admission. This process involves discussion with patients/carers/using primary care records.

Medicines errors cause harm to patients, lead to increased morbidity/mortality/inflated healthcare costs [1, 2].

NBT Has invested in many safety initiatives including: the Safer Patients Initiative (SPI2) and the Southwest Quality and Patient Safety Improvement Programme (SWQPSI).

Purpose To implement and improve Medicines Reconciliation. The objectives were to: Ensure more than 95% of patients admitted receive Medicines Reconciliation within 24 hours; Improve the quality of Medicines Reconciliation and reduce medicines errors on admission.

Materials and Methods Using improvement methodology, tests of change were trialled and spread, involving:

- **Phase 1: 2007–2008: (1–8 wards**
  - Introduced a Medicines Admissions Proforma
  - Developed an e-audit tool
- **Phase 2: 2008–2009: (8–11 wards**
  - Training DVD was designed
  - Analysed admissions data to spread towards where admissions were >2% of the total number of admissions
  - Collected randomised data electronically as a run chart
  - Improved communication (Patients/Ambulance/GP’s)
- **Phase 3: 2009–now: (11–30 wards**
  - 2010: tests of change on accuracy of Medicines Reconciliation
  - Spreading to 42 wards
  - 2012: Surgical Pharmacist funding agreed following a Pre-admissions clinic trial.

Results The medians in the table show improvements 2007–2012. In 2011 we achieved and maintained our target. Accuracy data showed only 55% of admissions drug histories taken by doctors alone are accurate.

Conclusions From February 2011 we achieved and maintained our 95% target on 30 wards. We improved the quality of medicines reconciliation and reduced medicines errors on admission.

The Institute for Healthcare Improvement congratulated us and QIPP’s national programme benchmarking teaching hospitals also highlights our remarkable results.

Abstract GRP-093 Table 1

<table>
<thead>
<tr>
<th>Date</th>
<th>Median%</th>
</tr>
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<tbody>
<tr>
<td>May 2007</td>
<td>80%</td>
</tr>
<tr>
<td>July-Dec 2007</td>
<td>56%</td>
</tr>
<tr>
<td>Jan-Jun 2008</td>
<td>67%</td>
</tr>
<tr>
<td>Jul-Dec 2008</td>
<td>73%</td>
</tr>
<tr>
<td>Jan-Jun 2009</td>
<td>77%</td>
</tr>
<tr>
<td>Jul-Dec 2009</td>
<td>77%</td>
</tr>
<tr>
<td>Jan-Jun 2010</td>
<td>85%</td>
</tr>
<tr>
<td>Jul-Dec 2010</td>
<td>92%</td>
</tr>
<tr>
<td>Jan-Jun 2011</td>
<td>96%</td>
</tr>
<tr>
<td>Jul-Dec 2011</td>
<td>95%</td>
</tr>
<tr>
<td>Jan-Jun 2012</td>
<td>95%</td>
</tr>
<tr>
<td>Sep 2012</td>
<td>98%</td>
</tr>
</tbody>
</table>

References
2. Quality, Innovation, Productivity and Prevention (QIPP) including Medicines Optimisation and Transfer of Care

No conflict of interest.

**Improving Medication Safety: The Danaparoid Storey**

doi:10.1136/ehjpharm-2013-000276.095

1. M. Trojan, 1A. Ihbe-Heffinger, 1A. Greinacher, 1C. Unkri, 1A. Muller, 1F. Bernard, 1C. Quaesch, 1Klinikum Rechts der Isar der TUM Munchen, Pharmacy, Munich, Germany; 1Klinikum Rechts der Isar der TUM Munchen, Department of Gynecology, Munich, Germany; 1Department of Immunology and Transfusion Medicine, Medicine, Greifswald, Germany; 1Federal Institute for Drugs and Medical Devices (BfArM), Drug Safety, Bonn, Germany

**Background** To avoid medical errors and thus to improve the safety and quality of cancer treatment in our institution, all chemotherapy prescriptions are critically checked by a clinical pharmacist. Prescription errors are communicated immediately to the attending physician and corrected prior to the preparation and administration of the drugs.

**Purpose** To compile error statistics and to assess the potential severity of errors in chemotherapy prescriptions, we retrospectively analysed and evaluated prescription errors in order to improve the safety of treatment.

**Materials and Methods** 42624 paper written (no CPOE) chemotherapy prescriptions (containing 86101 prescriptions for medicines) from 19 departments of the University Hospital of RWTH Aachen between 2004 and 2009 were analysed retrospectively by the hospital pharmacy. The most important criteria for analysis were wrong patient, wrong drug, missing drug, wrong dose, wrong application day and wrong protocol. The clinical relevance of the medical errors detected was assessed independently by four oncologists and two clinical pharmacists using the criteria of Small et al. [1].

**Results** In total, 696 medicines errors were detected in 373 prescriptions during the routine verification by the pharmacist. By far the most abundant errors (92.4% of the total) were related to the dose. Of the 373 prescriptions the team reviewed 20% of the errors as minor, 50% as significant, 25% as severe and 5% as potentially fatal. Potentially fatal errors were detected in regard to overdoses and once to the prescription of the wrong drug.

**Conclusions** Our results clearly show the relevance of clinical pharmacists being part of the therapeutic team to reduce medicines errors and to prevent any patient harm.

**Reference**

No conflict of interest.

**Improving the Clinically Relevant Safety of Chemotherapy by the Involvement of a Clinical Pharmacist**

doi:10.1136/ehjpharm-2013-000276.094

1. N. Hohn, 1S. von Hobe, 1F. Brummendorf, 1O. Galm, 1E. Jost, 1A. Eier. 1University Hospital of the RWTH Aachen, Pharmacy, Aachen, Germany; 1University Hospital of the RWTH Aachen, Oncology, Aachen, Germany

**Background** To avoid medical errors and thus to improve the safety and quality of cancer treatment in our institution, all chemotherapy prescriptions are critically checked by a clinical pharmacist. Prescription errors are communicated immediately to the attending physician and corrected prior to the preparation and administration of the drugs.

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**Reference**

No conflict of interest.

**Improving Medication Safety: The Danaparoid Storey**

doi:10.1136/ehjpharm-2013-000276.095

1. M. Trojan, 1A. Ihbe-Heffinger, 1A. Greinacher, 1C. Unkri, 1A. Muller, 1F. Bernard, 1C. Quaesch, 1Klinikum Rechts der Isar der TUM Munchen, Pharmacy, Munich, Germany; 1Klinikum Rechts der Isar der TUM Munich, Department of Gynecology, Munich, Germany; 1Department of Immunology and Transfusion Medicine, Medicine, Greifswald, Germany; 1Federal Institute for Drugs and Medical Devices (BfArM), Drug Safety, Bonn, Germany

**Background** During rounds a clinical pharmacist identified and corrected subtherapeutic doses of danaparoid. This error was caused by misleading information in the German Summary of Product Characteristics (SPC).

**Purpose** To improve medication safety an in-house standard operation procedure for the use of danaparoid sodium was implemented and changes in the SPC were requested.

**Materials and Methods** The error frequency when using danaparoid was determined over a period of 4 months. The medicines information centre intensified the routine cheque of prescriptions for danaparoid as well as the counselling on dose adjustment. Medication errors were reported to the manufacturer and the Federal Institute for Drugs and Medical Devices (BfArM). At the same time an interdisciplinary working group developed in-house dosing recommendations. Suggestions for modifications of the SPC were submitted to the BfArM.

**Results** From April to July 2011 subtherapeutic doses were detected in 7 of 21 patients treated with danaparoid at the university hospital Klinikum rechts der Isar: because of misleading information in the SPC, prophylactic doses were administered despite indications for therapeutic anticoagulation. In July 2011 the results
of the working group were communicated in the hospital’s formulation committee meeting, an in-house journal published by the pharmacy and the intranet-based quality management system. The BfArM initiated steps to effect a change of the German SPC at the European level in November 2011.

Conclusions As a result of collaboration between a clinical pharmacist, the medicines information centre, the quality management system and external experts an in-house guideline was developed. At the European level the BfArM intends to bring about a change in the German SPC.

No conflict of interest.

GRP-096 IMPROVING SAFETY OF HIGH RISK MEDICATIONS IN A PSYCHIATRIC HOSPITAL

doi:10.1136/ejhpharm-2013-000276.096

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Background Medicines are major causes of adverse events in hospitalised patients, which can be serious. However, not all drugs carry the same risks.

Purpose The purpose of the study was to identify a list of High Risk Medications (HRMs) and increase their safety of use in a hospital (25 Care Units (CUs)) where an electronic drug process is in place.

Materials and Methods A multidisciplinary team was formed. Its task was to:
- conduct a literature review in order to identify HRMs
- perform an audit to assess drug processes in all CUs
- set up measures to improve the safety of HRMs

Results The literature review led us to establish an HRM list of 14 drugs (including oral/parenteral anticoagulants, anti-arrhythmics, insulins, parenteral hypertonic solutions, adrenergic agonists, opioids and digoxin).

Results of a clinical audit performed in 2011 revealed that 50% of the 391 referenced oral drug tablets are not fully identifiable until the administration stage; at least one error of storage in medicine cabinet was found in 32% of CUs; parenteral hypertonic KCl and MgSO4 solutions were present in 76% and 28% of CUs respectively.

Measures taken to improve safety of HRMs were:
- ensure recognition with an alert pictogram for their storage in the pharmacy and CUs
- attribute an electronic HRM alert in prescription software
- re-label blister packs for non-unit packaging HRMs (relevant to 3/15 drugs on the list)
- rationalise keeping hypertonic solutions in CUs
- implement good clinical practise for HRMs and distribute a newsletter about HRM use
- develop a systematic statement of HRM errors
- provide information about relevant HRMs to patients
- arrange training for healthcare professionals

Conclusions Corrective actions should help to improve HRM safety by preventing medication errors. An evaluation of the efficacy of these measures in practise is needed. This work will allow us to meet the requirements of French legislation.

No conflict of interest.

GRP-098 INAPPROPRIATE PRESCRIBING FOR ELDERLY PEOPLE: IS THE HOSPITAL THE INITIATOR?

doi:10.1136/ejhpharm-2013-000276.098

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Background Adverse drug reactions are frequently encountered in older people. They represent the cause of hospitalisation of 10 to 20% of hospitalised people aged 60 years or over. The quality of geriatric prescription is thus a healthcare priority.

Potentially inappropriate drugs (PIDs) are medicines with an unfavourable benefit/risk ratio or questionable efficacy while other and safer therapeutic alternatives are available.

Purpose To evaluate the quality of prescribing in our hospital for patients who are 75 years old or over. Are PIDs prescribed to our patients? Who first prescribed this treatment: our hospital doctors or family doctors?

Materials and Methods A list of potentially inappropriate medicines, judged by 54 criteria, specially adapted to French medical practice, was used as reference. 28 of these drugs are used in our hospital. We analysed the prescriptions of patients who were 75 years old or over, hospitalised on one day chosen arbitrarily, in order to collect data about their treatments.

Results 133 patients (29.6% of patients hospitalised in medical and surgical care units) were included. On average, 8 systemic drugs were prescribed per patient. 31 patients had at least 1 PID prescribed (23.3%); 24 (18%) had 1 PID, 5 (3.8%) had 2 PIDs and 2 (1.6%) had