The aim of TVEPS is to develop the interprofessional competencies of health profession students. A TVEPS training experience consists of three meeting points. During the autumn of 2017, TVEPS began using a standardised questionnaire, the Interprofessional Collaborative Competences Achievement Survey (ICCAS). The questionnaire consists of 20 items divided into five domains (Communication, Collaboration, Roles and Responsibilities, Collaborative Patient/Family-centred Approach and Conflict Management/Resolution and Team Functioning).

Purpose To investigate whether a translated version of ICCAS can be used to measure the effect of interprofessional education in health students that have participated in TVEPS training.

Materials and methods ICCAS uses a retrospective pre-post design, where the students respond to both the before and after state after participating in the learning activity. The questionnaire was translated into Norwegian, and data were collected from October 2017 to January 2018. The questionnaire was part of a larger evaluation distributed to 85 students from 13 different health profession-educations using Survey Exact. Participation was required to finish the course, except for the students from the pharmacy, who had their placements during the spring of 2017. For them, filling in the questionnaire was optional. Data was analysed using IBM's Statistical Package for Social Sciences (SPSS), version 25.

Results In total, 78 of 85 students (91.8%) completed the survey. In all five domains the students scored themselves significantly higher ($p < 0.05$) after participation than before. On a scale from 1 to 5 the increase (post-participation – pre-participation) was (mean $\pm$ SD): Communication: 0.63 ± 0.45 , Collaboration: 0.84 ± 0.57 , Roles and Responsibilities: 0.92 ± 0.65 , Collaborative Patient/Family-centred approach: 0.92 ± 0.66 and Conflict Management/Resolution and Team Functioning: 0.75 ± 0.52 . The effect size (Cohen's d) was larger than 1.4 in all domains, significantly higher than which has previously been reported.

Conclusions The translated version of ICCAS seems well-suited to measure self-assessed change in interprofessional competencies following TVEPS training. A larger study is needed to assess the full validity and reliability of the translated questionnaire.

REFERENCES AND/OR ACKNOWLEDGEMENTS

None.

NP-011

MEDISCREEN: IMPLEMENTATION OF A TOOL FOR DETECTING PATIENTS AT RISK OF ADVERSE DRUG EVENTS VIA THE ELECTRONIC MEDICAL RECORD

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Background Pharmacists at our hospital are not able to validate all prescriptions daily. To fill this gap, a project called MediScreen was launched to detect situations at risk of drug-related problems (SRDRP). Twenty-five queries of high criticality were developed based on a literature review and consensus with physicians from different medical disciplines. The queries were then programmed with the software PharmaClass, which is interfaced with the electronic medical record of our hospital.

Purpose The aims of this study were to evaluate the impact of this screening on drug therapy and to estimate the time required for pharmacists to analyse and manage SRDRP.

Material and methods PharmaClass performed a real-time detection of all hospitalised patients (approximately 900 beds) in whom SRDRP occurs. During 6 months (February–July 2018), the clinical pharmacist analysed the detected SRDRP and, if necessary, called the prescriber to suggest treatment modifications. The following indicators were measured: number of SRDRP detected, pharmacist interventions accepted by the physician (and acceptance rate), refused (R) or not applicable (NA). The required resources were quantified in pharmacist-time per day.

Results After elimination of false positives due to interfacing problems, of 986 SRDRP, 808 (82%) were not clinically relevant, 50 (5%) were resolved before pharmacist intervention and 128 (13%) were addressed. One-hundred and four (87%) proposals were accepted and implemented (16 R and eight NA). On average, pharmacists spent 1 hour 20 min per day on the analysis of about 10 SRDRP (9.8) and intervened about once a day (0.85).

Conclusion MediScreen allowed us to adapt treatment and prevent the occurrence of adverse drug events in 104 situations that would not otherwise have been identified. This new activity required a reassignment of time spent on clinical activities. For some queries (to identify a particular drug-related problem), the specificity should be improved to reduce the rate of non-clinically relevant SRDRP. For those identifying a specific drug at risk, sensitivity is a more appropriate endpoint than specificity. The focus on queries of high criticality and the pharmacist's verification of the clinical relevance of SRDRP contribute to the high acceptance rate (87%). After this first step with a limited number of queries, alerts for less critical situations will be developed in order to optimise the treatment of patients seen during interdisciplinary visits.

REFERENCES AND/OR ACKNOWLEDGEMENTS

None.

NP-012

STANDARDISATION OF ANALGESIA AND SEDATION INFUSION SOLUTIONS IN PAEDIATRIC PALLIATIVE PATIENTS RECEIVING END-OF-LIFE CARE AT HOME

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Background Parenteral medication administration by continuous infusion has become a common practice in end-of-life home care settings because portable infusion pumps are well tolerated and maintain more nearly constant drug plasma levels.

Purpose To ensure safe and quality home care in paediatric patients nearing end-of-life in the community setting, by establishing a standard operating procedure based on elaboration by dose banding.

Material and Methods First, most commonly used drugs and administration routes reported in the paediatric palliative care literature were identified. Second, a literature review was performed in order to assess the compatibility and stability of drug solutions prepared under aseptic conditions in polyvinyl chloride medication cassette reservoirs. Finally, a drug library

(drug, patient weight range, concentration) to be used in end-of-life home care settings was drawn up and the main results regarding its implementation were analysed.

Results Five patient weight ranges (<6 kg, 6<11 kg, 11<20 kg, 20<30 kg, ≥30 kg) were established. According to these, solutions with standardised drug concentrations were defined as follows: diluted morphine 0.1, 0.2, 0.4, 0.8, 1.2 mg/ml, concentrated morphine (alone or combined) 0.4, 0.8, 1.6, 2.4, 4.0 mg/ml and haloperidol 0.02, 0.04, 0.08, 0.12, 0.2 mg/ml, respectively. Fentanyl and midazolam cassettes were set to contain 0.02, 0.04, 0.05 mg/ml and 1, 2.5, 5 mg/ml for weight ranges corresponding to <6 kg, 6<11 kg and ≥11 kg. The shelf-life of all reservoirs was defined to be 14 days. A minimum infusion rate of 0.1 ml/h was established, except when using subcutaneous reservoir catheters (0.5 ml/h), and an unlimited maximum rate, except for subcutaneous route (5 ml/h).

During the first 10 months, six patients were included: mean age 7.1 years (4 months – 19 years), weights 6 kg – 40 kg. Twenty-two solutions were elaborated (54% morphine, 21% morphine-haloperidol, 25% midazolam), of which 12 were necessary. The rest were discarded due to previous death (two) or satisfactory symptom management by oral route (eight). No medication error or incident related to the infusion was recorded.

Conclusions The standardisation of drug solutions containing morphine, haloperidol, midazolam or fentanyl permits the establishment of a rational programme to ensure safe and quality end-of-life home care in paediatric palliative patients.

REFERENCES AND/OR ACKNOWLEDGEMENTS

None.

NP-013

IMPLEMENTING THE EUROPEAN STATEMENTS OF HOSPITAL PHARMACY IN ITALY: RESULTS OF A WORKING GROUP

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Background The European Statements of Hospital Pharmacy express commonly agreed objectives which every European health system should aim for in the delivery of hospital pharmacy services to improve clinical outcomes and patient safety; 44 Statements are divided into six sections: (S1: Introductory Statements and Governance; S2: Selection, Procurement and Distribution; S3: Production and Compounding; S4: Clinical Pharmacy Services; S5: Patient Safety and Quality Assurance; S6: Education and Research). To obtain full achievement of the European Statements of Hospital Pharmacy, the European Association of Hospital Pharmacists (EAHP) has developed a project to implement the Statements within its member countries. The self-assessment tool (SAT), which allows hospital pharmacists to assess the level of implementation of the Statements within their hospitals, provides the means for hospital pharmacists to address the areas needing improvement with a tailor-made action plan and evidence-based resources, and to show progress over time, as it can be updated any time. The tool also helps hospital pharmacists to assess their status

within their own countries and compare this to others. In order to implement the project in Italy, a working group was formed including Italian Society of Hospital Pharmacists (SIFO) representatives: the EAHP Delegate, the EAHP Ambassador, university professors, hospital pharmacists and local healthcare unit pharmacists from all over Italy (SIFO-EAHP-WG).

Purpose The objective of the work was to analyse the level of implementation of the Statements within the SIFO-EAHP-WG healthcare services.

Materials and methods The link to access the SAT question set was sent via email to 30 SIFO-EAHP-WG participants associated with 23 healthcare settings (14 hospitals – two private and 12 public; 8 Local Health Units; 1 university). All data obtained from the SAT was collected and analysed in an Excel file.

Results Twenty participants (67%) belonging to 61% of the healthcare services answered the survey: 10 hospitals (H) of which one private and nine public, and four Local Healthcare Units (ASL). The level of implementation was: S1 61.3% (H: 67.7% [95% CI : 59.6–75.9]; ASL: 45.4% [29.1–61.6]); S2: 72.6% (H: 80% [74.2–85.8]; ASL: 53.9% [26.1–81.8]); S3: 83.9% (H: 89% [83.5–94.5]; ASL: 71.3% [34.7–107.8]); S4: 52.6% (H: 61.1% [48.9–73.3]; ASL: 31.3% [18.6–44.0]); S5: 73.7% (H: 82.6% [74.1–91.1]; ASL: 51.4% [38.9–64.0]); S6: 70.8% (H: 76.7% [63.4–89.9]; ASL: 56% [38.7–73.3]), confirming the high variability mainly for S1 and S4.

Conclusion The results have shown how the level of implementation of the Statements in the analysed sample is high. However, the variability between the single Statements highlights the need to obtain a complete picture of the Italian setting. Such data is fundamental for SIFO-EAHP-WG to be able to define an effective action plan to support a harmonised implementation of the Statements in Italy.

REFERENCES AND/OR ACKNOWLEDGEMENTS

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NP-014

DEVELOPMENT OF NEW PRODUCTION WHEN NEITHER PACKAGING NOR SOME OF THE RAW MATERIALS CONFORM TO EUROPEAN STANDARDS

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What was done? A new MR-scanning technology, hyperpolarisation, for the quantification of metabolic processes with an extremely high sensitivity enables physicians early detection of treatment effects in e.g. cancer and diabetes. A so-called Pharmacy Kit is used in the hyperpolarisation process and consists of a specially designed packaging with tubes, vessels and filters containing the contrast agent and buffer solutions. The objective for the hospital pharmacy¹ was to manufacture Pharmacy Kits complying with Good Manufacturing Practice (GMP), though neither packaging nor two of the raw materials conformed to European standards.

Why was it done? A research team at the MR Centre (MRC²) wished to set up a production of Pharmacy Kits, but had no prior experience with, or licence to, manufacture drugs). Thus, the hospital pharmacy was asked to participate in the development of such a production.