one: the remaining 21% ^{223}Ra was used in the fourth line or higher. Thirty-seven patients completed six treatment cycles and 26 stopped treatment before completing six cycles because of side effects or worsening performance status: ^{223}Ra mean dose was 4.6 MBq (SD=0.7). Fifteen per cent of patients had more than a 40% reduction in PSA levels at the end of treatment. According to Kaplan–Meier estimation, median OS and PFS were 10.0 (95% CI: 8.1 to 11.9) and 5.0 (95% CI: 4.1 to 5.9) months, respectively. Six- and 12 month OS rates were 76% and 39%, respectively. Patients receiving all six cycles experienced the major benefit from the therapy. In addition, nine patients were given ^{223}Ra at least 1 month prior to death. Forty-nine per cent of patients suffered haematological adverse effects such as thrombocytopenia and neutropenia, three patients grade 3 or 4 toxic effects and 24% of patients showed gastrointestinal side effects such as diarrhoea, nausea and vomiting in grade 1–2. Fourteen patients reported a worsening of their bone pain.

Conclusion PFS and OS observed in this study are lower than those reported in the clinical trial. This could be explained by a worse performance status and that approximately half of the patients had been heavily pre-treated, ^{223}Ra receiving as a third line or higher. ^{223}Ra was well tolerated, the adverse effects being clinically manageable.

REFERENCES AND/OR ACKNOWLEDGEMENTS

No conflict of interest.

4CPS-192 IDENTIFYING MEDICATION HISTORY ERRORS AT HOSPITAL ADMISSION USING THE LUND INTEGRATED MEDICINES MANAGEMENT MODEL

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Background An accurate medication history list is an integral part of patient assessment at hospital admission.

Purpose The objective of the study was to describe the frequency, type and predictors of unintentional medication errors and to evaluate the quality of the clinical pharmacy services, focusing on the acceptance of the recommendations made by the clinical pharmacist.

Material and methods A descriptive study was conducted at two internal medicine wards at a teaching hospital using Lund Integrated Medicines Management (LIMM)-based medication reconciliation. The study pharmacist conducted medication interviews for patients shortly after hospital admission to obtain the most accurate pre-admission medication history list. This list was compared with the medication list in the patient's medical chart. Intended addition, withdrawal of a drug, or changes to the dose/dosage form in the patient's medical list was considered as medication discrepancies. However, medication discrepancies were considered as medication errors based on no identified clinical reason.

Results A total of 114 patients were included in this study. Over two-thirds of the study patients (73.6%) experienced 215 medication errors identified by a clinical pharmacist conducting medication reconciliation. Most errors were omission (87.9%). Cardiovascular agents followed by NSAID were

commonly in error (53%) and (10.2%) respectively. In a logistic regression model, age (OR, 1.055: 95% CI: 1.010 to 1.102), female gender (OR, 3.468: 95% CI: 1.232 to 9.761) and number of medications at admission (OR, 0.810: 95% CI: 0.681 to 0.963) were predictors for medication history errors at admission.

Conclusion Medication errors at the time of hospital admission are common and undetected. A structured approach such as LIMM-based medication reconciliation at the hospital is needed to detect these errors.

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Conflict of interest Corporate-sponsored research or other substantive relationships:

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4CPS-193 A THEORETICALLY BASED CROSS-SECTIONAL SURVEY ON THE BEHAVIOURS AND EXPERIENCES OF CLINICAL PHARMACISTS CARING FOR CHRONIC KIDNEY DISEASE PATIENTS

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Background Chronic kidney disease (CKD) is a comorbid condition with high economic burden. Patients need multiple medications and pharmacists provide care that improves outcomes. A systematic review published in 2012¹ and an update in 2018² reported that pharmacists are often poorly integrated within the multidisciplinary CKD team with little description of the practice of pharmacists.

Purpose To describe behaviours and experiences of clinical pharmacists providing care to patients with CKD.

Material and methods This was a cross-sectional online survey using questionnaire items relating to influences on behaviours grounded in the Theoretical Domains Framework (TDF). The questionnaire was reviewed for face/content validity and the subjected to think aloud testing then piloting. Items included; demographics, clinical practice and prescribing practice. The Bristol Online Survey Tool was used with a link emailed to members of a national renal pharmacy group (n=147). The study was approved by a university ethics committee.

Results Responses were received from 36 persons, female (n=25), qualified as pharmacist for >10 years (n=19) and registered active NMPs (n=24). Services provided to inpatients and outpatients are described in the table 1.

Abstract 4CPS-193 Table 1

Service	Inpatient n=	Outpatient n=
Dialysis	30	19
Transplant	26	18
Polypharmacy review	30	16
Targeted CKD medication review	28	15

While responses to most TDF items relating to clinical practice were positive, the majority (n=24) disagreed that they had sufficient time to practise their role.

For prescribing, 16 of the 24 active NMPs were prescribing daily, six weekly and only one ad hoc. They were prescribing in all renal conditions (n=13), dialysis (n=11), transplantation (n=10), anaemia (n=7) and bone mineral disease (n=6). TDF items for prescribing were mostly positive but (n=11) disagreed that they had sufficient time to practise.

Conclusion Results of this survey indicate high levels of complex clinical practice including widespread NMP activity, demonstrating development of practice, including prescribing, since the previous systematic reviews.^{1 2} Qualitative research is required to provide further in-depth insights to practice.

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No conflict of interest.

4CPS-194

CLINICAL IMPACT OF GENOMIC BIOMARKERS PREDICTORS OF RESPONSE AND THE THERAPEUTIC STRATEGY IN PATIENTS WITH MYELODYSPLASTIC SYNDROME ASSOCIATED WITH DEL(5Q)

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Background According to OMS-2016, myelodysplastic syndrome (MDS) associated with del(5q) is manifested by a transfusion-dependent progressive bone marrow failure, with Lenalidomide acting as the intended drug to treat this syndrome.

Purpose To analyse the clinical impact of the directed risk-stratification therapy and to evaluate the clinical benefit associated with the discontinuation of the Lenalidomide treatment due to side effects or intolerance.

Material and methods Three-year prospective observational study on 69 cases of MDS in a third-level hospital, 17 of them with del(5q). Mutational profile analysis using a Next Generation Sequencing (NGS) on a panel of 28 genes mutated in haematologic malignancies prior to Lenalidomide treatment decision-making, with TP53 mutation as ultra-high-risk profile for discouraging its use. Variables considered: beginning of treatment, Lenalidomide mean dose, ending of treatment and beginning of discontinuation, side effects, time after

discontinuation, evaluation of the drug withdrawal response and cost savings.

Results Sixty-nine MDS cases were analysed by NGS. Mutational risk profile: high (six), low (21), intermediate (18), very high (seven) and very low (17). Seventeen cases were detected as MDS associated with del(5q) and five of them showed positive TP53 mutation and were treated with hypomethylating agents instead of Lenalidomide. Seven of them showed DNMT3A, ASXL1, SF3B1 and TET2 mutations. Eleven patients were treated with Lenalidomide, the treatment was discontinued in six of them due to side effects and the dose reduced in three cases due to intolerance. Reported side effects: Grade 4 neutropaenia, rhabdomyolysis, erythematous reactions and haemolytic crisis. All patients in which Lenalidomide was discontinued, maintained complete haematological and cytogenetic response, reaching a mean monitoring time of 12 months since the withdrawal of Lenalidomide. The cost saving associated with the discontinuation of Lenalidomide 10 mg was € 48 000 per patient per year.

Conclusion The use of NGS permits the selection of the mutational profile of each patient, resulting in a change in therapeutic decision-making, the selection of more cost-effective drugs and a directed and personalised treatment. Discontinuation of Lenalidomide, due to side effects or intolerance, involves a clinical benefit to those patients who maintain a complete haematological response after interruption of the treatment.

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No conflict of interest.

4CPS-195

PHARMACIST INTERVENTIONS: THE SUCCESS OF AN ANTIMICROBIAL STEWARDSHIP TEAM

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Background Pharmacist involvement in antibiotic stewardship helps to ensure compliance with the standards set by the National Health Service. Collection and evaluation of antimicrobial utilisation data are important for assessing the impact of antibiotic stewardship intervention in hospitals.

Purpose Reduce number of inappropriate prescriptions, duration of antibiotic therapy and, therefore, decrease the antimicrobial resistance.

Material and methods Prospective study in a single centre. The antibiotics prescriptions between June 2015 and February 2017 were screened by a pharmacist who checked all prescriptions and sent to the antimicrobial stewardship physicians the ones without approval of therapeutic protocols or analytical results. Statistical analysis was performed using R Studio 3.5.1 (5% significance level).

Results We identified 1242 patients with mean (SD) age of 67.9 (16.6) years and 54.5% males, resulting in 1027 prescriptions of carbapenems (67.2%) and 502 prescriptions of quinolones (32.8%). The most common site of infection was the urinary tract, accounting for 28% of prescriptions. According to the prescribed therapeutic intervention, 261 (17%)