

of apps to better serve these specific stakeholders in PH management.

While this development has the potential to improve patient care, this proposition warrants empirical validation. Therefore, it is advisable to conduct studies in controlled settings to generate robust evidence regarding the efficacy of these tools.

#### REFERENCES AND/OR ACKNOWLEDGEMENTS

**Conflict of Interest** No conflict of interest.

6ER-009

#### PRESCRIBING PATTERNS AND EFFECTIVENESS OF RANIBIZUMAB AND AFLIBERCEPT IN PATIENTS WITH CENTRAL RETINAL VEIN OCCLUSION: A RETROSPECTIVE COHORT STUDY IN TAIWAN

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**Background and Importance** Intravitreal injections of ranibizumab and aflibercept are established initial therapies for managing macular oedema arising from central retinal vein occlusion (CRVO). However, there is a lack of extensive studies evaluating the prescribing patterns and therapeutic effectiveness of these two drugs.

**Aim and Objectives** To scrutinise the patients' characteristics, particularly focusing on the initial severity of the CRVO, and to evaluate the effectiveness of ranibizumab and aflibercept in patients with CRVO eyes.

**Material and Methods** We performed a retrospective examination of electronic health records data from three hospitals in Northern Taiwan. We included adult patients with CRVO who initiated either intravitreal ranibizumab or aflibercept from 2017 to 2021. Central retinal thickness (CRT) and visual acuity (VA) were evaluated before the treatment and through a follow-up period lasting up to 2 years. For statistical analyses, VA was transcribed into LogMAR (logarithm of the minimum angle of resolution) VA values. Independent t-test and paired t-test analyses were employed to assess the difference of baseline CRT and LogMAR VA between ranibizumab and aflibercept and changes of CRT and LogMAR VA after treatments, respectively.

**Results** The study cohort consisted of 220 patients (average age: 65.6±13.8 years; 55.9% male) and included 127 eyes intravitreally treated with ranibizumab and 93 eyes treated with aflibercept. Aflibercept-treated eyes displayed a markedly higher initial CRT (577.7 µm vs. 510.8 µm, p=0.006), but no significant differences in initial LogMAR VA were seen (0.92 vs. 0.87, p=0.29), compared to those with ranibizumab. Both medications led to considerable reductions in CRT after 1-year (ranibizumab: 510.8 vs. 343.5 µm, p<0.001; aflibercept: 577.7 vs. 346.5 µm, p<0.001) and 2-year treatments (ranibizumab: 510.8 vs. 310.6 µm, p<0.001; aflibercept: 577.7 vs. 298.5 µm, p<0.001). Nevertheless, neither drug contributed to noteworthy improvements in LogMAR VA after 1-year (ranibizumab: 0.87 vs. 0.92, p=0.51; aflibercept: 0.92 vs. 0.92, p=0.90) or 2-year treatments (ranibizumab: 0.87 vs. 0.92, p=0.49; aflibercept: 0.92 vs. 0.93, p=0.91).

**Conclusion and Relevance** Both intravitreal ranibizumab and aflibercept for CRVO produced significant reductions in CRT and remained the VA in the routine care from Taiwan. Our data suggest that upcoming comparative studies between these treatments should consider the observed baseline differences in CRT.

#### REFERENCES AND/OR ACKNOWLEDGEMENTS

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6ER-010

#### INVESTIGATING NEED AND APPROPRIATENESS FOR PHARMACIST-LED VACCINATION SERVICES WITHIN A HEALTHCARE SYSTEM

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**Background and Importance** Pharmacist-led vaccination services are an opportunity to improve patient access to vaccination and improve uptake.

**Aim and Objectives** To assess drivers for pharmacist-led vaccination services and to understand patient expectations and pharmacist-preparedness for pharmacist-led vaccination services.

**Material and Methods** Two self-administered questionnaires were developed and validated; one for pharmacists and the other for general public. The pharmacist questionnaire evaluated knowledge and skills on the preparation and administration of vaccines and service provision. The patient questionnaire evaluated vaccine education and administration by pharmacists. The questionnaires were distributed electronically (n=40 pharmacists; n=140 patients) and physically from 2 community pharmacies and snowball sampling (n=22 pharmacists; n=23 patients).

**Results** Pharmacist questionnaire (N=62): 45 female, 17 male, 23–69 years, where 19 pharmacists prefer to administer vaccines to the adult group over the paediatric group (n=3). Pharmacists are aware of errors during preparation and administration of vaccines (n=31), as well as contraindications (n=45), the current national guidelines (n=42) and the procedure of vaccine storage (n=58). Community pharmacists agreed that it is feasible to carry out vaccination services at the pharmacy (n=47), some of whom stated that the premises require further modifications (n=28). Pharmacists commented on the importance of proper training for the service to be carried out efficiently.

**Patient questionnaire** (N=163): 97 female, 66 male, 18–70 + years, where 102 patients approach pharmacists with concerns on varying aspects including side effects, general information, concerns, uses and other information regarding vaccines, 71 reported that they were satisfied with the pharmacist's responses, and 146 trust the pharmacist to administer the influenza vaccine. Seventy-five patients are willing to pay €5 for the service provided by pharmacists, and 37 patients are not willing to pay.

**Conclusion and Relevance** The drivers that contribute to the implementation of pharmacist-led vaccination services include

patient expectations and the level of preparedness among pharmacists.

#### REFERENCES AND/OR ACKNOWLEDGEMENTS

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#### 6ER-011 AN ASSESSMENT OF PHARMACISTS' CONFIDENCE AND BEHAVIOURS IN DISPENSING OPIOID MEDICATIONS

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**Background and Importance** Opioid prescribing has been associated with what is described as an 'opioid crisis' in the United States. Pharmacists are in unique positions to offer beneficial services to promote the safe use of opioid medicines. Low confidence, knowledge, and training have been associated with barriers in providing opioid dispensing services.<sup>1</sup>

**Aim and Objectives** The primary aim was to investigate the association between community pharmacists' confidence and practice behaviours in the dispensing of opioid medications.

**Material and Methods** A modified version of the Opioid Therapy Provider Survey was sent 178 community pharmacists between April and September 2023 to assess their confidence and behaviours in dispensing opioid medicines. Participants confidence was assessed with ten statements around counselling and advice, dispensing, abuse perception, communication with providers, and practice protocols that were measured using Spearman's statistical correlation.

**Results** The study response was 28%. Staff pharmacists accounted for 35% and pharmacy managers 32% of the respondents. Thirty-five percent of the pharmacists had been in practice for more than 7 years. Forty-seven percent (47%) of the pharmacists dispensed over 30 opioid medicines per week. Ninety-one (91%) percent of the respondents felt confident in dispensing opioids in their practice. There was a strong, positive correlation between pharmacists' comfort when: (1) following a recommended opioid dispensing protocol ( $r_s = .593, p < .001$ ), (2) counselling patients on side effects ( $r_s = .480, p = .005$ ), (3) information provided by pain specialists ( $r_s = .515, p = .002$ ), and (4) having a consistent practice approach in dispensing opioids ( $r_s = .604, p < .001$ ).

**Conclusion and Relevance** Most community pharmacists appear to feel confident in dispensing opioid medicines. There is a strong level of confidence among community pharmacists in counselling patients on opioid side effects, overdose, and antidotes. Pharmacists are most comfortable in dispensing opioids when there are management approved dispensing protocols and medical information is provided by the prescribing pain specialist.

#### REFERENCES AND/OR ACKNOWLEDGEMENTS

1. Pearson AC, Moman RN, Moeschler SM, *et.al.* Provider confidence in opioid prescribing and chronic pain management: results of the Opioid Therapy Provider Survey. *J. Pain Research* 2017;10:1395–1400.

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#### 6ER-012 EVALUATION OF THE EFFECT OF CLOSED SYSTEM TRANSFER DEVICE SYRINGE ADAPTOR CONNECTION IN THE ISOLATOR ON CYTOTOXIC RESIDUE CONTAMINATION DURING INTRAVENOUS ADMINISTRATION

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**Background and Importance** The European Biosafety Network recommends that cytotoxic drug surface contamination in pharmacy and patient wards not exceed 0.1 ng/cm<sup>2</sup>. Among other mitigations, closed system transfer devices (CSTDs) are recommended in several guidances in the US, Europe, and UK for reduction of surface contamination. In the UK, CSTDs are not part of standard cytotoxic preparation procedures in isolators, but the NHS recommends the use of CSTD syringe adaptors (SAs) with syringes used for intravenous administration. At University Hospitals Birmingham, standard practice is to connect Luer caps in the isolator and remove them for administration.

**Aim and Objectives** The aim was to determine if the addition of a CSTD SA in the isolator reduces cytotoxic residue contamination during intravenous bolus administration.

**Material and Methods** Surface contamination of syringes, gauze pads placed at the administration site, and nurses' gloves were compared between two procedures: connecting AMD hub caps in the isolator and removal in the ward vs. connecting Tevadaptor SA Locks (SALs) in the isolator during preparation.

In a negative pressure isolator, 25 cyclophosphamide syringes were prepared with hub caps and 25 with SALs. Syringes were wiped with 50% methanol prior to removal from the isolator. In the ward, syringes were swabbed. Gauze pads placed under connection sites for bolus administration were collected. Following administration, nurses' gloves were swabbed. Cyclophosphamide on swabs and gauze pads was quantified by LC/MS.

#### Results

**When SALs replaced hub caps** median cyclophosphamide contamination decreased from 8.29 ng to 0.62 ng on syringes, from 384.82 ng to 0.01 ng on gauze pads, and from 1.11 ng to 0.00 ng on gloves. When hub caps were used, 12/25 syringes, 19/25 gauze pads, and 2/25 gloves exceeded the recommended limit of 0.1 ng/cm<sup>2</sup>, while with SAL, no samples exceeded this limit.

**Conclusion and Relevance** Addition of Tevadaptor SALs to syringes in the isolator reduced cytotoxic residue on syringe surfaces, nurses' gloves, and on connect/disconnect, compared to the addition of standard hub caps. Thus, Tevadaptor SALs are beneficial in reducing cytotoxic drug exposure to nurses administering IV syringes and may reduce the risk of mutagenic adverse events.

#### REFERENCES AND/OR ACKNOWLEDGEMENTS

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