

# NPIS Edinburgh

Scottish Poisons Information Bureau

A history: 1963 to 2023



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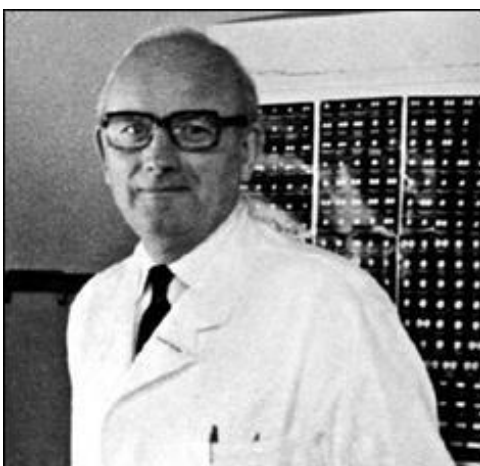
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This brief history has been written to celebrate the 60<sup>th</sup> anniversary of our unit.

## 1960s: the birth of poisons information in Edinburgh

In 1962 the UK government issued the Atkins Report recommending the establishment of poisoning treatment centres and poisons information services. In response to this report the Scottish Poisons Information Bureau was inaugurated on 2 September 1963 under the Directorship of Dr Harold V Street, a chemical pathologist based in the University of Edinburgh's Department of Forensic Medicine. This centre was part of an informal UK network that also included centres in Belfast, Cardiff and London.

The Royal Infirmary of Edinburgh had, since its opening in 1879, always had a ward designated for cases of "incidental delirium". By the 1960s this ward had become the Regional Poisoning Treatment Centre (RPTC) and in 1965 the Scottish Poisons Information Bureau was transferred to the RPTC. Its physician in charge, Dr Henry Matthew, became the first Medical Director of the unit.



*Dr Henry Matthew,  
Medical Director 1965-1973*



*Gastric lavage equipment*

## Clinical unit

The RPTC, based within a large teaching hospital with a major Emergency Department, was a unit dedicated to the care of poisoned patients. Patients were brought to this central centre from throughout the region. The unit's growing international reputation attracted a stream of visitors and trainees.

At this time, patients with any sort of overdose were generally subjected to gastric lavage - this was done by pouring warm water or saline into a funnel with the patient in a left sided, head down position; then the funnel was lowered and emptied into a bucket.

## Poisons information service

The poisons information database existed as a paper system, the data on each of approximately 8,000 substances and products being typed on a standardised sheet which was filed alphabetically in the appropriate register. The medical and nursing staff of the unit used these registers to answer telephone calls which came in 24 hours a day on the "red telephone".

## Research

Original contributions to the medical literature covered topics such as the general management of acute poisoning, the need (or otherwise) for prophylactic antibiotics in unconscious patients, forced diuresis in salicylate intoxication, gastric decontamination, the features of tricyclic antidepressant poisoning, and the development of the poisons information service.



*The unit secretary, Mamie Strathdee, and the infamous red telephone; in the background is the paper-based poisons information database*

Matthew H, Mackintosh TF, Tompsett SL, et al. Gastric aspiration and lavage in acute poisoning. *BMJ* 1966; 1: 1333-7.

Lawson AAH, Proudfoot AT, Brown SS, et al. Forced diuresis in the treatment of acute salicylate poisoning in adults. *Q J Med* 1969; 38: 31-48.

Matthew H, Proudfoot AT, Brown SS, et al. Acute poisoning: organization and work-load of a treatment centre. *Br Med J* 1969; 3: 489-93.

Matthew H, Proudfoot AT, Brown SS, et al. Acute salicylate poisoning. *Lancet* 1969; 1: 1312.

## 1970s: an expanding reputation

### Clinical unit

When (now Professor) Laurie Prescott was appointed as a senior lecturer in clinical pharmacology in 1969, his only in-patient commitment was to the RPTC. Visiting fellows continued to work within the unit, including (now Professor) Barry Rumack from the US and (now Professor) Mahdi Balali-Mood from Iran. Ward 3 was a busy unit, the team spirit of which was noted in the somewhat satirical Christmas carol entitled "Overdose" penned by a junior doctor.

#### **OVERDOSE**

*to be sung to the tune of  
Edelweiss from the Sound of Music*

Overdose, overdose  
Four o'clock in the morning  
A&E phoned Ward 3  
Just as daylight is dawning  
How did he take his LSD?  
From his little parcel  
Not IV nor orally  
He stuck it up his nostril  
Overdose, overdose  
Washing out all their dinners  
Chinese meals, orange peel  
Carlsberg Special and Guinness  
Life's a laugh if you're on the staff  
That's one thing we're sure of  
Cos we're the boys from the  
Scottish Poisons Information Bureau

*Walter Nimmo, Christmas 1972*



*Ward 3*

## Poisons information service



*Dr Alex Proudfoot*  
*Medical Director 1974-1998*

On Henry Matthew's retiral in 1974, Dr Alex Proudfoot took over as Medical Director of the unit.

For many years the poisons bureau had only one secretary by way of staffing: Mamie Strathdee. The Bureau always provided a 24/7 service, with consultants and junior doctors covering Ward 3, as well as the nurses, all contributing to the provision of poisons advice.

## Research

The first paracetamol deaths had been reported from the RPTC in 1966 and by the 1970s acetylcysteine had become the treatment of choice. The intravenous regimen (which today's UK regimen is still based upon) developed by Prescott and published in 1979 in the British Medical Journal, was widely adopted across the UK. Data from Edinburgh also allowed Rumack to develop the oral acetylcysteine protocol used in North America.

The pesticide paraquat was a popular agent for self-harm. Following the UK's first lung transplant, on a teenage boy who had accidentally drunk paraquat stored in a soft drinks bottle, the unit collaborated with colleagues in London to publish approaches to outcome stratification.

Matthew H. The Scottish Poisons Information Bureau 1963-68. Health Bull 1970; 28: 1-2.

Rumack BH , Matthew H . Acetaminophen poisoning and toxicity. Pediatrics 1975; 55: 8716.

Prescott LF, Illingworth RN, Critchley JAJH, et al. Intravenous N-acetylcysteine: the treatment of choice for paracetamol poisoning. Br Med J 1979; 2: 1097-100.

Proudfoot AT, Stewart MS, Levitt T, et al. Paraquat poisoning: significance of plasma-paraquat concentrations. Lancet 1979; 18: 330-2.

## 1980s: we're going to need a bigger database

### Clinical unit

The unit remained within Ward 3 for most of this decade. The ward was large; with female patients housed at one end, male at the other, and the nurses station and washout room located in the centre. The Ward Sister was Fiona Johnston. At Christmas the patients would be given a wee celebratory nip of brandy – it was a different time!

### Poisons information service

During the early 1980s, under the guidance of Alex Proudfoot, a radical new development in poisons information was instituted as a response to increasing numbers of poisons enquiries - the computer database TOXBASE.

TOXBASE first operated using Viewdata technology. This was similar to Teletext and allowed hospitals to access information using a telephone and a television (later a computer terminal).

The first TOXBASE server had 128 kb memory and a 40 Mb hard drive and could be accessed simultaneously by seven users. TOXBASE was awarded the British Computer Society "social benefit award" in 1983. The ability to standardise information and make it concise to meet screen restraints meant that TOXBASE was a revolution in information delivery for poisons services. It quickly became widely used in over 500 units in Scotland, Northern Ireland and northern England.



*Data input, early 1980s*



*Data input, early 1990s*

1985 saw the appointment of Mrs Alison Good as Specialist in Poisons Information; Alison would go on to become the Information Services Manager. During the working week poisons calls were taken within the poisons office, but nurses on the ward continued to provide out of hours cover.

## Research

The central aim of research activity was the desire to improve patient care.

Forced diuresis was commonly used internationally to treat barbiturate and aspirin poisoning; clarification of whether it was beneficial occupied the unit for a number of years. Our findings resulted in forced diuresis being abandoned and urinary alkalinisation becoming the intervention of choice. Ward Donavan was a visiting fellow from the USA who worked on acetylcysteine kinetics.

Quinine, widely used in the UK as a treatment for leg cramps, causes blindness when taken in overdose. Stellate ganglion block had been advocated to reverse retinal vascular constriction but collaborative studies of the outcomes of patients across Scotland and the North of England showed the futility of this approach.

Prescott LF, Balali-Mood M, Critchley JAJH, et al. Diuresis or urinary alkalinisation for salicylate poisoning. *BMJ* 1982; 285: 1383-6.

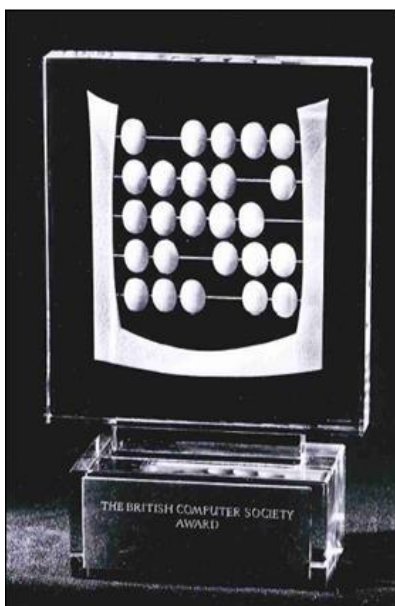
Proudfoot AT, Davidson WSM. A Viewdata system for poisons information. *Br Med J* 1983; 286: 1125-7.

Beckett GJ, Foster GR, Hussey AJ, et al. Plasma glutathione S-transferase and F protein are more sensitive than alanine aminotransferase as markers of paracetamol (acetaminophen)-induced liver damage. *Clin Chem* 1989; 35: 2186-9.

Dyson EH, Proudfoot AT, Bateman DN. Quinine amblyopia—is current management appropriate? *Clin Toxicol* 1985; 23: 571-8.

Proudfoot AT, Davidson WSM. A viewdata system for poisons information. *BMJ* 1983; 286: 1127.

Prescott LF, Donovan JW, Jarvie DR, et al. The disposition and kinetics of intravenous N-acetylcysteine in patients with paracetamol overdose. *Eur J Clin Pharmacol*. 1989; 37: 501-6.



*The British Computer Society “social benefit award”, awarded to TOXBASE in 1983*

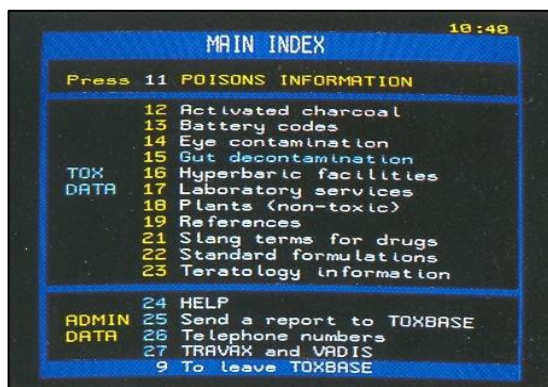


# 1990s: poisons information in the online age

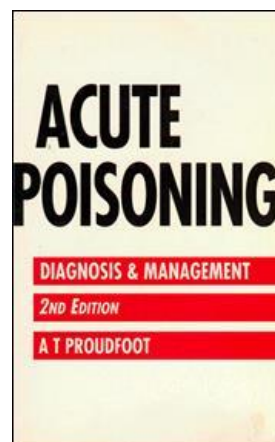
## Clinical unit

In the early 1990s the poisons ward moved to Ward 22 but then closed for a short period. Its utility and importance was such that this decision was, however, swiftly reversed and it moved location within the Royal Infirmary to become a dedicated 10 bedded area located in Ward 1A. The unit was now associated with the acute medical admissions unit, and was staffed by junior doctors on the acute medical rotation, overseen out of hours by both specialist clinical toxicologists and general physicians working in the Infirmary. A specialist registrar was appointed, Dr (now Professor) Alison Jones. Key ward sisters during this decade were Mhairi Pollock and Betty Campbell.

The fundamental importance of psychiatric support for overdose had long been recognised, and close working relationships with the liaison psychiatrists working in the Royal Infirmary were key. A joint approach to the assessment and care of poisoned patients was established where dual assessments would be undertaken by both clinical toxicologists and liaison psychiatrists for all patients admitted to the unit. This ensured the best possible care could be delivered for their physical and mental health. This successful method of assessment remains to the present day.



*TOXBASE index page mid-1990s*



*Acute Poisoning. Diagnosis & Management. 2nd edition, 1993*

## Poisons information service

Staff numbers grew with the arrival in the early 1990s of Ms Lindsay Gordon in an administrative support role, and an additional Specialist in Poisons Information, Mr Willie Laing.

When Alex Proudfoot retired in 1998 he was succeeded as Director by (now Professor) Nick Bateman. Nick had previously been Director of the Northern and Yorkshire Regional Drug & Therapeutics Centre which included the Newcastle poisons unit. It also included the (then) National Teratology Information Service (now UKTIS) which he had been instrumental in setting up.

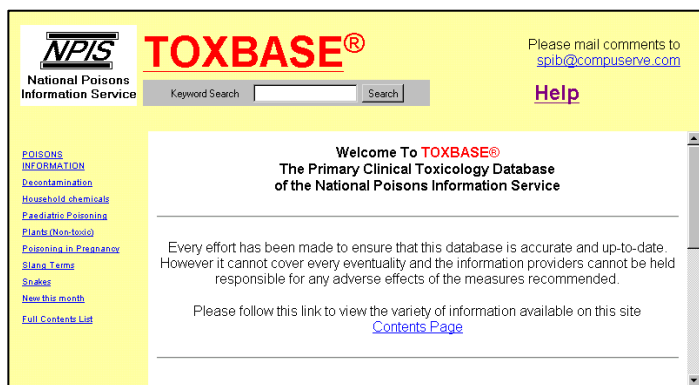


In the late 1990s the UK health departments commissioned a review of UK poisons services and following the review's recommendations a newly structured UK National Poisons Information Service was implemented - the NPIS now comprised units in Birmingham, Cardiff, Newcastle and Edinburgh, and provided a 24 hour telephone help service on a regional basis. Calls were answered by Specialists in Poisons Information, supported by a team of Consultant Toxicologists. The poisons bureau became formally known as NPIS Edinburgh, however locally the moniker 'SPIB' persists until the present day.

*Professor D Nicholas Bateman  
Director, 1998-2016*

When standardisation of national advice became a concern for UK health departments in the 1990s TOXBASE was the obvious tool to become the core of the new NPIS structure.

TOXBASE moved on to the internet in 1999, making it available to any hospital department with an online connection. The UK Department of Health recommended TOXBASE as first line of contact for poisons information within the UK. With its long experience of the development and running of TOXBASE, NPIS Edinburgh remained the unit with editorial responsibility for the database. Within seven years the number of product searches from across the whole of the UK had exceeded 1 million per year.



*TOXBASE internet home page in 1999*

## Research

In 1993 Alex Proudfoot published the 2nd edition of his book, *Acute Poisoning. Diagnosis & Management*. Research output in poisoning had reduced in the early 1990's as a result of reorganisation in both the University Department of Clinical Pharmacology (which moved to the Western General Hospital), and in the organisation and staffing of the poisons unit in the Royal Infirmary. The arrival of Nick Bateman in 1998 would change that trend in the coming years, with his interests in toxicoepidemiology, pesticides, and poisons information systems.

Proudfoot AT. Acute poisoning. Diagnosis & management, Oxford: Butterworth-Heinemann, 1993.

Good AM, Bateman DN. TOXBASE on the internet. J Acc Emerg Med 1999; 16: 399.

## 2000s: toxicology into the new century

### Clinical unit

This decade was one of development and staff growth. By re-establishing links to the university Department of Clinical Pharmacology, increasing numbers of research-minded trainees were exposed to poisoned patients. Dr Catherine Kelly was appointed as a second physician, and her background in Emergency Medicine was very useful in developing TOXBASE, which was increasingly being used in Emergency Departments across the UK and elsewhere.

Subsequently with support from the Scottish Government, the Royal Infirmary and the service commissioning body Health Protection Agency, additional staff were appointed at consultant and trainee level. Trainees included Ian Wilkinson, James Oliver and Stephen Waring. Later James Dear, Michael Eddleston and Euan Sandilands were appointed to a range of training appointments and later were appointed as consultants. Ruben Thanacoody came as a consultant from NPIS Newcastle, where he had trained, before returning there. Aravindan Veiraiah joined the team as a consultant, having trained in Cardiff.

In 2000 the then Scottish Health Department facilitated creation of a Toxicology Specialist Nurse role, at a senior nursing level. Postholders (notably Fiona Strachan, and later Janice Pettie and Margaret Dow) split their time between clinical duties on the ward, supporting the poisons information service, and research. Joint working with the liaison psychiatry team was strengthened by the appointment of additional psychiatry staff. In 2003 the Royal Infirmary of Edinburgh moved site, and the unit became Base 6 of the Assessment Unit, a 10-bedded, dedicated unit.





*TOXBASE used in the ward, circa 2011*

## Poisons information service

Under Nick Bateman's Directorship the NPIS Edinburgh team grew, with the addition of several Specialists in Poisons Information (Dr Caroline McGrory, Mr Richard Adams and Dr Gill Jackson) and admin staff. The NPIS had moved to a national 24 hour phone service, with two units remaining open until 23.00 and a single unit remaining open overnight with calls being taken by Specialists in Poisons Information.

The Edinburgh unit, which had been relying on nurses on the ward to take out of hours calls, could now divert calls to the national service overnight and better focus on its role as NPIS unit with editorial responsibility for TOXBASE. A 24 hour national consultant rota was also instituted, to which all NPIS Edinburgh consultants contributed. This in part stimulated new consultant appointments. The unit began to once again attract international visitors, including PhD students (now Professor) Reza Afshari and Dr Nasrin Pakravan.

Nick Bateman served as President of the European Association of Poisons Centres and Clinical Toxicologists from 2004 to 2006, and in 2005 became Professor in Clinical Toxicology.

By the end of the decade TOXBASE was being used by NHS departments all around the UK, handling in excess of 1.3 million accesses per year, and was provided under special agreements and subscriptions to around 35 other countries. As planned by the NPIS and its commissioners, improved access to TOXBASE online led to UK healthcare providers adopting TOXBASE as their go-to resource for poisons information. This in turn resulted in a natural reduction over a number of years in the number of calls to the service. With TOXBASE handling the majority of enquiries the NPIS Specialists in Poisons Information and clinicians could focus on the development of management guidance, and the provision of individualised telephone advice for complex poisoning enquiries.

## Research

Co-proxamol (a combination analgesic containing dextropropoxyphene) was widely used in the UK. NPIS Edinburgh's studies showed that patients developed dose-related electrocardiographic changes compatible with sodium channel blockade. Epidemiological data collected by Scotland and elsewhere revealed it was associated with a mortality rate that was much higher than other similar combination analgesics, and that of those who died, many were out of hospital. Taken with other UK data, the Scottish data persuaded UK regulators to withdraw the drug.

In addition, work on acetylcysteine clearly identified histamine release as a mechanism for adverse effects in man, leading to new research avenues, and stimulating a major clinical trial. Research in Edinburgh centred on improving our treatment of paracetamol poisoning, through better antidote delivery with reduced adverse effects.



*Dr James Dear is interviewed by STV in 2010*

Although the main role of TOXBASE is to inform patient management, another great strength is that analysis of usage data and real-time alerting can reveal the epidemiology of poisoning; this is particularly important in the context of recreational drugs where the pattern of substances taken can change rapidly.

Bateman DN, Good AM, Laing WJ, et al. TOXBASE: poisons information on the internet. *Emerg Med J* 2002; 19: 31-4.

Afshari R, Good AM, Maxwell SRJ, et al. Co-proxamol overdose is associated with a 10-fold excess mortality compared with other paracetamol combination analgesics. *BJCP* 2005; 60: 444-7.

Bateman DN, Good AM. Five years of poisons information on the internet: the UK experience of TOXBASE. *Emerg Med J* 2006; 23: 614-7.

Pakravan N, Waring WS, Sharma S, et al. Risk factors and mechanisms of anaphylactoid reactions to acetylcysteine in acetaminophen overdose. *Clin Toxicol* 2008; 46: 697-702.

Sandilands EA, Bateman DN. Co-proxamol withdrawal and suicide in Scotland. *BJCP* 2008; 66: 290-3.

Adams RD, Lupton D, Good AM, et al. UK childhood exposures to pesticides 2004-2007: a TOXBASE toxicovigilance study. *Arch Dis Child* 2009; 94: 417-420.

Pakravan N, Simpson KJ, Waring WS, et al. Renal injury at first presentation as a predictor for poor outcome in severe paracetamol poisoning referred to a liver transplant unit. *Eur J Clin Pharmacol* 2009; 65: 163-8.

## 2010s: continued growth

### Clinical unit

The close working relationship between the toxicology and psychiatry teams on Base 6 continued to represent a gold standard in the care of poisoned patients. Margaret Dow and Janice Pettie retired (in 2016 and 2019 respectively) and Karen Osinski became the new Toxicology Specialist Nurse. Dr Jonathan Wraight joined the NPIS team to provide specialist ED support for both the unit and the poisons service.

### Poisons information service

This was a decade for moving on. Alison Good retired and was awarded an MBE in 2011 for her services to healthcare. Gill Jackson took her place as Information Services Manager. In 2012 Nick Bateman retired. Dr (now Professor) Michael Eddleston became Director of NPIS Edinburgh, and in 2016 was succeeded by Dr Euan Sandilands as the fifth Director. Willie Laing took early retirement in 2015, however the SPIB roster of Specialists in Poisons Information and admin staff continued to grow.

The screenshot shows the TOXBASE app interface for Amitriptyline. At the top, there is a blue header with the text 'Amitriptyline' and a 'SEARCH' button. Below the header, the title 'Amitriptyline' is displayed, followed by 'Updated 1/2017'. A 'Table of Content' section lists links for 'Type of product', 'Ingredients', 'Toxicity', and 'Features and management'. The 'Type of product' section describes it as a 'Tricyclic antidepressant' used for depression and other conditions. The 'Ingredients' section lists 'Amitriptyline' and provides dosages for 'Tablets' (10 mg, 25 mg, 50 mg) and 'Oral solution (150 mL bottle)' (10 mg/5 mL, 25 mg/5 mL, 50 mg/5 mL). The 'Toxicity' section is partially visible. At the bottom, there is a navigation bar with icons for 'Poisons', 'Antidotes', 'Alerts', 'Contact Us', and 'Calculator'.

TOXBASE now contained in excess of 17,000 pages, and the number of pages accessed regularly began to exceed 2 million per year. Keeping TOXBASE up to date is a complex process involving a comprehensive literature search together with analysis of information from case-based experience to develop the clinical advice. Overseen by Edinburgh, continuing in its role as the NPIS unit with editorial responsibility for TOXBASE, each and every page is reviewed and updated on a continuous 4 year schedule by specialists across the four NPIS units.

We launched an e-learning resource at [toxlearning.co.uk](http://toxlearning.co.uk) which provides modules on how to use TOXBASE, and on the general management of poisoned patients. The free resource is aimed at NHS staff and UK medical, nursing and paramedic students who may register using their professional or academic email account.

A TOXBASE app for use on iOS and Android devices was launched. Developed in response to advancing technology and user feedback, the TOXBASE app offered greater user mobility and – for the first time – off-line availability of TOXBASE information.

*TOXBASE app, circa 2017*

*Mrs Alison Good MBE  
Information Services Manager  
1985 - 2011*



*Professor Michael Eddleston  
Director, 2012-2016*



*Dr Euan Sandilands  
Director, from 2016*

## Research

To improve patient care, first locally then internationally, NPIS Edinburgh led the Scottish and Newcastle Antiemetic Pre-treatment for paracetamol poisoning study (SNAP), funded by the Scottish Government Health Directorates Chief Scientist Office. This study set out to evaluate a shorter, simpler 12 hour NAC regimen in comparison to antiemetic pretreatment with ondansetron in a factorial study to establish if adverse effects could be reduced.

Building on the SNAP trial, NPIS Edinburgh changed the treatment of patients in Edinburgh. This strategic audited introduction of the first major change in management of paracetamol overdose for 40 years continues to be rolled out across other interested clinical units in a controlled manner.

Additionally, NPIS Edinburgh lead on major research projects: surveillance of patients exposed to pesticides and biocides to improve the monitoring of adverse effects of pesticide exposure in humans, and surveillance of the clinical effects of carbon monoxide poisoning, to improve the diagnosis and management of patients.



*NPIS Edinburgh team, 2013*

Thanacoody HK, Gray A, Dear JW, et al. Scottish and Newcastle antiemetic pre-treatment for paracetamol poisoning study (SNAP). *BMC Pharmacol Toxicol* 2013; 14: 20.

Bateman DN, Dear JW, Thanacoody HKR, et al. Reduction of adverse effects from intravenous acetylcysteine treatment for paracetamol poisoning: a randomized controlled trial. *Lancet* 2014; 383: 697-704.

Pettie JM, Caparrotta TM, Hunter RW, et al. Safety and efficacy of the SNAP 12-hour acetylcysteine regimen for the treatment of paracetamol overdose. *EClinicalMedicine* 2019; 11: 11-17.



## 2020s and the future

### Clinical unit

At the time of writing our unit sees over 1,700 in-patients annually, and is a centre of excellence providing the highest standard of care for poisoned patients. We work very closely with both the emergency department and critical care units and regularly advise on the management of patients in these areas as well as our unit, while continuing to work with psychiatry.

Our specialist nurses have always played a crucial role in the clinical unit in leading a core team of nurses to provide a high standard of care for our patients and also play an important role in the academic arena, presenting at national and international conferences and publishing articles in peer reviewed journals. Karen Osinski has become an Advanced Nurse Practitioner in Clinical Toxicology, the first post of its kind in the UK.



*Karen Osinski  
Clinical Toxicology  
Advanced Nurse  
Practitioner*

With the gold standard of care provided for our patients, NPIS Edinburgh continues to attract many visitors from the UK and beyond who are interested in learning about our clinical service, poisons information or the world leading research currently underway.

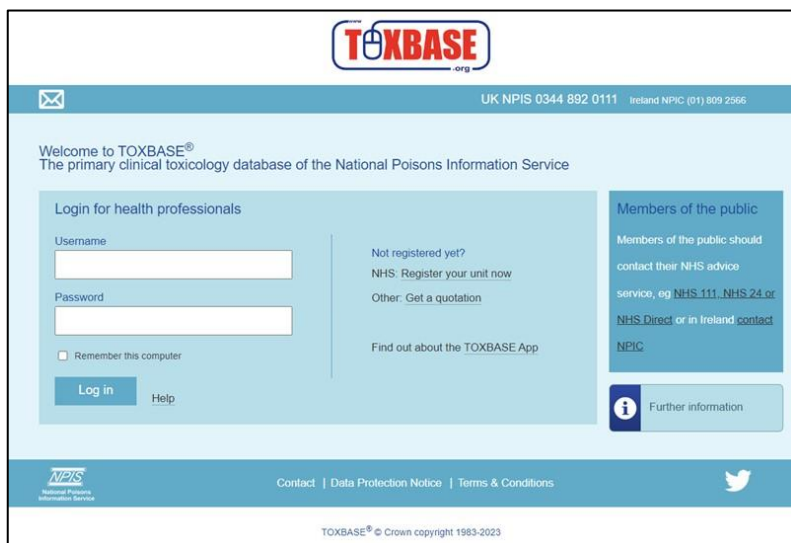
### Poisons information service

This decade will always be associated with the COVID-19 pandemic and the challenges we, like many other organisations, had to overcome to continue to provide high quality poisons information. During this period the unit was able to adapt to alternative ways of working to allow home working. Our governance policies and operating procedures were amended with the specific aim of reducing the burden on emergency departments through avoiding unnecessary presentations of poisoned patients.

By 2023, the international profile of the UK NPIS and TOXBASE has grown significantly. TOXBASE is now used in over 125 countries worldwide, and remains at the forefront of poisons information delivery around the world. Together with our partner units, NPIS Edinburgh are involved in global health projects aimed at improving poisons provision in low and middle income countries. Our Specialists in Poisons Information have travelled to these countries to deliver training, and we also provide TOXBASE via an ethical subscription model which ensures its availability to these countries.

Education has been central to the ethos of NPIS Edinburgh for many years and as well as frequently hosting international visitors who are keen to experience what we do, we have enjoyed running courses for doctors, nurses, paramedics and other healthcare professionals in all aspects of clinical toxicology.

In 2023 we are delighted to celebrate the 40<sup>th</sup> anniversary of the launch of TOXBASE. The database continues to grow and develop and now boasts an excess of 21,000 pages and over 2.5 million page accesses per year.



*TOXBASE home page, 2023*

## Research

Clinical research continues to be one of the core activities of NPIS Edinburgh as we play a leading role in clinical toxicology research. We are currently involved in a number of projects in collaboration with partner organisations.

We continue to work on our long-term surveillance project capturing NPIS data on UK patients exposed to pesticides and biocides. With this toxicoepidemiological study we aim to improve the monitoring of adverse effects of pesticide exposure in humans and improve our management advice for patients who are exposed.

Carbon monoxide poisoning is a major public health problem in the UK. We are coming to the end of an eight year study to improve our knowledge and understanding of the epidemiology, toxicity and outcome of carbon monoxide poisoning through analysis of NPIS enquiries.

NPIS Edinburgh is currently leading a research study of NPIS enquiries about digoxin poisoning (including plant cardiac glycosides) and the use of digoxin-specific antibodies. This follows a similar study on methotrexate poisoning. Both of these studies are aimed at improving our knowledge and understanding of the toxicity to better inform our management of poisoned patients.

The object of Professor James Dear's research is to make medicines safer for patients, focussing on discovery of new tools to identify side-effects rapidly and developing new treatments for drug-induced organ injury. Markers have been developed which transform the clinical care of paracetamol patients; biomarkers allow early exclusion of liver injury and facilitate prompt identification of injury. Novel treatments are being developed for patients at high risk of liver failure, including leading multi-centre trials of new first in class therapeutics

and advanced therapies such as cell therapy to repair the injured liver. The SNAP protocol is now being used across the UK.

In 2023, Professor Michael Eddleston lead a team of worldwide researchers to a successful application to the National Institute for Health and Care Research Research and Innovation for Global Health Transformation (RIGHT) programme which funds interdisciplinary applied health research in low and middle income countries on areas of unmet need. The project will focus on preventing deaths from acute poisoning in these countries and encompasses clinical trials, developing guidance, increasing research capacity and building on capacity of poisons information centres. Various members of the team in NPIS Edinburgh are working on this project.

### **Quality improvement and clinical governance**

Dr Arvind Veiraiyah has a passion for quality improvement. With an intricate knowledge of quality improvement methodology, he continually assesses not only the clinical information we provide but also the manner in which we provide it and how it is interpreted by our user group. This is a critical aspect of quality assurance and clinical governance with respect to our role in providing TOXBASE for the clinicians of the UK and beyond.

### **Medicines management**

As Chair of the NHS Lothian Area Drug & Therapeutics Committee and committee member of the Scottish Medicines Consortium, Dr Emma Morrison is a leading figure in medicines management. Since her appointment in 2020, this has provided an invaluable link between clinical toxicology and medicines governance with a direct impact locally within NHS Lothian and wider implications for national guidelines.

### **Toxicology education**

As well as providing directorial oversight for NPIS Edinburgh, Dr Euan Sandilands's main interest lies within medical education and advancing the knowledge, skills and expertise of both under- and postgraduates. With the support of the wider team at NPIS Edinburgh, he leads on the delivery of educational events, online training, e-learning, and undergraduate education.

## **The future**

2023 has marked the 60<sup>th</sup> anniversary of our unit, and also the 40<sup>th</sup> anniversary of the launch of TOXBASE.

Our services have developed and come together over the years to become the cohesive entity known as "Edinburgh Clinical Toxicology".

We offer specialist management of poisoned patients in our dedicated toxicology unit, we provide poisons information to health professionals throughout the UK as part of the National Poisons Information Service, and we undertake world leading research as part of the University of Edinburgh's Pharmacology, Toxicology & Therapeutics group.

We look forward to what the coming decades will bring for NPIS Edinburgh and the world of clinical toxicology.

# About NPIS Edinburgh

NPIS Edinburgh

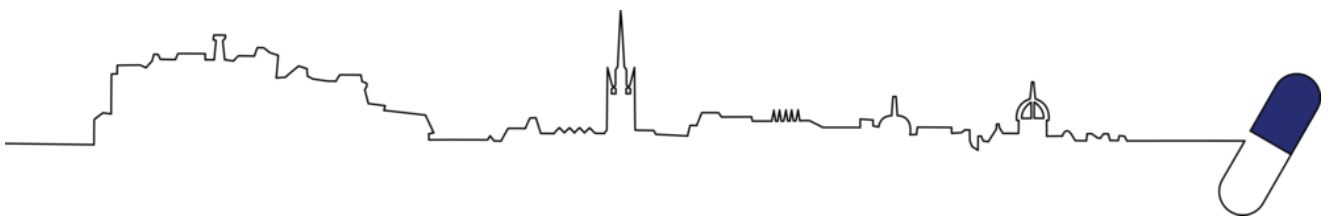
Royal Infirmary of Edinburgh

Edinburgh

EH16 4SA

[www.edinburghclinicaltoxicology.org](http://www.edinburghclinicaltoxicology.org)

[spib@nhslothian.scot.nhs.uk](mailto:spib@nhslothian.scot.nhs.uk)



Author: LD Gordon, with thanks to Alex Proudfoot, Nick Bateman, Alison Good & Euan Sandilands

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