Appendix 13: contribution to the wider emergency department

In total, 148 Part 2 forms were submitted by all EDPPs. Individually, pharmacists submitted between 1 and 12 forms collectively describing 6 categories of activity; the sixth (other activities) included anything which did not fall within categories 1 to 5.

Table 1: Summary of categories of contribution to the wider ED reported

Contribution to wider ED	Number of forms where described*
1. Educate of healthcare professionals – groups and individuals	61
2. Risk management	35
3. Guideline development and review	33
4. Ward-round participation	24
5. Financial tasks	20
6. Other activities	55

*number of forms which described the activity prior to re-grouping data collected

1. Education of healthcare professionals – groups and individuals

EDPPs often provided education and training to other healthcare professionals. This was to individuals – either casually or pre-arranged – but also to larger groups more formally. Both individual and formal group training was provided to all variety of ED healthcare professionals, including all grades of doctor (Foundation doctors were not specifically mentioned, but 'doctors' were described collectively) and nurses including Emergency Nurse Practitioners. EDPPs also supported the education of other pharmacists, including those studying for their prescriber qualification, pharmacy technicians, and pre-registration pharmacists who spent time observing pharmacy practice in the ED. The education and training of individuals concerned many topics which are presented in **Error! Reference source not found.**.

Table 2: Clinical education and training

How to:	Drug focused:	Systems and resources: use of…
Prescribe generally (pharmacist training as prescriber)	Alendronic acid administration and how to counsel patients	Drug storage systems e.g. Omnicell and Mediwell
Prescribe controlled drugs	Antidotes e.g. Naloxone	Electronic prescribing systems e.g. JAC
Prescribe in the ED (doctor new to department)	Switching from oral prednisolone to IV hydrocortisone (dosing and pharmacokinetics)	British National Formulary
Prescribe for children	Interactions e.g. anti-coagulants and NSAIDs	Summary Care Record
Administer infusions	Anticoagulants e.g. differences and choice in Deep Vein Thrombosis	Guidelines
Cardiovert	Antibiotic choice in urinary tract infection	Resources to check interactions
Manage rashes in children	Controlled drugs	
Obtain stock in short supply e.g. hepatitis B vaccine	Most suitable medication for various conditions	
	Suitability of medication for vegan patient	
	Use of colchicine for gout	
	Management of low folate	
	Over the counter medicines available	

Formal group training primarily focused on large clinical topics e.g. treatment of major haemorrhage, but EDPPs did also educate others on Pharmacy's offering to the ED and the use of guidelines and systems. Types of education and training delivered are listed in
Table 3, divided into 'Clinical' and 'Service' topics. As per training individuals, groups

Clinical	Service
Treatment of major haemorrhage	Pharmacy frailty pathway
Acid-base disorders	The nature of the service provided
Resus training (simulation)	Pharmacists as prescribers
Overdose (simulation)	Patient Group Directions
Complex infusions in the transfer of critical children	Electronic bed management tool 'FLOW'
Severe asthma in children (with supportive podcast)	
Controlled drug errors and their prevention	
Influenza in geriatric patients	
Antimicrobials (including prescribing)	
General medicines use	
Gentamycin and vancomycin administration	

trained included all variety of healthcare workers. An EDPP also educated pharmacists visiting from another Trust on their service.

Various methods and resources were used to deliver training. For example, simulation was used to deliver resuscitation training and a 'podcast' from the online emergency medicine blog 'PEM' was used to deliver a session on severe asthma in children.

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Treatment of major haemorrhage	Pharmacy frailty pathway
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Table 3: Group training: clinical and service focused

2. Risk management

Risk management activities related to 3 areas: medicines and infusion fluids; incidents; and governance and management activities. Somewhat differently, one EDPP reviewed their own contribution to risk management and identified further input they could offer.

Medicines and infusion fluids

EDPPs worked to ensure medicines and infusion fluids were stored securely and appropriately yet available and accessible e.g. immediately in an emergency. On one occasion, an EDPP advised that fluid infusion bags in a resuscitation trolley be destroyed due to suspected tampering. Pharmacists also re-stocked ED storage facilities with medicines to be used in the ED, discharge medicines and FP10 prescription pads (or arranged for this to be done). To ensure there would be enough stock available over the weekend this was often done later in the week. EDPPs also reviewed stock lists including for antidotes.

Specific medicine issues were also dealt with to mitigate risk. Some examples include the introduction of pre-filled insulin syringes to reduce preparation errors, and liaising with the pharmacy medicines information team to investigate the stability of drugs stored a fridge that was too warm. An EDPP also collated information about an

issue with ondansetron vials and informed the manufacturer. Risks associated with controlled drugs were also managed e.g. ensuring storage procedures adhered to and correct running balances.

Incidents

EDPPs reviewed medicine incident reports and further investigated these, providing feedback to those involved. Some incidents concerned controlled drugs e.g. where a patient's own controlled drug was not returned to them at discharge. Pharmacists also themselves submitted incident reports (Datix) when necessary.

Governance

Pharmacists contributed to departmental and hospital wide governance meetings, and drafted routine governance reports. They also planned and supported development of guidance e.g. a guideline to prevent duplication of prescriptions if the electronic prescribing system goes offline and prescribers revert to paper-based prescriptions. EDPPs planned audits and collected data for these e.g. audits of non-medical prescribing and medicines errors at admission. Another specific example is how an EDPP was consulted on the potential risks to a pregnant pharmacist working in a clinical environment.

3. Guideline development and review

EDPPs contributed to the development and review of many different guidelines. These primarily concerned medicines, the general management of a condition or were Patient Group Directions. All guidelines EDPPs contributed to are presented in Table 4. An EDPP also supported development or review of a guideline for use in an Urgent Care Centre 'eConsult'. According to X, their platform is "an online triage tool that enables GPs to conduct consultations more efficiently".

Efforts to support development ranged from general discussions to writing the guideline from scratch. Guidelines reviewed were either those already in use or new drafts produced by others. Sometimes, development and review involved attendance at multidisciplinary meetings.

Table 4: Guidelines which were developed and/or reviewed by EDPPs

Use of medicines in:	Management of:	Patient Group Directions	Systems
Acute Coronary Syndrome	Ocular burns	Diamorphine by nasal administration for paediatric pain	eConsult platform
Sedation	Alcohol withdrawal	Rivaroxaban for Deep Vein Thrombosis	
Rapid tranquilisation	Hypokalaemia	Paracetamol and ibuprofen for paediatric pain	
Pain e.g. Penthrox	Flu	Ulipristal	
Thrombolysis e.g. IV Heparin	Major incidents	Triage nurse (drug focused aspects)	
Tetanus		Emergency Nurse Practitioner (drug focused aspects)	
Status Epilepticus		Physiotherapist initiated treatments	
Opioid substitution			
Opioid overdose e.g. naloxone			
Paracetamol overdose			

4. Ward-round participation and handover

EDPPs described participation in both ward-rounds and 'board-rounds'. The latter is a stationary 'round' where each patient on the bed list (board) is discussed in turn. Pharmacists also participated in 'Clinical Decision Unit' ward rounds. This unit, often thought of as part of the ED and co-located, is an intermediate between the main ED areas (e.g. majors) and acute medical wards. Patients are often transferred from majors to the unit to undergo further investigations.

Contribution of EDPPs to ward or board rounds was to provide pharmaceutical advice, prescribe and develop patient management plans. In addition to rounds, pharmacists joined 'handovers' where information is transferred between staff leaving and starting work. Whilst this is often a handover which most staff attend, some EDPPs specifically stated they joined the doctors' handover.

5. Financial tasks

Drug expenditure

Activities related to finance often involved creation or review of drug expenditure reports and presentation of drug cost information to ED or pharmacy teams. The purpose of doing so was to identify potential cost savings.

Medicines stock

EDPPs reviewed stock items to identify medicines which could be changed to cheaper alternatives and to reduce the amount of stock held, specifically those medicines rarely used or with abuse potential. An EDPP also described reducing pre-packed medicines stocked, with patients instead given FP10 prescriptions to take to a community pharmacy. This moves the cost burden away from the ED to the primary care, and if they are required to pay prescription charges, the individual patient.

Payments

Continuing with the theme of FP10 prescriptions, pharmacists helped with the introduction of prescription charges to the ED. Their contribution involved educating staff on how NHS prescription charges work, liaising with the Information Technology department to add a card payment option to charge collection machines, and discussions about an audit to evaluate payments made. As well as work on collection of patient payments, EDPPs helped departments recoup the cost of drugs e.g. alteplase and claim thrombolysis payments (presumably from NHS England).

Cost effective use of medicines and ED pharmacist

EDPPs undertook activities to increase the cost-effective use of medicines. This included educating staff on cost effective prescribing and the production of educational materials. Business cases were also made for automated medicines storage cabinets e.g. Omnicell. Aside from efforts to reduce medicines expenditure, an EDPP also reviewed their own role to identify how they could improve cost savings.

6. Other activities

Human resources

Activities included development of staff rotas and processing annual leave requests. EDPPs also carried out many staff recruitment and development activities as listed in Table 5.

Table 5: Staff recruitment and development

Staff recruitment, selection and induction	Staff development and progress review
Feedback provided to recent interview candidate	Discussion of objectives with ED pharmacy team
Explained role to junior pharmacists new to the ED (defined role, and how role being refined)	Alternative rotations and career progression beyond the ED
Induction for pharmacists new to the ED and other departments	Professional development review
Induction of other staff new to the ED (how to access / use Omnicell and how to prescribe safely in the ED)	Review and sign-off of evidence written by ED pharmacy technicians for their formal qualification

Patient complaints

One EDPP managed a complaint made by a patient who was in receipt of a dispensing error made in the outpatient pharmacy.

Research and innovation

Some EDPPs were involved with research, specifically, the review of clinical trial protocols and partnering with academics to discuss publication of data collected in the ED.

Many activities to develop existing and new ways of working were described. For example, EDPPs met with managers to plan future development of the ED pharmacy service including expansion of coverage to the weekend. Efforts were also made to increase dispensing support provided to ED by the central hospital pharmacy outside of standard work hours. Other examples of service innovation included:

- New models of working and setup of required Information Technology systems
- Devising new ways to communicate medication information to General Practitioners
- Writing of a business case to purchase electronic medicine storage cabinets
- Development of a paediatric ED electronic prescribing order set to support prescribing for children
- Relocation of the acute medicine / ED satellite pharmacy
- Sharing of practice with other Trusts

Unlicensed medicines

One EDPP described how they helped a consultant make an application for use of an unlicensed medicine.