



MEDICAL BUREAU OF ROAD SAFETY

ANNUAL REPORT 2003



Department of Forensic Medicine
UCD



Department of
Forensic Medicine
UCD



**MEDICAL BUREAU OF ROAD SAFETY
DEPARTMENT OF FORENSIC MEDICINE
UNIVERSITY COLLEGE DUBLIN
EARLSFORT TERRACE
DUBLIN 2**

**REPORT FOR THE
YEAR ENDED
31ST DECEMBER 2003**

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**MEDICAL BUREAU OF ROAD SAFETY
DEPARTMENT OF FORENSIC MEDICINE
UNIVERSITY COLLEGE DUBLIN**

ESTABLISHMENT AND FUNCTIONS OF THE BUREAU

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 22nd July 1997. In June 2002 the Medical Bureau of Road Safety came under the aegis of the Minister for Transport following the transfer of Departmental Administration and Ministerial Functions Order 2002.

The functions of the Bureau are laid down in the Road Traffic Acts 1968 – 1994 and their regulations and they include:

- The receipt and analysis of specimens of blood and urine forwarded to the Bureau.
- The issue of certificates of analysis.
- The provision of equipment for the taking or provision of specimens of blood and urine.
- Approval, supply and testing of equipment or apparatus for indicating the presence of alcohol in the breath.
- Approval, supply and testing of equipment or apparatus for determining the concentration of alcohol in the breath.
- Research on drinking and drugs in relation to driving, including the methods of determining the amount of alcohol or drugs in a person's body and the epidemiology of driving under the influence of intoxicants.

The Bureau derives its finances from an Annual Grant out of the Vote for the Department of Transport. The Board which comprises of five members (including the Director) is appointed by the Minister for Transport. The current Board members are Professor Bernadette Herity (Chairman), Professor Denis A. Cusack (Director), Ms. Hilary Dalton, Mr. Brendan Gogarty and Dr. Fenton Howell.

The Medical Bureau of Road Safety utilises the premises and staff provided under an agreement with University College Dublin, Department of Forensic Medicine, Earlsfort Terrace, Dublin 2. The Bureau currently employs one Chief Analyst, nine Analysts, one Senior Technician, one Laboratory Attendant, one Administrative Officer, three administrative staff on a permanent basis and one person on a temporary basis. The Analysts have primary degrees and most have post graduate qualifications. The Director is responsible for the day to day management of the Medical Bureau of Road Safety.

ACTIVITIES OF THE MEDICAL BUREAU OF ROAD SAFETY

In 2003 a total of 11,332 blood, urine and breath specimens were analysed for alcohol concentration. This represents an overall decrease of 10.6% on the total number of specimens analysed during 2002 due primarily to the decrease in the number of breath specimens. Chart 1 shows the breakdown of all blood, urine and breath specimens analysed during 2003 in a ten year period. 416 were analysed for the presence of drugs and this represents an increase of 7% on 2002.

The activities of the Medical Bureau of Road Safety for this report have been classified into the following five main programmes:

1. Blood and Urine Alcohol Analysis
2. Breath Alcohol Analysis
3. Blood and Urine Drug Analysis
4. Research –Driving under the Influence of a Drug (DUID) Survey
5. Professional Expert Services and Court Attendance

The breakdown is as follows:

1. Blood and Urine Alcohol Analysis

A total of 3,733 blood and urine specimens were received for analysis during 2003. Analyses were carried out and certificates were issued in 3,662 of these cases. In 71 cases certificates were not issued either because of some defect in the specimen or in the documentation accompanying it. The number of blood and urine specimens received for 2003 is similar to the total number of specimens received for 2002.

1.1 Number of Specimens Provided in Hospitals

In 2003 there were 195 specimens provided in hospitals, this represents an decrease of 17% on 2002. 31.3% of these had alcohol concentrations in excess of 150mg/100ml blood or 200mg/100ml urine while 26.1% were in excess of 200 mg/100ml blood or 267mg/100 ml urine.

1.2 Analysis of Time

Of the total number of blood and urine specimens received 81% were provided between the hours of 9.00 p.m. and 6.00 a.m., 11% between 4.00 p.m. and 9.00 p.m., and the remaining 8% between 6.00 a.m. and 4.00 p.m. This follows the same pattern as 2002 and 2001.

1.3 Mean Alcohol Levels in Blood & Urine Specimens

The mean alcohol level in blood was 174mg/100ml.

The mean alcohol level in urine was 211mg/100ml.

1.4 Alcohol Levels in Blood & Urine Specimens

Table I and II to this report give a breakdown of alcohol levels encountered in blood and urine specimens received during 2003. Tables III and IV compare the levels of blood and urine with previous years. Charts 2 and 3 correspond to Tables I and II and charts 4 and 5 correspond to Tables III and IV respectively.

1.5 Twice Over the Legal Limit

During 2003 there were 2,091 specimens received which were twice or more over the legal limit. This figure represents 57.1% of the total number of specimens taken.

CHART 1

**TOTAL SPECIMENS ANALYSED BY M.B.R.S.
IN THE TEN-YEAR PERIOD
1993 - 2003**

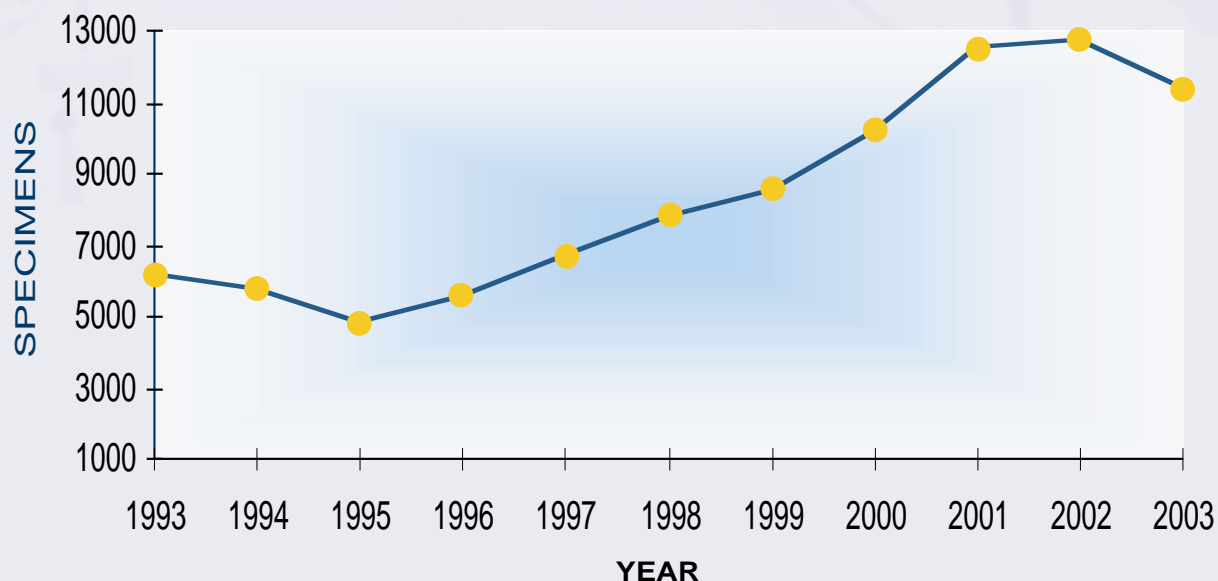


CHART 2

CERTIFIED ALCOHOL CONTENT OF BLOOD SPECIMEN
RECEIVED IN 2003

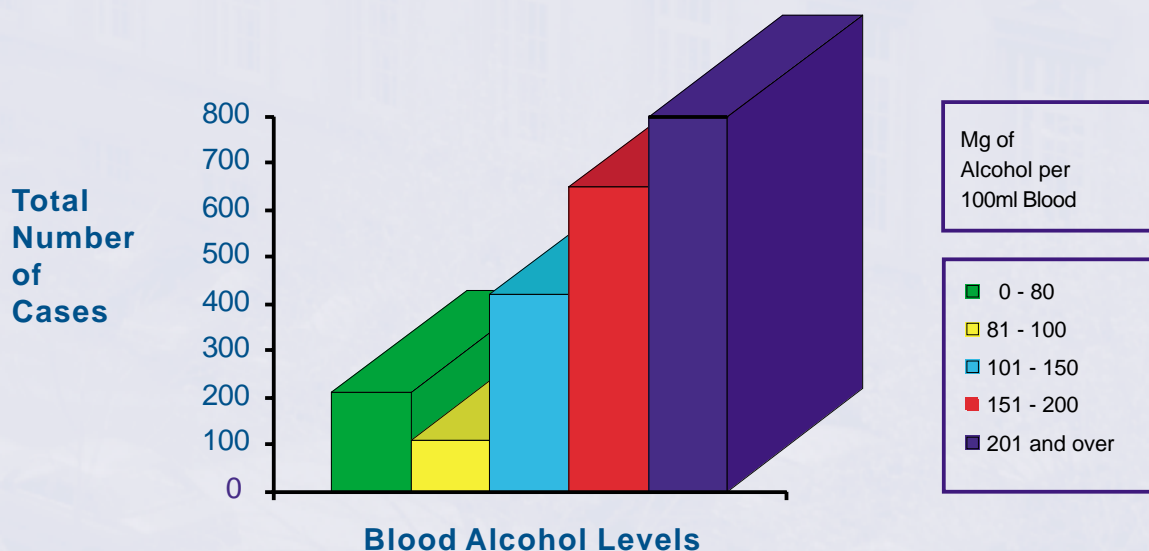


CHART 3

CERTIFIED ALCOHOL CONTENT OF URINE SPECIMENS
RECEIVED IN 2003

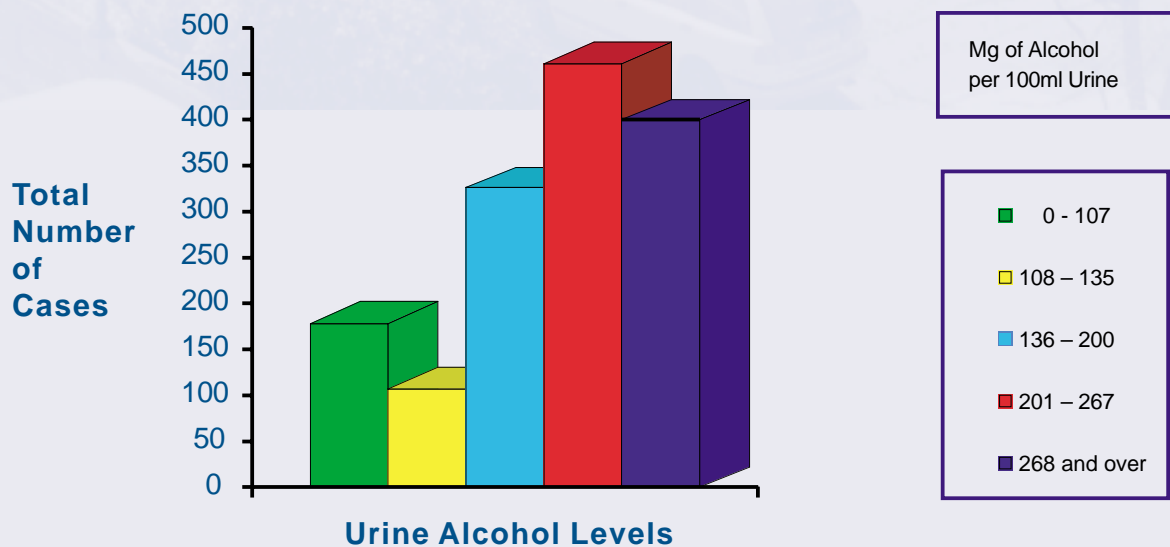


TABLE I

CERTIFIED ALCOHOL CONTENT OF BLOOD SPECIMENS RECEIVED IN 2003

Mg. of alcohol per 100ml of blood	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	TOTAL
0 – 80	46	64	53	47	210
LEGAL LIMIT					
81 – 100	25	36	30	18	109
101 – 150	100	118	105	97	420
151 – 200	129	160	182	179	650
201 & Over	185	239	188	186	798
	485	617	558	527	2,187

TABLE II

CERTIFIED ALCOHOL CONTENT OF URINE SPECIMENS RECEIVED IN 2003

Mg. of alcohol per 100ml of blood	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	TOTAL
0 – 107	38	39	45	57	179
LEGAL LIMIT					
108 – 135	22	32	28	26	108
136 – 200	63	97	92	74	326
201 – 267	116	121	117	108	462
268 & Over	89	118	100	93	400
	328	407	382	358	1,475

CHART 4

BLOOD ALCOHOL LEVELS WITH PREVIOUS YEARS

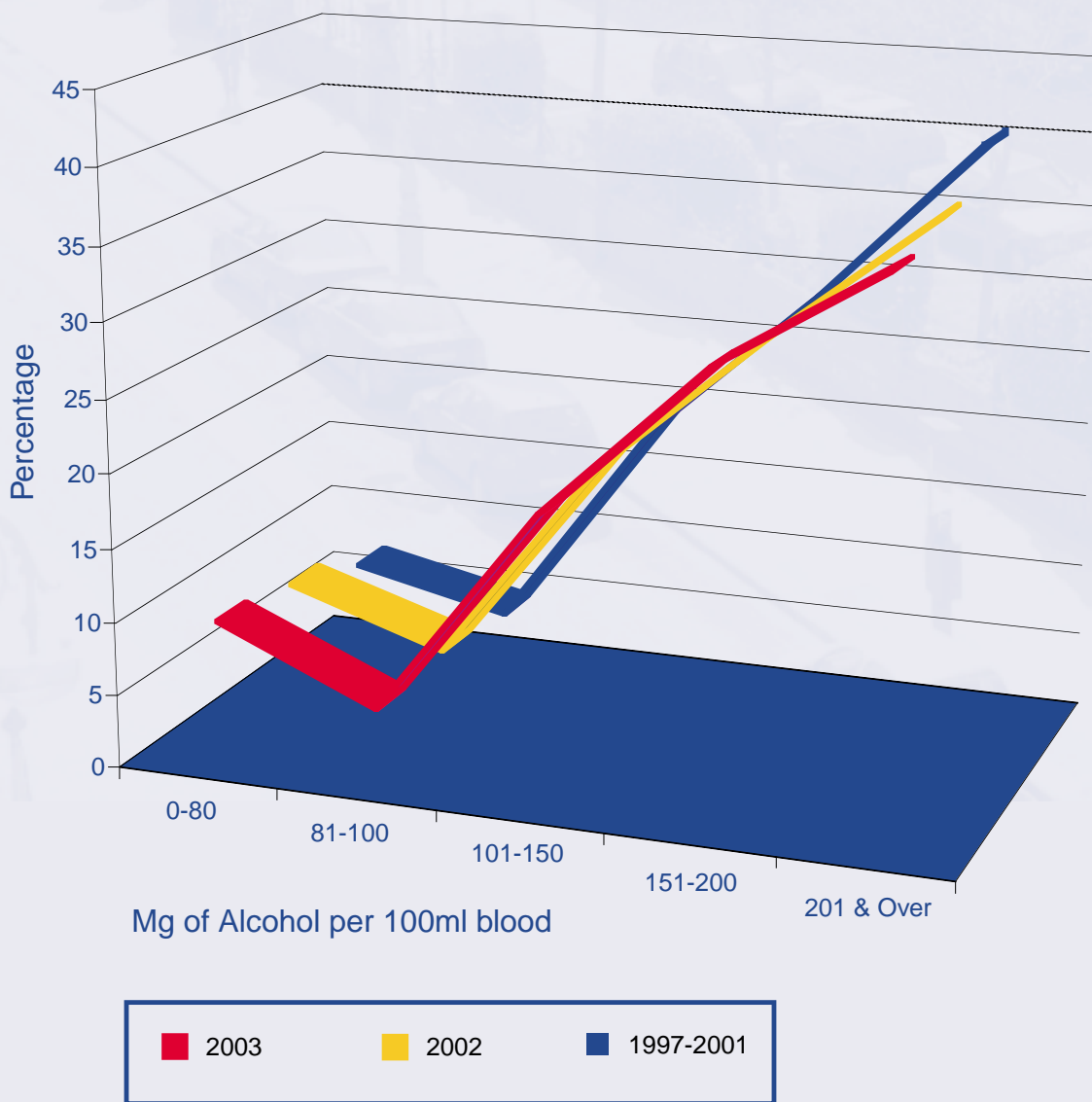


CHART 5

URINE ALCOHOL LEVELS WITH PREVIOUS YEARS

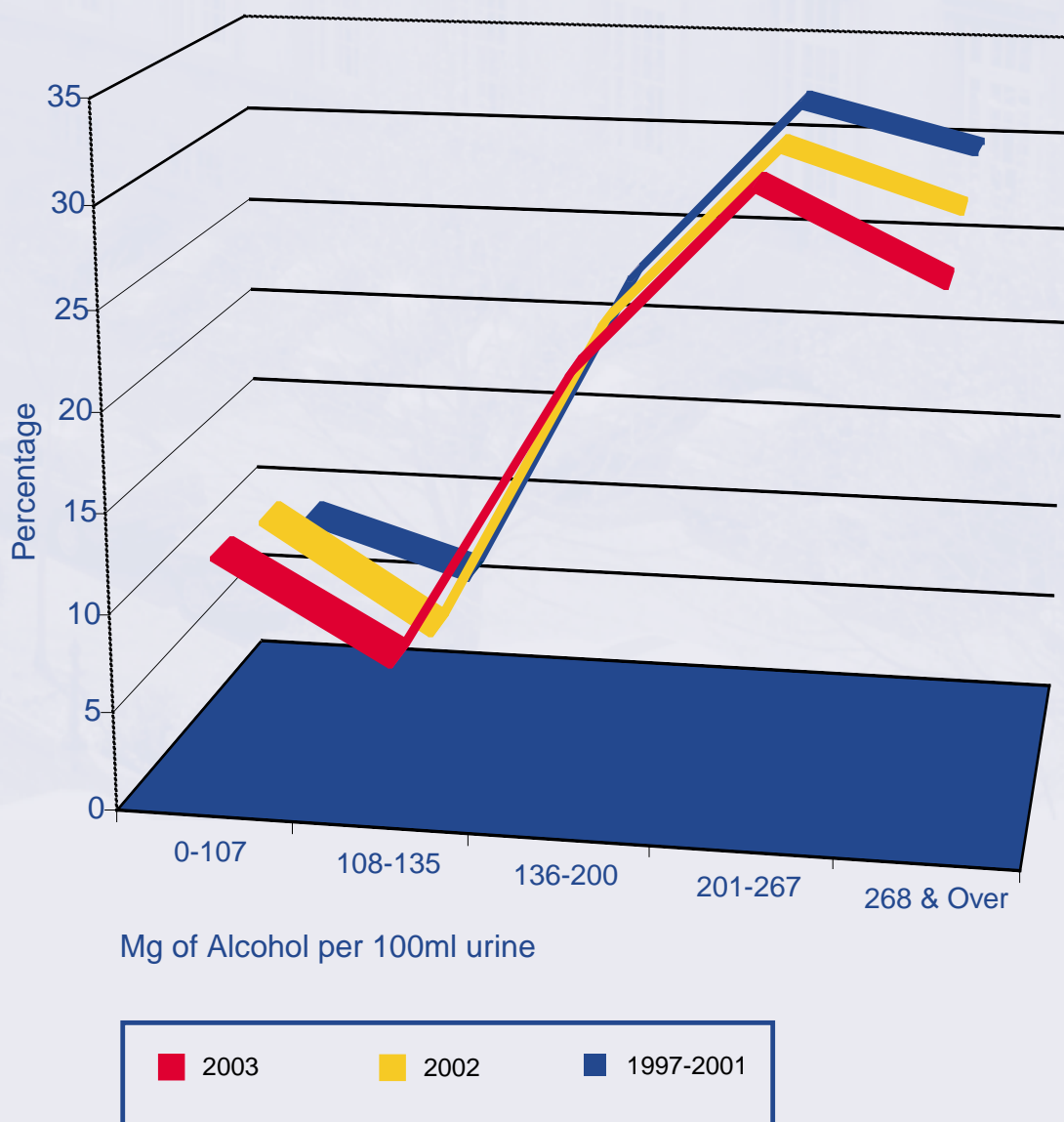


TABLE III

BLOOD ALCOHOL LEVEL – COMPARISON WITH PREVIOUS YEARS

Mg. of alcohol per 100ml of blood	2003		2002		5 Year Period 1997-2001	
	No.	%	No.	%	No.	%
0-80	210	9.6	195	8.8	1,412	6.8
LEGAL LIMIT						
81-100	109	5.0	120	5.4	942	4.5
101-150	420	19.2	430	19.4	4,016	19.3
151-200	650	29.7	638	28.8	6,092	29.2
201 & Over	798	36.5	835	37.6	8,381	40.2

TABLE IV
URINE ALCOHOL LEVEL – COMPARISON WITH PREVIOUS YEARS

Mg. of alcohol per 100ml of blood	2003		2002		5 Year Period 1997-2001	
	No.	%	No.	%	No.	%
0-107	179	12.2	166	11.4	1,179	8.9
LEGAL LIMIT						
108-135	108	7.3	88	6.0	822	6.2
136-200	326	22.1	326	22.4	3,008	22.8
201-267	462	31.3	459	31.5	4,240	32.1
268 & Over	400	27.1	418	28.7	3,967	30.0

2. Breath Alcohol Analysis

In 2003 a total of 7,599 breath specimens were taken in Garda Stations, this is a decrease of 15.1% on 2002. 6,525 of the specimens were certified; 80.8% were over the legal limit. Of the total number of breath tests registered, 1,074 tests did not result in a statement under Section 17 of the Road Traffic Act being provided.

2.1 installation of Instruments

During 2003 the Medical Bureau of Road Safety installed Evidential Breath Testing (EBT) instruments into Kanturk and Macroom Garda stations. This was in accordance with the implementation of the Government's Strategy for Road Safety and brings the total number of EBT instruments installed to sixty-two.

The instruments were installed when the stations were notified to the Medical Bureau of Road Safety as having been prepared for an EBT instrument. The two instruments installed and commissioned in Garda stations were intoxilyzer 6000IRL instruments.

2.2 Testing & Visits to Garda Stations

Bureau Scientists visited and tested each instrument that had been previously installed in Garda stations, on at least two occasions during 2003. Bureau scientists have made in excess of one hundred and sixty visits to EBT instrument locations throughout Ireland in the year. These visits covered the room inspection, installation, testing, demonstrations and training by Bureau scientists.

2.3 Evidential Breath Testing Training

The two-day EBT training course devised to train Garda Operators and Supervisors continued throughout 2003. The training courses were conducted by a Bureau scientist and a member of the Garda Síochána in-service training school at Harcourt Square. During 2003, 200 operators were trained for the Intoxilyzer 6000IRL instrument. A separate training course was provided for 5 operators who trained for the INTOXIMETER EC/IR. During 2003 the Bureau also provided an EBT information seminar for State Prosecution Solicitors.

2.4 Mean Alcohol Level in Breath

The mean alcohol level in breath was 57µg/100ml.

2.5 Twice over the Legal Limit

29.9% of the number of breath specimens provided were over twice the legal limit.

2.6 Analysis of Breath Specimens

Chart 6 and table V provides a breakdown of alcohol levels measured in breath during 2003. Table VI compares the levels of alcohol in breath specimens found in 2003 with levels found in 2002.

TABLE V

CERTIFIED ALCOHOL CONTENT OF BREATH SPECIMENS RECEIVED IN 2003

Mg. of alcohol per 100ml of breath	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	TOTAL
0-35	277	275	306	392	1,250
LEGAL LIMIT					
36-44	139	152	134	172	597
4-66	472	566	577	691	2,306
67-88	413	411	403	491	1,718
88 & Over	138	165	189	162	654
	1,439	1,569	1,609	1,908	6,525

CHART 6

CERTIFIED ALCOHOL CONTENT OF BREATH SPECIMENS DURING 2003

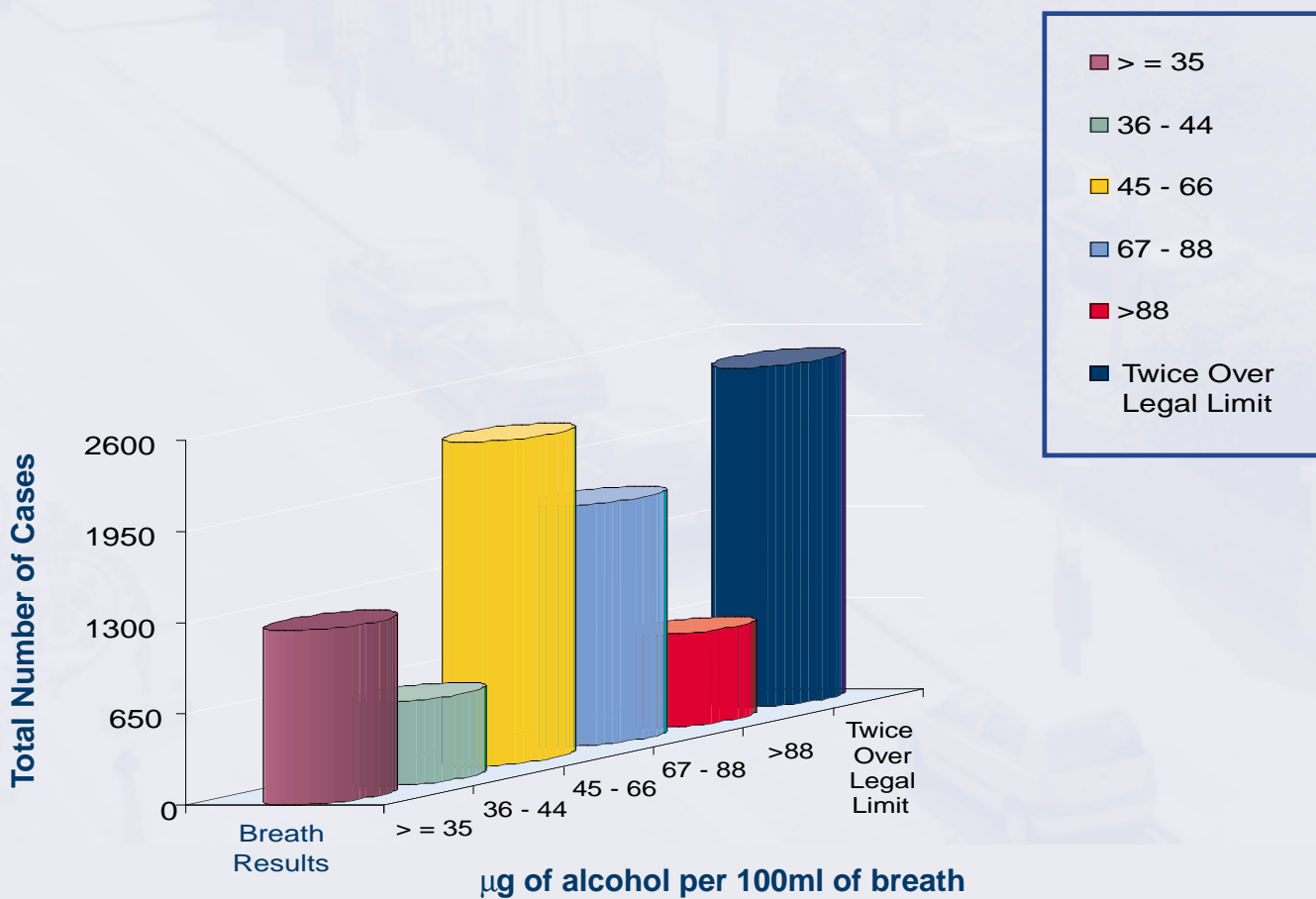


TABLE VI
ALCOHOL BREATH LEVEL – COMPARISON WITH PREVIOUS YEARS

Mg. of alcohol per 100ml of breath	2003		2002	
	No.	%	No.	%
0–35	1,250	19.2	1,449	18.7
LEGAL LIMIT				
36–44	597	9.2	726	9.3
45–66	2,306	35.3	2,662	34.3
67–88	1,718	26.3	2,070	26.6
>88	654	10.0	863	11.1
Total Certified	<u>6,525</u>		<u>7,770</u>	
Failures/Refusals	1,074	14.1	1,178	13.2
Overall Total	<u>7,599</u>		<u>8,948</u>	

TABLE VII

**ALCOHOL LEVELS BLOOD, URINE & BREATH SPECIMENS
COMPARISON WITH PREVIOUS YEARS**

Alcohol Content			2003		2002		5 Year Period 1997-2001*	
BLOOD mg/100ml	URINE mg/100m	BREATH µg/100ml	No.	%	No.	%	No.	%
0-80	0-107	0-35	1,639	16.1	1,810	15.8	2,591	7.6
LEGAL LIMIT								
81-100	108-135	36-44	814	8.0	934	8.2	1,764	5.2
101-150	136-200	45-66	3,052	29.9	3,419	29.9	7,024	20.6
151-200	201-267	67-88	2,830	27.8	3,166	27.7	10,332	30.3
201 and upwards	268 and upwards	88 and upwards	1,852	18.2	2,116	18.5	12,348	36.3

* Blood and Urine only in 1997-2000 figures.

Table VII shows the comparison between 2003 and 2002 for blood, urine and breath specimens received for analysis. This is the third year that a comparison can be made in the area of Evidential Breath Testing since its introduction in late 1999.

3. Blood and Urine Drug Analysis

The Medical Bureau of Road Safety continued analysis of specimens for the presence of seven different drugs or drug classes using an immunoassay technique (ELISA). There were 416 specimens tested for the presence of a drug or drugs. This includes all the specimens received which were under the legal limit for alcohol and 12 specimens where the alcohol level was over the legal limit and drug analysis was requested by Gardai.

There also were 3 specimens where alcohol analysis had been carried out by an evidential breath alcohol test and drug analysis was requested by Gardai.

3.1 Results of Drug Analyses

266 specimens tested positive (64% of specimens analysed) and 150 specimens were found to be negative for the presence of a drug or drugs.

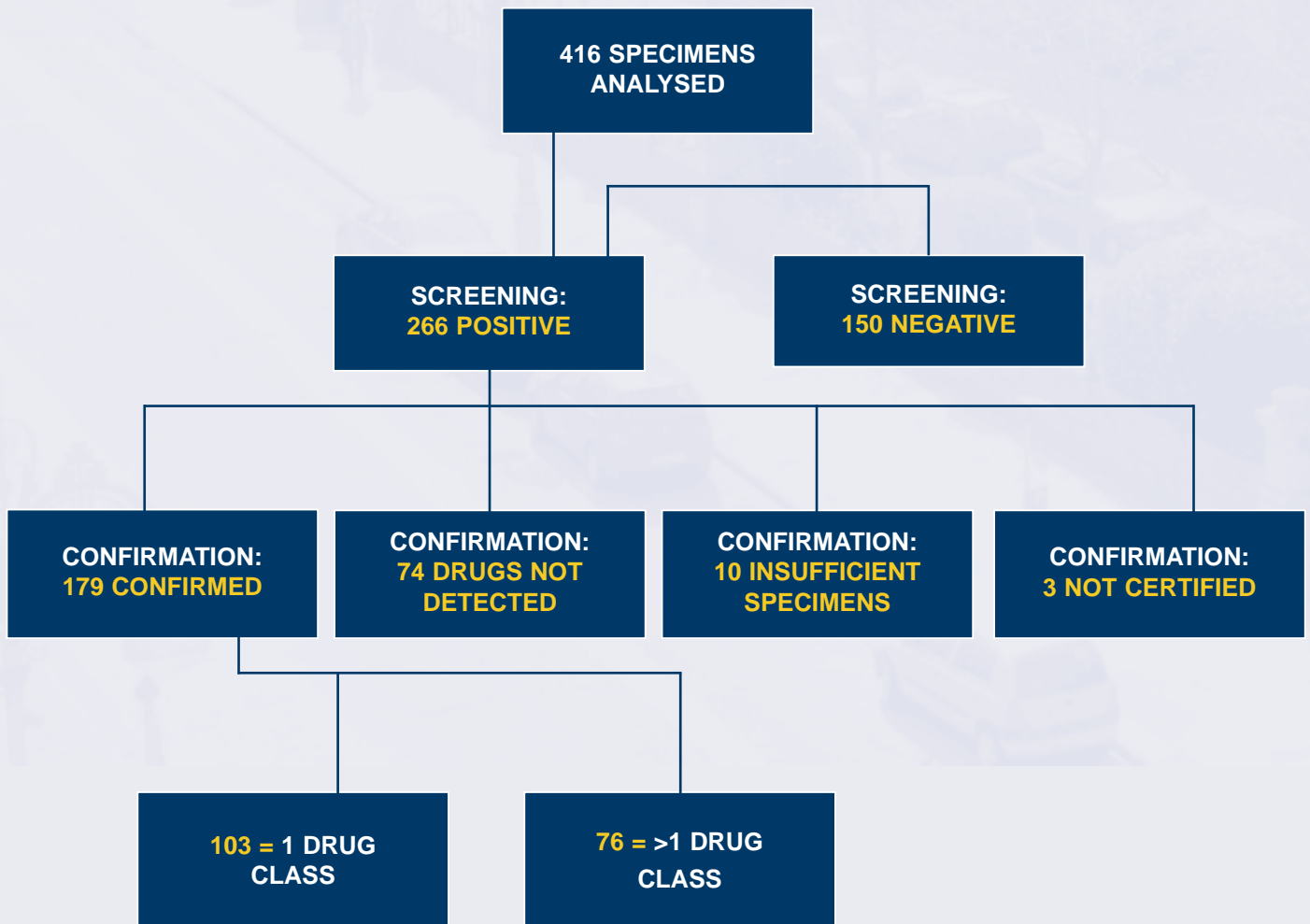
Specimens testing positive were forwarded to the State Laboratory for confirmatory analysis using Gas Chromatography/Mass Spectrometry or Liquid Chromatography/Mass Spectrometry.

179 specimens were confirmed positive (67% of specimens sent to State Laboratory and 43% of total specimens analysed for the presence of drugs), 74 were not confirmed (33% of specimens sent to State Laboratory), 10 specimens were insufficient for complete analysis and 3 specimens were not certified.

Chart 7 provides a summary of drug analysis for 2003.

CHART 7

SUMMARY OF DRUG ANALYSIS 2003



4. Research - Driving under the Influence of a Drug (DUID) Survey

The analysis of 2,000 specimens for a national DUID survey which commenced in late 1999 was completed in 2002 in the Medical Bureau of Road Safety. A report of findings was presented in August 2002 at the T2002 16th International Conference on Alcohol, Drugs and Traffic Safety in Montreal, Canada and published in the proceedings of the Conference, Volume 2, pages 487 – 492. Epidemiological and statistical analysis of the data was undertaken and a report based on the findings will be published in 2004.

5. Professional Expert Services and Court Attendance

The total number of occasions that different members of Bureau staff had to attend court cases during the year was fifty-seven, of which eight attendances related to blood and urine alcohol analysis. Forty-eight attendances were legal challenges in relation to Evidential Breath Testing and one attendance related to drug analysis. Staff were also on stand-by for a larger number of cases which were adjourned.

The Bureau continues to provide a significant and independent professional expert support by way of information and preparation of reports to assist the courts in the administration of justice. The number of queries and requests for information from parties in criminal proceedings continued to rise throughout 2003.

MEMBERSHIP OF COMMITTEES RELATING TO ROAD SAFETY

The Bureau continued during 2003 to be one of the active participating agencies in the workings of the High Level Group on Road Safety. The Director and Chief Analyst are both members of the group and were in attendance at five meetings held during 2003. The dates of these meetings were the 4th March, 11th April, 3rd July, 31st October and 11th December 2003.

CONFERENCES, COURSES AND MEETINGS ATTENDED BY STAFF DURING 2003

1. The Chief Analyst, Principal Analyst, one Senior Analyst and three Analysts attended the Lion Laboratories Instructors Training Course for one day on 17th February 2003, in Harcourt Square, Dublin 2.
2. The Principal Analyst attended the Lion User Group meeting for two days on 13th and 14th March 2003 in Worcestershire, U.K.
3. The Principal Analyst attended the Eurachem Seminar (accreditation) for one day on the 31st March 2003, at the Red Cow Hotel, Dublin.
4. The Chief Analyst, Principal Analyst, one Senior Analyst and two Analysts attended the Lion Laboratories User Group meeting for a half day on the 4th April 2003, in Harcourt Square, Dublin 2.
5. One Analyst and Senior Technician attended an Agilent Gas Chromatography Maintenance and Troubleshooting course for two days on the 22nd and 23rd May 2003 at the Department of Chemical Engineering, U.C.D., Belfield, Dublin 4.
6. The Principal Analyst and Senior Technician attended a Mass Spectrometry Troubleshooting and Maintenance course for two days on 26th and 27th May 2003 held in U.C.D., Belfield, Dublin 4.
7. The Director and Chief Analyst attended and each presented a paper at the Pompidou Group of the Council of Europe Meeting on Drugs and Driving for three days on the 18th to the 20th June 2003 in Strasbourg.

8. The Chief Analyst and Principal Analyst visited the Toxicology Laboratory for one day on the 10th September 2003 in Lausanne, Switzerland.
9. One Analyst is completing a two year part-time MSc in Molecular Pathology September 2002/2004 in DIT Kevin Street and Trinity College Dublin.
10. The Principal Analyst attended an Uncertainty of Calibration course for one day on 25th September 2003 at Enterprise Ireland, Dublin.
11. The Administration Officer attended an Effective Purchasing course for a half day on 15th October 2003 at U.C.D., Blackrock, Co. Dublin.
12. One Senior Analyst and two Analysts attended the Lion User Group meeting for two days on 16th to the 17th October 2003 in Sheffield, U.K.
13. The Principal Analyst attended the Society of Forensic Toxicology Conference for eight days on the 16th to the 24th October 2003 in Portland, Oregon, USA.
14. Two Analysts visit the Forensic Laboratory in Belfast, Northern Ireland on the 13th November 2003, for one day.
15. The Chief Analyst attended the TIAFT 41st International Meeting of the International Association of Forensic Toxicologists from the 16th to the 20th of November 2003, in Melbourne, Australia. She also visited the Victoria Police, Traffic Alcohol Section in Melbourne Australia for a half day on the 20th November 2003.
16. The Chief Analyst visited the New South Wales Police Service in Sydney, Australia for one day on the 27th November 2003, and also visited the Division of Analytical Laboratories, New South Wales for one day on the 28th November 2003.
17. Two Analysts attended a Gas Chromatography Mass Spectrometry Software Training Course for one day on the 12th December 2003 in the Medical Bureau of Road Safety, Dublin.

STAFF APPOINTMENTS IN 2003

A permanent Senior Laboratory Attendant resigned from the Bureau and was replaced in May 2003. The new Laboratory Attendant commenced in September 2003. A part time Executive Assistant left the Bureau and was replaced by a temporary administrative person. A locum Analyst was employed during 2003 to assist with the Drug Programme.

BUREAU MEMBERSHIP AND MEETINGS

During 2003 the Medical Bureau of Road Safety held four meetings. These meetings were held on the 11th February, 13th May, 23rd September and 16th December 2003.

THE PROMPT PAYMENT OF ACCOUNTS ACT, 1997

The Prompt Payment of Accounts Act came into operation on the 2nd January 1998, the Medical Bureau of Road Safety has come under the remit of the Act and since that time has complied with the terms of the 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 very strict procedures in operation.

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

Bernadette Heneghan

Chairman

Lewis A. Cusack

Director

October 5th 2004

Date