UK Health Security Agency

NPIS

National Poisons Information Service

Report 2024 to 2025

The National Poisons Information Service is commissioned by the UK Health Security Agency on behalf of the UK health departments

Contents

Foreword

Every day in the United Kingdom hundreds of people present to front-line NHS healthcare services because of concerns about exposure to medicines, drugs or chemicals. These exposures commonly involve unintentional contact with substances found in households or gardens and, although they occur in all age groups, are particularly common in young children. Exposures also commonly occur as medicine overdoses in the context of self-harm or as a result of drug misuse, with adolescents and younger adults disproportionately involved. Occupational exposures or enquiries regarding natural toxins such as snake envenoming are less common.

The variety of different substances that may be involved in human exposures is broad, including many thousands of medicines, household and garden products, drugs of misuse, industrial chemicals and plant or animal toxins. Most NHS healthcare professionals do not have the necessary knowledge and training to manage every potential exposure, so they need clinical support to provide appropriate care. This includes a source of high-quality information about the health effects that might be expected from exposure to different drugs and chemicals, advice on appropriate patient care, and the opportunity to discuss cases with a clinical toxicology expert.

The National Poisons Information Service (NPIS) is commissioned to provide this clinical support by the UK Health Security Agency (UKHSA), which acts on behalf of the English Department of Health and Social Care (DHSC), the Scottish Government, the Welsh Government and the Northern Ireland Department of Health. The NPIS service is provided by four NHS hospitals located in Birmingham, Cardiff, Edinburgh and Newcastle, which work together to deliver a fully integrated national service.

Information and advice about thousands of drugs and chemicals are available via our internet database TOXBASE and the TOXBASE app, which are available free of charge to all NHS UK healthcare professionals, colleagues in UKHSA and the Ministry of Defence (MOD), and healthcare staff and students affiliated with UK academic institutions. For complex cases, our 24-hour telephone enquiry line is available, staffed by specialists in poisons information (SPIs) and supported by an on-call rota of consultant clinical toxicologists for advice on more serious or challenging cases. The NPIS also provides services to the Republic of Ireland, commissioned by Beaumont Hospital, Dublin, on behalf of the Irish Government.

The unborn child is particularly vulnerable to in-utero effects of drugs and chemicals, so the NPIS also incorporates the UK Teratology Information Service (UKTIS), which is the designated UK source of expert advice regarding exposure to medicinal and illicit drugs as well as other chemicals during pregnancy. Information and advice about exposures to hundreds of drugs and chemicals are published via a public facing website, while NHS health professionals can access more detailed and fully referenced teratology information via TOXBASE and obtain specialist advice by telephone during office hours.

The information and advice provided by the NPIS, including UKTIS, supports the high-quality clinical management of patients with suspected poisoning and has a role in identifying and alerting about chemical incidents. This improves the care of those at risk of serious complications, but also avoids unnecessary referrals, admissions and treatments for those who are not at risk, reducing cost and burden on healthcare resources. The NPIS also performs research and education activities, while collecting and sharing surveillance data that are important for public health and health security in the UK and internationally.

This annual report is published as a statement of the activity, accountability, and governance of the NPIS during the reporting year.

Michael Eddleston
Chair, NPIS Clinical Standards Group

Raquel Duarte-Davidson
NPIS Commissioner, Radiation, Chemicals, Climate and Environmental Hazards Directorate, UK Health Security Agency

Executive summary

Poisoning is an important clinical and public health issue, with presentations to emergency departments continuing to increase year on year. These episodes may involve unintentional exposures, medication errors, self-harm or drug misuse. Many more patients are managed in the community, including by primary care and NHS patient advice services such as NHS 111 and NHS 24.

While the majority of episodes do not produce severe clinical effects, several thousand people die each year as a result of poisoning. In England and Wales alone, poisoning related deaths have been increasing every year over the last decade, from 2,955 in 2013 to 5,448 in 2023 - in most part due to increasing numbers of unintentional overdoses with opiates and other drugs (particularly cocaine, which was involved in 1,118 deaths, 30% more than in 2022, and 10 times higher than in 2011)(1).

The National Poisons Information Service (NPIS) is commissioned to provide 24-hour information and advice to NHS healthcare professionals across the UK in order to support the management of patients with suspected poisoning. This information is provided primarily via TOXBASE, an online database containing information on more than 21,000 potential poisons and toxins. TOXBASE is also available as an app which users can access both on and offline.

A 24-hour telephone enquiry service, staffed by specialists in poisons information and supported by consultant clinical toxicologists, is also available for more complex cases. The availability of this expertise avoids unnecessary hospital referrals and admissions for patients at low risk of harm, while improving the quality of treatment and shortening hospital stay for those with clinical toxicity. The UK Teratology Information Service (UKTIS) provides information and advice nationally about exposures to drugs and chemicals during pregnancy.

Activity

During 2024 to 2025 there were:

NPIS

- 3,233,268 TOXBASE pages accessed by 56,925 registered individual users, as well as by the staff of 4,338 different registered healthcare departments
- 44,717 patient-related telephone enquiries answered, of which 2,487 were referred to an NPIS consultant clinical toxicologist
- 4,041 TOXBASE entries written or updated
- 38,780 safety data sheets submitted to the NPIS Product Data Centre, bringing the total to nearly 442,000

UKTIS

- over 2 million hits on publicly available information about drugs in pregnancy provided by the ‘Bumps’ (Best Use of Medicines in Pregnancy) website
- almost 42,000 accesses to summaries and 18,300 accesses to systematic evidence reviews on the UKTIS website and TOXBASE
- 735 telephone enquiries about specific patients handled by the UKTIS telephone advice service

Quality

The NPIS has clear clinical governance procedures. Quality assurance exercises continue to demonstrate that all the services provided have very high user satisfaction. The proportion of respondents scoring services as very good or excellent was 97.0% for the NPIS telephone poisons information service, 87.5% for TOXBASE online, and 100% for the UKTIS telephone service.

Surveillance

The NPIS continues to collect clinical information on important causes of poisoning from across the UK. This helps us improve our clinical advice for health professionals and provides valuable information for public health surveillance of poisoning. Examples of work carried out during 2024 to 2025 include work on poisoning with drugs of misuse, pesticides, dinitrophenol, glycerol in slushy drinks, and sodium nitrite.

Introduction

Poisoning is an important clinical and public health issue in the UK, accounting for hundreds of thousands of hospital presentations per year, and many more consultations with primary care and NHS patient advice services such as NHS 111 and NHS 24.

Poisoning can be categorised according to type of exposure, substance involved or circumstance of exposure. Inappropriate exposure to medicines and other drugs is a common source of poisoning and might involve use by someone who was not prescribed the medicine or involve unintentional or intentional ingestion of excessive doses (an ‘overdose’). Recreational drug misuse is a major public health problem in the UK and may involve licensed medicines or non-medicinal substances. Finally, people may be exposed to substances that are not intended for human use (for example household cleaning products), environmental toxins (for example, carbon monoxide), or natural toxins (for example mushrooms or snake venom).

The majority of episodes of poisoning in the adult UK population are caused by drug overdose in the context of intentional self-harm, although drug misuse is also an important contributor to mortality. In young children, unintentional exposures are common, particularly involving substances found within the household.

Many thousands of substances may be involved in these cases, making it very difficult for NHS staff to be aware of the most recent evidence on risk assessment, diagnosis and clinical management. The great majority of UK hospitals do not have specialist clinical toxicology services, therefore 24-hour access to high-quality information and clinical advice concerning people exposed to drugs and chemicals is essential for their safe and effective management.

The NPIS is a network of dedicated poisons units, commissioned by the UKHSA on behalf of the Department of Health and Social Care (DHSC) and the health departments in devolved governments, to provide poisons information to healthcare professionals. The service also receives some contract income for providing services in other countries, as well as research income for specific projects.

The role of the NPIS within the NHS is to support the appropriate triage, referral, assessment and treatment of poisoned patients. This is achieved by the provision of advice to emergency departments, GP practices and NHS patient advice services to aid the decision-making process as to whether patients require medical assessment or hospital admission or can be safely managed at home. Information and advice are provided in the first instance via

TOXBASE®†, an online poisons information database, and via a 24-hour telephone enquiry line for provision of specific advice on individual cases. The information on TOXBASE is updated regularly using published literature, experience from NPIS telephone enquiry data, and direct clinical experience of NPIS-linked clinical departments.

Drug and chemical exposures during pregnancy can cause particular concern because these may affect the fetus as well as the mother. UKTIS, hosted by Newcastle University Hospital Trust, is a service providing advice to healthcare professionals and patients about potential effects on the unborn child. As well as providing information and advice, UKTIS collects new information on the potential adverse fetal effects of exposure to drugs and chemicals during pregnancy, including the therapeutic use of medicines.

Providing a high-quality responsive service to NHS users, including maintaining our essential and highly used online platforms, is the NPIS's key priority.

† TOXBASE® is a registered trademark of the UK National Poisons Information Service

National Poisons Information Service

The UK NPIS provides a 24-hour, 365 days a year, consultant-supported clinical toxicology advice service to assist healthcare workers in their diagnosis and management of poisoned patients, including those exposed in chemical incidents.

The 4 NPIS units are based within Cardiff and Vale University Health Board, Newcastle Hospitals University Trust, NHS Lothian, and Sandwell and West Birmingham NHS Trust. The units in Birmingham, Cardiff and Newcastle participate in a 24-hour national telephone enquiry rota. The Edinburgh unit (within NHS Lothian) receives telephone enquiries only during working hours; its focus is on the editing and production of TOXBASE.

The UK NPIS also takes enquiries on chemical exposures through a designated chemical hotline for UKHSA, operates the UK NPIS early warning alerting system and provides clinical advice, ensuring efficient use of resources. The units liaise with the UKHSA Radiation, Chemicals, Climate and Environmental Hazards Directorate (RCCE), Public Health Scotland (PHS) and Public Health Wales (PHW) regarding real-time management of chemical incidents.

The service has consultant clinical toxicologist support available to advise on the management of more complex presentations and patients who are seriously unwell. This is provided by NHS consultant staff in the 4 NPIS units and also colleagues from one other NHS Trust (Guy’s and St Thomas’ NHS Foundation Trust). These NPIS consultants also provide locally funded specialist services in clinical toxicology in their own hospitals. The availability of this dispersed expertise is important for resilience and health security in the UK. Due to the NPIS receiving many enquiries about children, UKHSA has commissioned additional support from a consultant specialising in paediatrics.

The primary source of information provided by the NPIS is its online database, TOXBASE, which is available free of charge to all UK NHS healthcare professionals, including those working in hospital departments, primary care practices and NHS patient advice services. TOXBASE is the National Institute for Health and Care Excellence (NICE) mandated, and DHSC recommended, initial source of poisons information for healthcare professionals in the UK. Ensuring that the information on TOXBASE is current and evidence-based is of paramount importance for patient safety and to maintain the confidence of healthcare professionals as end-users of the service. It is also essential that the great majority of enquiries are made via TOXBASE as NPIS telephone services do not have the capacity to absorb the substantial increase in telephone enquiries that would result from TOXBASE information becoming unavailable or outdated. Uninterrupted access to TOXBASE is therefore crucial to the service and the UK NPIS maintains extensive contingency plans to ensure that it remains operational at all times.

The TOXBASE app is also available without charge to UK NHS, UKHSA, MOD healthcare professionals and healthcare staff and students affiliated with UK academic institutions. The app has the advantage of being available on personal mobile devices both on and offline offering another level of resilience to ensure information is available at all times. TOXlearning, an e-learning resource, is also available to the above groups offering learning modules designed to help users learn how to use TOXBASE safely and effectively.

While TOXBASE provides a wealth of information, it cannot provide all the answers for individual patients or complex cases. Healthcare professionals are therefore encouraged to discuss such cases with the NPIS. To address this requirement, the NPIS provides a 24-hour telephone information service for healthcare professionals using a single national telephone number (0344 892 0111).

Telephone enquiries are managed by specialists in poisons information (SPIs) who may have a scientific, nursing or pharmacy background and are qualified to at least degree level, with the majority also holding postgraduate qualifications in toxicology. In determining the severity of each clinical case, SPIs use the World Health Organization (WHO)'s Poisoning Severity Score (PSS), developed by the International Programme on Chemical Safety, the European Commission and the European Association of Poison Centres and Clinical Toxicologists (EAPCCT)[(2)]. Enquiries about complex or severe cases, or where a review by an NPIS consultant might allow a patient to either not be admitted to hospital or be discharged home earlier, are referred to NPIS consultants. ***Figure 1*** illustrates how poisons enquiries are answered by the NPIS.

If calls are received which have population, political or media implications, the NPIS works with UKHSA RCCE, PHS or PHW as appropriate.

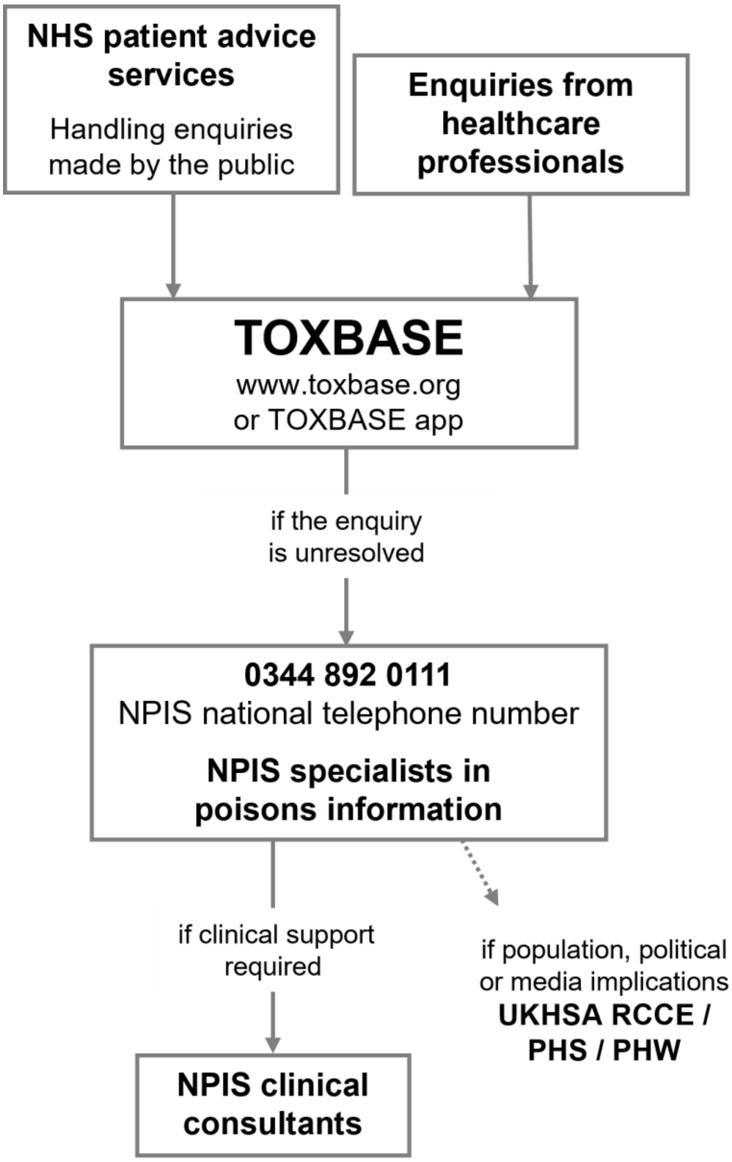
Audio recordings of all NPIS telephone enquiries are retained for governance purposes and clinical data are logged within a specially designed national database, the UK Poisons Information Database (UKPID). Data are uploaded to a central server, allowing access by other NPIS units that may be involved in the subsequent management of any particular patient. Information can also be used to look at the patterns of enquiries received. Details of all telephone enquiries made since 2007 are held within UKPID, making it an invaluable resource for studying the patterns of poisoning in the UK.

In Northern Ireland, the Regional Medicines and Poison Information Service (RMPIS) in Belfast provides a poisons information service during working hours, with NPIS Edinburgh providing clinical toxicologist cover. Out-of-hours enquiries from Northern Ireland are automatically routed to the NPIS 24-hour telephone enquiry line.

The NPIS is also contracted to provide poisons information for users in the Republic of Ireland through the provision of TOXBASE to major hospital emergency departments and to the National Poisons Information Centre (NPIC) in Dublin. The NPIS also provides direct out-of-hours telephone support to health professionals and the general public in Ireland.

Information on the potential toxicity to the unborn child from maternal exposure to drugs and chemicals in pregnancy is provided by UKTIS. Information is provided for healthcare professionals by telephone and via TOXBASE, but summary advice is also openly available on the UKTIS website with public advice leaflets available on the 'Bumps' website (www.medicinesinpregnancy.org).

Figure 1. How poisons enquiries are answered by the NPIS



The NPIS maintains a consistent approach, irrespective of the NPIS unit answering an enquiry, through a formal UK-wide strategic framework for training and governance, agreeing clinical advice and supporting the management of the service. Operating procedures are updated regularly and available to NPIS staff on a closed area of TOXBASE.

Commissioning issues are dealt with by the UKHSA NPIS Commissioning Group, while clinical issues, including clinical governance, are discussed by the NPIS Clinical Standards Group. Both groups meet at least quarterly and are attended by a representative of the commissioner, and a senior clinician and manager from each of the 4 NPIS units. Invitations are also extended to representatives of the NPIC in Dublin. Other senior NPIS staff are invited to attend as observers on a rotational basis.

Regular teleconferences are held by the TOXBASE Editing Group to ensure consistent and nationally agreed database content. The NPIC in Dublin and the Northern Ireland RMPIS also contribute to TOXBASE content development and review. The UKPID User Group meets regularly to ensure the database remains an effective and reliable record of clinical enquiries to the NPIS.

To ensure a consistent and evidence-based approach to the clinical management of poisoning, all NPIS clinical and information staff are invited to attend continuing professional development (CPD) meetings. These educational meetings provide an opportunity for clinicians and SPIs to present updates on current topics, research and audit projects, and to discuss complex clinical cases and governance issues. These events occur several times a year, both virtually and face-to-face, and hosting is rotated around the 4 NPIS units. Clinicians and SPIs are encouraged to attend and present at international toxicology conferences such as the annual congress of the EAPCCT.

Cost benefit of NPIS

The NPIS provides timely reassurance and expertise in response to both routine and complex cases of poisonings. It is a well-used frontline clinical service and an intrinsic component of the UK health security arrangements, fulfilling national and international requirements. The benefits provided by the service include avoidance of unnecessary hospital referrals and admissions, reduced lengths of stay, and improvements in the quality of treatment for those patients admitted. The NPIS has previously published research demonstrating its cost-effectiveness through reducing referrals to emergency departments as a result of its advice. [3]

NPIS activities

Overall service profile

The overall activity for NPIS services, both within the UK and overseas, in 2024 to 2025 is summarised below:

- 3,233,268 TOXBASE pages accessed
- 4,338 healthcare departments registered to access TOXBASE online
- 56,925 healthcare professionals registered with an individual account giving access to both TOXBASE online and the TOXBASE app
- 4,041 TOXBASE entries written or updated
- 44,717 patient-related telephone enquiries answered
- 2,487 patient-related telephone enquiries referred to a consultant toxicologist
- 1,204 information only telephone enquiries answered

A revision of user management processes, implemented to remove accounts that were no longer active, resulted in a 51.2% decrease in departments registered for TOXBASE online. At the same time, there was an 89.5% increase in individual accounts, which now give access to both TOXBASE online and the TOXBASE app.

The TOXBASE content management system (CMS) was migrated to a new software provider on 8 May 2024.

Combined TOXBASE online and app use remained relatively constant: page views decreased by a marginal 0.6% in 2024 to 2025, compared to 2023 to 2024.

A 7.1% increase in patient telephone enquiries was seen, attributable to an increased number of calls from NHS patient advice services, prisons and ambulance service users.

These changes are discussed in the relevant sections below.

UK service profile

Figure 2 shows the number of telephone enquiries and resulting consultant referrals since the national service began in 2007. Telephone enquiries increased by 7.1% and consultant referrals increased by 4.1% in 2024 to 2025 compared to 2023 to 2024. In 2024 to 2025 NHS patient advice services (NHS 111 and NHS 24) made 20,940 enquiries to the NPIS telephone enquiry helpline (***Table 1***), an increase of 16.5% compared to 2023 to 2024, contributing to the 7.1% increase seen in patient-related enquiry volumes overall.

NPIS use of TOXBASE, as well as departmental use linked to educational activity and temporary use, has been excluded from further analysis. Overseas use of TOXBASE is also excluded but is described later in the report. In 2024 to 2025, UK users made 2,344,420 TOXBASE online accesses and 222,353 accesses via the TOXBASE app. As in previous years the main users of TOXBASE online are hospital staff (56.4%), followed by NHS patient advice services (23.4%) and then ambulance users (13.2%). The main users of the TOXBASE app remain ambulance users (63.8%), followed by hospital staff (26.2%) and then primary care (3.0%). The TOXBASE CMS was migrated to a new software provider on 8 May 2024. A substantial revision of user management processes and a major rebuild of the app means that users with individual accounts can now access both TOXBASE online and the TOXBASE app using a single account. ***Figure 3*** shows the developing profile of TOXBASE usage by departmental accounts (which can access only TOXBASE online) and individual accounts accessing via both TOXBASE online and via the app in 2024 to 2025.

Figure 2. Number of telephone enquiries and consultant referrals between 2006 to 2007 and 2024 to 2025

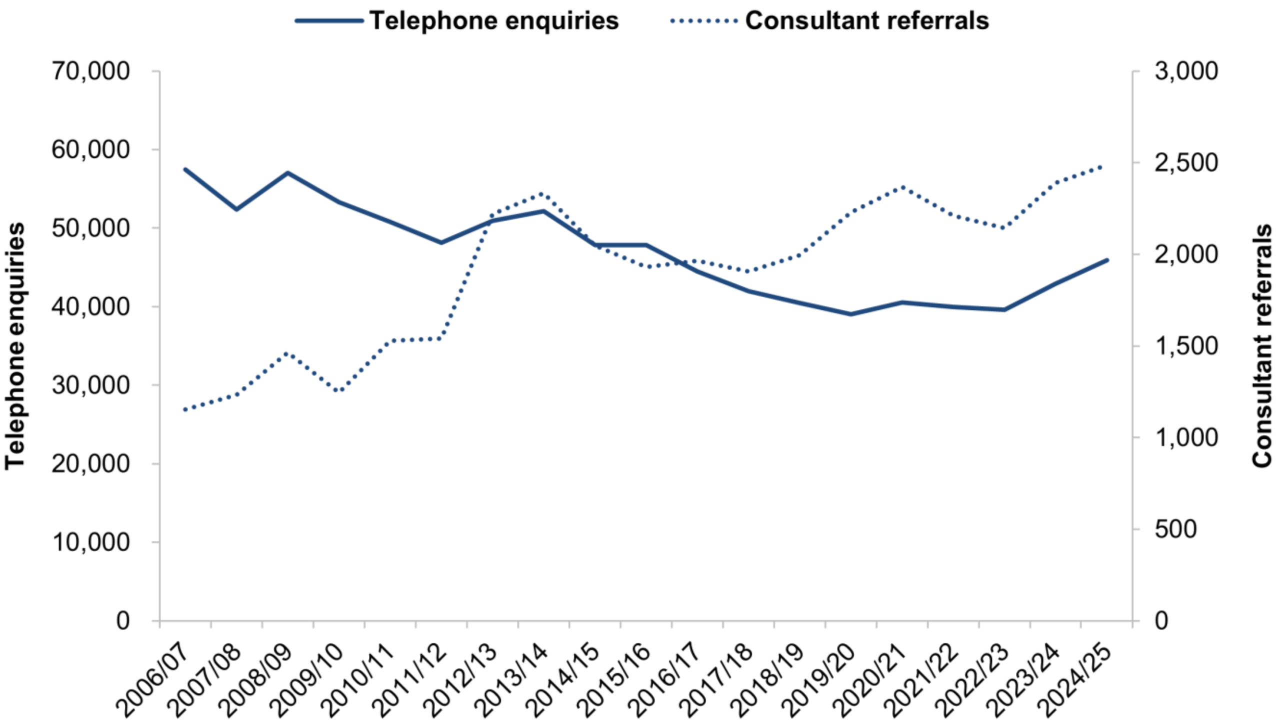
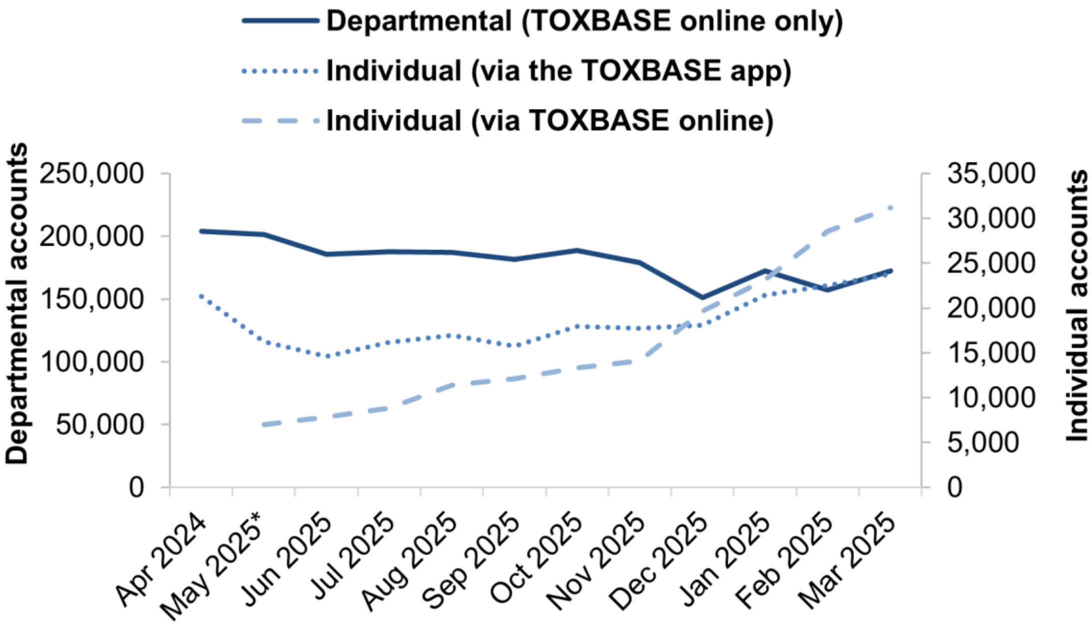


Figure 3. TOXBASE page accesses by account type and platform (UK only)



* Individual accounts were introduced from 8 May 2024 onwards

Table 1. Use of NPIS services by workplace type as of 31 March 2025 (UK only)

Workplace type	Number of TOXBASE online page accesses (% of total)	Number of TOXBASE app page accesses (% of total)
Hospital	1,322,485 (56.4)	58,235 (26.2)
NHS patient advice services	547,829 (23.4)	811 (0.4)
Ambulance	309,834 (13.2)	141,929 (63.8)
Primary care	112,222 (4.8)	6,707 (3.0)
Other	52,050 (2.2)	14,671 (6.6)

Workplace type	Number of patient related telephone enquiries (% of total)
Hospital	10,403 (23.3)
NHS patient advice services	20,940 (46.8)
Ambulance	5,582 (12.5)
Primary care	4,623 (10.3)
Other	3,169 (7.1)

The top 10 most common pages accessed on TOXBASE are shown in ***Table 2***. Via TOXBASE online, only paracetamol page accesses increased in 2024 to 2025, with a 3.3% increase seen compared to 2023 to 2024. A decrease was seen from 2023 to 2024 in all commonly viewed pages via the app, with more than a 20% decrease seen for quetiapine (-20.6%), sertraline (-22.9%), diazepam (-23.3%) and ibuprofen (-23.4%).

The top 10 most common agents involved in telephone enquiries are also listed in ***Table 2***. There was an increase in enquiry volume for all of these agents compared to the previous year. Of note, multivitamin enquiries increased by 25.7% compared to last year. This correlates with a 30.3% increase in multivitamin enquiries received from NHS patient advice services in 2024 to 2025.

Table 2. Most commonly accessed product pages on TOXBASE online and the TOXBASE app, and most common agents involved in telephone enquiries in 2024 to 2025 (UK only)

Rank	TOXBASE online	Number of page views
1	Paracetamol*	183,464
2	Ibuprofen	48,023
3	Sertraline	31,627
4	Pregabalin	26,393
5	Codeine*	24,933
6	Propranolol	22,599
7	Diazepam	21,983
8	Quetiapine	20,819
9	Mirtazapine	19,218
10	Amitriptyline	19,470

Rank	TOXBASE app	Number of accesses
1	Paracetamol*	19,226
2	Sertraline	4,374
3	Amitriptyline	4,157
4	Ibuprofen	4,051
5	Propranolol	3,546
6	Pregabalin	3,472
7	Diazepam	3,324
8	Codeine*	3,237
9	Mirtazapine	3,200
10	Quetiapine	3,169

* does not include product accesses for combination products or those listed under proprietary names, for example co-codamol or Zapain

Table 2 continued

Rank	Telephone enquiries	Number of calls
1	Paracetamol	8,423
2	Codeine	2,550
3	Ibuprofen	3,525
4	Multivitamins	1,064
5	Naproxen	1,062
6	Sertraline	951
7	Mirtazapine	873
8	Aspirin	859
9	Quetiapine	761
10	Propranolol	688

Services provided by the UK NPIS include guidance on the use and correct administration of antidotes. ***Table 3*** lists the most accessed antidote pages on TOXBASE online and the TOXBASE app and the most common antidotes recommended during telephone enquiries.

In 2024 to 2025 there were 47,946 TOXBASE online accesses to antidote pages. By far the most commonly accessed page was the acetylcysteine antidote page across both platforms.

Table 3. Most commonly accessed antidote pages on TOXBASE online and the TOXBASE app, and most commonly recommended antidotes during telephone enquiries in 2024 to 2025 (UK only)

Rank	TOXBASE online	Number of page views
1	Acetylcysteine	33,352
2	Toxic alcohols antidotes (fomepizole 2,102; ethanol 511)	2,613
3	Naloxone	1,721
4	Flumazenil	1,161
5	Digoxin specific antibody fragments	1,541
6	Heavy metal antidotes (DFO 572; DMSA 139; sodium calcium edetate 69; DMPS 52)	832
7	Procyclidine	612
8	Desferrioxamine	573
9	Antivenom (adder)	518
10	Glucagon	504

Table 3 continued

Rank	TOXBASE app	Number of page accesses
1	Acetylcysteine	1,444
2	Toxic alcohols antidotes (fomepizole 196; ethanol 111)	307
3	Naloxone	261
4	Atropine	209
5	Flumazenil	178
6	Glucagon	107
7	Methylthioninium chloride	97
8	Heavy metal antidotes (DFO 40; DMSA 32; DMPS 8; sodium calcium edetate 7)	87
9	Digoxin specific antibody fragments	84
10	Procyclidine	61

Rank	Telephone enquiries	Number of calls
1	Acetylcysteine	1,067
2	Toxic alcohols (fomepizole 195; ethanol 11)	206
3	Sodium bicarbonate	158
4	High dose insulin	146
5	Naloxone	82
6	Heavy metal antidotes (DMSA 30; DFO 17, Sodium Calcium Edetate 17; DMPS 3)	67
7	Methylthioninium chloride	50
8	Glucagon	46
9	Antivenom (adder)	37
10	Digoxin specific antibody fragments	37

TOXBASE online in the UK

The TOXBASE CMS was migrated to a new software provider on 8 May 2024. The upgrade involved an update and overhaul of the underlying structure and functionality of the CMS, a substantial revision of user management processes, and a major rebuild of the TOXBASE app.

These significant infrastructure modifications have led to improvements in ease of access for users and improved data protection, information governance and IT security for the service. A gradual shift from use of departmental accounts to individual accounts is anticipated over the coming years, as an individual account now offers access to all platforms; the number of registered users should be more representative of the number of healthcare professionals using TOXBASE.

The migration has additionally led to improved reliability, with no downtime or outages seen since 8 May 2024.

The update has streamlined data analysis; departmental session data will no longer be reported on.

As of 31 March 2025, there were 4,338 healthcare departments registered to use TOXBASE online at www.toxbase.org in the UK (-51.2% on 31 March 2024). This decrease was anticipated as the number of individual accounts rises; additionally, the revision of user management processes removed inactive departmental accounts.

The use of individual accounts to access TOXBASE online has risen steadily since their implementation on 8 May 2024; during March 2025 they accounted for 13.4% of all TOXBASE online page accesses.

In 2024 to 2025 there were over 2.3 million individual page accesses via TOXBASE online in the UK. As of 31 March 2025, there were:

- 21,056 currently active product and plant pages, of which 13,034 different pages were viewed a total of 1,420,947 times during 2024 to 2025
- 105 currently active antidote pages, of which 99 different pages were viewed a total of 47,946 times
- 3,164 currently active further information pages (for example: common features and management, toxic doses, help interpreting ECGs) of which 1,351 different information pages were viewed a total of 875,527 times
- 4,041 pages written or updated; this was a decrease of 20.4% on 2023 to 2024 where additional worked involved in the migration to the new CMS was undertaken. The reduction seen in 2024 to 2025 returns editing activity to more typical levels.

The dosage calculator on TOXBASE is frequently utilised by UK users (199,112; 22.7% of all information page accesses). Information pages on toxic doses are also frequently viewed (183,711). The most viewed toxic dose information pages were: NSAIDs (29,822), opioids (26,697) and SSRIs (18,658).

TOXBASE app for iOS and Android mobile devices

The TOXBASE app offers convenient mobile access to up to date poisons advice at the point of care. It is synchronised with online TOXBASE content and provides offline access when no internet connection is available, making it a particularly invaluable resource for emergency responders. The app is available from the iOS app store and Google Play.

Figure 4 shows examples of screenshots from the app (the isocyanates entry on an Android device, and the *Atropa belladonna* entry on an iPad).

The design of the app is regularly updated to improve usability, and to ensure compatibility with the ever-changing market of mobile devices. The move in May 2024 to a new software provider facilitated changes to the way users access the database. For operational reasons the paid version of the app was retired, however the app now provides full and free TOXBASE access to NHS, UKHSA, MOD and healthcare staff and students affiliated with UK academic institutions on validation of professional email addresses. These individual users are, for the first time, now able to self-register for a single account providing access to both the TOXBASE website and the TOXBASE app for Android and iOS, as well as the TOXlearning e-learning resource.

NPIS clinicians and SPIs also have access to the app to support their NPIS duties and to increase service resilience in case of interruption to internet access.

The number of active individual accounts changes daily as accounts are created, lapse and are renewed; on 31 March 2025 there were 56,925 active individual accounts, an 89.6% increase on the numbers of active app-only accounts at the same date in 2024.

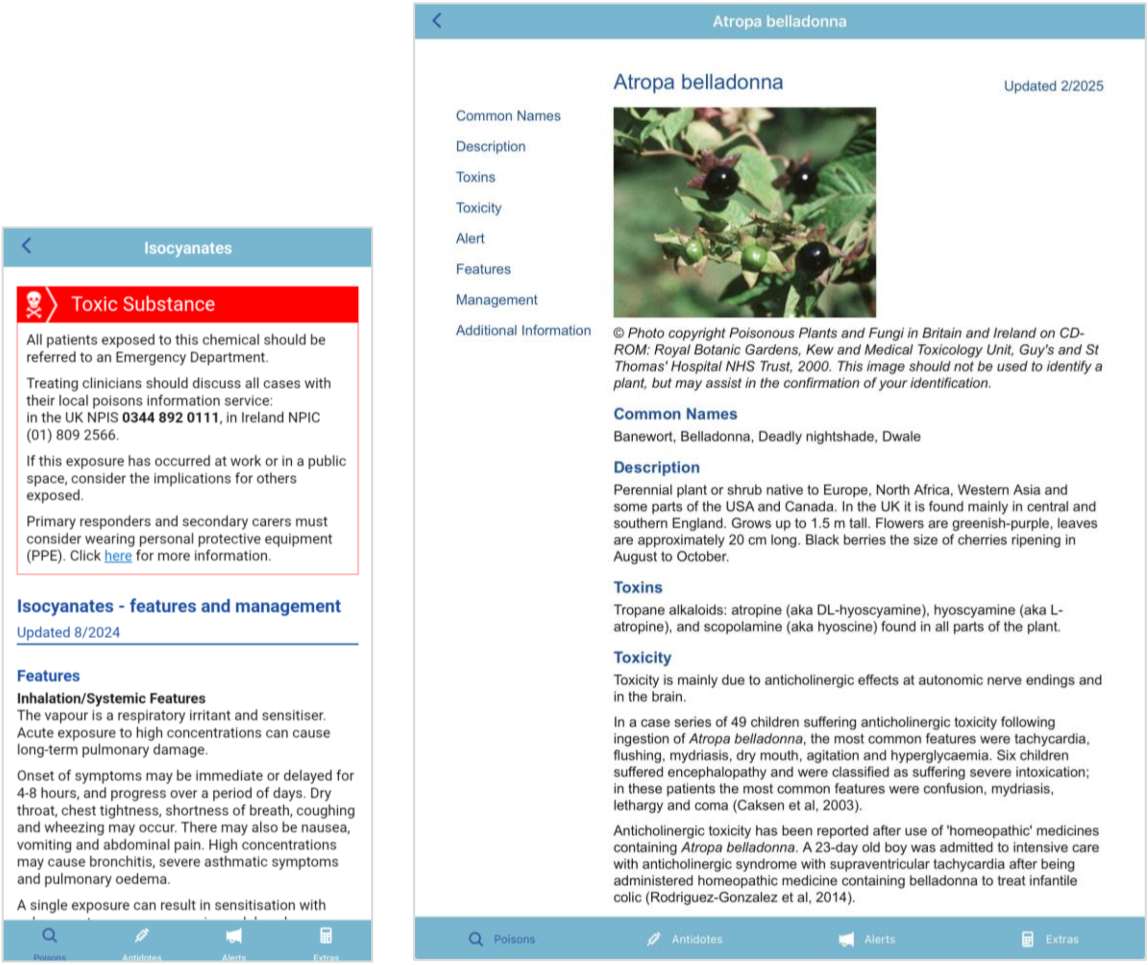
Despite the large increase in user numbers, activity seen on the app has fallen. Individual users (excluding NPIS users) accessed 258,695 pages including 186,943 product entries and 71,752 antidote and information pages, a decrease of 17.3% from the previous reporting year. A large proportion of this decrease may be explained by the retiral of the paid version of the app. Additionally, those with individual accounts can now choose to use their logins on the TOXBASE app or on TOXBASE online (where previously only the app was available to them). During June 2024, shortly after the introduction of individual accounts, 74.2% of users were accessing TOXBASE via the app and 25.8% via TOXBASE online; during March 2025 the split was 44.6% via the app and 55.4% via TOXBASE online suggesting a preference for using TOXBASE online. This preference may also have contributed to the decrease in app activity.

App accesses accounted for 8.1% of all activity on TOXBASE during 2024 to 2025.

The most frequent UK healthcare workplace types of users accessing via the app are shown in ***Table 1*** above; ambulance personnel were the most common.

Tables 2 and 3 above show the top UK product and antidote pages accessed on the app.

Figure 4. TOXBASE app screenshots



TOXBASE overseas

TOXBASE continues to be a well-regarded source of poisons information internationally and its international use has grown steadily. As of 31 March 2025, there were 202 overseas departments registered for TOXBASE online, representing 57 different countries.

The UK NPIS remains a front-line clinical NHS service, dedicated to improving care for poisoned patients. It continues to offer TOXBASE free of charge or at a reduced rate to many poison centres within low- and middle-income countries, helping to improve resilience and build capacity in poison centres and hospitals where needed most.

Paid subscriptions to TOXBASE online from upper middle- and high-income countries are available, representing 39.6% of our overseas users. Funding from subscription fees is used towards ongoing development and hosting costs. The TOXBASE app is no longer available to individuals outside of the UK but remains available to staff within these subscribing departments.

In 2024 to 2025, TOXBASE online users in 57 different countries made 445,752 product and information page accesses (+2.5% compared with 2023 to 2024). Overseas users made 314,342 accesses to 9,671 different product pages online, an increase of 4.5% and 3.0%, respectively, compared with 2023 to 2024. The majority (271,622; 86.4%) of all overseas product accesses were made by poison information centres.

On the TOXBASE app, individuals within overseas subscribing units made 26,384 product page accesses to 2,868 different product pages.

As is seen in the UK, paracetamol was the most accessed product by overseas users on both TOXBASE online and the app; other commonly accessed products are a mixture of analgesics, antidepressants, anxiolytics and the antipsychotic quetiapine. The specific antidepressants and anxiolytics commonly accessed by overseas users differs to those in the UK and include clonazepam, alprazolam and escitalopram. Overseas app users are more likely to seek advice regarding anticonvulsants (carbamazepine) and antihistamines (cetirizine) (***Table 4***).

Table 4. Top product pages accessed by overseas users via TOXBASE online and the TOXBASE app in 2024 to 2025

Rank	Product page	Number of TOXBASE online page views
1	Paracetamol	9,877
2	Clonazepam	6,955
3	Sertraline	5,675
4	Quetiapine	4,717
5	Amitriptyline	4,080
6	Escitalopram	3,388
7	Ibuprofen	3,384
8	Risperidone	3,306
9	Fluoxetine	3,232
10	Alprazolam	3,168

Rank	Product page	Number of TOXBASE app page views
1	Paracetamol	474
2	Ibuprofen	400
3	Diclofenac	295
4	Quetiapine	291
5	Amlodipine	287
6	Aspirin	261
7	Metformin	258
8	Carbamazepine	249
9	Azithromycin	245
10	Cetirizine	235

Overseas TOXBASE app users made 26,384 product page accesses to 2,870 different product pages. This was 28.1% fewer accesses than the previous year - after the paid version of the TOXBASE app was retired in May 2024 the remainder of each affected user's subscription was honoured, be that 1 day or 365 days. As most paid app subscribers were located overseas the expected drop in their usage over the reporting year is reflected in the lower number of overseas app accesses. The TOXBASE app does, however, remain available to individuals based within overseas units who subscribe to TOXBASE online.

NPIS national telephone enquiry helpline

TOXBASE is the NICE mandated and DHSC recommended initial source of poisons information for healthcare professionals in the UK. It is supported by the NPIS national telephone enquiry helpline, available for more complicated enquiries due to ingestion of multiple agents, patient co-morbidities, where the patient is severely unwell, or for less experienced TOXBASE users. The enquiry line provides 24-hour access to advice from SPIs and, when required, a network of UK consultant toxicologists.

Of the 49,937 telephone calls answered by the service, 44,717 were enquiries related to patients. ***Figure 5*** shows the age ranges of the patients involved; patients aged 5 years or less were most common, representing 20.4% (9,136) of all poisoned patients. As in previous years poisonings were predominantly unintentional (16,695; 37.3%; ***Table 5***), by ingestion (62,353; 88.3%; ***Table 6***) and occurred at home (38,074; 85.2%; ***Table 7***).

Figure 5. Age ranges of patients reported to NPIS during telephone enquiries in 2024 to 2025

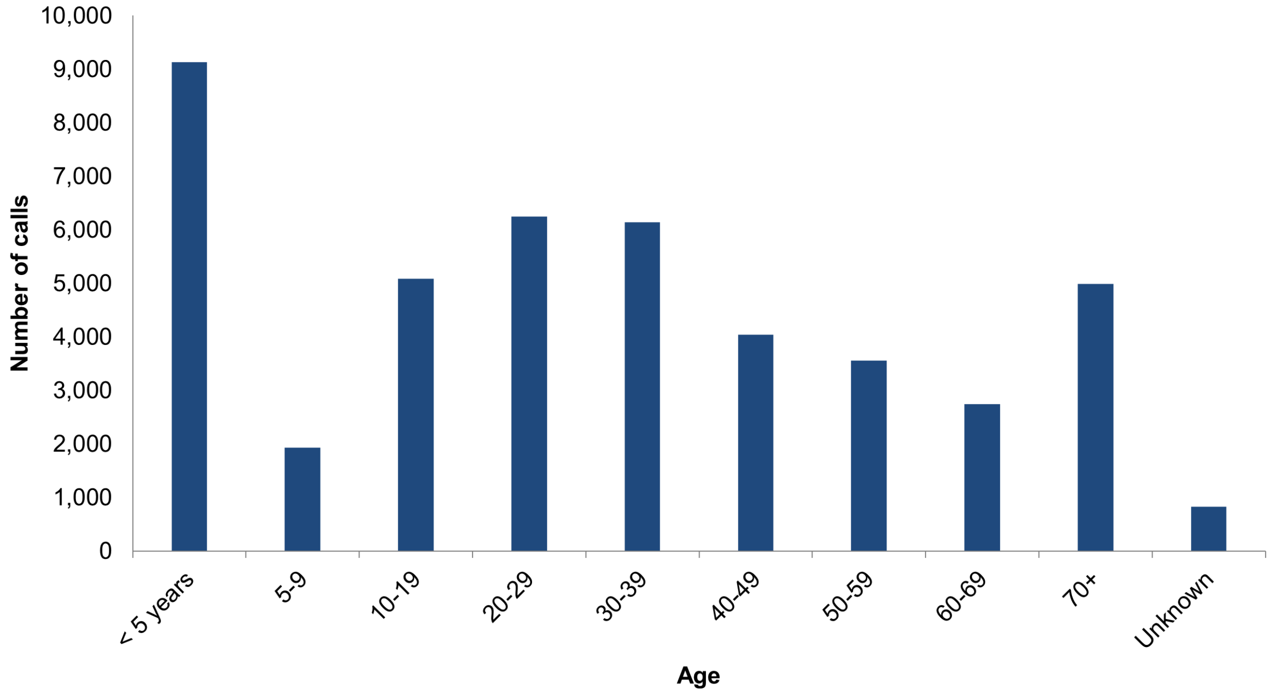


Table 5. Circumstances of poisonings reported to the NPIS during telephone enquiries in 2024 to 2025

Circumstance	Number (% of total)
Unintentional	16,695 (37.3)
Intentional self-harm	9,521 (21.3)
Therapeutic error	7,621 (17.0)
Intentional therapeutic excess	4,199 (9.4)
Medical error	1,658 (3.7)
Intentional	1,191 (2.7)
Unknown	1,109 (2.5)
Recreational misuse	995 (2.2)
Other	922 (2.1)
Adverse reaction	571 (1.3)
Malicious potential	127 (0.3)
General information	108 (0.2)

Table 6. Exposure route of poisonings reported to the NPIS during telephone enquiries in 2024 to 2025

Route of exposure	Number* (% of total)
Ingestion	62,353 (88.3)
Inhalation	3,045 (4.3)
Skin contact	1,737 (2.5)
Eye contact	1,009 (1.4)
Other	840 (1.2)
Subcutaneous	535 (0.8)
Insufflation	314 (0.4)
Intravenous	275 (0.4)
Intramuscular	220 (0.3)
Bite or sting	193 (0.2)
Needlestick	92 (0.1)

* the number of exposure routes exceeds the total number of enquiries because patients may be exposed via multiple routes/multiple agents during one episode of poisoning, for example ingestion and skin contact, or inhalation and eye contact

Table 7. Location of poisonings reported to the NPIS during telephone enquiries in 2024 to 2025

Location	Number (% of total)
Home/domestic	38,074 (85.2)
Prison	1,819 (4.1)
Nursing/care home	1,187 (2.7)
Work	981 (2.2)
Hospital	622 (1.4)
Public area	683 (1.5)
School	555 (1.3)
Unknown	456 (1.0)
Other	237 (0.5)
GP surgery	42 (0.1)
Agricultural workplace	22 (0.0)

For the second year running there was an increase in telephone enquiries, with SPIs responding to 7.1% more patient related enquiries in this reporting year, following an 8.2% increase seen the previous year. Previously, isolated increases in enquiry volumes were in direct response to distinct events, for example changing the paracetamol guidance on TOXBASE (2012 to 2013) or increased demands during COVID-19 pandemic (2020 to 2021). However, in both of the last 2 reporting years increases have been more general, with increased enquiries received from prison, ambulance and telephone triage services, seeing average increases of 25.4%, 17.2% and 13.3%, respectively.

Of the 44,717 patient related telephone enquiries, a poisoning severity score(2) was recorded in 43,959 (98.3%).

The severity of symptoms recorded in these enquiries ranged from none to fatal:

- 27,092 (61.6%) no symptoms
- 13,000 (30.0%) minor symptoms
- 2,027 (4.6%) moderate symptoms
- 1,661 (3.7%) severe symptoms
- 48 (0.1%) fatalities

There were 20,940 calls from NHS patient advice services; most of these enquiries related to patients with no or minor symptoms (20,592; 98.3%). Only 6,502 (31.1%) enquiries were then referred to emergency departments, meaning that the UK NPIS, via its telephone enquiry helpline, prevented up to 14,438 (68.9%) referrals to UK emergency departments in 2024 to 2025. Enquiries from NHS patient advice services commonly involved analgesics (paracetamol, ibuprofen, naproxen and co-codamol), multivitamins and toy/novelty ingestions.

TOXBASE and the NPIS telephone enquiry helpline continue to be invaluable clinical resources for healthcare professionals working across a range of healthcare facilities in the UK, providing urgent advice regarding the management of poisoned patients at any time of the day or night. This ensures that less severe, unintentional exposures are managed effectively out of hospital and more severe, commonly intentional self-harm exposures are managed efficiently in hospital.

Telephone enquiry handling

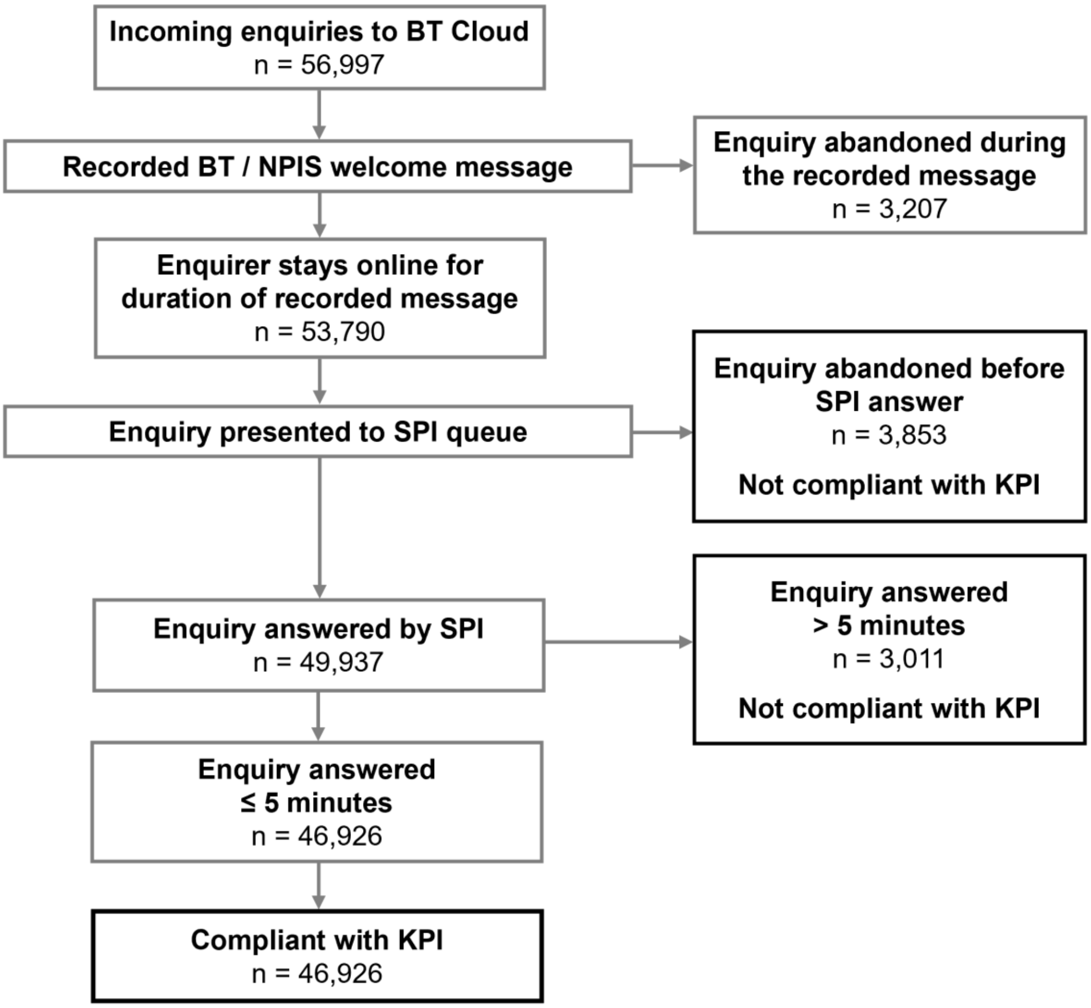
The NPIS uses a bespoke BT Cloud Contact™ system to deliver telephone enquiries received from healthcare professionals across the UK via a single number (0344 892 0111) to SPIs in the 4 units. This system has several benefits including conference call functionality and a comprehensive reporting tool. The latter enables close monitoring of workload, wait times, dropped (abandoned by caller) calls and call duration at national, individual unit and individual scientist level. It also allows assessment of compliance with the UKHSA stipulated key performance indicator (KPI) that 95% of telephone requests will be answered within 5 minutes of the call being made. Not all telephone enquiries received are recorded onto the enquiry logging system (UKPID); examples of these enquiries include line tests, repeat calls made by healthcare professionals with additional case specific details and healthcare professionals contacting the NPIS to provide follow-up data on previously discussed cases.

Telephone enquiry data were assessed retrospectively for the period 1 April 2024 to 31 March 2025 using the BT Cloud data reporting tool and analysed using Microsoft Excel. ***Figure 6*** summarises the flow of telephone enquiries through the BT platform.

The median wait time for a call presented to the SPI queue to be answered (or abandoned) was 36 seconds (IQR, 31-59 seconds). Approximately 1% (665) of enquirers waited longer than 10 minutes for their call to be answered, due to intermittent heavy enquiry load volumes. Of the 49,937 enquiries that were answered, the median talk time was 5 minutes and 27 seconds (327 seconds, IQR, 230-485 seconds) with 15.2% of answered enquiries lasting 10 minutes or more (7,598). The longest enquiry lasted one hour and 10 minutes. The proportion of enquiries that were abandoned before being answered by a SPI was 7.1% (3,853); the median wait time before abandonment was 41 seconds (IQR, 23-196 seconds) suggesting that many of these callers changed their mind about the need for advice within this short time. One hundred and sixty-two (4.2%) users unfortunately had to wait in the SPI queue for more than 10 minutes before abandoning their call. There were 6,864 (12.8%) enquiries that were not answered within 5 minutes, the majority (3,954, 57.6%) of which were received between midday and 10 pm.

These data demonstrate that the NPIS provides a robust service, answering 92.8% of all presented enquiries - the large majority (87.2%) within a wait time of 5 minutes or less. The service, however, is tasked to answer 95% of enquiries within 5 minutes; further resources will be required to allow opening of additional telephone lines during busy periods to achieve this target.

Figure 6. Summary of telephone enquiry flow through the BT platform in 2024 to 2025



Consultant referrals

Daytime cover of the national telephone enquiry helpline is provided by SPIs in each NPIS unit, who are supported by consultants, academic clinical staff and/or specialist registrars, with appropriate supervision where needed.

The NPIS operates an out-of-hours (weekdays 18:00-09:00, weekends and public holidays) national consultant clinical toxicology on-call rota for the UK and the Republic of Ireland. During 2024 to 2025 there were 16 consultant clinical toxicologists (14 from the 4 NPIS units and 2 from Guy's and St Thomas' NHS Foundation Trust, London) contributing to this cover. All are involved in the care of poisoned patients in their own local NHS hospitals. A nationally agreed protocol is used to determine when SPIs should refer enquiries to a consultant. The national consultant rota is managed from NPIS Edinburgh.

Units provide cross-cover in emergencies and occasionally support colleagues in other units. NPIS Edinburgh also provides consultant support for enquiries from Northern Ireland during the working week. Details of all telephone calls to the NPIS are logged on the UKPID database and sent to the relevant consultant for local or national audit and checking.

There were 2,487 referrals to NPIS consultants in 2024 to 2025 (a 4.1% increase from 2023 to 2024) representing 5.6% of patient related telephone enquiries. Of these 1,318 (53.0%) were received during working hours and 1,169 (47.0%) out-of-hours. The median number of referrals per day was 7. By far the most consultant referral calls (2,350; 94.5%) came from hospitals (***Table 8***), with calls from GPs/primary care (61; 2.5%) and NHS patient advice services (40; 1.6%) being the second and third most common sources respectively.

Table 9 shows the most common types of agents involved in referrals to consultants. The list reflects agents that are commonly ingested and those associated with more complex poisoning where consultant input into patient care is often required; it also highlights the number of calls relating to unknown agents. A referral to a consultant may also be made when a consultant review may avoid the patient being referred to hospital or allow earlier discharge than normal.

Analysis of consultant referrals is used to improve the services offered by the NPIS, in particular TOXBASE. Issues highlighted by difficult or complex calls are discussed among NPIS staff at regular TOXBASE Editing Group meetings which facilitates necessary revisions to the advice provided on TOXBASE.

Table 8. NPIS consultant referrals from hospitals by department in 2024 to 2025

Source	Number of referrals from hospitals (% of total hospital referrals: 2,350)
Adult emergency departments	941 (40.0)
Intensive care units	714 (30.4)
Paediatrics	312 (13.3)
Unspecified hospital units	155 (6.6)
Admission/assessment units	109 (4.6)
General medicine	87 (3.7)
Other adult hospital units	24 (1.0)
Medicines information and pharmacy	8 (0.3)

Table 9. Agents commonly involved in NPIS consultant referrals in 2024 to 2025

Rank	Agent	Number of referrals (% of total referrals: 2,487)
1	Paracetamol (inc. combination products)	492 (19.8)
2	Unknown agent	247 (9.9)
3	Drugs of misuse	237 (9.5)
4	Propranolol	121 (4.9)
5	Lead containing products	114 (4.6)
6	Ethylene glycol/methanol/antifreeze	112 (4.5)
7	Ibuprofen	92 (3.7)
8	Venlafaxine	90 (3.6)
9	Bites and stings	87 (3.5)
10	Sertraline	83 (3.3)

The NPIS national out-of-hours on-call consultant rota continues to work well. Frequent contact by email and telephone, together with regular educational meetings, helps to ensure consistency of advice and patient care. Information gleaned from analysis of the enquiries has assisted in identifying toxicological and methodological problems, improving the clarity of TOXBASE entries, and informing the need for research in a number of areas.

NPIS Product Data Centre

NPIS Birmingham is responsible for collecting and disseminating chemical safety information to other UK poison units. On 1 January 2021, Annex VIII of EU Classification, Labelling and Packaging Regulation (1272/2008) was implemented in Northern Ireland. This has meant that the UK is currently operating a dual system of chemical safety information submission. Whether information is submitted in the harmonised European format for Northern Ireland, or the non-harmonised format for Great Britain, it is securely held on the NPIS Product Data Centre (PDC), to which all NPIS staff have 24-hour access. This composition information is used to advise healthcare professionals contacting the NPIS for the acute management of poisoned patients as well as to update TOXBASE, enabling end-users to obtain specific advice on many common products. In 2024 to 2025 a total of 38,780 submissions (24,002 of which were in the EU harmonised format) were made to the NPIS, with the PDC now holding composition information on nearly 442,000 products.

Electronic engagement

The NPIS has a long history of engaging with service users electronically, going back as far as the early 1980s when TOXBASE was first developed as a response to increasing numbers of poisons enquiries, revolutionising information delivery for poisons information.

In May 2024, it's successful move to a new software provider facilitated changes to TOXBASE password security in line with the latest regulations. For the first time, users are now able to self-register for a single account providing access to the TOXBASE website, the TOXBASE app for Android and iOS, and the TOXlearning e-learning resource.

UKTIS deliver information to healthcare professionals via the UKTIS website and provide public facing information at the 'Bumps' website.

The NPIS website is focused on providing information to our stakeholders. It holds information on the structure and function of the NPIS and details the range of services offered to healthcare professionals on all aspects of poisoning and links to affiliated organisations and relevant websites. Visitors to the website can download NPIS publications, including annual reports dating back to 2004. The website was created and is maintained by NPIS Birmingham with collaboration from the other units. Examples of research undertaken by the NPIS and presented at international toxicology conferences are also accessible on the website. Members of the public are signposted to appropriate sources of emergency advice as well as provided with free access to leaflets and posters about poisoning in the home and garden. In addition, information specifically for industry who engage with NPIS has been made available on the website to clarify the requirements of both UK and EU specific legislation as a consequence of the UK's departure from the EU.

UK Teratology Information Service

Overview

Many women need to take medicines in pregnancy to control chronic or acute health conditions to maintain their health and that of their unborn baby. Others may be inadvertently exposed to medication, chemicals or other hazards either occupationally or through environmental exposure. Pregnancy safety data is often limited and of varying quality, making it difficult for healthcare workers to provide patient risk assessments regarding continued medication use in pregnancy, or to establish the risk of fetal harm.

The UK Teratology Information Service (UKTIS) aims to support the appropriate use of medicines in pregnancy and to advise on management after in-utero exposure to potentially harmful substances. UKTIS provides information and advice to NHS healthcare workers via a telephone enquiry line and online systematic evidence reviews from UKTIS website (uktis.org). In addition, UKTIS also provides information directly to women and their families via patient information leaflets accessed via the Best Use of Medicines in Pregnancy ‘Bumps’ website (www.medicinesinpregnancy.org). These services are provided by a small team of experienced scientists led by a Consultant Obstetrician in Maternal and Fetal Medicine. In addition, UKTIS contributes to global teratogen surveillance. Data is collected following enquiries to the service and self-reports via an online pregnancy reporting portal ‘the MyBump Portal’. Access and linkage of national administrative datasets are also currently being utilised.

Information provision to healthcare providers

UKTIS continues to update and provide detailed, fully referenced systematic evidence reviews, providing critical appraisal of the published data for over 700 drug and chemical exposures, for registered health professionals. The full reviews are accessed by registered users either direct from the UKTIS website, or via a referral link from TOXBASE. UKTIS also provide summaries/abstracts of each of the reviews which are openly available to all on the UKTIS website.

In 2024 to 2025 almost 42,000 summaries and 18,300 systematic evidence reviews were accessed from uktis.org and TOXBASE, with a third of all accesses via uktis.org coming from the UK.

If information can’t be found on the UKTIS website, or if NHS healthcare providers have a complex enquiry, they can telephone UKTIS for advice. In 2024 to 2025 the service answered 735 telephone enquiries, 90% of which were regarding routine therapeutic medication exposures. The remaining 10% of enquiries were concerning a poisoning or overdose in pregnancy (6.4%), an occupational (1.7%) or environmental exposure (0.6%), an alternative medication (0.5%) or substance abuse (0.9%).

There has been an increase in the number of summaries accessed via uktis.org and a decrease in the number of full systematic evidence reviews accessed via registered users. This likely reflects the limited time that healthcare providers have to read information. The summaries provide comprehensive information and are usually sufficient to help guide healthcare professionals in their prescribing decisions. The full systematic evidence reviews are available for those who would like to review the primary data sources and access a higher level of detail.

In 2024 to 2025 the service received frequent enquiries regarding unplanned pregnancies in women exposed to GLP-1 agonists. In response to these enquiries, UKTIS has written and published a systematic evidence review on the available published pregnancy safety data. In addition, a patient information leaflet has also been made available via the ‘Bumps’ website.

Information provision to members of the public

‘Bumps’ is a patient facing website providing freely available information produced by UKTIS for women and their families. Patient information leaflets are written to correspond with the systematic evidence reviews available on uktis.org. This year over 2 million hits on the ‘Bumps’ leaflets were received, with almost 44% coming from within the UK.

Patient leaflet hits have decreased compared to 2023 to 2024, which may be due to the introduction of Google AI overview, an AI generated summary pulling information from multiple sources, which has shown to reduce average click-through-rates by 40-60%. AI overview commonly cites the ‘Bumps’ website as one of their trusted sources when returning answers about drugs in pregnancy, and although this provides visibility and credibility to the information, it is likely having an impact on the website hits.

The ‘Bumps’ website was upgraded in the previous financial year to provide improved accessibility of the interface. In addition, the website links to a new pregnancy registry to collect participant self-reported data, which can be utilised to conduct observational safety monitoring of maternal medication use in pregnancy.

MyBump Portal

UKTIS have previously demonstrated that it is possible to recruit, enrol and collect data relating to medicine safety during pregnancy directly from pregnant women. In 2024 to 2025 the MyBump portal (***Figure 7***), a bespoke platform, was designed to directly capture data from this population group. The MyBump Portal was launched in November 2024.

The main hypothesised benefits of this direct-to-participant approach include the ability to:

- reduce data collection costs
- avoid the burden associated with healthcare professional data reporting
- collect larger amounts of exposure and outcome data, thereby decreasing the time taken to obtain a sufficient sample size for analysis
- collect maternal reports of exposure and outcome events which for some data variables could be more complete and/or accurate than healthcare records
- source information which is typically difficult to collect from healthcare records (including non-prescription medication use and lifestyle factors such as alcohol and smoking)
- perform long term follow-up of children exposed to medication in-utero

The aim of this project is to investigate the feasibility of implementing an online data capture tool to collect medication exposure and pregnancy, fetal, neonatal and childhood outcome information directly from women using medicines during pregnancy. The project received ethics approval from the North East - Tyne and Wear South Research Ethics Committee in January 2024 (24/NE/0025). The system utilises an electronic data collection system (Research Electronic Data Capture - REDCap) to administer questionnaires prospectively supplied to a cohort of pregnant women self-recruited through online promotional activities. A preliminary analysis of the data collected to date has demonstrated the system is functional and that a small cohort (~300 pregnancies) have self-enrolled without promotion and provided data.

Figure 7. MyBump Portal

External collaborations

UKTIS have continued to support NHS England with the nhs.uk medicines A-Z pages, reviewing the pregnancy and fertility content of 50 therapeutic medications.

In 2024 to 2025 external lectures have been provided by UKTIS to UKHSA, Drug and Safety Research Unit, Great North Pharmacy Research Collaborative Conference, European Network of Teratology Information Services Conference, MacDonald Obstetric Medicines Society Annual Meeting, UK Medicines Information Conference, Royal College of Psychiatrists Meeting, NPIS CPD days, and a British Rheumatology Society Meeting.

European Network of Teratology Information Services

UKTIS continue to support the European Network of Teratology Information Services (ENTIS), with members of the team supporting the ENTIS Board as Vice President, incoming Head of the Scientific Committee and Head of the Website Committee. In 2024 to 2025 collaborative work with ENTIS has focused on publications regarding paternal valproate use, and paracetamol and its association with neurodevelopmental disorders in exposed offspring.

ConcePTION

The ConcePTION project, launched in 2019, came to an end in 2024 to 2025. UKTIS provided input into many of the work packages within the project aiming to improve how evidence on the effects of medicines in pregnancy is generated and disseminated. Some of the most significant collaborations resulted in two important publications: the first described core data elements for pregnancy pharmacovigilance studies using primary source data collection methods, and the second was a Delphi method of consensus on statistical analysis and reporting recommendations for single arm pregnancy medication safety studies investigating pregnancy, birth and neonatal health outcomes. Both publications were led and were principally authored by the UKTIS Principal Medical Information Scientist and Data Manager.

Fetal Exposure to Medicines Service

The Fetal Exposure to Medicines Service (FEMS) provides expert assessment, advice and care plans for people who are thought to have been affected by exposure to certain anti-seizure medications in-utero. This is a pilot scheme for children and adults in the North of England to be assessed for physical, learning and cognitive or social difficulties which may be associated with maternal exposure to medicines. UKTIS are supporting the service by providing individual risk assessments for patients referred to the team. The service is funded by NHS England and will run until March 2026.

Research and development

Newcastle Health Innovations Partners

Women from ethnically marginalised groups are more likely to have poor pregnancy outcomes including miscarriage, preterm delivery, and smaller babies. Although rare, maternal death and stillbirth are also more likely. Reduced access to maternity services due to language and cultural barriers is thought to contribute. To address this issue, UKTIS have co-produced an animated version of our patient information on treating pregnancy sickness with women from ethnically marginalised groups.

The funding for the project was through an external grant award from the Newcastle Health Innovation Partnership 'Dragon's Den' initiative, which supported pilot studies with potential to benefit the NHS. UKTIS generated a short, simple animation with a voiceover and subtitles that could be translated into different languages. The co-production group helped to guide animation design so that the themes and language were understandable, and to ensure inclusivity and cultural sensitivity. The final animation has been translated into Urdu, Arabic, Polish and Slovak (commonly accessed languages through NHS translation services). The video will be freely available on the UKTIS and 'Bumps' websites and on the UKTIS YouTube channel (***Figure 8***). It will be widely promoted amongst pregnant women and healthcare providers in the UK.

It is hoped that this will lead to improved understanding of the risks and benefits of treatment offered during pregnancy among vulnerable groups of women, enhanced participation in shared decision-making, better disease management due to allayment of unfounded fears about medication effects and improved maternal and infant health.

Figure 8. Screenshots from the treatment of nausea and vomiting in pregnancy animation

Linkage of national administrative datasets

Numerous national datasets exist in the UK which contain data that are useful for teratogen surveillance purposes. These include primary care healthcare records, secondary care hospital episodes and maternity services access data, medication dispensing data, and educational attainment data. These datasets are attractive for teratogen surveillance purposes as they contain data for the full population within their geographical regions of coverage (denominator-based) and have been running for numerous years, meaning there are no costs (financial or time) associated with data collection. These datasets also likely provide high levels of statistical power to allow for the detection of signals of teratogenicity. However, running high accuracy signal detection algorithms through these datasets is likely unfeasible. As such, methods are required to identify which exposures require investigation in the UK.

The National Congenital Anomaly and Rare Disease Registration Service congenital anomaly registry holds high-quality, clinically verified information on infants/fetuses with birth defects in England. Linkage of this dataset to a data source which provides information on exposure to medicines could provide a valuable resource for a routine teratogen surveillance system which could be implemented in England.

The NHS Business Services Authority maintain a dataset containing information about dispensed medications that have been reimbursed by the NHS. Utilising data linkage techniques UKTIS successfully linked these two datasets. This linkage provided details of the medications taken by mothers of infants/fetuses with birth defects in their first trimester of pregnancy. Utilising simple statistical disproportionality analysis techniques, UKTIS were able to investigate whether exposure to any specific medication was over-represented within any congenital anomaly groups (for example heart defects, CNS defects etc.).

UKTIS have conducted a preliminary analysis, with several statistical signals of interest produced, some of which appear novel. These statistical signals (which due to the analysis techniques performed) do not imply causality and therefore require further investigation, accounting for important co-variable risk factors in denominator-based datasets.

Future work

UKTIS plans for future work:

- publication of new systematic evidence reviews including the use of Janus kinase inhibitors in pregnancy
- exploration to determine the feasibility to create another animation regarding the use of medicines in pregnancy for the website
- an analysis of ‘MyBump’ data is planned for September 2025 (9 months of data collection since launch)
- further development of collaborations with several academic institutions, including the University of Liverpool, Queen Mary University London, St George's University London and Bristol University, to access denominator-based datasets for teratogen surveillance purposes

Clinical governance

NPIS aims to provide a high-quality service to ensure patient safety is, and continues to be, a high priority. Our approach to clinical governance is detailed in previous annual reports and includes detailing critical and near miss events and a comprehensive system of user feedback.

Analysis of critical and near miss events

From 1 April 2024 to 31 March 2025, a small number of events were discussed by the NPIS Clinical Standards Group.

Near miss events

The national operating procedure “Follow-up of poisons enquiries” was not followed on one occasion when a case should have been referred to the NPIS consultant toxicologist on-call, given the severity of the case. A second call was made to the service 5 hours later about the same patient; this call was referred correctly following procedure to the NPIS consultant toxicologist on-call. Following an internal review, it was concluded the advice provided by NPIS was correct and patient outcome was not affected but lessons learned were identified.

Coroner’s requests

Three coroner’s requests were received and responded to by the service:

1) The first involved the death of a patient in 2023 from a beta-blocker and aspirin overdose. Treatment with high dose insulin/glucose was given to the patient and low blood sugar can result as an important complication of therapy, although avoidable with monitoring and glucose supplementation. The NPIS consultant toxicologist involved in the case at the time responded to the request and stated that, in their opinion, the late occurrence of a very low blood sugar had no bearing on the tragic outcome for the patient.

2) The second request was in relation to the death of a patient who ingested unknown quantities of sedatives. The patient received treatment with flumazenil and naloxone but was not appropriately monitored for at least 6 hours post naloxone administration (as recommended by the TOXBASE guidelines) to ensure opioid toxicity from dihydrocodeine did not recur. The opinion from the NPIS consultant clinical toxicologist was that appropriate treatment may have prevented the death of this patient. No changes to the TOXBASE guidelines were required, as the monitoring recommended post naloxone treatment is very clear and consistent with joint NPIS/Royal College of Emergency Medicine (RCEM) best practice guidelines for the management of opioid toxicity.

3) The third request was received from a coroner investigating a death caused by sodium nitrite, in which the coroner was considering measures to prevent further deaths. NPIS data pertaining to sodium nitrate and sodium nitrite exposures reported to the service were

provided from January 2018 to December 2023 along with TOXBASE online and app access for the same period.

West Midlands Ambulance Service (WMAS) also approached the NPIS for their view on the ambulance service routinely stocking methylene blue. The NPIS position was that there is currently insufficient evidence for NPIS to recommend that ambulances routinely hold methylene blue in light of a WMAS pilot study. However, NPIS is interested in exploring the potential for specialist ambulances to carry it, with more studies and evidence required. A virtual meeting was organised by the NHS Resilience Interoperable Capabilities Team with NPIS to discuss a trial of methylene blue for treating nitrite poisoning by the Hazardous Area Response Team paramedics and potentially other specialist teams, such as critical care paramedics and helicopter emergency medical services. A planned study will seek to assess the efficacy of methylene blue in treating nitrite poisoning using a service evaluation model.

Critical events

TOXBASE

In previous years we reported events linked to TOXBASE. We are pleased to report that, since TOXBASE transitioned to a new software provider and upgraded infrastructure on 8 May 2024, there have been no instances of downtime or any other critical event.

Telephone enquiry systems

On 17 May 2024 a local Trust network failure caused the loss of on-site NPIS services, BT Cloud and UKPID. Remote working for the night shift staff was implemented. The issue was resolved by the Trust within 24 hours.

On 19 May 2024 intermittent functionality issues occurred with BT Cloud due to instability in one Trust's internet connection. SPIs were unable to carry out some functions on the BT Cloud. Laptops were subsequently purchased as mitigation in case of further internet issues; the risk from potential internet stability remains on the Trust Risk Register.

On 19 July 2024 BT Cloud was unavailable due to a worldwide major outage caused by a Microsoft-CrowdStrike software update; 5 NPIS calls were missed. Calls were then taken via Inbound Architect, a system maintained as an alternative in case of BT Cloud outages. BT Cloud was restored within 5 hours.

On 2 January 2025 a UKPID server failure occurred, leading to a 5-hour UKPID outage. Paper logging of enquiries was undertaken. Migration to a virtual and upgraded server was completed 12 days later, addressing the issue.

Quality assurance exercises

Telephone information service user satisfaction

Since 2002 NPIS have been collecting feedback on user satisfaction with their telephone enquiry service to evaluate service performance, user requirements/expectations, and to identify any areas for improvement.

Quality assurance (QA) surveys were sent out using a postal questionnaire up until 2021, and via an email questionnaire between January 2021 to the end of the 2021 to 2022 reporting year. In an attempt to increase user response, the questionnaire was then modified, and data has since been collected via Microsoft Forms with the aim to improve accessibility and automate data collection and analysis.

The Microsoft Forms questionnaire was sent out to a random sample of telephone enquiries between 1 April 2024 and 31 March 2025. 10% of calls from the 24-hour units were surveyed (Birmingham, Cardiff, and Newcastle), and 20% of calls from the Edinburgh unit were surveyed to account for the fewer telephone enquiries taken by this unit given its operational hours are 09:00-18:00 Monday to Friday.

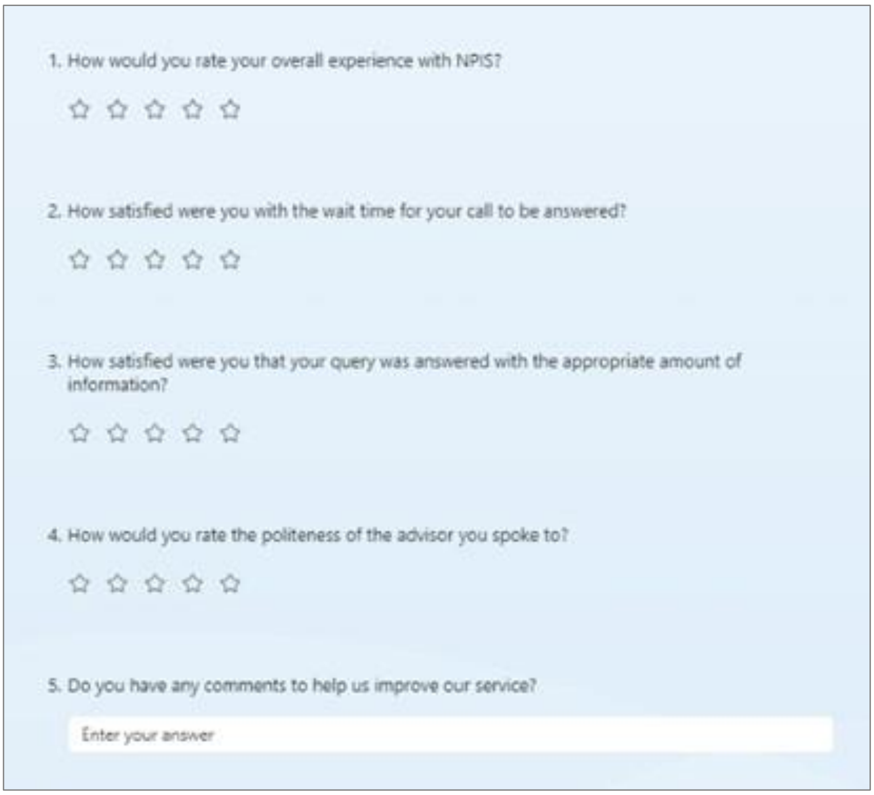
For the 2024 to 2025 reporting year, 5,118 questionnaires were sent out, of which 657 users responded. This was a 1.3% decrease in return rate from the previous year (***Table 10***).

Table 10. Telephone information service QA questionnaire response rate 2015 to 2025

Year	**2015 /16**	**2016 /17**	**2017 /18**	**2018 /19**	**2019 /20**	**2021** (1 Jan-31 Mar)	**2021 /22**	**2022 /23**	**2023 /24**	**2024 /25**
QA type	Postal	Postal	Postal	Postal	Postal	Email	Email	MS Forms	MS Forms	MS Forms
Response rate (%)	23.5	24.3	22.5	18.9	17.3	11.7	9.6	12.4	14.1	12.8

The form consisted of 5 questions for which users were requested to respond with a star rating between 1 and 5 to gauge satisfaction, with 1 star indicating they were extremely dissatisfied and 5 stars representing that they were extremely satisfied (***Figure 9***).

Figure 9. Telephone information service QA questionnaire


1. How would you rate your overall experience with NPIS?

2. How satisfied were you with the wait time for your call to be answered?

3. How satisfied were you that your query was answered with the appropriate amount of information?

4. How would you rate the politeness of the advisor you spoke to?

5. Do you have any comments to help us improve our service?

Enter your answer

Survey results

Most respondents indicated that they were highly satisfied with the service, with 97% of respondents selecting 4 stars or 5 stars for each question, corresponding with feedback obtained in previous years (***Table 11***). For the 2 callers that expressed some dissatisfaction, this related to the wait time for the call to be answered.

Table 11. Telephone information service QA satisfaction scores in 2024 to 2025

	Number of respondents (%)				
Question	**Low 1**	**2**	**3**	**4**	**High 5**
How would you rate your overall experience with NPIS?	0	0	3 (<1)	32 (4.9)	616 (94.6)
How satisfied were you with the wait time for your call to be answered?	0	2 (<1)	17 (2.6)	59 (9.0)	574 (88.0)
How satisfied were you that your query was answered with the appropriate amount of information?	0	0	7 (1.1)	27 (4.2)	614 (94.8)
How would you rate the politeness of the advisor you spoke to?	0	0	0	7 (1.1)	643 (98.9)

The final question had a free text box where respondents could comment on any feedback they believed would help improve the service. Of the 657 respondents, 365 (55.6%) completed this section and the responses were overwhelmingly positive. Many users used this section to further highlight their satisfaction with the service and expressed their gratitude. Some commented on how the call was answered and handled quickly, whereas a few expressed dissatisfaction with the wait time.

Switching the data collection format to Microsoft Teams has previously resulted in an increase in response rate but the response rate for the 2024 to 2025 reporting year declined by 1.3% from the previous year. Nevertheless, the results highlight that users continue to find the service to be highly satisfactory.

TOXBASE user satisfaction

Formal QA is obtained from TOXBASE users using an online questionnaire. A selection of users are automatically asked to complete and submit one of a series of short QA forms during their online session. To combat user fatigue, differing forms are presented throughout the year. Invitations are generated every 5 to 15 database logins; this number is also varied throughout the year. A total of 1,773 returns were received during the 2024 to 2025 reporting year.

Users were asked to grade a series of statements on a Likert scale of 1 to 6 where 1=disagree completely, and 6=agree completely. TOXBASE user satisfaction scores are shown in ***Table 12***. Satisfaction scores remain good.

Overall satisfaction with TOXBASE on a scale of 1 to 6 was indicated on 1,749 returns; 87.5% scored either 5 (good) or 6 (excellent).

Table 12. Summary of TOXBASE user satisfaction scores in 2024 to 2025

Satisfaction score is the percentage of respondents who agree ‘completely’ (6) or ‘a lot’ (5).

Number of responses	Question	Satisfaction score (%)
439	“I had confidence in the information for my query”	90.5
762	“Finding the information I required was easy”	90.0
436	“Logging on to the database was easy”	89.9

The percentage of respondents who disagreed ‘a lot’ or ‘completely’ with the above statements was small (2.7%, 4.5%, and 2.9% respectively).

User feedback is an important component in the review process of TOXBASE entries. Feedback may be received from a variety of sources including TOXBASE QA forms, questionnaires linked to products of interest, responses to follow-up on cases of interest, or by email, letter or telephone. Users may raise queries or provide clinical data. Issues specific to entries are dealt with as they arise or may be collated for discussion at the TOXBASE Editing Group or Clinical Standards Group meetings.

Free text comments were provided on 275 TOXBASE QA returns (15.5%), which can be grouped as shown in ***Table 13***.

Table 13. Summary of free text comments on TOXBASE from QA returns in 2024 to 2025

Type of comment	Number (% of comments) *
Positive comments and thanks	181 (65.8)
Suggestions	66 (24.0)
Comment related to other NPIS services	28 (10.2)
Negative comments	11 (4.0)
Specific issues	5 (1.8)
Information technology	5 (1.8)

* users often offer multiple comment types within one response

UKTIS user satisfaction

In 2024 to 2025 UKTIS sought feedback via paper questionnaire sent to a random sample of telephone enquirers with a response rate of 40 out of 75 (53%).

The responses that were received indicated a high degree of satisfaction with the service, with all of respondents reporting that they found it easy to contact the service, enquiry staff were polite and helpful, the service was easy to contact, the enquiry was answered in an acceptable time frame and at an acceptable pace, the information received was relevant and useful, and they had confidence in the reply. All respondents said they would use the service again.

Education and training

Training for scientific staff

NPIS units provide structured in-house training and assessment in both clinical and non-clinical (for example communication) skills to prepare scientific staff for providing advice to healthcare professionals who contact the service. Training is structured towards learning objectives covering all aspects of clinical toxicology, from the mechanisms of toxicity to the management of poisoned patients. These are clearly set out in a national training curriculum. Additionally, scientific staff may wish to undertake a postgraduate qualification in toxicology to further enhance their knowledge and expertise.

All NPIS staff are encouraged to participate in research and submit papers to peer-reviewed journals and national and international meetings.

Continuing professional development

CPD for NPIS staff is an essential component of the clinical governance structure of the service. A national CPD programme equips both clinicians and scientific staff with the necessary knowledge and expertise to provide up to date, accurate, evidence-based and consistent advice on all aspects of poisoning.

It is the responsibility of the CPD lead, an NPIS consultant appointed by the unit directors every 3 years, to organise the rolling programme of meetings. An NPIS scientist is also appointed every 3 years, to ensure the needs of the scientific staff are well represented within the educational programme. The primary role of the CPD meetings is to ensure that clinicians and scientists remain up to date with the latest developments within clinical and academic toxicology. This includes education on new poisons, antidotes and other emerging treatment modalities.

A 2-day face-to-face meeting is held on an 8 monthly basis and hosted by all NPIS units in turn, allowing staff the opportunity for CPD along with the benefit of networking during an evening social event. This is complemented by a minimum of 2 virtual CPD events (2 hours/event) during the year. In 2024, a special 2-day chemical, biological, radiological, and nuclear (CBRN) focused event was hosted by NPIS Birmingham (**Box 1**). Since the COVID-19 pandemic and related restrictions, regular bimonthly CPD sessions have been held virtually over an online video conferencing platform at minimal added financial cost. During 2024 to 2025 an annual session highlighting external NPIS scientific contribution in the spring and a Christmas CPD event with a guest speaker were also successfully organised with good virtual attendance and participation. The schedule of CPD was revised in 2023 and feedback has been positive in response to the change. Overall, feedback remains positive.

CPD sessions are recorded and uploaded to the NPIS closed area of TOXBASE (with speaker's permission) to enable NPIS staff unable to attend CPD sessions access to the presentations.

Box 1. NPIS CPD event, hosted by NPIS Birmingham

Day 1: Wednesday 24 April 2024

Introduction to CBRN medicine for the clinical toxicologist. (Lt Col Andrew Johnston, Royal Centre for Defence Medicine)

Current biosecurity considerations (Lt Col Kate Clay, Royal Centre for Defence Medicine)

Long term consequences of exposure to nerve agents (Prof Allister Vale, University of Birmingham)

The challenges presented by artificial intelligence to clinical toxicology (Dr Steve Emmett, DSTL)

The role of the UKHSA in CBRN incidents (Mr Jeff Russell, UKHSA)

Ambulance Service decontamination and specialist operational response (Mr Colin Charlton, on behalf of National Ambulance Resilience Unit)

The National CBRN Centre: an overview (Mr Colin Charlton, National CBRN Centre)

Radiation casualties – key principles of management (Dr Crawford Foster, Institute of Naval Medicine)

A spectrum of cyanide exposure scenarios (Major Peter Welby-Everard, West Midlands Poisons Unit and Professor James Coulson, NPIS Cardiff)

Box 1 continued

Day 2: Thursday 25 April 2024

Ethanol prescribing for alcohol withdrawal syndrome (E-PAWS): initial outcomes and future avenues (Dr Darren Quelch, Addiction Research Group, University of South Wales)

The dose is the poison - or is it? (Dr Aravindan Veiraiah, NPIS Edinburgh and Dr Mark Anderson, NPIS Newcastle)

An outbreak of N-desethyl isotonitazene toxicity in Birmingham (Dr Mark Pucci, West Midlands Poisons Unit)

Controversies with high dose insulin: an intensivist's perspective (Dr Jonathan Looms, West Midlands Poisons Unit)

ECMO and cardiotoxic agent poisoning (Dr Cyril Chako, Royal Wolverhampton NHS Trust)

When to consider dialysis for your poisoned patient (Dr Darren Roberts, New South Wales Poisons Centre)

Aluminium poisoning: collaboration to solve a mystery (Dr Edel Duggan, NPIC Dublin)

Diagnosis and monitoring of heavy metal poisoning: interactive case illustrations (Dr Nicola Barlow, Black Country Pathology Services)

A 5-year review of *Vipera berus* envenoming in the UK and overview of the Expert Antivenom Group for exotic envenoming (Dr Thomas Lamb, Centre for Tropical Medicine and Global Health, University of Oxford)

Make your UKPID data analysis easier with this one big snake. Doctors love it (Mr Nathaniel Keymer, NPIS Cardiff)

Poisoning for love or money (Professor Robin Ferner, West Midlands Poisons Unit)

TOXlearning – a clinical toxicology e-learning resource

A clinical toxicology e-learning resource has been provided to NHS healthcare professionals across the UK by NPIS Edinburgh for 20 years. When TOXBASE migrated to a new software provider in May 2024 the opportunity was taken to build a new e-learning platform. The new resource at www.toxlearning.toxbase.org is available to all NHS staff, as well as UK medical, nursing and paramedic students, UKHSA staff, MOD healthcare professionals and UK and international TOXBASE subscribers. It was re-launched on 1 February 2025.

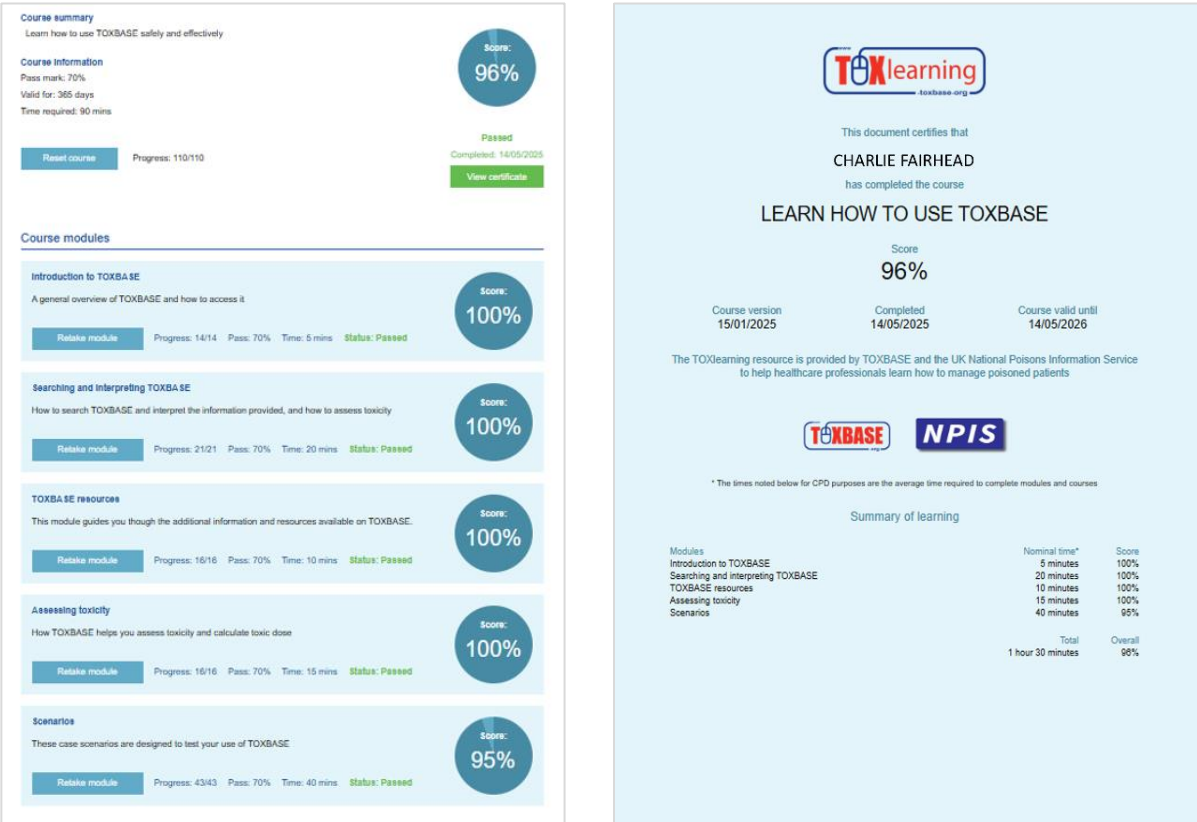
The resource provides useful and accessible training for those wishing to learn how to use TOXBASE effectively when handling enquiries about poisoning, and also learn more about the management of common overdoses. It is especially useful for NHS patient advice services staff.

The NPIS recommends that TOXBASE users of all types and grades complete the ‘Learn how to use TOXBASE’ course which represents 90 minutes of learning. ***Figure 10*** shows the topics included within this course. Registration and access are free; users can work through courses at their own pace, save their work, obtain their scores and print off a certificate for CPD files (also shown in ***Figure 10***).

Although the resource had only been available for a short time as of 31 March 2025, the resource has been used by 780 individual users who had already made 804 course attempts. 441 users had passed a course (pass mark 70%), 13 had failed and re-attempted a course (users may re-take modules and courses to improve their score), and 350 courses were ‘in progress’ (users can save their work and return to it later).

Most users of the resource indicated at account registration that they worked in ambulance services (66.3%), a hospital environment (11.8%), primary care (6.0%) and NHS patient advice services (6.7%). By 31 March 2025 79.6% of NHS patient advice service users had gone on to pass a course they had started, followed by 59.2% of ambulance service users, and 50.0% of primary care users. Only 21.1% of hospital users had so far passed a course that they started, perhaps reflecting the nature of the “Learn how to use TOXBASE” course which focusses mostly on the practicalities of using TOXBASE. Further courses are planned for launch during 2025 to 2026 which will offer more opportunity to learn about the management of poisoned patients; it is anticipated these will be of interest to a wider range of users.

Figure 10. Course page and certificate of learning from TOXlearning



Areas of interest

Drugs of misuse

Introduction

NPIS actively monitors and analyses telephone enquiries and the volume of TOXBASE online and app accesses about drugs of misuse. These data may indirectly reflect use and harm of these substances or healthcare professional familiarity. These data can be used to follow trends with time, including the emergence of new substances, and to characterise features of toxicity reported for different substances. These data are shared regularly with responsible agencies, including the Office for Health Improvement and Disparities, UKHSA and the Advisory Council on the Misuse of Drugs.

Methods

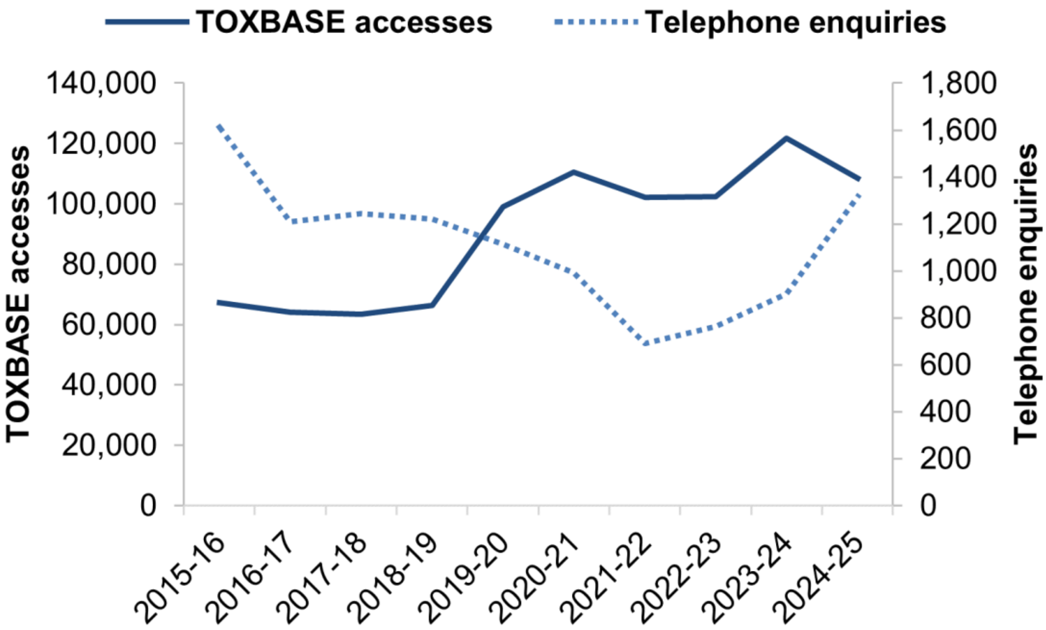
Telephone enquiries are included in this analysis if the exposure is to a substance with no other purpose than drug misuse, or when the exposure has been classified as ‘recreational’ by the SPI receiving the call, irrespective of the substance involved and therefore including medicinal drugs. This has the advantage of identifying substances not previously recognised as being involved in misuse.

The intent of the exposure is not available when using TOXBASE access data either online or using the TOXBASE app. Analysis of TOXBASE access data for prescription drugs does not allow insight into whether the access related to an exposure resulting from recreational drug misuse, self-harm or therapeutic error. Consequently, accesses to TOXBASE pages that relate to licensed medications are omitted from cumulative data, with the exceptions of diazepam, methylphenidate, ketamine and methadone, which are under specific surveillance.

Overall activity

For the fourth consecutive year there has been an increase in the absolute number of telephone enquiries related to drugs of misuse, although the absolute number of TOXBASE online accesses and TOXBASE app accesses is lower this year than last (***Figure 11***).

Figure 11. Trends in the absolute number of NPIS telephone enquiries and TOXBASE accesses over the last 10 years



During the 2024 to 2025 reporting year there were 1,315 telephone enquiries to the NPIS meeting the drug misuse criteria described above, a 46% increase in absolute call numbers compared to 2023 to 2024. These enquiries related to 393 different substances or products and accounted for 2.9% of all NPIS telephone enquiries, compared to 2.1% last year.

There were also 95,914 TOXBASE online accesses, a 9.4% decrease compared to last year. These related to 1,210 different substances or products and accounted for 6.8% of all TOXBASE online accesses, compared to 7.4% last year.

There were 12,440 TOXBASE app accesses, a 21% decrease in absolute number compared to last year, although these accesses accounted for a relatively greater proportion of all TOXBASE app accesses at 7.8% compared to 5.1% last year. These accesses related to 663 different drugs of misuse.

Activity related to individual drugs of misuse

The top 10 substances of misuse involved in telephone enquiries and TOXBASE online and app accesses are shown in ***Table 14***.

Table 14. Top drugs/substances of misuse involved in telephone enquiries and TOXBASE online and app accesses in 2024 to 2025 (% change from 2023 to 2024)

Rank	Telephone enquiries	Number	% change from 2023/24
1	Cocaine	317	-3.6
2	Cannabis	210	+12.9
3	Ketamine	122	+18.4
4	MDMA	105	-1.9
5	Methadone	76	+8.6
6	Unknown drug of misuse*	65	+30.0
7	Pregabalin	63	+50.0
8	Heroin	62	-12.7
9	Diazepam	61	+32.6
10	Nitrous oxide	40	+300.0

Rank	TOXBASE online accesses	Number	% change from 2023/24
1	Diazepam**	22,342	-9.6
2	Cocaine	15,364	-9.0
3	Ketamine**	8,554	+9.8
4	Cannabis	8,389	+7.2
5	Methylphenidate**	6,474	-9.5
6	MDMA***	4,704	-14.5
7	Heroin	4,015	-14.9
8	Nitrous oxide	3,065	-33.0
9	GHB[#]	2,887	23.0
10	SCRA[##]	2,623	39.7

Rank	TOXBASE app accesses	Number	% change from 2023/24
1	Diazepam**	3,408	-23.5
2	Cocaine	1,819	-14.8
3	Ketamine**	1,212	-4.0
4	Cannabis	660	-22.8
5	Methylphenidate**	650	-21.8
6	MDMA***	544	-43.9
7	Heroin	447	-32.5
8	GHB[#]	411	-14.2
9	SCRA[##]	375	+3.6
10	Organic nitriles	276	-27.9

* 'Unknown drug of misuse' refers to calls where the clinician suspects that the person has taken a drug of misuse but does not know which specific substance(s)
** May include TOXBASE accesses relating to therapeutic use
*** MDMA - 3,4-Methylenedioxymethamphetamine; MDMA data for 2023 to 2024 have been corrected to remove duplicate accesses
[#] GHB - Gamma hydroxybutyric acid, [##] SCRA - synthetic cannabinoid receptor agonists

Patterns of NPIS activity for selected substances over time

Figures 12 and 13 show NPIS activity related to selected substances of interest over time.

Overall, 2024 to 2025 data are largely similar to those of last year. Activity for ketamine continues to increase following the rather substantial increases that we reported last year; these data continue to suggest concerns regarding the use of and harms associated with ketamine. While cocaine remains a significant issue, there is a plateau or perhaps small reduction in activity this year in both calls and online accesses. Conversely activity regarding cannabinoids, both synthetic and classical, have risen again this year. Most classical cannabinoid activity was regarding cannabis with the route unspecified although, for the first time this year, a small but increased number of calls specified vaping as a route of exposure.

Substances of particular interest: synthetic opioids

Synthetic opioids remain of great public health concern with increased mortality reported in the UK. This year NPIS received 7 calls regarding a new synthetic nitazene opioid. Most were otherwise unspecified but there was one call regarding metonitazene. We suspect this relates to an inability to clinically distinguish synthetic opioids from conventional opioids in the acute toxicity setting and represents an under reporting of the true prevalence.

TOXBASE accesses for synthetic opioids has increased slightly this year. There were 392 accesses related to nitazenes, most commonly for the general nitazene page but also for metonitazene and metodesnitazene. There were 235 TOXBASE accesses regarding other synthetic opioids, mostly fentanyls and desomorphine.

Figure 12. TOXBASE accesses by year for selected substances 2014 to 2015 to 2024 to 2025

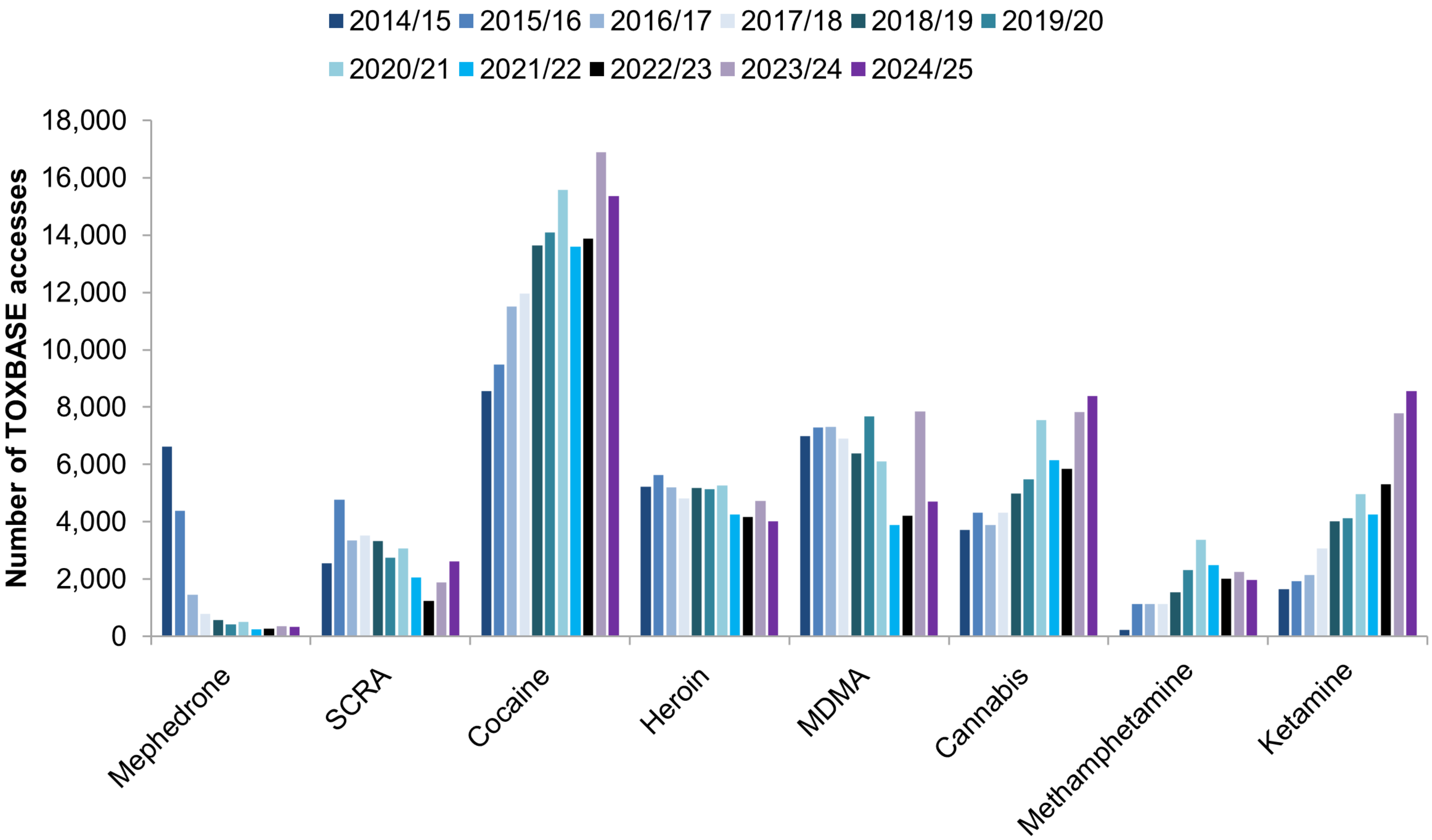
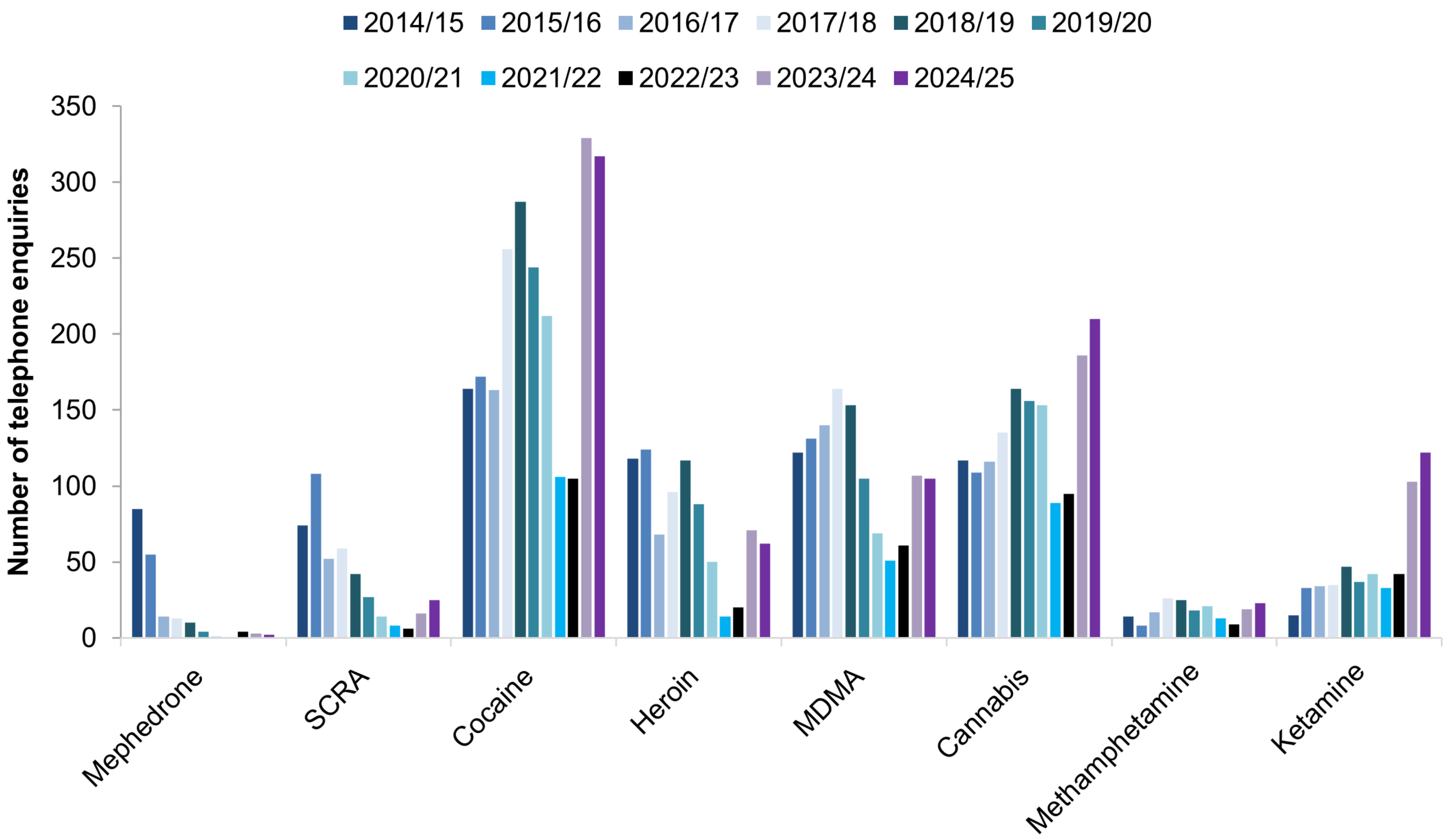


Figure 13. NPIS telephone enquiries by year for selected substances between 2014 to 2015 and 2024 to 2025



Pesticides

The NPIS pesticide surveillance system was established in 2004 under approval of the Pesticides Safety Directorate and funded by the Department for Environment, Food and Rural Affairs (DEFRA). The work was implemented to better describe the incidence and character of pesticide exposures in the UK that result in contact with health professionals (thereby selecting for more serious exposures). Surveillance data are collated and both quarterly and annual reports are submitted to the government's Expert Committee on Pesticides via the Chemicals Regulation Directorate of the Health and Safety Executive (HSE).

Currently, 694 TOXBASE entries for pesticides and biocides are being tracked. Incident information is obtained from follow-up of TOXBASE enquiries by an online or postal questionnaire, and from data collected during NPIS telephone enquiries.

During the year, there were 5,174 accesses to TOXBASE about pesticides of interest and information on 476 potential exposures was collected via the NPIS telephone enquiry service. The number of TOXBASE accesses (5,174 in 2024 to 2025 vs 4,176 in 2023 to 2024) regarding pesticide poisoning increased by 23.9% between periods. There was also a 12.5% increase in the number of calls (476 in 2024 to 2025 vs 423 in 2023 to 2024).

Overall, information was gathered on 721 potential exposures involving pesticides during 2024 to 2025. From these exposures, the number of cases identified for further analysis in 2024 to 2025 was 689.

The results presented below include both unintentional acute (584; 84.8%) and chronic cases (29; 4.2%) and cases of deliberate self-harm (67; 9.7%).

The poisoning severity[(2)] of the 689 cases was assessed: 615 cases (89.3%) were graded as PSS 0 (no symptoms or signs related to poisoning) or PSS 1 (mild). Eight cases (1.2%) were graded moderate (PSS 2), and 6 cases (0.9%) were graded severe (PSS 3). There was one fatality reported (0.1%).

Agents of interest

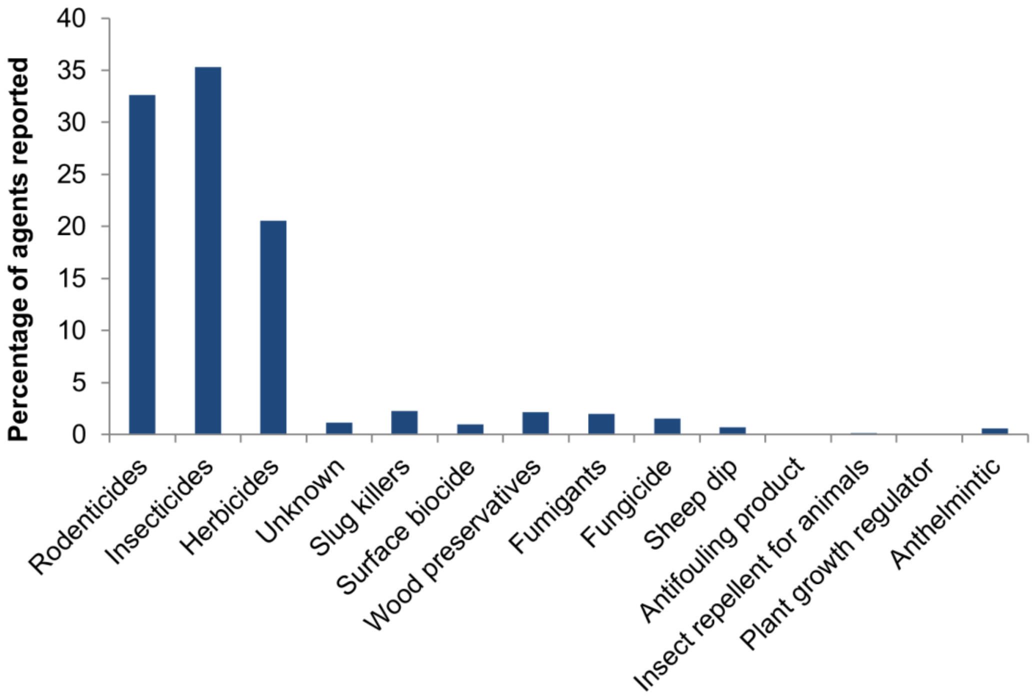
The agents most commonly involved in exposures are shown in ***Table 15***. In addition, there were 89 cases involving unknown rodenticides and 30 cases involving unknown herbicides.

In 2024 to 2025, patients potentially exposed to pesticide products comprised 412 adults (59.8% 13 years or older) and 274 children (39.8% 12 years or younger). There were 357 (51.8%) male patients and 311 (45.1%) female patients. There were 7 enquiries involving pregnant patients reported in 2024 to 2025 (10 in 2023 to 2024). All 7 exposures were acute and unintentional. All 7 cases were graded PSS 0/PSS 1. The classes of product most commonly involved in exposures are shown in ***Figure 14***, with permethrin, glyphosate, bromadiolone and difenacoum being the most commonly involved substances. Multiple/combination products were involved in some incidents.

Table 15. Pesticides most frequently (≥20) reported by respondents in suspected pesticide exposures during 2024 to 2025 compared with 2023 to 2024, ordered by rank in 2024 to 2025

Ingredient	2023 to 2024	2024 to 2025
Permethrin	66	83
Glyphosate	47	59
Bromadiolone	28	57
Difenacoum	36	45
Brodifacoum	30	32
Tetramethrin	31	29
Petroleum distillate	12	20

Figure 14. Pesticide exposures by class of product (as reported by respondent) in 2024 to 2025 (704 agents)



Dinitrophenol

2,4-Dinitrophenol (DNP) is a toxic industrial chemical that blocks the normal mechanisms for storage of energy in the body, including fat, and is sometimes ingested by users to produce weight reduction, ‘fat burning’ or ‘body sculpting’. Unfortunately, DNP can cause serious health effects in humans including high fever, rapid heart rate, agitation, headache, diarrhoea, vomiting, convulsions, acidosis, muscular rigidity and multi-organ failure. These effects can be fatal despite intensive medical treatment.

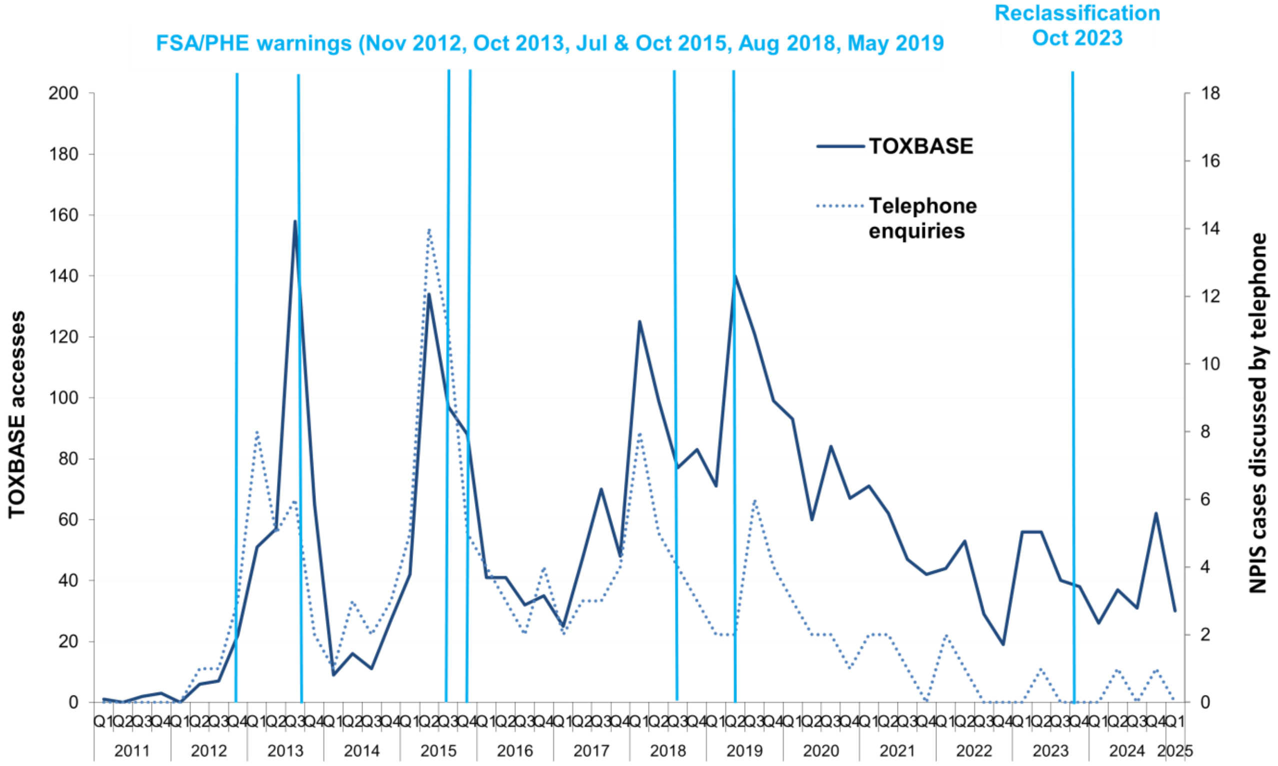
The NPIS first reported an increase in enquiry numbers and deaths relating to DNP in 2013 and has since been monitoring and reporting these to UKHSA and the Food Standards Agency (FSA) and publishing data regularly in our annual reports. Various actions have been taken in response to the increase in enquiry numbers, including provision of warnings to the public and information to healthcare professionals, as detailed in previous annual reports.

DNP was previously classified as a poison under the Poisons Act 1972 until 1996, when the classification was removed. Following a number of deaths from DNP, and campaigning by the victims’ parents for the reclassification of DNP under the Act, NPIS responded to a consultation by the Home Office. In October 2023, DNP was reclassified as a poison under the Poisons Act 1972, which will make it more difficult for members of the public to acquire DNP.

The data presented here was obtained using the same methodology as described in previous annual reports. Quarterly numbers of DNP-related TOXBASE accesses and individual cases of systemic exposure reported in telephone enquiries since January 2011 are shown in ***Figure 15***. In the year preceding the reclassification of DNP (between 1 October 2022 and 30 September 2023) NPIS received 8 enquiries regarding DNP, only one of which was a confirmed DNP exposure at presentation. Since the reclassification of DNP in October 2023 there were 2 further cases of systemic DNP exposure referred to the NPIS, both in the 2024 to 2025 reporting year and with neither case resulting in fatality.

Although enquiries about DNP have continued to fall, continued vigilance is required to identify illegal sales of DNP.

Figure 15. Quarterly NPIS telephone enquiries and TOXBASE accesses relating DNP, January 2011 to March 2025



Glycerol and slushies

In August 2022 NPIS became aware of a young child who developed severe hypoglycaemia, coma, lactic acidosis and pseudohypertriglyceridaemia following ingestion of approximately one litre of a slushed drink in an activity centre. Initially, these clinical effects were deemed to be a rare effect of glycerol, which was considered to be a low toxicity substance at the time. However, the public health risk assessment of this event identified another case of poisoning from a different UK region, and concerns were raised about the risk of poisoning from glycerol. The FSA subsequently updated its risk assessment, warning that slushed drinks should not be offered to children under 7 and refills should not be given to children under the age of 10.

NPIS advice and services have been modified since August 2022, with the aim of increasing recognition, monitoring, early interventions and prevention of glycerol poisoning from slushed drinks. An alert on the risk of slushie poisoning was placed on TOXBASE to help increase user awareness and recognition of this condition, which might otherwise be missed. TOXBASE advice was updated through creation of a specific page for “Slushie”, updating advice to reflect the risk of poisoning from large ingestions and how they should be managed. TOXBASE users were asked to get in touch whenever they saw a case; however, no calls were triggered by this intervention, and the page was later edited to ask users to fill in a short online survey.

One consequence of these initial activities was that a clinician contacted a consultant in public health in England about 2 cases of glycerol poisoning from slushies that they were aware of; this was subsequently shared with the NPIS. On follow-up, it was clear that specialists in paediatric metabolic medicine were aware of additional cases. Subsequently, a case series(4) of 21 children who developed glycerol poisoning from slushed drinks between 2009 and 2024 was published jointly by clinicians from across the UK and Ireland, including an NPIS consultant. This case series included the index case from August 2022.

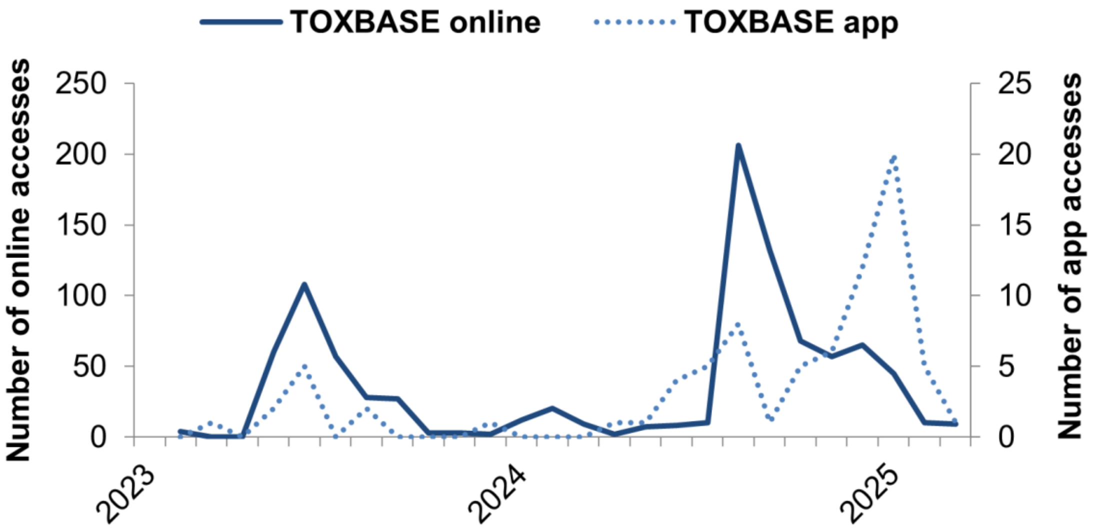
In addition, the NPIS has received information about another 6 cases of glycerol poisoning from slushed drinks.

The index case and a child who became unwell after drinking from a pre-made 'Slushie maker' cup were the only cases of glycerol poisoning from slushed drinks reported to the NPIS telephone enquiry line between 1 January 2020 and 31 March 2025. Searching UKPID for all cases of glycerol poisoning identified another 139 calls about exposures to glycerol-containing products. None of these were associated with harm from glycerol.

While the above enquiries and case reports provide rich data, they are effort-intensive for healthcare staff. It is therefore likely that many cases of glycerol poisoning from slushed drinks resulted only in access to the TOXBASE entry and no further contact with the NPIS. As shown in ***Figure 16***, the numbers of accesses of the online TOXBASE page for "Slushie" (available since February 2023) far exceeds cases reported by any other means. There are 2 large spikes peaking in summer in 2022 and 2024. At its peak, there were 206 accesses of the page in August 2024. This spike is probably confounded by educational use of the TOXBASE 'Slushie' page following reporting on 1 August 2024 (including by BBC News(5)) of a case of severe glycerol poisoning in Glasgow, followed by a warning on the NHS Inform page about glycerol poisoning. A much smaller spike in February 2023 coincided with news reports of another case, from the Good Morning Britain TV show and other agencies. Even if it is accepted that these spikes are due to educational access to the TOXBASE page, the higher spike in August 2024 may have been caused by a spike in real cases, or perhaps by increased consideration of glycerol poisoning in patients presenting with non-specific clinical features.

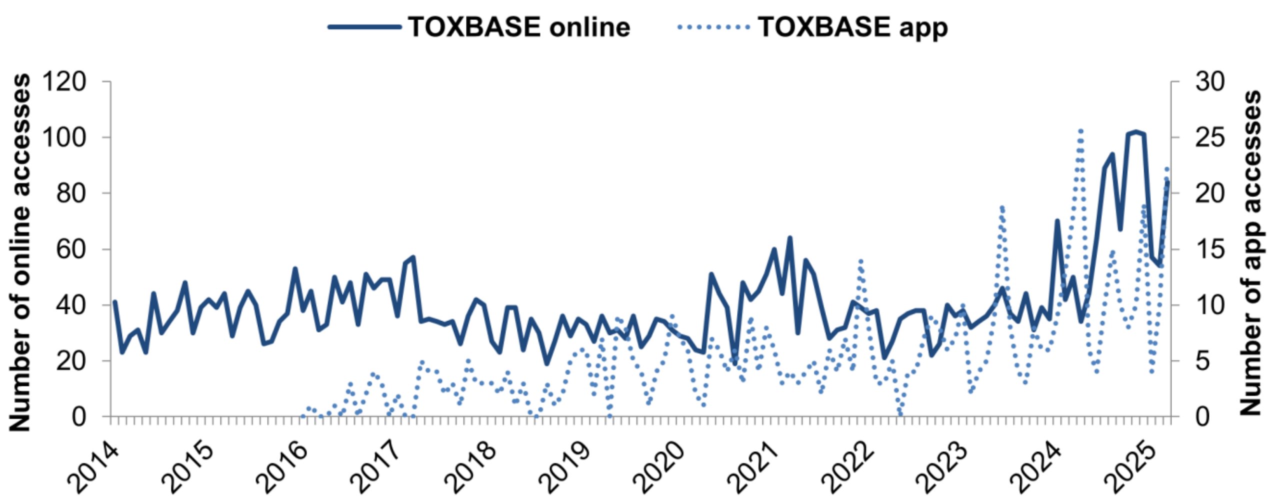
The numbers for accesses of the 'Slushie' page on the TOXBASE app, also shown in ***Figure 16***, are surprisingly different, with an unexplained peak in access in January 2025. The variance from TOXBASE online accesses confirms that app usage for TOXBASE is different from online usage, perhaps because of greater use by ambulance staff.

Figure 16. Accesses to the TOXBASE 'Slushie' page made via TOXBASE online and via the TOXBASE app



In addition to the specific page on 'Slushie' poisoning, TOXBASE has a separate but similar page on 'Glycerol' designed to link to other products that contain glycerol, and to help in cases of exposure to pure glycerol. ***Figure 17*** shows accesses to the 'Glycerol' page on TOXBASE online and on the app. The large increase in accesses of this page also occurs around August 2024 (peaking slightly later), probably because of healthcare staff using the page for their learning. A corresponding, but more gradual, increase in accesses to the 'Glycerol' page on the app can also be seen.

Figure 17. Accesses to the TOXBASE 'Glycerol' page made via TOXBASE online and via the TOXBASE app



Summary

From the time the NPIS became aware of a case of severe poisoning from glycerol in slushed drinks we have made significant changes to our processes and advice. In conjunction with interventions from other agencies, these changes have been associated with increased accesses of TOXBASE pages on 'Slushies' and 'Glycerol', both online and on the app. Case reports, including the case series by Brothwell et al[4], enquiries to the NPIS telephone enquiry service, and reports sent in through the online questionnaire, add up to about 30 known cases, which is small when compared to the likely very large numbers of children who consume slushed ice drinks regularly. However, the case reports also demonstrate that poisoning can be very severe. The online questionnaire has been useful for gathering information, although it is used infrequently. TOXBASE accesses are probably picking up more cases, but this is muddied by a large proportion of uses for personal learning, as indicated by large spikes coinciding with prominent news articles and multiagency alerts. Improved surveillance and reporting of data, or more connected data from several sources, are needed to understand the true frequency of severe glycerol poisoning from slushed drinks so that public health interventions can be optimised.

Joint NPIS / Royal College of Emergency Medicine collaboration

NPIS has collaborated with Royal College of Emergency Medicine (RCEM) in the past, for example on the publication of joint guidelines on antidote stocking in acute hospitals and participation in toxicology study days. In 2024 to 2025, two NPIS consultants (Prof Dargan and Dr Thanacoody) were invited to become co-opted members of the RCEM Toxicology Specialist Interest Group (SIG) to further this collaborative approach to issues of common interest.

RCEM and NPIS collaborated on two best practice guidelines:

- 'Assessment and management of acute opioid toxicity in adults in the Emergency Department', which was also published as an article in the Emergency Medicine Journal[6] with updates made on TOXBASE to reflect the new guidance
- 'Management of patients with suspected but unidentified poisoning in the Emergency Department'

NPIS consultants contributed to the RCEM toxicology update study day held virtually on 4 September 2024 and to a drugs of abuse symposium at the RCEM annual conference in October 2024 in Gateshead. The Chair of the Toxicology SIG gave a presentation at the NPIS CPD Day in Newcastle in April 2025.

Sodium nitrite

Sodium nitrite ($NaNO_2$) is a chemical widely used in the food industry as a preservative and in the chemical manufacture industry. However, there has been recent concern regarding its use for self-harm.

Sodium nitrite is potentially toxic if ingested or injected. In significant exposures, sodium nitrite produces methaemoglobin (MetHb). MetHb is an abnormal haemoglobin where the iron molecule has undergone a change in ionic state that prevents transport of oxygen. Therefore, as the proportion of MetHb increases, the oxygen carrying capacity of the blood decreases. In severe cases this can lead to seizures, heart damage and death.

Sodium nitrite is a reportable poison listed in Part 4 of Schedule 1A of the Poisons Act (1972) which means that sale is not restricted but suppliers have a legal obligation to report suspicious transactions.

Enquiries to the NPIS regarding sodium nitrite have been analysed and indicate a concerning trend. Prior to the reporting year 2018 to 2019, all enquiries to the NPIS were for information only or related to unintentional or occupational exposures. However, during 2018 to 2019, enquiries regarding intentional exposures started to be received by the NPIS. Since then, there have been 132 enquiries to the NPIS concerning 95 cases of intentional self-harm with sodium nitrite. It is important to note as these data are based on enquiries to the NPIS it is likely an underestimate of the true incidence and harms related to sodium nitrite. There has been a steady increase in enquiries and cases since 2018 to 2019. These cases are often severe and associated with significant harm and often deaths (***Figures 18 and 19***).

Figure 18. Telephone enquiries and cases of intentional self-harm with sodium nitrite reported to the NPIS between 2018 to 2019 and 2024 to 2025

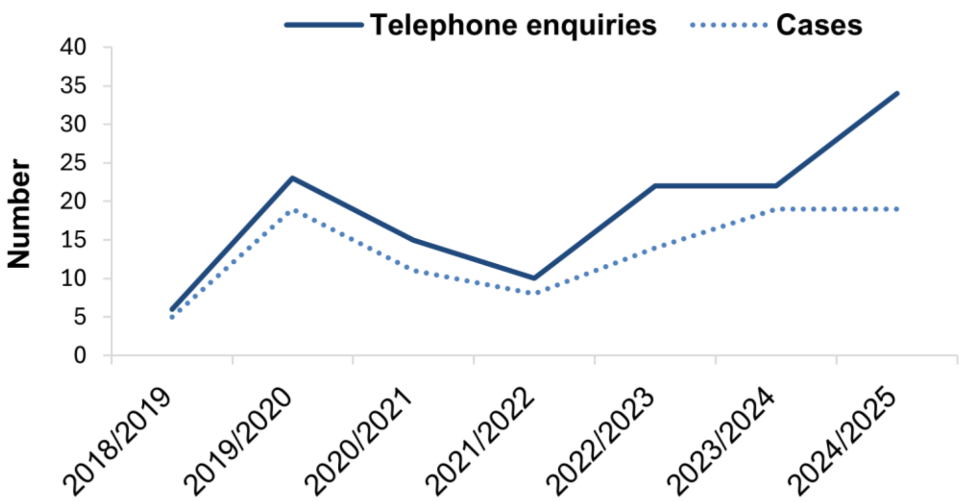
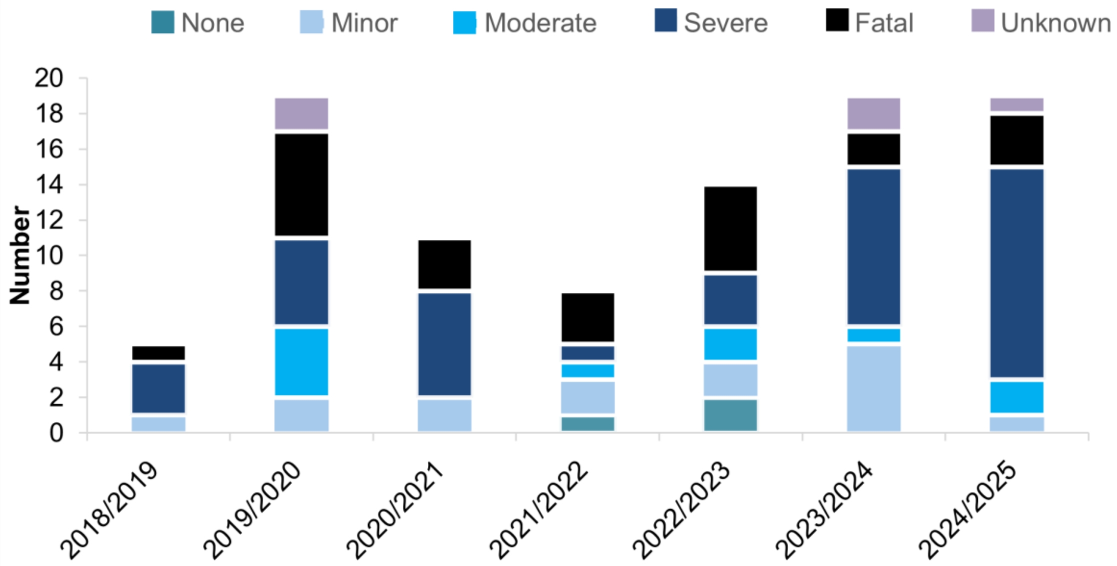


Figure 19. Poisoning severity(2) of cases of intentional self-harm with sodium nitrite between 2018 to 2019 and 2024 to 2025



Since 2018 to 2019, there have been 23 fatalities that have been reported in NPIS data and 39 cases of severe poisoning. Severe and fatal cases, therefore, make up of 62 of the 95 cases and account for more than half of all cases reported.

The number of cases in the last 2 years remains high but has plateaued.

To effectively combat this trend, a multi-faceted approach is required. From a legislative point of view, legal changes coupled with prosecution of “suicide kit” providers in the UK may reduce the availability of this chemical. Secondly, it will be important to work with both internet providers and search engine providers to reduce visibility and accessibility of “suicide sites” and, where possible, remove them. Finally, among healthcare professionals and the wider public health community, there needs to be awareness raising to allow both effective prevention and treatment.

ECMO

Extracorporeal membrane oxygenation (ECMO) is a type of life support therapy intended to maintain organ perfusion by supporting oxygenation and/or cardiac function on a short-term basis (***Figure 20***). It has increasingly been described as a ‘bridge to recovery’ in the poisoned patient, allowing the lungs and/or heart to be supported until the offending substance(s) has been eliminated.

In the UK, ECMO is funded centrally by the NHS. There are at least 8 adult and 5 paediatric centres commissioned to provide regional ECMO capabilities. Other cardiothoracic centres can provide ECMO and do so on an ad-hoc basis. However, unlike other countries such as

France and the United States, ECMO is not commissioned in the UK for use in the severely ill poisoned patient and is only occasionally commenced in poisoned patients in extremis.

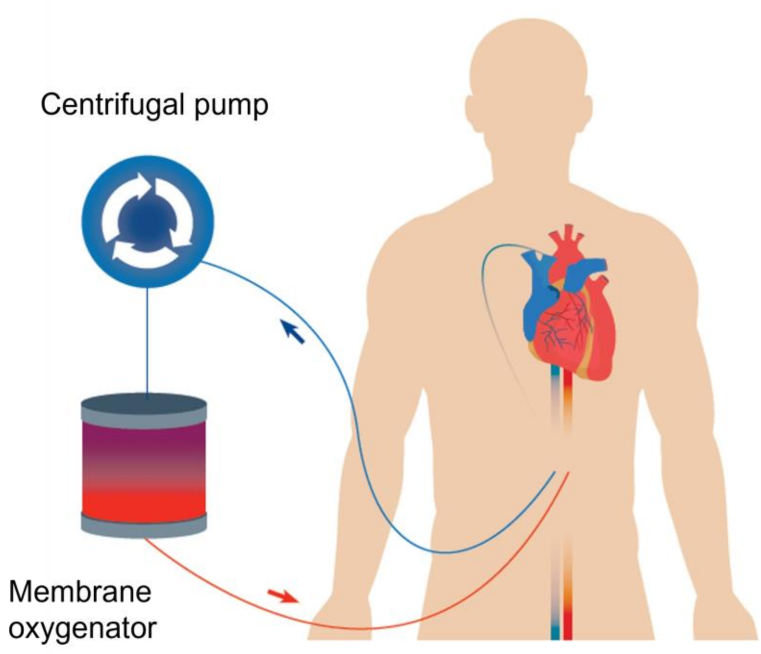
The NPIS received a total of 125 enquiries involving 98 patients between 1 April 2024 and 31 March 2025 where the role of ECMO was discussed, equivalent to 2 patients per week.

A single substance ingestion was involved in 32 patients, multiple substances in 59, and the number of agents involved were unknown in the remaining 7 patients.

Thirteen (7 male and 6 female) of the 98 patients received ECMO, 3 of whom were commenced on ECMO prior to discussion with the NPIS. Six patients had taken polypharmacy overdoses, 4 had taken single agents, and the substance involved was unknown in the remaining 3 patients. Outcomes for the 13 patients commenced on ECMO included survival in 4 and death in 4; 5 patients were lost to follow-up. Of the 98 patients in whom ECMO was discussed with NPIS, 35 (35.7%) died (including the 4 who received ECMO).

ECMO is an expensive and infrequently available form of life support for the critically ill patient. As evidence overseas grows advocating its use in severe poisoning, NPIS clinical toxicologists may increasingly be consulted to discuss the appropriateness of its use in cases of poisoning in the UK.

Figure 20. Veno arterial (VA)-ECMO circuitry



NPIS telephone enquiry follow-up

Telephone enquiry follow-up is an essential component of poison centre activity but can be resource intensive. Enquiry follow-up offers opportunities for determining outcome of poisoned patients, identifying interventions to improve patient care, optimising the toxicosurveillance capabilities of poisons information centres and contributing to good clinical governance.

The UK NPIS currently follows-up (as a minimum) all enquiries with a poisoning severity score[(2)] of 'severe', or if explicitly requested by the clinical toxicologist in cases of PSS ≤ 'moderate'.

During this past year, the Birmingham unit has been undertaking a quality-improvement exercise to determine the resources required to expand the existing follow-up criteria to patients admitted to hospital with PSS ≥ 'minor'. SPIs documented the number of follow-up calls made and the total time spent on follow-up activities for each case. In addition, SPIs were surveyed for feedback on their experiences of undertaking the additional follow-up work during this period.

The Birmingham unit received 2,708 enquiries from hospitals during this time. Of these at least 336 were appropriate for follow-up under existing protocols as result of the initial severity of the case. An additional 1,016 enquiries were identified for the quality improvement exercise, giving a total of 1,352 cases.

In total 3,845 outbound follow-up calls were placed lasting a mean of 7.5 min per case (total of 28,934 min). Follow-up of the 336 'severe' cases (in line with existing protocols) accounted for approximately 40% of this workload (1,623 outbound follow-ups lasting a mean of 7.7 min per case; total 12,542 min).

Specifically widening follow-up criteria resulted in 1,016 cases being followed-up at a resource investment of 2,222 follow-up calls lasting a mean of 7.4 min per case (total 16,392 min). A documented case outcome - including 6 deaths - was confirmed in 991 of 1,016 cases (97.5%).

The specific impact to the Birmingham unit associated with widening the follow-up criteria equated to 5.3 outbound follow-up calls lasting 39.4 minutes additional total activity per SPI per week. This equates to 35 hours total additional SPI activity per year and 1,155 hours per year across the 4 NPIS units.

Of the SPIs surveyed, nearly all felt that enhanced follow-up was worthwhile, but only half felt the enhanced programme of follow-up by telephone was a cost-effective use of their time. The majority did not feel that the period of enhanced follow-up compromised achievement of other core responsibilities and that having additional outcome data was of value to the service.

Follow-up can be resource intensive but may provide important outcome data for cases of toxicological interest as well as for understanding epidemiological trends and patterns at a national level. A multi-unit trial is planned for 2025 to 2026.

Conclusions

Poisoning and exposures to drugs and chemicals make up a large part of the UK's national medical and public health workload.

NPIS and UKTIS continue to provide high-quality information and advice to NHS health professionals regarding the management of patients with suspected poisoning and drug and chemical exposures in women who are pregnant. Our excellent user feedback reflects the quality of the services provided and the continuing commitment and hard work of all our staff.

Increasing use of TOXBASE and the TOXBASE app is welcome, because these are highly effective methods for the rapid delivery of written information and clinical advice. The growing use of 'Bumps' as a publicly accessible source of advice about drugs and chemicals in pregnancy is similarly welcome, allowing pregnant women to become better informed and discuss their concerns with their doctor or midwife.

The service continues to provide valuable public health information to UK government authorities regarding issues such as drugs of misuse, pesticide exposures, and established problems such as DNP. NPIS plays a leading role in detecting and reporting, evaluating, and supporting multi-agency response regarding novel public health toxicology problems, as seen recently with glycerol slushies and sodium nitrite. It continues to work in close partnership with the UKHSA and with central and devolved governments.

NPIS and UKTIS remain keen to evaluate the quality of their work, with careful review of feedback from users and coroners to ensure that lessons are learned and improvements made. The service also regularly reflects on the type of service required, for example the level of follow-up required to ensure maximum use of the data collected.

Its work helps ensure efficient and cost-effective management of poisoned patients across the UK, improving outcomes and reducing costs to the NHS.

Recommendations

Outcome of recommendations for NPIS in 2024 to 2025

1. 'Continue collaborative working between Cardiff and Vale University Health Board, Sandwell and West Birmingham NHS Trust, Newcastle Upon Tyne Hospitals NHS Foundation Trust and NHS Lothian to provide NPIS services. Work closely with UKHSA to maintain service provision and the agreed level of staffing within each poisons unit, whilst maximising resources available to allow the service to function effectively for its users.'

NPIS continues to work effectively with UKHSA, maximising use of resources to support the NHS in dealing with poisoned patients.

2. 'Continue to monitor episodes of poisoning of public health importance, retrospectively and in real-time via the NPIS Early Warning System, reporting to responsible government agencies as appropriate and promoting the role of the UK NPIS in public health.'

The NPIS continues to effectively monitor episodes of poisoning and to provide this information to responsible public bodies. It also responds to UK hospitals accessing TOXBASE regarding chemicals of interest to support management of patients and alerting UKHSA.

3. 'Work with UKHSA to improve the national response to chemical incidents, including reviewing current processes and contributing toxicology expertise in the detection, reporting and management of incidents.'

NPIS continues to provide medical expertise for the treatment of patients affected by chemical incidents, such as glycerol poisoning.

4. 'Continue to organise high-quality hybrid and online continuing professional development for NPIS staff to ensure users of the service are confident about the reliability and quality of the information provided.'

Multiple CPD days and online meetings have been held over the year, supporting ongoing education of SPIs and consultant toxicologists.

5. 'Continue to work with UKHSA, as the newly appointed body, and the HSE to fulfil their obligations to receive, store and manage material data sheets for chemicals sold in Northern Ireland and in Great Britain utilising the resources available. Ensure the NPIS has access to this information when needed.'

UKHSA and NPIS Birmingham continue to manage the storage and provision of material data sheets for chemicals used and/or sold in Northern Ireland and in Great Britain to the UK's NPIS.

6. 'Continue to play a world-leading role as a national network of poisons information centres involved in research, policy change and poisons information centre capacity building that aims to improve outcomes for poisoned patients globally.'

NPIS continues to play a major global role with poisons information centres, through its global leadership (President of EAPCCT), its work at international congresses (EAPCCT, NAACT, APAMT and MENATOX), and role in NIHR RIGHT4 'Preventing deaths from acute poisoning in low- and middle-income countries' project and European Environment and Health Process (EHP) partnership on Poison Centres.

7. 'Continue to produce and improve knowledge about poisoning in the UK through improvements in accuracy and presentation of TOXBASE and enquiry activity data'.

Ongoing review of the information provided by NPIS and UKTIS via databases and phone calls to ensure provision of high-quality information.

Recommendations for NPIS in 2025 to 2026

1. Continue collaborative working between Cardiff and Vale University Health Board, Sandwell and West Birmingham NHS Trust, Newcastle Upon Tyne Hospitals NHS Foundation Trust and NHS Lothian to provide NPIS Services. Work closely with UKHSA to continue to develop a sustainable, resilient and flexible NPIS service.

2. Continue to monitor episodes of poisoning of public health importance, retrospectively and in real-time via the NPIS Early Warning System, reporting to responsible government agencies as appropriate and promoting the role of the UK NPIS in public health.

3. Continue to engage with UKHSA to improve the national response to chemical incidents, including reviewing current processes and contributing toxicology expertise in the detection, reporting and management of incidents.

4. Work with UKHSA to improve ways of sharing UK wide anonymised data for the purpose of surveillance in line with UKHSA’s public health and security remit.

5. Continue engaging with UKHSA to facilitate the development of the Chemical Portal that will assist with the collection of data that is used to improve poisoning advice.

6. Continue to play a world-leading role as a national network of poisons information centres involved in research, policy change and poisons information centre capacity building that aims to improve outcomes for poisoned patients globally. Contribute to the EU Environment and Health Process and participate in the WHO Poisons Centre Partnership.

APPENDIX A Senior NPIS staff

NPIS Birmingham

Professor S M Bradberry BSc MD FRCP FAACT FEAPCCT
Director, NPIS Birmingham, City Health Campus, Dudley Road, Birmingham B18 7QH; Service Lead for Clinical Toxicology and Drug and Alcohol Services, Sandwell and West Birmingham NHS Trust, Midland Metropolitan University Hospital, Grove Lane, Smethwick, Birmingham B66 2QT

Dr M E M O Elamin MBBS DTM&H PgCertClinEd MSc(Med Tox) FRCP
Consultant Physician and Clinical Toxicologist, NPIS Birmingham and West Midlands Poisons Unit, Midland Metropolitan University Hospital, Sandwell and West Birmingham NHS Trust

Mr P S Jagpal BSc MSc CMgr MCMI
Service Manager, NPIS Birmingham

Dr M Pucci MBChB MRCP(UK) DipMedTox BSc MSc
Consultant in Clinical Toxicology and General Internal Medicine, Sandwell and West Birmingham NHS Trust

NPIS Cardiff

Mrs G L Alldridge MBE
Senior Information Services Manager, NPIS Cardiff

Professor J Coulson BSc MBBCh LLM MD DipMedTox DipTher MFPH FRSB FBPhS FRCP FRCPE ERT
Professor in Clinical Pharmacology and Toxicology, School of Medicine, Cardiff University and Honorary Consultant, Cardiff and Vale University Health Board

Dr L A Gray BA MBBCh MRCP
Medical Director, NPIS Cardiff; Consultant Physician in Clinical Pharmacology and Therapeutics, Cardiff and Vale University Health Board

Dr A Thomas MBChB FRCP DipMedTox, DipTher
Senior Lecturer in Clinical Pharmacology, Centre for Medical Education, Cardiff University and Honorary Consultant, Cardiff and Vale University Health Board

NPIS Edinburgh

Professor J W Dear PhD FRCPE
Professor of Clinical Pharmacology and Honorary Consultant Clinical Toxicologist, University of Edinburgh and NHS Lothian

Professor M Eddleston ScD FRCPE FRSE FMedSci FEAPCCT FBPhS
Professor of Clinical Toxicology, University of Edinburgh; Consultant Clinical Toxicologist, NPIS Edinburgh and Royal Infirmary of Edinburgh; Clinical lead for the NPIS and Chair of the NPIS Clinical Standards Group

Dr G Jackson BSc DipMedTox PhD
Manager, NPIS Edinburgh

Dr E Morrison BSc(Hons) MBChB(Hons) PhD FBhPS FRCP
Consultant in Acute Medicine, Medicines Management and Toxicology, Royal Infirmary of Edinburgh

Dr E A Sandilands BSc MD FRCPE
Consultant Physician and Clinical Toxicologist, Royal Infirmary of Edinburgh; Honorary Clinical Senior Lecturer, University of Edinburgh

Dr A Veiraiah MB BS MRCP
Director, NPIS Edinburgh; Consultant in Acute Medicine and Toxicology, Royal Infirmary of Edinburgh

NPIS Newcastle (including UKTIS)

Mrs S Bradley BSc MSc
Information Services Manager, NPIS Newcastle

Dr S L Hill BSc MBBS FRCP
Consultant Physician and Clinical Toxicologist, Newcastle upon Tyne Hospitals NHS Foundation Trust; Honorary Clinical Senior Lecturer, Translational and Clinical Research Institute, Newcastle University

Dr K K Hodson MD MRCP(UK) MRCOG DipTher
Head of Teratology, UKTIS; Consultant in Obstetrics and Maternal Medicine, Newcastle upon Tyne Hospitals NHS Foundation Trust; Associate Clinical Lecturer, Translational and Clinical Research Institute, Newcastle University

Dr S Stephens BSc PhD
Assistant Head of UK Teratology Information Service, Newcastle upon Tyne Hospitals NHS Foundation Trust; Honorary Associate Fellow, Translational and Clinical Research Institute, Newcastle University

Dr H K R Thanacoody MD FRCP FRCPE
Director, NPIS Newcastle and UK Teratology Information Service (UKTIS); Medical Director, Regional Drugs and Therapeutics Centre; Consultant Physician and Clinical Toxicologist, Newcastle upon Tyne Hospitals NHS Foundation Trust; Honorary Senior Clinical Lecturer, Translational and Clinical Research Institute, Newcastle University

Dr S M Wiltshire BMedSci BM MRCP
Consultant Physician and Clinical Toxicologist, Newcastle upon Tyne Hospitals NHS Foundation Trust

Other consultants providing on-call support for the NPIS

Professor P I Dargan FRCPE FACMT FRCP ERT FAACT FEAPCCT FBPhS MAE FCRaz FRSB
Consultant Physician and Clinical Toxicologist, Clinical Director and Caldicott Guardian, Guy's and St Thomas' NHS Foundation Trust, London; Professor of Clinical Toxicology, King's College London, London

Dr D M Wood MD FRCP FEAPCCT FACMT FAACT FBPhS
Consultant Physician and Clinical Toxicologist, Chair of Drug and Therapeutics Committee and Co-Chair of Medication Safety Committee, Guy's and St Thomas' NHS Foundation Trust and King's Health Partners, London; Reader in Clinical Toxicology, King's College London, London

Consultants providing specialist support for the NPIS

Dr M Anderson BSc BMedSci BMBS MRCPCH
Consultant Paediatrician, Great North Children's Hospital, Newcastle upon Tyne Hospitals NHS Foundation Trust

National and international appointments of NPIS senior staff

NPIS staff have roles in supporting many important aspects of toxicology, both nationally and internationally. These include advisory roles to international and national bodies, including government, as well as academic activities. The range of their roles presented below provides a flavour of these activities and indicates the wider 'added value' of the NPIS.

NPIS Birmingham

Professor S M Bradberry
INTERNATIONAL SOCIETIES
Fellow: American Academy of Clinical Toxicology
Fellow: European Association of Poisons Centres and Clinical Toxicologists
Past President: Clinical and Translational Speciality Section, Society of Toxicology
UK ADVISORY COMMITTEES
Member: HSA Lead exposure in children surveillance system steering group
Member: Home Office, Office for security and counter terrorism. Chemical Expert Panel
ACADEMIC ACTIVITIES
Honorary Professor: School of Pharmacy, University of East Anglia
Honorary Professor: School of Biosciences, University of Birmingham
Visiting Professor: University of South Wales
Joint Course Organiser: MSc (Toxicology), University of Birmingham

Dr M E M O Elamin
INTERNATIONAL SOCIETIES
Board Member (at Large): MENATOX (Middle East and North Africa Clinical Toxicology Association)
Member: Scientific Committee, MENATOX (Middle East and North Africa Clinical Toxicology Association)
UK ADVISORY COMMITTEES
Member: UKHSA Expert Advisory Group on Antivenoms
NHS NATIONAL AND REGIONAL COMMITTEES
ACADEMIC ACTIVITIES
Chair: MRCP Part 1 and 2 Specialty Question Writing Group
Honorary Senior Clinical Lecturer: School of Biosciences, University of Birmingham
Casual Lecturer: Masters in Pharmacotoxicology, Faculty of Medicine and Surgery, University of Malta
External Marker: MRes Toxicology and MRes Translational Medicine and Therapeutics, Faculty of Medical Sciences, Newcastle University

Mr P S Jagpal
INTERNATIONAL ACTIVITIES
General Secretary: European Association of Poison Centres and Clinical Toxicologists
Member: Scientific Committee of European Association of Poison Centres and Clinical Toxicologists
UK ADVISORY COMMITTEES
Member: Asia Pacific Association of Medical Toxicology
UK ADVISORY COMMITTEES
Member: Register of Specialists for Chemicals, Materials and Toxicology, Office for Product Safety and Standards

Dr M Pucci
ACADEMIC ACTIVITIES
Honorary Clinical Lecturer: MSc (Toxicology), University of Birmingham
Senior Author: Prescribing Safety Assessment (PSA), British Pharmacological Society
Author: University of Birmingham and Health Education England Script® e-learning programmes on drugs of misuse, and cannabis-based products for medicinal use

NPIS Cardiff

Professor J Coulson
UK ADVISORY COMMITTEES
Member: Committee on Toxicity
Member: Herbal Medicines Advisory Committee, MHRA.
Member: Expert Committee on Pesticides
NHS NATIONAL AND REGIONAL COMMITTEES
Chair: New Medicines Group
Member: ILAP Sponsor Board
ACADEMIC ACTIVITIES
Honorary Professor of Clinical Pharmacology and Toxicology: Cardiff Metropolitan University

Dr L A Gray
NHS NATIONAL AND REGIONAL COMMITTEES
Chair: All Wales Prescribing Advisory Group (AWPAG) for All Wales Medicine Strategy Group
Chair: Medicines Safety Executive (MSE), Cardiff and Vale University Health Board
ACADEMIC ACTIVITIES
Programme Director: Postgraduate Diploma in Medical Toxicology, Cardiff University
Member: Prescribing Safety Assessment (PSA) Assessment Board, British Pharmacological Society
Medical Lead: Cardiff Update in Medical Toxicology

Dr A Thomas
NHS NATIONAL AND REGIONAL COMMITTEES
Medical Director: Yellow Card Centre Wales
Member: All Wales Medicines Strategy Group
Member: National Pharmacogenomics Group for Wales
ACADEMIC ACTIVITIES
PSA Lead: School of Medicine, Cardiff University
Theme Lead: BDS Human Disease Course, Cardiff University
Member: Final Year Exam Executive, Cardiff University

NPIS Edinburgh

Professor J Dear
INTERNATIONAL ACTIVITIES
Member: Expert Advisory Group EU IMI TransBioLine Consortium, Critical Path Institute Acute Kidney Injury Working Group
INTERNATIONAL SOCIETIES
Vice-President: Clinical and Translational Toxicology Specialty Section, Society of Toxicology (SOT)
INTERNATIONAL JOURNALS
Senior Editor: British Journal of Clinical Pharmacology
UK ADVISORY COMMITTEES
Member: Scottish Medicines Consortium
NHS NATIONAL AND REGIONAL COMMITTEES
Deputy Director: Yellow Card Centre, Scotland
Member: Lothian Formulary Committee

Professor M Eddleston
INTERNATIONAL ACTIVITIES
Board Member: South Asian Clinical Toxicology Research Collaboration, Peradeniya, Sri Lanka
INTERNATIONAL JOURNALS
Senior Editorial Board Member: Clinical Toxicology
UK ADVISORY COMMITTEES
Member: Expert Advisory Group on Antivenoms, UK Department of Health and Social Security
Deputy Chair: Expert Committee on Pesticides, UK Health and Safety Executive
ACADEMIC ACTIVITIES
Director: Centre for Pesticide Suicide Prevention, University of Edinburgh
Co-Director: NIHR RIGHT4: Preventing Deaths from Acute Poisoning in Low-and Middle-Income Countries, University of Edinburgh

Dr G Jackson
UK ADVISORY COMMITTEES
Medical Sub Group Member: The All-Party Parliamentary Carbon Monoxide Group
INTERNATIONAL ACTIVITIES
Member: WHO European Healthcare Partnership on Poison Centres

Dr E Morrison
INTERNATIONAL SOCIETIES
Fellow: Royal College of Physicians (Edinburgh)
Fellow: British Pharmacological Society
UK ADVISORY COMMITTEES
Member: Scottish Medicines Consortium
Member: National Review Panel for PACS Tier 2, Healthcare Improvement Scotland
Member: Area Drug and Therapeutics Collaborative, Health Improvement Scotland
NHS NATIONAL AND REGIONAL COMMITTEES
Chair: NHS Lothian Area Drugs and Therapeutics Committee
Member: Individual Patient Treatment Request panel, NHS Lothian

Dr E A Sandilands
ACADEMIC ACTIVITIES
Assessment Lead: Edinburgh Medical School, University of Edinburgh
MSc Critical Care, Toxicology Lead: Royal College Physicians Edinburgh and University of Edinburgh
Committee member: Standard Setting Committee for UKMLA, UK Medical Schools Council

Dr A Veiraiah
UK ADVISORY COMMITTEES
Member: Committee on Toxicology, Food Standards Agency
NHS NATIONAL AND REGIONAL COMMITTEES
Specialist Advisor: CMO (Scotland), Clinical Pharmacology, Therapeutics and Toxicology

NPIS Newcastle (including UKTIS)

Dr S Hill
UK ADVISORY COMMITTEES
Co-opted Member: New Psychoactive Substances sub committee of the Advisory Council on the Misuse of Drugs
NHS NATIONAL AND REGIONAL COMMITTEES
Member and Curriculum and Assessment Lead: Specialist Advisory Committee, Clinical Pharmacology and Therapeutics, Northern Deanery Representative
ACADEMIC ACTIVITIES
Module Lead: Drug Discovery and Development, Masters by Research in Translational Medicine, Newcastle University

Training Programme Director and SAC Representative: Clinical Pharmacology and Therapeutics, HEE North East
Member: Clinical Pharmacology and Therapeutics STC (HEE North East)
Educational Supervisor: PHE Funded Advanced Fellowship in Clinical Toxicology
Deputy Director of Medical Education (Undergraduate Lead): Newcastle Upon Tyne Hospitals NHS Foundation Trust
Co-Director: NIHR Newcastle Clinical Research Facility, Royal Victoria Infirmary, Newcastle upon Tyne

Dr K K Hodson
INTERNATIONAL SOCIETIES
Member: ENTIS (European Network of Teratology Information Services) Scientific Committee
UK ADVISORY COMMITTEES
Member: MHRA Medicines for Women's Health Expert Advisory Committee
NHS NATIONAL AND REGIONAL COMMITTEES
Member: MHRA Safer Medicines in Pregnancy and Breastfeeding Consortium
ACADEMIC ACTIVITIES
Lead Consultant: Obstetric Medicine Training in NE England
Course Organiser: Obstetric Medicine Teaching Course, Royal College of Obstetricians and Gynaecologists

Dr S Stephens
INTERNATIONAL ACTIVITIES
Vice-chairperson: European Network of Teratology Information Services (ENTIS)
UK ADVISORY COMMITTEES
Member: The Safer Medicines in Pregnancy and Breastfeeding Consortium, Medicines and Healthcare Products Regulatory Agency (MHRA)
ACADEMIC ACTIVITIES
Honorary Associate Fellow: Translational and Clinical Research Institute, Newcastle University

Dr H K R Thanacoody
INTERNATIONAL ACTIVITIES
Member: EAPCCT Acetaminophen/Paracetamol Clinical Toxicology Recommendations Collaboration
INTERNATIONAL SOCIETIES
Member: European Association of Poisons Centres and Clinical Toxicologists
Member: British Pharmacological Society
INTERNATIONAL JOURNALS
Executive Editor: British Journal of Clinical Pharmacology

UK ADVISORY COMMITTEES
Member: Herbal and Complementary Medicines Expert Advisory Group (HCM EAG), British Pharmacopoeia Commission
NHS NATIONAL AND REGIONAL COMMITTEES
Clinical Advisor: Health Service Ombudsman
ACADEMIC ACTIVITIES
Strand Lead: MRes in Translational Medicine, Newcastle University
Module Leader: MRes Experimental Medicine and Therapeutics, Newcastle University
External Examiner: MSc Experimental and Translational Therapeutics, Oxford University
External Examiner: Diploma/Masters in Medical Toxicology, Cardiff University
Member: BSc Pharmacology Curriculum Committee, Newcastle University
Member: MRCP(UK) Part 1 Standard-Setting Group

Dr S M Wiltshire
ACADEMIC ACTIVITIES
Educational and Clinical Supervisor: University Hospitals Newcastle NHS Foundation Trust

Other consultants providing on-call support for the NPIS

Professor P I Dargan
INTERNATIONAL ACTIVITIES
Member: European Association of Poison Centres and Clinical Toxicologists Scientific Committee
President: European Association of Poison Centres and Clinical Toxicologists
Member: American College of Medical Toxicology International Committee
Abstract Reviewer: American Academy of Clinical Toxicology
Expert Adviser: World Health Organization, United Nations Office on Drugs and Crime, and European Union Drugs Agency
Member: WHO/UN Global Alliance to Eliminate Lead from Paint
Member: WHO Global Burden of Disease Expert Panel
INTERNATIONAL JOURNALS
Deputy Editor: Clinical Toxicology
Editorial Board Member: Toxicologie Analytique et Clinique
UK ADVISORY COMMITTEES
Commissioner to the UK Commission on Human Medicines
Expert Adviser: Advisory Council on Misuse of Drugs
Chair: Royal College of Emergency Medicine and National Poisons Information Service Antidote Guideline Group
ACADEMIC ACTIVITIES
Member: Faculty of Translational Medicine, Biomedical Research Centre (BRC) at Guy's and St Thomas' NHS Foundation Trust and King's College London
Examiner: MRCP (UK) Part 2 Clinical Examination (PACES)
Member: WHO Global Burden of Disease Expert Panel

Dr D M Wood
INTERNATIONAL ACTIVITIES
Member: Clinical Toxicology Collaborative: Activated Charcoal Systematic Review
Member: Clinical Toxicology Collaborative: Paracetamol Systematic Review
Member: Clinical Toxicology Collaborative: Amanita Toxicity Review
Member: EXtracorporeal TReatments In Poisoning (EXTRIP) 2 workgroup
Expert Advisor: European Monitoring Centre for Drugs and Drug Addiction (EMCDDA)
Expert Advisor: United Nations Office on Drugs and Crime (UNODC)
Expert Advisor: World Health Organisation
INTERNATIONAL SOCIETIES
Member and Chair Elect of the Scientific Committee: European Association of Poisons Centres and Clinical Toxicologists (EAPCCT)
Member: International Committee of American College of Medical Toxicology
INTERNATIONAL JOURNALS
Senior Editorial Board Member: Journal of Medical Toxicology
International Scientific Committee Member: Toxicologie Analytique et Clinique
UK ADVISORY COMMITTEES
Member: UK Advisory Council on the Misuse of Drugs (ACMD)
Member: ACMD Technical Committee, Novel Psychoactive Group and Monitoring Group
Member: Expert Analysis and Assessment Group (EAAG) for the UK cross-government drugs Early Warning System (EWS)
Member: COMed Working Group/All-Party Parliamentary CO Group (on behalf of the NPIS)
Member: Royal College of Emergency Medicine Nitrous Oxide and Naloxone Guidelines Group
Member: Joint Royal Colleges Ambulance Liaison Committee (JRCALC) Overdose and Poisoning Guideline Group
Clinical Co-Ordinator: National Confidential Enquiry into Patient Outcome and Death (NCEPOD)
Trustee and Board Member: Positive East
NHS NATIONAL AND REGIONAL COMMITTEES
Co-Vice Chair: South East London Integrated Medicines Optimisation Committee
Member: South East London Joint Formulary Committee (as Guy’s and St Thomas’ NHS Foundation Trust representative)
ACADEMIC ACTIVITIES
Joint Project Co-ordinator: European Drug Emergencies Network (Euro-DEN) Plus project
Lecturer: NPIS/RCEM Clinical Toxicology Training Days
Lecturer: NPIS Cardiff Update in Medical Toxicology course
Royal College of Physicians (RCP) representative: Royal College of Pathology (RCPath) Specialty Advisory Committee on Toxicology

APPENDIX B NPIS publications

NPIS staff published 116 contributions to the scientific literature in 2024 to 2025; NPIS staff are shown in **bold** type, except where NPIS staff were part of a collaborative group.

† early online publication details for these publications were previously listed in the 2023 to 2024 NPIS report

Peer-reviewed papers

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About the National Poisons Information Service

The role of the NPIS is to advise NHS healthcare professionals on the diagnosis, treatment and care of poisoned patients across the United Kingdom. Poisoning is a common cause of hospital admission in the UK, with similar numbers of admissions to other common medical emergencies. NPIS advice ensures that healthcare professionals not only have access to up to date information about treating poisoned patients, but also information to safely manage appropriate cases of minor poisoning at home, thus reducing unnecessary use of NHS resources. The major workload of the NPIS is to advise hospital emergency departments, NHS patient advice services (NHS 111 and NHS 24) and also primary care services.

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NPIS Cardiff unit

University Hospital Llandough, Cardiff, hosted by Cardiff and Vale University Health Board
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Regional Drug and Therapeutics Centre, Newcastle, hosted by Newcastle upon Tyne Hospitals NHS Foundation Trust
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About the UK Health Security Agency

UKHSA is responsible for protecting every member of every community from the impact of infectious diseases, chemical, biological, radiological and nuclear incidents and other health threats. We provide intellectual, scientific and operational leadership at national and local level, as well as on the global stage, to make the nation health secure.

UKHSA is an executive agency, sponsored by the Department of Health and Social Care.

Version 1

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Published: December 2025
Publishing reference: GOV-19913