Pharmacy

Also known as:
Medicines, medicine management, pharmaceuticals, pharmacy research, pharmacy education, pharmacy qualifications

What we do:
The Pharmacy Department directs the way the Trust manages its medicines, and provides an intuitive and complete service to support this. The department is open 7 days a week and an on-call out-of-hours service is provided.

We aim to provide a high quality service to all patients and staff of the Trust by providing full information about medicines.

The Pharmacy Department leads the Trust Medicines Management agenda and provides a complete service to the whole Trust. We are committed to providing high quality pharmaceutical care by ensuring cost effective purchasing, distribution and use of medicines.

During the week, up to sixteen outpatient clinics operate at any one time providing services for over 300,000 outpatients per year. The pharmacy works in partnership with Lloyds Pharmacy to dispense outpatient prescriptions. The prescriptions are dispensed from a separate retail outlet on the mezzanine floor.

Patients have shorter waiting times for their prescriptions whilst having access to the same high quality pharmacy advice as they had previously.

The major acute services are based within the Royal, together with regional and national specialist services in Nephrology, Renal Transplant, Renal Dialysis, Ophthalmology, Haematology, Bone Marrow Transplant and Vascular Surgery.

Alison B Ewing FRPharmS

What to expect
Working For Pharmacy

Introduction
We have significantly increased our number of clinically active pharmacists in the last 12
months and will continue to increase as needs require. Now, our staff works with a far greater clinical focus, with participation in ward rounds and consultant and directorate teams now considered normal practice.

We have also developed the roles of our pharmacy technicians including:

- Dispensary manager
- Medicines information
- Information management and technology
- Aseptic services manager
- Medicines management
- Ward based teams

We have made significant advances in Information Technology, with an upgrade to JAC windows and automated dispensing in 2003. At the Royal, there is a Clinical Pharmacy Unit with desks for approximately 12 Pharmacists, eight personal computers and a meetings and presentation room. Each pharmacist has their own netbook for use on hospital wards.

Our Aseptic Unit has been redeveloped with state of the art facilities and opened in September 2003. The sum of these developments means that the £2 million has been invested in the department.

**Induction programme**

New recruits of all grades of staff are offered a comprehensive induction programme that is tailored to the needs of the individual and usually lasts two to three weeks. This induction covers all sections of the Pharmacy Department. This induction is different for each grade of staff:

**Pharmacists:**

- Induction into the department.
- JAC and patient administration training and integration into the dispensary.
- Final checking tutorial programme with the dispensary manager.
- Clinical checking programme with the clinical services manager.

**Technicians:**

- Induction into each section of the department.
- JAC and packpicker training.
- Mentoring scheme.
- Final checking (where appropriate).

**Pre-registration pharmacists:**

- Year long training programme.
- Induction into the department.
- JAC and packpicker training.
- Integration into the dispensary.
- Final checking tutorial programme with the dispensary manager.
- Clinical checking programme with the clinical services manager.
Pre-registration pharmacy technicians:
- Two year BTEC training programme at college.
- Two year training programme consisting of rotation through all sections of the department.
- NVQ level 3 training.
- JAC and packpicker training.

Dispensers:
- Undergo an in-house training dispensing package unless holds a formal qualification.
- Induction into the department
- JAC and packpicker training
- mentoring scheme.

Assistant technical officer:
- Undergo an in-house training package to suit section in which allocated to work.

Pharmacy porters:
- Undergo a formal in-house training package.
- Induction into the department.
- JAC training.

Receptionists:
- Undergo a formal in-house training package.
- Induction into the department.

**On call**
The departments are open from 9am to 6.30pm each weekday evening and 10am to 12.30pm at weekends. On weekdays there is a late night service, which most pharmacists participate in once a month. After that, all pharmacists are involved in the on-call ‘from home’ service. This is on a weeklong basis running from Thursday to Thursday. On present staffing levels, this equates to two or three weeks on call cover per year. Calls out of hours are first screened by the duty manager to ensure that all calls are appropriate. There is an extensively stocked ‘emergency night store’ for items that wards may require as a matter of urgency. The pharmacist on-call is not expected to come into the department for discharge prescriptions or total parenteral out of hours. We have a laptop facility with various medicines information sources, including the internet via a mobile, and the facility to dial in and check pharmacy stock levels from home.

**Career progression**
Pharmacists and technicians at our hospitals have opportunities to progress their careers within our hospitals, subject to the appropriate vacancies. A number of our current senior staff have progressed through the ranks over a number of years, lending a sense of permanence within the department. A significant number of assistant technical officers have progressed to become student technicians over the years.
Summary
We hope that this brief overview will give an idea of what our department aims to achieve and how you might fit into that vision. We consider ourselves to be proactive, embracing new technologies and models of care. You may be able to help us achieve more!

You can download the Pharmacy Services document here for more information. (no link provided).

Education and Training in Pharmacy

- We share two joint teacher / practitioner pharmacist posts with John Moores University to promote liaison between pharmacy education and practice.
- There are three posts each year for training new graduate pharmacists in hospital pharmacy.
- There are two posts each year for training pre-registration pharmacy technicians in hospital pharmacy.
- Each year (on average), two pharmacists complete further education qualifications such as a Clinical Diploma or MSc.
- A number of ‘in house’ education programmes exist for in-service training of pharmacy staff.
- A number of the pharmacy staff have NVQ assessor award qualifications and internal verifier.
- Senior pharmacy staff have taken part in national pilot schemes for NVQ levels 4 and 5 management awards.
- A number of pharmacists and ward-based technicians routinely participate in training and education schemes for nurses, pharmacy undergraduates and other staff groups.

Pharmacists run education sessions on medication for patients who are recovering from heart attacks or who have chronic chest complaints.

All pharmacists attend twice-weekly team meetings, which vary in content. These meetings include case presentations, external speakers, planning and discussing service developments and intervention monitoring.

The Directorate actively encourages pharmacists to undertake postgraduate education
including postgraduate diplomas and MSc’s in clinical pharmacy and teaching qualifications. We also support the pharmacists in attending national conferences and symposia, including those provided by the Guild of Healthcare Pharmacists and the United Kingdom Clinical Pharmacy Association. We strongly encourage pharmacists to network with others working in similar specialities and to participate in undergraduate and postgraduate education.

The department has long-standing links with the school of Pharmacy and Chemistry, Liverpool John Moores University. As well as using their courses, we also employ two lecturer practitioners who are employed on a 50:50 and 75:25 split (Hospital:University). A number of our staff also lecture there on a regular basis, depending on the academic calendar and curriculum.

Information for Pre Reg Pharmacists

Introduction
Due to changing requirements from the General Pharmaceutical Council and changes in regional arrangements, no guarantee can be given that the scheme that will operate in 2014/15 will stay exactly the same.

Interviews for pre-registration training will be held on 10th & 11th September 2014, before some universities have restarted term. You need to make sure you are not likely to be on holiday if you are called for interview.

Do our hospitals follow the new National Clearing Scheme procedures?
From this year, we can only use preference to narrow down a field of candidates, not as an initial selection tool. We also have no sight of your academic references until after shortlisting, and cannot see graduates who need a Tier 2 visa to work in the UK. The only thing we can go on is how well you express yourselves on the form, and who has shown they meet the criteria for the post.

How do I choose between Hospitals?
Since all Trusts follow the curriculum approved by the regulator, the training in all will produce rounded graduates. The Royal Liverpool University Hospital is a 900 bed acute teaching hospital, with many regional specialities. It doesn’t do any paediatrics, obstetrics, or psychiatry and to see some of these areas we rotate our graduates during the year. Graduates employed at the other Liverpool Trusts have similar rotations. What will differ is
the focus of the clinical experience, the style of working, and the culture of the Pharmacy Department. You can apply to whichever Trusts you prefer but be sure you have asked the right questions to identify the environment in which you will be happier and gain more.

One thing that differentiates the Liverpool Trusts training schemes from those elsewhere is the high degree of rotation between very specialised, very acute hospitals and units. Students who thrive in these environments tend to be driven, self-motivated and especially eager for a constant supply of new experiences and challenges. Other equally good graduates may prefer to work mainly in one hospital for the majority of their training year, developing closer relationships with a smaller number of staff. You should not commit a year of your life to a hospital unless you are sure that it is the environment you will develop best in.

Supposing I have an interview in Liverpool but I would rather (if I had a choice) work in a city elsewhere or for another type of employer and the interview is not for another two weeks?

Again, honesty is the best policy. We traditionally interview fairly early, in mid-September. If you are made an offer, we will expect a positive verbal response as soon as possible. In fairness to the people who may have just been 'pipped at the post' the sooner you decline, the sooner they will be made an offer.

**What qualities do you look for at interview?**

Most hospitals are seeking graduates who have some understanding of the roles of hospital pharmacists, including changes affecting the profession, good communication skills, and a proactive approach to their own learning. Most hospital interviewers will ask questions to discover this. In Liverpool, the interviewers will want to be sure that you are aware of the demanding environments of our busy hospitals, and will emerge after twelve months qualified, competent, and feeling that you have enjoyed your year.

**What does your training scheme look like?**

In your first few months graduates are inducted the basic areas of the departments for about a month in each:

- The Dispensary
- The Aseptic Manufacturing Unit
- The Medicines Information Unit
- Clinical Services Team

After Christmas, there is then a period of two-three months rotating outside the Trust to bases such as Regional Quality Control, Liverpool Womens Hospital, North Mersey Community Trust (Psychiatric and Community services) and to the Children’s Hospital at Alder Hey. All students are offered two-four weeks in a community pharmacy if needed. This rotation is necessary because in Liverpool, unlike most other cities, the hospital services are split by service type rather than geographically. In order to see a range of practice graduates therefore have to move around more. Whilst this may seem disruptive, our pre-registration trainees have often valued the broader view of hospital practice gained. Finally, graduates return to us about Easter time ready to begin to mimic the work of a qualified pharmacist.
They will finish their dispensary training, build up gradually to delivering clinical services to their own ward or wards, and carry on assisting in Medicines Information.

**What regular training will I receive?**
Whilst on-site, our pre-registration pharmacists join all the pharmacists for our regular educational meetings on Tuesdays and Thursdays. In addition, they attend Grand Round once a week and have a meeting together each week to cover aspects of the examination syllabus. Finally, there is a regional programme of study days. Graduates are expected to lead some of the smaller meetings to gain confidence and experience - but no-one is dropped in at the deep end.

**Will I go on any Study Days?**
Yes, we believe our programme of study days is second to none. There are 35 days out of work, including the day of the pre-registration exam, the equivalent of seven weeks at work. All study days have participative sessions in which you will be expected to participate fully, and you may be expected to prepare for some of them by completing set tasks/reading, etc.

**Will I have to do a project?**
Yes. You will have some choice in the topic though, and assistance with it.

Some time-management skills will be needed to fit the required work around everything else. Graduates present their projects as posters or slide presentations at a regional day in June. For the second time in three years, one of graduates, David Larkin, won the prize for best oral presentation for the North West region held in Manchester.

**Will I have any study time?**
Most trusts allow study time to be made available for graduates. In some of the hospitals in Liverpool, there is a regular time slot but in our hospitals we find it more practical to let graduates arrange time with their immediate supervisors by negotiation. This time is not generally for exam revision, but to follow-up problems that have been identified on wards or elsewhere. Some work will be required in your own time.

**What about the General Pharmaceutical Council?**
You will have a formal appraisal with your tutor once a quarter, against the performance criteria laid down by the society. We adopt a robust approach to evidence collection and you will be expected to assemble a portfolio of evidence to prove your competence, as well as help you reflect and develop your practice. There is thus no room for subjective opinion about how well you are doing, which results in a fairer assessment process. However the system is paper-heavy and needs a diligent and continuous approach to work.

**Phew! Will I cope?**
You will see now that you do have to be self-motivated to be a pre-registration graduate in the NHS. But put the work in and you will turn out with a Registration Certificate and enough experience and confidence to walk into any Hospital Pharmacy department in the NHS. Our Pharmacists are all available to support you, but part of becoming a professional is that you are no longer pushed or pulled into doing things - you do them because you want to or need to. You do get plenty of paid holidays in your year, plus bank holidays, though these have to
be taken at convenient times by mutual negotiation.

**Terms and Conditions**

Pre-registration graduates are paid on the standard Band 5 payscale of the National Health Service. Salary is expected to be £21,478 in August 2015. You have 27 days leave plus statutory holidays. Some participation in weekend rotas is required; we can negotiate around religious restrictions. Some sick pay rights after qualifying period (Note: extended sick leave has to be notified to the society). Accommodation is usually available at subsidised rents. There is a standard NHS three-month probationary period in all contracts in the UK.

**Can I look around the departments?**

Yes. If you are in the area feel free to contact the relevant departments to make an appointment. We encourage visiting; we want you to end up in the place you will develop best in.

**How do I find out more?**

If you would like to chat further please e-mail John Sexton - john.sexton@rlbuht.nhs.uk

Click here to download a sample Pre reg Rota

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**Information for Pre Reg Pharmacy Technicians**

**What will my training programme be like?**

During your 2 year training programme trainees are rostered into the following areas of the department:

- The Dispensary
- The Aseptic Manufacturing Unit
- The Medicines Information Unit
- Distribution / Stores
- Ward Based Services
- Audit
- Purchasing

A rotation is necessary to enable comprehensive training throughout the department over 2
Whilst this may appear to be disrupting and confusing, past trainees have valued the more comprehensive training given in each area, by being in each one for a worthwhile length of time. This enables the trainee to achieve the competencies required in a structured way, as required to gain the NVQ level 3 qualification. NVQ level 3 consists of 14 mandatory units and 3 optional units.

The trainee works with an allocated assessor in creating a portfolio, by having assessment plans agreed for each unit. The trainee is given time in the workplace to accomplish this.

As well as building a portfolio, the trainee is required to attend college for one day per week to gain a BTEC in Applied Science (pharmaceutical) qualification; this is the theory or underpinning knowledge to support the NVQ. The college will set projects and assignments as well as tests on a wide range of topics relating to pharmacy such as law and ethics, pharmacology, pharmacokinetics and microbiology. This requires work to be done at home, so a strong commitment is required from the trainee.

Each trainee is supported by a mentor, he/she will be a qualified technician with experience, but all colleagues are there to help. Technicians are required to hold both qualifications, to enable them to register with the General Pharmaceutical Council, their recognised professional body. Those not registered with the council are not legally allowed to call themselves pharmacy technicians. You can find more information about registration at the Association of Pharmacy Technicians website.

**What regular training will I receive?**
All training in house is NVQ based and all students must be competent in all standards of each of their chosen elements of the NVQ. At the Royal, we adopt a robust approach to evidence collection and you will be expected to assemble a portfolio of evidence to prove your competence.

**Will I have to do a project?**
Yes. Your NVQ is a project, but you will get assistance with it. Some time management skills will be needed to fit the required work around everything else.

**Will I have any study time?**
Yes. You will be allocated a half day a week for time with your assessor. This time is not for BTEC work or examination revision, but to sign off work and create action plans with your assessor. Some work will be required in your own time.

**Read the views of recent student technicians.**

**Grainne Kelly - Trainee pharmacy technician (2nd year)**
The past two years, I have been training as a pharmacy technician, which has included attending Liverpool Community College one day per week to complete a BTEC 3 in Pharmacy Services. The college course included submitting assignments and coursework, as well as ongoing assessments by the college tutors.

Alongside the BTEC qualification, you are required to complete a practical based qualification, the NVQ 3 in Pharmacy Services. The NVQ is completed during work time as you complete your in-house training and rotate through the various departments.

The Royal is a fantastic place for learning as the opportunities available for students are vast. These include dispensary, aseptics, clinical trials, purchasing, distribution and ward
based training.

I feel that the in-depth training that I have received as a student has prepared me for my future as a qualified technician.

**Gina Moss - Trainee Pharmacy Technician (2nd year)**

I have worked as part of the Pharmacy Team at the Royal for three years. The first year I worked as an assistant technical officer and then applied for a new job as a pre-registration pharmacy technician. This new job involved completing a BTEC in Pharmacy Services and an NVQ level 3. The BTEC in Pharmacy Services is the underpinning knowledge required, it entails all students going to college one day a week to study different modules including: microbiology, chemistry, human physiology, scientific practical techniques.

This allows all employees to develop a range of Pharmacy skills, techniques and personal skills that they will require in their day-to-day life as a pharmacy technician.

The NVQ is completed within the workplace and includes four mandatory units and four optional units. This is the practical training which is completed and developed at all times when working within the department. It involves the employees gathering evidence and collecting personal statements/observation as evidence to support that they are competent at their job. To ensure that the employees are experienced in all areas they have a rotation through their two year contract. This involves spending time in all areas of pharmacy:

- Dispensary
- Distribution / purchasing
- Aseptics / cytos
- Clinical trials
- Medicines information
- Ward based

The NVQ is required for a pharmacy technician to become registered.

I have just come to the end of my two years and I feel confident in my ability and training to fulfil my job responsibilities as a pharmacy technician. Even though the BTEC is not a requirement of the registration I am glad that I chose to complete the training in a hospital pharmacy due to the knowledge and experience I have gained from the department, staff and the courses.

For more information, please contact:
Who we are

Pharmaceutical Services are established as a clinical support directorate that has approximately 100 staff, including pharmacists, pharmacy technicians, dispensers, assistant technical officers, an information analyst, clerical officers and porters. At any one time, we are training four pre-registration technicians, three pre-registration pharmacists and staff from other Trusts around the region.

A broad range of services are provided as would be expected for a major teaching hospital complex and we open our pharmacy seven days a week and have on-call service out of opening hours.

Briefly, these services include:

- Dispensing for inpatients, specialist outpatients, day case patients and patients attending the Emergency Department.
- Training of post-graduate pre-registration pharmacists and student pharmacy technician
- Participation in clinical ward-rounds
- Patient self-medication schemes
- Trust formulary review and development
- Adverse drug reaction monitoring scheme
- Medicines information
- Use of patients own medicines
- Medicine use review
- Patient counselling
- Preparation of medicine information leaflets
- Centralised intravenous additive service
- Research and development and clinical audit
- Nurse education programmes
- Cytotoxic drug reconstitution service
- Aseptic dispensing and manufacturing service
Medicines Management
Expenditure on medicine this year is estimated at over £40m and the department's own budget is around £3 million. With the director of pharmacy as the clinical director, effective medicines management is seen as a key focus of the directorate, which is reflected in every aspect of staff activity. Pharmacists play a key role on the drug and therapeutics committee that is chaired by a clinical pharmacologist, who holds a university chair in pharmacoeconomics.

The Trust formulary is reviewed on an ongoing basis and is normally reprinted annually; it is also now available on our intranet. Both pharmacists and technicians are actively involved in clinical audit projects on an ongoing basis. Pharmacoeconomic evaluations, where applicable, ensure that formulary recommendations balance efficacy and safety with cost effectiveness and are based on measurable, clinically relevant criteria.

Directorate reports are prepared monthly according to the needs of individual directorates and are subject to ongoing development. Our 'medicines management' approach promotes the use of medicines that are safe, effective and economic. Clinical interventions and adverse drug reaction reporting are incorporated where appropriate.

Clinical Pharmacy Services
We are committed to developing Pharmaceutical Services in our hospitals and ensuring that patients benefit from expertise in pharmaceutical care in all clinical specialities. This has been supported with staged investment of new and recurring funds resulting in the creation of a significant number of new posts, a process that is still continuing. We train our pharmacists and expect them to develop the levels of service they provide and the expertise we offer to clinical specialities. We have also put a number of pharmacists forwards for supplementary prescribing training and hope that this will in turn, lead towards independent prescribing.

Our clinical service has continued to move towards the pharmaceutical care model and pharmacists have an increasing presence on wards, which has been welcomed enthusiastically by consultants in our hospitals. Pharmacists also participate in and support ward-based schemes for patients’ own medicine use and one-stop dispensing. We are in the process of exploring self-medication to give patients increased independence within the ward or to prepare them for discharge after a long hospital stay. Ensuring that medication histories are correct, early during patients’ admission to hospital is also an important role and our service to the Acute Medical Unit has increased dramatically to ensure that we achieve this. Some of our pharmacists are taking the first steps towards clinic work although the degree to which they can become involved will depend on staffing issues.
Pharmacy staff roles

A career in pharmacy offers equal opportunities for both men and women and employs about 100 whole time equivalents (WTE). Staff groups include pharmacists, pharmacy technicians, assistant technical officers, clerical officers, an IT analyst and porters.

The Pharmacist
Whilst most people generally understand something of the training and work of doctors and nurses, that of the pharmacist appears to be little known. The pharmacist has in fact undergone four years of intensive full-time education to University degree level, followed by a further twelve months of probationary training in the work environment. Only after the successful completion of these five years, can a pharmacist begin to practice his or her profession. Each and every pharmacist is listed on a national register, which has legal status, and is incorporated into a Royal Charter. The training encompasses an extremely wide range of subjects covering all aspects of medicines from their specific chemical nature, through their actions in the body, to their side-effects, and even which formulation (e.g. tablets or mixture) will give the best effect.

Pharmacists are clearly the experts on drugs, and it is therefore not surprising to find hospital doctors regularly being advised by pharmacists on the best drug to use in a given situation. All prescriptions written in the hospital are carefully checked by pharmacists to ensure that the details such as dose etc. are correct; and where drugs are used in combination, checked for any interaction between them which could affect either the patient or the drugs themselves. Any problems found are brought to the doctor's attention. Nurses may also consult the pharmacist with problems relating to specific patients, e.g. where a patient can no longer swallow tablets, or to check which is the most appropriate dressing to use for a particular type of wound.

Although all pharmacists have had the same training, naturally there are some areas of pharmacy where specialisation occurs, and the Pharmacy Directorate employs a range of 'specialist' pharmacists, each of which contributes their expertise when required.

Pharmacy technicians
About one third of the staff in the Pharmacy are pharmacy technicians. Technicians have undergone two years of academic and practical training on a day-release basis at a Technical College of Further Education.

This leads to the nationally recognised qualification of an 'NVQ in Pharmacy Services'.
Entry to this course requires at least four GCSEs (C Grade or above maths, English, chemistry and one other science subject). Students spend one day per week at college, whilst working in the hospital for the remaining days.

Like the pharmacist, the technician has studied a wide range of subjects related to pharmacy, to provide a solid academic basis on which to develop the necessary practical skills required in the dispensing of modern medicines.

Although technicians do some of the more complex dispensing such as making ointments, mixtures and injections from scratch, which demands a high degree of dexterity and manipulative skills, they also supervise and check the dispensing of assistant technical staff. The highly specialised work of sterile production involves working in an ultra-clean, germ-free environment, preparing solutions for direct injection into a patient’s blood stream, or for use by surgeons in the operating theatre. These items must of course be made to the highest quality standards, and requires the technician to pay very close attention to accuracy and detail. This makes technicians, in their own field, as valuable as the pharmacist; and together their complementary roles combine to ensure that the right drug, at the correct dose, in the best form, reaches each patient at the right time.

The contribution of the technicians in particular has been strengthened with technician managed and led services in distribution, procurement, aseptic services and the dispensary. Final dispensing accuracy checking by accredited technicians is the norm. Arrangements for the use of patients own drugs are well developed within a number of directorates and depend significantly on technician input. Similar initiatives to support research and development projects are planned.

Support staff
There are many duties which, whilst not requiring the depth of knowledge of the pharmacist, or the technical skills of the technician, are nevertheless essential to supporting the pharmacy service.

Assistant technical staff are given their training in-house and as well as dispensing; perform very necessary duties in the ordering and receiving of supplies of medicines, and in their distribution to the wards and directorates of our hospitals. It may be stating the obvious, but the best drug in the world is useless, unless it is actually received by the patient. As with any supplying unit, the stock within the Pharmacy must be maintained at levels suitable to ensure consistent supply, and to ensure correct storage conditions etc., and this also falls within the scope of the assistant technical staff.

Study for NVQ’s by support staff is required and an in-house training programme for dispensers is well established.

Management and hospital liaison
A directorate the size of the Pharmacy at our hospitals requires a considerable degree of management, to ensure that all the personnel and services are working to optimal capacity. The directorate is structured so that other health professionals within the hospital can always talk directly with the most appropriate person. Wards often have an appointed pharmacist and assistant technical officer, who are responsible for ensuring that the service operates to that wards best advantage. The allocation of duties within the directorate is carefully managed to ensure that the most appropriate grade of staff is performing a particular duty, and that any necessary training or skills are acquired. This enables the Pharmacy to give the very best service in all its aspects, and ensures that the provision of pharmaceutical needs rests in the very best hands.
**IT analyst**
The post of IT analyst is essential to the support of Pharmaceutical Services.

The analyst works with the Directorate Management Team in implementing and directing an IT strategy that will promote and deliver the implementation of IT solutions within pharmacy to inform and support the delivery & development of pharmaceutical services.

Key roles and responsibilities are to:

- Manage and develop the current information management systems within Pharmacy and to promote the development of new systems
- Manage, maintain and develop the data outputs from the information systems to meet the informational needs of the directorate and our hospitals
- Manage and co-ordinate the maintenance and development of IT hardware within the directorate, in conjunction with the IT department.

**Clerical Staff**
With over 100 people working in the pharmacy directorate, the clerical support needed to record staff holidays, sickness, and staff changes is very significant; and in fact, essential to maintaining the functioning of the directorate. We naturally also have many dealings with other hospital directorates, and letters don’t type themselves!

Our clerical staff use information technology tools to perform these tasks, and help to ensure that the internal workings of the directorate run smoothly. Each must have the relevant competence certificates in typing and office work, and are regularly kept on their toes by dealing with complex drug names and technical specifications. The clinical director of pharmacy’s personal assistant, coordinates clerical activities as well as supplying close administrative support to the clinical director and her Senior Management Team.

Where we are
Not provided

**Opening Times**
Monday to Friday – 9am to 6.30pm
Weekends and Bank Holidays – 10am to 12.30pm
Contact us

The Royal Liverpool Pharmacy Department

The Royal Liverpool Pharmacy Department is situated on the ground and lower ground floors with the main entrance and patient waiting room on the corridor that leads to the ABC lifts from the main foyer opposite the Haematology Department.

Telephone : 0151 706 2090
Facsimile: 0151 706 5838

The Broadgreen Pharmacy Department

The Broadgreen Pharmacy Department is located on the ground floor of the Alexandra Wing opposite the Physiotherapists

Normal opening hours are:
Monday to Friday - 9am to 5pm
The BGH pharmacy is NOT open on a weekend or Bank holiday
Telephone: 0151 282 6056
Facsimile: 0151 282 6218

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<tr>
<th>Dispensary Contacts</th>
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<th>Pharmacy Ward Based Teams</th>
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Additional info

‘Did you know’

- Around 6,000 different medicines are stocked, 3,750 of which are used most frequently.
- The average value of stock held on any one day is around £1.8 million.
- The cost of medicines ranges from tablets at less than a penny each to one costing £5,700 per pack.
- Total annual supply output is about 550,700 items to wards and patients.
- Around 1,100 inpatient items are dispensed each day.
- Around 100 outpatient items are dispensed each day by Lloyds Pharmacy.
- Around 100 discharge prescriptions are processed per day.
- Around 700 ward stock issues made per day.

Services

Aseptic Production

The aseptic dispensing and manufacturing facilities are located at two sites within the envelope of the Pharmacy Department at the Royal Liverpool and Broadgreen University Hospitals NHS Trust.

The first site, situated on the lower ground floor of the Royal, consists of clean rooms designed to facilitate the manufacture of intravenous infusions/injections, eye drops and parenteral feeding solutions. Four isolator cabinets, situated in separate clean rooms, provide the environmental conditions that are required to enable the manufacture of products under license.

This facility consisting of four clean rooms is based on the lower ground floor of the Pharmacy Department. A second facility based away from the Pharmacy Department is located in the Linda McCartney Centre and consists of a clean room with two isolators set up for the production of chemotherapy.

The environmental conditions in the clean rooms are continuously monitored by a sophisticated system of pressure / temperature / humidity sensors as well as particle counting probes. Sequential and continuous particle counting allows for the extrapolation of monitoring data and its application to product quality.

Operator drug dose manipulation and dose checking is enabled via the installed closed circuit television camera systems.

Extraction of excessive alcohol used for disinfection of product components and
consumables is facilitated via specialist extraction sinks.

The secondary site, located on the fourth floor of the Linda McCartney Centre houses two isolator cabinets designed for the production of chemotherapy. Air conditioning to this facility is maintained via an independent air handling unit. The cabinets are ducted externally to restrict any re-circulation of contaminated air back into the clean room.

The two sites are linked centrally via a building management system (BMS), directly to the estates maintenance departments. Any malfunction of the facilities is picked up and addressed efficiently via this system.

Both sites carry Medicines and Healthcare Products Regulatory Agency (MHRA) issued manufacturing licenses (MS & MA (IMP)). This allows for the manufacture of licensed aseptically prepared ‘specials’ and investigational medicinal products.

**Staffing**
Aseptic manufacture and dispensing is carried out by a large team of designated pharmacists, technicians and assistant technical officers. Senior technicians are responsible for production as well as Quality Control and Assurance (QA&C) of both facility and end product. Product release is facilitated by qualified pharmacists in their roles as Qualified Persons (QPs) and Releasing Officers.

Cytotoxic agents for use in cancer care / treatment are manufactured and dispensed under the supervision of senior pharmacists and technicians. All members of staff receive specific training, both within the clinical and technical areas associated with provision of patient care through aseptic services.

**Products**
The facilities are used for both dispensing and manufacturing of products. The quality standards applied and hence the product quality achieved from both processes is the same. The Production Unit services the requirements of both patients within the Trust, and customers within and outside the North West Region. Production focuses on a vast number of centralised intravenous additive agents (CIVAs), ophthalmic preparations, parenteral feeding solutions, cytotoxic drug reconstitution and investigational medicinal products (IMP) development and delivery.

The facilities and its products are tested and controlled by support services contracted via Quality Control North West (QCNW).

**Dispensary Services**
The Pharmacy Department has a very public appearance in the dispensing of prescriptions but this is only one component of the work involved in delivering a modern hospital
pharmaceutical service.

The operations of the Dispensary are managed by the dispensary manager, who has a team of staff including a senior technician, technicians, student technicians, dispensers, porters, receptionist and several pharmacists.

Each inpatient, outpatient and discharge prescription is clinically checked and verified by a pharmacist with liaison with a prescriber where necessary, dispensed by a pharmacy technician or dispenser and then finally checked by a pharmacy technician, pharmacist or pre-registration pharmacist.

The dispensaries prepare over 4000 ointments, creams, lotions and mouthwashes per year, each one made to patient specific formula for a particular condition.

Some 'exotic' items are supplied by Pharmacy e.g. leeches for removing haematomas and aromatherapy oils for use by trained aromatherapy nurses.

The Royal Liverpool Hospital dispensary runs around 100 clinical trials (medication still in development) at any one time.

We have also seen the implementation of a Swisslog Pack Picker automated dispenser. This installation took place during 2003.

Distribution Services
The Pharmacy Distribution provides a service which manages the supply of routinely used medicines to Wards, Clinics, Theatres, Emergency Department and ITU via a stock list.

Each stock list is specifically tailored to meet the users needs and is kept under review by the dispensary manager, senior pharmacy dispensing assistant, ward technicians and ward pharmacist.

Wards are visited once a week but specialist areas such as the Emergency Department, Intensive Therapy Unit and Theatres are visited more frequently as their usage of medicines is much greater.

This service provides a significant part of the medicines re-cycling scheme and clears the wards of surplus, unwanted stock. This helps to save the Trust hundreds of thousands of pounds each year.

Clinical Services
These contribute a significant part of our clinical risk management by frequently reviewing medication charts to ensure that prescriptions are safe and tailored to best meet patients needs.

Our 'medicines management' approach promotes only the use of medicines that are safe, effective and economic.

Where medication related adverse events do occur, pharmacists assist in both the investigation and the preparation of the report to the risk manager. Where necessary, pharmacists direct and participate in the training of medical, nursing and other staff in the safe handling of medicines.

Pharmacists take a lead role in the identification and reporting of adverse drug reactions.
ADRs – which can range from a mild rash to a life-threatening allergic reaction. Pharmacists may detect ADRs by talking to medical and nursing staff or to patients, or by noticing changes to prescriptions such as the addition of a skin cream, indigestion mixture etc. ADRs are reported via an internal 'green card' scheme to Medicines Information and then investigated. Where appropriate, ADRs are then reported via the national 'Yellow Card' scheme to the Commission on Safety of Medicines (CSM) who will disseminate the information nationally to all doctors and pharmacists.

Recent pharmacist led reviews of prescribing have suggested changes capable of saving several thousands of pounds per year. These reviews are often in conjunction with the Medicines Information Unit and the Drugs and Therapeutics Committee.

Pharmacists participate in and support ward based schemes for patient self-medication to give them increased independence within the ward or to prepare them for discharge after a long hospital stay.

Medicines Information (MI) Centre
The MI Centre is staffed by a team of pharmacists and technicians. The centre is led by a senior clinical pharmacist and supported by a senior pharmacy technician, who have both undergone additional training and have substantial experience in medicines information.

The function of the MI centre is to support the safe, effective, economical and rational use of medicines within our hospitals, with a strong emphasis on promoting quality patient care and ensuring patient safety.

The MI Centre deals with about 1,800 medicines-related enquiries each year. The MI Centre has a wide range of medicines information resources available to help answer these enquiries, including text and reference books, reputable medical and pharmaceutical journals, access to online databases, as well as a wealth of personal knowledge and experience of the staff.

The MI Centre is also responsible for:

- Promoting the reporting of adverse drug reactions by healthcare professionals working within the hospital
- Supporting the medicines management team, who deal with the introduction of new medicines into the hospital, by providing impartial evidence and advice.

We receive enquiries from a wide range of people, for example consultants, nurses and dieticians. Enquiries range from simple ‘what is the dose of X?’ through to enquiries about drug interactions and the safe use of medicines in pregnancy, to more complex treatment problems requiring literature searches to find the answer.
Examples of frequently asked questions:

- How do you treat a patient with low calcium?
- What are the dose equivalents for phenytoin oral versus IV?
- How do you administer a danaparoid infusion?
- What treatment regimens are used for eradication of helicobacter pylori?
- What dose of carbamazepine should be used to treat phantom limb pain?
- What are the guidelines on IV administration of potassium?
- What drugs should be avoided in porphyria?

Purchasing

The Pharmacy Purchasing Department is a team of eight staff responsible for the timely, safe and efficient procurement of pharmaceuticals for our hospitals. The annual spend of the Pharmacy on medicines is £40 million.

The process involves:

- Sourcing supply. This is done either by using national contracts set by the NHS Commercial Medicines Unit (NHS CMU) where available or appropriate, or by Trust specific contracts with suppliers negotiated for best value. We also purchase some medicines from overseas to treat various diseases.
- Ordering of goods. Regular orders need to be placed with pharmaceutical wholesalers and manufacturers to ensure that the Pharmacy is able to meet the daily demands of the hospital. Around 150 orders are released each week to various suppliers.
- Goods receipt. Deliveries are safely checked into the Pharmacy and details of batch and expiry dates recorded before passing on for use or storage. The Goods Receipt Team handle around 50 deliveries every day.
- 'Troubleshooting'. This involves expediting overdue orders and the resolution of unexpected supply chain problems by liaising with suppliers and Pharmacy section managers.
- Invoice Processing. The authorisation of invoices for payment by the Finance Department is undertaken in-house due to the sensitive and specialist nature of the products that are being purchased.

The Pharmacy Purchasing Department is proactively working to meet the standards set by the NHS modernising supply agenda – part of which involves the use of electronic trading. E-trading has been introduced here using the NHS Messaging Service and we are working with all our suppliers to obtain as much buy-in as possible.

The benefits of e-trading include:
• Reduction of errors in order transmission – computer to computer ordering (no re-keying of orders)
• Shortened lead times
• Reductions in picking errors because order appears in supplier’s preferred format
• Time saved not transmitting orders by fax/phone
• Immediate confirmation of product availability and notification of delivery date
• Paperless transactions possible.

Our long-term aim is conduct 100% of commercial transactions electronically including incoming invoices. This will increase the efficiency of the pharmacy procurement function in our hospitals to release resources that could be better used elsewhere. Electronic invoicing will also enable the Pharmacy Department to meet its payment targets in compliance with the ‘Better Payment Practice’ code.

Information Management and Technology
The pharmacy directorate has a strong IT focus and has its own senior IM&T pharmacy technician and IM&T analyst who provide a range of support services to the directorate and its staff.

Key roles & responsibilities are to:
• Manage and develop the current information management systems within pharmacy and to promote the development of new systems
• Manage, maintain and develop the data outputs from the information systems to meet the informational needs of the directorate and our hospitals
• Manage and coordinate the maintenance and development of IT hardware within the directorate, in conjunction with the IT department
• Training for all members of staff in the pharmacy including the JAC computer system and automated dispenser and basic computer skills
• Help with daily issues and support relating to IT within the pharmacy
• Pack picker and JAC maintenance
• Running reports to show drug usage and monthly costs
• Out of hours support
The directorate makes good use of IT with pharmacists and technicians having access to the patient record and pathology systems, as well as all the usual Microsoft Office suite of programmes.

**Clinical Trials**
This team is responsible for coordinating the dispensing process for the numerous commercial and non-commercial clinical trials conducted throughout the our hospitals.

Pharmacy staff work closely with Research and Development, investigators and research nurses, commercial sponsors and other involved parties to set up the medicine supply process for each clinical trial.

Dispensing and storage of medicines for clinical trials is quite different from non-trials and is subject to very strict regulations and accountability.

Staff are trained specifically to dispense and check clinical trials medication.

The Pharmacy is responsible for approximately 130 studies. From those in varying stages of set up to some which have been running for a number of years.

We have a Clinical Trials Team within the Pharmacy Department consisting of two pharmacists, two senior technicians, one technician and one administrator/dispenser.

**Pharmacy Developments**

**Automated Dispensing**
This was the first Swisslog Pack Picker in the UK and a world first in a hospital, it also is the biggest Pack Picker to date. It has a pack capacity of around 20,000 packs and each module has a pick rate of around 350 per hour.

Our aim with this system is to improve the accuracy of picking, thus reducing the risk of
dispensing error, to improve the rate of dispensing and to reduce the space requirement of the dispensary.

The Concept
The Swisslog Pack Picker is based between two floors. The dispensers are sited in the dispensary on the ground floor and the input unit is sited in distribution on the lower ground floor.

The Pack Picker was the chosen product because:
- Input unit on one floor with picking and delivery on another
- Smaller 'footprint' in dispensary
- Five storage modules and picking heads
- Non-rectangular packages can be stored giving greater flexibility.

Statistics

- We input on average 1000 packs a day
- We output on average 700 packs per day

Figures since implementation in 2003 (as at August 2011)

- Inputs to date are over 2.2 million
- Outputs to date are over 1.8 million
- Transfers within the Pack Picker are over 3.3 million

This gives an overall total of movements within the Pack Picker over 7.3 million with these figures getting larger as each day passes.

Ward Pharmacy Teams
All wards have a daily pharmacist visit and several wards have a daily technician visit. It has been our aim to re-engineer our services to the wards to introduce ward- based teams, which would mean a smaller team of people would look after medicines for a particular group of wards and provide an improved quality of service.
We have successfully introduced a team to work with four general surgical wards one of which being the Emergency Surgical Admissions Unit. The team includes the ward pharmacist, a ward checking technician, a dispenser and an assistant technical officer. The team also includes the ward staff, ward managers and the matron for these wards. The roles of the team members are as follows:

**Pharmacists**
The role of the ward pharmacist has not changed greatly with the introduction of the team; they still continue to do their clinical work on the wards, but have additional support from the other team members.

**Ward Pharmacy Technician**
The ward pharmacy technicians assess a patient’s own medication for continued use in hospital. They order medication, remove discontinued medication and re-label dose changes. They keep medication charts updated with supply endorsements order controlled drugs (CDs). They final check and deliver medicines to own wards as well as manage discharge prescriptions.

**Dispenser**
The dispenser dispenses work sent down from designated wards and bleeps the ward technician to check work when ready.

**Assistant technical officer**
The assistant technical officer orders ward stocks on a weekly basis and once delivered returns to put the order away.

**Team approach**
The team approach allows the team members to have full control of the ordering and supply of medication to these wards. Communication has been much improved because everyone is aware that a team member will deal with anything regarding these wards so any queries can be directed to the appropriate people. The overall quality of service is improved, being present on the wards stops medication charts being sent to the dispensary. Having designated people to dispense, check and deliver medication means that missed doses are reduced or delayed greatly and patients can be discharged from the wards in a more timely manner with their discharge medication. Feedback from ward staff regarding the teamwork is very positive and they can see improvements in the Pharmacy Service, especially around delivery of medication.

**EPMA**
We have made investments to move all our prescribing and administration from traditional
drug cards to an electronic system known as EPMA (Electronic Prescribing and Medicine Administration). This is a major project involving number of different disciplines and pharmacy team play an integral role in this deployment. We have a dedicated team of a Lead EPMA pharmacist and a senior pharmacy technician to aid with the roll out of EPMA to the trust.

Some of their day to day jobs include:
- Setting up and managing all the drugs on the new system to allow safer prescribing and administration on the ward level
- Training of staff on the use of the system
- Managing user accounts
- Hand-holding during go live periods and providing advice and assistance to EPMA wards
- Updating the system as new upgrades become available
- Establishing a roll out of EPMA to all of our hospitals
- Liaison between the project team and the Trust Board to ensure Trust objectives are delivered in a timely manner.

EPMA has its own dedicated webpage on the intranet that is regularly updated and can be accessed for further details.

**Lloyds’ Outpatient Outsourcing**

In the emerging environment of quality, innovation, productivity and prevention (QIPP) it is essential that the acute hospital setting delivers high quality clinical care in a cost effective manner.

Trust benefits were clear:
- Release of manpower from the dispensary for deployment near to the patients at ward level.
- Providing outpatients with a faster dedicated service whilst maintaining access to high quality professional advice.
- Overall efficiency saving to the health economy.

We at the RLBUHT have outsourced our out patient prescriptions to a joint venture with Lloyds pharmacy. It is one of the first and certainly the biggest project of its kind in the country. The value over the term of the contract is over £45million.

The project required several members of staff to cover all aspects including:
- Outlining specific service to be devolved
- Setting up a pilot project with haematology
- Communicating the changes to staff, patients and colleagues
- Drawing up a European tender specification
- Managing the tender process for over £45million of business
- Transferring the service
- Liaising with Lloyds staff – training
- Setting & monitoring standards to ensure clinical governance is in place
- Working with finance for invoice reconciliation and recovering PbR excluded drug costs

Out patient waiting time now averages 9 minutes and a satisfaction survey has shown the scheme to be popular. Improved work flow through the inpatient dispensary has resulted in improved discharge prescription turnaround time.

The reduction in the number of items allows reallocation of staff to the wards to provide the
near-patient pharmaceutical care that we want to deliver, giving patients more information about their treatment and reusing more of their own medicines while they are on the wards. The staff have also benefited from working together with community pharmacy. Training and development has been done jointly which has increased the understanding of how each sector works.

Many other hospitals have now looked at this development for inspiration to set up similar schemes of their own. This project shows that joint working across the barriers between primary and secondary healthcare can result in huge improvements to pharmaceutical care for patients. The established collaborative partnership is synergistic with constantly emerging ideas for improvements.

Links

**National Links**
The Department of Health
The Royal Pharmaceutical Society of Great Britain
General Pharmaceutical Council
The Association of Pharmacy Technicians
NHS Direct
NHS Choices
Pharmaceutical Journal Online
NHS Jobs
UK Medicines Information
EMC Medicine Guides
Pan Mersey Area Prescribing Committee

**Local Hospital Links**
Liverpool Heart and Chest Hospital
Alder Hey Childrens NHS Foundation Trust
Aintree Hospitals
St Helens and Knowsley Teaching Hospitals
Liverpool Womens Hospital
The Walton Centre
Mersey Care NHS Trust
Clatterbridge Centre for Oncology

**Liverpool Links**