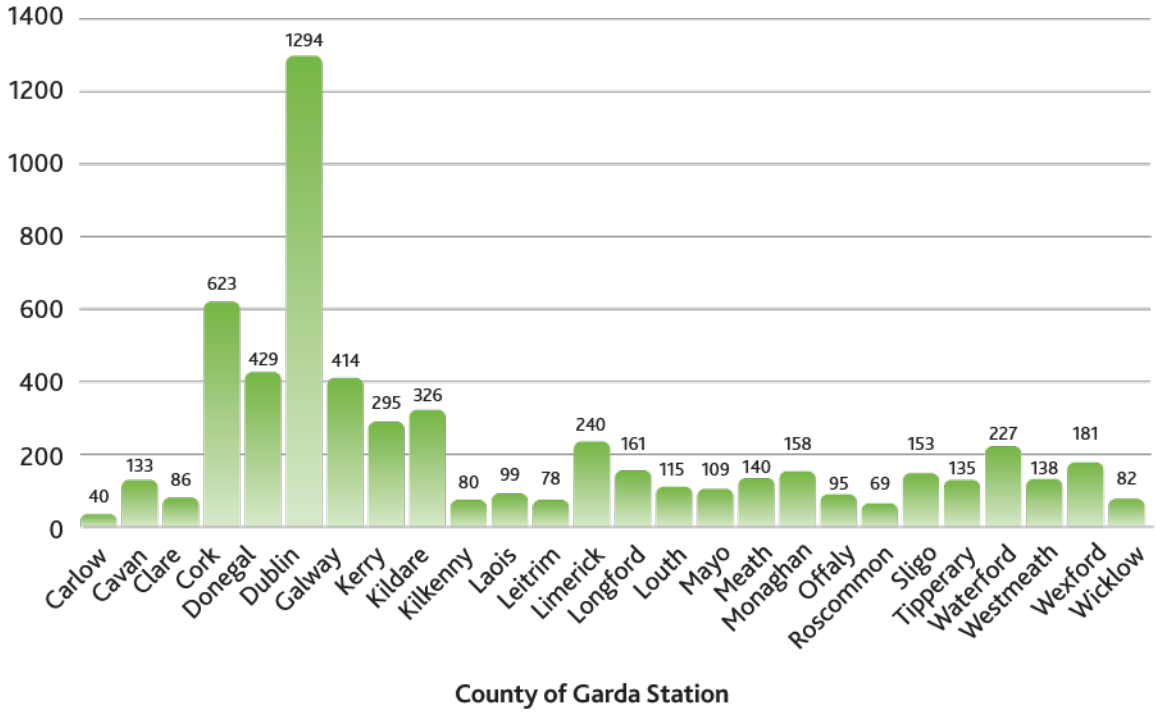


Figure 2: *Blood & Urine Specimens - County of residence of drivers 2024*

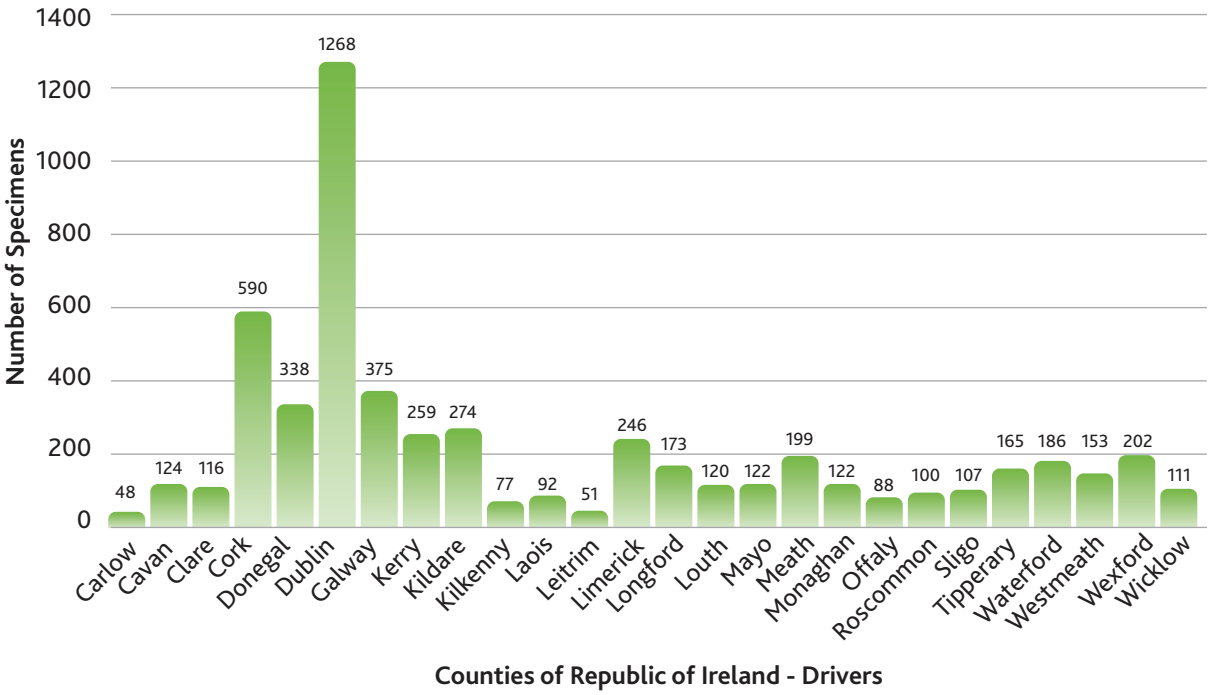


Figure 3: *Blood & Urine Specimens - Drivers from outside Republic of Ireland 2024*

The most prevalent county/country of residence provided by drivers outside of the Republic of Ireland was Derry, Northern Ireland.

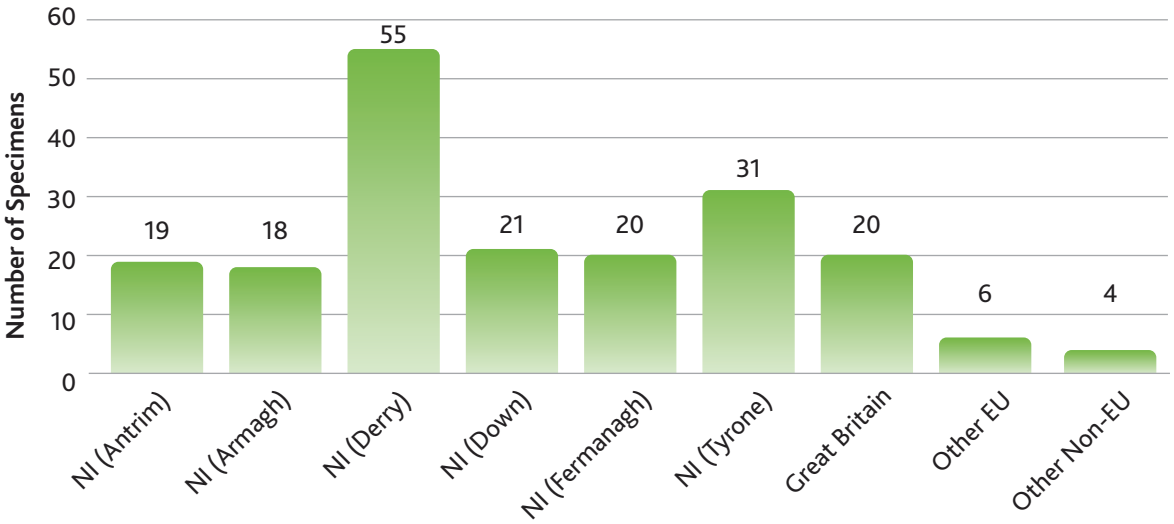
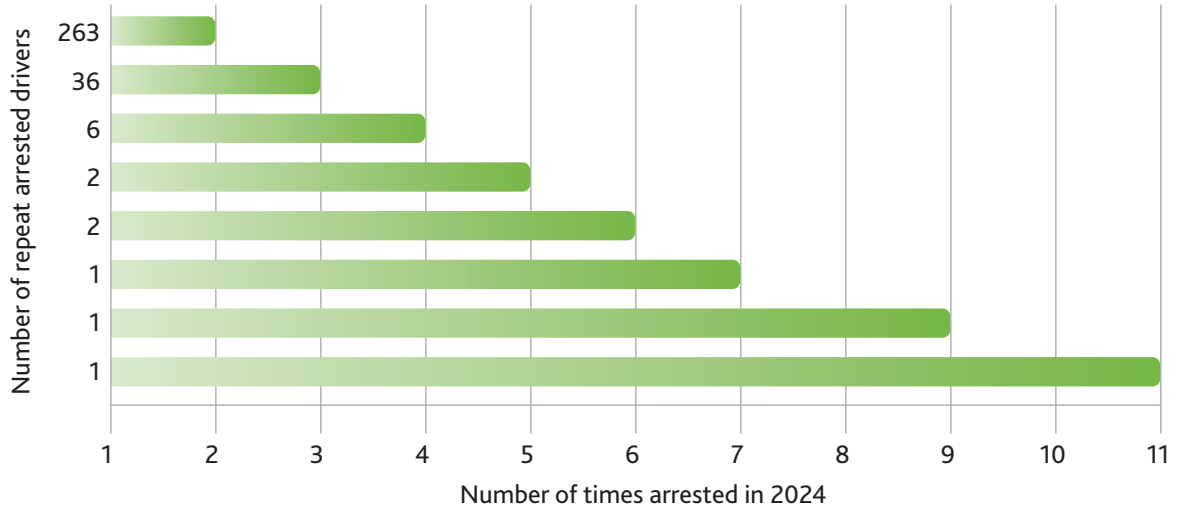


Figure 4: *Repeat Arrested Driver Specimens 2024*

The level of recidivism detected remains significant with 263 drivers arrested twice in 2024 – this is an increase of 8% on 2023.

This includes drivers who have alcohol and/or drug positive results.



Analysis of Time

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

Figure 5: *Time Specimen Taken 2024*

55% of drivers were arrested in the 8 hour period from 8pm to 4am.

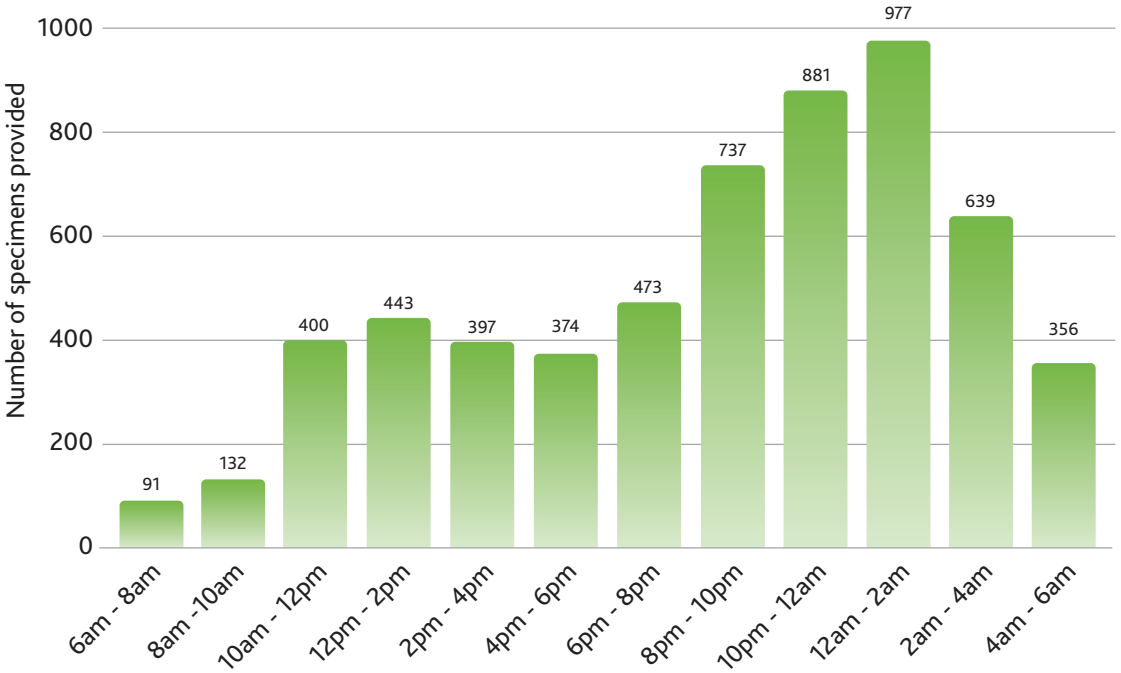


Figure 6: *Day of the Week Specimen Provided*

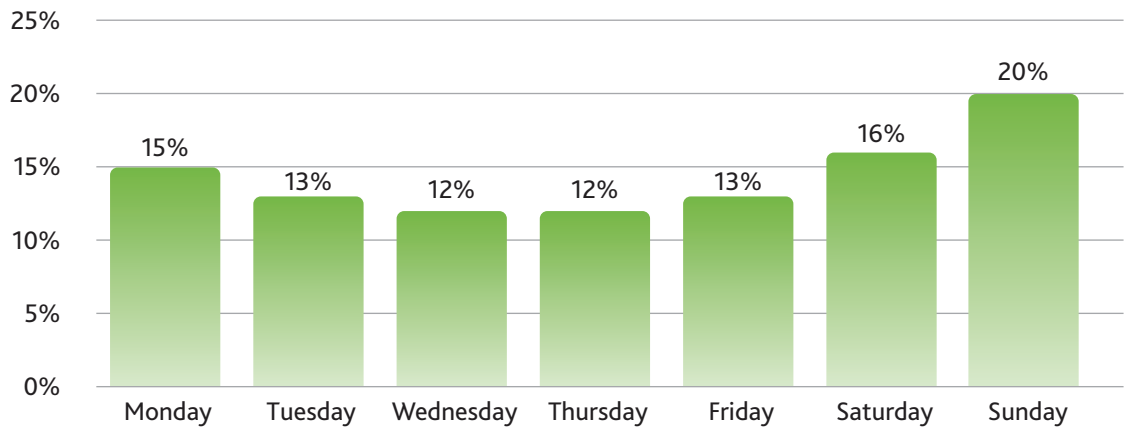


Figure 7: *Weekend Hours – Saturday*

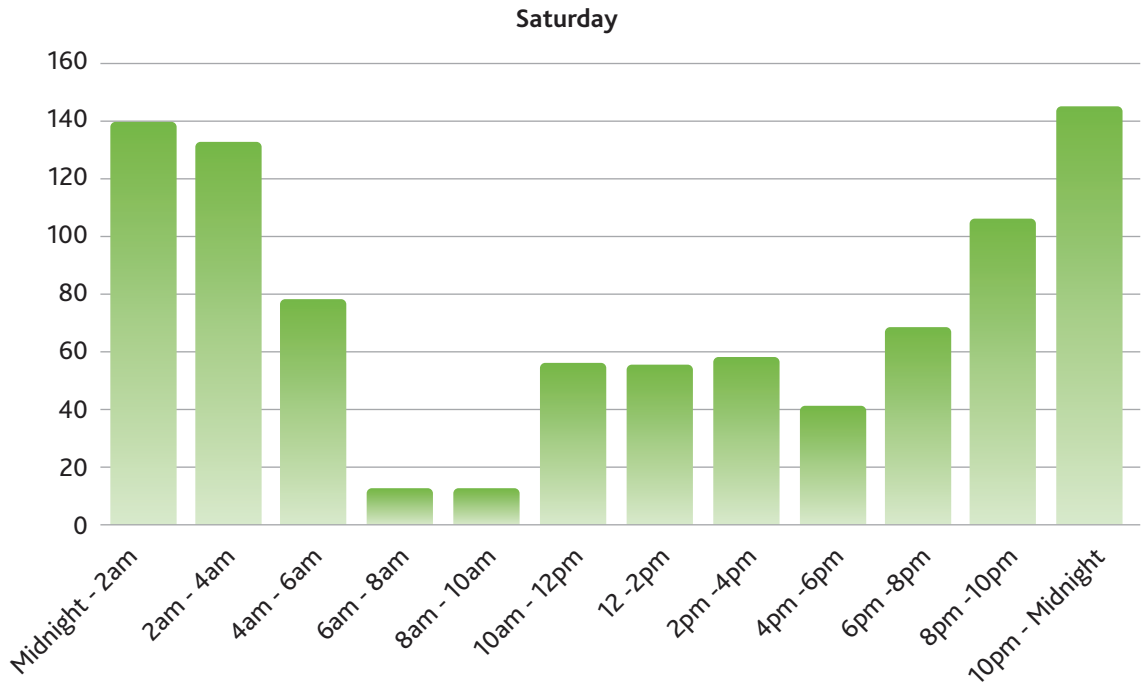


Figure 8: *Weekend Hours – Sunday*

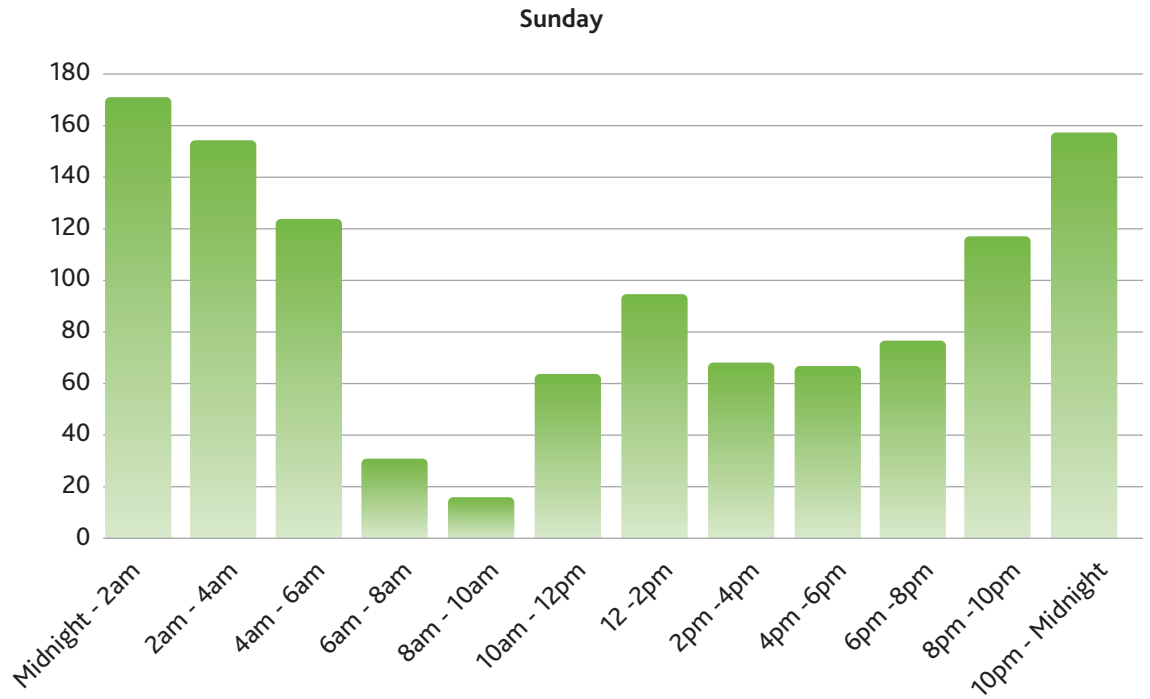
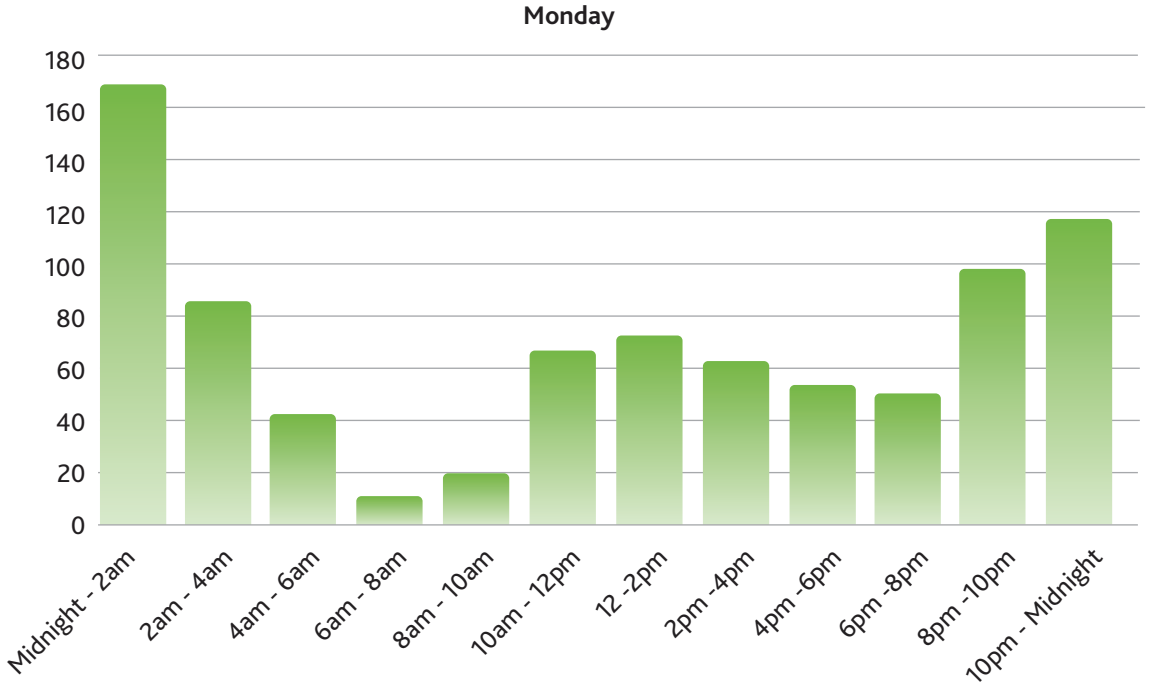


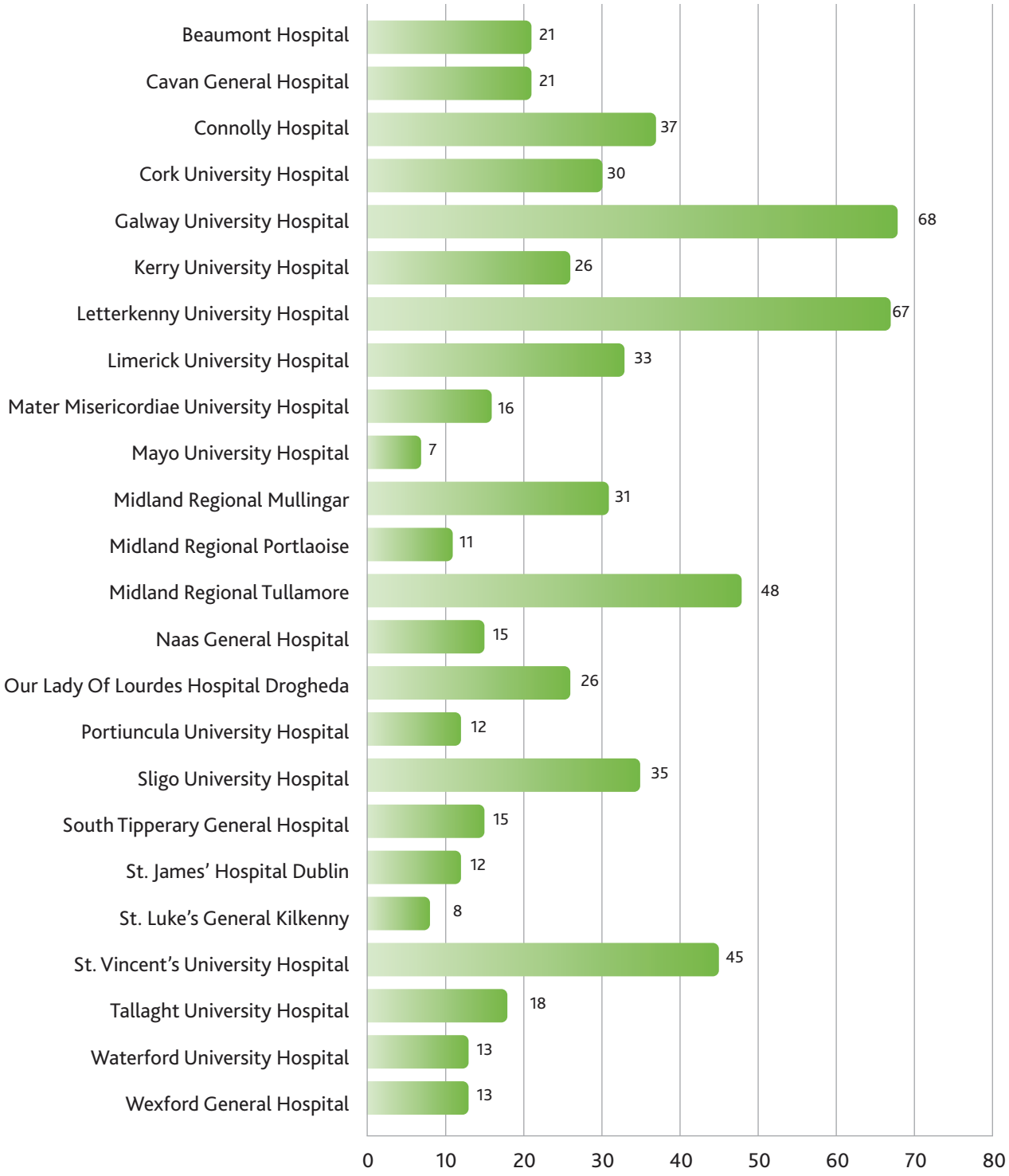
Figure 9: *Weekend Hours – Monday*



Number of Specimens Provided in Hospitals

In 2024, there were 628 specimens provided in hospitals, this is 11% of the total blood and urine specimens received.

Figure 10: *Overview of hospital cases in 2024*



Unconscious Drivers

In 2024, four specimens were forwarded to the Bureau for analysis following blood taken from unconscious drivers compared to six specimens for unconscious drivers received in 2023.

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*

	2024	2023	2022	2021
MALE	85%	86%	85%	86%
FEMALE	15%	14%	15%	14%

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. 78% 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 14 years old and the oldest was 94 years old. The youngest male driver was 14 years old and the youngest female driver was 16 years old.

Figure 11: *2024 Age Profile by Gender %*

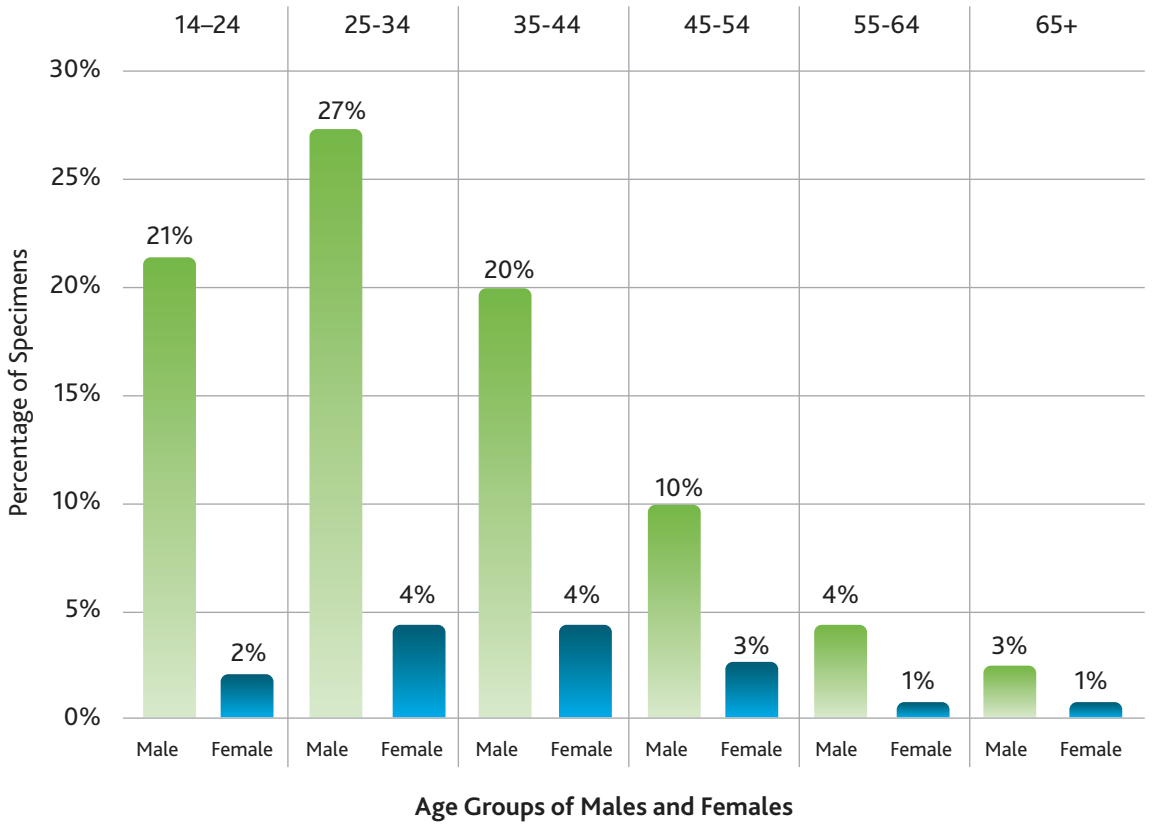


Figure 12: *2024 Age Profile of Males*

Of the 5012 male arrested drivers, 80% are under 45 years of age (also 80% in 2023).

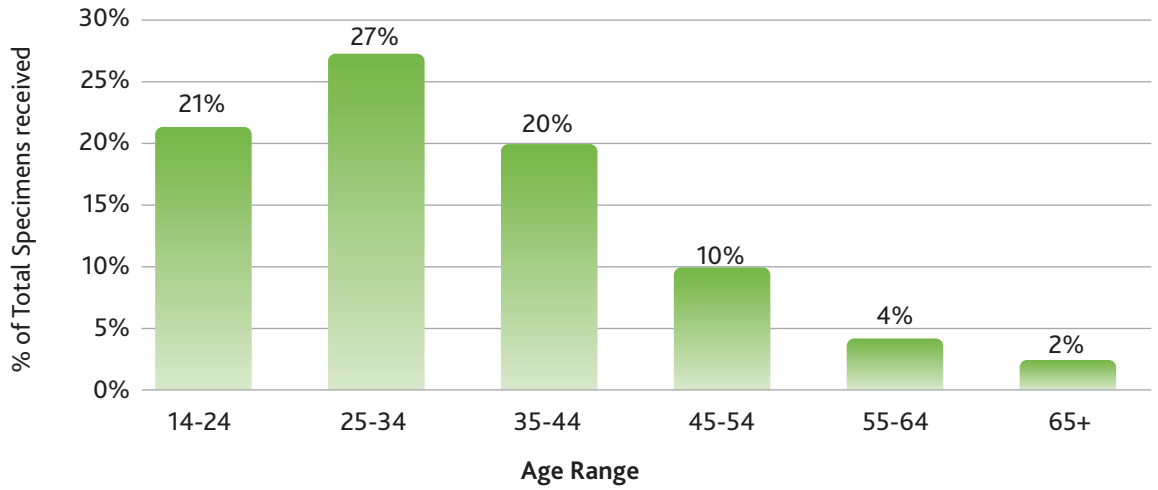
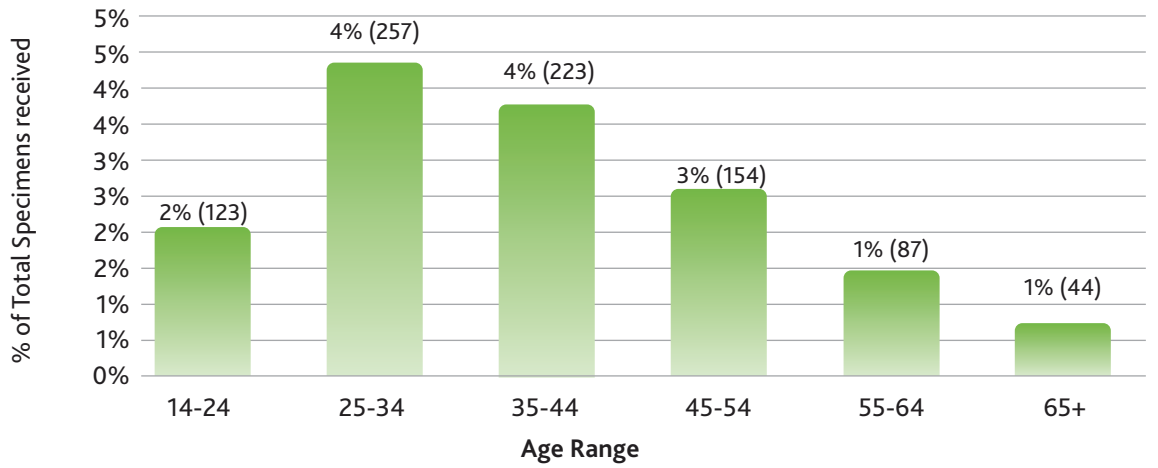


Figure 13: *2024 Age Profile of Females*

Of the 888 female arrested drivers, 68% are under 45 years of age (also 68% in 2023).



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.

Following a review of the different types of needles available for drawing blood specimens, the needle provided in the blood kit was changed to a Safety - Multifly needle in the last quarter of 2024. This needle is pre-assembled with a safety mechanism to prevent needlestick injuries and offers optimal punctures in challenging vein conditions.

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

	Kits Prepared and Issued			
	2024	2023	2022	2021
BLOOD KITS	6,600	5,200	5,200	6,400
URINE KITS	2,400	1,932	2,200	1,500
JUGS	-	1,879	2,780	1,700
URINE POTS	1900	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 HSGC-FID systems. The results of analyses must be within 4% of each other before issue of a Certificate of Analysis.

A total of 5,900 blood and urine specimens were received for analysis during 2024. 32 specimens were cancelled and did not have a certificate of analysis for alcohol concentration issued for reasons including: specimen clotted, specimen not sealed and insufficient for analysis.

Median Alcohol reported Level in Blood and Urine

The median reported alcohol level in blood was 142mg/100ml and in urine was 194mg/100ml for 2024, excluding specimens which had no trace of alcohol. The median blood alcohol result has decreased from 153mg/100ml in 2023 and the median urine result is similar to 2023(196mg/100ml).

Maximum Alcohol reported Level in Blood and Urine

The highest reported alcohol level in blood was 428mg/100ml and in urine was 525mg/100ml in 2024.

Lower Alcohol Concentration Specimens in Blood and Urine

59% of blood and urine specimens had no trace of alcohol in 2024.

Figure 14: *Certified Positive Blood Alcohol Levels 2024 v 2023*

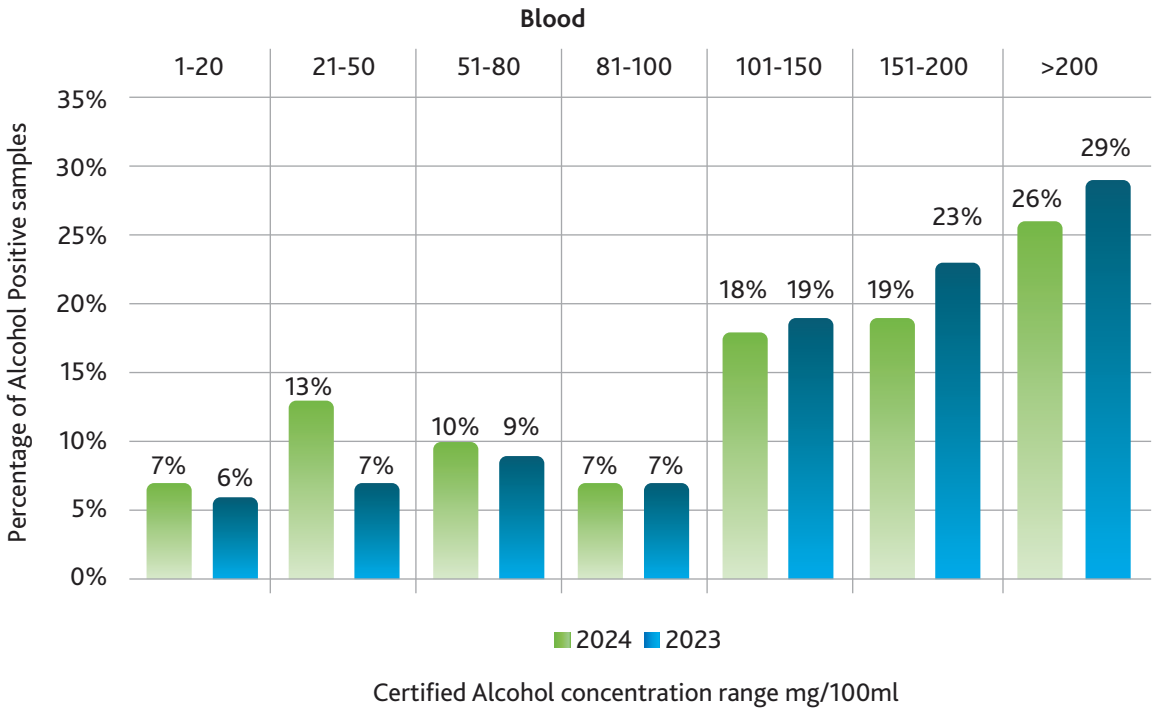
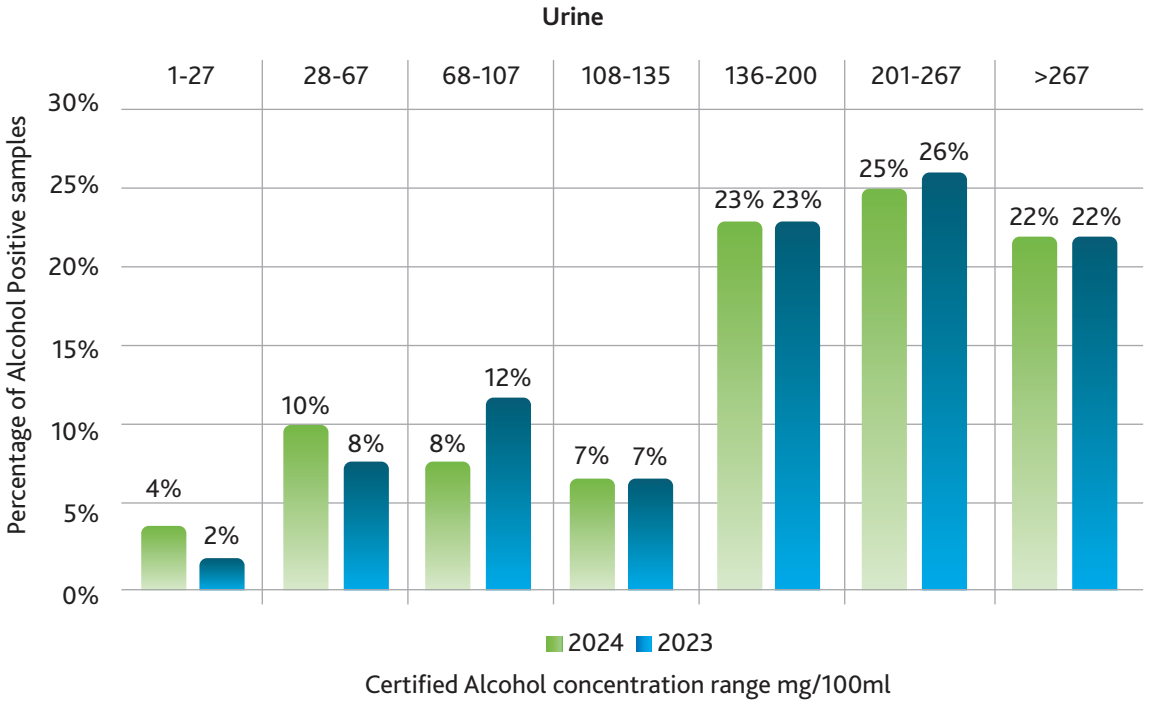


Figure 15: *Certified Positive Urine Alcohol Levels 2024 v 2023*



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

The Alcohol Breath Testing Programme is led by Principal Analyst, Ms. Louise Lawlor which includes Preliminary Breath Testing, Evidential Breath Testing, Aviation Breath Testing and the Alcohol Ignition Interlock Device (AIID) programme.

In 2024, the programme continued to deliver critical services supporting road and aviation safety in Ireland through the deployment, testing, and oversight of breath alcohol testing technologies.

Main functions of the Breath Alcohol programme are:

- Approval, supply, and testing of devices used for roadside preliminary breath testing, which indicate the presence of alcohol in a driver's breath.
- Approval, supply and testing of apparatus for determining the concentration of alcohol in the breath (evidential breath testing instruments)
- 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.
- Delivery of training courses for EvidenzerIRL Operators and Supervisors.
- Delivery of Train the Trainer courses for the Operation of the Dräger Alcotest 7510 device.
- Collection, management and analysis of data in relation to evidential breath alcohol tests.
- Approval, supply, and testing of apparatus for indicating the presence and concentration of alcohol in breath for use by the Irish Aviation Authority (IAA).
- Delivery of training courses for the Operation of the Dräger Alcotest 8610 unit.


Dräger Alcotest 7510 device

Aviation Breath Alcohol Testing

The Aviation Breath Testing programme, established through a Memorandum of Understanding between the Medical Bureau of Road Safety and the Irish Aviation Authority (IAA) is a component of aviation safety in Ireland. This ongoing collaboration reinforces our shared commitment to maintaining a high standard in breath alcohol testing within aviation settings.

The Bureau is responsible for the approval, supply, and testing of the Dräger Alcotest 8610 devices used by the IAA. Device calibration and performance checks are conducted twice yearly by the Bureau.

With the framework now firmly in place, the programme continues to support the integrity of aviation operations by prioritising reliability, consistency, and a strong culture of safety for both passengers and crew.

Alcohol Ignition Interlock Device (AIID) – Assessment and Approval

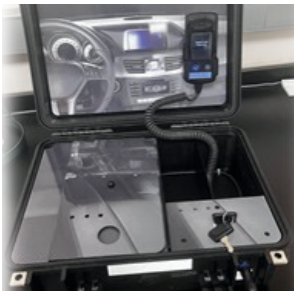
Alcohol ignition interlock devices (AIIDs), commonly known as interlocks, are influential in preventing drink-driving incidents. These devices, installed in vehicles, require drivers to provide a breath sample before the engine can start. If the breath alcohol concentration exceeds a predetermined limit, the vehicle remains immobilised (blocked), thereby preventing driving while impaired.

International research underscores the effectiveness of AIIDs, particularly when integrated with rehabilitation programmes. Studies have shown that such combined approaches can significantly reduce reoffending rates, both during and after the period the device is installed. For instance, jurisdictions with mandatory ignition interlock laws have experienced notably lower rates of alcohol-involved fatal crashes compared to those without such regulations.

In Europe, the EN 50436 standard provides comprehensive guidelines for AIIDs, detailing specifications for their design, testing, installation, and use. Compliance with this standard ensures that devices meet rigorous safety and performance criteria.

Assessment and Approval Process

Under Action 119 of the Road Safety Strategy 2021–2030, the Medical Bureau of Road Safety (MBRS) is tasked with the assessment and approval of AIIDs in Ireland.



SMARTSTART 2035 Device

LifeSafer L250 Device

The approval process comprises four key stages:

Stage 1: Approval Application

In July 2023, the MBRS issued a public invitation for AIID manufacturers and suppliers to submit their devices for evaluation. This call for submissions was published on the eTenders platform (Reference: UCDOPP5355), encouraging broad industry participation.

Stage 2: MBRS Testing

Submitted devices undergo a thorough examination, including a review of technical documentation and test reports provided by the manufacturers.

Stage 3: Evaluation of Test Reports

The MBRS conducts rigorous testing of each device to assess compliance with the EN 50436 standard and to evaluate functional performance. This ensures that only devices meeting the standard are approved for use.

Stage 4: Approval and Publication

Following successful assessment and testing, approved devices are added to the MBRS list of approved interlock devices. As of 2024, four devices have been MBRS approved, with details available on the MBRS website: Approved Interlocks - Medical Bureau of Road Safety

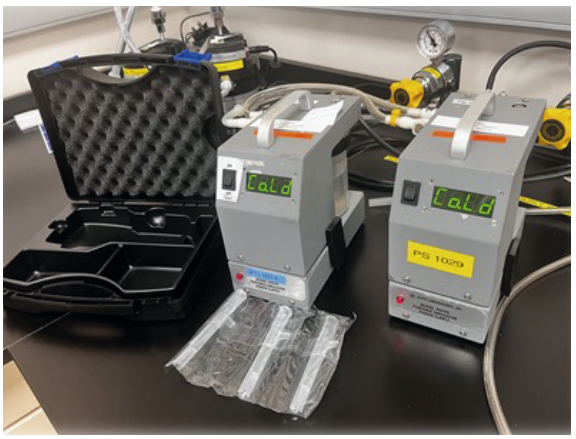
The ongoing evaluation and approval of AIIDs reflect Ireland's commitment to enhancing road safety and reducing instances of impaired driving. By adhering to international best practices and standards, the MBRS ensures that only reliable and effective devices are implemented in the national road safety framework.

Roadside Breath Alcohol Testing

Since 2018, An Garda Síochána has been using the Dräger Alcotest 7510 breathalyser for roadside alcohol breath testing. This portable device is used at checkpoints to screen drivers for alcohol consumption. When a driver exhales into the device, it measures the concentration of alcohol in their breath and provides an immediate result: a PASS if the level is below the legal limit or a FAIL if it exceeds the limit. This device is intended as a screening tool to detect the presence of alcohol.

To ensure continued accuracy and reliability, the Dräger Alcotest 7510 devices are calibrated and tested every six months by the Bureau. In 2024, a total of 2,030 calibrations were carried out. This process is accredited by the Irish National Accreditation Board (INAB) under the ISO 17025 standard.

The programme operates a 'hot swap' system: when a device is sent for calibration or testing, it is immediately replaced with a recently calibrated unit. This approach minimises downtime and ensures the availability of functional devices at all times. Approximately 1,400 devices are currently in operational use by An Garda Síochána.



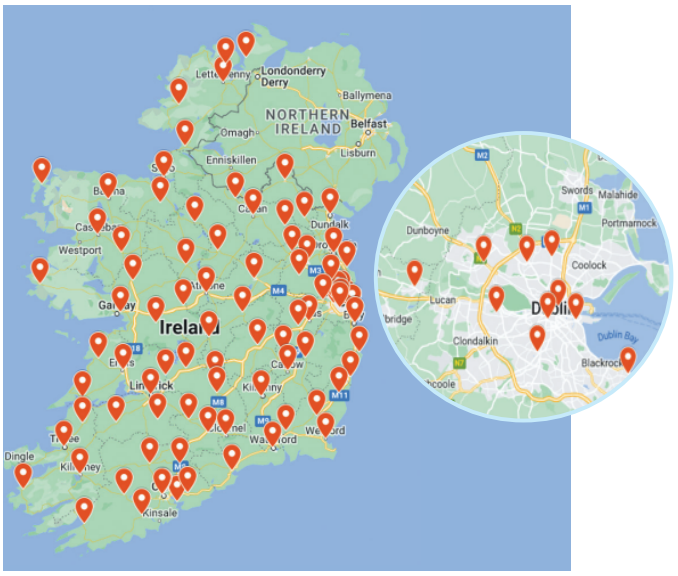
Evidential Breath Alcohol Testing

Evidential breath test instruments are used to analyse a driver's breath to determine the breath alcohol concentration (BrAC). The results are expressed in micrograms of alcohol per 100 millilitres of breath (µg/100mL). The process involves the driver providing breath specimens directly into the instrument, which then measures the concentration of alcohol present.

These instruments are non-invasive, accurate, and deliver results in real-time, offering a practical and efficient alternative to blood or urine testing. For a valid test, the driver is required to provide two separate breath specimens, with the instrument ensuring consistency and reliability between the readings.

Evidential breath test instruments are widely used around the world in road traffic enforcement due to their robust performance, reliability, and legal admissibility.

In 2024, the Bureau supported and maintained 86 EvidenzerIRL instruments in Garda stations across Ireland. These instruments form a critical component of Ireland's enforcement infrastructure for combating drink driving. See the map below for an overview of instrument locations.



Testing EBT instruments in Garda Stations

In 2024, the Bureau continued its commitment to maintaining the accuracy and correct functioning of breath alcohol testing conducted within Garda stations through thorough 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 onsite testing was carried out on 186 occasions in 2024 (197 in 2023). 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 2024 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.

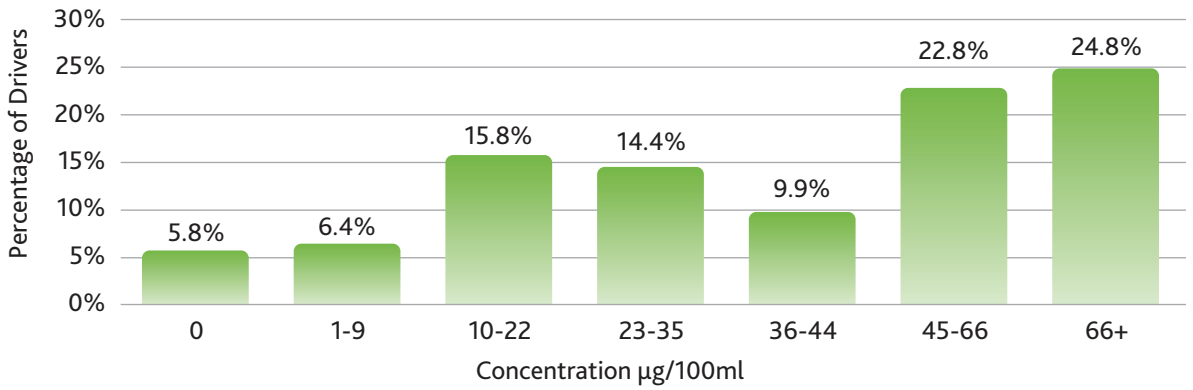
Nine EvidenzerIRL courses were conducted throughout the year which included comprehensive Operator and Supervisor training. All courses were conducted onsite at the UCD Campus in collaboration with the Garda Training College, the EvidenzerIRL course structure comprised a condensed yet comprehensive format. 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 2024, a total of 178 Garda members underwent training through the EvidenzerIRL courses.

Breath Alcohol Statistics

Statistics for breath alcohol are from the period 1st July 2023 to 30th June 2024. 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 2024 – Breath*



Breath Alcohol Analysis

The statistics for this annual report were calculated from evidential breath tests spanning from 1st July 2023 to 30th June 2024. 3,580 drivers were brought to Garda Stations and provided breath specimens for alcohol analysis. In approximately 3% 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.

11.5% of drivers either failed or refused to provide breath specimens. 86% of breath specimens undertaken were successfully completed and a Section 13 certificate issued.

Of all the drivers who successfully provided breath specimens 94% 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 45µg/100ml.

The maximum alcohol level in breath was 152µg/100ml.

Analysis of Time

38% 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: *2024 Time Breath Specimen Provided*

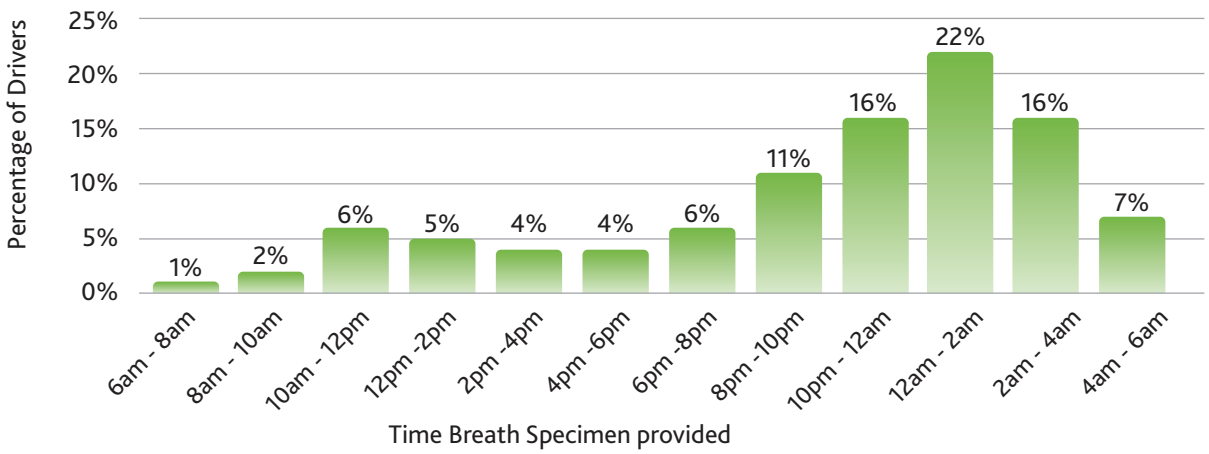
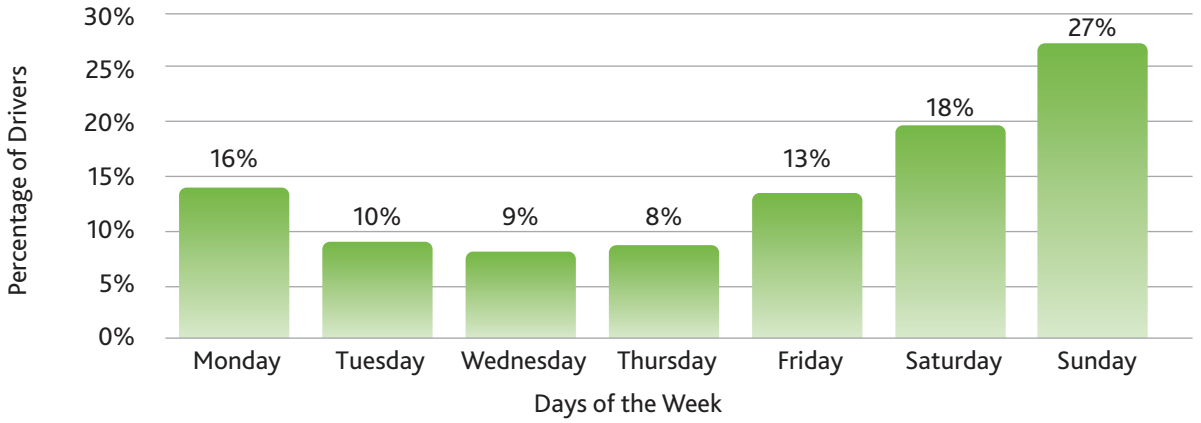


Figure 18: *2024 Day Breath Specimen Provided*



Gender in Evidential Breath Testing Specimens

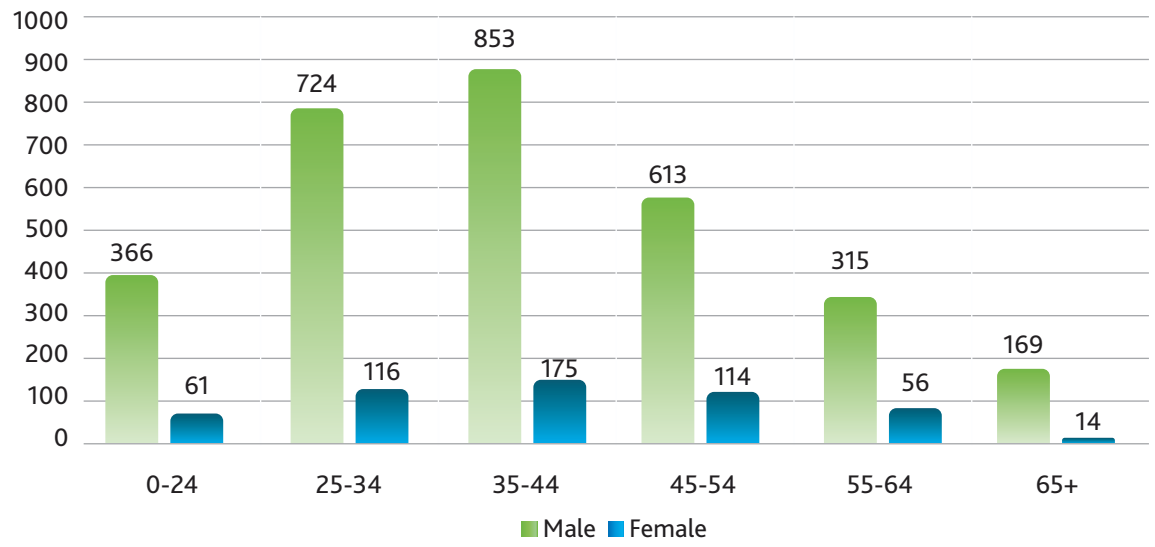
The number of male drivers required to provide a breath specimen far exceeds the number of female drivers, the male to female ratio being approximately 6:1, the gender profile remained similar from previous years, 85% male and 15% female.

Table 4: *2024 Gender Profile of Breath Specimens provided*

	2024	2023	2022	2021	2020
MALE	85%	84.5%	85%	85%	85%
FEMALE	15%	15.5%	15%	15%	15%

Age Profile in Evidential Breath Testing Specimens

Figure 19: *2024 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 81 years. The median age was 39 years. Eighteen drivers under 18 years provided breath specimens in 2024. 4 not stated.

Toxicology Programme

This programme is led by Principal Analyst, Dr Richard Maguire. The main functions of this programme in 2024 were:

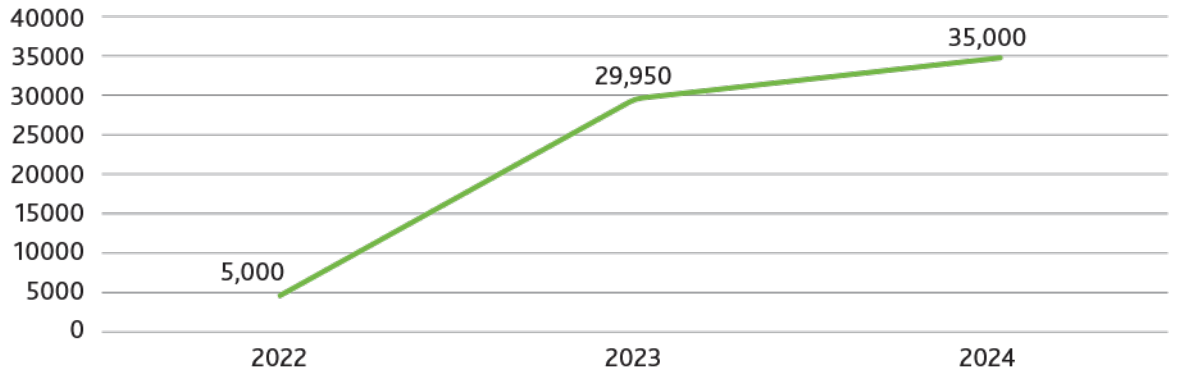
- The analysis of blood and urine specimens for the presence and/or concentration of a drug or drugs.
- The issue of Certificates of Analysis for the presence and/or concentration of a drug or drugs.
- Provision/maintenance of Preliminary Drug Testing Devices (oral fluid) and quality control of consumables.
- 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)

2024 was the second full year where the Securetec Drugwipe 6s (DW6S) oral fluid test was in operation. This system detects cannabis, cocaine, opiates, benzodiazepines and amphetamines in oral fluid. In 2024, 35,000 DW6S cassettes were issued to an Garda Síochána. This is a 16.7% increase on the number of cassettes provided in 2023. Figure 20 below shows the trend in supply of oral fluid drug tests to an Garda Síochána between the introduction of testing in 2017 and 2024.

The Bureau also managed the quality control testing of the DW6s cassettes received throughout 2024 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.

Figure 20: *Supply of Drugwipe 6S Cassettes to an Garda Síochána*

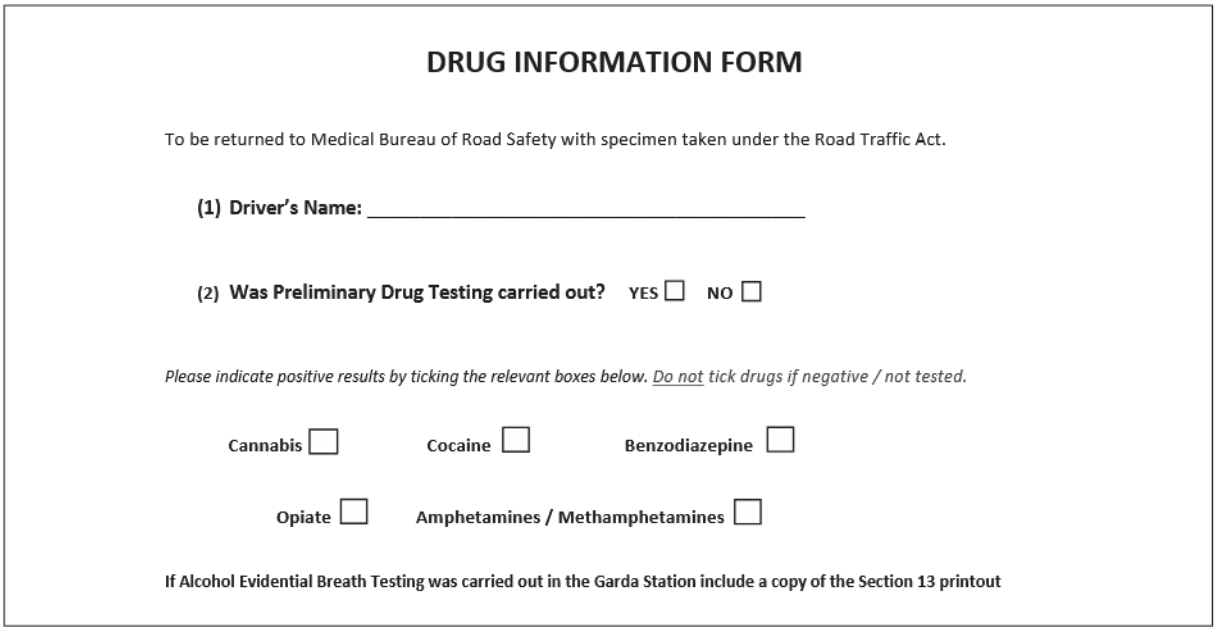


Oral Fluid Testing and Prevalence 2024

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 an "Information Form" indicating the results of the test.

Drug Information Form

This information form enables a comparison of the performance of the oral fluid testing with laboratory testing. In 2024, 2,297 (2,033, 2023) specimens were returned with an "Information Form" indicating that an oral fluid PDT test had been carried out and indicated a positive drug result for at least one of the drugs that the DW6s can detect. Of the positive cases in 2024 the prevalence of drugs detected by the DW6s is shown in Table 5.



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	2024	2023	2022	2021	2020	2019
Cannabis	54%	53%	66%	69%	67%	66%
Cocaine	59%	58%	48%	45%	46%	43%
Opiates	8%	7%	6%	6%	8%	8%
Benzodiazepines	11%	9%	5%	5%	5%	4%
Amphetamines/ Methamphetamines	6%	7%	3%	n/a	n/a	n/a

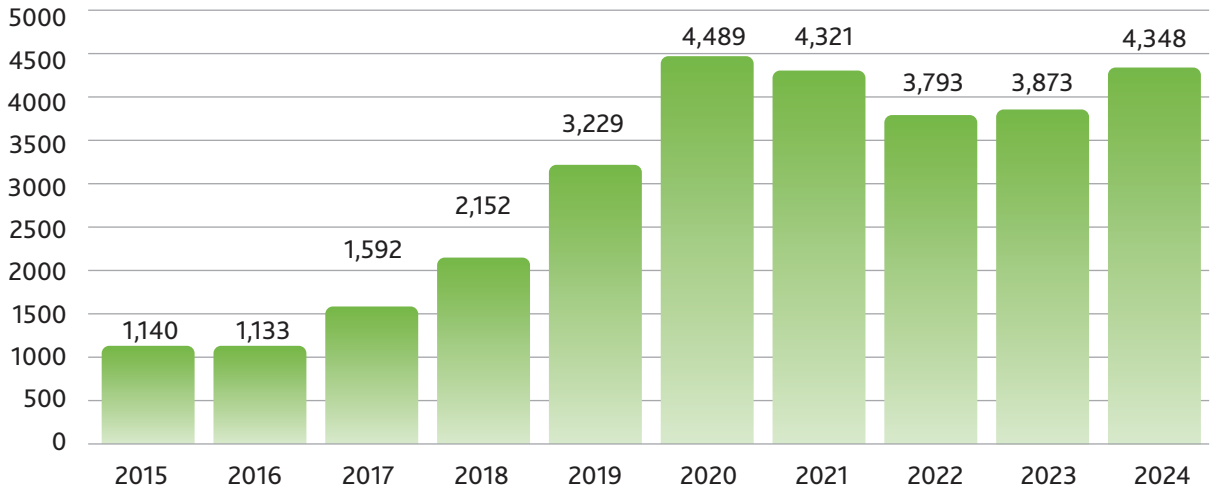
Prevalence of drugs positives reported on information forms received for the DW6S 2024. Amphetamine testing was introduced in 2022.

Laboratory Testing

Blood and Urine Specimen Overview

There were 4,348 specimens analysed for the presence of a drug or drugs in 2024, which is a 12% increase on the number of specimens analysed in 2023. The workload trend in toxicology between 2015 and 2024 is shown below (Figure 21).

Figure 21: *Number of Toxicology Specimens Screened for drugs (2015 – 2024)*



Toxicological analysis was required for 73.7% (70.9%, 2023) of all specimens received in the MBRS. 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 2024.

There were 29 specimens (28, 2023) over these alcohol concentrations which were specifically requested for drug testing by an Garda Síochána. There were 4 (8, 2023) Evidential Breath Testing negative specimens sent to the Bureau for drug testing.

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 91.3% (91.0%, 2023) of specimens analysed for toxicology being blood and 8.7% being urine (9.0%, 2023, 9%).

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 LC-MS-MS.

Of the 4,348 specimens tested in 2024, 2,980 were found to be positive for at least one drug class on preliminary laboratory drug testing, while 1,368 were negative for the drugs targeted by the Bureau at the thresholds used by the Bureau. This drug positive figure represented 68.5% of Toxicology specimens (71.4%, 2023) and 51.0% of all specimens received in the Bureau (50.6%, 2023).

Figure 22 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 23 and the prevalence of drugs is shown in figure 24.

Figure 22: *Drug Prevalence Screening 2024*

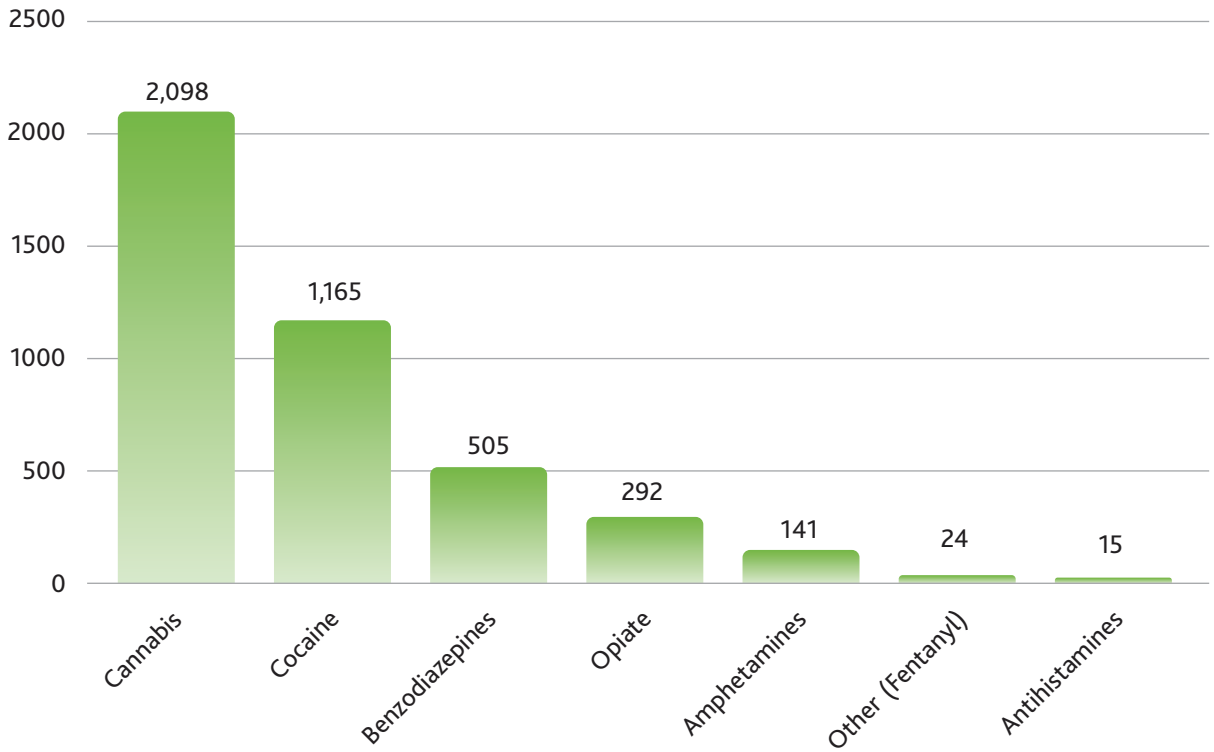


Figure 23: *Drug Screening - No. of classes detected per specimen 2024*

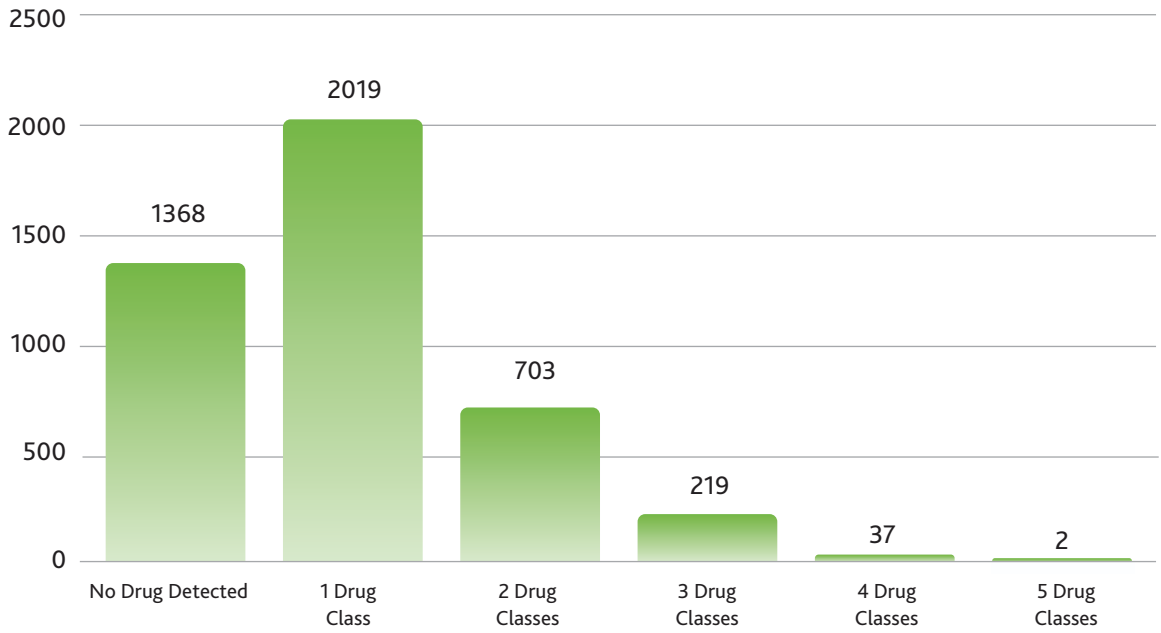
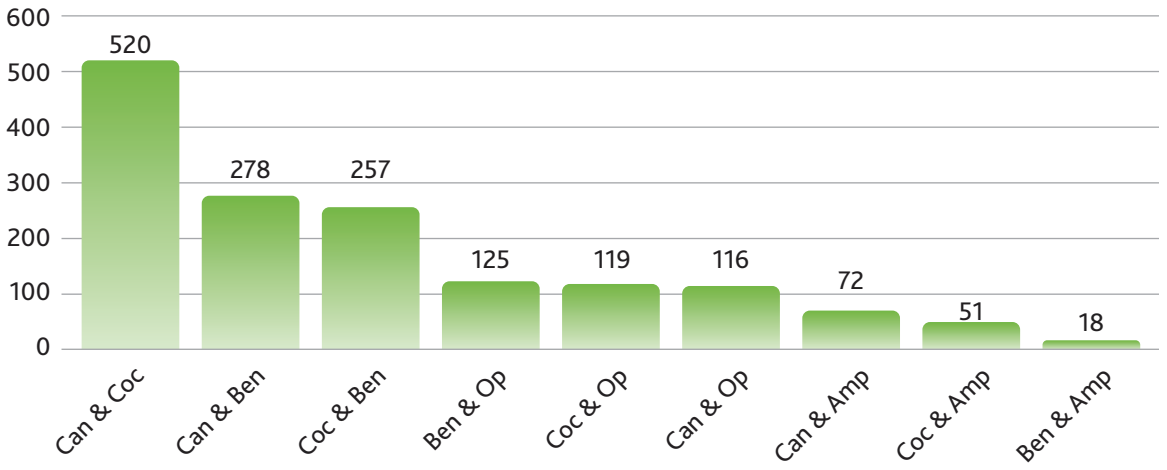


Figure 24: *Drug Screening – Prevalence of Combinations where two drugs were detected per specimen 2024*

(Can: Cannabis, Coc: Cocaine, Ben: Benzodiazepine, Op: Opiate, Amp: Amphetamine)



The gender profile of specimens analysed for drugs was 86.4% male and 13.4% female (0.2% gender not stated) based on screening positive data which is similar to the breakdown in 2023 (88.9% male, 9.7% female, 1.4% gender not stated).

The age profile of positive specimens is shown below with 87.6% being age ≤ 44 and under and 63% under 34.

Figure 25: *% Total Screening Positive by Age 2024*

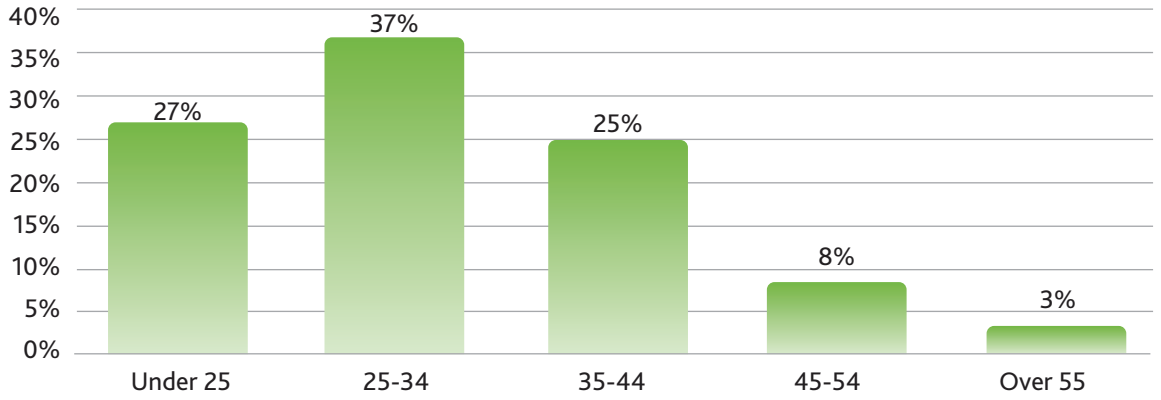


Figure 26: *Geographical Distribution of Cannabis*

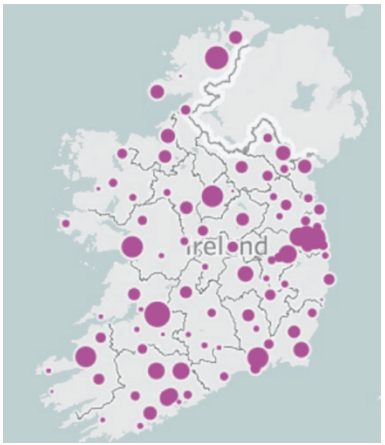
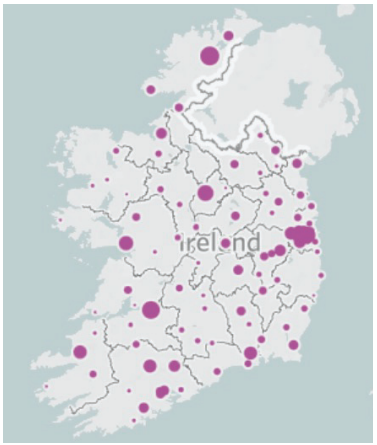


Figure 27: *Geographical Distribution of Cocaine*



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 2024, 2980 specimens went on for confirmation. In each case a small number of specimens could not be confirmed due to specimen volume limitations. In 2024 this amounted to 2.

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 for only one confirmatory test method. This was implemented for specimens received on or after the 1st of July, 2021 to the end of 2023. Confirmatory testing for all drugs subject to specimen volume resumed in 2024. The distribution of confirmatory tests for 2019 to 2024 is shown in table 6 below.

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

Drug Class	2024	2023	2022	2021	2020	2019
Cannabis	2,050	1,539	1,949	2,353	2,606	1,747
Benzodiazepines	467	102	101	369	535	475
Cocaine	1,062	895	889	1,239	1,494	852
Opiates/Opioids	243	177	214	313	453	308
Amphetamine/ Methamphetamine	140	97	54	107	193	157
Tramadol	n/a*	18	n/a	n/a	n/a	n/a
Diphenhydramine	5	3	n/a	n/a	n/a	n/a
Total	3,967	2,831	3,213	4,388	5,281	3,539

(Tramadol included in the Opiates/Opioids Drug Class)*

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).

Table 7: *Per se levels*

Drug	Legal Limit
Δ9-Tetrahydrocannabinol (Cannabis)	1ng/ml
11-nor-9-carboxy-Δ9-tetrahydrocannabinol (Cannabis)	5ng/ml
Cocaine	10ng/ml
Benzoylecgonine (Cocaine)	50ng/ml
6-acetylmorphine (Heroin)	5ng/ml

Mean *Per Se* Drug Levels

The mean level of Δ9-Tetrahydrocannabinol (Cannabis) was 6.2ng/ml in 2024 (6.3ng/ml in 2023).

The mean level of 11-nor-9-carboxy-Δ9-tetrahydrocannabinol (Cannabis) was 49.4ng/ml in 2024 (58.2ng/ml in 2023).

The mean level of Cocaine was 120.3ng/ml in 2024 (60.5ng/ml in 2023).

The mean level of Benzoylecgonine was 749.7 g/ml in 2024 (1032.9 ng/ml in 2023).

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	7-Carboxy-CBD	Cannabinoid
6	Adinazolam	Benzodiazepines
7	Alpha-Hydroxyalprazolam	Benzodiazepines
8	Alpha-Pyrrolidinopentiophenone	Cathinone
9	Alprazolam	Benzodiazepines
10	AM-2201	Cannabinoid
11	Benzoylecgonine	Cocaine
12	Benzylpiperazine	Cathinone
13	Carisoprodol	Muscle Relaxant
14	Chlordiazepoxide	Benzodiazepines
15	Clobazam	Benzodiazepines
16	Clobromazolam	Benzodiazepines
17	Clonazepam	Benzodiazepines
18	Cocaethylene	Cocaine
19	Cocaine	Cocaine
20	Codeine	Opioid
21	Desalkylflurazepam	Benzodiazepines
22	Desalkylgidazepam	Benzodiazepines
23	Demoxepam	Benzodiazepines
24	Diazepam	Benzodiazepines
25	Dihydrocodeine	Opioid
26	Diphenhydramine	Anti-histamine
27	EDDP	Methadone
28	Estazolam	Benzodiazepines
29	Etizolam	Benzodiazepines
30	Fentanyl	Opioid
31	Flualprazolam	Benzodiazepines
32	Flubromazepam	Benzodiazepines
33	Flubromazolam	Benzodiazepines
34	Flunitrazepam	Benzodiazepines
35	Fluoxetine	Anti-depressant
36	Flurazepam	Benzodiazepines
37	Gabapentin	Anti-convulsant
38	HU-210	Cannabinoid
39	Hydrocodone	Opioid
40	JWH-018	Cannabinoid

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

Quality Assurance

The Bureau has an established Quality Management System led by the Quality Manager, Ms. Susan Browne. This Quality Management System 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's yearly surveillance visit occurred in March 2024 to assess compliance of the Bureaus' current scope and a number of Flexible Scope of Accreditation applications to amalgamate the Benzodiazepine and Qualitative Drug Confirmation Blood Test methods into the Multidrug Confirmation Blood Test Method, to remove Fenfluramine from the Blood and Urine Tox Screening Test Method, introduce a new Head Space Gas Chromatograph for Alcohol quantification and a new Liquid Chromatography Mass Spectrometer for Toxicology drug identification.

Following the INAB assessments, the 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 Urine
- Multidrug confirmation in Blood and Urine
- Qualitative Drug Confirmation in Urine

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

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

The Bureau was assessed in the first quarter of 2024 and 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.

Proficiency Testing

Over the course of 2024 the Bureau continued its involvement in the Proficiency testing schemes outlined in Table 9 and continued its participation in the Pipette Control scheme run by LabQuality. Performance across all schemes was acceptable.

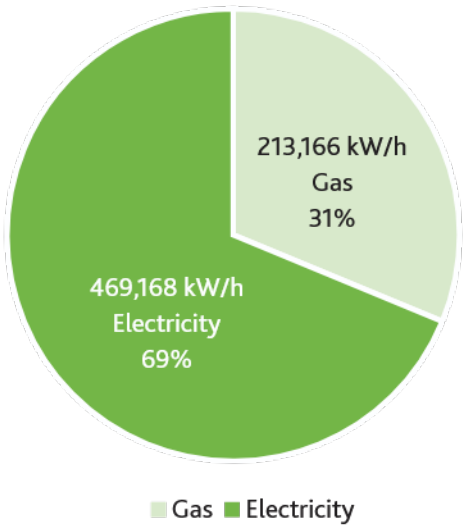
Table 9: *Proficiency Testing Programmes*

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

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.



Total CO2 used in 2024 was 171,554 which is 14% below the baseline set in 2009 for the laboratory. However, as no major energy reduction plans are in place it is likely that the facility will not reach a 50% reduction by 2030; but the reductions made will contribute to the overall reduction in CO2 emissions made by the public service.

The MBRS confirms that it complied with the requirements of Circular 1/2020 and all flights kms have been offset.

The MBRS is on UCD's Belfield campus and University College Dublin has been awarded a gold level Smarter Travel Mark from the National Transport Authority (NTA) for its efforts to support active and sustainable travel to and from its campuses.

Health, Safety and Welfare

The MBRS has a legal obligation to provide a safe work environment for all its staff and visitors. The Chief Analyst holds the role of Safety Officer and is supported by the Support Specialist who holds the role of Deputy Safety Officer. A team of safety monitors conduct monthly safety checks which are reviewed and actioned when required.

The MBRS has an internal safety statement and adheres to UCD's safety statement. The MBRS is supported by the UCD safety office. Risk assessment and safety awareness is integral to the way we work.

The Bureau has several trained first aiders and has installed an automated external defibrillator (AED) onsite. The staff benefit from the health and welfare offerings provided by UCD encouraging healthy activities and good work life balance. There is also an Employment Assistance Programme available to all staff by UCD.

Climate Action

The MBRS is committed to address climate actions in a positive and dynamic manner. The MBRS monitor usage of energy and consumables with the aim of contributing to the reduction of CO2 emissions in line with the government climate action plan 2024. A number of actions have been implemented over the last few years such as reactive lighting and reduced heating of hallways and stairwells.

The MBRS has an established Climate Action Plan which has been reviewed in light of the government climate action plan 2024. The internal plan is made available to staff within the MBRS document control system where engagement with the document can be measured.

The establishment of a green team to review and monitor energy use has helped drive positive change towards sustainability. The laboratory joined the Green Labs Group in 2024 where a score was awarded based on the laboratory's current way of working. Advised improvements are being implemented and these improvements will be measured over the coming months with green lab certification being the aim.

The MBRS benefits from actions included in UCD's climate action plan which include, green travel initiatives encouraging walking, cycling and the use of public transport to the campus. The carbon footprint of recycled paper which was being purchased was found to be significantly higher than low carbon paper. Low carbon paper is now purchased. Canon black label is used and its carbon load is 278kg/tonne of paper compared to recycled paper which has a CO2 load of 1250kg/tonne. The MBRS will continue to monitor consumables available and endeavour to purchase the greenest products while balancing quality and value for money.

The MBRS engages with a reuse scheme operated on the UCD campus which facilitates the reuse of no longer needed furniture and other items.

Water refill points are provided on each of the four floors of the building to encourage reduction in single use plastics.

The MBRS currently provides data annually to the Sustainable Energy Authority of Ireland's (SEAI) Monitoring and Reporting (M&R) system, in order to determine MBRS trajectory towards its 2030 Climate Change Emissions, and Climate Change Energy Efficiency Targets. Progress on the implementation of the Climate Action Mandate is being tracked through the SEAI M&R system.

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 2024 was €7,449,000.

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 (up to 30/09/24)	4 of 5
Mr. Sean Quigley	Chairman from 01/10/24 Board Member (up to 30/09/24)	5 of 5
Professor Denis Cusack	Board Member and Director	5 of 5
Professor Patricia Fitzpatrick	Board Member	5 of 5
Ms. Joan O'Brien	Board Member	5 of 5

Bureau Membership and Meetings

During 2024 the Medical Bureau of Road Safety held five meetings.
These meetings were held on 28th March, 30th May, 15th August, 19th September and 12th December 2024.

Schedule of Fees and Aggregate Expenses paid to Directors during 2024

During 2024 the following fees were paid:

BOARD FEES PAID			
Board Member	Type of Fee	Paid 2024	Paid 2023
Dr. Declan Bedford	Fee for Chairperson of Board of State Body (Chairman up to 30/09/2024) Fee for Non-Executive members of Boards of State Bodies	€6,734 -	€8,978
Ms. Joan O'Brien	Fee for Non-Executive members of Boards of State Bodies	€5,985	€5,985
Mr. Sean Quigley	Fee for Chairperson of Board of State Body (Chairman from 01/10/2024) Fee for Non-Executive members of Boards of State Bodies	€2,244 €4,489	€5,985
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, Ms. Joan O'Brien and Dr. Declan Bedford until his term finished on 30th September 2024. There were 3 meetings of the Audit and Risk Committee held during 2024.

The Audit and Risk Committee Annual Report is due for completion in early 2025 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 3 meetings of the Governance Oversight Committee held in 2024.

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 2024.

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 2024 – 31st December 2024.

Statutory Requirements

The Medical Bureau of Road Safety confirms that it complied with its statutory requirements during 2024.

Ethics in Public Office

The members of the Board who held office at the 31st December 2024 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 2023 Financial Statements during 2024. No issues were raised during the audit. The draft unaudited Financial Statements for 2023 were sent to the Comptroller and Auditor General on 7th March 2024. The annual audit of the 2024 Financial Statements takes place in 2025.

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 2024.

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 2024.

Strategic Planning

The Bureau compiled its Annual Strategic Plan for 2025 and its Five-Year Strategic Plan 2025 – 2029 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 2024.

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 2024 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 2024 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 2024

	31/12/2024	31/12/2023
INCOME	€	€
Oireachtas grants	7,449,000	6,700,000
Professional fee income	2,580	2,706
Profit on sale of fixed asset	4,700	-
Miscellaneous Income	293	-
Total Income	7,456,573	6,702,706
EXPENDITURE		
Salaries and pension contributions	4,034,838	3,685,474
Board members remuneration	19,452	20,948
Direct costs associated with service delivery	1,608,213	1,216,954
Office and laboratory supplies	630,543	720,820
Administration costs	958,237	885,563
Depreciation	840,716	890,441
Total Expenditure	8,091,999	7,420,200
Deficit for the period before appropriations	(635,426)	(717,494)
Transfer from capital account	532,788	598,648
Deficit for the year after appropriations	(102,638)	(118,846)
Balance brought forward at 1 January	662,625	781,471
Balance carried forward as at 31 December 2024	559,987	662,625

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, Mr. Sean Quigley, 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 2024 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 three times in 2024.

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 2024 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 2024 on the 20th March 2025.

Internal Control Issues

No weaknesses in internal control were identified in relation to 2024 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 2024.

Breaches in Control

No breaches in control were identified in relation to 2024 that require disclosure in the financial statements.

Material Losses or Frauds

There were no material losses or frauds identified in relation to 2024 that require disclosure in the financial statements.

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

Mr. Sean Quigley
Chairman of the Board

Freedom of Information

During 2024 the Bureau received two Freedom of Information requests. One was granted and the other was part-granted. Both were the "Other" category of requestor.

Staffing

The Bureau continued during 2024 to operate within its delegated sanctioned staffing number under the Employment Control Framework. The recruitment process for the additional staff continued throughout 2024 mainly due to the sanction of new posts carried forward from 2023. 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).

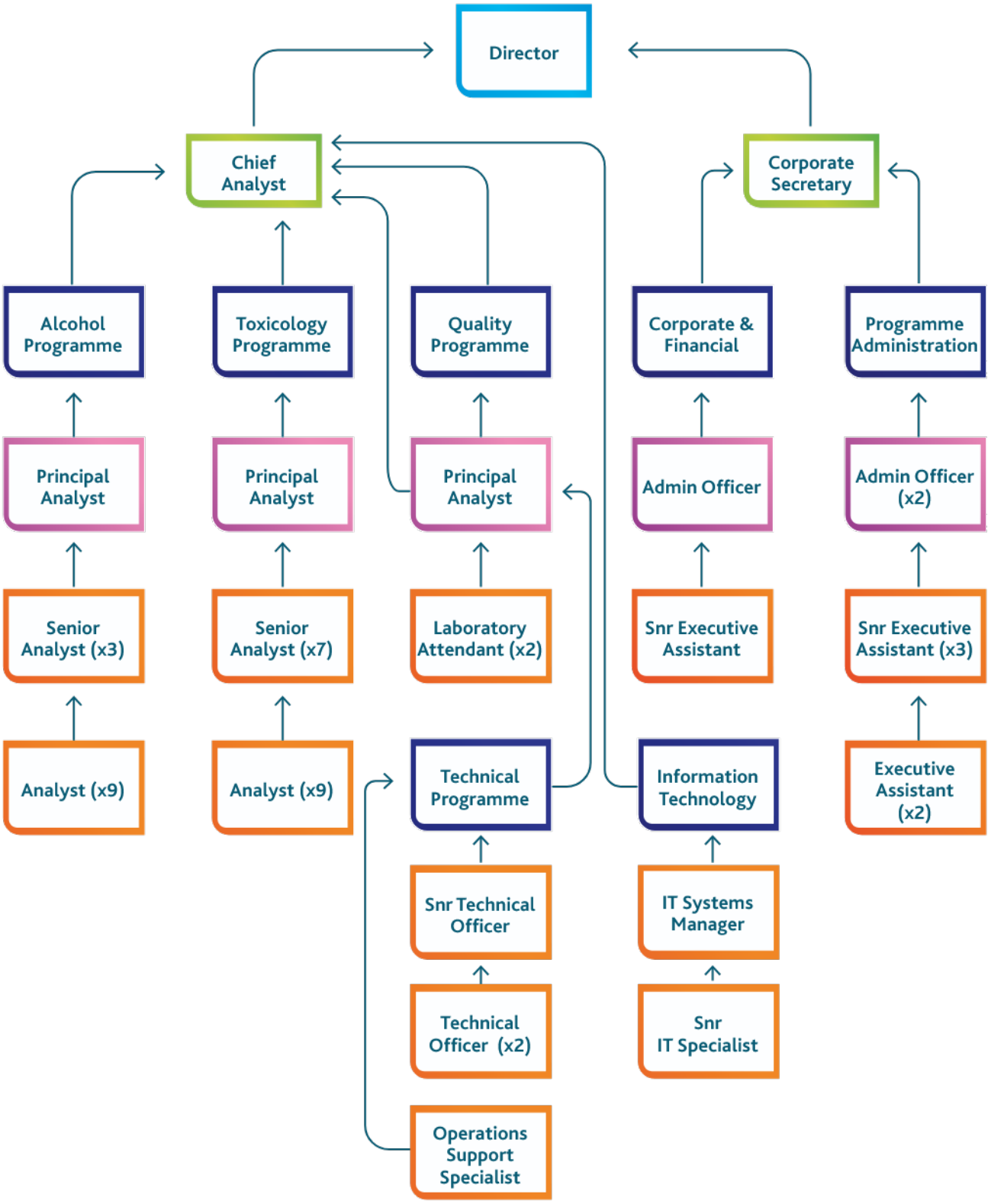
Training new and established staff is a constant feature and includes training in scientific techniques, IT skills, Health and Safety and Soft skills.

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

Medical Bureau of Road Safety

ORGANISATIONAL CHART



Conferences and Meetings attended by the Director in 2024

Conference	Location	Date
Presented on alcohol and drugs driving trends at the Road Safety Strategy Annual Review	Dublin	18th January 2024
Annual Forensic Conference of the Coroners Society of Ireland	Dublin	27th January 2024
Medico-Legal Society Academic Day – Digital Technology and Artificial Intelligence	Dublin	17th February 2024
Faculty of Forensic & Legal Medicine Annual Conference	London	10 – 11th May 2024
Annual Forensic Conference of the Coroners Society of England & Wales	Belfast	19th – 20th September 2024
Annual Forensic Conference of the Coroners Society of Ireland	Ballina	4th – 5th October 2024
Presented at the 4th International Conference in Translational Forensics First International Conference on alcohol ignition interlocks	Lisbon, Portugal	20th – 24th October 2024

Meetings	Location	Date
Virtual Meeting of the Medical Advisory Panel on Alcohol, Drugs and Driving	UK	20th March 2024
Medico-Legal Society Meeting on Over the Counter Addiction	Dublin	21st March 2024
Presented at the 26th Triennial Meeting of the International Academy of Legal Medicine	Athens, Greece	21st – 23rd May 2024
Medico-Legal Society Meeting on Forensic Science	Dublin	10th October 2024
Medico-Legal Society Meeting on Mental Health Bill	Dublin	14th November 2024
National Office for Traffic Medicine Working Group	Dublin	28th November 2024

Courses, Conferences and Meetings attended by MBRS Staff in 2024

Conference	Location	Date
Better Public Services Conference: Shaping the Workforce of the future	Online	22 Feb 2024
International Association for Chemical Testing (IACT) 2024	San Diego, USA	21st – 26th April 2024
Irish Mass Spectrometry Society (IMSS) 2024	Dublin	15th May 2024
International Association of Forensic Toxicologists (TIAFT) 2024	Switzerland	2nd – 6th September 2024
Society of Forensic Toxicologists Conference 2024	USA	27th October – 1st Nov 2024
OGP Client Conference	Dublin	5th November 2024

Seminars, Webinars and Workshops	Location	Date
Safe and Sober Seminar	Dublin	19th January 2024
Sustainability Laboratory Workshop 2024	Kildare	12th June 2024
ManageEngine Cybersecure Roadshow	Dublin	10th September 2024
NPS Discovery 2024 Novel Synthetic Drugs Threat Symposium	Online	11th November 2024

Meetings	Location	Date
Chemistry Network	Kildare	15th June 2024
United Kingdom and Ireland Association of Forensic Toxicologists (UKIAFT)	Online	19th June 2024
United Kingdom and Ireland Association of Forensic Toxicologists (UKIAFT) Annual General Meeting	UK	10th October 2024
Perkin Elmer GC User Group Meeting 2024	UK	2nd October 2024
Irish Forensic Toxicology Laboratories Meeting	Belfast, NI	17th October 2024

Courses	
MSc. Management Studies	Electrical Safety Course
MSc. (Research) Year 2	First Aid Responder – Full Course
Diploma in Management Studies	First Aid – Refresher Course
Borkenstein Drug Course 2024	Internal Auditor Course
Understanding HPLC	Manual Handling Training
HPLC Troubleshooting	Complying with the Rights of Individuals
Foundational Statistics for Forensic Toxicology	HPLC Operator
Introductory Statistics for Scientists	Conducting LIMS Healthcheck

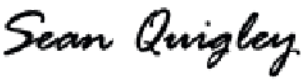
MBRS staff also attended a range of training and events offered under the UCD People Development Programme in the areas of:

- Health and Safety
- IT
- Professional Development

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.



Mr. Sean Quigley,
Chairman.

Notes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MBS
ÁRBHÓITHRE
TARBHAILTEACHT

Medical Bureau of Road Safety, Health Sciences Centre,
University College Dublin, Belfield, Dublin 4