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Aims

“The aims of the Regional Drug and Therapeutics Centre are to promote the safe, effective and economical use of medicines in the National Health Service in the former Northern and Yorkshire Region; and other stakeholder areas to promote the highest quality of care for people exposed to the toxic effects of drugs or chemicals; and to disseminate and develop knowledge in these areas through teaching and research”
Foreword

It is with considerable pride that we present our Annual Report describing the varied workstreams of the Regional Drug & Therapeutics Centre during 2014/15.

The provision of high quality support, from that at individual patient level to population level demonstrates the broad skill base of our staff. The development of new ways of delivering information, from bespoke prescribing reports to patient facing websites such as bumps, showcases our determination to continually drive improvements and increase value to our commissioners.

Medicines Optimisation drives a renewed focus on achieving the best outcomes for patients and we look forward to working with colleagues and commissioners to deliver this agenda in the coming months.

Sue Dickinson     Simon Thomas
Director of Pharmacy    Medical Director
Executive Summary

Prescribing and Medicines Use

The provision of high quality, timely information and expert advice remains essential to the commissioning and delivery of safe, clinically excellent and cost-effective healthcare and supports the four main principles of the medicines optimisation agenda referred to above.

Support provided by the RDTC in prescribing and medicines optimisation aims to help primary care organisations address some of the challenges associated with improving outcomes from medicines use. Provision of regular evidence based reviews allows CCGs to make the most appropriate choice of clinically and cost effective medicines that meet local priorities. Comparative prescribing data allows CCGs to tackle variation in prescribing between practices and promotes best practice across regions. In addition the unique blend of services and proactive support provided by the RDTC allows specialist knowledge and expertise to be shared across stakeholders reducing duplication of effort and facilitating best and equitable use of limited resources.

Services provided continue to develop and improve in line with stakeholder demands, staff dedication and the changing NHS environment. The service is well respected by healthcare professionals across the Northern region.

Medicines Information

Access to high quality medicines information is key to achieving the best outcomes for patients in use of their medicines. As medicines become ever more complex the need for expert interpretation of often limited information increases. The RDTC, working as part of the United Kingdom Medicines Information Network (UKMi), provides assurance around the quality of such services to the NHS as well as contributing to wider Specialist Pharmacy Services. Support is provided to non-medical prescribers and General Practitioners as well as pharmacists and doctors working in secondary and tertiary care. Our feedback continues to demonstrate the high levels of satisfaction with the service provided.

Pharmacovigilance

The primary function of the Northern & Yorkshire Yellow Card Centre (YCCNY), which receives funding from the Medicines and Healthcare Products Regulatory Agency (MHRA), is to encourage ADR reporting from local health professionals, patients, parents and carers by providing support and education, targeted according to local reporting patterns. During the 2014/15 financial year, 2,799 ADR reports were received from the Northern and Yorkshire region, an 11% increase on 2013/14. The increase has been largely due to a 22% increase in reporting from GPs, with 1,047 reports submitted, 56% from electronic prescribing systems. The simplicity and speed of reporting through these systems is likely to be the major reason for the increase observed. Reporting from other groups, however, was also increased, including hospital and community pharmacists, nurses and patients.
Executive Summary

Poisons Information

The National Poisons Information Service (NPIS) is commissioned by Public Health England (PHE) on behalf of the UK Department of Health. The NPIS comprises of four units based in Birmingham, Cardiff, Edinburgh and Newcastle and provides a year round service for health care professionals, on the diagnosis, treatment and management of the poisoned patient. Three of the units (Birmingham, Cardiff and Newcastle) operate on a rotating 24 hour basis. Overnight (between 22.00 and 08.00), the UK NPIS also answers telephone enquiries on behalf of the National Poisons Information Centre in Dublin, as well as supporting the Northern Ireland Regional Medicines and Poisons Information Service in Belfast out of hours.

Teratology

The UK Teratology Information Service (UKTIS) is commissioned by Public Health England (PHE) to conduct surveillance and to provide evidence-based information and advice to UK health professionals on the fetal effects of medicines, poisonings and chemical exposures in pregnancy. In recent years, the service has had to develop and evolve significantly to keep pace both with the increase in complexity and volume of scientific publications in this field, as well as the increasing demand from clinicians and the public for critical review and interpretation of the available human pregnancy data. Established in 1983 as a telephone advisory service, provision of detailed information about specific exposures during pregnancy via the internet now predominates.

UKTIS delivered information and advice in response to over 444,000 requests during 2014/15, a 132% increase on 2013/14. These comprised 2,529 telephone enquiries, 56,799 scientific monograph downloads from toxbase.org, 160,351 monograph abstract accesses from uktis.org and 221,053 ‘bumps’ patient information page views.
Introduction

The Newcastle based Regional Drug and Therapeutics Centre (RDTC) is responsible for a range of issues relating to optimising medicines use and drug safety. These include monitoring and advising on prescribing and medicines use in primary and secondary care across stakeholder organisations.

The Centre was established in 1991 as a collaboration between Newcastle University and the former Northern Regional Health Authority. Over the course of the last twenty three years, services provided by the Centre have developed and increased in volume as we have acquired larger contracts and has also expanded the geographical areas covered. The Centre is hosted by the Newcastle upon Tyne Hospitals NHS Foundation Trust, which is responsible for employing staff.

In 2013/14 the major reorganisation of the NHS resulted in profound changes to the way our services are commissioned with funding coming from NHS England for the Specialist Pharmacy Service elements, from CCGs for Prescribing Support and from Public Health England for NPIS and UKTIS. Collaboration remains a key way of allowing more cost-effective and joined up services for all stakeholders.

The Centre delivers a broad range of services relating to prescribing and the use of medicines. These include:

- Prescribing Analysis and Support Services
- Regional Medicines Information Services
- Regional Yellow Card Centre Northern & Yorkshire
- National Poisons Information Services (NPIS)
- The UK Teratology Information Service (UKTIS)

The Centre is also active in education and training and in research relating to all aspects of medicines and therapeutics, with a particular focus on the safe and effective utilisation of medicines, management of poisoning, prevention of adverse drug reactions and the appropriate use of medicines during pregnancy.
Prescribing and Medicines Use

The Prescribing Support unit at the RDTC has over 20 years of experience in providing high quality information and support to NHS organisations and health care professionals. The work carried out in supporting decision-making for commissioners and prescribers around new therapies coming to market has been a core activity for a number of years. Provision of comparative prescribing data across regions allows Clinical Commissioning Groups (CCGs) to investigate any variations in prescribing patterns. Working across a wide geographical area at various levels from CCGs to Area Team and National level groups facilitates sharing of good practice and in-depth understanding of current issues. Strategic support and advice to stakeholder organisations allows them to access high levels of skills and expertise in prescribing and management of medicines without having to duplicate positions at a local level.

Overview

Medicines play a crucial role in maintaining health, preventing illness, managing chronic conditions and curing disease. In an era of significant economic, demographic and technological challenge it is crucial that patients get the best quality outcomes from medicines (NICE G5). As the population ages and life expectancy increases, more people are living with several long-term conditions that are being managed with an increasing number of medicines. Improving outcomes through appropriate use of new and existing medicines is vital to ensuring the NHS gets the best value for money invested. Medicines optimisation aims to do this by ensuring that the right patients get the right choice of medicine, at the right time. By focusing on patients and their experiences, the goal is to help patients to: improve their outcome; take their medicines correctly; avoid taking unnecessary medicines; reduce wastage of medicines; and improve medicines safety.

The provision of high quality, timely information and expert advice remains essential to the commissioning and delivery of safe, clinically excellent and cost-effective healthcare and supports the four main principles of the medicines optimisation agenda referred to above.

Support provided by the RDTC in prescribing and medicines optimisation aims to help primary care organisations address some of the challenges associated with improving outcomes from medicines use. Provision of regular evidence based reviews allows CCGs to make the most appropriate choice of clinically and cost effective medicines that meet local priorities. Comparative prescribing data allows CCGs to tackle variation in prescribing between practices and promotes best practice across regions. In addition the unique blend of services and proactive support provided by the RDTC allows specialist knowledge and expertise to be shared across stakeholders reducing duplication of effort and facilitating best and equitable use of limited resources.

Services provided continue to develop and improve in line with stakeholder demands, staff dedication and the changing NHS environment. The service is well respected by healthcare professionals across the Northern region.

“"The RDTC have developed (the bespoke report) over and above our specification and we have had some very positive responses from our localities and practices”"

CCG Medicines Optimisation Lead

<table>
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<tr>
<th>NHS Outcomes framework domain</th>
<th>Preventing people from dying prematurely</th>
<th>Enhancing quality of life for people with long term conditions</th>
<th>Helping people to recover from episodes of ill health or following injury</th>
<th>Ensuring people have a positive experience of care</th>
<th>Treating and caring for people in a safe environment and protecting from avoidable harm</th>
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<td>RDTC Contribution</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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Prescribing Analysis Reports

Overview

The provision of regular prescribing data to stakeholder organisations encourages improvements in prescribing. The RDTC prescribing reports present prescribing data in a manner which enables the reader to readily identify areas of prescribing which may warrant further attention. Information is included within the reports which may aid users in their interpretation of variations in prescribing such as national, regional and local guidance, safety alerts, products entering or leaving the market and significant product price changes. Stakeholders are alerted to the need for further local investigation and where possible examples of successful prescribing initiatives are highlighted so that stakeholders are able to share best practice and support the aim of achieving cost-effective prescribing for their patient population.

The RDTC is conscious of the changing audience requiring access to the information contained within prescribing reports and additional work has been undertaken this year to update the format of the reports to accommodate both existing and new users.

Figure 1 below lists the reports produced by the RDTC across the North of England regions during 2014/15.

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<th>Report title</th>
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<th>Report description</th>
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<tr>
<td>Potential generic savings</td>
<td>Quarterly</td>
<td>Data from the Information Services Portal is used to highlight potential savings through switching from proprietary drugs to their generic equivalent at CCG and AT level and is updated on a quarterly basis.</td>
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<tr>
<td>Cost Comparison charts (word and excel version)</td>
<td>Quarterly</td>
<td>These charts illustrate costs of comparative drug treatments within therapeutic classes (BNF sections).</td>
</tr>
<tr>
<td>Switch saving calculator</td>
<td>Quarterly</td>
<td>Developed by the RDTC prescribing support team, this tool calculates savings that will result from switching one drug or formulation to another with the same / similar therapeutic effect or constituents, respectively.</td>
</tr>
<tr>
<td>Drug tariff monitor</td>
<td>Quarterly</td>
<td>This tool is intended to be used by primary care advisors as an aid to informing budgetary discussions. Monthly potential savings / cost increases are calculated for all generic drugs in the BNF, and include Category M generic drugs as a particular subgroup.</td>
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<td>Monthly financial headlines</td>
<td>Monthly</td>
<td>Provides headline information on year to date prescribing expenditure, including forecast expenditure and cost growth, actual cost growth relative to budget uplift, weighted per capita prescribing frequency and cost in the previous financial year. Item growth is also included</td>
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Ad Hoc Requests

Within the RDTC SLA is the facility to request ad hoc data analysis during the year; during 2014/15 sixty-eight such requests were prepared. These requests were in relation to work carried out across therapeutic networks, area prescribing committees or for CCGs monitoring the progress of a particular cost saving initiative.

The RDTC is currently one of a few organisations in the country with direct access to Hospital Episodes Statistics (HES) data and has concentrated its efforts to incorporate this data into the therapeutic reports to demonstrate the impact primary care prescribing may have on patient outcomes. An example of the use of HES data to try to correlate prescribing practice with patient outcome data is shown in figure 2 (see below).

“Your reports, as always are professional and really comprehensive and have saved us significant time in collating them - thank you”

CCG Lead Pharmacist
where a correlation is sought between the levels of oral anticoagulant prescribing and the number of patients admitted to hospital following a stroke who have a secondary diagnosis of atrial fibrillation.

The RDTC is keen to encourage the sharing of best practice between regions and continues to request that stakeholders submit any examples of successful initiatives or practices to the Unit in order that it can be highlighted within the reports. Where the Unit is able to identify any evidence of successful practice via changes in prescribing data, CCGs are contacted to ascertain what actions were taken in order to achieve the results shown, and whether this success can be shared with other stakeholders via the narrative included within the reports.

![Figure 2. Northern CCGs: Oral anticoagulant drug weighted prescribing frequency April 2014 to December 2014 v hospital admissions per 10,000 patients - April 2014 to December 2014](image)

### Managing the Entry of New Drugs and/or treatments

#### Overview

Support in managing the introduction of new medicines (and/or devices) into the NHS is provided in the form of regular (annual and monthly) horizon scanning reports as well as the provision of clinical evidence reviews for new medicines or indications. The service provided by the RDTC allows CCGs to access high level critical appraisal and horizon scanning expertise at minimal costs to the commissioning organisation.

#### Horizon Scanning

Planning the introduction of innovative medicines and managing future expenditure are key activities of clinical commissioning groups (CCGs) and these are supported by RDTC Horizon Scanning activities. Nationally the team supports the publication of Prescribing Outlook - a NHS UKMi publication providing advanced notice of new medicines and new licensed indications for existing medicines. The RDTC leads on the production of several sections of the UKMi new drugs report providing therapeutic monographs, an
assessment of the potential uptake of new drugs and the likely impact of new therapies on NHS services.

Regionally the availability of a monthly Horizon Scanning report provides CCGs with updates on new products, significant changes to product licenses, significant new guidance, and other determinations and recommendations of recognised national bodies. These reports have been updated following CCG feedback and now include details about drugs that are already on the NICE work plan and include the responsible commissioner. RDTC Horizon scanning documents are standard agenda items on several Area Prescribing Committees and at multidisciplinary Drug and Therapeutic team meetings. Where invited, RDTC staff can further inform local meetings by providing extra information around the impact of selected primary care medicines.

Further ad hoc regional reports have been produced annually for RDTC stakeholders; these have helped primary care organisations with budget planning activities as well as allowing them to plan for the introduction of effective new medicines into local care pathways.

Evidence based New Drugs Review Documents

The RDTC remains committed to promoting high quality care for patients and helping CCGs to promote the use of clinically and cost effective medicines. One of the most important objectives of our various publications is to manage the introduction of new medicines into the NHS. Several review documents specifically related to new drugs are provided to assist with this aim:

The New Drug Evaluations are concise, structured reviews of new drugs recently launched within the NHS designed to support quality and efficacy at a local level by guiding primary care organisations in the promotion of appropriate safe, effective and efficient prescribing. Drugs which are considered to be primary care orientated with the potential to have a large financial or clinical impact are selected for evaluation. In addition, drugs that are likely to be initiated in secondary care but transferred to primary care are also related.

Recent publications include evaluations of Tiotropium for asthma, and aclidinium / formoterol for COPD.

Evaluation Reports are designed to give a comprehensive appraisal of the efficacy, adverse events, place in treatment and arrangements for prescribing of drugs that are likely to have a significant clinical or financial impact on the NHS. The evaluation reports provide advance objective appraisals of the clinical and cost effective use of medicines in secondary care before NICE (National Institute of Health and Clinical Excellence) issues guidance. Recent topics have included Tapentadol and Targinact® for pain.

NTS Reviews are prepared for the GMMMG New Therapies Subgroup and are similar in content to New Drug Evaluations. Recent topics have included Naltrexone / Bupropion for obesity, Denosumab for osteoporosis in men and nabilone for chronic non-cancer pain.

NTAG Appraisal Reports are the principal source of evidence used by NTAG to make recommendations on the commissioning of treatments. The principal aims of the work undertaken by NTAG are to provide regionally consistent advice to primary care organisations and to ensure that patients requiring non-NICE-approved treatments receive equitable access to a clinically defined and appropriate range of treatments. Recent topics have included Lurasidone, Airsonett device, dapoxetine, and Evaluation of Ranibizumab Cost Models.

“Can I congratulate your team on the clarity of the evidence review documents which are very well written”

Regional APC Member
North East Treatment Advisory Group (NTAG)

The Northern (NHS) Treatment Advisory Group (NTAG) was (re-)formed in February 2014. The RDTC in its collaborative arrangement with NTAG has continued to act as the lead author in the production of a number of detailed treatment appraisal reports as well as providing Professional Secretarial support to the group. Professional Secretarial activities over the year involved updating of the remit of the group, updating of decision making processes, development of the NTAG website and updating of the recommendation template to take account of patient safety aspects as well as the inclusion of a patient perspective box. The RDTC works with NTAG to identify potential new treatments and provide commissioners with advance notice of developments, through horizon scanning, signposting and critical appraisal of evidence, safety and cost-effectiveness as appropriate.

Attendance at New Drugs Groups

Further advice is provided by attendance at specific new drugs meetings such as the Greater Manchester New Therapies Subgroup meeting. The RDTC provides independent advice alongside CSU support and local CCG medical and pharmaceutical representation. The aim of the GMMMG New Therapies Subgroup is to make recommendations on new drugs to the parent medicines management group (GMMMG) and to local Drug and Therapeutics Committee of Greater Manchester NHS organisations. This group provides prescribers with guidance on newly licensed therapies and indications with regard to the products place in treatment. All recommendations are made utilising the best available clinical evidence. The RDTC developed the paperwork and decision making processes underpinning the group to ensure that just and fair decisions are made.

Support to Formulary and Interface Groups

The RDTC continues to provide professional secretarial support to the Greater Manchester Formulary subgroup and in 2014/15 also undertook the role of providing professional secretarial support to the County Durham and Darlington Formulary Subgroup.

In addition to the usual Professional Secretarial duties, the support provided to both groups includes the management of the formulary application process and the provision of an evidence base and accompanying decision aids, in order to support the groups in maintaining and developing the formulary, whilst ensuring a robust decision-making process is followed. The RDTC provides groups with a monthly paper proposing formulary amendments to ensure the formulary is NICE compliant and contains the most up to date safety information. The RDTC has worked alongside the NW CSU to facilitate the review of whole chapters of the GMMMG formulary and has supported the development of pathways for use across Greater Manchester and the facilitation of a GMMMG wide ‘Do Not Prescribe’ and “Grey” list which recommends specific drugs for disinvestment or limited use.

The GMMMG website is hosted and maintained by the RDTC who also update the content of the CD&D formulary website.

The RDTC provides Professional Secretarial Support to the Interface Prescribing Subgroup of the GMMMG; this includes provision of evidence base reviews, comparison documents and prescribing data to support individual drug and/or indication RAG status recommendations. During the year the RDTC has facilitated a full review of the GMMMG RAG list, and coordinating the writing and review of shared care protocols within Greater Manchester. Similarly in County Durham & Darlington support is provided by providing advice on process, clinical evidence reviews and by providing Professional Secretarial Support to both the APC, Primary Care Drug & Therapeutics Clinical Advisory Group, and the Formulary Subgroup. This includes maintenance of the County Durham & Darlington Formulary website.

A number of comparison documents were produced by the Prescribing Support Team throughout the year in response to requests from stakeholders and local decision making groups. The purpose of these comparison documents was to provide a comparison of all the drugs within a therapeutic class in quick and easy to understand format to aid groups in decision making around these drugs.
Topics included:
- NOACs for atrial fibrillation
- Combination steroid inhalers for asthma and COPD
- LAMA inhalers for COPD
- LAMA/LABA inhalers for COPD

Supporting Local Decision Making Groups

National recommendations state that localities should have access (either employed or via a commissioned service) to staff with the specialist skills in evidence synthesis and critical appraisal if they are to review and make decisions on the use of medicines. The RDTC has over 20 years of experience in evidence synthesis and the critical appraisal of clinical trial data. The Prescribing Support team continues to provide support to local decision making groups where requested in various ways as outlined below:

- Provision of locally tailored clinical evidence synthesis review documents
- Provision of professional secretarial support including development of process paperwork
- Advice and support around clinical governance structures of APCs or Medicines Management groups
- Ensuring that decision making groups adhere to the NHS constitution and DH Directions
- Hosting of a local website
- Provision of Training around critical appraisal, population vs individual decision making etc
- Provision of comparative prescribing data to support specific agenda items

Ensuring consistency of processes across all such decision making groups is increasingly important as changes in membership are likely due to NHS structural changes.

Decision Making Tools

The Unit continues to work with local groups to develop tools to support robust decision-making. During 2014/15 this has included a revised Formulary inclusion tool and “Do not prescribe list” assessment tool which is used by both the Greater Manchester Formulary Subgroup and the Greater Manchester New Therapies Subgroup. Similar tools have also been developed for use by NTAG and the CD&D APC and formulary groups.

Strategic Support & Support to individual localities

Members of the RDTC prescribing support team work closely with medicines management groups and other health care professionals across the North of England. This includes direct support in the form of attendance at meetings of groups involved in medicines management and also the provision of general support and advice through an ad hoc enquiry answering service. Some specific examples of the strategic advice and support are as follows:

- When requested, key prescribing reports are presented at meetings outlining the key areas for the group to focus on and areas of potential improvement. Support has also been provided at local area level for specific disease areas e.g. North East and Cumbria Diabetes Clinical Network North East and Cumbria Respiratory Clinical Network or NHS England (North) Area Team Meeting. This localised, specific interpretation of data is highly useful to the group members because it is immediately relevant and points out key areas to consider in improving care of their patients.
- Highlighting areas where costs could be reduced and cost-effectiveness improved. This very specific interpretation of local data at meetings accompanied by ad hoc email and telephone queries allows our respective NHS colleagues to be aware of key issues they might otherwise have missed. Information is presented in a variety of formats ensuring the data is understandable and easily interpreted.

Individual CCGs are interested in promoting cost effective, evidence-based prescribing, as a means of quickly freeing limited resources to reinvest in other services. Strategic support can be provided to commissioning groups to help them in achieving this objective. Support has been provided to Sunderland CCG on a regular basis during 2014/15. Examples of work carried out include development of evidence-based guidelines in specific therapeutic areas, analysis of comparative prescribing data and highlighting areas for improvement. A senior RDTC pharmacist is also a
member of the local medicines management group. During the year the RDTC took on the role of providing Professional Secretary support to the County Durham & Darlington APC, and its associated subgroups. This included working with stakeholders to develop a work plan for the coming year.

Strategic meetings that the RDTC prescribing team support include:

- County Durham and Darlington APC
- County Durham and Darlington Formulary Subgroup
- County Durham and Darlington D&T
- Gateshead Medicines Management Committee
- Greater Manchester Medicines Management Group
- Greater Manchester Formulary Subgroup
- Greater Manchester New Therapies Subgroup
- Greater Manchester Interface Prescribing Subgroup
- The North East Ambulance Service
- The North East and Cumbria Medicines Optimisation workstreams
- The North East Academic Health Science Network
- The North East Senior Pharmacy Managers Meeting
- The North of Tyne APC
- The North of Tyne Formulary Subgroup
- The Northern Treatment and Advisory Group
- Sunderland CCG Medicines Management Committee
- Ad hoc attendance and support to various network meetings [strategic clinical network meetings such as the Clinical Advisory group for diabetes or respiratory or the Academic Health Science Network (AHSN) meetings]

**Education and Training**

During 2014/15 the RDTC developed and delivered a series of training sessions to prescribers new to North Durham CCG. The purpose of these sessions was to provide new prescribers e.g. GPs, GP registrars and non-medical prescribers with an overview of the resources and support available to promote high quality prescribing. The sessions investigate the factors which influence prescribing and include an introduction to the policies and guidelines in place across County Durham and Darlington (CD&D) and a background to the groups involved in the development of this work e.g. the CD&D Area Prescribing Committee and the CD&D Formulary group.

**Training feedback:** Of those that responded, 100% of attendees would recommend attendance at the training provided by the RDTC prescribing support team to a colleague.

RDTC staff attended the Pharmacy Management National Forum in London in November 2014 and presented a poster titled “Right Information, right time, right place”. The poster illustrated how the RDTC critically appraises the evidence for new medicines and produces evaluations to inform decisions made by clinicians, medicines optimisation teams and formulary subgroups regarding their safe and cost-effective use. The poster highlighted the advantages of regional therapeutic prescribing reports to encourage the sharing of best practice at a regional level resulting in improvements in the cost effective and safe prescribing to patients.

In October 2014 the RDTC hosted a table at the NECS North East Primary Care Conference. RDTC staff provided a demonstration to attendees on the information available within the reports. This session enabled attendees the opportunity to feedback to the RDTC on their experiences of using this information and how the development of the reports could continue to benefit the user.
Medicines Information

Overview

Access to high quality Medicines Information is key to achieving the best outcomes for patients in use of their medicines. As medicines become ever more complex the need for expert interpretation of often limited information increases. The RDTC, working as part of the United Kingdom Medicines Information Network (UKMi), provides assurance around the quality of such services to the NHS as well as contributing to wider Specialist Pharmacy Services. Support is provided to non-medical prescribers and General Practitioners as well as pharmacists and doctors working in secondary and tertiary care. Our feedback continues to demonstrate the high levels of satisfaction with the service provided.

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Medicines Information activity

Regional Activity

The RDTC provides medicines information support by a multidisciplinary staff team including pharmacists, information scientists and nurses. The RDTC also hosts the UK Teratology Information Service (UKTIS), and our Medicines Information service also acts as the UKMi national specialist medicines information service for therapeutic teratology enquiries, providing information on the effects of drug exposures on the fetus. Because of the large volume of enquiries and the requirement of Public Health England, all teratology enquiries are documented on a different database to MI enquiries.

During 2014/15 the RDTC answered 1,375 MI enquiries from all stakeholders in the Northern and Yorkshire region. Of these, 1,258 (91.5%) were from primary care, of which 1,051 were patient-centred. The Centre took 269 therapeutic drugs in pregnancy enquiries from primary care in our region. The total number of enquiries from primary care has remained relatively stable over the past five years (Figure 3). However, behind that total, the MI enquiries recorded on MiDatabank has increased 21% since 2010/11 while the number of therapeutic drugs in pregnancy enquiries has decreased by 25% over the same period. The trend upwards may be explained by increased awareness of our MI enquiry answering service and some changes in the nature of our support, with an increase in the number of enquiries from GPs and ‘other NHS’ practice employees in particular. The decrease in therapeutic drugs in pregnancy enquiries may be explained by increased availability of UKTIS monographs and website innovation, UKMi Q&As and National Guidelines addressing drugs and disease states in pregnancy.

Most of the enquiries from primary care came from community pharmacists (n=315), general practitioners (n=414), CCG pharmacist advisors (n=275) and practice pharmacists (n=109) (Figure 4).

MI enquiries are assigned levels based on complexity. Level 1 is a simple enquiry and an answer is found quite easily in one or two resources. Level 2 requires a lengthier search accessing multiple resources. Level 3 is complex and involves evaluation and an opinion based on the information found. There has been a trend towards greater complexity over recent years, which demonstrates a growing need for specialist MI skills and resources (Figure 5). All MI enquiries on MiDatabank are checked by Senior MI Pharmacists before they are closed.
Figure 3. Trend in Primary Care Enquiry numbers

Figure 4. All Medicines Information Enquiries in 2014/15 by Enquirer
The additional 269 therapeutic drugs in pregnancy enquiries are likely to be mainly level 3 but recorded on a different database to enable case follow-up which unfortunately does not assign levels.

The proportion of MI enquiries received via email increased from 4.3% in 2012/13 to 23.6% in 2014/15. 51.4% of answers were e-mailed which provided an accurate written record of the information provided for the enquirer. All the therapeutic drugs in pregnancy enquiries are received via phone and almost all are answered on the same day.

MI enquiries answered within specified time 1,094 98.9%
MI Enquiries answered the same day 1,033 93.4%

Table 1. Enquiry Response Time during 2014/15

All medicines information enquiries received are reviewed monthly to identify any common issues facing those organisations that commission our services. This information is then discussed in our regular publications meetings, with consideration given to whether there is a need for an in-depth review of evidence resulting in a publication on that topic. The MiDatabank database can be interrogated to identify themes and trends. For example 125 enquiries were received in 2014/15 about swallowing difficulties / enteral feeding, 30 about switching / equivalence, 51 about shortages / supply and 44 about newer oral anticoagulants (compared to just 10 in 2013/14). The RDTC published documents covering the latter two topics.

Figure 6 provides detail of the types of enquiries answered during 2014/15. “Other” enquiries include those categorised as pharmacology / pharmacokinetics, renal and hepatic disease, dentistry and compatibility of injectable medicines.

National Activity

The RDTC contributed to the Medicines Question and Answer documents which are available on the NHS Evidence website (www.evidence.nhs.uk). Medicines Q&As are evidence-based, fully referenced answers to commonly asked MI enquiries. The RDTC target is to write 6 new Q&As each year, as well as updating the 26 that we have previously written. Our Senior MI Pharmacist is accredited to lead on, check and sign off Q&As. We also reviewed and wrote documents on Travel Health and Medicines Waste Awareness respectively as part of the UKMi ‘Thinking Ahead’ series which is intended to support national medicines related public campaigns.

Q&As produced by the RDTC include:

- How do you switch between pregabalin and gabapentin for neuropathic pain, and vice versa?
- What should be considered when prescribing medicines for patients that have undergone bariatric surgery?
- Do gastric events influence the choice of bisphosphonate for the treatment of osteoporosis?
Can the use of proton pump inhibitors increase the risk of community acquired pneumonia infection?

Do statins cause amnesia?

Is methotrexate therapy associated with an increased risk of leukaemia?

What are the safety concerns surrounding the use of black cohosh?

What are the risks of ocular adverse effects with bisphosphonate treatment?

We are one of the authoring centres for the New Medicines Section of the Prescribing Outlook Series - a horizon-scanning publication providing independent and evaluated information on new drugs and reducing duplication of effort across the UK.

Regular meetings of the local MI Network have been held at the RDTC to promote national UKMi activity, deliver CPD and encourage and support collaboration such as peer review between MI specialist pharmacists and their respective centres.

The RDTC audited and provided a report on three MI Services - Northern Ireland Regional Medicines Information Service (Belfast), Newcastle Hospitals NHS Foundation Trust and Northumberland, Tyne and Wear NHS Foundation Trust.

The RDTC continues to use Version 3 of MiDatabank which enables submission of adverse drug reaction data directly to the Medicines and Healthcare Regulatory Authority from enquiries received as part of our routine medicines information activities. The RDTC were one of the early implementers of this development sending our first yellow card report from MiDatabank in June 2011. As of 2nd March 2015 2,006 reports have been made to the MHRA from all participating centres, an increase of 429 (27%) since August 2014, 1,305 of which were classed as serious. Of these the RDTC submitted 141 reports of which 58 were serious making it the second highest reporter of the 103 participating centres.

The RDTC is also taking part in the planned national MiDatabank enquiry Sharing Project through the UKMi Network which aims to reduce duplication nationally and increase efficiency. All staff have received training in using it. As of April 2014 approximately 2,240 enquiries have been put on Mi Sharer. The number of participating centres has increased from an initial three (of which RDTC was one) to ten by April 2015.

Work has begun to develop the specification for Medicines Information national activity under the Specialist Pharmacy Service arrangements. NHS
England commissions services on behalf of the wider NHS though final details have yet to be confirmed beyond March 2016. Closer working with colleagues in Quality Assurance and Procurement is already underway, particularly around managing shortages and consideration is being given to extending the work around Medicines Safety in the North of England.

North East Ambulance Service

The RDTC have a SLA with North East Ambulance NHS Foundation Trust for a Pharmacy Advisor for the equivalent of one day per week. This work is delivered by an assigned Principal Pharmacist whose work in 2014/15 included:

- **Medicines Management Advice**
  Advising on ad hoc medicines management issues across the service
  Advising on legal aspects of medicines management arrangements and the NEAS response to Medicines Legislation changes
  Providing advice on the medicines management aspects of the various different services including standard A&E service, HART, Occupational Health, Enhanced Care, the new Advanced Paramedic service and future service developments such as the phased introduction of Omnicell®, an electronic integrated medicines management system
  Contributing to the NEAS medicines policy and particular procedures and governance arrangements within that
  Raising awareness of new or updated national or regional guidance and advising as to how these could be embedded into NEAS policies and practice, such as
  - NICE Medicines Practice Guideline. Patient Group Directions (MPG2). August 2013
  - NICE Guideline. Medicines optimisation: the safe and effective use of medicines to enable to the best possible outcomes (NG5)
  - NHS North East and Cumbria antibiotic prescribing guideline for primary care
  - Quality Premium 2015/16 improving antibiotic prescribing in primary and secondary care (10% of quality premium)

- **Attendance at Meetings**
  Quarterly NEAS Medicines Management Group Meetings which provide oversight and strategic input for medicines management at NEAS and quarterly Operational Medicines Steering Group to address day-to-day medicines management operational issues
  Attendance and support for relevant agenda items at the quarterly NEAS Clinical Advisory Group meetings
  Attendance at the quarterly Quality Committee Meetings until a change in the number, Terms of Reference and membership of Groups and Committees at NEAS in Spring 2015
  Attendance and support for the monthly Pharmacy Contract meetings with the Pharmacy supplier

- **Governance**
  Supporting trust-wide medicine management standards and review of audit findings and advice on necessary actions
  Review and advise NEAS in response to national guidance and alerts from the NHS England or Medicines Healthcare Regulatory Authority or other relevant national bodies. This included reviewing NEAS against the NHS Protect ‘Security standards and guidance for the management and control of controlled drugs in the ambulance sector’, with an action plan and mitigation against the standards in readiness for a CQC visit.
  Interpretation of legal frameworks and exemptions on supply, possession and administration of medicines, with advice on the implications for NEAS and any necessary actions such as in response to:
  - The Misuse of Drugs (Amendment) (No.2) (England, Wales and Scotland) Regulations 2015 which amend the Misuse of Drugs Regulations 2001
  Writing responses to relevant consultations on behalf of NEAS such as:
  - Consultation on the rescheduling ketamine under the Misuse of Drugs Regulations 2001 (submitted for 3rd November 2014)
  - Consultation on proposals to introduce independent prescribing by paramedics across the United Kingdom (submitted for 22 May 2015)
Attendance at Durham CD LIN meetings as a deputy for NEAS Accountable Officer when necessary (quarterly meetings)

Support for the drugs procurement process and tendering of contracts as required. Contribute to the monitoring of the current contract through regular meetings and review of KPI and activity reports

Presenting to CAG a New Drugs Template for use when NEAS are considering formulary changes

Benchmarking with APN

• **Membership of the national Ambulance Pharmacists Network**

Attendance at quarterly meetings, sharing of ideas, lobbying and networking with key stakeholders such as CQC Controlled Drugs National Manager, RPS, NHS 111 Pharmacy Lead, Head of the Home Office Drugs Licencing & Compliance Unit etc

Benchmarking exercises such as drug procurement costs, controlled drug losses and breakages, administration of diazepam for epilepsy in children to inform the need for paramedic access to buccal midazolam

The RDTC Principal Pharmacist fulfilling the NEAS Pharmacy Advisor role became secretary to the APN in November 2014

• **Patient Group Directions**

Pharmacist signatory to patient group directions for use by NEAS

Annual review of the PGDs used by the Occupational Health Team

Updated PGD Development Procedures and Template based on NICE Guidance September 2013

A NEAS PGD Formulary for frontline services was written (excluding Occupational Health PGDs)

Development of thirty PGDs for the Advanced Paramedic new service development in addition to maintaining those already in existence bringing the total NEAS PGD suite to fifty with a view to producing additional PGDs for the Advanced Paramedic Service during 2015/16

• **Training**

The RDTC Principal Pharmacist in the NEAS Pharmacy Advisor role delivered Pharmacology training on Drug Delivery to two cohorts of Year 2 Paramedics during 2014/15 and training to the first group of Advanced Paramedics on Patient Group Directions

**Teaching and Training**

As a matter of routine, all enquiry answering staff undertake initial locally-delivered training and assessment in medicines information, teratology and management of poisoning, ongoing learning is supported by regular CPD sessions, courses and attendance, as appropriate, at national training events such as the UKMi National MI training course and UKMi Professional Development Seminars.

Medicines information Training delivered during 2014/15 included:

**RDTC**

Internal comprehensive initial training and assessments, ongoing CPD attendance at courses and relevant conferences

**Pre-Registration Trainee Pharmacists**

Regional half day training session and workshop

5 x 3 week and 2 x one week RDTC MI rotations for two local Trust’s Pre-registration trainee pharmacists where in-house MI expertise and appropriate supervision is unavailable

**Local Trust Support**

Six monthly meeting of local MI Pharmacists within the region

Circulation of information from the UKMi Executive Committee and the Commercial Medicines Unit in relation to shortages

**Service Developments**

This year the RDTC was an early implementer of the Mi Sharer capability on MiDatabank which was introduced in response to a desire to reduce duplication of effort.
The MI service has also continued to promote the use of e-mail to submit enquiries in addition to the telephone enquiry answering service. The proportion of e-mailed enquiries has increased significantly since 2011. All enquirers, including those who have placed their enquiry by telephone, are offered the option of receiving a written answer via e-mail.

Clinical Governance

Call recording for medicines information enquiries has continued this year and call review has been done which has allowed us to monitor the quality of our enquiry answering, and offer feedback and reflective learning to improve our service. It is also available in response to any complaints received.

220 quality assurance user survey forms were sent to a random selection of MI service users and 125 were returned. UKMi has devised a scoring system out of 6 for responses received as a measure of the service provided and scores indicate that users are very happy with the service provided (Figure 7).

The survey asks 10 questions to which the enquirer could select yes, no or not applicable. Table 2 indicates the percentage who answered yes out of those that were counted as applicable. The User Survey forms are reviewed and the service arrangements are modified if service improvements are required. Changes were introduced to timeliness of QA request forms being sent out in response to comments about difficulties in remembering the query or the service provided. This resulted in an increase from 35% to 56% in QA forms returned.

<table>
<thead>
<tr>
<th>Category Score for Answer Satisfaction</th>
<th>% Yes</th>
<th>% NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Were you able to contact us easily by phone, e-mail or person?</td>
<td>100</td>
<td>NA</td>
</tr>
<tr>
<td>Did our staff interpret your needs correctly?</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Was a deadline agreed for a reply?</td>
<td>85</td>
<td>4</td>
</tr>
<tr>
<td>Did you receive the answer by the agreed time?</td>
<td>85</td>
<td>5</td>
</tr>
<tr>
<td>Did our response answer your questions?</td>
<td>95</td>
<td>5</td>
</tr>
<tr>
<td>Did we offer practical advice where appropriate?</td>
<td>99</td>
<td>1</td>
</tr>
<tr>
<td>Did we give you enough detail?</td>
<td>99</td>
<td>1</td>
</tr>
<tr>
<td>Were you confident in the answer we gave you?</td>
<td>97</td>
<td>2</td>
</tr>
<tr>
<td>Did our answer contribute to patient care?</td>
<td>96</td>
<td>3</td>
</tr>
<tr>
<td>Would you use the service again?</td>
<td>99</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 2. The percentage of enquirers who answered yes to the question in the User Survey for 2014/15

Figure 7. The Percentage of MI enquiries which received a UKMi score (0-6) in the UKMi User Satisfaction survey in 2014/15
We generally receive very positive responses to the request for suggestions as to how to improve the service or other comments related to the MI service they received.

- An excellent service - long may it continue
- Excellent Service. My first choice for more complex enquiries
- Have always found the service to be very helpful and always got the answer I needed
- Extremely useful service and very helpful
- Excellent prompt service, thank you

- Great Service. Received answer quickly, felt confident with answer given
- Knowing the service is available where up to date information can be sought is a good thing in this line of practice particularly where information about medicines and prescribing habits can change very quickly

In addition to the standard UKMi User Survey questions, the RDTC has added questions to explore the value of our service by asking about the use to which the answers were put (Figure 8). The main use identified was to ‘initiate or modify a patient’s management’.

Figure 8. The use made of MI answers received during 2013/14 as a % of the total QA responses
Pharmacovigilance

Overview

The primary function of the Northern & Yorkshire Yellow Care Centre (YCCNY), which receives funding from the Medicines and Healthcare Products Regulatory Agency (MHRA), is to encourage ADR reporting from local health professionals, patients, parents and carers by providing support and education, targeted according to local reporting patterns. During the 2014/15 financial year, 2,799 ADR reports were received from the Northern and Yorkshire region, an 11% increase on 2013/14. The increase has been largely due to a 22% increase in reporting from GPs, with 1,047 reports submitted, 56% from electronic prescribing systems. The simplicity and speed of reporting through these systems is likely to be the major reason for the increase observed. Reporting from other groups, however, was also increased, including hospital and community pharmacists, nurses and patients.

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Yellow Card Data

The YCCNY is responsible for encouraging appropriate adverse drug reaction reporting from the North East of England, Yorkshire and Cumbria. With the increasing patient safety agenda, it is important that information is collected on adverse drug reactions (ADRs) when these arise so that this information can be acted on to protect public safety when appropriate. For 50 years the Yellow Card Scheme has played a vital role in medication safety and continues to evolve as an invaluable tool for preventing harm to patients. A high level of ADR reporting from NHS organisations indicates a high degree of awareness and a good patient safety culture and our role is to encourage and support that.

Reporting of serious ADRs has increased in line with reporting overall (Figure 9). The MHRA asks for all serious ADRs to be reported but we know that only around 10% are actually the subject of a Yellow Card report. It is hoped that with increased awareness and education and improvements in IT systems, we can increase the proportion of serious ADRs that are reported.

Figure 9. Total number of reports received by financial quarter
This year the most frequently reporting group was doctors (all types, 49%), but pharmacists (17%), nurses (13%) and patients (including parents and carers, 12%) also made important contributions (Figure 10). Total pharmacist reporting increased by 10%. Community pharmacist reporting has always been lower than for other professional groups, so it was pleasing to see a 7% increase this year. We hope to continue this momentum by further targeting this group in the coming year.

Yellow Card reporting varied widely by CCG. Of the 36 CCGs in our area, 25 saw an increase in reporting in the 2015/16 financial year. NHS Gateshead had a 95% increase in reporting this year following educational sessions delivered in the Gateshead area in recent years. The 11 CCGs where reporting did not increase will be targets for improving reporting rates in the coming year (see Figure 11).

The influenza vaccine is the drug with the most yellow card reports this year, providing 4% of all reports. The top 10 suspected drugs for our area were broadly similar in 2014/15 and 2013/14, with varenicline, rivaroxaban, phenoxymethylpenicillin, simvastatin and the Varicella-Zoster vaccine all appearing in the top 10 reports for both years. This year saw the HPV vaccine drop from the 10 for the first time since 2009/10. Publicity following the unrelated death of a girl after receiving the vaccine had led to a large number of reports for the HPV vaccine. This effect may now be dwindling and as the drug is no longer under additional monitoring we are receiving fewer reports.
Yellow Card Promotion

The Centre has continued to work with the MHRA and other YCCs throughout the country to ensure the optimum promotion of the Yellow Card Scheme.

As in previous years, a themed version of the annual report was sent to Chief Pharmacists of each hospital trust in the Northern and Yorkshire region with the aim of stimulating reporting from hospital pharmacists. Encouragingly, reporting from this group increased by 15% this year and we hope to build on this momentum by offering further educational sessions in the coming year.

Patients, parents and carers remain a target group for increased reporting. Increasing reports from patients, parents and carers has been a target of our Centre and an upward trend in the number of Yellow Cards submitted from these groups was continued, with a 37% increase in 2014/15. We have been targeting patients and carers via patient groups such as the Epilepsy Action, National Osteoporosis Society, Parkinson’s Disease UK and Polymyalgia Rheumatica and Giant Cell Arteritis support groups, providing materials and education sessions. This year we also had an article promoting the Yellow Card Scheme published in *All About Health* magazine. This free magazine is distributed throughout community pharmacies nationally. We also seek to raise awareness of patient reporting through our educational work directed at healthcare professionals, who are also encouraged to continue reporting themselves.

The centre has continued to publish the bulletin series *Safer Medication Use*, which promotes safer prescribing, highlights emerging or significant drug safety problems, and raises awareness of adverse drug reaction detection and reporting. The *MINT (Medicines Information News Today)*, a newsletter produced by the centre, discusses drug news relevant to primary care health professionals and also continues to promote the use of Yellow Card.

We provide support and education targeted by local reporting patterns to health professionals in order to increase the quality and quantity of Yellow Card reports received by the MHRA and during the year the Centre provided a number of local training events for this group. We also encourage future health professionals to embrace the culture of ADR reporting and patient safety by offering educational resources and specialist speakers on ADRs and Yellow Card reporting to universities within our region.
Poisons Information

Overview

The National Poisons Information Service (NPIS) is commissioned by Public Health England (PHE) on behalf of the UK Department of Health. The NPIS comprises of four units based in Birmingham, Cardiff, Edinburgh and Newcastle and provides a year round service for health care professionals, on the diagnosis, treatment and management of the poisoned patient. Three of the units (Birmingham, Cardiff and Newcastle) operate on a rotating 24 hour basis. Overnight (between 22.00 and 08.00), the UK NPIS also answers telephone enquiries on behalf of the National Poisons Information Centre in Dublin, as well as supporting the Northern Ireland Regional Medicines and Poisons Information Service in Belfast out of hours.

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Performance against contract

The roles and responsibilities of the Newcastle NPIS unit are detailed in the contract with PHE. The unit has achieved all agreed Key Performance Indicators (KPIs), as set out in that contract.

Enquiry Answering

During 2014/15 the unit answered 15,283 enquiries, compared to 17,038 the previous year. This 10.3% reduction in enquiry numbers may have occurred due to (a) agreed national changes resulting in the Unit closing to enquiries between 08.00 - 16.00 on five days of the three weekly rota cycle, and (b) the planned increasing use of the NPIS on-line database TOXBASE® as a first point of call for poisons information. This is a more efficient and cost-effective way of providing poisons information for less complex cases.

Of the enquiries received, a significant proportion (30%) involve children under the age of 5, as reported in previous years. The most common age groups for adults subject to an enquiry were 20-29 years (13%) and greater than 70 years (10%) (Figure 12).

![Figure 12. Age distribution](image)
The largest user groups of the service were nurses (45%) and doctors (39%) and hospitals (28%) (Figures 13 and 14).

The majority of episodes (85%) of poisoning occurred in the home. Accidental poisoning accounted for 48% and therapeutic error 24% of enquiries. Intentional self harm (19%) and recreational abuse (3%) were less common reasons for contacting the service.

Pharmaceuticals continue to be the most commonly involved substances (62%) with paracetamol (11%) and ibuprofen (4%) the two most commonly involved in enquiries. Industrial and household agents both accounted for 14% each, similar to previous years.

Figure 13. Source of Enquiry

Figure 14. Designation of Enquiry
All enquiries involving a patient are graded on severity using a system developed by the European Association of Poisons Centres and Clinical Toxicologists (EAPCCT). The score is based on the clinical condition of the patient at the time of the call and graded as “none” “minor”, “moderate” or “severe”. The maximum PSS is also recorded (MAXPSS) and this reflects the most severe symptom/s experienced by the patient from the initial exposure, to NPIS receiving the call. The majority of exposures (66%) were recorded as having a PSS of none (i.e. no features), but 25% had minor, 3% moderate and 1% severe features (Figure 16).

All severe enquiries, and any cases that meet criteria for referral as per national operating procedures, are offered further discussion with the Consultant Toxicologist on call. A total of 582 cases were referred to a Consultant Toxicologist during 2014/15. All of these cases are routinely followed up to ascertain patient outcome and to see if NPIS can assist further as obtaining such follow up data could ultimately impact on treatment guidelines improving patient care. NPIS advice can also, and often does, prevent admissions to hospitals or referrals to primary care and this is evident in 40% of enquiries where no treatment was advised.

### Table 4. Top 10 Agents

<table>
<thead>
<tr>
<th>Agent</th>
<th>Total number of enquiries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paracetamol</td>
<td>1,654</td>
</tr>
<tr>
<td>Ibuprofen</td>
<td>658</td>
</tr>
<tr>
<td>Ethanol</td>
<td>453</td>
</tr>
<tr>
<td>Co-codamol</td>
<td>347</td>
</tr>
<tr>
<td>Citalopram</td>
<td>229</td>
</tr>
<tr>
<td>Diazepam</td>
<td>218</td>
</tr>
<tr>
<td>Tramadol</td>
<td>198</td>
</tr>
<tr>
<td>Zopiclone</td>
<td>194</td>
</tr>
<tr>
<td>Aspirin</td>
<td>184</td>
</tr>
</tbody>
</table>

Figure 15. Category of poison

![Category of poison](image)

Table 4. Top 10 Agents
TOXBASE®
TOXBASE® is the primary clinical toxicology database of the NPIS providing guidance for the management of the poisoned patient to NHS healthcare professionals. Newcastle contributes actively to the work programme by updating, reviewing and producing new monographs. A total of 702 were submitted during 2014/15 a 14% increase on the 602 produced in 2013/14. This continues our year on year increase in TOXBASE® output.

The unit also takes an active role in participating in national editing group meetings and providing comments on entries as and when required.

Quality Assurance
NPIS Newcastle takes part in the national quality control exercise for telephone poisons enquiries and aims to provide a high quality service to users. During 2014/15 15,035 patient specific calls were answered by the unit, 5.1% were randomly selected and sent the standard questionnaire. A total of 760 questionnaires were sent out and 256 were returned, a response rate of 33%, which is typical for this type of survey.

General Practitioners were the largest group of respondents (23.4%), as in previous years, closely followed by NHS 111 nurses (17.6%). Table 5 shows the designation of respondents.
<table>
<thead>
<tr>
<th>Designation</th>
<th>Newcastle n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital consultant</td>
<td>9</td>
<td>3.5</td>
</tr>
<tr>
<td>Junior Hospital Doctor</td>
<td>20</td>
<td>7.8</td>
</tr>
<tr>
<td>General Practitioner</td>
<td>60</td>
<td>23.4</td>
</tr>
<tr>
<td>Hospital Pharmacist</td>
<td>2</td>
<td>0.8</td>
</tr>
<tr>
<td>Community Pharmacist</td>
<td>3</td>
<td>1.2</td>
</tr>
<tr>
<td>Paramedic (NHS 111)</td>
<td>24</td>
<td>9.4</td>
</tr>
<tr>
<td>Nurse (NHS 111)</td>
<td>45</td>
<td>17.6</td>
</tr>
<tr>
<td>Nurse (NHS Direct/NHS24)</td>
<td>9</td>
<td>3.5</td>
</tr>
<tr>
<td>Nurse (A&amp;E)</td>
<td>12</td>
<td>4.7</td>
</tr>
<tr>
<td>Nurse (Other)</td>
<td>31</td>
<td>12.1</td>
</tr>
<tr>
<td>Ambulance Service</td>
<td>10</td>
<td>3.9</td>
</tr>
<tr>
<td>Other</td>
<td>21</td>
<td>8.2</td>
</tr>
<tr>
<td>No Response</td>
<td>10</td>
<td>3.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>256</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Table 5. Designation of Respondents

More than half of the respondent had consulted TOXBASE® before phoning NPIS.

<table>
<thead>
<tr>
<th>Consulted TOXBASE®</th>
<th>Newcastle n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>135</td>
<td>52.7</td>
</tr>
<tr>
<td>No</td>
<td>119</td>
<td>46.5</td>
</tr>
<tr>
<td>No Response</td>
<td>2</td>
<td>0.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>256</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Table 6. Respondents that consulted TOXBASE® before contacting NPIS telephone service

In the majority of cases, the reason cited for phoning NPIS after consulting TOXBASE® was that there was considered to be inadequate information on TOXBASE® to answer the question they had, or that there were special circumstances or other reasons.

For those who did not consult TOXBASE® first (46.5%), 27.2% selected “other” as the reason and 16.7% did not know what TOXBASE® was. It is common practice for the unit to send out a standard letter to all users who don’t know what TOXBASE® is that explains more about the database and how they can register to access it.

Respondents were asked to agree or disagree with a number of statements in relation to the given enquiry that they made to NPIS. Overall satisfaction with the service offered was extremely high with 98.4% rating the service very good / excellent compared to 97.4% in 2013/14.
We have a protocol telling us to ring NPIS for all cases of poisoning 3 2.4
There was inadequate information on TOXBASE® to question I had 71 57.7
I couldn’t interpret the information on TOXBASE® 9 7.3
The information on TOXBASE® seemed to contradict other information I had 1 0.8
There were special circumstances or other reasons 39 31.7

| Total number responding | 123 | 100 |

Table 7. Reason NPIS was contacted after consulting TOXBASE

<table>
<thead>
<tr>
<th>Reason</th>
<th>Newcastle n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>I don’t know what TOXBASE® is</td>
<td>19</td>
<td>16.7</td>
</tr>
<tr>
<td>We don’t have it in our department</td>
<td>24</td>
<td>21.1</td>
</tr>
<tr>
<td>We couldn’t get logged on / connection wasn’t working</td>
<td>6</td>
<td>5.3</td>
</tr>
<tr>
<td>We’ve not been trained to use it yet</td>
<td>13</td>
<td>11.4</td>
</tr>
<tr>
<td>Other</td>
<td>31</td>
<td>27.2</td>
</tr>
</tbody>
</table>

| Total number responding | 114 | 100 |

Table 8. Reason cited for not consulting TOXBASE before contacting the telephone service

<table>
<thead>
<tr>
<th>Question</th>
<th>% Satisfaction Score 2014/15*</th>
</tr>
</thead>
<tbody>
<tr>
<td>The person I spoke to was polite and pleasant</td>
<td>97.6</td>
</tr>
<tr>
<td>Once my call was answered by the Specialist in Poisons Information the enquiry was dealt with promptly</td>
<td>96.0</td>
</tr>
<tr>
<td>The reply from NPIS was relevant and useful</td>
<td>93.5</td>
</tr>
<tr>
<td>The information was given to me at an appropriate speed</td>
<td>94.6</td>
</tr>
<tr>
<td>I was given the right amount of information for my needs</td>
<td>93.9</td>
</tr>
<tr>
<td>I had confidence in the reply I was given</td>
<td>91.8</td>
</tr>
<tr>
<td>My telephone call was answered without delay by a specialist</td>
<td>90.2</td>
</tr>
</tbody>
</table>

Table 9. Telephone Quality Assurance Survey Satisfaction Scores 2014/15

*Satisfaction score is the proportion of respondents who agree ‘completely’ or ‘a lot’
The UK Teratology Information Service (UKTIS) is commissioned by Public Health England (PHE) to conduct surveillance and to provide evidence-based information and advice to UK health professionals on the fetal effects of medicines, poisonings and chemical exposures in pregnancy. In recent years, the service has had to develop and evolve significantly to keep pace both with the increase in complexity and volume of scientific publications in this field, as well as the increasing demand from clinicians and the public for critical review and interpretation of the available human pregnancy data. Established in 1983 as a telephone advisory service, provision of detailed information about specific exposures during pregnancy via the internet now predominates.

During 2014/15 we launched our dedicated public facing website ‘bumps - best use of medicines in pregnancy’ (medicinesinpregnancy.org) and moved to direct public engagement through social media platforms such as Facebook and Twitter. Through bumps, UKTIS aims to make evidence-based, high quality information openly accessible to as many people as possible, thereby increasing awareness and knowledge amongst both health care providers and women to support informed and shared decision making regarding use of medicines in pregnancy. Women will also be able to use bumps to contribute to teratogen surveillance by creating their own personal online bumps record, detailing their pregnancy history, exposures and pregnancy outcome.

UKTIS is one of a network of international teratology information services and a founder member of the European Network of Teratology Information Services (ENTIS) which celebrated its 25th anniversary last year. International collaboration between UKTIS, other ENTIS centres, Motherisk (Canada) and the Organisation of Teratology Information Specialists (OTIS) in the USA has demonstrated the value of combining individual small datasets, which provide an important source of information to inform clinical practice and policy.

UKTIS provides information on request to official organisations such as the Medicines and Healthcare products Regulatory Agency (MHRA), the Commission for Human Medicines (CHM), the European Medicines Agency (EMA), the British National Formulary and the Neonatal Formulary (BNF). Expertise amongst UKTIS staff is reflected in their involvement in national expert committees, international special interest groups, international collaborative research studies and ongoing contribution to educational and academic meetings.

<table>
<thead>
<tr>
<th>NHS Outcomes framework domain</th>
<th>Preventing people from dying prematurely</th>
<th>Enhancing quality of life for people with long term conditions</th>
<th>Helping people to recover from episodes of ill health or following injury</th>
<th>Ensuring people have a positive experience of care</th>
<th>Treating and caring for people in a safe environment and protecting from avoidable harm</th>
</tr>
</thead>
<tbody>
<tr>
<td>RDTC Contribution</td>
<td>✓</td>
<td></td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

**Information Provision**

UKTIS delivered information and advice in response to over 444,000 requests during 2014/15, a 132% increase on 2013/14. These comprised 2,529 telephone enquiries, 56,799 scientific monograph downloads from toxbase.org, 160,351 monograph abstract accesses from uktis.org and 221,053 ‘bumps’ patient information page views.

**National Telephone Enquiry Line**

To meet increasing demand for high quality information in the face of restricted funding and rapidly changing methods of health care provision, UKTIS has increasingly encouraged users to access information via our websites, with the telephone service being reserved
for more complex cases. Health care professionals are
directed to online written monographs on TOXBASE®
as the first line source of information. As a result of
this strategy, telephone enquiries from across the UK
have gradually decreased from 4,844 in 2006/07 to
2,529 in 2014/15. The enquiries received, however, are
of increasing complexity; for example there has been
an increase in the proportion of enquiries involving
exposure to more than one substance from 46% in
2013/14 to 68% in 2014/15.

GPs, hospital pharmacists and hospital enquirers are the
commonest users of the telephone advisory service. As
in previous years, around half of telephone enquiries
were about women who were already pregnant and
a third were requests for pre-prescription or pre-
conceptual advice (Figure 17). The vast majority of calls
(88.4%) involved a therapeutic exposure, with overdose,
poisoning and recreational drug exposure together
accounting for 9%. Complimentary medicines (0.3%),
occupational (1.3%) and environmental (1.3%) exposure
enquiries to UKTIS remain relatively infrequent.

Written Information
Currently, written information is available from UKTIS
via 3 sources:

1. UKTIS scientific monographs
These are detailed and fully referenced documents which
are available to registered health care professionals via
www.toxbase.org, the National Poisons Information
Service (NPIS) clinical toxicology database. They
are clinically focused scientific reviews of the
available information relating to the teratogenicity
or reproductive toxicology of a specific exposure in
pregnancy. Surveillance data collected by UKTIS may
also be reported, and in some instances may be the only
available information relating to human pregnancy.
There are currently about 350 of these scientific
monographs available; UKTIS aims to update these
documents 4-5 yearly, or sooner should new information
that changes or impacts on clinical practice become
available.

During 2012 the format of monographs was changed
from a chronological description of available studies,
to a new template that supports collation of data from
multiple studies into a “bottom-line” section for different
fetal risks (e.g. miscarriage, congenital malformation).
Studies from which data are drawn are tabulated in
detail. Although this process is labour intensive, the new
format helps busy health care professionals to access
the information they need to answer a particular clinical
question more easily and also helps UKTIS to keep the
current monograph portfolio up-to-date. By the end of
2014/15 over half of all UKTIS monographs were in the
new format.

2. UKTIS Scientific Monograph abstracts
Summaries of the detailed scientific monographs have
been openly accessible via www.uktis.org since 2012.
These provide a brief overview but do not include the
detailed and fully referenced review of the available
evidence provided in the full UKTIS scientific
summaries.

Figure 17. Nature of telephone enquiries to UKTIS in 2014/15
3. \textit{bumps} patient information leaflets

UKTIS patient information leaflets are short user-friendly articles written for the general public and are openly accessible via the new \textit{bumps - best use of medicines in pregnancy} website www.medicinesinpregnancy.org. The information they include is consistent with that in UKTIS scientific monographs (Figure 18).

The \textit{bumps} website was launched in April 2014. By the end of 2014/15 it contained 143 links to 92 unique information leaflets. Resource to enable leaflets to be written over 2014/15 has been obtained exclusively through research and other soft funding options. The leaflets have proved popular, with monthly hits to the website exceeding 9,000 in March 2015, 78% of which were directed at the information leaflets. Feedback from users about the website has also been very encouraging.

Table 10 highlights the difference in the 10 exposures most commonly downloaded by registered TOXBASE® users (health care providers), and global internet users with unrestricted access to UKTIS monograph abstracts on UKTIS.org and to ‘\textit{bumps}’ lay information leaflets on medicinesinpregnancy.org. Despite \textit{bumps} having only been launched in April 2014, and the site gradually populated with new information over the past twelve months, leaflet views far exceed those for UKTIS monograph abstracts and suggest that demand for openly-available patient information on exposures in pregnancy is high.

Whilst the total number of monograph abstract accesses on uktis.org have increased by 32% to over 160,000 during 2014/15, the number of monographs downloaded from TOXBASE® has decreased slightly from last year. This may reflect preferential use of the openly accessible information by health care professionals (Figure 19).

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{bumps.png}
\caption{Online view of \textit{bumps} information leaflet on sodium valproate (screenshot of URL http://www.medicinesinpregnancy.org/Medicine--pregnancy/Valproic-acid)}
\end{figure}
<table>
<thead>
<tr>
<th>Access</th>
<th>Registered health professionals</th>
<th>TOXBASE.org</th>
<th>Number of Accesses</th>
<th>UKTIS. org.</th>
<th>Number of Accesses</th>
<th>bumps</th>
<th>Number of Accesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>NAUSEA AND VOMITING</td>
<td>TOXBASE.org</td>
<td>1,850</td>
<td>GENTAMICIN</td>
<td>4,123</td>
<td>CONSTIPATION</td>
<td>31,464</td>
</tr>
<tr>
<td>2</td>
<td>CODEINE</td>
<td>TOXBASE.org</td>
<td>1,210</td>
<td>TRIMETHOPRIM</td>
<td>3,201</td>
<td>AMOXICILLIN</td>
<td>22,831</td>
</tr>
<tr>
<td>3</td>
<td>CORTICOSTEROID</td>
<td>TOXBASE.org</td>
<td>987</td>
<td>PROPRANOLOL</td>
<td>3,087</td>
<td>METRONIDZOLE</td>
<td>20,471</td>
</tr>
<tr>
<td>4</td>
<td>PARACETAMOL OVERDOSE</td>
<td>TOXBASE.org</td>
<td>945</td>
<td>DIAZEPAM</td>
<td>2,352</td>
<td>PARACETAMOL</td>
<td>17,459</td>
</tr>
<tr>
<td>5</td>
<td>SSRIS</td>
<td>TOXBASE.org</td>
<td>919</td>
<td>DOXYCYCLINE</td>
<td>2,168</td>
<td>THREADWORMS</td>
<td>17,142</td>
</tr>
<tr>
<td>6</td>
<td>SERTRALINE</td>
<td>TOXBASE.org</td>
<td>897</td>
<td>CLARYTHROMYCIN</td>
<td>2,047</td>
<td>IBUPROFEN</td>
<td>16,288</td>
</tr>
<tr>
<td>7</td>
<td>IBUPROFEN</td>
<td>TOXBASE.org</td>
<td>884</td>
<td>FORMALDEHYDE</td>
<td>2,021</td>
<td>ASPIRIN</td>
<td>15,806</td>
</tr>
<tr>
<td>8</td>
<td>PAIN RELIEF</td>
<td>TOXBASE.org</td>
<td>837</td>
<td>DICLOFENAC</td>
<td>1,887</td>
<td>CLOTRIMAZOLE</td>
<td>14,224</td>
</tr>
<tr>
<td>9</td>
<td>CITALOPRAM</td>
<td>TOXBASE.org</td>
<td>773</td>
<td>CO-AMOXICLAV</td>
<td>1,716</td>
<td>HEAD LICE</td>
<td>13,568</td>
</tr>
<tr>
<td>10</td>
<td>ANTIBIOTICS</td>
<td>TOXBASE.org</td>
<td>753</td>
<td>METROLOL</td>
<td>1,469</td>
<td>CETIRIZINE</td>
<td>13,238</td>
</tr>
<tr>
<td></td>
<td><strong>Total Number</strong></td>
<td></td>
<td><strong>56,799</strong></td>
<td></td>
<td><strong>160,351</strong></td>
<td></td>
<td><strong>221,053</strong></td>
</tr>
</tbody>
</table>

Table 10. Top 10: Most requested pregnancy related information via toxbase.org, uktis.org and medicinesinpregnancy.org in 2014/15

Figure 19. Full monograph (toxbase.org), monograph summary (uktis.org) and bumps leaflets downloads (medicinesinpregnancy.org) showing UKTIS information provision and user access over the past 5 years
Data collection - surveillance and research

UKTIS conducts teratogen surveillance by obtaining details of pregnancy outcome from the health care professionals who sought advice by telephone about an exposure(s) in pregnancy. The managed reduction in telephone enquiry volume has therefore compromised the collection of data for surveillance using this approach. The availability of an online reporting form that health care professionals could download and return to UKTIS by post or fax to notify the service of an exposure has been ineffective. Despite over 2,000 downloads of the reporting form via uktis.org in 2014/15, very few were completed and returned to the service. Informal feedback from health care professionals suggests that increasing workload and reduced time for administrative activity have been major factors.

Considerable time has been invested in the development of an online reporting tool for pregnant women, which was ready for launch on the bumps website at the end of March 2015. Women can provide details about their health, their pregnancy and pregnancy exposures (such as medicines, chemicals, alcohol and cigarettes) directly to UKTIS by creating a secure password protected unique ‘my bumps record’. Email prompts will encourage women to update their record in ‘real-time’ throughout the pregnancy and, where a live born infant is recorded, to provide information at yearly intervals about the child’s health and development. It is hoped that information collected in this way will supplement that currently provided to UKTIS by healthcare professionals and offer a means of enhanced surveillance, in particular for signals suggestive of longer term effects of a medicine on behaviour or learning ability. Importantly, this online reporting facility will support international data collection and offers immediately available infrastructure to support national or even global surveillance during future pandemics or national UK vaccination programs where real-time data collection and analysis is critical to inform public health policy and clinical practice.

During 2014/15 UKTIS staff members were involved in several collaborative international teratology information service research studies. Two studies, on TNF-α inhibitor and mirtazepine exposure in pregnancy, were completed and the results published in peer reviewed scientific journals. An NIHR-HTA funded review of therapies used in the treatment of hyperemesis gravidarum (severe pregnancy sickness) was also completed and the final study report accepted for publication. UKTIS is also involved in two studies investigating the risk of neurodevelopmental effects with in-utero exposure to antiepileptic drugs, in collaboration with Bath University, the UK Epilepsy and Pregnancy Register and the Liverpool Neurodevelopment Group. Staff of UKTIS have also been involved in the EU Innovative Medicines Initiative funded PROTECT Pregnancy Study, examining the value of direct reporting of exposures and pregnancy outcome by pregnant women.

During 2014/15 UKTIS staff co-authored two chapters on poisoning and recreational substance use in pregnancy in the third edition of Drugs During Pregnancy and Lactation (Schaefer), a designated essential information resource for Medicines Information centres in the UK.

Informal spontaneous feedback on bumps (medicinesinpregnancy.org)

‘Wish I had read bumps when I was pregnant, it is really good to have the available evidence to hand’
- Member of the public

‘This website is brilliant! I’ve been wanting this for 20 years!’
- Healthcare Provider

‘A fabulous write up from @medsinpregnancy about sodium valproate’
- Patient support group member, Twitter

‘I have used a lot of your leaflets for patients, they are very helpful to support conversations about drugs in pregnancy. Great site and extremely beneficial to patient care. The more you do, the better!’
- Pharmacist

‘We very much welcome the service user leaflets about medication in pregnancy on the bumps website - a much needed resource’
- Consultant Psychiatrist

‘Thanks for this - I have been looking for a website to safely tell whether a medicine is okay for a pregnant patient. It is better than the BNF for this. Please could you also start doing safe for breastfeeding section too, Thanks’
- Doctor from NHS

Clinical Governance

Formal feedback is sought from a random sample of telephone enquirers, with questionnaires sent out between one and four weeks after the enquiry. During 2014/15 there were 350 enquiries (14% of the total enquiries) selected for quality assurance monitoring in this way.
As of May 2015, 95 (27%) of these forms had been returned from a range of enquirers including GPs (59), pharmacists (11), hospital consultants (7), junior hospital doctors (4), nurses (7) and ‘other’ service users (6). The occupation of one responder was not reported.

Of the 95 responders 6% had used the service more than five times, 56% had used the service between one and five times previously and 38% were first-time enquirers. Enquirer satisfaction scores for 2014/15 demonstrated an improvement in nearly all areas, with 100% of responders indicating that they would use the service again and 96% reporting a high overall degree of satisfaction (Table 11). Satisfaction scores were lower, however, for the speed of information delivery, which will be a focus for staff training in 2015/16.

<table>
<thead>
<tr>
<th>Question</th>
<th>High Satisfaction Score (%)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did you find it easy to contact UKTIS</td>
<td>99</td>
</tr>
<tr>
<td>The reply from UKTIS was relevant and useful (agree)</td>
<td>97</td>
</tr>
<tr>
<td>Once I got through, the enquiry took a long time to be dealt with (disagree)</td>
<td>82</td>
</tr>
<tr>
<td>The information was given to me too quickly (disagree)</td>
<td>68</td>
</tr>
<tr>
<td>The person I spoke to was polite and pleasant (agree)</td>
<td>98</td>
</tr>
<tr>
<td>The information was sufficient for my needs (agree)</td>
<td>91</td>
</tr>
<tr>
<td>I had confidence in the reply I was given (agree)</td>
<td>93</td>
</tr>
<tr>
<td>Was the information received detailed enough</td>
<td>98</td>
</tr>
<tr>
<td>Will you use the service again</td>
<td>100</td>
</tr>
<tr>
<td>Overall Satisfaction with the service</td>
<td>96</td>
</tr>
</tbody>
</table>

Table 11. Summary of UKTIS telephone enquirer satisfaction scores

*High Satisfaction score is the proportion of respondents who scored 5 and 6 (in agreement) or 1 and 2 (in disagreement)
## Appendix I  Prescribing Support Publications

### New Drug Evaluations 2014/15

<table>
<thead>
<tr>
<th>Drug</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aclidinium + formoterol</td>
<td>Mar 15</td>
</tr>
<tr>
<td>Tiotropium (asthma)</td>
<td>Feb 15</td>
</tr>
<tr>
<td>Indaceterol + glycopyrronium - update</td>
<td>Dec 14</td>
</tr>
<tr>
<td>Rivaroxaban in ACS - update</td>
<td>Oct 14</td>
</tr>
<tr>
<td>Lidocaine prilocaine</td>
<td>July 14</td>
</tr>
<tr>
<td>Brimonidine for the treatment of facial erythema of rosacea</td>
<td>June 14</td>
</tr>
</tbody>
</table>

### Evaluation Reports 2014/15

<table>
<thead>
<tr>
<th>Report</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Targinact for chronic pain</td>
<td>Jan 15</td>
</tr>
<tr>
<td>Tapentadol for chronic pain</td>
<td>Jan 15</td>
</tr>
</tbody>
</table>

### Safer Medication Use 2014/15

<table>
<thead>
<tr>
<th>Document</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nefopam</td>
<td>Jan 15</td>
</tr>
</tbody>
</table>

### Prescriber Support Tools 2014/15

<table>
<thead>
<tr>
<th>Document</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combination steroid inhalers</td>
<td>Feb 15</td>
</tr>
<tr>
<td>Comparison of long-acting antimuscarinic + long-acting veta 2 agonist combination inhalers</td>
<td>Feb 15</td>
</tr>
<tr>
<td>Comparison of long-acting inhaled antimuscarinics (LAMAs) Bronchodilators</td>
<td>Feb 15</td>
</tr>
<tr>
<td>FAQs on oral anticoagulant drugs</td>
<td>Oct 14</td>
</tr>
</tbody>
</table>

### Monthly Horizon Scanning Reports 2014/15 monthly x 12
### Appendix II  Financial Summary

Regional Drug & Therapeutics Centre Final outturn for the 12 month period to 31 March 2015

<table>
<thead>
<tr>
<th>Income</th>
<th>Centre</th>
<th>Poisons</th>
<th>Centre Projects</th>
<th>Poisons Projects</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income - Regional core PCTs (indicative)</td>
<td>659,000</td>
<td>659,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income - Regional core - other (indicative)</td>
<td>289,000</td>
<td></td>
<td>289,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income - HPA</td>
<td></td>
<td></td>
<td>1,160,160</td>
<td>1,160,160</td>
<td></td>
</tr>
<tr>
<td>Income - Projects</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Deferred income</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CCG</td>
<td></td>
<td></td>
<td>81,957</td>
<td>81,957</td>
<td></td>
</tr>
<tr>
<td>PHE</td>
<td></td>
<td></td>
<td>56,831</td>
<td>56,831</td>
<td></td>
</tr>
<tr>
<td>Refurb Deferred monies Release</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Adjust for Deferred Income to 14/15</td>
<td></td>
<td></td>
<td>-75,912</td>
<td>-34,390</td>
<td>-110,302</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td>948,000</td>
<td>1,160,160</td>
<td>6,045</td>
<td>22,441</td>
<td>2,136,646</td>
</tr>
</tbody>
</table>

| Notional Income                             |        |         |                |                 |          |
| Newcastle PCT                               | 66,547 |         | 66,547         |                 |          |
| Clinical excellence                         | 19,672 | 27,421  | 47,093         |                 |          |
| Superannuation all staff                    | 2,329  |         | 2,329          |                 |          |
| Adjust for on call notional recharge        | 0      |         |                | 0               | 0        |

**TOTAL ANNUAL INCOME**

| Income phasing calculation                  | 1,036,548 | 1,187,581 | 6,045          | 22,441          | 2,252,615 |

| Expenditure                                 |        |         |                |                 |          |
| Pay - Managers                              | 43,425 | 56,710  | 0              | 0               | 100,135  |
| Pay - Medical                               | 100,487| 309,633 | 0              | 0               | 410,120  |
| Pay - Scientific and Professional           | 603,375| 590,631 | 0              | 3,063           | 1,197,069|
| Pay - A&C                                   | 113,626| 69,846  | 0              | 5,846           | 83,472   |
| Pay - IT Subsidy                            | 20,025 | 20,025  | 0              | 0               | 40,050   |

**Total Pay**

| 880,938 | 1,046,845 | 0 | 3,063 | 1,930,846 |

| NP - S & S Clinical                         | 0      | 0     | 0    | 0     |
| NP - Supplies & services general            | 3,552  | 3,552 | 0    | 0     | 7,104  |
| NP - Establishment services                 | 14,476 | 15,768| 0    | 1,568 | 31,812 |
| NP - Premises & fixed plant                 | 65,765 | 50,607| 0    | 3,903 | 116,372|
| NP - External Contract Staff & Consultancy | 0      | 0     | 0    | 0     |
| NP - NHS Exp - non H’care                   | 3,630  | 257   | 0    | 0     | 3,887  |
| NP - Miscellaneous                          | 358    | 655   | 0    | 0     | 1,013  |
| NP - Reserve                                | 0      | 0     | 0    | 0     |

**Total Non Pay**

| 87,781 | 70,839 | 0 | 1,568 | 160,188 |

**Expenditure sub total**

| 968,719 | 1,117,684 | 0 | 4,631 | 2,091,034 |

| Overheads contribution                      | 72,558 | 83,131| 0    | 0     | 155,689|
| Postage budget Notional Expenditure (to match income) | 1,100 | 2,280 | 0 | 0 | 3,380 |

**TOTAL EXPENDITURE**

| 1,042,377 | 1,203,095 | 0 | 4,631 | 2,250,103 |

| 5,830 | 15,514 | -6,045 | -17,810 | -2,512 |

**Surplus/(Deficit)**
Appendix III Presentations

**Dickinson S.** Dementia Workshop, NHS England, Leeds, 22 September 2014

**Dyker AG.** Presentation to NICE Appraisal Committee D - Clinical efficacy of Tolvaptan in Adult Polycystic Kidney Disease

**Dyk er AG.** Hypertension Core Trainee training session, May 2014


**Hawkins L.** One last call for methionine - a peculiar case of recurrent paracetamol poisoning. NPIS Study Day, Edinburgh, September 2014

**Lam H.** Paediatric button battery exposures. NPIS Study Day, Cardiff, March 2015

**L. Yates.** British Toxicology Society Annual Congress 2014, 28-29 April, London, UK *Pregnancy Registries: Concordance of Animal versus Human Data, Occupational and Pharmaceutical*

**L. Yates.** PENNEC (Paediatric Epilepsy Network North East & Cumbria), Newcastle, UK, 18 November 2014, *Fetal Valproate Syndrome - Update on Sodium Valproate EU Review*

**Mankin G, Reddy B, Mason M.** Pharmacy Management. Medicines Optimisation, London (including poster presentation)

**Richardson JL.** The 2nd International Joined Organisation of Teratology Information Specialists and the European Network of Teratology Information Services Conference, Toronto, Canada, September 2014

**S. Stephens.** Drug safety in pregnancy. Medical Aspects of adverse drug reactions. Drug Safety and Research Unit, Southampton, January 2015


**Thanacoody HKR.** Whole bowel irrigation: an update. National Poisons Information Service CPD Meeting, Newcastle, 6 November 2014

**Thanacoody HKR.** Intoxication, Drugs and Toxins. Intensive Care Medicine meeting, Newcastle, 13 February 2015

**Thomas SHL.** Poisoning in pregnancy. Sydney University and Royal Prince Alfred Hospital, Sydney, Australia, 22 April 2014

**Thomas SHL.** Paracetamol - background to changes in management in the UK. Sydney University and Royal Prince Alfred Hospital, Sydney, Australia, 22 April 2014

**Thomas SHL.** Paracetamol poisoning. Emergency Department, Princess Alexandra Hospital, Brisbane, 24 April 2014

**Thomas SHL.** The ECG and QT interval in poisoning. Emergency Department, Princess Alexandra Hospital, Brisbane, 24 April 2014

**Thomas SHL.** Paracetamol poisoning. Queensland Poisons Information Centre, Royal Children’s Hospital, Brisbane, 24 April 2014

**Thomas SHL.** Drug-induced QT prolongation, Medical Grand Round. Newcastle mater Hospital, Newcastle, NSW, Australia, 28 April 2014

**Thomas SHL.** Drug treatment during pregnancy - touching the information void. Newcastle University, Newcastle, NSW, Australia, 29 April 2014
Thomas SHL. QT prolongation - its significance in overdose. Toxicology and Poisons Network Australia (TAPNA). Newcastle, NSW, Australia, 1 May 2014

Thomas SHL. Workshop 1 - the QT interval - making sense of it in practice. Toxicology and Poisons Network, Australia (TAPNA), Newcastle, NSW, Australia, 1 May 2014


Thomas SHL. Paracetamol - still a headache! NUTH Talks, Newcastle upon Tyne Hospitals NHS Foundation Trust, 19 August 2014


Thomas SHL. The ECG in poisoning and management of arrhythmias. College of Emergency Medicine / National Poisons Information Service. Update on Toxicology, Newcastle, 26 September 2014

Thomas SHL. Paracetamol poisoning. College of Emergency Medicine / National Poisons Information Service. Update on Toxicology, Newcastle, 26 September 2014

Thomas SHL. Repeated supratherapeutic paracetamol ingestion. Risks and management. National Poisons Information Service CPD Meeting, Newcastle, 6 November 2014

Thomas SHL. Data from TOXBASE - enhancing the signal detection function of the Yellow Card Scheme. 50th Anniversary meeting, Yellow Card Scheme, Edinburgh, 20 March 2015


Yates LM. EUROMEDICAT conference, Safety of Medication Use in Pregnancy. February 2015, Poznan, Poland

Appendix IV  Conference and academic training attended

Dickinson S.  UKMi Professional Development Seminar, September 2014

Dickinson S.  Greater Manchester Medicines Optimisation Strategy Workshop Facilitation, 16 October 2014

Dyker AGD. British Hypertension Society, Edinburgh, September 2014

Mason M, Erhorn S, McDermott D, Kane N.  North East Commissioning Support Primary Care Conference, 9 October 2014

Reddy B. Pharmacy Management regional road show ‘Medicines Optimisation’, 2 April 2014

Reddy B. NICE Conference, 14 May 2014

Reddy B. AHISN engagement workshop 'Implementing NICE guidelines’, 28 May 2014

Reddy B. Greater Manchester Medicines Optimisation Strategy Workshop Facilitation, 16 October 2014

Russell P, Erhorn S. Regional medicines and other information services, cost-effective prescribing and yellow card reporting. Pre-Registration pharmacists, Newcastle, 18 September 2014


Thanacoody HKR, RCP Acute Medicine conference, Newcastle, 30 April 2014

Thomas SHL. Patient and public involvement (PPI) in research Training event - Faculty of Medicine 19 November 2014

Thomas SHL. Toxicology and Poisons Network Australia (TAPNA). Newcastle, NSW, Australia, April 2014

Thomas SHL. Annual Congress of the European Association of Poisons Centres and Clinical Toxicologists, 27 to 30 May 2014, Brussels, Belgium

Thomas SHL. College of Emergency Medicine / National Poisons Information Service update on Toxicology - CEM, London

Thomas SHL. National Poisons Information Service CPD Meeting, Edinburgh, 11 September 2014

Thomas SHL. National Poisons Information Service CPD Meeting, Newcastle, 6 November 2014

Thomas SHL. 50th Anniversary meeting. Yellow Card Scheme, Edinburgh, 20 March 2014
Appendix V  Courses Supported

Hull York Medical school, University of York MBBS Course (medicine)
  Drugs in Pregnancy and the newborn

Newcastle University Medical School MBBS Course (medicine)
  Clinical Pharmacology and Prescribing 1. Antiarrhythmic drugs

Newcastle University Medical Dental School BDS Course
  Antihypertensive and antianginal drugs
  Drugs used in the management of heart failure and cardiac arrhythmias
  Management of Hypertension and cardiovascular disease

Newcastle University MRes Experimental Medicines and Therapeutics
  Critical evaluation of clinical trials and other experimental medicine research

Newcastle University BSc Pharmacology
  Clinical Pharmacology and Drug Development: Clinical and cost effectiveness
  Clinical Pharmacology and Drug Development: Pharmacovigilance and Risk Management Planning
  Clinical Pharmacology and Drug Development: Prescribing Indications: Epidemiology and high risk patient groups
  Newcastle University Masters in Clinical Research: Clinical and cost effectiveness

Newcastle University MRes Human Genetics
  Clinical Spectrum of Common Birth Abnormalities - Part B (Teratogens)

Newcastle University MRes Toxicology
  Adverse cardiovascular effects of potassium channel blockade

Newcastle Foundation Doctor Training
  Management of poisoning

University of Hertfordshire MSc Pharmacovigilance
  Adverse Drug Reactions by Body Systems - Consequences of drug use in pregnancy
Appendix VI In-House Training & Development

Mandatory Training

Fire Safety
Infection Prevention and Control Level 1
Information Governance
Equality and Diversity
Moving and Handling (Office Staff)
Safeguarding Adults and Children Level 1
Anti Bribery and Corruption

In-house Training

Induction training in Poisons, Teratology and Medicines Information
Certificate in Leadership and Management, Institute of Leadership and Management, Level 5
Excel Workshop

Regular three weekly information service meetings

Sessions this year
Mefanamic acid
Animal products in medicines
A history of early antidote development
Selective Serotonin Reuptake Inhibitors in pregnancy
Case report high dose desferrioxamine in a child
Atypical antipsychotics in pregnancy
Fish toxins
MI Databank documentation for Medicines Information enquries
EMS documentation for Teratology enquries
UKID documentation for Poisons enquiries
Fish toxins part 2
Teratology document update
IV access
National MI project results
Characteristics of telephoned poisons information enquries arising from British prisons. A report from the UK National Poisons Information Service
Lithium in pregnancy
Overview of antiepileptics in pregnancy
Paracetamol and TOXBASE guidance
Appendix VII Publications in Scientific and Medical Journals

Book Chapters


“Pharmacovigilance”, pages 14-15
“Drug and alcohol withdrawal”, pages 46-47
“Serotonin syndrome”, pages 79-80
“Malignant hyperpyrexia”, pages 81-82
“Methotrexate and other chemotherapeutic agents”, pages 168-171
“Vitamins”, pages 176-177
“Cyanide”, pages 229-230


Review Articles

Erhorn S, Kane N. Jaydess IUS. Drug and Therapeutics Bulletin 2015; 53:9-12

Kane N. Nalmefene for alcohol dependence. Drug and Therapeutics Bulletin 2014; 52:54-57


Peer-reviewed Papers

Barnicott LRC, Tarmey NT, Craig GR, Thomas SHL. Intravenous lipid emulsion (ILE) therapy for severe felodipine toxicity. JICS 2013; 14:346-8


Abstracts


Kamour A, James D. Lupton DJ, Cooper G, Eddleston M, Vale JA, Thompson JP, Thanacoody RHK, Hill S, Thomas SHL. Toxicity after reported use of “benzofury” compounds ([2-aminopropyl]-2,3-dihydrobenzofurans) compared with mephedrone: A report from the UK National Poisons Information Service. Clinical Toxicology 2014; 52:367


Richardson JL, Stephens S, Thomas SHL, Latos-Bielenska A, Jamry-Dziurla A, de Jong-van den Berg TW, Zetstra-van der Woude P, Laursen M, Dreyer N, Hliva V, Mt-ISA S, Blackburn SCF. Internal advertisement methods provide highest levels of recruitment to a pilot study of self-reported medication use and pregnancy outcomes. Pharmacoepidemiology and Drug Safety 204; 23 (S1):312-3


Appendix VIII  Staffing Establishment

Medical Director
Director of Pharmacy
Consultant in Pharmacology
Consultant Physician / Clinical Toxicologist
Consultant Clinical Pharmacologist
Head of Prescribing Support
Lead Pharmacist - Prescribing Support
Senior Pharmacist - Prescribing Support
Senior Pharmacist - Prescribing Support
Clinical Editor - Prescribing Support
Senior Medical Information Scientist - Prescribing Support
Principal Pharmacist - NHS Direct Lead
Senior Pharmacist - Pharmacovigilance
Senior Pharmacist - Medicines Information
Medical Information Scientist - Medicines Information
Information Services Manager
Senior Medical Information Scientist - Poisons Information
Medical Information Scientist - Poisons Information
Medical Information Scientist - Poisons Information
Medical Information Scientist - Poisons Information
Medical Information Scientist - Poisons Information
Medical Information Scientist - Poisons Information
Medical Information Scientist - Poisons Information
Medical Information Scientist - Poisons Information
Head of Teratology
Assistant Head of Teratology
Senior Medical Information Scientist - Teratology
Senior Medical Information Scientist - Teratology
Medical Information Scientist - Teratology
Service Manager
Statistician
Information Officer / Data Analyst
Information Officer
Information Officer
Web Developer / Designer
Personal Assistant to the Head of Teratology
Personal Assistant to the Medical Director
Personal Assistant to the Director of Pharmacy

Externally Funded
Senior Medical Information Scientist - Teratology

Professor SHL Thomas
Mrs SL Dickinson
Dr AG Dyker
Dr R Thanacoody
Dr S Hill
Ms B Reddy
Mrs M Mason
Mr D McDermott
Ms H Johnson
Dr S Erhorn
Ms N Kane
Ms P Russell
Mrs S Smith
Vacancy Pending
Mr V Cassidy
Mrs S Bradley
Mr D James
Mr N George
Ms C Gilfillan
Mrs P Gilmore
Mr L Hawkins
Mr P Holmes
Mr H Lam
Ms Y Peacock
Mrs R Waugh
Dr LM Yates
Dr S Stephens
Ms D Jones
Dr H Dunstan
Mr J Richardson
Mrs J Wood
Dr G Masters
Mr B Khazaeli
Mr J Boot
Ms C Carpenter
Mr R Gourlay
Ms J Ingram
Mrs A Makepeace
Mrs J Metcalf

Dr A Greenall
Appendix IX External Positions Held

SL Dickinson

NHS NATIONAL AND REGIONAL COMMITTEES
UKMi Executive Member. Professional Secretary to November 2014
Member: Greater Manchester Medicines Management Group
Member: North of Tyne APC

AG Dyker

UK ADVISORY COMMITTEES
NICE Technology appraisal committee D

UK ACADEMIC ACTIVITIES
British Hypertension Society
British Association of Stroke Physicians
External speciality training assessor for Clinical Pharmacology Scotland
Reviewer Stroke Association grant applications
Reviewer British Journal of Clinical Pharmacology
Acta medica Scandinavica

OTHER EXTERNAL COMMITTEES
Vice Chair: North of Tyne Formulary Sub committee
Member: Area Prescribing Committee
Member: Medicines use guidelines group

S Erhorn

UK ACADEMIC ACTIVITIES
Associate Lecturer, Faculty of Medical Sciences - Graduate School, Newcastle University

SL Hill

INTERNATIONAL SOCIETIES
Member: European Association of Poisons Centres and Clinical Toxicologists

UK ACADEMIC ACTIVITIES
Strand Lead: Masters in Clinical and Health Sciences with Therapeutics
Module Lead: Clinical and Health Sciences with Therapeutics - Drug discovery and pre-clinical development
Module Lead: Drug Discovery and Development, MRes in Translational Medicine, Newcastle University
Training Programme Director and SAC representative; Clinical Pharmacology and Therapeutics, Northern Deanery
Member: Clinical Pharmacology and Therapeutics STC (Northern Deanery)
Educational Supervisor: PHE Funded Fellows in Clinical Toxicology
Member: British Pharmacological Society
B Reddy

NHS NATIONAL AND REGIONAL COMMITTEES
Professional: Greater Manchester Medicines Management Group
Professional: Greater Manchester New Therapies Subgroup
Professional: Northern Treatment Advisory Group

S Stephens

INTERNATIONAL SOCIETIES
Member: European Network of Teratology Information Services (ENTIS)
Member: The Teratology Society
Member: Organisation of Teratology Information Specialists

UK ACADEMIC ACTIVITIES
Associate Researcher, Institute of Cellular Medicine, Newcastle University

HKR Thanacoody

INTERNATIONAL SOCIETIES
Member: European Association of Poisons Centres and Clinical Toxicologists

UK ADVISORY COMMITTEES
Member: Independent Scientific Advisory Committee, Medicines and Healthcare Products Regulatory Agency
Member: Pharmacovigilance Expert Advisory Group, Medicines and Healthcare Products Regulatory Agency

UK ACADEMIC ACTIVITIES
Honorary Senior Clinical Lecturer, Institute of Cellular Medicine, Newcastle University
Member: Question Writing Group: Joint Royal Colleges MRCP (Part 1) Examining Board
Strand Lead: Clinical Pharmacology Therapeutics and Prescribing, MBBS, Newcastle University
Module Leader: Experimental Medicine and Therapeutics, MRes in Translational Medicine, Newcastle University
Module Leader: Drug development from first-in-man to bedside, Masters in Clinical and Health Sciences, Newcastle University

SHL Thomas

INTERNATIONAL SOCIETIES
Fellow: European Association of Poisons Centres and Clinical Toxicologists
Expert Panel Member: European Medicines Agency
Member: American Academy of Clinical Toxicology

INTERNATIONAL JOURNALS
Senior Editorial Board Member: Clinical Toxicology

UK ADVISORY COMMITTEES
Member: Commission for Human Medicines
Co-opted Member: Technical Committee, Advisory Council on Misuse of Drugs
Member: Expert Advisory Group on Management of Casualties Caused by Chemical Terrorism
Member: Ministry of Defence Advisory Committee on Military Medicine
LM Yates

INTERNATIONAL SOCIETIES AND COMMITTEES
Chair: European Network of Centres of Pharmacoepidemiology and Pharmacovigilance (ENCePP) Working Group 2: Independence and Transparency
Member: Pregnancy Special Interest Group, European Network of Centres for Pharmacoepidemiology and Pharmacovigilance (EMA - ENCePP)
Board Member: European Network of Teratology Information Services (ENTIS)
Expert Panel Member European Medicines Agency
Member: Organisation of Teratology Information Specialists
Member: South African Society of Human Genetics (SASHG)

UK ADVISORY COMMITTEES
Member: MHRA (Medicines and Healthcare products Regulatory Agency) Expert Committee

UK ACADEMIC ACTIVITIES
Member: British Society of Human Genetics
Member: Clinical Genetics Society
Member: Northern Congenital abnormality Survey (NorCAS) Steering committee
Honorary Senior Clinical Lecturer: Institute of Genetic Medicine, Newcastle University
# Appendix X Business Plan

<table>
<thead>
<tr>
<th>Service Area</th>
<th>Objectives</th>
</tr>
</thead>
</table>
| Internal Management and Administration | Ensure that an up-to-date Service Level Agreement between RDTC and commissioners is maintained  
Ensure that an up-to-date Service Level Agreement between RDTC and Greater Manchester Medicines Management Group is maintained  
Agree a mechanism for annual review of SLAs  
Ensure contact databases are up-to-date and maintained following NHS reorganisation  
Ensure that the Drug Alert Cascade system remains robust and fit for purpose  
Contribute to the development of MiDatabank  
Contribute to the development of TOXBASE®  
Contribute to the development of UKPID  
Support updating of UKPID source and agent lists nationally  
Maintain relevant sections of NHS ESR system  
Manage the Electronic Rostering and Attendance (ERA) system to meet the requirements of the Centre and thereafter administer the system  
Support continued staff development  
Monitor financial controls established with formalised budget setting process |
| Prescribing and Medicines Usage | Increase awareness of prescribing support activities to stakeholders  
Support for the NEAS in the implementation of national guidance / policy around medicines as per SLA  
Support medicines management teams in evaluating sources of evidence  
Support for medicines management groups and related forums in the implementation of national guidance / policy |
| Prescribing and Medicines Usage  
Prescribing Analysis Reports | Provide support for implementation of non-medical prescribing  
Linking outcome data to Prescribing  
Provide continued support for performance management of primary care prescribing  
Provide primary care organisations with tools to promote cost-effective prescribing and make prescribing savings |
<table>
<thead>
<tr>
<th>Service Area</th>
<th>Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prescribing and Medicines Usage</td>
<td>Prepare and distribute a range of documents for primary care prescribers and medicines management teams, including: summary monographs on new active substances introduced to the UK market, existing drugs / groups of drugs and safety of medicines; strategic documents concentrating on therapeutic areas; and brief documents to assist with effecting prescribing change. Improve provision of evidence-based advice on new drugs for commissioners and horizon scanning for new developments. Link publications to QUIPP agenda to support prescribing reports. Prepare and distribute detailed reports on agents not covered by the NICE work program, and are excluded from the ‘Payment by Results’ (PBR) tariff. Provide academic detailing aids to accompany relevant publications. Produce strategic documents on therapeutic areas of current interest / concern to medicines management teams, area prescribing committees / drug &amp; therapeutics committees and commissioners. NICE accreditation for RDTC Publications. Ensure Publications reach NHS audience.</td>
</tr>
<tr>
<td>Publications</td>
<td></td>
</tr>
<tr>
<td>Prescribing and Medicines Usage Web</td>
<td>Develop website to allow increased access to the range of publications, and prescribing information / reports.</td>
</tr>
<tr>
<td>Primary Care Pharmaceutical Services Support</td>
<td>Monitor and report user satisfaction of Poisons Information Service.</td>
</tr>
<tr>
<td>Education and Training</td>
<td>Continue to provide input into national training events in medicines information and poisons service. Provide continuing professional development to staff within the RDTC. Provision of specialist study days (e.g. New Drugs, Adverse Drug Reactions, Drugs in Pregnancy, Critical Appraisal and Academic Detailing).</td>
</tr>
<tr>
<td>Research and Development</td>
<td>Contribute to data collection for research projects carried out by NPIS, HPA, EAPCCT, or WHO. Provide Seminars / Study Days on management of poisoning and TOXBASE use for NHS Direct staff in the region and nationally. Carry out research in prescribing and medicines management.</td>
</tr>
<tr>
<td>Service Area</td>
<td>Objectives</td>
</tr>
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</tbody>
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| Medicines Information| Align service within SPS portfolio  
Ensuring UKMi clinical governance standards for enquiry answering are adhered to via external audit of local medicines information centres  
Provide professional development seminars for medicines information pharmacists  
Provide regular communication to PCTs on types of enquiries received  
Contribution to UKMi MI Questions and Answers series  
Maintain current Medicines Information enquiry services and manage anticipated growth  
Develop working relationships with Local Hospitals to deliver MI services and support publications processes |
| NPIS                 | Agree annual contract and KPIs with Public Health England  
Produce TOXBASE entries as required under terms of contract with Public Health England  
Maintain UKPiD Server  
Annual review of clinical governance arrangements provided in NPIS annual report |
| UKTIS                | Maintain support to Chemical Hazards and Poisons Division of HPA in accordance with contract with Public Health England  
Continue to deliver the UK Teratology Information Service in accordance with contract with Public Health England  
Maintain and update the database of summaries on the fetal effects of drugs and chemicals in pregnancy in accordance with our Service Level Agreement with Public Health England  
Develop a public facing teratology website for UKTIS  
Produce information leaflets on drug use in pregnancy for the general public which are consistent with UKTIS HCP monographs but are openly accessible  
Maintain the research profile of UKTIS  
Provision of education in teratology and poisoning in pregnancy |
| Yellow Card Centre    | Agree contract with MHRA  
Increase awareness of Yellow Card Centre Northern and Yorkshire to stakeholders |