

# **STRATEGIC PLAN – 2017**

## **MEDICAL BUREAU OF ROAD SAFETY**

School of Medicine and Medical Science

University College Dublin

## **GOAL**

It is the continuing policy of the Medical Bureau of Road Safety (MBRS or Bureau) to achieve and maintain a high standard of quality in all aspects of the work of the Bureau.

## **OBJECTIVES**

1. To continue to provide a high quality national forensic service in alcohol and drug analysis, the provision of certificates and court assistance.
2. To provide and maintain approved Evidential Breath Testing equipment to An Garda Síochána.
3. To provide and maintain approved Preliminary Breath Alcohol Testing and Preliminary Drugs Testing in oral fluid to An Garda Síochána.
4. To maintain ISO 17025 accredited status achieved for the different analytical programmes within the Bureau and to extend the scope of accreditation to additional areas.
5. To train and develop Scientific Staff to enable them to become experts in their area of work.
6. To continue to develop the drug confirmatory programme within the Bureau at UCD premises.
7. To ensure that all work in the Bureau is maintained and improved where possible to a high standard of quality that is required of a national forensic laboratory in a cost effective and efficient manner.
8. To assist with the education, enforcement and legislative measures outlined in the Government Road Safety Strategy 2013 - 2020.

## **PLAN OF WORK FOR 2017**

### **INTRODUCTION**

The programme of work for the Medical Bureau of Road Safety (MBRS or Bureau) will continue to focus on the main legal responsibilities as set out in the Road Traffic Acts and the action plan of the Government's Road Safety Strategy 2013-2020. The functions of the Bureau are divided into different programmes and services: Alcohol, Breath testing, Toxicology and Corporate services. All areas have been developed and expanded in recent years in line with increased demands in all aspects of the work of the Bureau. This strategy assumes that the Bureau has its full complement of staff allocated to it.

### **BLOOD & URINE ALCOHOL PROGRAMME**

#### **Blood and Urine Alcohol Analysis**

##### ***GC Analysis – Section 2 (A) Estimate***

The number of blood and urine alcohol analysis is predicted to be above 3000 for 2017. The same level of standard preparation and post instrument maintenance validation are required compared to previous years and the same staffing level is required in this area.

##### ***Quality Assurance – Section 2 (A) (1) Estimate***

The Bureau will continue to operate a quality assurance programme in this area to retain its ISO17025 accredited status.

##### ***Equipment – Section 3(6) Estimate***

The Bureau will maintain five HSGC-FID instruments for alcohol analysis. An additional bench top Spectrophotometer instrument for integrity testing will be required in 2017. Two diluters will need to be replaced.

##### ***Specimen Kits – Section 2(A) (3) Estimate***

The number of specimen kits due for preparation in 2017 is currently estimated at 4,500 blood and 2,500 urine kits. The MBRS has agreed with the Garda National Traffic Bureau to maintain at least 500 blood and 500 urine kits in stock at any one time.

In view of the imminent changes in legislation regarding Preliminary Drug Testing, a review of specimen collection options is taking place in 2016. Specimen type, amount and procedure for the taking of specimens will come under this review and changes required to the current kit format that may need further consideration; for example, blood specimens provided sequentially, removal of choice of urine specimen, possibility of use of oral fluid specimens. Changes to kit item procurement may occur in 2017.



## **TOXICOLOGY PROGRAMME**

### **Blood & Urine Drug Analysis**

#### ***Preliminary Analysis – Section 2 (B) (7) Estimate***

The Bureau will continue the analysis of all blood and urine specimens with alcohol concentration  $\leq 80\text{mg}/100\text{ml}$  BAC legal limit for the presence of a drug or drugs. Gardai can continue to request drug analyses on specimens with alcohol levels above the  $80\text{mg}/100\text{ml}$  BAC legal limit and also for specimens where an EBT section 13 statement for breath alcohol content has already been issued. To date the Bureau has screened samples for drugs using immunoassay and is currently validating an alternative method using LCMSMS to test for the presence of drugs in blood and urine specimens. The LCMSMS screening method will be operational by the end of 2016 and immunoassay drug screening will be discontinued in 2016. The procurement of additional LCMSMS instruments will be required to provide additional capacity for drug screening. It is notable that the existing LCMSMS equipment is close to seven years old.

#### ***Confirmatory Analysis – Section 2 (B) (2) Estimate***

Cannabis and benzodiazepines continue to be the most prevalent drugs detected in specimens analysed and the Bureau will continue to carry out in house confirmatory testing for the presence of cannabinoid and benzodiazepine drug class in specimens during 2017. With the introduction of PDT it is expected that there will be fewer negative specimens arising from drug screening and similarly there will be a higher percentage requiring confirmation than the current level. Confirmatory methods for the remaining drug classes currently outsourced will continue to be developed in-house in 2017 and a method currently under development which will cater for the confirmation of Amphetamine, Methamphetamines, Opiates, Cocaine and Methadone will be implemented in 2017. This will complement the proposed new legislation which includes specified levels for some of these drugs.

#### ***Reporting and Workflow***

In 2016 we initiated a review of reporting methodology and toxicology analysis workflow. It is anticipated that this will be completed in 2017. A review of the legislative requirements has been initiated and will be further developed in 2017.

#### ***Roadside Drug Testing - Section 2 (B) (2) Estimate***

Preliminary Drug Testing (PDT) is expected to be introduced in late 2016. 50 devices have already been purchased and a further 86 will be purchased prior to enactment of the legislation. The use of the devices will be kept under close review in 2017 and it is estimated that further devices will be purchased to bring the complement available to An Garda Síochána to 300. Throughout 2017 all devices will be performance tested every six months. 10,000 test sticks will be purchased every three months and again the use will be kept under review and the Bureau's purchasing will be adjusted based on usage.

The introduction of the PDT is expected to result in an increase in Blood samples being forwarded to the bureau for drug screening analysis and a similar increase in

drug confirmation requirement. The extra capacity requirement further emphasises the need for two LCMSMS instruments.

The ongoing requirement to verify Oral Fluid controls for drug content for use in quality control testing of the Drug Test sticks will be met in 2017 using LCMSMS and GCMSMS.

The Bureau will continue to monitor developments in PDT testing and keep up to date with drug driving prevalence and detection methodologies.

***Quality Assurance – Section 2 (A) (1) Estimate***

The Bureau will continue to operate a quality assurance programme in both preliminary (Laboratory) and confirmatory analysis to retain its ISO 17025 accredited status. The Bureau will continue to use the flexible scope approach to accreditation for validated confirmatory methods in drugs in blood, urine and oral fluid. Extension to scope for PDT (Roadside and Garda Station) is also being sought in 2016. This may lead to increased external assessment time as the scope of accreditation increases.

***Equipment – Section 3 (8) Estimate***

The Bureau plans to procure LCMSMS (two) instruments in 2017.

***Training***

The Bureau will provide courses in 2017 for Garda instructors for the new PDT devices. The Bureau will continue to participate in any courses to be provided for Garda instructors in road traffic impairment testing in conjunction with UCD and the Garda Training College if required in 2017.

***Research***

Driving under the influence of drugs (DUID) continues to be an area of concern to the government especially with regard to enforcement. The type of research area that the Bureau will be involved in will be decided by the Director, in consultation with the Chief Analyst, the Principal Analysts, the DTTAS or as part of the Road Safety Strategy 2013-2020. Researchers (whole-time or part-time) may be required for this part of the programme.

The Bureau has installed a HR-LCMSMS. The instrument has been fully commissioned in 2016 and will be used to screen specimens which have no drugs detected using the standard drug screening approach.

Any impairing drugs discovered will be monitored and then added to the standards drug screening panel.



## **BREATH ALCOHOL TESTING PROGRAMME**

### **Roadside Breath Alcohol Testing Devices**

#### ***Equipment***

The Bureau is currently supporting in excess of 1000 “Draeger 6510” roadside breath alcohol testing devices issued to Gardai. A phased replacement programmes of all 1200 devices is planned for a three year period commencing in 2017, this would require purchase of about 400 in 2017.

#### ***Provision of Mouthpieces to Gardai – Section 2 (D) Estimate***

The issue of mouthpieces to AGS will depend in part on the device chosen as a result of the procurement process. It is estimated that the Bureau will need to issue close to 200,000 mouth pieces in 2017.

#### ***Routine Testing - Section 2 (A) (12) & (13) Estimate***

Each device is scheduled for recalibration on a six-monthly basis. The Bureau will continue to test and calibrate the roadside devices in the laboratory that have been issued on an ongoing basis since 2005. In 2017 the Bureau will be supporting two device types, the current Draeger 6510 and the new device. The Bureau was notified that spare parts for the Draeger 6510 will be available until 2022. This will allow the Bureau to continue to carry out in-house repairs of devices.

The new device will have a seven month lockout after date of calibration to encourage return of device for re-calibration. This should result in an increased workload for Bureau analysts.

#### ***Quality Assurance – Section 2 (A) (1) Estimate***

The Bureau will continue to operate a quality assurance programme in this area to maintain ISO17025 accredited status. Extension to scope will be sought for the testing of the new device.

### **Evidential Breath Testing Instruments in Garda Stations**

#### ***Instruments***

The Bureau will continue to maintain the 86 EvidenzerIRL instruments installed in Garda Stations nationwide. There is no plan to increase this number in 2017.

Intoxilyzer 6000IRL instruments which have been in storage since their removal from operation in 2011 are scheduled for disposal in 2016. Several will be retained into 2017.

#### ***Schedule of Visits and Level of Testing– Section 2 (C) (9) & (10) Estimate***

Under the RTA the MBRS is responsible for the forensic integrity of the instruments and will continue in 2017 to maintain the current instruments in good working order. The calibration of the instruments is now carried out annually at the premises of manufacturer’s agent in Ireland and swap-out instruments are provided to stations.

### ***Training***

The MBRS will continue to train operators and supervisors as requested by the Gardai. The demand for training from the Gardai has fluctuated over the recent years and it is expected that training requirements may increase in 2017 as new Gardai become operational. Bureau scientists will continue to supply the courses by agreement with An Garda Síochána.

### ***Test Equipment – Section 2 (C) (11) Estimate***

The checking of the calibration status of each piece of testing equipment used by the scientists is required on an ongoing basis. In order to check the calibration status of the testing equipment it is necessary to have selected reference equipment calibrated externally by an accredited calibration laboratory. Internal interval checks on test equipment are carried out in the Bureau against known reference standards at scheduled intervals.

### ***Simulator Solutions – Section 1 (A) (3) Estimate***

In order to test the instruments the Bureau has to maintain a supply of standards (simulator solutions) which are produced in the Bureau. These solutions are prepared in 25L quantities (50 x 500ml bottles). It is estimated that approximately 40 batches will be required in 2017. The production and supply of solutions requires constant monitoring as both scheduled and unscheduled visits require them.

### ***Review of EBT Programme***

The MBRS work closely with the Garda National Traffic Bureau and continue to review the EBT programme during the year and relocate instruments where required.

### ***Quality Assurance – Section 2 (A) (1) Estimate***

The Bureau will continue to operate a quality assurance programme in this area to retain ISO17025 accredited status.

### ***Research***

A collaborative project with St Vincent's University Hospital to measure the effect of lung function capabilities on breath provision ability has been commenced in 2016. The project will include both the preliminary breath screening device and the evidential breath testing instrument. The project will be ongoing throughout 2016 and is scheduled for completion before the end of 2017.

## **ALL PROGRAMMES**

### ***Maintenance and Service – Section 2 (A), (B), (C) & (D) Estimate***

All the above programmes require equipment to be calibrated and maintained in good order. This is carried out either in-house or external provider.

The scheduling and supervision of these service visits requires careful planning and resources.

### ***Court Attendances***

The requests by Prosecution and Defence solicitors for MBRS scientists to attend courts nationwide and present evidence with regard to Bureau analysis for alcohol and drugs and for evidential breath alcohol testing has continued as in the previous few



years. It is expected that with the introduction of PDT the requirement for Bureau scientists may see an increase in 2017.

#### ***IT Services***

The Bureau is provided with IT services from UCD but it also has an independent Local Area Network (LAN) system to support its Laboratory Information Management System (LIMS) and its Quality Document Management System.

#### ***Local Area Network (LAN) - Section 2 (E) Estimate***

The IT security, hardware and software needs of the Bureau will be maintained and upgraded where required in 2017.

#### ***Laboratory Information Management System (LIMS) – Section 2 (E) Estimate***

The Alcohol in Blood and Urine analysis, the Blood and Urine Toxicology and the Preliminary Breath Testing Programmes runs using a LIMS system which requires monitoring and amending to deal with improved procedures. The LIMS system is being upgraded from Nautilus 8.2 to 9.2 in 2016 which requires updating LAN computers. Constant amendment is required to ensure the system is fit for purpose as new tests are added and tests are amended or improved upon. There will be a requirement for significant development of LIMS to accommodate the new toxicology tests as mentioned above. The evidential breath testing programme will not be transferred to nautilus. The PDT will not be transferred to LIMS and will be managed through an access database. The LIMS system will not be extended into further programmes.

#### ***Quality Management - Section 2(A) (1) Estimate***

The Bureau has a Quality Management software system which supports the accredited activities of the Bureau. The document control, records, training and improvement modules are operational and the content is continually being expanded. The system will be maintained in 2017 and developed in line with the needs of the Bureau.

### **Bureau Website**

#### ***Section 2(E) Estimate***

The Bureau will review and update its website to include updated publications and relevant information. The Annual Report 2016 will be uploaded in 2017 as soon as it has received the appropriate approval.

#### ***Bureau Statistics***

The installation of the LIMS system has assisted with the gathering and analysis of statistics in the Alcohol and Toxicology programmes. Both the toxicology and the alcohol statistics will be collected via the LIMS in 2017.

The breath testing programme will continue to gather its statistics by the direct downloading of EBT data from instruments in Garda Stations by analysts during their station visits when required. EBT statistical data for 2016 will be available via the current excel data collection system.



Statistics for PBT for 2016 will be gathered partly from the access database and partly from LIMs, as the LIMs system was live from May 2016.

Statistical Reporting for all programmes requires development in 2017 this will require consultancy while developing and validating such reports.

### **Health & Safety**

#### ***Statement***

The Bureau Health and Safety Statement will be reviewed in 2017.

#### ***Risk assessments***

A risk register is maintained and updated as new procedures and tests are introduced to the laboratory. A list of chemicals stored in the Bureau is maintained and updated when new chemicals are procured and corresponding safety data sheets are maintained in readily available format.

#### ***Screen User Assessments***

Three staff members have been trained as screen user assessors to ensure that all staff work stations are of a standard to prevent injury. Assessments will be ongoing throughout 2017 and corrective action identified will be implemented. Personalised PPE such as safety glasses or prescription safety glasses when required will be provided to all staff.

#### ***Biological Waste/Chemical Waste – Section 2 (A) (5) Estimate***

The quantity of biological/chemical waste depends on specimen numbers and the types of analysis undertaken within the Bureau. The level of chemical waste is expected to increase in 2017 due to developments in drug testing.

#### ***Disposal of Equipment***

The Bureau will continue to dispose of out of use scientific equipment through UCD. This ensures adherence to the Waste Electronic and Electronic Equipment Directive. Proper accounting will be adhered to through the use of in-house disposal procedure disposal system will comply with rules and regulations in this area will need to be adhered to when disposing of old equipment.

### **Procurement**

The Bureau will continue to purchase goods, services and equipment using the UCD e-Procurement system and purchase guidelines. For national and international tenders the Bureau will refer to UCD procurement's office and use the Office of Government Procurement (OGB) for guidance and services.

## **STAFF**

#### ***Staffing Levels***

The Bureau will continue to operate within its allocated Employment Control Framework number of staff of 37 whole time equivalents.

The strategy for each programme is reliant on having complete cover in all programmes. Scientific and administrative staff will be deployed where required throughout 2017 to ensure

proper service is provided by the Bureau. Training will ensure that each area has sufficient competent staff.

### ***Staff Development***

The forensic nature of the work of the Bureau requires investment in education and training of staff to enable them to become experts in their area of work. Some academic training was delivered by an external trainer in the Bureau to scientific staff in 2016 in the area of drugs and alcohol. In-house academic training will be delivered by appropriate Bureau Staff in 2017.

Laboratory staff are reviewed annually and any training and development needs are identified. In 2017 the Bureau will endeavour to facilitate as many staff as possible attending relevant conferences and taking part in educational and training activities to assist the work of the Bureau. IT training is recognised as an integral part of staff development.

Several Bureau scientists are members of IACT (International Association of Chemical Testing) this is a very useful association especially for EBT purposes. Other analysts are members of UKIAFT (UK and Ireland Association of Forensic Toxicologists) for forensic toxicology matters or TIAFT (International Association of Forensic Toxicologists) or SOFT (Society of Forensic Toxicologists) and are encouraged to attend the annual conferences.

The Bureau will continue to support staff to be active members of professional organisations and committees.

### ***IT Services***

The Bureau has one IT officer working full time; several other members of staff from the scientific and technical area have increased their IT skills to the level of administrator and support staff. The Bureau also relies on UCD IT services and plans to continue to rely on UCD IT services for emergency support when required. In 2017 IT consultancy will be required where the Bureau skill base is not sufficient.

## **CORPORATE SERVICES**

### ***Corporate Governance***

The Bureau will comply with the relevant provisions of the code of practice for the Governance of State Bodies. It will include the holding a number of Board meetings throughout the year, carry out audit committee review and risk management review.

The Bureau will continue to provide the Minister and the Department with reports as required during the year and will issue the Annual Report for 2016 in a timely manner in 2017.

### ***Human Resources***

As all staff working in the Bureau are employed by UCD, all matters in relation to pay and conditions will continue to be handled by UCD.

***Finance***

The Bureau operates the UCD e-procurement system since 2013. The Bureau will prepare its annual financial statement in readiness for the annual audit by the Comptroller and Auditor General's office.

Budget requirements for 2017 will be notified to the DTTAS during 2016.

***Freedom of Information (FOI)***

The Bureau will continue to make FOI information available as readily as possible.

***Data Protection***

The Bureau will continue to comply with its obligations under the Data Protection Act which includes submitting documentation detailing the Bureau's data protection plan to the Data Protection Agency on an annual basis.



**MEDICAL BUREAU OF ROAD SAFETY  
PROJECTED ESTIMATE OF EXPENDITURE FOR 2017**

**Breakdown of Estimated Expenditure for 2017**

**2017**

<b>Section 1</b>		Pay	2,867,000
<b>Section 2</b>	(A)	General	610,500
	(B)	Drug Analysis Programme	465,000
	(C)	Roadside Chemical Drug Testing	715,000
	(D)	Evidential Breath testing Programme	330,000
	(E)	Breath Screening Devices Programme	325,000
	(F)	IT Programmes	55,000
<b>Section 3</b>		Capital Expenditure	550,000

**TOTAL ESTIMATE FOR 2016**

**5,917,500**

SECTION 1 - PAY		
Director's Remuneration		133,000
Chairman's Hon		-
Secretary's Hon		1,730
Bureau Salaries		11,970
UCD Salaries		2,475,300
Pension Supplementation		245,000
<b>TOTAL PAY</b>		<b>2,867,000</b>
SECTION 2 - NON-PAY		
(A) NON-PAY - GENERAL		
Postage		35,000
Telephone/fax		12,000
Office Supplies		20,000
Laboratory Supplies	(3)	130,000
Service		105,000
Biological/Chemical Waste Disposal	(5)	20,000
Travelling & Subsistence		15,000
Audit Fees		5,500
Laboratory Accreditation	(1)	10,000
Building Running Costs		160,000
Insurance		40,000
Miscellaneous		10,000
Training		15,000
Books and Publications		5,000
Memberships		5,000
Professional Fees		13,000
Conference Fees		10,000
<b>TOTAL NON - PAY - General</b>		<b>610,500</b>

<b>(B) NON-PAY Drug Analysis Programme</b>		
Laboratory Supplies	(7)	225,000
Confirmatory Tests	(2)	30,000
Service		200,000
Miscellaneous		5,000
Travel & Subsistence		5,000
<b>TOTAL NON-PAY - DS</b>		<b>465,000</b>
<b>(C) NON-PAY Roadside Chemical Drug Testing Programme</b>		
Roadside Chemical Drug Testing Consumables	(12)	633,000
Roadside Chemical Drug Testing Service	(13)	10,000
Roadside Chemical Drug Testing Miscellaneous		5,000
Roadside Chemical Drug Testing Devices	(14)	67,000
<b>Total NON-PAY - DS</b>		<b>715,000</b>
<b>(D) NON-PAY Evidential Breath Testing Programme</b>		
Garda Supplies / Cases	(9)	80,000
Service for Instruments	(10)	155,000
Laboratory Service	(11)	10,000
Travel & Sub	(9)	40,000
Miscellaneous		5,000
Irish Language Modification		40,000
<b>Total NON-PAY - EBT</b>		<b>330,000</b>
<b>(E) NON-PAY Breath Screening Devices Programme</b>		
Breath Alcohol Screening Consumables	(12)	75,000
Breath Alcohol Screening Service	(13)	5,000
Breath Alcohol Screening Devices Miscellaneous		5,000
Breath Alcohol Screening Devices		240,000
<b>Total NON-PAY - EBT</b>		<b>325,000</b>



<b>(F) IT Programmes</b>		
IT Consumables		12,000
IT Training		5,000
IT Service		30,000
<b>IT Infrastructure</b>		-
IT Security		2,000
IT Professional Fees		6,000
<b>Total NON-PAY - IT</b>		<b>55,000</b>
<b>SECTION 3 Capital Expenditure</b>		
Furniture & Fittings		-
Laboratory Equipment	(6)	45,000
EBT Capital Equipment		-
DS Capital Equipment	(8)	500,000
Office Equipment		-
Miscellaneous Equipment		5,000
<b>TOTAL CAPITAL EXPENDITURE</b>		<b>550,000</b>