

informed of these patients by the electronic records thus made by geriatricians. Pharmacists checked their medical records with the currently prescribed medicines and identified all discrepancies revealed in reconciliation, and if appropriate, notified attending physicians.

Results A total of 45 patients were included in the study with a median age of 87.8 (SD 4.6) years and a median of 8 (SD 3) current home medicines. The pharmacist was consulted in 86.7% of patients. Pharmacists reviewed all these patients and discrepancies were detected in 41% patients: a) prescription of a drug not included in the hospital formulary (23.1% of patients). The substitution of these drugs proposed by pharmacists was accepted by physicians in 44.4% patients. b) Other kinds of discrepancies were detected in 5 patients (12.8%). The degree of acceptance of these pharmaceutical interventions was positive in just one patient. The rest was either negative or not assessed by physicians. 100% of discharged patients included in their medical report a list of active drugs and also, specific recommendations were made about interrupting former medicines.

Conclusions Medicines reconciliation developed by a multidisciplinary team has been found to be useful in detecting and reducing discrepancies with home medicines when frail elderly patients are admitted to hospital. It will be interesting to implement the same process, involving a pharmacist, when patients are discharged.

No conflict of interest.

GRP-004 A NEW STRATEGY FOR MONITORING AND IDENTIFICATION OF ADVERSE DRUG REACTIONS IN ONCOLOGY PATIENTS

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Background Drug safety is an important issue in clinical practise because Adverse Drug Reactions (ADRs) are frequent and potentially life-threatening complications in patients undergoing cancer treatment.

Purpose This study had two main purposes: firstly, to monitor the safety of oncology patients in chemotherapy treatments and to identify and describe the toxicity of drugs; secondly, to compare the incidence and frequency of ADRs in approved experimental chemotherapy protocols compared to the ADRs in common clinical practise.

Materials and Methods From September to December 2012, all prescriptions reducing the normal dosage by at least 25% were examined to evaluate whether or not the reduction or withdrawal were related to ADRs. During these analyses pharmacists supported oncologists in completing ADR spontaneous report forms.

Results To date, eighty-two patients with dose reductions have been screened in the database. Seventeen patients (20.7%) experienced an ADR and the reports were recorded in the Italian Pharmacovigilance Database. Of the 17 patients, 12 were female and the median age was 62 years. All the observed ADRs are known and described in the summary of product characteristics. The drugs mainly responsible for the reactions were 5-fluorouracil, platinum-based agents, bevacizumab and cetuximab. Eight ADRs were graded as serious and required hospitalisation. Reducing the dose or withdrawing the drug after the onset of reactions led to a complete recovery in the majority of the patients. In 1 patient the ADRs caused treatment failure.

Conclusions Our exploratory survey demonstrates a clear and consistent underreporting in this patient setting. Management and understanding of ADRs in the course of drug treatment in cancer patients is important for improving the response to, and tolerability

of, the treatment. Collaboration between different professionals is needed to improve the clinical efficacy and safety of care for patients.

No conflict of interest.

GRP-005 A NOVEL MODELLING APPROACH ADAPTING FUZZY REGRESSION FOR CAPTURING VAGUE DEFINITION OF ADMISSION OF A PATIENT

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Background Unplanned admission of a patient which is a vague or fuzzy event has important financial implications for efficient use of hospital resources. Patients at high risk of admission are of major concern due to heavy use of hospital resources. Traditional approaches are not capable of accounting for the complex uncertainty and vague nature of hospital admissions. Methods adapting fuzzy regression methods could be an alternative method for decision-making experts to predict patient admission.

Purpose To deal with uncertainty in health system variables, identify the relationship between risk of admission and risk factors associated with the admission of a patient, and capture a vague definition of admission of a patient.

Materials and Methods A modelling approach adapting a fuzzy regression method was designed and developed using UK Hospital Episode Statistics (HES) data to capture the vague definition of admission of a patient. This model deals with uncertainty in health system variables which act as input variables in the model. The data collected is fuzzified, upper and lower bounds of the fuzzy membership function are evaluated using a JAVA programme that uses fuzzy regression methods.

Results

1. The fuzzy membership function was evaluated for about 10,000 patient records.
2. 404 input variables were scanned using HES data sets.
3. Significant risk factors were admission source, admission method, reference conditions, age, length of stay, disease diagnosis.
4. The uncertain relationship between predictors and outcome associated with it is shown with the help of upper and lower bound regression equations.

Conclusions The fuzzy regression model was found to be capable of quantifying and estimating the unknown relationships between input predictors and predicted outcomes. The findings suggest that the fuzzy regression approach provides a good way of dealing with uncertainty in health system variables and vagueness in the admission of a patient.

No conflict of interest.

GRP-006 A POLICY REVIEW OF THE APPLICATION OF THE INTEGRATED MEDICINES MANAGEMENT SERVICE MODEL IN NORTHERN IRELAND

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Background Since 2002, the Integrated Medicines Management Service (IMM) has strategically re-engineered clinical pharmacy services in the five acute Health and Social Care Trusts (HSCTs) in Northern Ireland. The Department of Health, Social Services and Public Safety (DHSSPS) supported the initial development of the IMM informed by evidence which demonstrated improvements in

patient care and efficiencies [1, 2]. These included reduced length of stay, readmission rates and drug costs with improved medicines appropriateness and communication with primary care. Against a background of the review of public administration, focus on efficiencies and future models for integrated health and social care, IMM remains a key policy initiative.

Purpose Within this context, a review of IMM service provision is being undertaken to assess the current application of the IMM model and its strategic alignment with plans for integrated health and social care.

Materials and Methods The first stage of the review involved a quantitative assessment of IMM practise within HSCTs to measure the application of the IMM model against a range of good practise indicators, relating to: use of funding for a dedicated IMM workforce; relevant staff roles and professional focus; workforce deployment across HSCT sites; availability and level of IMM service provision.

Results During 2011/12 66% of the total funding identified for IMM services in all HSCTs in Northern Ireland was used to employ pharmacists and 34% for pharmacy technicians. Within this workforce 96% of pharmacists and 98% of technicians had IMM roles included in their job descriptions with pharmacists spending 80% of their working time on clinical or IMM duties and pharmacy technicians 65%. The IMM workforce was deployed at 74% of HSCT sites ($n = 17$) with IMM services available for a range of bed types from Monday to Friday between 8am and 6pm. 40% of the total number of beds identified as suitable for IMM service provision across all HSCTs were reported as having active service provision during 2011/12 with activity levels ranging from 20% to 95% between HSCTs.

Conclusions IMM is regarded as a cornerstone of medicines policy in Northern Ireland and results indicate that the funding allocated for this service is being used to support the deployment of a cohort of pharmacists and pharmacy technicians with roles that are focused on clinical practise and medicines management. Results show the provision of IMM services within defined periods across HSCT sites in a range of bed types but with some variation in the active application of the IMM model between HSCTs.

References

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No conflict of interest.

GRP-007 A RETROSPECTIVE SURVEY OF PATIENT OUTCOMES AFTER SWITCHING INTRAVENOUS IMMUNOGLOBULIN

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Background The market place for human immunoglobulins is constantly evolving and reacting to instability of supply of the raw material. This has meant new products emerging as well as old products being replaced or withdrawn.

The NHS 'Demand Management Plan' has stabilised the UK market and helped to ensure adequate supplies. This plan also included a national contracting process and this has led to more cost-effective products becoming available.

These issues have led to two occasions when a complete product switch of the IVIg patient population was undertaken at Southend Hospital NHS Trust.

Purpose To assess the level of significant adverse effects, resulting in product discontinuation, seen during two IVIg switches in 2009 and 2011.

Materials and Methods The hospital pharmacy system was used to identify all IVIg patients.

Patient notes were requested for review.

Each patient's entry on the UK IVIg database was reviewed.

Results 68 patients completed a total of 98 switches.

2 patients were unable to continue with the alternative IVIg product. Both were receiving monthly IVIg infusions for multiple myeloma. Both experienced headaches and flu-like symptoms post-IVIg infusion after being switched to Octagam 10% and were subsequently returned to their previous product, Intratect.

Conclusions The switching of IVIg products is typically not encouraged. However there is a very little recently published literature that discusses the problems encountered when switching these products. The quality and relevance of what is available is variable and often relates to non-UK products.

This retrospective survey indicates that comprehensive IVIg switch programmes can be undertaken with a low level of patient disruption.

Abstract GRP-007 Table 1

IVIg switch	Patient numbers
Intratect to Octagam 10%	17
Octagam 5% to Intratect	1
Octagam 5% to Intratect to Octagam 10%	1
Vigam to Octagam 10%	1
Sandoglobulin to Octagam 10%	2
Sandoglobulin to Intratect to Octagam 10%	29
Sandoglobulin to Intratect	17

No conflict of interest.

GRP-008 A SOCIO ECONOMIC APPROACH TO MANAGEMENT (SEAM): AN ATTRACTIVE TOOL FOR MONITORING CHANGE IN A CLINICAL PHARMACY ENVIRONMENT

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Background Organization has become more complex in hospitals. In the context of change, management is particularly critical.

Purpose The aim of our project was to develop and improve clinical pharmacy services between the Pharmacy and the cardiology departments using SEAM.

Materials and Methods Socio Economic Diagnosis (SED) was conducted through semi-directed interviews (SIDs) to identify dysfunctions (Ds) in 2009 ($n = 30$ SIDs i.e 62 collaborators) prior to the start of the project and in 2012 ($n = 23$ SIDs i.e 48 collaborators) when the action plan was completed. Ds were classified according to the ISEOR grid*. The action plan was undertaken from 2009 till 2012 as major Ds were identified. Feedback meetings with staff were undertaken after each SED.

Results SED generated 352 verbatim comments in 2009 and 508 in 2012, summarised in 55 and 73 'key ideas'. From the SED run in 2009, the action plan included three major projects: 'Improving the ward drug cabinet supply chain' to 'Lower emergency drug requests', 'Establishing a skills grid of Pharmacy collaborators' to 'Maintaining Pharmaceutical Care standards', and 'Optimizing clinical pathway of patients receiving chemo'. SED 2012 showed an improvement in all "Centre for research and expertise in socio-economic management" (ISEOR) items particularly within Work organisation, communication-coordination and strategy development domains. The so called 'Mirror effect' meetings to feedback to all professionals (whether they were managers or not) were very fruitful and gave consideration and recognition to the entire staff.