



# ABSTRACT BOOK

**2nd NuPhaC Winter Conference 2024**

*Integrated care for high quality and safe use of medicines*

**13-14 December 2024, Antwerp**

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Campus Drie Eiken

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## Overview of sessions

### **Day 1: Friday 13 December 2024**

Session 1: Quality of prescribing and medication monitoring

Session 2: Medication safety and the use of technology

### **Day 2: Saturday 14 December 2024**

Session 3: Medication self-management and patient empowerment

Session 4: Medication adherence and treatment burden

Session 5: Sustainable use of medicines

Session 6: Interprofessional and transmurial pharmaceutical care

## Oral presentations

### SESSION 1: QUALITY OF PRESCRIBING AND MEDICATION MONITORING

#### Patients' appointments with nurse prescribers and following readmissions: A register-based study

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**Background.** Deprescribing guidelines have been assessed in clinical trials for their effectiveness in reducing the number of potentially inappropriate medications (PIMs) and understanding PIM prevalence. However, the real-world impact of publications of these guidelines on routine practice has not been fully evaluated. Therefore, we assessed the trends in deprescribing of PIMs among nursing home residents (NHRs) with limited life expectancy in Belgium and to evaluate the impact of specific deprescribing guidelines, including STOPPFrail, proton pump inhibitor (PPI), and antipsychotics guidelines.

**Methods.** Deprescribing prevalence was assessed using healthcare reimbursement data for NHRs aged 65 and over who died between 2014 and 2019. Fifteen PIMs from the STOPPFrail version 1 were selected. To identify changes in the trend of discontinuing at least one PIM during the last 4 months of life among residents who had been prescribed these medications chronically between 6-12 months prior to death; we employed a Joinpoint linear regression model. We calculated the average quarter percent change (AQPC) and 95% CIs. Additionally, we used Autoregressive Integrated Moving Average (ARIMA) modelling to explore the impact of publication of these guidelines on four commonly used PIMs: PPIs, antipsychotics, lipid modifying agent, and calcium.

**Results.** The analysis included 244,865 deceased residents. Of these, 169,782 (69.3%) had at least one PIM prescribed chronically. Among these PIM users, 50,487 (29.74%) had at least one PIM discontinued. The prevalence of deprescribing declined from 31.7% to 27.66% between the first quarter of 2014 and the fourth quarter of 2019. This corresponds to an AQPC decrease of 0.47% (95% CI: -0.85, -0.10), which, although small, was statistically significant ( $p=0.01$ ). No joinpoints were identified (0), indicating a consistent linear trend with no interruptions or statistically significant shifts in the rate of change in deprescribing prevalence. ARIMA modeling found no significant effect of guideline publications on deprescribing trends.

**Discussion.** Despite the high use of PIMs among NHRs in Belgium, the deprescribing rate remained low and even decreased slightly from 2014 to 2019, suggesting a need for improved deprescribing efforts. The publication of deprescribing guidelines, including STOPPFrail, did not significantly influence these trends. Although the study leveraged comprehensive healthcare data, it had limitations, such as reliance on claims data that might overlook over-the-counter medications and a focus on complete discontinuation, potentially missing cases where residents were tapering off medications. The findings highlight the need for better integration of guidelines into clinical practice and for addressing barriers to their implementation.

**Conclusion.** The deprescribing rate decreased slightly from 2014 to 2019. The publication of deprescribing guidelines, including STOPPFrail, PPI, and antipsychotic guidelines, had no significant impact on deprescribing trends for key medication classes such as PPIs, antipsychotics, calcium supplements, and lipid-modifying agents.

## Nurse prescribing: Current practice and future prospects in Slovenia and Croatia

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**Background.** The competence of prescribing medication has long been a part of the medical profession. However, in the last 30 years, this situation has significantly changed, with an increasing number of countries worldwide implementing reforms to grant nurses the authority to prescribe certain medications. Since 2019, 13 countries in Europe have legalized medication prescribing by nurses, but Slovenia and Croatia are not among them. In Croatia, however, training for nurses in pre-hospital emergency care, including medication prescribing, has begun. The aim of our research is to determine to what extent, despite the absence of a legal framework for prescribing medications by nurses in Slovenia and Croatia, this practice is being implemented in clinical practice.

**Methods.** A quantitative research approach was used, specifically a survey method. The study included 234 nurses, 117 from Slovenia, 68 from Croatia, and 49 from Norway, the USA, Canada, Slovakia, Germany, Italy, Switzerland, Sweden, Austria, and the UK. The survey questionnaire focused on current practices related to medication prescribing and the possibilities for developing this practice further. Respondents received an online questionnaire via 1ka.si. Data were analyzed using IBM SPSS 25 (SPSS Inc., Chicago, Illinois).

**Results.** The results show that nurses independently administer medications without a doctor's order (e.g., an additional pill for lowering blood pressure, stomach protection) (Slovenia: n=67/57.3%; Croatia: n=37/54.4%), prescribe therapy on hospital documents (Slovenia: n=83/70.9%; Croatia: n=43/63.2%), and more frequently suggest to other healthcare professionals which therapy should be prescribed (Slovenia: n=59/50.4%; Croatia: n=42/61.8%). Respondents believe that nurses could prescribe medication independently (n=150/63.6%). The strongest agreement was on the possibility of nurses prescribing medications in emergency situations (n=159/85.9%), followed by the extension of chronic therapy (n=130/70.3%) and a limited list of medications (n=129/69.7%). Respondents also believe that specialization in the field of nursing would facilitate the implementation of nurse prescribing in clinical practice (n=143/77.3%), as would in-depth education in pharmacology and medication use in undergraduate studies (n=96/51.9%). Additionally, legal regulation of nurse prescribing is considered necessary (n=87/47.1%).

**Discussion.** Nurses are still somewhat hesitant regarding their competence in prescribing medications, yet they expressed a desire for some level of autonomy in this area. The findings also indicate that, in current clinical practice, nurses often exceed their competencies. Furthermore, the existing educational system and legislation do not support the expansion of this role in nursing. Based on our findings, it is necessary to consider strengthening the educational system in nursing and the legal framework for expanding competencies. We also believe that a larger sample would be needed for a more in-depth understanding of the current situation.

**Conclusion.** The role of nurses in prescribing medications is already well-established in Europe. To follow European guidelines, ensure an efficient healthcare system, and provide higher-quality patient care, it is necessary to further develop this issue in Slovenia and Croatia. Given that this role is already being assumed by nurses in clinical practice in both countries, it is important to also develop a legal framework for this practice.

## Implementation of the Nurse Prescription of Medications in the field of Pharmaceutical Care in Spain

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**Background.** In Spain, through the approval of the Royal Decree 1302/2018, of October 22, which regulates the indication, use and authorization of dispensing of medicines and health products for human use by nurses, the NPM has been regulated, conditioned to a series of protocols or clinical practice guides published in the Spanish Official State Gazette.

**Objectives.** The aims to enhance the specific knowledge of the nurses with the right to prescribe and advance the NPM across the country with the highest quality possible, through the implementation of updated training for nurse prescribers, the publication of scientific evidence, the design of tools that could support nurses in this new competency and the development of a pioneering pilot project in Spain about the nurse dispensing order.

**Methods.** The first training activity was carried out at the University of Alicante in June 2022. The second training activity took place at the Official Board of Nurses of Alicante in November 2023. Two scientific articles have been submitted, the first one entitled: "Identifying the Enablers and Barriers to Advance Nurse Prescribing of Medication in Spain According to Experts' Views: A Delphi Study" and the second entitled: "Global Economic Evaluation of the Nurse Prescribing of Medication Role: Scoping Review". A pioneering pilot project has been launched in Spain that refers to the nurse dispensing order. At this time, we have created an interprofessional work, made up of nurses and biomedical engineers to design a useful digital application (APP).

**Results.** In the first training activity, a total participation of 15 students was obtained. In the second training activity, a total of 7 women participated. In the first scientific article, our results showed the importance of prospectively developing additional protocols based on chronic diseases, as well as moving towards independent nursing prescription. In the second article, our findings suggest a positive Economic Evaluation in Health in those countries where the implementation of the role of the NPM is a reality, contributing to increased efficiency, healthcare cost savings, and economic profitability. Over a period of 3 months, the implementation of dispensing orders by its prescribing nurses has been carried out at the HLA Vistahermosa hospital in Alicante.

**Discussion.** Given the specific training for prescribing nurses in Spain, it was proposed to start two specific training activities for undergraduate nursing students and active professionals, providing the development of the courses annually at the University of Alicante or semi-annually at the Official College of Nursing of Alicante, where participants had the opportunity to learn updated knowledge from expert speakers in the proposed subjects.

**Conclusion.** It is necessary to define the type of training for nurse prescribers in the Spanish context, their professional profile and competencies, to develop support tools for nurse prescribers based on safety in medication prescription, conceptual framework for the development of these competencies based in scientific evidence and in accordance with European regulations and strategies.

## The current, preferred and expected impact of implementing nurse prescribing of nurses, pharmacists and physicians

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**Background.** The drivers for implementing non-medical prescribing include improving access to care, reducing the workload for medical doctors, increasing convenience for patients, enhance job satisfaction for nurses and upskilling and expansion of roles. However, the implementation of nurse prescribing must be well considered, tailored to the regional context and aimed at improving quality of care and patient outcomes, or at least maintaining a status quo, without endangering patient safety. To date, in 2024, Belgian nurses are not allowed to prescribe medicine. However, we are aware that in clinical practice, nurses sometimes do prescribe medicines, despite the absence of a legal framework.

**Methods.** A quantitative, cross-sectional survey study was performed to collect data on the practices and preferences of nurses, pharmacists and physicians towards nurse prescribing and expected impact of implementing nurse prescribing in Belgian hospitals. Data was collected from December 2022 until April 2023. All eligible healthcare providers received an email with study information and a link to the online survey. Before taking the survey, participants received an informative video explaining two possible models of nurse prescribing (independent- and supplementary prescribing). The survey was constructed in Qualtrics and composed of four parts: socio-demographic data, current practices in nurse prescribing, expected impact of implementing nurse prescribing and the preferred model of nurse prescribing. This multicenter study was conducted in seven different wards located in seven hospitals across Belgium.

**Results.** A total of 303 healthcare providers completed the survey, with a mean age of 40 years [22 – 78 years]. Of the sample, 25% identified as male. The majority of respondents were nurses (86%), followed by medical doctors (10%) and pharmacists (4%). The reasons most frequently cited for the granting of prescribing authority demonstrate that many respondents expressed confidence in the competence of nurse prescribers and that such practice was frequently accepted within the department. Overall, nurses (84%), medical doctors (76%) and pharmacists (76%) would choose to implement independent or supplementary nurse prescribing over no nurse prescribing. In total, 44% would prefer to grant independent prescribing authority to nurses.

**Discussion.** Our study has provided an exceptional insight in the black box of nurse prescribing in Belgian hospitals before the existence of a legal framework. It shows the need to continue with the implementation, to fit nurse prescribing models to the context and to develop a stronger regulatory framework to guarantee quality, safety, efficiency and regular evaluation and updates.

**Conclusion.** Despite the current absence of a legal framework, in Belgian hospitals, nurses do prescribe medication on a regular basis. A strong regulatory framework is still missing to create the conditions needed to turn nurse prescribing into a success. With new legislation coming into force soon, the time is right to invest in research and to anticipate and collaborate internationally to build strong evidence, policies and implementation.



## SESSION 2: MEDICATION SAFETY AND THE USE OF TECHNOLOGY

### Complexity of communication contributes to medication incidents

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**Background.** Wide variety of medication communication challenges has been little studied in the same study, which jeopardizes the prioritization of needed interventions to enhance communication. The study aimed to compile the challenges.

**Methods.** Medication communication challenges contributing to medication incidents were studied first by literature review (n=23) (Nov 2020) to define the concept. Second, by analysis of medication incident reports (n=500). Third, a scale was developed and used in an online survey for measuring healthcare professionals' (n=303) perceptions of the communication challenges' (Nov 2019 and Jan 2020, in Finland). Also, two open-ended questions were asked about communication challenges and solutions to prevent them. In the incident reports were analysed frequencies and types of the literature based communication factors. Descriptive analysis of Likert-scale survey was conducted and the final scale of communication factors were formed using an Explorative factor analysis. The free texts were analysed using inductive content analysis and text mining.

**Results.** According to the incident reports the communication challenges were mostly within the own unit. The person-related issues were linked to professionals not following the existing guidelines. Communication with patients prevented incidents. The institutional issues concerned lacking orientation of staff, staffs' unawareness about the guidelines and task-coordination. The process and structural challenges concerned lacking medication documentation, and lacking instructions along prescriptions or that prescriptions are not read. In the survey, the major weekly challenges were lacking, or unclear guidance given along prescriptions, and missing prescriptions given outside of the regular ward rounds. Challenges concerned digital, non-standardized documentation resulting in missing medication prescriptions. Factor analysis condensed the scale to communication factors concerning I) medication prescriptions, II) guidelines and reports, III) patient and family, IV) implementation of guidelines, V) competencies and responsibilities, and VI) communication attitudes and atmosphere. On average the most frequent challenges were in the factors I, III, and IV. The respondents recommended standardizing documentation, communicating orally about prescriptions given outside of ward rounds, and to firmly clarify the need to follow guidelines.

**Discussion.** Surprisingly communication challenges existed majorly within the same unit controverting the previously stressed challenges in patient transition phases. The results might be to measuring all communication factors in the same study. The results supported the previously found need to standardize documentation.

**Limitations.** The results are limited to two hospital districts. Further testing of the developed scale is needed for measuring complex communication challenges.

**Conclusion.** Interventions to improve medication communication are needed within the units, regarding prescriptions given outside of regular ward rounds, standardizing documentation and strengthening superiors' communication of guideline compliance.

## Medication-related adverse events: national analysis conducted in the Czech Republic

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**Background.** Hospital patient safety relies on the use of adverse event (AE) monitoring. The national Adverse Event Reporting System (AERS) in the Czech Republic keeps track of adverse events that occur in clinical practice and makes it easier to provide this data to the national level. AE Medication/i.v. medication administration is included in the classification of AEs since it follows the globally accepted WHO Classification of Patient Safety. Legislation mandates that inpatient care facilities report data on the number of reported adverse events. Data on the frequency of medication-related adverse events (AEs) and intravenous drug use among inpatient healthcare practitioners (IHPs) in the Czech Republic are monitored. Developing and implementing efficient preventive and corrective measures based on these findings is a component of the aforementioned national initiatives.

**Methods.** Collection of longitudinal prevalence data from 2018 to 2022 based on tracking the occurrence of adverse events (AEs) at the local inpatient level and then transmitting data via the report L(MZ) 3-01 to a central (national) system.

**Results.** A total of 3,956 adverse events (AEs) classified as medication or intravenous medications were reported in the Czech Republic between 2018 and 2022. An average of 244.8 inpatient care providers (min: 234; max: 248) reported AE medications/i.v. medicines out of the 423.8 (min: 408; max: 430) average number of AEs. Medication errors reaching 974 were recorded in 2018, 844 in 2019, 777 in 2020, 635 in 2021, and 726 in 2022 out of the 5 years that the errors were reported. For each 1000 hospitalized patients, the average is 0.37 events (minimum: 0.33; maximum: 0.44).

**Discussion.** Generally speaking, one of the riskiest procedures in medical facilities is drug administration. The problem of adverse drug events becomes worse by the rise in prescriptions driven by an ageing of population, the increase in comorbidities, and the complexity of illnesses afflicting hospitalized patients. Errors in medication administration may occur at any stage in the cycle, involving prescription, transcribing, dispensing, or administration. This implies that the strategy for preventing drug errors must inevitably incorporate all medical workers, such as physicians, nurses, and pharmacists. Instead of being a tool for punishment, the AERS is used for shared learning. We confirmed that the AERS is a useful instrument for tracking national trends in AEs prevalence.

**Limitation.** The administrative nature of gathering aggregated data without being able to determine an individual drug delivery procedure error is a limitation on data collection.

**Conclusion.** AERS is one of the national registers, which is a valuable source. The paths and algorithms for national care standardisation are developed based on the analyses with the goal of raising the quality and security of inpatient care. Data analysis is a tool to raise awareness of the role of clinical pharmacists throughout hospital stays and allows for more planning for collaborative learning and service improvement.

## What could be the emotional responses of nurses to medication errors and what kind of support do they wish for?

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**Background.** After being involved in medication errors, nurses become traumatized by the event manifesting psychological, cognitive, and physical reactions. If not addressed this issue at the earliest, these might affect their personal and professional life. Further, these negative reactions might increase their chances of making another error, thus elevating the risk to patient safety.

**Aim.** To identify the contributing factors behind second victim phenomenon, describe the emotional responses of nurses after medication errors, assess the support received by them after errors, and recognize the need of a suitable support program for second victims.

**Methods.** Qualitative descriptive design. Eleven in-depth semi-structured interviews were conducted among registered nurses studying advanced degrees at a University in Finland during November 2021-April 2022. Data were analyzed using thematic analysis.

**Results.** The study results revealed four themes with various sub-themes which included: contributing factors behind second victim phenomenon; emotional responses of nurses after error; support received by nurses; and desired need of a support program for second victims. Severity of error and negative work environment acted as catalysts for the second victim phenomenon among nurses. A “bitter aftermath” of emotions and sense of insufficient support added further risk to already stressed and anxious nurses.

**Discussion.** In-depth experiences of our participants suggest that the second-victim phenomenon is neglected in some healthcare institutions to some extent, and there are only a few unstructured support programs for nurses experiencing negative emotions after getting involved in medication incidents. Limitations associated with this study is that the participants volunteered themselves for participation, so there could be an issue of self-selection bias. Even though the participants were native Finnish speakers, the interview was conducted in English. Hence, some unseen difficulties might have been there for the participants to express their feelings in foreign language.

**Conclusions.** This study identifies the early exploratory and enduring impact of memories associated with medication errors, some of them haunting nurses for long periods of time. Further, the need for support at different levels is highlighted to reduce the impact of negative emotions generated among nurses after medication errors.

## Procedural comfort in adults in intensive care by music: a randomized controlled trial: the PROCAD study

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**Background.** Procedural distress is the combination of pain, stress and anxiety and occurs in 70% to 80% of intensive care patients. Sitting up is important for the early mobilization of the patient and has positive effects such as the improvement of functional status and shortening of the length of stay in ICU. The painful consequences of this mobilization have already been described. While turning a patient in bed, the pain intensity increased by 20 to 67%. Music has an analgesic effect. Previous research shows that listening to music reduces pain, anxiety, respiratory rate and blood pressure. The aim of this study was to investigate the effect of music on procedural distress and vital signs during sitting up after a time of immobilization.

**Methods.** A multicentre Randomised Controlled Trial (RCT) via convenience sampling was conducted in the ICU of 3 hospitals. The CONSORT guidelines were followed. The intervention group was given personal preference music via noise canceling headphones throughout the procedure. At four measurement moments (-10 min., +10 min., before ending procedure and after stop music) pain, anxiety and stress were questioned via NRS and vital parameters (breathing, blood pressure and heart rate) were noted.

**Results.** The pre-calculated sample of 128 was not met. A total of 36 patients were included. Procedural distress was not significantly different between control and intervention groups ( $p=0.203$ ). However, a trend can be seen and this would be significant at an alpha level of 10%. Systolic blood pressure in the intervention group differed significantly from the control group, 112.1 (SD 15.5) and 132.1 (SD 23.5) ( $p=0.005$ ), respectively. Diastolic blood pressure had the same effect with 63.5 (SD 45) in the intervention group and 75.5 (SD 66) in the control group ( $p=0.029$ ).

**Discussion.** The main reason for the low sample size is the limited RASS inclusion scores. The central ethics committee wanted an administrator to sign the ICF for each patient with a RASS of -1. This was hardly feasible in practice, so these patients were excluded. Another reason for the limited inclusion was that in one ICU many neurosurgical patients were admitted who had a head bandage, which was an exclusion criteria. Longer hospitalization time, difficult weaning after intubation and understaffing were some other reasons for the limited sample. Limitations of this study were the exclusion of confounders such as the analgesics administered, continuous drops with effect on hemodynamics, continuous or intermittent sedatives and other types of medication. The reason for admission was also excluded from the analysis. These influencing factors may explain any differences.

**Conclusion.** This study is part of a larger study on procedural comfort care in adults with a focus on nurse-led non-pharmacological interventions. Due to the fact that the minimum sample size was not met, the study is currently ongoing. Despite this, both systolic and diastolic blood pressure were significantly different at measurement time three.

### SESSION 3: MEDICATION SELF-MANAGEMENT AND PATIENT EMPOWERMENT

#### **Experiences and perceptions of Dutch homecare professionals using the BEM tool, a medication management assessment tool**

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**Background.** The medication management assessment tool (abbreviated in Dutch as BEM) is used in home care settings in the Netherlands to assess patients' medication management capabilities. Despite its widespread use, the perceptions and experiences of homecare professionals regarding its usability have not been thoroughly explored. This study aims to evaluate the experiences and perceptions of quality employees and home care nurses regarding the usability of the BEM tool.

**Methods:** A qualitative research approach with semi-structured interviews was performed. Home care nurses (level 3, 4, 6) and quality employees of home care organizations in the Netherlands were approached. NVivo 12 software was used for thematic analysis.

**Results:**

15 home care nurses and 6 quality employees from 9 home care organizations in the Netherlands participated. Nurses at level 3 indicated that the BEM tool is helpful, but experienced difficulties with clarity of care plans after an assessment. Nurses at level 4 and 6 experienced a positive value of the BEM tool but expressed concerns about workload due to the length of the questionnaire and administrative tasks. Quality employees believed that the BEM tool is well integrated in current practice. Integration of the BEM tool into electronic patient files was mentioned as a need. Furthermore, some nurses at level 4 and 6 mentioned their limited understanding of the BEM procedures and their unawareness of its integration into electronic patient files.

**Discussion:** This study highlights positive experiences with the BEM tool and the need for more clarity and efficient procedures. More insight is needed into whether the BEM tool has been integrated into electronic patient files. Training and clear guidelines could improve work experiences with the BEM tool to better support patients with medication management.

**Conclusion:** We conclude that homecare professionals have overall positive experiences with the BEM tool. However, clear guidelines are needed, and it should be assessed whether the BEM tool has been integrated into electronic patient files for optimal usability and work efficiency.

## Medication literacy assessment in geriatric populations: psychometric properties of the MED-fLAG based on Flemish and French speaking samples

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**Background.** Assessing patients' medication literacy (i.e., their ability to access, comprehend, and interact with medication-related information) is crucial for helping clinicians plan education, simplify prescriptions, and provide necessary assistance. Despite efforts to develop standardized scales of medication literacy, it remains a significant gap in measures specifically designed for older adults. To address this, a new standardized scale was conceptualized: the MEDication Literacy Assessment in Geriatric patients (MED-fLAG). This three-dimensional, patient-reported outcome measure evaluates functional, interactive, and critical medication literacy skills. Given that the content validity of the MED-fLAG has been previously established, this study aims to evaluate its structural validity, internal consistency, and cross-cultural validity using a 56-item version of the scale.

**Methods.** A psychometric study was designed in line with the Consensus-based Standards for the Selection of Health Measurement Instruments (COSMIN). A convenience sampling approach was used to recruit hospitalized participants aged 65 years and older from Dutch-speaking Belgium and French-speaking Switzerland.

**Results.** Based on a sample of 365 Dutch-speaking participants and 218 French-speaking participants, the psychometric analyses will assess the structural validity of the MED-fLAG using confirmatory and exploratory factor analyses. The internal consistency of each subscale will be evaluated using the Omega coefficient, while cross-cultural validity will be assessed through tests of configural, metric, and scalar invariance. Additionally, score distributions, floor and ceiling effects, and the percentage of missing responses will be reported.

**Discussion and Conclusion.** Although the analysis is still in progress, the anticipated findings will indicate whether the MED-fLAG aligns with the originally conceptualized three-factor model (structural validity), whether the items within each dimension reliably measure the same underlying construct (internal consistency), and whether the instrument is invariant across Dutch and French language groups (cross-cultural validity). If these conditions are met, the results would support the application of the MED-fLAG in further research and clinical practice.

## Continued use of potentially inappropriate medication after discharge: a retrospective cohort study

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**Background.** Many patients receive temporarily indicated medication when they are hospitalized, e.g. opioids, benzodiazepines and/or antipsychotics. When this medication is continued at hospital discharge, it can result in potentially inappropriate medication (PIM) prescriptions post-discharge. However, there is no data available about continued use of PIMs at home in the Netherlands. Therefore, the aim of this retrospective cohort study was to investigate the incidence of continued use of hospital-initiated opioids, benzodiazepines, and antipsychotics post-discharge in The Netherlands.

**Methods.** A retrospective cohort study was conducted in a Dutch teaching hospital (OLVG). Patients aged  $\geq 18$  years and discharged from the hospital between Jan 2019–May 2023 with a new prescription of an opioid, benzodiazepine or antipsychotic started during admission and continued at discharge were included and followed-up for one year. Data from the hospital information system and the dispensing records of community pharmacies (Nationwide Medication Record System, NMRS) were used to identify patients who continued use post-discharge. The primary outcomes of this study were the incidence of continued PIMs prescriptions post-discharge for each of the medication classes of interest and the duration of use. Duration of use was classified into  $< 30$  days, 30-182 days and  $\geq 182$  days. Secondary outcome was the most commonly prescribed individual medication. Descriptive statistics were used to analyze the data.

**Results.** Out of 6,835 new users, 82.7% received a prescription for opioids at discharge ( $n=5,652$ , mean age 61.1 y, 57.3% female), 14.7% received a prescription for benzodiazepines ( $n=1,005$ , mean age 60.7 y, 53.3% female) and 2.6% received a prescription for an antipsychotic ( $n=178$ , mean age 69.2 y, 48.9% female). 62.5% of the benzodiazepine users, 73.4% of the opioid users and 42.1% of the antipsychotic users had a duration of continued use of  $< 30$  days post-discharge. However, a substantial number of patients had a duration of PIM use  $\geq 182$  days post-discharge (13.4% of opioid, 20.9% of benzodiazepine and 36.0% of antipsychotic medication users). The most frequent initiated opioid was oxycodone (80.8%); for benzodiazepines this was oxazepam (41.3%) and temazepam (31.5%), and for antipsychotics this was quetiapine (39.3%) and haloperidol (34.8%).

**Discussion.** The results of this retrospective cohort study show that a worrying number of patients continue medication initiated during hospitalization after discharge. Antipsychotics were most often continued  $\geq 182$  days post-discharge, followed by benzodiazepines and opioids. These drugs are widely known to lead to adverse events, such as falls, especially when used chronically. A limitation of this study is the loss to follow-up for patients who did not provide informed consent for information exchange through the NMRS.

**Conclusion.** These results raise awareness of PIMs and emphasize the need for careful evaluation of discontinuing these medications at hospital discharge or adding a discontinuation date. Future work will include an assessment of the indications of these medications to assess the indications for long-term use.

## SESSION 4: MEDICATION ADHERENCE AND TREATMENT BURDEN

### Combining medication adherence measurement methods in patients with polypharmacy: a longitudinal and patient perspective

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**Background.** Identifying and monitoring medication adherence in patients with polypharmacy remains a challenge despite several measurement methods being currently available. This study aimed to explore patients' willingness to have medication adherence measured using different methods and to evaluate the feasibility and validity of a combination of pill counts, a medication diary and a questionnaire assessing adherence two months post-discharge in patients with polypharmacy.

**Methods.** First, a cross-sectional evaluation was conducted to determine the willingness of patients with polypharmacy to participate in medication adherence monitoring post-discharge. Additionally, medication adherence was monitored during two months using pill counts based on preserved medication packages and a diary where patients recorded their adherence-related problems. Subsequently, participants completed the Probabilistic Medication Adherence Scale (ProMAS) and a questionnaire on feasibility during a home visit.

**Results.** Among the 144 participants who completed the questionnaire at discharge, the majority indicated a willingness to truthfully communicate their adherence (97%) and share adherence-related information with healthcare providers (99%). Despite this high willingness, only 59% of patients had their adherence effectively monitored during two months post-discharge. Most participants reported minimal effort in preserving medication packages (91%), completing the diary (99%) and the ProMAS (99%). About 60% of participants perceived pill counts as the most accurate method for assessing medication adherence, followed by the diary (39%) and ProMAS (1%). Medication adherence measured by pill counts correlated significantly with ProMAS scores, but not with the number of diary-reported problems. However, adherence measured by the medication diary and ProMAS correlated significantly.

**Discussion and conclusion.** Combining tools for measuring adherence seems feasible and can provide insight into the accordance of patients' actual medication use with their prescribed regimen, but also into problems contributing to non-adherence.



## **ALERT study - Prevalence of medications associated with falls in hospitalized elderly people at risk of falling: a retrospective observational study**

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**Background.** In Switzerland, 25% of people aged 65 and over report at least a fall in the last 12 months. Falls are a public health problem that is likely to increase as the population ages. Among the many factors associated with falls, certain drugs and the concomitant use of several molecules (polypharmacy) are known factors. Hospitalization and discharge from hospital are sensitive periods in terms of medication safety. During hospitalization, drug treatment is often modified, and the medication list tend to increase. With the perspective to prevent falls among this population and maximizing deprescription opportunities, the aim of the current study was to describe the prevalence of fall-risk increasing drugs (FRIDs) in people aged 65 and over hospitalized in a tertiary hospital in Switzerland.

**Methods.** The design of this study was observational and retrospective, based on the medical records of older patients hospitalized in internal medicine wards, for whom nursing documentation mentioned a risk of fall. The prevalence of FRIDs was measured at admission and discharge using the Screening Tool of Older Persons Prescriptions in older adults with high fall risk – STOPPFall. This screening tool includes 14 drug classes associated with the risk of falls, which is a more exhaustive list of drugs than the STOPP/START.

**Results.** Out of 741 older patients hospitalized between 2021 and 2022, 44 % (n = 332) had experienced at least a fall during the last 12 months or were at risk of falls based on a standardized nursing evaluation. Among these, 75% (n = 250) had at least a FRID prescription at admission versus 63% at discharge (p < 0.001). At admission and discharge, the most frequently prescribed FRIDs remained the same. The FRIDs at discharge were: benzodiazepines 30%; diuretics 28% and opiates 18%. When nurses reported an increased risk of falling during hospitalization, patients had a 12% reduced probability (p = 0.032) of having a FRID prescribed at the time of hospital discharge.

**Discussion.** Despite a statistically significant decrease in FRIDs prevalence during hospitalization, more than half of older patients were discharged with a prescription of FRIDs (63%), which is lower than the previous studies using STOPPFall (73% to 85%). Compared with the findings based on START/STOPP, the prevalence reported with STOPPFall is higher. In fact, STOPPFall includes a more exhaustive and specific list of FRIDs than the START/STOPP. Future research should explore the weighted risk associated with certain molecules in terms of exposure to the risk of falls.

**Conclusion.** This study highlights the potential of interprofessional synergy during the hospital stay regarding medication review, and more specifically the de-prescribing of FRIDs. The use of STOPPFall during hospitalisation could support the identification of patients at risk, and could support the healthcare professionals' clinical judgement in order to provide individualised interventions, including detailed information on FRIDs (e.i., risk/benefit).

## Impact of International Deprescribing Guidelines on Trends in Deprescribing for Nursing Home Residents with Limited Life Expectancy in Belgium

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**Background.** Deprescribing guidelines have been assessed in clinical trials for their effectiveness in reducing the number of potentially inappropriate medications (PIMs) and understanding PIM prevalence. However, the real-world impact of publications of these guidelines on routine practice has not been fully evaluated. Therefore, we assessed the trends in deprescribing of PIMs among nursing home residents (NHRs) with limited life expectancy in Belgium and to evaluate the impact of specific deprescribing guidelines, including STOPPFrail, proton pump inhibitor (PPI), and antipsychotics guidelines.

**Methods.** Deprescribing prevalence was assessed using healthcare reimbursement data for NHRs aged 65 and over who died between 2014 and 2019. Fifteen PIMs from the STOPPFrail version 1 were selected. To identify changes in the trend of discontinuing at least one PIM during the last 4 months of life among residents who had been prescribed these medications chronically between 6-12 months prior to death; we employed a Joinpoint linear regression model. We calculated the average quarter percent change (AQPC) and 95% CIs. Additionally, we used Autoregressive Integrated Moving Average (ARIMA) modelling to explore the impact of publication of these guidelines on four commonly used PIMs: PPIs, antipsychotics, lipid modifying agent, and calcium.

**Results.** The analysis included 244,865 deceased residents. Of these, 169,782 (69.3%) had at least one PIM prescribed chronically. Among these PIM users, 50,487 (29.74%) had at least one PIM discontinued. The prevalence of deprescribing declined from 31.7% to 27.66% between the first quarter of 2014 and the fourth quarter of 2019. This corresponds to an AQPC decrease of 0.47% (95% CI: -0.85, -0.10), which, although small, was statistically significant ( $p=0.01$ ). No joinpoints were identified (0), indicating a consistent linear trend with no interruptions or statistically significant shifts in the rate of change in deprescribing prevalence. ARIMA modeling found no significant effect of guideline publications on deprescribing trends.

**Discussion.** Despite the high use of PIMs among NHRs in Belgium, the deprescribing rate remained low and even decreased slightly from 2014 to 2019, suggesting a need for improved deprescribing efforts. The publication of deprescribing guidelines, including STOPPFrail, did not significantly influence these trends. Although the study leveraged comprehensive healthcare data, it had limitations, such as reliance on claims data that might overlook over-the-counter medications and a focus on complete discontinuation, potentially missing cases where residents were tapering off medications. The findings highlight the need for better integration of guidelines into clinical practice and for addressing barriers to their implementation.

**Conclusion.** The deprescribing rate decreased slightly from 2014 to 2019. The publication of deprescribing guidelines, including STOPPFrail, PPI, and antipsychotic guidelines, had no significant impact on deprescribing trends for key medication classes such as PPIs, antipsychotics, calcium supplements, and lipid-modifying agents.

## Breaking the Taboo: Nurses' Perspectives on the Discontinuation of Long-Term Antidepressants: A Qualitative Study

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**Background.** Long-term use of antidepressant drugs is widespread among older adults in nursing homes despite guidelines recommending limited duration. General practitioners (GPs) play a central role in reviewing and discontinuing antidepressants in nursing homes, but often hesitate to initiate discussions about their long-term use. The potential role of nurses in nursing homes in this process is underexplored, despite their daily contact with older adults and their responsibility for the correct management of medication. This study explores nurses' perspectives on the discontinuation of long-term antidepressant use and their barriers and facilitators to their involvement in this process in NHs.

**Methods.** This qualitative study included two focus groups with five nurses from two NHs in Belgium, and individual, in-depth interviews with six additional nurses until data saturation was reached. The focus groups and interviews were recorded, transcribed, and thematically analysed.

**Results.** The study found mixed opinions among nurses about their role in the antidepressant discontinuation process. Key barriers included a lack of knowledge about antidepressants, unclear interprofessional guidelines, limited time, and stigma associated with discussing mental health issues with residents. Many nurses felt uncomfortable initiating conversations about mental health due to the fear of stigma and felt their efforts were not fully recognized. The hierarchical nature of the medical system in nursing homes often led to uncertainty and reluctance to question doctors' decisions about antidepressants. Facilitators for improving the discontinuation process included multidisciplinary reviews and non-pharmacological support tailored to the needs of residents.

**Limitations.** Our study used a small sample from two focus groups in a single Belgian region, however interviews confirmed the findings from the focus groups and data saturation was reached. The level of care-dependence among elderly residents in nursing homes may vary between countries, and may limit the generalizability of our findings.

**Conclusion.** This study highlights the complexities of discontinuing long-term antidepressants in nursing homes and the need for better education and clearer guidelines for nurses. Empowering nurses through education and collaboration with GPs can enhance their confidence and involvement in the antidepressant discontinuation process. Future research should also explore the perspectives of older adults in nursing homes and their families to further improve the discontinuation process.

## SESSION 5: SUSTAINABLE USE OF MEDICINES

### How can new technologies influence the everyday lives of nurses?

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**Background.** Computerized physician order entry (CPOE) and clinical decision support systems (CDSS) are used internationally since the 1980s. Implementing such systems like CPOE-CDSS requires training for effective adoption and, more important, acceptance by the users. Potential improvements for the software and implementation process can be derived from the users' perspective. Based on the CPOE, patient-orientated logistics can be processed by the unit-dose dispensing system (UDDS). This has the potential for a lasting and positive influence on digitalisation, the relief of nursing staff and most important, patient safety.

**Methods.** In an anonymous voluntary online survey, physicians and nursing staff were asked about their satisfaction with the new CPOE-CDSS and about their UDDS-acceptance. The survey comprised single-choice queries on a Likert scale, categorizing into general information, digital medication administration, drug safety, and software introduction. The time required for on-ward medication-related processes on ward before and after the introduction of UDDS was recorded based on a survey form.

**Results.** The software's performance and loading times have clearly had a negative impact on users' contentment, which leads to a low satisfaction of only 20% among physicians and 17% among nurses. 53% of nurses find the program's training period unsuitable for their daily use. Both professions agree that drug-related problems are easier to detect using CPOE-CDSS, with 76% of nurses and 75% of physicians agreeing. We also show that nurses appreciate the UDDS. The UDDS reduces the time needed to dispense medications from 4.52 min to 1.67 min/day/patient. In relation to the entire medication process, this corresponds to a reduction of 50% per day and per patient.

**Discussion.** Both CPOE-CDSS and UDDS are systems known to enhance drug safety. Although UDDS interferes with the professional profile of the nursing staff, they see UDDS as support rather than as competition, as they value the improvement in drug safety highly. By developing new routines, confidence in the new system has increased. It should be noted that in our study, the time recording was based on personal assessments by the nursing staff rather than being carried out using a stopwatch. Lastly, it cannot be ruled out that the survey participants constituted a specific group of individuals (eg only younger users, computer-savvy participants). Furthermore, the survey aims to present personal opinions objectively, despite the highly emotional nature of the topic for users.

**Conclusion.** In conclusion, digitizing healthcare requires managing change, effective training, and addressing software functionality concerns to ensure improved medication safety and streamlined processes. Interfaces, performance optimization, and training remain crucial for software acceptance and effectiveness. Improving the closure of the Closed Loop Medication Management (CLMM), particularly with regard to medication scanning and patient wristband verification, would also improve patient safety. Our study shows that UDDS can influence several medication-related processes on the ward in a resource-efficient way.

**EQUANU: Equality in societal and professional recognition of nurses. A cross-sectional, international comparison on the societal and professional recognition of European nurses**

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**Background.** Despite trends towards greater professionalisation of the nursing profession and an improved public image in certain countries, studies also show large proportions of the public still does not fully appreciate nurses' competences. Mapping differences in the societal recognition of nurses, as well as their professional recognition, allows benchmarking among countries.

**Aim.** To investigate the level of societal recognition of the nursing profession in nine European countries, and the level of professional recognition perceived by European nurses themselves; to compare levels of recognition between countries; and to identify influencing factors.

**Methods.** A cross-sectional study was conducted. Through an online survey, the study questioned both the general public and nurses from various healthcare settings across nine countries between December 2022 and June 2023. Socio-economic prestige scores for the public and work environment/work motivation scores for nurses were calculated.

**Results.** A total of 1618 adult citizens and 2335 nurses participated. The public predominantly characterised nurses with attributes as friendliness, warmth, empathy, and compassion. Mean socio-economic prestige score assigned to nurses was 7.2/10 (SD 1.9), with Portugal having the highest score (M 7.5/10, SD 2.0) and Norway the lowest (M 5.8/10, SD 1.4;  $p < 0.001$ ). Professional recognition experienced by nurses was generally low (54% indicated rather low, 17% very low). Slovenia, the Netherlands, and Belgium had slightly higher mean scores (all M 1.4/3) compared to other countries ( $p < 0.001$ ). High professional recognition could be predicted for 33% by work environment score (OR = 1.21; 95%CI [1.19–1.24]), work motivation score (OR = 1.02; 95%CI [1.01–1.02]), expertise outside the hospital (OR = 1.57; 95%CI [1.25–1.97]) and work experience (OR = 1.01; 95%CI [1.00–1.02]), corrected for country.

**Conclusion.** The study highlights the need for targeted interventions to improve the professional and public image of the nursing profession and addresses disparities in professional recognition between countries. Longitudinal studies are recommended to track changes in public perception and professional recognition by nurses.

## SESSION 6: INTERPROFESSIONAL AND TRANSMURAL PHARMACEUTICAL CARE

### Cross-sectional evaluation of educational programs and nurse students' competences in interprofessional pharmaceutical care: the Italian experience

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**Background.** Pharmaceutical care represents one of the main skills for healthcare professionals and in particular for nurses. Adequate educational programs are essential to obtain high levels of knowledge and competences.

Previous evidence, showing survey results across 14 European countries, has demonstrated relatively low knowledge scores for final-year nursing students, which seemed not to be sufficiently prepared to take on responsibilities in pharmaceutical care.

Moreover, national educational programs and policies on the role of nurses differ greatly through Europe and influence the quality of pharmaceutical care.

Therefore, the aim of this study was to evaluate the knowledge and competences of nursing students in Italy and the adequacy of university educational programs.

**Methods.** A cross-sectional survey was administered to 1433 nursing students. Multiple-choice questions on drugs and side effects, also through clinical cases of internal and surgical interest, were aimed at the direct assessment of knowledge. Other questions were administered to evaluate the adequacy of the competences provided by the university educational programs according to the students' opinion.

Statistical analysis was conducted using a standard software package (STATA version 18.0). Scores were created to evaluate the percentages of correct answers provided by each student and for the level of satisfaction expressed about the quality of the educational programs. An additional score was used to assess whether the students who expressed greater satisfaction were those with greater knowledge and competences.

**Results.** The average of correct answers to direct multiple-choice questions was  $61.06 \pm 22.3$ . The average of teaching evaluation score was  $57.3 \pm 12.9$ , indicating sufficient satisfaction with the educational programs. However, 31% of students showed a lower level of knowledge compared to self-assessment of one's skills in pharmaceutical care. On the other hand, 68.9% of students demonstrated a level of knowledge higher than the level of satisfaction expressed about teaching.

**Discussion.** Italian students seem to be average satisfied with the educational programs and the competences acquired. However, since the average of correct answers for each student, it is clear that a further increase in educational programs is needed.

Of note, 30% of students rate university educational programs positively, but show less knowledge than expected for the level of satisfaction expressed with teaching.

**Conclusion.** This study provides interesting evidence on the current levels of competence and knowledge of Italian nursing students and can represent an important tool for the educational programs' improvement.

## The perceived impact on patient safety and quality of care of pharmaceutical technical assistants on nursing wards: a qualitative study

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**Background.** Staff shortages challenges hospital nurses to maintain high-quality medicine management. To support nurses, pharmaceutical technical assistants (PTAs) have been introduced on hospital wards to dispense medication. However, evidence is lacking regarding the impact of PTAs on the quality of care and patient safety. This study explored nurses', PTAs' and pharmacists' experiences and perceptions regarding the implementation of PTAs to support medication dispensation on hospital wards.

**Methods.** A qualitative study (December 2022 – June 2024) with a sequential methodological triangulation using two parts: 1) individual semi-structured interviews and 2) focus groups. The interviews explored personal perceptions and detailed thoughts of the involved healthcare professionals. Focus groups explored general beliefs and attitudes around emerging themes and issues extracted from the individual interviews with the potential for quality improvement. The interviews and focus groups were audio recorded, transcribed verbatim and thematically analysed.

**Results.** Twenty-eight interviews with (head) nurses, PTAs and pharmacists across various hospital wards revealed three main themes: patient safety & quality of care, organization of care, and role development & collaboration. Implementing PTAs on hospital wards was perceived to lower the risk of medication errors without compromising care quality. Successful implementation requires clear role descriptions and uniform communication procedures. Consistent assignment of PTAs to the same wards is crucial for team integration and optimal collaboration with nurses. PTAs perceived their implementation on hospital wards as a valuable expansion of their role. Nurses indicated that collaboration with PTAs challenged them in their supervisory role and resulted in a reduced workload. The main bottlenecks and improvement opportunities in PTA implementation were in the communication process, addressed in three focus groups. Three main themes emerged: team meetings, adaptability to changing circumstances, and individual communication skills. It is crucial for nurses and PTAs to adapt to changing circumstances to follow predefined communication procedures and deal with unexpected deviations. It was repeatedly mentioned that regular interprofessional meetings are essential for promoting collaboration. As individual communication skills impact team dynamics additional training was advised.

**Discussion.** Implementing PTAs on hospital wards presents a multifaceted opportunity for nursing management. While practical benefits are undeniable, successful integration requires a comprehensive approach. Focusing on the implementation of PTAs within a single healthcare organization limits the generalizability of the findings to other healthcare settings. However, exploring the experiences and perspectives of nurses, PTAs, and pharmacists within this specific context offers valuable insights for theoretical generalization with caution. This study provided a comprehensive understanding of nurses' perspectives on implementing PTAs on the hospital ward. Recognizing PTAs as valuable contributors in medication management highlights their potential to pos

## Poster presentations

### Poster 1 - Interprofessional Care in Education and Monitoring of Patient Adherence to the Medication Regimen – Nurses' Perception

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**Background.** Among healthcare professionals, nurses, doctors, and pharmacists perform roles in the pharmaceutical care (FC). However, there is no clear definition of the specific competencies of each of these professional groups. Nevertheless, it is widely recognized that interprofessional collaboration is necessary to achieve the highest quality of care. Therefore, it is important to explore nurses' perceptions of their competencies in patient education regarding medication use and in monitoring adherence within an interprofessional team.

**Methodology.** Descriptive and cross-sectional quantitative research, based on a convenience sample of 266 nurses actively involved in pharmacotherapeutic care across various healthcare settings. Data collection was conducted using a questionnaire made available on an online platform.

**Results.** Nurses believe that monitoring patient adherence to the medication regimen (95.86%) and providing education or information about its use (96.62%) are their roles in clinical practice. Competence is rated positively (on a scale from 0 to 10) for monitoring adherence to the therapeutic regimen (7.82) and for educating patients about medication use (7.67). Interpersonal communication is also considered positive. There is collaboration between nurses and doctors in monitoring adherence (6.09) and patient education (5.69); however, collaboration between nurses and pharmacists is negative (3.34 and 3.36, respectively). Only 41.98% of nurses felt qualified to educate about medication use in the past month, while 44.03% felt that other professionals would do it better.

**Discussion.** The results seem to reveal that nurses understand the importance of interdisciplinary work in the context of pharmacotherapeutic care and the relevance of developing interprofessional training programs to support healthcare professionals in providing patient care in a collaborative team environment [Resolution CM/Res(2020)3]. The perception of a lack of qualification to educate patients about medication use and the belief that other professionals could perform this activity better highlight the need to strengthen nurses' training in pharmacotherapeutic care (Heczková & Dilles, 2020; De Baetselier et al., 2020).

The negative perception of collaboration between nurses and pharmacists in monitoring adherence to the medication regimen and in patient education aligns with the conclusions of Celio et al. (2018) and De Baetselier et al. (2020).

**Conclusion.** Nurses have significant roles in pharmacotherapeutic care, and there is a need for greater awareness of their role in improving the quality of care and enhancing interdisciplinary cooperation, particularly with pharmacists.



## Poster 2 - Pharmaceutical care competencies of nursing students

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**Background.** There is a need to improve nursing students' training in pharmaceutical care (Stolic et al., 2022) and demonstrate the deficiency in related curricula (Seguro et al., 2023).

**Objectives.** To identify nursing students' perception of the adequacy of nursing curricula for developing knowledge, skills, and attitudes in pharmaceutical care and assess students' competencies in this area.

**Methods.** Descriptive study on a convenience sample of undergraduate and master's students from five Portuguese nursing schools. Data were collected using De Baetselier's instrument (De Baetselier et al., 2022), and data synthesis used descriptive and frequency measures.

**Results.** Fifty-seven students between the ages of 19 and 62, with a median age of 23, participated in the study. More than 60 % believed that nursing curricula only sufficiently address nurses' roles. Fewer than 22% stated that clinical placements provided learning opportunities, and fewer than 23% confirmed that these competencies were addressed in the curricula. Performance for pharmaceutical care varied between 131 and 169 points on a maximum scale of 200 points.

**Limitations.** This study is limited by a small number of questionnaire responses and the long instrument used to assess PC competencies. The length of the instrument negatively affected the completion rate of students despite prior notice and the option to pause the questionnaire. The difficulty level of the questionnaire items was evaluated by experts. However, it may be important to conduct an assessment with students in advance to determine the difficulty of each item. This will help to eliminate the items that are too easy and too difficult, which could hinder the ability to differentiate in the assessment. Another limitation is the assessment of competencies using questionnaires, which ideally require contextualized assessment, which was not feasible in this study.

**Conclusions.** Nursing curricula do not fit the current framework for nurses' roles in pharmaceutical care. For this reason, skill-based learning and greater emphasis on pharmaceutical care are recommended.

### Poster 3 - Nurses in pharmaceutical care - opportunities and threats from the physician's point of view

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**Background.** Pharmaceutical care (PC) is admittedly an area of multiprofessional convergence. Nurses' responsibilities and interventions in the PC vary between health care contexts and between countries.

**Methods.** Pretending to understand the view of Portuguese physicians about the responsibilities of nurses in the PC, strengths, weaknesses and future perspectives, we intentionally selected eight physicians (critical cases) with relevant experience in the CF. These were interviewed individually, semi-structured.

**Results/Discussion.** The participants framed the nurses' roles in the preparation and administration, monitoring, prescription, and education of the user and/or caregiver. They noted that the areas of preparation and administration, monitoring, and education of the user and / or caregiver are preserved and valued. Regarding the prescription, there is no unanimity among the participants while some assume that it is not a competence attributable to nurses, others assume that it may be a future path, based on specific training, definition of protocols, limitation to groups of users, medical supervision, political and/or mentality changes. The differentiation of nurses in the PC will be dependent on individual requirements, the interdisciplinary team, and the context of intervention and/or politics.

They identify general training, soft skills, and the nurse-user/family relationship as strengths of nurses for the PC; specific training in PC, interprofessional communication and current working methods/conditions as weaknesses; research, interdisciplinary work, gains for the user and possible financial gains as opportunities; the interprofessional conflicts, the risks and difficulties associated with the prescription and the (de)motivation of nurses to assume a different role in the PC as threats.

The possible failure to reach data saturation with the interviews carried out, as well as the use of a data collection instrument not specific to the Portuguese population, can be pointed out as potential limitations.

**Conclusion.** In the PC team, physicians consider that the preparation, administration, monitoring, and education of the user and/or caregiver are interventions under the responsibility of nurses. On the part of those professionals, there is receptivity, so that they are reinforced by integrating the prescription, when it becomes evident that the nurses' curricula are differentiated in the preparation for the PC.

#### Poster 4 - The patient's interpretation of recommendations and self-management of medication

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**Background.** Translation of research findings into clinical practice, policy, and patient care is lacking. Public or patient versions of guidelines (PVGs) could bridge this gap. PVGs help facilitate shared decision-making by enhancing patient health literacy, including medication self-management.

**Aim.** To develop and test a methodology for creating plain language recommendations (PLRs) for the general population. Method: Scoping Review following the Preferred Reporting Items for guidelines – PRISMA-ScR1. We searched in the MEDLINE (Ovid) and Embase (Ovid) databases and in the guideline developers repositories. The screening and data extraction were carried out independently by 2 reviewers, with subsequent discussions within the team.

**Results.** A total of 2512 citations and 66 web pages from guideline developers were screened. We analysed evidence from 8 documents provided by guideline developers and 9 articles focusing on PLRs development. The findings reveal a heterogeneous array of approaches in PVG development. The scoping review identifies, among others, crucial methodological documents for PVG development, such as PVG-RIGHT checklist<sup>2</sup> or GIN Public Toolkit<sup>3</sup>.

**Discussion.** Healthcare professionals deal with a range of scenarios related to the prompt preparation, administration and application of the drug and must supervise patient compliance. It is important to make sure the patient fully understands all recommendations, particularly those pertaining to how the medication should be used (e.g., time of administration, route of administration, compliance) especially in a home setting. The risk is larger for Sound Alike/Look Alike (SALA or LASA) Drugs. The elements influencing a patient's capacity to comprehend recommendations—their age, visual, auditory, and cognitive abilities—must be considered.

**Limitation.** Due to the sources of evidence, the material acquired for the scoping review is limited. Despite screening 2512 citations and 66 guidelines developers' webpages. All methodological documents may not be published or freely available.

**Conclusion.** The standardised tools and methods are obtainable and can be recommended to use for the development of easily comprehensible guidelines. We did not identify any particular medication usage-related instruments for suggestions in plain language. However, the general tools can also be applied to medication self-management.

## Poster 5 - Glass particles contamination in glass ampoules – a patient safety concern in Dutch hospitals?

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**Background.** Glass contamination during the compounding of glass ampoules can impact patient safety in clinical care. However, there is limited information concerning the occurrence of glass particle contamination in Dutch hospitals. The aim is to evaluate the observation of glass particles, ampoule disposal due to glass particles, and the use of filtering techniques in clinical care.

**Methods.** A multicentre cross-sectional study design was employed from September to October 2022 to examine the practices associated with handling glass ampoules among registered nurses and pharmacy technicians compounding on wards. The survey was developed by hospital pharmacists and consisted of 21 items and five open-ended questions. Descriptive statistics were used for the evaluation.

**Results.** Registered nurses (n=58) and pharmacy technicians (n=32) from 31 hospitals participated. 44.8% of the registered nurses observed particles in glass ampoules and 17.2% discarded the ampoules sometimes. 31.0% reported not using filtering techniques during compounding in clinical care. 84.4% of pharmacy technicians reported observing glass particles during compounding, with 21.9% reporting to discard ampoules because of contamination sometimes. A total of 18.8% reported not using filtering techniques to prevent contamination.

**Discussion.** One of the main strengths is the multicentre approach of this cross-sectional study and the heterogeneous composition of the hospitals in the Netherlands. However, a main limitation of the study is the relatively small sample size and the study duration, which means we cannot make any statements about generalization.

**Conclusion.** Results suggest that visible glass contamination occurs in clinical care. Further studies are urgently needed to investigate filter use and its impact on preventing glass contamination as well as developing mitigation strategies to prevent glass contamination with (sub)visible particles.

## Poster 6 - Nurses' needs, expectations and perceptions on barcode medication administration implementation: A qualitative study

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**Background.** Medication errors in hospitals are a frequent occurrence and can harm patients. As a preventive measure against medication errors, barcode medication administration (BCMA) technology can be utilized. Nurses dedicate a significant portion of their daily activities to medication-related tasks. Understanding the determinants of BCMA acceptance and use is crucial for designing and implementing a BCMA-system that nurses will accept and use correctly for ensuring patient safety. To gain insight into nurses' needs, expectations and perceptions regarding BCMA implementation in a general hospital in Belgium. Additionally, barriers and facilitators to BCMA implementation were explored to optimize the implementation process and enhance the acceptance of this technology.

**Methods.** A qualitative descriptive study was conducted in 2023, involving focus groups with a purposive sample of nurses from a general hospital in Belgium. The sample included nurses with varied years of work experience and from different hospital wards. A topic guide based on the Technology Acceptance Model was utilized, and data were analyzed using thematic analysis.

**Results.** Six themes emerged from five focus groups: (1) safety, (2) workflow, (3) impact of BCMA on the patient, (4) nurses' perception of BCMA usage, (5) workload, and (6) training and support. These themes provided insights into BCMA-implementation. Subsequently, barriers and facilitators for BCMA-implementation were extracted from the obtained themes.

**Discussion.** The study highlights the complexity of BCMA's impact on nursing workflows. While nurses expressed positive expectations regarding the potential for BCMA to improve workflow efficiency, they also voiced concerns about increased workload, particularly during nighttime shifts and in specific patient scenarios. These findings underscore the importance of addressing individual differences and system characteristics to enhance technology acceptance, as outlined in the Technology Acceptance Model. Although BCMA is seen as a valuable tool for reducing medication errors and enhancing patient safety, issues related to practical usability and the potential for workarounds due to increased workload may compromise these benefits. The monocentric nature of the study limits the generalizability of the findings, and the involvement of a single researcher in data analysis could introduce bias, despite efforts to mitigate this through member checking and self-reflection.

**Conclusion.** Safety is paramount, with reliable technology being crucial for patient safety. To streamline the BCMA-workflow in nursing wards, procedures need optimization, considering aspects such as workload, usability, and required equipment. Concerns regarding increased workload and organizational culture influence BCMA acceptance, underscoring the importance of training and ongoing support. The facilitators and barriers offer valuable insights for optimization and enhancing BCMA acceptance.

## Poster 7 - Nurses' support methods after a safety incident: A literature review

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**Background.** Patients, their family members, as well as the nurses can be involved in a safety incident. The safety incident and the harm it may cause to the patient can be traumatic to the nurse. Patients and their family are called the first victims. The term second victim is a healthcare professional who has experienced harm from an incident. Safety incidents can be related to different kind of patient safety situations. Safety incidents often occur when nurses are working with medications. Safety incidents can cause negative impacts for the nurse. To avoid these negative impacts, it is important to support the nurse after the safety incident.

**Methods.** A literature review was performed to compile support methods for nurses after a safety incident. The search was done in Cinahl, Ovid and Scopus databases. The search was limited to Finnish and English language and to years 2012-2022. In this review the quality of studies were assessed with Joanna Briggs Institutes critical appraisal tools. The systematic search was supplemented with a manual search. The inductive content analysis was used.

**Results.** A total of 16 studies were included. Four main categories were formed: possibility to take a distance from work, organizing a calm environment, support provided by different groups of people and different forms of support. The main category possibility to take a distance from work contained time-out after a safety incident and absence from the workplace. Time out means a short break immediately after the safety incident. During this short break, the nurses can calm down. Absence from the workplace includes longer absences from work, such as, sick leaves and changing the workplaces.

Organizing a calm environment included two subcategories, possibility to leave after the safety incident to another environment and processing the safety incident in a calm environment. Possibility to leave to another environment means that nurse is guided to another room where the incident happened. Processing the safety incident in a calm environment is important to nurses. Safe and private place to that is necessary.

Support provided by different groups of people included ten subcategories. Nurses received support from superiors, colleagues, family and friends, social workers, psychotherapists, lawyers, pastors, outside work advisors, grief counselors and patient safety officers.

Different forms of support were peer support, emotional support, support outside of the work, second victim support programs, legal help, open conversation, debriefing and safety incidents investigation.

**Discussion and conclusion.** The purpose of this literature review was to describe what kind of support nurses receive after a safety incident. Four main categories were formed. Similar results have also been reported in previous studies. The limitation is the results of review may not be applicable to all cultures.

Safety incidents are common in healthcare. Because of that the development of support methods is needed. The results of this review confirm what support should be like. From this review, the effectiveness of support methods after a safety incident emerges as a topic for further research.

## Poster 8 - Medication adherence and treatment burden

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**Background.** Medication adherence is vital in the treatment process. Maintain medication adherence still remains a challenge. Treatment burden which has made adherence a challenge include the physical, financial, and psychological demand of healthcare which are crucial in shaping adherence. This study aims to explore the interplay between medication adherence and treatment burden. It evaluates the implications of medication adherence in healthcare practices.

**Methods.** The researcher undertook a comprehensive review of the existing body of knowledge regarding adherence to medication. Keywords were used to select sources that will be evaluated on the subject under study. Databases such as PubMed, Scopus, and Web of Science will be used to get all the relevant sources. Only sources between 2019 and 2024 were taken into consideration. Relevant sources were screened using the full-text review, abstract and title.

**Results.** The analysis reveals that there is a relationship between medication adherence and treatment burden. The treatment burden is as a result of complex medication, adverse drug effects, financial challenges and emotional challenges. Poor adherence to prescription is as a result of high treatment burden. Failure to adhere to the prescription undermines the effectiveness of treatment. It increases the risk of progression and increase healthcare burden.

**Discussion.** Addressing medication adherence and treatment burden necessitates a patient-centered strategy that takes into account individual preferences, talents, and socioeconomic circumstances. Simplifying prescription regimens, giving patient education and counseling, utilizing digital health technology for remote monitoring and assistance, and encouraging collaborative decision-making between patients and healthcare professionals are all strategies for reducing treatment burden and increasing adherence. Furthermore, healthcare practitioners have an important role in detecting and resolving treatment burden through empathic communication, medication reconciliation, and collaborative care planning.

**Limitation.** Despite the proposed techniques, there are significant hurdles to effectively managing drug adherence and treatment burden. These include patient population heterogeneity, restricted resource availability, healthcare system limits, and the requirement for long-term involvement and support. Furthermore, measures aiming at minimizing treatment burden may not be appropriate or successful for all patients.

**Conclusion.** The link between medication adherence and treatment burden emphasizes the importance of comprehensive, patient-centered methods to healthcare delivery. By recognizing and alleviating treatment burden, healthcare stakeholders can improve medication adherence, treatment outcomes, and reduce the overall burden of chronic disease management for patients. More research and innovation are required to develop individualized solutions that address the different demands and obstacles that people with chronic diseases confront.

## Poster 9 - Interprofessional pharmaceutical care on Guernsey: Challenging traditional processes and creating new ways of working.

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**Background.** The framework devised by De Baetselier et al (2021a) defined the complexity of pharmaceutical care and highlights the need for nurses, physicians and pharmacists to work together for optimal pharmaceutical care. This case uses the principals of action research to demonstrate how this established research has been applied in a practical setting to improve healthcare of service users.

Traditionally, medication on Guernsey was prescribed by physician, dispensed by pharmacists and administered by nurses with little collaboration between those people regarding medication management. High incidents of medication errors within community services were investigated and actions were taken to improve the situation.

**Methods.** The paper records of medication administration were investigated. A tool was devised that examined the written instructions from the physicians to the nurses regarding the medication to be administered and how the nurses recorded what had been given. All adult health and social care teams were scrutinised across the island, which was 7 teams in total. Several errors were highlighted with many similarities across all the teams. Following this, focus groups were held with staff to determine the cause of these errors.

**Results.** It was found that the lack of communication between the nurse, physician and pharmacist was a significant factor in the errors. Physicians did not always communicate clearly what medication was to be given. This was particularly apparent on discharge from hospital. There was also a difference in the way the teams used the documentation and this led to confusion within the nursing teams. There was also a significant lack of any evidence in the documentation of communication with the pharmacist.

**Discussion.** Following the focus group meetings were set up between the nurse leaders and chief pharmacist for the Island. A working group was formed with the lead nurses and pharmacist to create a new policy for medication management in community services which is underpinned by the need for collaboration between nurses, physicians and pharmacists. New documentation has been created to improve communication between the physicians and the nurses, and there is clearer understanding of roles of all involved in the pharmaceutical care of the service users. Questioning long held traditional practices has been challenging and as with all change management processes getting stakeholder engagement has been a key aspect of the process. The service will be re investigated to determine the impact of the interventions made.

**Conclusion.** There is a need for the practical implementation of established research in healthcare. The work of De Baetselier et al (2021b) clearly demonstrates that collaboration between physicians nurses and pharmacists has a positive impact on the quality of care for service users. This case clearly demonstrates the practical application of this process.



## Poster 10 - Exploring the responsibility of nurses in Slovenia for medication management

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**Background.** In different countries, the competences of nurses in the field of medication administration are often limited, with the scope of their tasks varying according to national regulations and healthcare systems. In Slovenia, the role of nurses in this area is particularly limited. The aim of this study was to investigate the extent of responsibility that Slovenian nurses have in relation to medication prescribing and related tasks.

**Methods.** A cross-sectional study was conducted using a structured questionnaire developed by the NuPhaC consortium for data collection. The sample comprised 224 nurses, 199 of whom were female. The mean age of the participants was 40.28 years (SD = 11.53), with a mean experience of 17.55 years (SD = 12.24) in healthcare. The data was analysed using IBM SPSS software. Basic descriptive and inferential statistics were used. Statistical significance was assumed at  $p \leq 0.05$ .

**Results.** Nurses reported limited autonomy in scheduling medication-related tasks ( $\bar{x} = 0.84$ , SD = 0.82), meaning that most tasks were not allowed or were performed under supervision. However, the highest level of responsibility was found in the performance of these tasks ( $\bar{x} = 3.28$ , SD = 0.60), where nurses often acted with great independence. The level of responsibility for monitoring medication tasks was moderate ( $\bar{x} = 2.51$ , SD = 0.98). ANOVA revealed that a higher level of education significantly influenced the responsibility for medication review and optimisation ( $F(3, 220) = 3.45$ ,  $p = 0.017$ ). Furthermore, linear regression analyses revealed no statistically significant influence of demographic variables on the level of responsibility for monitoring, performing or planning medication-related tasks ( $p < 0.05$ ).

**Discussion.** This study emphasises the limited autonomy of Slovenian nurses in medication-related tasks due to restrictive national regulations. Despite these restrictions, nurses show considerable responsibility for performing these tasks, reflecting confidence in their clinical skills, although their involvement in decision-making remains limited. Moderate responsibility in overseeing medication tasks suggests that nurses play an important facilitator role, recognised for their practical contributions but not fully empowered for comprehensive leadership. Higher levels of education have a significant impact on responsibility for medication review and optimisation, suggesting that higher education enhances nurses' skills in complex medication management. This is consistent with evidence that education empowers nurses to expand their role, especially in areas typically dominated by other healthcare professionals. Interestingly, demographic factors such as age, gender and experience do not have a significant impact on the level of responsibility, suggesting that structural factors such as education and legal frameworks have a greater influence.

**Conclusion.** Slovenian nurses are cautious about their prescribing authority, reflecting the limitations imposed on them by current regulations and training frameworks. To support the evolving role of nurses in healthcare, the education system urgently needs to be improved.

## Poster 11 - Healthcare Professionals' Ability to Predict Patients Adherence to Newly Prescribed or Switched Antipsychotic Medication: A Pilot Study

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**Aim.** To explore healthcare professionals' ability to predict medication adherence in patients with psychotic disorders when initiating or switching antipsychotic medication.

**Methods.** A prospective cohort pilot study was conducted between March and September 2024. Psychiatrists and psychiatric nurses or nurse-specialists treating adult patients ( $\geq 18$  years) with oral antipsychotics for psychotic disorders. Healthcare professionals (HCPs) completed digital questionnaires at two time points: when prescribing a first antipsychotic or switching antipsychotics (baseline) and at two-month follow-up. At baseline, HCPs rated their prediction of patient adherence (0-100%) and reported shared decision-making (SDM) levels. Additionally, personal characteristics (age, profession, setting, years of work experience) were collected. After two months, actual adherence to the treatment was assessed by the HCPs. Receiver operating characteristic (ROC) curves were constructed to assess predictive accuracy, with area under the curve (AUC) calculations for the total sample and subgroups (gender, antipsychotic type, SDM level). Analyses were performed using R 4.4.2 software.

**Results.** Six healthcare professionals (1 psychiatrist, 3 nurses, 2 nurse specialists) provided predictions for 24 patients (19 male), generating 29 questionnaires. Overall, the predictive ability was moderate (AUC 0.65, 95% CI: 0.29–1.0), with an optimal cut-off point of 77.5%. Predictive accuracy varied among patient subgroups: females ( $n=6$ , AUC 1.0) versus males ( $n=19$ , AUC 0.54, 95% CI: 0.03-1.0); classical antipsychotics ( $n=9$ , AUC 0.69, 95% CI: 0.28-1.0) versus atypical antipsychotics ( $n=15$ , universal adherence); sufficient SDM ( $n=7$ , AUC 1.0) versus insufficient SDM ( $n=17$ , AUC 0.60, 95% CI: 0.06-1.0). Statistical comparisons between subgroups were limited by sample size.

**Discussion.** This pilot study demonstrated moderate ability of healthcare professionals to predict antipsychotic medication adherence (AUC 0.65), with notable variations across patient subgroups. Perfect prediction was observed for female patients and cases with sufficient shared decision-making, while prediction accuracy was lower for male patients and cases with insufficient shared decision-making. The universal adherence found in patients using atypical antipsychotics warrants further investigation. To our knowledge, this is the first study of its kind. Several methodological limitations affect the interpretation of these findings: the small sample size led to wide confidence intervals and prevented meaningful statistical comparison between subgroups; the use of self-developed questionnaires instead of validated instruments and the possibility of social desirability may have impacted measurement reliability. Additionally, potential selection bias in both healthcare professional and patient participation should be considered when interpreting these results.

**Conclusion.** These preliminary findings suggest potential value in clinical judgment for predicting medication adherence, particularly when combined with shared decision-making. Future research should address the current limitations by including larger samples, extending follow-up periods, using validated instruments, and incorporating objective adherence measures, such as electronic monitoring or pharmacy dispensing data. Understanding healthcare professionals' ability to predict adherence could ultimately contribute to early identification of at-risk patients and more targeted adherence interventions in clinical practice.

**Poster 12 - Exploring Nurse Prescribing Practices and Preferences in Belgian Hospitals: A Multicenter Cross-sectional Survey on Healthcare Providers' Perspectives and Expected Impact**

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**Aims.** This study aims to describe current nurse prescribing practices in the absence of a legal framework, evaluate healthcare providers' preferred prescribing models, and their perception of the impact of nurse prescribing in Belgian hospitals.

**Design.** Multicenter quantitative, cross-sectional survey

**Methods.** Between December 2022 and April 2023, participants from seven hospitals in Flanders were shown a video describing independent and supplementary prescribing before completing an online survey that assessed socio-demographics, current practices, expected impacts and preferred prescribing models.

**Results.** Of the 303 respondents, 86% were nurses, 10% medical doctors, and 4% pharmacists. Independent nurse prescribing or deprescribing of medications was reported by 75% in their current work context. Nurse prescribing was observed weekly or daily by 48%, primarily for initiating new medications. Overall, 44% preferred independent nurse prescribing over no prescribing.

**Conclusion.** Despite the absence of a legal framework, nurses in Belgian hospitals regularly prescribe medications. Most healthcare providers positively perceive the expected impact of nurse prescribing.

**Poster 13 - The effect of in-hospital medication self-management (SelfMED) on medication adherence in polypharmacy patients post-discharge: protocol of a pre-post intervention study**

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**Background.** Healthcare providers usually manage medication for patients during hospitalisation, although patients are expected to self-manage their medication post-discharge. Lack of self-management competencies is associated with low adherence and medication errors harming patients' health. When self-management is allowed during hospitalization, it often lacks a structured, evidence-based approach. Therefore, an in-hospital medication self-management intervention, SelfMED, was developed based on existing evidence. Since empirical data on SelfMED's effectiveness are lacking, this study aims to evaluate its effect on medication adherence two months post-discharge in patients with polypharmacy.

**Methods.** A multicentre pre-post intervention study is conducted. This study begins with a control phase investigating usual care (i.e., medication management provided by healthcare providers), followed by an intervention period, investigating the effects of SelfMED. SelfMED consists of multiple components: (1) a stepped assessment evaluating patients' eligibility for in-hospital medication self-management, (2) a monitoring system allowing healthcare providers to follow-up medication management and detect problems, (3) a supportive resource for healthcare providers to act upon observed problems with medication self-management. Medication adherence two months post-discharge, measured by pill counts, is the primary outcome. Secondary outcomes include self-management, medication knowledge, patient and staff satisfaction, perceived workload and healthcare service utilization.

**Results.** Recruitment of patients receiving usual care is ongoing. The control group's medication adherence, medication knowledge, patient satisfaction and healthcare services utilization two months post-discharge will be presented.

**Discussion and conclusion.** The results of this pragmatic study will assist healthcare organizations and providers in making informed decisions about implementing medication self-management programs in practice.