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CONFERENCE ABSTRACTS

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Social and administrative pharmacy

Comparison of first line antihypertensive agents and the risk of dementia in adults with hypertension: A real-world evidence cohort study

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RFMO-02 - Rapid Fire Session Monday, P1-P2, September 25, 2023, 11:00 AM - 12:30 PM

Background
Dementia represents a global epidemic with no treatment to slow neurodegeneration. Hypertension is a recognized modifiable risk factor for dementia. However, evidence for using antihypertensive agents to reduce the risk of dementia is inconclusive.

Purpose
The objective of this study was to evaluate the association between first-line treatment with angiotensin II receptor blockers (ARB), beta-adrenergic receptor antagonists (BB), calcium channel blockers (CCB) or thiazide-diuretics compared with angiotensin converting enzyme inhibitors (ACEI) and the risk of incident dementia.

Method
Primary care health records from IQVIA Medical Research Data (IMRD-UK) were used to conduct a new-user active comparator cohort study in adults ≥40 years with a new diagnosis of hypertension and newly initiated on one of five antihypertensive agents (ACEI, ARB, BB, CCB or thiazide-diuretics) between 2000-2021 in the UK. We excluded participants with a prior diagnosis of dementia, cognitive impairment, confusion, prescription for treatment of dementia symptoms or prior antihypertensive therapy use. Validated diagnostic read codes linked to a clinical diagnosis were used to measure the outcome of dementia. To address the latency of dementia development, follow-up was started 1 year after initiation of antihypertensive therapy. Potential confounders including blood pressure, underlying health conditions, co-prescribed medicines, socioeconomic status and lifestyle factors (e.g. BMI, smoking and alcohol) were adjusted using inverse probability of treatment weighting (IPTW) based on propensity scores. The relative risk of dementia was estimated using a Cox proportional hazards model to estimate hazard ratios (HR) with 95% confidence intervals (CI).

Results
The study cohort included 733,151 hypertensive patients with a mean age of 64 (SD 12) years and 53% female sex; 202,716 initiated on an ACEI, 35,305 ARB, 164,143 BB, 158,810 CCB, and 172,177 thiazide-diuretics. A total of 28,912 cases of newly diagnosed dementia occurred during a median follow-up of 7.4 (IQR 3.2-11.4) years. After IPTW, all measured covariates were well balanced between each antihypertensive drug class and ACEI (reference group). ARB and BB initiators were associated with a lower risk of dementia compared to ACEI initiators; HR 0.91 (95%CI, 0.86-0.97) and 0.93 (95%CI, 0.89-0.97) respectively. There was no evidence of reduced risk in those who initiated CCB or thiazide-diuretics compared to ACEI initiators; HR 0.99 (95%CI, 0.96-1.03) and 0.98 (95%CI, 0.95-1.02) respectively.

Conclusion
In adults newly diagnosed with hypertension, initiation with angiotensin II receptor blockers or beta-blockers was associated with a lower risk of dementia compared to those initiated with angiotensin converting enzyme inhibitors. There was no difference in risk of dementia when initiated on calcium channel blockers or thiazide-diuretics. These findings may help patients and prescribers when choosing antihypertensive therapy in those at an increased risk of dementia. We were unable to account for ethnicity, which is a determinant of first line antihypertensive use and risk factor for dementia. To improve the generalisability of our findings, a randomised controlled trial that includes participants from various ethnic backgrounds would be beneficial to confirm the findings of this study.

Improving access to cancer control services in low- and middle-income countries: A novel framework on policy change for pharmacists' involvement

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RFMO-02 - Rapid Fire Session Monday, P1-P2, September 25, 2023, 11:00 AM - 12:30 PM

Background
Cancer, a complex global health issue, is overburdening healthcare systems globally. It is the second most common cause of death and could claim 76 million more lives over the next decade, especially in low- and middle-income countries (LMICs). This high burden of cancer is driven by critical shortage of oncologists and poor access to diagnosis and treatment leading to late disease presentation, hence poor prognosis. Consequently, exploring strategies to improve access to cancer control is key. One such strategy is task shifting, a critical health system strengthening approach that optimizes efficient use of human resources. However, evidence on how task shifting, involving advanced clinical professionals like pharmacists, could improve access to cancer control services is lacking.

Purpose
Because pharmacists, through their proximity to communities, could play a significant role in improving access to cancer control services, we sought to develop a conceptual framework for task shifting to pharmacists to determine its feasibility in improving access to cancer control.

Methods
We conducted an initial systematic review to ascertain what is known from the existing literature about the effectiveness of task shifting of cancer control services to nonphysician health workers. The findings showed the scope of roles that have been shifted to nonphysician health workers and further suggests that it could be effective in improving access to cancer control services. However, most of the tasks were shifted to less advanced health workers such as community health workers, and primary healthcare workers. With findings showing limited research on task shifting to advanced clinical practice professionals like pharmacists, we saw the need for further research on how the critical elements of care required along the cancer control continuum can be shifted to pharmacists. Such research requires a critical framework for understanding the organizational readiness for change involving oncologists, pharmacists, policymakers, and patients and how the development of a new model of care to improve access to cancer control services can be supported.
Using three theoretical structures comprising intellectual capital theory, organizational readiness for change theory and the theoretical domains framework, we developed a framework for exploring readiness for pharmacists' involvement in cancer control.

Results
We propose the Task Shifting Concepts for Pharmacists to Advance Cancer Control and Treatment (TASK PACT) framework. It synthesizes key theoretical concepts that can explore oncologists, pharmacists, policymakers, and patients' readiness for task shifting in LMICs. By exploring the factors that influence oncologists, policymakers, pharmacists and patients' perspectives for task shifting to pharmacists, relevant information for developing a new model of care to improve access to cancer control services could emerge.

Conclusion
Even though there are studies that have explored or advocated for roles for pharmacists in cancer care, there is, to the best of our knowledge, no framework to explore the development of an actual model of care for pharmacists to improve access to cancer control services. Therefore, we believe that this framework could provide a good starting point for significant involvement of pharmacists in addressing the burgeoning cancer epidemic.

Comparison of factors affecting turnover intentions by job fields in biopharmaceutical industry in South Korea

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RFMO-02 - Rapid Fire Session Monday, P1-P2, September 25, 2023, 11:00 AM - 12:30 PM

Background and objective
Excessive turnover in the biopharmaceutical industry can negatively impact public health and corporate management. This study aims to find the difference in turnover intention by job field and compare the factors affecting it.

Methods
An online self-report survey was administered to employees working in the production, sales/marketing, and clinical/regulatory affairs fields of biopharmaceutical companies from September 1 to October 31, 2020, in Korea. The questionnaire addressed sociodemographic, job-related, organization-related, and personal-related factors, as well as turnover intention. The difference in turnover intention by job field was confirmed by using the one-way analysis of variance (ANOVA) test. Multivariate regression analysis was performed to identify factors affecting turnover intention by job field.

Results
A total of 529 employees responded to the questionnaire, and 500 cases were analyzed after discarding 29 cases with missing data. Turnover intention showed differences according to job field ($p < 0.001$), and production was the highest. In the production position, the higher the satisfaction with the supervisor ($\beta = -0.345$, p-value = 0.004) and the higher the organizational commitment ($\beta = -0.308$, p-value = 0.022), the lower the turnover intention. Greater satisfaction with the work scope ($\beta = -0.171$, p-value = 0.014)

and salary (β = -0.176, p-value = 0.004) factors showed low turnover intention for sales or marketing, and the higher the satisfaction with the job (β = -0.379, p-value = 0.027), the lower the turnover intention for clinical or regulatory affairs.

Conclusions
It is necessary to develop a policy that reflects the characteristics of the job to reduce the turnover rate in the biopharmaceutical industry. Organization-related factors in production, job satisfaction in clinical or regulatory affairs, and job satisfaction and economic compensation in sales or marketing must be improved.

Pharmacy workforce development: Leading change in Singapore

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RFMO-02 - Rapid Fire Session Monday, P1-P2, September 25, 2023, 11:00 AM - 12:30 PM

Background:
As of December 2022, there are 3900 pharmacists registered with the Singapore Pharmacy Council (SPC). The pharmacy workforce needs to move in tandem with the shifts in global practice landscape, care models and patients' needs in the local community. In Singapore, pharmacy workforce development is led by the Chief Pharmacist's Office at the Ministry of Health. The initiatives hinge on the National Pharmacy Strategy and align with the Development Goals of the International Pharmaceutical Federation. These initiatives envision a progressive and confident pharmacy workforce that is effective and adaptive in the evolving healthcare environment.

Objective:
We sought to review pharmacy workforce development initiatives using Kotter's change management model.

Methods:
A coalition was formed with local and international experts, to envision the performance criteria and identified the required competencies from foundation to advanced levels. Alignment to descriptors at the various performance levels was validated. To ensure content validity, the SPC or education leads from healthcare institutions and schools were engaged. Training programmes and toolkits were developed to enable adoption for quick wins. National surveys and stakeholder engagements were conducted to gather feedback at institutional and individual levels to strengthen and anchor change.

Results:
The Development Framework for Pharmacists (DFP) establishes a competency continuum across seven domains, four performance levels and towards eight key roles. The DFP was endorsed by SPC and published by the Ministry of Health in May 2020. Portfolio workshops were extended to reach over 500 senior pharmacists and a Portfolio Building Toolkit was produced. For pharmacy technicians, 373 polytechnic students have completed the Entry-to-Practice competency assessment framework introduced in 2022. Over 100 pharmacy technicians have graduated from the Advanced Diploma in Pharmaceutical Science Programme since 2017. The reviews with local and visiting experts reported key strengths, challenges faced and shed insights to improve the practice and delivery of pharmacy training and workforce development. Key stakeholders were engaged regularly for co-creation of solutions to overcome challenges faced which facilitated the adoption of subsequent strategic and action plans to strengthen the initiatives. Results and feedback gathered from the national surveys provided direction for more changes. In 2022, The PHARMFORCE initiative was set up to safeguard wellness and maintain resilience for pharmacy workforce in the patient care settings. Five workstreams were set up to focus on key areas including (i) leadership development; (ii) roles and scope of practice expansion; (iii) manpower development and recognition; (iv) workload and the work environment optimisation; (v) better communication and engagement with patients, the public and other healthcare professionals for better appreciation and recognition on the role and value of the pharmacy workforce and services.

Conclusion:
A continuum of competency was developed to enable a systematic and harmonized progression from foundation to advanced level practice across different settings. The developmental frameworks guide self-directed learning and career development. The PHARMFORCE initiative provides avenues for pharmacy leaders to influence change and position the pharmacy workforce as caring partners who are accessible, ready and motivated to forge ahead with resilience, anchored on a strong core of professional excellence.

An evaluation of the Australian community pharmacy agreement from a public policy perspective: Industry policy cloaked as health policy

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RFMO-02 - Rapid Fire Session Monday, P1-P2, September 25, 2023, 11:00 AM - 12:30 PM

Background
A series of Community Pharmacy Agreements (Agreements) between the Australian Federal government and a pharmacy-owners' body, the Pharmacy Guild of Australia (PGA) have been influential policy in Australian community pharmacy (CP) since 1990. While ostensibly to support the public's access and use of medicines, the core elements of the Agreements have been remuneration for dispensing and rules that limit the establishment of new pharmacies. Criticism have focused on the self-interest of pharmacy owners, the exclusion of other pharmacy stakeholders from the Agreement negotiations, the lack of transparency, and

the impact on competition. The objective of this paper is to determine the true nature of the policy by examining the evolution of the CPA from a policy theory perspective.

Methods
A qualitative evaluation of all 7 Agreement documents and their impact was undertaken using policy theory including a linear policy development model, Multiple Streams Framework, Incremental Theory, the Advocacy Coalition Framework, the Theory of Economic Regulation, the Punctuated Equilibrium Framework, and Elite Theory. The Agreements were evaluated using four lenses: their objectives, evidentiary base, stakeholders and beneficiaries.

Results
The PGA has acted as an elite organisation with long-standing influence on the policy's development and implementation. Notable has been the failure of other pharmacy stakeholders to establish broad-based advocacy coalitions in order to influence the Agreements. The incremental changes negotiated every 5 years to the core elements of the Agreements have supported the publics' access to medication, provided stability for the government, and security for existing pharmacy owners. Their impact on the evolution of pharmacists' scope of practice and through that, on the public's safe and appropriate use of medication, has been less clear.

Conclusions
The Agreements can be characterised predominantly as industry policy benefiting pharmacy owners, rather than health policy. An emerging issue is whether incremental change will continue to be an adequate policy response to the social, political, and technological changes that are affecting health care, or whether policy disruption is likely to arise.

Disposal of unused/expired medications: knowledge, attitude and practice among individuals visiting community pharmacy in Kathmandu District

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RFTU-01 - Rapid Fire Session Tuesday, M4, September 26, 2023, 11:00 AM - 12:30 PM

Background
The improper disposal of expired, unwanted, or unused medications ,particularly by consumers is issue of global concern. Pharmaceutical wastes enter our ecosystem due to improper disposal practices that pose a huge threat to public health and environment. However, the public's lack of knowledge and awareness regarding the safe disposal of medicines can be widely observed. This study was planned to assess knowledge, attitude, and practice of individuals visiting community pharmacies in the Kathmandu district regarding pharmaceutical waste disposal.

Methods
A cross-sectional study was carried out in community pharmacies of the Kathmandu District. The questionnaire was distributed to 395 random individuals visiting community pharmacies. The data were analyzed for descriptive and inferential statistics using SPSS version-23 (SPSS Inc., Chicago, IL, USA).

Results
The present study's findings showed that more than half of the respondents (62%) have good knowledge on the correct disposal of unused and expired medicine. Majority of the participants (92%) have a positive attitude toward and more than two-thirds of respondents (88.1%) were aware of the harmful effects of improper medicine disposal in the environment. About 43% of the respondents had unused medicines stored at home, with analgesics (46%) and antibiotics (42%) most common. Most of the respondents discarded expired medicines in household rubbish bins, and kept unused medicines in their homes until they expired. A significant association (p value<0.05) was found between the knowledge and their actual medicine disposal practice.

Conclusion
Despite having a positive attitude and good knowledge concerning the disposal of unused and expired medicines, the actual disposal was inappropriate. Therefore, there is an urgent need to establish proper drug take-back programs and national guidelines on safe disposal of unused and expired medicines generated from households. Furthermore, healthcare providers should play an active role in organizing awareness campaigns on appropriate medicine disposal practices.

The inter-relationship between psychotropic use and health-related quality of life in people living with dementia and their carers

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RFTU-01 - Rapid Fire Session Tuesday, M4, September 26, 2023, 11:00 AM - 12:30 PM

Background: Dementia impacts more than 400,000 people in Australia, with two thirds of individuals residing in the community. People with dementia are high users of medications, including psychotropic medications, and are at a greater risk of adverse drug events. However, there is limited research into psychotropic use and the impact this has on quality of life in people living with dementia and their carers in the community.

Purpose: To investigate (i) the prescribing patterns and risk factors for psychotropic use in people with dementia living

in the community and (ii) the inter-relationship between the use of psychotropics and health-related quality of life in people with dementia and their primary carers.

Method: A cross-sectional study using baseline medication data from the Interdisciplinary Home-bAsed Reablement Program (I-HARP) collected between 2018 and 2021 in Sydney, Australia. 130 dyads consisted of people aged over 60 with mild to moderate dementia and their primary carers were recruited from two participating aged care providers and four participating hospital geriatric services in Sydney, Australia. Psychotropic medications were classified according to the Anatomical Therapeutic Chemical (ATC) classification codes (N06A, N05A, N03A, N05B, N05C, N02A). Health related quality of life (HrQoL) of people with dementia and their carers was measured with the weighted EQ5D5L. Logistic regression was used to identify factors associated with use of psychotropics. Analyses were adjusted for age, sex, education, functional ability, physical functioning, dementia severity, depression and carer burden. Furthermore, multilevel modelling was conducted to identify the inter-relationship between the use of psychotropics and HrQoL of people with dementia and their carers, using an actor and partner interdependence model (APIM).

Results: Of the 130 people with dementia included, 43.1% were using at least one psychotropic with 10.7% using two or more. The most commonly used psychotropic classes were antidepressants (33.1%) and antipsychotics (6.9%). Polypharmacy (≥5 medications) was associated with the use of psychotropics (adjusted odds ratio [aOR]: 4.63, 95% confidence interval [CI]:1.93–11.09). People with dementia with a higher education level were less likely to use psychotropics (aOR: 0.36, 95% CI: 0.16–0.81). In the APIM model, the use of psychotropics in people with dementia (b:-0.102, 95% CI: -0.169–-0.034) and their carers (b: -0.084, 95% CI: -0.145–-0.024) was significantly associated with poorer HrQoL in people with dementia; while no statistically significant findings were found on the carer's HrQoL.

Conclusion: Psychotropics were one of the most commonly used medication classes in people with dementia; the use of psychotropics was associated with a reduced HrQoL. The potential risk and benefits of using psychotropics must be carefully considered before prescribing in people living with dementia. Future longitudinal studies of dyads should be conducted to examine the causal inter-relationship between medication use and HrQoL in both people with dementia and their carers.

A qualitative evaluation of a community pharmacist-led support service for people living with severe and persistent mental illness– Experiences from implementing the PharMIbridge RCT

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RFTU-01 - Rapid Fire Session Tuesday, M4, September 26, 2023, 11:00 AM - 12:30 PM

Background
People living with severe and persistent mental illness (SPMI) have reduced life expectancy compared to the general population, which is often attributed to physical comorbidities, as well as disparities in healthcare access, utilisation and provision. Community pharmacists, as one of the most accessible healthcare professionals, can help support and manage mental and physical health problems experienced by people living with SPMI. The PharMIbridge (Bridging the Gap between Physical and Mental Illness in Community Pharmacy) Randomised Controlled Trial (RCT) aimed to evaluate the effectiveness of a pharmacist-led support service for this population. Fifty-one participating pharmacies were randomised to the Intervention Group (IG) or Comparator Group (CG). Pharmacists in the IG delivered the individualised, goal-oriented pharmacy service (PharMIbridge) while CG pharmacists delivered standard care (MedsCheck, a one-off medication management service). IG pharmacists were also supported by mentors who were experienced community pharmacists or mental health consumers, during PharMIbridge training and throughout the PharMIbridge service implementation.

Purpose
To explore pharmacists' and mentors' experiences of implementing the PharMIbridge service, explore supports needed for implementation and propose ideas for pharmacist-led services for people living with SPMI.

Method
Semi-structured interviews and focus groups were conducted with PharMIbridge participating IG pharmacists and mentors, respectively. Audio-recordings were de-identified and transcribed verbatim. Qualitative data was inductively analysed using thematic analysis, then deductively coded to the EPIS (Exploration, Preparation, Implementation and Sustainment) framework.

Results
Sixteen interviews were conducted with participating IG pharmacists. Six mentors participated in the focus group.

Qualitative data was broadly classified into two main themes: external (healthcare system, mental health training and policy) and internal (pharmacy operations) barriers and facilitators affecting implementation. Themes generated from the interviews aligned closely with themes from the focus group. This study focuses on three of the four EPIS phases: Preparation, Implementation and Sustainment. The 'Preparation' phase focused on the suitability of work environments and training needs prior to service delivery. Challenges identified in the 'Implementation' stage included pharmacy operational difficulties including time constraints, pharmacy staffing requirements, inadequate referral pathways from pharmacies to mental health services and/or professionals and limited public awareness of pharmacists' roles in mental healthcare. Concerns hindering the 'sustainment' phase included the lack of time and resources in the pharmacy, policy, funding and public awareness for pharmacist-led mental health services. Continued mental health education for pharmacists was thought to be a potential facilitator of sustainability of such a service.

Conclusion
Barriers and facilitators for implementing mental health services in community pharmacies were identified. Policy changes, adequate remuneration and adjustments to the current mental healthcare system are necessary to build and sustain functioning, integrated mental health pharmacy services. More public education is needed to raise consumers' awareness about pharmacists' potential roles in mental healthcare.
Funding/Registration. This activity received grant funding from the Australian Government Department of Health and Aged Care. Registration: ACTRN12620000577910.

Capacitating the last mile pharmacy practitioner: Francophone vs Anglophone in Sub-saharan Africa

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RFTU-01 - Rapid Fire Session Tuesday, M4, September 26, 2023, 11:00 AM - 12:30 PM

Background
The pharmacy educational system is very diverse especially between Anglophone and Francophone nations of sub-Saharan Africa (SSA). With formal training ranging from 3-6 years, SSA countries have one or both systems which more often than not dictates the density of skilled pharmacy workforce. Anglophone countries are generally more economically developed. Further, English dominates in health-related education: academic literature, and public/global health resources.
The Ecumenical Pharmaceutical Network (EPN), which has members in both French and English speaking SSA, conducted a needs assessment survey in remote health facilities which showed less than 25% of the church-based facility staff are qualified, yet they are managing and dispensing medicines. The role of a pharmacist is taken up by other health professionals or community volunteers, who have basic education.
EPN, has instituted capacity building activities in both languages to fill this gap through training for last mile Health Care workers through tailored training sessions e.g. essential pharmaceutical practices and handling Antimicrobial Resistance, that have proven to yield positive results.

Purpose
The study highlights the gaps in the pharmacy workforce in the church health system SSA, more so in marginalized and remote areas where National government health services are limited.

Method
The study used both qualitative and quantitative study design analysis of 114 church health facilities (including dispensaries and health centers). Participants were mainly health facility administrators and pharmacy staff responded to an online questionnaire, and interviews on aspects of institutional, infrastructural and knowledge gaps.

Results
In francophone Africa, some countries only have 6-year Pharm.D (Niger, Guinea, Togo, Benin) program which is costly and lengthy hence the number of pharmacists enrolling for the programs is low is low and some leave the countries for better opportunities. Others train only one cohort of students at a time, train them for 3 years before enrolling another class (CAR, Chad).
Within Anglophone countries, most countries offer certificate, diploma and degree programs (1, 3, 4-6 years respectively): Kenya, Tanzania, Zimbabwe, Nigeria, resulting in diversity in cadres: dispensers/pharmacy assistants, pharmaceutical technologist and pharmacists respectively.
EPN training sessions are delivered as a hybrid of 3-10 days in-person training and up to 3 days online training with continuous follow-up, and practical implementation of knowledge acquired. This approach has yielded 39% increase in basic pharmaceutical knowledge and more than 90% success rate in implementing public health interventions in facilities with staff that have no skilled pharmacy practitioners.
EPN also offers scholarship, targeting scholarship program has been very successful with an 80% improvement rate in basic pharmaceutical services. Specialized training can be quite expensive and time consuming but very impactful.

Conclusion
Synergistics efforts in both formal training and continuous on job training, are key bridging the gap in skilled workforce in both regions especially where there are no pharmacists. EPN's efforts to deliberately tailor make training opportunities for the francophone member countries resulted in improved pharmaceutical services.
There's still need to empower the last mile pharmacy practitioner though varied innovative channels to bridge the existing gap to assure patient safety in handling medication.

The accessibility of disabled patients in pharmacy services in Indonesia: A cross sectional study from young pharmacists perspective

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RFTU-01 - Rapid Fire Session Tuesday, M4, September 26, 2023, 11:00 AM - 12:30 PM

Introduction:
Disability in Indonesia is one of the remaining significant social issues, especially to achieve health equality and equity among all citizens. According to an estimate from the Ministry of Social Affairs, 27 million or equal to around 10% of the whole Indonesian population are disabled. In health services, many studies reported inaccessibility for disabled to reach the facility due to lack of training among the healthcare workforce to provide educational instruments and infrastructure such as railways. There has been limited evidence on what are the challenges faced by pharmacists in providing services for disabled patients. To fill the evidence gap, we performed a cross sectional survey to understand the barrier of providing services for disabled patients from the pharmacist's perspective.

Objectives:
Provide a preliminary assessment on disability access in pharmacy services in Indonesia, to enable advocacy on policy-making process or further studies to create inclusive health services.

Design, Subjects, and Setting:
Cross Sectional Online Survey targeting pharmacists that work in hospital, clinic or community pharmacy in Indonesia.

Methods:
A questionnaire form was built referencing The Disability Partnership Pharmacy Project Report by Mencap. Surveys were divided into three sections including demography of participant and service delivery for disabled patients, accessibility and communication method. Form was then distributed around the Indonesian Young Pharmacist Group (IYPG) and Indonesian Pharmacist Association (Ikatan Apoteker Indonesia/IAI) networks through social media, and email blast. Data were collected from 17-29 April 2023.

Results:
Of the total 117 responses collected, it was found that 49.6% pharmacists have difficulties providing service to disabled patients, due to several reasons: information delivery medium (51.3%), and communication difficulty (47%). 73,7% of respondents have received patients with disability but 86.3% Pharmacists reported never being trained to serve disabled patients, and 76.1% of pharmacy facilities have no Standard Operating Procedures (SOP). 67% respondents that they receive less than 10 disabled patients monthly. The most common type of patients were multiple disability patients 42,4% and patients with physical disability 22,8%.Of 50.4% who reported not having difficulty serving disabled patients, 67.2% answered that patients were accompanied with their relatives.

Conclusion:
Resource and awareness to provide service for disabled patients were shown low among Pharmacists in the health facilities. Several causes are lack of training, communication instruments, and infrastructure. To continue in developing the evidence, ee are suggesting further research such as qualitative study on patient's barrier and facilitator in accessing pharmacy services. Furthermore, developing guidelines and training pharmacists to provide services for disabled patients are needed.

Evaluation of the quality of geriatric pharmacotherapy services for patients with polypharmacy in primary care: A six-month observational study

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RFWE-02 - Rapid Fire Session Wednesday, P3-P4, September 27, 2023, 11:00 AM - 12:30 PM

Background: Measuring quality of care in primary care is increasingly important for older people with polypharmacy to minimise the harm from medicine use. However, few studies have comprehensively evaluated the quality of geriatric pharmacotherapy services. Therefore, our team has recently developed face and content validated quality indicators (QIs) for medication safety in geriatric pharmacotherapy across 17 disease states in primary care by conducting a modified Delphi study.

Purpose: To evaluate the quality of geriatric pharmacotherapy services provided by community pharmacies in Japan for older patients with polypharmacy.

Method: The face and content validated 130 QIs (109 process indicators and 21 outcome indicators) for geriatric pharmacotherapy was used for six months. Patients were eligible if they were aged 75 years and older with six or more regular medications (i.e., taking more than four weeks). During the study period, participating community pharmacists evaluated 1) how many QIs could be applied to each patient and 2) how many guideline statements described in QIs were adhered to for the patient by their pharmacists at the level of patients. Pharmacists also reported what medicines were the most commonly deprescribed as a result of pharmacists' recommendations using the third level (i.e., pharmacological or therapeutic

subgroup) of the Anatomical Therapeutic Chemical classification of the World Health Organisation. All information was reported via the web-based application platform our team had developed for this study. Descriptive statistics were summarised as means with standard deviations, medians with interquartile range (IQR), or percentages.

Results: A total of 60 community pharmacies with 457 patients were enrolled from across Japan. The median age of patient was 82 years (IQR: 79-86) and 56% were females. On average, 16 QIs (IQR: 14-19) needed to be considered for an older patient with polypharmacy. However, only 9 QIs (IQR: 6-12) were actually evaluated by the participating pharmacists, resulting in a guideline adherence rate at the level of patients of 57% (IQR: 40-76%). The total of 112 deprescribing recommendations were accepted by the prescribers. Of the 112, the most frequently deprescribed medicines as a result of pharmacists' recommendation was drugs for peptic ulcer and gastro-oesophageal reflux disease (A02B, n=12), followed by hypnotics and sedatives (N05C, n=12), and drugs used in benign prostatic hypertrophy (G04C, n=8).

Conclusion: This study found that community pharmacists need to evaluate 16 guideline statements for older patients with polypharmacy. To minimise the risk of adverse drug events, pharmacists may need to prioritise which guideline statements to evaluate. Future studies could investigate the effect of the integration of QIs into an electronic medication record systems on the quality of geriatric pharmacotherapy and the uptake of deprescribing recommendations.

The role of pharmacists in improving healthcare outcomes: Analysis of interventions on prescribing errors in Malaysia

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RFWE-02 - Rapid Fire Session Wednesday, P3-P4, September 27, 2023, 11:00 AM - 12:30 PM

Background:
Prescribing errors (PE) are a major cause of avoidable harm in healthcare worldwide. In Malaysia, PEs are prevalent in government healthcare facilities. Pharmacists play a vital role in screening and intervening in prescriptions before dispensing medications. However, there is limited research at a national level investigating the relationship between the number of pharmacists and the total number of interventions conducted on prescribing errors as well as exploring the differences in the number of interventions across outpatient and inpatient setting.

Purpose:
This study aims to explore the relationship between the number of pharmacists and the total interventions on prescribing errors across different states and severity in Malaysia. Specifically, the trend of pharmacist and common types of instituted interventions on prescribing were focused, the impact of pharmacist and its role in various pharmacy settings.

Method:
A retrospective cross-sectional study analyzed data from the Ministry of Health's Pharmacy Management Form (PF form) and the Pharmacy Board Registry between 2017 and 2019. A multivariate regression analysis was conducted to determine the association between the number of pharmacists, total prescriptions received, and the number of prescribing errors intervened. A two-way ANOVA analysis was also performed to compare the number of pharmacist interventions for each type of prescribing error across three different settings: Health Clinic Outpatient Pharmacy, Hospital Outpatient Pharmacy, and Hospital Inpatient Pharmacy as well as severity levels.

Results:
Annually, a total mean of 1,355,170 (1.8% from total prescriptions received annually) pharmacists' interventions on PEs were reported with wrong dose (n=308,549, 22.8%), wrong medication (n = 242,821, 17.9%) and wrong dosing frequency (n = 149,289, 11.0%) being top three PEs and is consistent across all three settings.
The multivariate regression analysis revealed a significant positive association between the number of pharmacists, total prescriptions received, and the total interventions on PEs. The model's adjusted R-squared value of 0.899 suggests that the independent variables account for approximately 89.9% of the variability in the dependent variable with p-value of less than 0.05. Furthermore, the coefficients for the number of pharmacists and total prescriptions received are both significant ($p<0.05$) with positive values.
The two-way ANOVA analysis revealed no statistically significant differences in the number of interventions due to either factor or their interaction. The lack of statistically significant differences in the number of interventions suggests that pharmacists consistently provide interventions for PEs across different settings and severity levels. This consistency indicates that pharmacists are playing an active role in addressing medication-related issues, regardless of the context or severity.

Conclusion:
This study demonstrates that an increasing number of pharmacists and total prescriptions received are significant predictors of an increased number of PEs intervened in Malaysia. The research provides valuable insights into the crucial role of pharmacists in mitigating prescription errors and improving overall patient safety and healthcare quality in Malaysia. The two-way ANOVA analysis highlights the versatility and adaptability of pharmacists, showing that they contribute to patient care in various settings and situations and can address diverse patient needs and provide interventions for PEs in different environments.

Clinical pharmacy service improves medication adherence in patients with chronic kidney disease of uncertain aetiology (CKDu)–A randomized controlled trial from Sri Lanka

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Background
Chronic kidney disease of uncertain aetiology (CKDu) is a major public health concern in Sri Lanka. Patients with CKDu are often prescribed 10-12 medications per day and poor medication adherence is common. Sri Lankan health sector lacks an established clinical pharmacy service.

Purpose
The aim of this study was to assess the impact of introducing clinical pharmacy services in improving medication adherence in out-patients with CKDu in Sri Lanka.

Method
A randomized controlled clinical trial was conducted in patients with pre-dialysis CKDu (stages 4 and 5) at an out-patient renal clinic in a tertiary hospital in Sri Lanka. Participants were randomized to control and intervention groups and demographic and medication adherence data were collected at baseline. The control group received usual clinic care. The intervention group received medication counseling by a clinical pharmacist 4 times over 12 months and a booklet which included information on the disease, lifestyle modification and drug information, in addition to usual clinic care. Medication adherence data were collected from both groups after 12 months. "The Brief Medication Questionnaire (BMQ): a tool for screening patient adherence and barriers to adherence" was used to assess medication adherence. Total BMQ scores and individual BMQ scores of its three screens (regimen, belief, recall) were calculated (lower scores denote better adherence). The Mann-Whitney U test was used to compare medication adherence between the groups.

Results
At baseline, there were 122 and 126 patients in control and intervention groups respectively. Baseline median total BMQ scores, regimen scores, belief scores and recall scores were similar in the two groups.
After 12 months, there were 102 and 96 patients in control and intervention groups, respectively. The medians of total BMQ scores were 5 (4-5) and 3 (2-4) ($p<0.05$) in control and intervention groups respectively. The medians of regimen scores were 3 (2-3) and 1.5 (1-3) ($p<0.05$), and the medians of recall screen were 2 (1-2) and 1 (1-1) ($p<0.05$) in control and intervention groups respectively. The medians of belief scores were similar 0 (0-1) and 0 (0-0) ($p=0.075$) in control and intervention groups respectively. The medians of total BMQ scores, regimen scores and recall scores of the intervention group were significantly improved compared to control group at 12 months.

Conclusion
The results of the study provide evidence for the potential benefits of implementing clinical pharmacy services to improve medication adherence in stage 4 and 5 pre-dialysis patients with CKDu. A collaborative therapeutic management approach with the addition of a clinical pharmacist to the existing renal health care team is a worthwhile addition in a resource-limited setting like Sri Lanka.

Navigating the ICER value assessment framework for rare disease treatments

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RFWE-02 - Rapid Fire Session Wednesday, P3-P4, September 27, 2023, 11:00 AM - 12:30 PM

Background:
Cost-effectiveness analysis (CEA) is a primary decision tool used to assess the value of new medical tests, treatments, devices, and public health programs. It has been noted that the Institute for Clinical and Economic Review (ICER), the leading health technology assessment (HTA) body in the US, tends to recommend substantial discounts for rare disease treatments. As ICER gains prominence in the US, this could potentially lead to delayed or denied access to treatment for rare disease patients. In addition, this could result in spillover effects and discourage future research and development efforts in rare diseases.

Purpose:
To review the current Institute for Clinical and Economic Review (ICER) Value Assessment Framework (VAF) used for biopharmaceutical health technology assessments, identify its limitations, and propose changes and improvements to inform the design and implementation of VAFs for rare diseases worldwide.

Method:
We conducted a systematized review to explore the criticisms and proposed modifications to ICER's current VAF. Four databases, including PubMed, EconLit, CINAHL, and ABI/INFORM were searched on February 7-9th, 2023. Research articles were screened by six independent reviewers in two stages - title and abstract, and full-text screening. 2449 articles were retrieved for review after deduplication and 232 records remained after title and abstract screening. We also conducted an analysis of ICER's health technology assessment reports published between January 2020 and April 2023 to compare ICER's appraisal of

rare and non-rare disease treatments. Primary research with two field experts supplemented our study.

Results:

1. ICER's use of a narrow healthcare system perspective for its base-case CEA omits potentially important elements and therefore underestimates the value of treatments for rare diseases
2. ICER uses 10,000 patients as the threshold for special consideration in its rare disease framework, far lower than that needed for Orphan Drug designation in the U.S. and stricter than the definition in most countries.
3. ICER is more likely to report a dominant cost-effectiveness ratio for non-rare disease treatments compared to rare disease treatments.
4. At least an 80% discount from the manufacturer list price is suggested for 35% of the rare disease treatments reviewed, compared to 10% for non-rare diseases.
5. ICER's quality ratings of the supporting evidence to assess comparative clinical effectiveness were comparable for non-rare and rare diseases.

Conclusion:

ICER's value assessment framework (VAF) is inadequate when it is used to evaluate rare disease treatments. Emerging decision tools such as multi-criteria decision analysis (MCDA) and generalized risk-adjusted cost-effectiveness (GRACE) model address some of the fundamental issues of the traditional CEA. When designing an improved HTA model, stakeholders should:

1) Heighten patient engagement and incorporate disease-specific patient-reported outcomes (PROs); 2) Consistently re-evaluate the treatment post-approval and update the value assessment when new evidence becomes available; and 3) Develop and incorporate more diverse scenario analyses, such as healthy years in total (HYT) as a health outcome, alternative discount rates, and post-launch price changes.

Internationalization: Research comparing recognized programs supporting higher education in developing countries and their impacts and goals for expansion for global outreach

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Posters Monday, September 25, 2023, 12:30 PM - 2:30 PM

Background: The advancement of Internationalization and partnership can never be overlooked. Such collaborations have become pivotal in a measure of excellence in education and research at global higher institutions. Evidently, its impact has been recognized globally in institutions of higher education through research and collaboration. Whether every institution of need has been reached is still the question. Creating awareness in specific programs has been established. However, data analyzing the impact and success of these programs may be limited in specific disciplines. Large-scale programs such as the Carnegie Foundation and Fulbright Scholar, and United States India Education Foundation (USIEF) are recognized for their efforts in international outreach in education and research. However, how various disciplines in academia and specifically African and Indian Universities are impacted may still be an area of interest. On a small scale, the FIP-Pharmabridge partnership launched a successful exposure program around the globe, tailored specifically to pharmacy practitioners in all countries but particularly developing countries. The program has successfully placed many practitioners abroad since its debut. The goal is to enhance and enrich education and clinical practices in their respective countries upon return. A systematic review comparing selected large-scale programs and their impact on various academic disciplines in African and Indian Universities and their influence on small-scale programs is warranted.

Objective: The objective of this study is to analyze a selection of these programs and their impact on various academic disciplines in developing countries.

Method: This is a retrospective and prospective mixed method (qualitative and quantitative) systematic review study on selected international programs; and their impact on the advancement of institutions of higher education. A comprehensive literature search will be conducted for data on the subject. The study will assess the data and identify the need for newly emerging organizational support to bridge existing gaps in research, teaching, and collaboration in pharmacy education. The result will be presented in a podium format to allow for the display of data at the conference.

Impact/Conclusion: The result will lead to implementing strategic pathways to enhance, engage and enlarge the territory of the programs to promote excellence in education and research in African and Indian Universities.
References: This will be presented along with the presentation to avoid over-word limits

Digital upscaling: A 3-D animated coded app for patient-centric collaborative model (PCCM) counseling and simulation! A look beyond newly-emerged intelligent technologies in healthcare

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Background: Digital Health is elevating and enhancing the clinical care and skills of pharmacists and healthcare practitioners. Clinical practice and digitalization have become pivotal stages within the profession for patent care. To graduate competent practitioners, professional education

mandates robust instructions, assessment, and evaluation of students learning to ascertain the quality, competency skills, and achievement of a concurred degree. Such demand requires creativity and innovation in patient care activities. It is very critical to know how best to assess such activities in real-time-live pharmacist-patient interaction and simulations. With the influx of digital intelligence in healthcare, caution is warranted to select and engage pertinent tools in patient care. When an exclusive use of standardized rubrics or models is not an option, merging innovative tools with concept-mind mapping and Word Art Clouds became handy to design a diversified patient-centric collaborative model and tool for pharmacists and students. To date, literature is limited on such advancement. This presentation will emphasize on these re-engineered tools and their translation into an interactive user-friendly Digital Application with a LIVE HIV Patient-Provider demonstration compared to the use and impact of current intelligence Apps.

Objective: To measure the impact of current digital technologies in enhancing patient care counseling

Method: Concept-mind mapping and word clouds were used to design the diversified model. An application was built in a coded 3-D animated caption incorporating details of 4-Key acronyms LEARN, PACE, and OARS into a standardized patient care counseling tool. The re-engineered diversified model was upscaled into the application. A case of an HIV patient will be used for a LIVE voice-activated demonstration of the App in the PODIUM presentation to showcase a patient-centric collaborative model of counseling. A comparative look at current digital intelligence tools will be addressed.

Impact/Conclusion: It is paramount to engage current technologies to make counseling user-friendly for students and pharmacists to enhance patient care and uphold the quality of care.

Decision-makers' knowledge of community engagement and fostering: A qualitative analysis

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Background
Community Engagement(CE) is a primary healthcare intervention that can address immunization barriers. But, the unclear definition in immunization campaigns, and is infrequent use. Therefore, this study created a shared appreciative of the evolving understanding of CE and how it has aided immunization.

Methods
By following a qualitative approach 35 interviews with vaccine decision-makers from Pakistan's national and provincial levels, including legislators, directors, and chairs of vaccine technical committees interviewed. COREQ guidelines have been followed in reporting the study's methodology and findings.

Results
The findings revealed certain terms, such as "community," which included vaccine-eligible children, their parents, and front-line healthcare providers as well as CE strategies. Engagement with those communities was thought to entail information sharing, vaccine outreach, and capacity building. Despite the participants' awareness that CE is difficult to define and poorly understood, there were no specific policy guidelines or useful evaluation criteria. The shared robust definition of CE was completed by adhering to member checks, and it is summed up as CE is a crucial upstream policy requirement rather than a downstream initiative to establish trustworthy relationships between vaccine decision-makers and communities. In order to create vaccine policies and programs that are attentive to local needs, communities would be able to critically evaluate vaccine-related misconceptions and misinformation. It is necessary for CE to have ongoing political will and resources, in order to make sure that vaccine policies and programs are designed based on the latest scientific data and offer community members equitable, effective, and tangible benefits from immunization and capacity building. Lastly, the participants explored implementation issues and provided an operational definition of CE.

Conclusions
This investigative definition of CE was too specific to offer precise guidelines and limitations for developing thorough measuring and assessment procedures, further understanding of stakeholders' usage of the term, and what characteristics were employed to define the term's purported meaning.

Awareness and understanding of university students about human papillomavirus infection and its vaccination: A cross-sectional study from Punjab, Pakistan

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Background: Cervical cancer, head and neck cancers as well as other morbidities associated with human papillomavirus (HPV) are real public health issues across the globe especially for lower middle-income countries like Pakistan [1,2]. These diseases are vaccine-preventable and knowledge about HPV plays a pivotal role in HPV vaccine uptake [1].

Purpose: This study was aimed to evaluate awareness, knowledge levels and beliefs of university students towards HPV infections and HPV vaccination in Punjab, Pakistan.

Methods: A cross-sectional study, descriptive in nature was conducted to gain insight into students' understanding of the issue attending ten educational institutes across six cities of Punjab, Pakistan. A pre-validated questionnaire was utilized to obtain information: demographics, awareness, knowledge levels and beliefs about HPV infections and vaccination [3]. Descriptive statistics and Rasch Analysis were utilized to describe awareness, understanding, and knowledge scores using SPSS (IBM, version 23.0) and Winstep (version 3.75.0) respectively.

Results: Total 1200 students were approached and 1056 completed the questionnaires (response rate 88.0%). Mean age of the participants was 19.5 ± 0.5 years with 53.41% female responders. Merely 31.3% of the students had heard about human papillomavirus while 16.4% knew that vaccine against cervical cancer was available in Pakistan. The mean knowledge score of participants as per the Rasch Analysis was -0.368 ± 0.0274 (SD 0.893); which is low. Among students 9.5% believed that HPV can lead to cervical cancer, 94.8% falsely believed that HPV infections are rare, 92.8% believed that HPV vaccine is only for females, 75.5% participants opined that the antibiotics can cure HPV infections, 96.3% believed that HPV always manifests with visible signs, while 27.4% believed that HPV causes infections in both males and females. A majority of students lacked knowledge about ideal age for HPV vaccination (66.2%), cervical cancer screening methods (67.7%). In terms of self-perceived risk 52.8% of students did not consider themselves at any risk of HPV infections. Only 2.7% of the total students reported having vaccinated against HPV.

Conclusion: The university students' knowledge about HPV infections was cursory and below average while HPV vaccine uptake was found to be poor. In order to achieve target 3.4 of UN sustainable development goals by 2030, concerted efforts are required at community levels [4]. Mass media campaigns, utilizing social media and inclusion of sexual health education in university curriculum can help improve awareness, knowledge and HPV vaccines uptake.

Development and validation of a quality system for community pharmacy practice

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Background: Quality performance instruments focusing on different service aspects are developed for community pharmacy practice.

Purpose: To design, validate, and test the feasibility of a community pharmacy quality framework (CPQF) and standard operating procedures (SOP) covering quality aspects.

Method: A literature review was performed to identify quality aspects in community pharmacy practice. The CPQF and SOPs were designed and based on Maltese Legislation, published global pharmacy practice standards and undergraduate and postgraduate dissertations. The documentation developed was validated through a focus group. A stepwise thematic analysis was performed to code the qualitative data obtained. The documentation was adjusted according to recommendations put forward. A feasibility questionnaire consisting of closed ended statements with a 5-point Likert scale, along with two open ended questions was designed and validated by the focus group members. Stratified random sampling was used to identify pharmacies to test the feasibility of the SOPs. Three pharmacies from each of the five districts in Malta were randomly selected. The selected pharmacies self-administered the feasibility questionnaire after using the SOPs for two weeks.

Results: The literature analysis performed led to the determination of quality aspects in relation to community pharmacy practice: Care, Safety, Improvement and Services. The quality aspects were each subdivided into pertinent sections. The care aspect was characterised into: 1) accessibility, 2) effectiveness, 3) counselling, 4) monitoring medication use and follow-up, 5) management of patient therapy and 6) optimisation of treatment. The safety aspect was characterised into: 1) medication review, 2) therapeutic monitoring, 3) identifying prescription errors, 4) side effect and adverse event reporting, 5) optimal medication use, 6) medicine disposal, 7) dangerous drug act and special items and 8) stock control. The improvement aspect was

characterised into: 1) self-audits, 2) clinical governance, and 3) professional development. The services aspect was characterised into: 1) point of care testing, 2) professional clinical services, 3) health promotion and disease prevention and 4) responding to symptoms and self-care. The thematic analysis led to the identification of six general themes: 1) Framework concept theme incorporates accountability, safeguarding the profession, standardisation, harmonisation, and revisions. 2) Care theme incorporates medicine stock management, advise, empowerment, equity. 3) Safety theme incorporates prescription errors. 4) Improvement theme incorporates compulsory training. 5) Services theme incorporates recommendations versus advertisements and delivery services. 6) Presentation and dissemination theme incorporates diagrammatic representation. Three main findings were noted from the feasibility questionnaire (N=14): 1) 57% strongly agree and 36% agree that the quality system designed can help standardise quality aspects in community pharmacy practice in Malta, 2) 57% strongly agree and 43% agree that the SOPs cover all aspects checked within a Malta Medicines Authority inspection, 3) 64% strongly agree and 29% agree that they will pass an inspection when using these SOPs.

Conclusion: The study has delivered a validated framework and interlinked SOPs for the assessment of quality of community pharmacy services. This a step forward in the standardisation and harmonisation of quality within community pharmacies.

Developing a digitally-enabled pharmaceutical workforce

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Background
Digitalisation in the pharmaceutical field is rapidly evolving and presents opportunities for the profession. The COVID-19 pandemic was one of the drivers towards pharmaceutical digitalisation.

Purpose
The purpose of this study was to understand patients' and pharmacists' preparedness.

Method
Two questionnaires were prepared as research instruments, one for community pharmacists and one for patients. The questionnaires were validated and a test-retest reliability check was conducted for both questionnaires. The questionnaire for pharmacists was available to be filled out both as a hardcopy and also through an online platform. The physical copy was distributed to 150 community pharmacies in various localities across Malta. The questionnaire for patients was available in both Maltese and English and was disseminated by the managing pharmacist in a single pharmacy in Malta over a period of 6 weeks. The questionnaire was handed at different times of the day and to patients of different age groups.

Results
Fourty-three pharmacists completed the questionnaire. Thirteen of the respondents have been working in a community pharmacy for less than 5 years, 11 between 5-10 years, 11 for 11-20 years, 6 between 20-25 years and 2 over 25 years. Fourty felt confident with their digital skills, 28 said they had not acquired digital skills during their education and 39 said they are interested in learning more about digitalisation. Chi square testing showed a significant association with the amount of years working in a community pharmacy and the pharmacist's confidence in answering queries about digital health technologies. Chi square testing did not find a significant association between how important pharmacists view digital health expertise and pharmacist concern about public perception of having decreased job capability with advancements in technology. For the patient questionnaire, 56 responses were received. The mode was 41-50 years of age, 44 patients said they have used a digital health technology before. The most common form of obtaining information about digital health technologies among the respondents is by looking up information online, with 33 responses, while 12 said they would get information by asking a pharmacist. Fifty-four said they view the pharmacist as having an important role in assisting them with when and how to use digital health technologies, and 49 said they feel comfortable with pharmacists having access to the measurements taken by these technologies.

Conclusion
The data from the patient questionnaire shows that patients have a positive view of digital health technologies which was higher than hypothesised. The data from the pharmacist questionnaire shows that most of the respondents have not acquired digital health skills during their education and are interested in developing them. Further work includes disseminating the questionnaire to pharmacists that work in other pharmaceutical areas such as in the industry and to disseminate the patient questionnaire in various localities to get a more representative sample of the community.

Developing consensus on competency and assessment of pharmacist preceptors

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Pharmacist preceptors facilitate the professional development of students and interns during pre-registration training. It has become apparent that assessment of preceptor competency is necessary to ensure quality and consistency. Consensus is required to establish which preceptors' competencies require assessment, and the process by which they are to be assessed.

A modified Delphi method using an anonymous survey was conducted over 3 rounds. Sixteen competencies identified from a prior literature review were presented to a panel of experts from stakeholder organisations, policy developers, as well participants with professional and academic expertise. Participants were requested to comment on each competency with respect to: wording, whether assessment should be mandatory, preferable or unnecessary, assessment feasibility, who should perform assessment, and the mode of assessment. A 75% threshold was used for consensus. Where consensus was not obtained, refinement was undertaken for the subsequent round.

All three rounds have been completed to date. Of the 54 experts invited to participate, 20 participants completed round one, 13 completed round two, and 9 completed round three. Interim analysis on completion of round two achieved consensus for five competencies judged mandatory to assess, with 10 competencies judged to be feasible to assess. Further consensus was obtained for 10 competencies for, by whom the competency should be assessed and for seven competencies for the mode of assessment. Wording and descriptors were suggested in both rounds, with 2 additional competencies proposed.

Completion of the Delphi study will provide evidence for a pharmacist preceptor competency assessment framework, thereby filling a gap for accreditation providers and educators. The consensus process has highlighted the need for careful consideration of feasibility and acceptability of the assessment process, ideally providing a flexible approach to pharmacist preceptor assessment.

What are they complaining about now? A content analysis of medication-related complaints in residential aged care

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Background: Issues with medication administration and management in residential aged care can lead to severe consequences, including hospital admission and death. A recent Australian study found that 20% of unplanned hospital admissions for residents were a direct result of inappropriate medication use. Furthermore, there have been at least 30 coronial investigations into medicine-related deaths occurring in aged care since 2000, with the majority attributed to medication administration and monitoring errors.
Complaints reflect a person's or family's experience within the aged care system and provide important insight into community expectations and consumer priorities. Given the finding that medication-related issues received the highest number of complaints in RACS in three Commission annual reports from 2018 to 2020, it is important to identify, categorize, and quantify them so deficits can be acknowledged and addressed. Crucially, when aggregated, complaints data can serve to indicate problematic trends in care provision.

Purpose: Our objective was to determine the areas of medication management most frequently complained about in Australian residential aged care from 1 July 2019 to 30 June 2020. A secondary aim was to determine the participant groups making medication-related complaints.

Method: Anyone with a concern about residential aged care can lodge a complaint with the Aged Care Quality and Safety Commission. Each complaint issue was described and recorded by the Commission in a dedicated database. To gain in-depth understanding around the medication-related complaints, these issues were examined employing qualitative analysis that involved both inductive and deductive approaches. Content analysis was used to identify and interpret the medication-related complaints dataset. To ensure a systematic and detailed analysis, a dedicated coding framework was created using established criteria for appropriate medication management and information from the complaints database itself.

Results: A total of 1134 complaint issues specifically referenced medication use. We found that 45% of these complaints directly related to medicine administration processes. Three categories received nearly two thirds of all complaints: (1) not receiving medication at the right time; (2) inadequate medication management systems; and (3) chemical restraint. Half of the complaints described an indication for use. These were, in order of frequency: 'pain management', 'sedation', and 'infectious disease/infection control'. Only 13% of medication-related complaints referred to a specific pharmacological agent. Opioids were the most common medication class, followed by psychotropics and insulin. Family members or representatives were the main participant group making medication-related complaints and this was observed with complaints overall. However, significantly fewer residents themselves made medication-related complaints and there was a greater proportion of anonymous complainants.

Conclusion: This complaint database analysis has provided rich data about medication-related complaints from a large and representative sample to provide data that are highly consumer-focused and relevant. The ongoing analysis of medication-related complaints will provide useful insights not only into the performance of aged care providers but will also assist pharmacists to target education and actions to improve medication management in aged care and enhance the medication health literacy of residents and their family members or representatives.

Pharmacoeconomic evaluation of isavuconazole, posaconazole and voriconazole in the treatment of invasive fungal infection: Prior to differential pathogen diagnosis in China

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Objective:
Invasive fungal infection (IFI) is associated with high mortality and a substantial economic burden. For high-risk patients, fever drive or diagnostic drive therapy is usually initiated prior to the differential diagnosis of the pathogen. This study evaluated the cost-effectiveness of isavuconazole, posaconazole, versus voriconazole in the treatment of invasive fungal infections from the perspective of the Chinese healthcare system, providing a reference for clinical treatment decisions.

Methods:
A decision tree model was constructed using TreeAge Pro 2011 software to evaluate the cost-effectiveness of the entire course of the disease. Assume that the prevalence of mucormycosis in the patients entering the model is 7.8%. Efficacy, cost, adverse events, and other data included in the model are mainly derived from clinical studies, published literature, and publicly available databases. The main results of the model output are total cost, quality-adjusted life years (QALYs), life years (Lys), and incremental cost-benefit ratio (ICER). The willing-to-pay (WTP) threshold is defined as one to three times our per capita GDP in 2022. One-way sensitivity analysis and probability sensitivity analysis were used to determine the stability of the model. At the same time, the economics of the three drugs under different mucormycosis prevalence, when voriconazole may be included in medical insurance reimbursement, and after the price reduction of posaconazole were discussed.

Results:
Base case analysis showed that isavuconazole had a longer life expectancy (+0.38 LYs and +0.31 QALYs) than voriconazole, ICER was $15,702.46 /QALY, well below the WTP threshold ($38,223 /QALY) of 3 times our GDP per capita in 2022; However, posaconazole did not show an economic advantage over voriconazole (ICER $64,466.57 /QALY). Univariate sensitivity analysis showed that the all-cause mortality of isavuconazole in the treatment of invasive aspergillus infection was the most influential parameter for ICER results. In the probabilistic sensitivity analysis, when the WTP threshold was $38223 /QALY, the probability of isavuconazole being economical was 72.9%. The results of scenario analysis showed that isavuconazole was still economical compared with voriconazole in the above situation. However, posaconazole will be economical when the reduction of 15% and the prevalence of mucormycosis is 14%.

Conclusions:
Isavuconazole can be used as a cost-effective option for high-risk patients to receive febrile or diagnosis-driven therapy prior to the differential diagnosis of pathogens. It will also be economical when posaconazole is reduced by 15%.

Autonomous prescribing by pharmacists in Australia and beyond: Legal, ethical and logistical lessons from the UK

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Background
Australia's Health Professionals Prescribing Pathway (HPPP) outlines three models of pharmacist prescribing. Two of these, namely "prescribing via a structured prescribing arrangement" and "prescribing under supervision" can be progressed immediately. The third model – autonomous prescribing – had been deemed by the Pharmacy Board of Australia (PBA) as "requir[ing] additional regulation … [and] input from a broad range of stakeholders [including] government and importantly, the public" before it can be implemented.
Pharmacists in the UK were first permitted to prescribe under medical supervision over twenty years ago and have been allowed to prescribe independently upon completion of a postgraduate certificate since 2006. In 2012, they were legally empowered to prescribe controlled drugs, giving them the same prescribing rights as medical doctors. As of 2024, all newly qualifying pharmacists will enter the workplace as independent prescribers without the need for any additional postgraduate training.

Purpose
The aim of this presentation is to explain the historical development of independent prescribing in the UK, while mapping its successes and failures, with a view to informing other healthcare communities, such as Australia, about to embark on the same journey.

Method
Each of the chronological steps leading to the current situation in the UK are identified and analysed from legal, ethical and logistical perspectives. Steps that – in hindsight – were unnecessary or redundant are discussed with a view to avoiding such superfluous waypoints in other countries, including our Australian hosts. Those steps deemed important from a patient safety perspective are highlighted. To illustrate this analysis, direct analogies are drawn between Australia's national and state laws and the necessary amendments made to UK legislation to facilitate safe and legal pharmacist prescribing.

Results
We use Australia as an example in our discussion of the necessary changes at each step on the road to pharmacist prescribing, which must be carefully planned out from the beginning pharmacy's journey, not effected in a piecemeal manner. Firstly, both national (e.g. in Australia, Narcotic Drugs Act 1967) and state law (e.g. Drugs Misuse Act 1986

(QLD), Poisons and Therapeutic Goods Regulation 2008 (NSW)) must be significantly updated.
The creation of medically supervised "supplementary prescribers" may be an unnecessary step in the introduction of independent pharmacist prescribers. The parallel development of new undergraduate curricula for pharmacists-in-training and postgraduate qualifications for the existing workforce is a logistically efficient strategy.

Conclusion
As pharmacists embark on the first stages of the pathway to autonomous prescribing, it is essential to engage with the historical development of such activity in other common law jurisdictions with comparable moral and ethical values. The UK is an exemplar of the successful implementation of non-medical prescribing.

A systematic review of healthcare professionals' attitudes, knowledge, and confidence in psychosis care

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Background: Although psychosis as a mental disorder has low prevalence compared to other medical conditions, it has a relatively high disease and economic burden. Low levels of knowledge and/or skills in healthcare professionals (HCPs) relating to the care of people living with psychotic illnesses can impact their ability to confidently provide psychosis care. Furthermore, HCPs' stigma towards people living with psychosis can also impact provision of care and consumers' willingness to seek care for these illnesses.

Purpose: To explore published literature regarding the attitudes, knowledge, and confidence of HCPs in relation to psychosis care.

Method: A systematic review was conducted on records identified from a systematic search of MEDLINE, Embase, and PsycINFO using the searchable concepts "healthcare professionals", "knowledge, attitude, and confidence in care", and "psychotic illnesses and symptoms". Date range was set as 1st January 2002 – 18th March 2022. Resulting records were screened by title and abstract, followed by full text. During both stages of screening, consistent inclusion and exclusion criteria was used to check the suitability of each record. Included records were required to be primary research, explore knowledge, confidence, and/or attitudes, and include accredited HCPs as participants. Records were excluded if participants had lived experience of psychosis and/or were not HCPs or did not have a central focus on psychotic illnesses. Key findings such as the types of HCPs included, research instruments used, and constructs explored were extracted for narrative synthesis.

Results: The initial search in the three databases resulted in 7397 records. Following the two stages of screening, 24 studies were eligible for inclusion. Of these studies, 16 solely explored attitudes, one on knowledge, and one on confidence. Studies (n=6) exploring a mixture of constructs included four studies focusing on knowledge and attitudes, one on attitudes and confidence, and one exploring all three constructs. Nurses were the most commonly explored (n=9), while pharmacists, genetic counsellors, and case managers were the least explored, with participation in only one study each. After narrative synthesis, most key findings regarding HCPs' attitudes identified the presence of stigma to varying extents. Positive attitudes of HCPs were also identified, including HCPs' expressions of acceptance and support for people living with psychosis. Importantly, less stigma was observed among HCPs who personally knew someone living with psychosis. Furthermore, nurses and general practitioners were found to have low levels of knowledge relating to psychotic illness. Similarly, psychiatrists, occupational therapists, psychologists, and nurses demonstrated low levels of confidence in providing care in all studies that explored this construct. The need for additional specialised training and education in psychosis care was also highlighted in many of the included studies.

Conclusion: Stigma towards people living with psychosis was identified to be prevalent in healthcare. Furthermore, low levels of knowledge and confidence among HCPs were foregrounded. Inadequate HCP training and education in psychosis care and continuing professional development offerings was also identified. Future research on healthcare students and trainees is warranted. Findings may help inform the development of psychosis care education and assessment materials for healthcare curricula.

Experience and effectiveness sharing of anti-drug information resource center in Taiwan hospital

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Background
In order to effectively promote the prevention of drug abuse among high-risk groups, the Food and Drug Administration of the Taiwan Ministry of Health and Welfare has set up drug abuse prevention education resource centers in the northern, central, and southern regions of Taiwan. China Medical University Hospital (CMUH) is responsible for setting up the "Anti-Drug Information Resource Center (ADIRC)" in the Central Taiwan.

Purpose

The ADIRC is responsible for seeding teacher training, providing teaching resources, and conducting teaching activities to assist local health agencies or campuses in promoting drug abuse prevention education activities. This paper will share the experience and effectiveness of how CMUH established and promoted ADIRC.

Methods
CMUH established the Anti-Drug Education Resource Center (ADIRC) in Central Taiwan in 2013. It is hoped that through the establishment of the "ADIEC", more seed teachers and volunteers will be trained to promote drug abuse prevention education and sedative and hypnotic drug education to the community and gradually establish multiple contact channels of "school, family, community, society" , and provide teaching resources and conduct teaching activities, and will also assist local health institutions or campuses to promote drug abuse prevention education activities, so that the concept of drug abuse prevention can be incorporated into the community to promote publicity.

Results
The implementation results of the "ADIRC" in Central Taiwan, show that in 2022, 138 anti-drug seed teachers and 84 drug education volunteers have been trained, 23 sessions of drug abuse prevention education promotion and 22 sessions of sedative and hypnotic drug education and promotion, and 10 sessions of seed teachers were included in their teaching or activities. A total of 1,890 people participated in the above events during 2022. The number of drug abusers reported by medical institutions in Taiwan decreased about 24.5% from 4,306 in 2013 to 3,251 in 2022. The number of drug abusers reported by CMUH decreased about 60.2% from 186 in 2013 to 74 in 2022.

Conclusion
Since the establishment of the "ADIRC" in 2013, the CMUH has trained 868 anti-drug seed teachers and 150 anti-drug education volunteers, and conducted 183 sessions drug abuse prevention education promotions and 178 sessions of sedative and hypnotic drug education and promotion, with a total of 25,140 person-times. We look forward to continuing to expand the promotion and implementation of the United Nations SDG 3.5 through the ADIRC to strengthen the prevention and control of drug abuse and ensure the promotion of well-being for all people of all ages by 2030.

Integration of procurement capability and formulary management to ensure effective resource use for patients: A five-year retrospective report

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Background: FIP Development Goal 21, Sustainability in Pharmacy addresses economic sustainability of pharmacy services. In Australian hospitals, the price of medicines is determined by a number of factors including the national Pharmaceutical Benefits Scheme, collective health service agreements and direct negotiation between hospitals and suppliers. Medicines are funded by a mix of national and state governments, in addition to patient co-payment contributions. Pharmacists are uniquely placed to understand the complex interplay of price and funding models in the context of medicines formulary and supply chain management. This knowledge can be used to obtain best value from limited economic resources in publicly funded health services.

Purpose: To demonstrate the value achieved from integrating procurement capability, industry relationships and formulary management at a large Australian metropolitan health service.

Methods: The Pharmacy Formulary and Business Development team provides oversight and management of the medication formulary, procurement and purchasing decisions, pharmaceutical industry engagement and supply chain management, including medication shortages and critical medicines risk management. The integration of these key functions ensures alignment with the procurement decision making process and risk management associated with supply chain surety. This is of particular importance given the ongoing supply chain challenges faced globally throughout the COVID-19 pandemic.
A procurement plan, defining the decision processes and accountabilities involved in the procurement of medicines at a tertiary metropolitan health service was first implemented in 2017. The plan was developed by specialist pharmacists following detailed spend analysis to identify opportunities for market engagement: for example new generic market entries, biosimilar medicines, direct and indirect competition (via therapeutic equivalence) and renegotiation of existing contracts. Pharmaceutical industry partners were engaged to assist with horizon scanning and market surveillance.
A retrospective study was conducted to quantify the benefits derived from the plan across the period 2017-22. The study identified the value of sourcing events conducted, the scope of procurement activities and the financial and non-financial benefits for the health service.

Results: Nine tenders, 35 Requests for Pricing and nine direct negotiations were conducted across the 2017-22 financial years, in addition to major sourcing events conducted by the state-wide procurement organisation. 113 different medicines with 207 presentations were included in Invitations to Supply. Delivering an estimated $15.53 million in cost reduction, or 2.8% of health service expenditure, with a further $0.86 million estimated to be saved across the 2022-23 financial year resulting from Invitations to Supply completed during the 2021-22 financial year period. These savings would have otherwise been forgone had identification of opportunities for market engagement not occurred. Through proactive engagement by specialist pharmacists with the health service executive and Board, these savings were able to be reinvested into meeting department budget efficiency and productivity targets, as well as contribution towards business cases delivering over

an additional 20 EFT pharmacists and pharmacy technicians to provide operational and clinical pharmacy services.

Conclusion: The pharmaceutical market is dynamic, therefore detailed spend analysis, and agile, streamlined procurement processes ensure health services are able to respond to market dynamics changes and manage other opportunities for market engagement.

Medication-related problems identified during pharmacist-led medication review in two Australian populations

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Background: Medication-related problems (MRPs) are events which interfere, or have the potential to interfere with, desired health outcomes and may occur at any stage of the medication use process. Medication-related problems significantly contribute to patient harm and healthcare expenditure on a global sale. Vulnerable and underserved populations, including Indigenous (1) (First Nations) Australians and people living with severe and persistent mental illness (SPMI), may be at an increased risk of MRPs. As medication experts, pharmacists can identify and manage MRPs during interventions such as medication reviews.

Aim: To characterise MRPs and associated recommendations documented by pharmacists during medication reviews conducted with a sample of Indigenous Australians and people living with SPMI.

Methods: Participants enrolled in two Australian pharmacy trials formed the sample for this study. The Indigenous Medication Review Service (IMeRSe) feasibility study and the Bridging the Gap between Physical and Mental Illness in Community Pharmacy (PharMIbridge) randomised controlled trial tested the feasibility or effectiveness of novel community pharmacist-led interventions. Trained community pharmacists conducted medication reviews, tailored to the cultural and/or individualised health needs of participants. Identified MRPs, and any associated recommendations to manage the MRPs were documented by trial pharmacists using the existing DOCUMENT classification system (2). Perceived MRP severity was assessed by pharmacists and an independent assessor with expertise in medication review and researchers conducted comparative analyses these ratings.

Results: Community pharmacists identified 795 MRPs with 411 participants during medication reviews in both trials. Medication non-adherence (n=157, 25.1%) and undertreatment (n=139, 22.2%) were the two most-common MRPs in IMeRSe, with non-adherence (n=25, 14.7%) and reports of toxicity or adverse reactions (n=41, 24.1%) the two most common MRPs identified in PharMIbridge. Pharmacists made a variety of recommendations in response to the identified MRPs, most frequently recommending a change in pharmacotherapy (40.2% and 55.0% in IMeRSe and PharMIbridge, respectively). Severity ratings varied across the two pharmacist groups, with the majority being 'Mild' or 'Moderate'. Significant differences were found in the rating assigned by pharmacists and the independent assessor, with the assessor coding MRPs as less severe in the IMeRSe sample and more severe than pharmacists in the PharMIbridge sample.

Conclusion: A range of MRPs with varying severity were experienced by two at-risk populations, with community pharmacists proposing diverse strategies to manage the identified MRPs. Regardless of severity rating, these findings highlight that there is an opportunity for more targeted approaches to identifying and managing MRPs in primary care and tailored community pharmacist-led interventions may be of value in this space.

Applying the principles of academic detailing to educational outreach visiting with consumers to influence healthcare behaviour or health status: A systematic review

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Background: Academic detailing has been widely and effectively used to influence the behaviour of health care professionals. This method uses a social marketing framework, underpinned by social cognitive theory, trans-theoretical model of change, and diffusion of innovation theory. Information exchange takes place while delivering key messages to influence behaviour to achieve socially desired outcomes for the individual and society. Several studies have investigated educational outreach visits, adapted from the model of academic detailing for use with consumers to influence health behaviours and outcomes. We evaluated the concordance of these methods with eight key principles of academic detailing.

Purpose: To identify the use of educational outreach or academic detailing interventions to influence consumer's behaviour; to summarise the components of the interventions through the lens of academic detailing principles and to report the primary outcomes.

Method: PubMed@, Embase@, the Cochrane database, CINAHL, PsycINFO and International Pharmacy abstracts (IPA) databases were searched using the search terms: academic detailing, educational outreach visiting and educational visiting. Search dates were from 1983 until the end of 2019. Eligible studies included those that described academic detailing, educational visiting or educational outreach visiting as an intervention for patients or carers, contained a comparator group and were published in English. Titles and abstract were reviewed by two members of the research team for eligibility to progress to full text review. Risk of bias on included papers was conducted using the Cochrane risk of bias tool (ROB) for randomised and non-randomised studies. Data extraction was conducted using a standardised, pre-piloted form. Two review authors extracted data independently, discrepancies were identified and resolved through discussion (with a third author where necessary).
This study was registered with PROSPERO number CRD42019115776.

Results: 4618 articles were identified using the search terms with full text review resulting in 37 papers (28 randomised studies and 9 non-randomised studies) that met the inclusion criteria. Less risk of bias was found for the 28 randomised controlled trials (RCTs) compared with the 9 non-randomised studies. All eight principles of academic detailing were clearly described and included in 4 RCTs with seven principles in a further 2 RCTs. The delivery of pre-determined key messages and use of concise graphic educational materials was clearly described in only 9 and 5 RCTs respectively. A statistically significant difference in favour of the intervention group was found for 8 of 15 RCTs measuring behavioural primary outcomes and 5 of 13 RCTs measuring clinical primary outcomes.

Conclusion: There were several ways educational outreach interventions for consumers were conceptualised with different labels applied to describe similar methods. The application of academic detailing principles in this review provided greater understanding of the broad range of consumer education interventions that were described by researchers as educational outreach visits. Principles of academic detailing provide a useful taxonomy for the planning and description of interventions using educational outreach visiting for consumers.

Investigating stress, job satisfaction and compassion fatigue in Australian early career community pharmacists

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Background: Significant events like the 2019/2020 Black Summer bushfires and COVID-19 pandemic in Australia have prompted concerns about the emotional wellbeing of healthcare workers, including pharmacists. Community pharmacists have had a vital role in ensuring continuity of care during these events through the implementation of new services, changing regulations, staff and medication shortages while managing increased workload. While these have placed pharmacists under increased pressure, workplace stress amongst Australian community pharmacists is not a new phenomenon. Exacerbated by the pandemic and other natural disasters, heightened levels of stress have been shown to inversely correlate with job satisfaction, and manifest as burnout, if not adequately managed. Feeling devalued at work has been linked with poor job satisfaction and increased stress. Research has also revealed that pharmacists under the age of thirty are most prone to experiencing burnout, a syndrome that can lead to decreased workplace efficiency and increased medication errors. Mitigating stress and burnout amongst younger pharmacists should be a priority to improve job satisfaction and retention in the pharmacy workforce.

Purpose: To explore baseline levels of stress, job satisfaction, compassion fatigue and compassion satisfaction in Australian early career community pharmacists with less than ten years of general registration.

Method: Early career pharmacists working in Australian community pharmacies will be invited to participate in an anonymous online Qualtrics survey. Participants will be required to complete the following validated questionnaires: Perceived Stress Scale-10 (PSS-10), Job Satisfaction Survey (JSS) and Professional Quality of Life Health Measure (ProQOL Health). The ProQOL Health measure will address both compassion satisfaction and compassion fatigue, concepts that are used to explore the positive and negative aspects of working in a caregiving profession such as pharmacy. Participants will also be asked about behaviours they engage in to combat workplace stress and aid in self-care. The survey will be distributed three times at six-monthly intervals, beginning in May 2023. Recruitment will take place through online advertisement via the

Pharmaceutical Society of Australian Early Career Pharmacists Facebook page (approximately 13,000 members). Communications will also be sent to chain pharmacy groups for internal distribution of the advertisement.

Results: The research team will analyse the results at the end of the first data collection period (May - July 2023). The results will present a baseline snapshot of the current levels of stress, job satisfaction, compassion satisfaction and compassion fatigue in the Australian early career community pharmacist population. These data will be compared to other findings in which these measures were used, such as previous data reflective of pharmacists, and data reflective of more generalised populations. This survey will be repeated twice more over a twelve-month period.

Conclusion: Stress and burnout in pharmacists have become prominent in discussion following prior significant events. The results of this survey are predicted to inform if there are specific demographic variables that influence stress, job satisfaction, compassion fatigue and compassion satisfaction in Australian early career community pharmacists.

Pharmacists as knowledge brokers to improve guideline translation in residential aged care

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Background: The Australian Government has announced funding for a new workforce model involving embedded on-site pharmacists in residential aged care facilities (RACFs) to address ongoing suboptimal medication use. Knowledge brokers are a system-level knowledge translation strategy used to implement clinical practice guidelines into practice, and could be used to improve medication use in RACFs.

Purpose: To explore the roles of early adopters of Australia's embedded on-site pharmacist, and compare and contrast to the roles of a knowledge broker from the literature.

Method: Mixed-methods study. Firstly, a systematic review of the literature was undertaken to identify roles of a knowledge broker. MEDLINE, Embase, PsycINFO and CINAHL Plus were searched from 2014 to June 2022 for studies involving knowledge broker interventions, either alone or as part of a multicomponent intervention, that aimed to improve guideline translation in health-related settings. Secondly, qualitative semi-structured interviews were conducted with 15 early adopters of the embedded on-site pharmacist model. Interviews were audio-recorded, transcribed and thematically analysed independently by two investigators. A deductive analysis was conducted using the roles of a knowledge broker identified in the literature.

Results: Core roles of a knowledge broker from the literature included knowledge manager, linkage agent and capacity builder. Roles undertaken by embedded pharmacists in RACFs are consistent with all three roles of a knowledge broker. Knowledge manager roles included writing guidelines, policies and procedures; synthesising evidence and guidelines into usable formats; and developing algorithms and tools to assist with guideline implementation. Linkage agent roles included engaging with on-site stakeholders (e.g. nurses) and clinical governance teams; off-site stakeholders (e.g. general practitioners and community pharmacists); and embedded pharmacists in other RACFs. Capacity builder roles included delivering formal and ad-hoc education; improving staff awareness and understanding of quality use of medications; and conducting audit and feedback.

Conclusion: Embedded pharmacist roles in RACFs are consistent with that of a knowledge broker. The effectiveness of pharmacists acting as knowledge brokers to translate new guidelines for appropriate use of psychotropic medications is being evaluated in an ongoing randomised controlled trial in Australia. The knowledge broker framework could be used to define system-level roles for pharmacists in RACFs to improve guideline translation and reduce medication-related harm.

Do pharmacists want to work in residential aged care? An Australian survey of interest and perceived preparedness

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Background: Pharmacists involvement in residential aged care facilities (RACFs) has traditionally been limited to that of an external contractor providing medication reviews, or medication supply. In 2023, there is a planned a phased implementation of on-site pharmacists in Australian RACFs. It is unclear how interested or prepared the national workforce is for this new model of care.
Purpose: To explore Australian pharmacists' interest and perceived preparedness to work as on-site pharmacists in RACFs.

Methods: A national cross-sectional anonymous online survey of Australian pharmacists was conducted. The 36-question survey involved Likert-type, multiple choice and multiple selection and questions regarding demographics, interest and preparedness to work on-site in RACFs. Participants were recruited using a broad advertising strategy which included social and traditional media platforms. Data were analysed using descriptive statistics.

Results: Responses were received by 720 participants, 643 were eligible and completed the minimum question set (demographics). Most participants were female (n=466, 72.5%) and mean (SD) age was 43.5 (SD 12.5) years. Over half the participants were interested or extremely interested in working as an on-site aged care pharmacist (56.0%, n=360) and agreed or strongly agreed (n=475, 75.5%) that they felt prepared to work as an on-site aged care pharmacist. About half the participants (n=345, 54%) agreed or strongly agreed that their formal education had prepared them to work on-site in RACF, whereas 78% (n=501) agreed or strongly agreed that their practice experience had prepared them. Most pharmacists felt prepared to engage in a variety of roles within the RACF (>73% for each role), including resident and system-level roles, and the majority agreed they felt prepared to engage with stakeholders, particularly community pharmacists (98%) and nurses (96%).

Conclusion: Pharmacists reported they are interested and feel prepared to work as on-site aged care pharmacists. The findings from this study will be important to RACFs, professional organizations, pharmacy training providers, policy makers and governments in the design and rollout of the on-site aged care pharmacist model in Australia beginning in 2023.

The "Psyched Out" project: A mental health wellness app and student ambassador program for disadvantaged students

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Background: The United States is facing a mental health crisis with 40% of adults reporting symptoms of anxiety or depression. While the crisis has grown worse during the pandemic, Black, Indigenous, and people of color (BIPOC) communities have historically experienced inequities in mental healthcare including substantially lower access to mental health services. The age of onset for mental health issues coincides with traditional college student age ranges, with approximately 75% of mental health conditions developing by age 24. Suicidal ideation among this college population also increased 64% in the pandemic. Universities need culturally appropriate, economical, and user-friendly solutions to combat barriers to mental health therapy to improve students' well-being. This project describes the development and implementation of a mental health support program at a Historically-Black College and University (HBCU) consisting of research opportunities, educational outreach, and a mobile application.

Methods: A wellness app was developed at a HBCU and allowed for the creation of a pipeline of mental health student ambassadors. The project was tailored for HBCUs to leverage specific on-campus, culturally appropriate, and external resources to maximize students' mental health on their journey to become healthcare professionals. An app was created to track participant's mental health issues and provide them to services on-campus to support their mental needs. Students from each of the undergraduate and graduate schools participated in a mental health training to become ambassadors to reduce the stigma of associated with mental illness.

Results: In collaboration with Apple, the HBCU Wellness App, "Psyched Out", was created to link students via an in-house network to resources designed to assist them in addressing concerns pertinent to stress, wellness, mental health issues, and physical health concerns, while providing immediate links to campus resources such as the counseling center. Monitoring of physical indicators such as stress, blood pressure, heart rate and sleep quality was also measured on the app to empower students to take preventive measures to improve overall health and reduce triggering events. Two students from each of the four undergraduate schools as well as two students from the professional programs attended the Mental Health First Aid training as well as a customized campus training program so that they could serve as mental health ambassadors. These students promoted the app usage and enhanced support systems for first-generation, marginalized, and underrepresented students.

Conclusion: This program reduces barriers to appropriate mental healthcare by improving knowledge of mental health resources, reducing stigma, and promoting cultural shifts in mental illness perceptions. Improved mental health is anticipated to strengthened academic performance and reduce attrition rates as well as improve the student experience.

A study on the willingness and constraints of pharmaceutical companies to develop and produce pediatric drugs in China

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Background: Pediatric medication requires specialized treatment due to the unique differences in disease spectrum, pharmacodynamics, pharmacokinetics, and adherence in children compared to adults. Despite efforts to encourage pharmaceutical industry to develop and manufacture pediatric drugs through policies in China over the past decade, little research has examined how these policies have affected industry response. It remains unclear what the main barriers are developing and manufacturing pediatric drugs for industry.

Purpose: This study aims to investigate the willingness of Chinese pharmaceutical companies to develop and produce various types of pediatric drugs; explore the factors that limit the development and production of pediatric drugs throughout the entire drug lifecycle, and clarify the importance and urgency of different constraints.

Method: Using a convenience sampling method, 70 Chinese pharmaceutical companies completed electronic questionnaires consisting of three sections: 1) basic information of researched companies and respondents; 2) willingness of pharmaceutical companies to develop and produce various types of pediatric drugs; and 3) current factors that prevent pharmaceutical companies from participating in the development and production. The willingness was measured using a five-point Likert scale (with a score of 1 indicating reluctance and 5 indicating strong willingness), and constraints were assessed using a multiple choice ranking method.

Results: The study included companies from 15 provincial regions, including Shanghai, Beijing, and Jiangsu. Most respondents (>80%) held middle or senior management positions in the companies and had more than six years of experience in the pharmaceutical industry. The majority of Chinese pharmaceutical companies (78.57%) are willing to develop and produce pediatric drugs. Developing drugs for adults and children is more favorable than developing drugs solely for children ($p<0.05$). Pharmaceutical companies are more inclined towards producing first-in-class or me too/better drugs compared to generics ($p<0.005$). Based on research, production capacity, and market potential, pharmaceutical companies exhibit a significant interest in drugs targeting common childhood ailments, particularly respiratory and digestive diseases. In contrast, there is a reduced interest in drugs that address hematopoietic and genitourinary conditions ($p<0.001$). There is a split among companies regarding the production of drugs for rare pediatric diseases (sd=1.49). Pharmaceutical companies are more willing to adjust the strength of the medication rather than changing the dosage form to meet children's medication needs ($p<0.05$). Pharmaceutical companies identified pre-marketing studies and post-marketing market access as the primary impediments to the development of pediatric drugs. The major constraints were a fragmented market share of pediatric drugs leading to higher business risks, lack of clinical trial subjects, and high R&D capital costs. Secondary constraints include insufficient motivation to change production lines, difficulties in preparing registration materials for children's drugs, lack of communication with registration reviewers, and serious irrational use of children's drugs.

Conclusion: The research uncovered that Chinese pharmaceutical companies demonstrate a general inclination towards developing and manufacturing drugs for children and disparities exist regarding their enthusiasm for various types of pediatric medication. Despite this, considerable obstacles persist in the pre-market research and post-market access phases of pediatric drug development and production, necessitating regulatory attention.

Identifying residents who may benefit from an analgesic review: Applying analgesic indicators in residential aged care services

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Background: Ensuring safe and effective analgesic use in residential aged care services is important because older adults are susceptible to analgesic-related adverse drug events (ADEs).

Purpose: To identify the proportion and characteristics of residents of aged care services who may benefit from analgesic review based on indicators in the 2021 Society for Post-Acute and Long-Term Care Medicine (AMDA) Pain Management Guideline.

Methods: Cross-sectional analyses of baseline data from the Frailty in Residential Sector over Time (FIRST) study (N=550 residents) across 12 South Australian residential aged care services in 2019 were conducted. Indicators included the proportion of residents who received; >3000mg/day of acetaminophen [paracetamol], regular opioids without a documented clinical rationale, opioid doses >60mg morphine equivalents (MME)/day, >1 long-acting opioid concurrently, and a pro re nata (PRN) opioid on >2 occasions in the previous 7 days. Logistic regression was performed to investigate factors associated with residents who may benefit from analgesic review.

Results: Of 381 (69.3%) residents charted regular acetaminophen, 176 (46.2%) were charted >3000mg/day. Of 165 (30%) residents charted regular opioids, only 2 (1.2%) had no pre-specified potentially painful conditions in their medical record and 31 (18.8%) received >60MME/day. Of 153 (27.8%) residents charted long-acting opioids, 8 (5.2%) received >1 long-acting opioid concurrently. Of 212 (38.5%) residents charted PRN opioids, 10 (4.7%) received >2 administrations in the previous 7 days. Overall, 196 (35.6%) of 550 residents were identified as potentially benefiting from analgesic review. Females (odds ratio [OR] 1.9; 95% CI 1.2-2.9) and residents with prior fracture (OR 1.6; 95% CI 1.1-2.3) were more likely to be identified. Observed pain (OR 0.5; 95% CI 0.3-0.9) was associated with a lower likelihood of being identified, compared to residents with no observed pain. Overall, 43 (7.8%) residents were identified based on opioid-related indicators.

Conclusions: Up to 1 in 3 residents may benefit from a review of their analgesic regimen, including 1 in 13 who may benefit from a specific review of their opioid regimen. Analgesic indicators represent a new approach to target analgesic stewardship interventions.

Preferences of the future GBS vaccine for pregnant women in China: A national survey with a discrete choice experiment

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Background: Group B streptococcus is one of the major causes of neonatal death worldwide. The GBS vaccine is under development and is expected to be marketed to alleviate the GBS burden soon. The preference of GBS vaccine in pregnant women in China has not been studied.

Method: In order to understand the awareness of Group B streptococcus in the pregnant population and the potential preference for a Group B streptococcus vaccine under development, a multi-center cross-sectional study was conducted in hospitals in eastern, central, and western China. Pregnant women from Shaanxi, Hunan, and Zhejiang provinces in China have undergone a discrete choice experiment, using a conditional Logit regression model to analyze the data and calculate willingness to pay (WTP).

Results: 349 pregnant women were included in the final analysis. Only 2% of pregnant women believed that they have sufficient knowledge regarding Group B Streptococcus (GBS), and 46.42% of pregnant women were willing to receive the GBS vaccine if it was licensed. The results of the discrete choice experiment showed that safety (the severity of adverse events) was the most important attribute (preference coefficient =-1.90), and the decision of other pregnant women on whether to receive the GBS vaccine was also an important factor in pregnant women (preference coefficient =0.44). There was no significant difference in the relative importance of vaccine attributes among pregnant women in different regions of China.

Conclusions: The results indicate that pregnant women attach the most importance to the safety of future GBS vaccines, and improving the initial coverage of GBS vaccine in China is of great significance for the coverage effect of subsequent vaccines.

Pharmacists supporting pharmacists–The role of a peer support service for the Australian pharmacy profession

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The role of Pharmacists' Support Service (PSS) in Australia is unique. There are a number of organisations in Australia that provide professional, commercial, industrial and legal advice for pharmacists but PSS is the only agency dedicated to providing support for personal wellbeing specifically for pharmacists.

PSS was established 28 years ago in April 1995, in the state of Victoria in Australia. It was established in response to the then Victorian Doctor's Health Advisory Service, advising the Victorian branch of the Pharmaceutical Society of Australia about pharmacists reaching out for help, including the death of a pharmacist by suicide. Today the PSS provides a national service to all Australian pharmacists, pharmacy interns and students and overseas trained pharmacists working towards registration in Australia. PSS operates as a not-for-profit charitable organisation supported financially by donations and grants, with a Board comprising honorary representatives from each major Australian pharmacy membership organisation.

The main service provided by PSS is a peer support telephone support line which operates every day of the year for extended hours. All calls are taken by volunteers who are all experienced pharmacists and retired pharmacists and who have undertaken additional training to provide non-judgemental and compassionate support, guidance and signposting.

All calls to the service are anonymous and confidential, unless there is an immediate risk of harm. Data relating to the reason for calling is collected as well as general demographics of the callers. Approximately 50% of calls are perceived to come from early career pharmacists and about 70% of callers are perceived to be female. Common reasons for calling include workload, concerns about legal aspects of medication supply, conflict with work colleagues, professional dissatisfaction, ethical dilemmas, mental health and clinical practice concerns. Risk management is also documented with a small number of callers each year reporting thoughts of suicide or self-harm. In 2021/22 15% of calls related to COVID-19, 2% in 2020/21 and 13% in 2019/20.

The pharmacist volunteers taking calls typically provide a listening ear and support, provision of information and signposting.for further assistance. Callers may be provided with ongoing assistance in a small number of cases each year. Approximately 25% of calls last longer than 30 minutes. The number of calls each year grew steadily with a peak in 2020/21 of 464 calls over 12 months.

The pharmacist volunteers are supported in their role with initial training, ongoing education sessions and regular

individual debriefing after rosters with a clinical psychologist.

PSS also raises awareness and provides education on topics such as self-care, managing stress and wellbeing for the pharmacy profession including pharmacy students. PSS promotes the philosophy of pharmacists caring for themselves in order to be able to care for others in their role as health professionals. Supporting pharmacists to manage their wellbeing is essential to maintain the standards of each member of the profession in order to ensure that the public can access competent and well-functioning pharmacists.

Psychological distress in a community-dwelling sample of Australian adults living with severe and persistent mental illness

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Background
People living with severe and persistent mental illnesses (SPMI), such as schizophrenia and bipolar disorder, are susceptible to experiencing high levels of psychological distress. Higher levels of psychological distress are associated with worsening mental illness and increased mortality. As part of the PharMIbridge RCT, community pharmacists delivered an individualised mental and physical health support service for a community-dwelling sample of adults using antipsychotic and/or mood stabiliser medication(s) for the management of SPMI. As part of their participation in the PharMIbridge RCT, all consumers participants were assessed for psychological distress.

Purpose
This study aimed to explore levels of psychological distress in a community-dwelling sample of adults living with SPMI.

Method
Participants were recruited between September 2020-February 2021 from a subset of 28 community pharmacies participating in the RCT, within the Hunter New England region, the Australian Capital Territory, and regional Victoria, Australia. As part of their participation in the PharMIbridge RCT, participants completed a self-administered questionnaire, including the validated Kessler-6 (K6) psychological distress scale, and attended a consultation with a Mental Health First Aid-trained pharmacist. Following a "very high" (>19/30) K6 score, pharmacists were interviewed by researchers to discuss the consumer's presentation, potential contributing factors, and need for crisis assessment or support. Trial pharmacists also provided written reports of all consultations where consumers achieved a "very high" K6 scores. Researchers also documented key aspects discussed during their telephone interviews with pharmacists. Written reports were independently analysed by another researcher to assess for signs of psychological distress or crises, and any associated triggers.

Results
The first 150 eligible participants formed the sample of this study. The median K6 score was 16/30 (IQR=11,21; range=6-30). Fifty-nine (39.3%) participants scored >19 on the K6, of which 25 (42.4%) were exhibiting signs of psychological distress and none were experiencing mental health crises (as reported by trial pharmacists). Younger age, unemployment, and increasing number of mental health diagnoses were significant predictors of higher K6 scores ($p<0.01$, $R2=0.24$). Medication-related and family/personal factors were common triggers of distress.

Conclusion
Findings of this study indicate that psychological distress is commonly experienced by people living with SPMI, as evidenced by more than one-third of participants obtaining K6 scores indicating "very high" levels of psychological distress. However, according to pharmacists' reports, almost two-thirds of participants who scored "very high" on the K6 were not exhibiting signs of distress and did not present to the pharmacy in a manner that was 'different' to how they normally do. This possibly indicates poor sensitivity of the K6 among people living with SPMI or that distress is constant and/or goes unrecognised among some consumers living with SPMI. Further research exploring the psychometric properties of instruments that measure psychological distress among people living with SPMI is warranted. This study also highlights that trained pharmacists are capable of supporting consumers experiencing high levels of distress, within community pharmacy settings, demonstrating potential implications for pharmacists' roles in mental healthcare.

Medication errors and managing risk: A view from an insurer

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Information regarding medication dispensing errors and their causes is well documented in the literature. Despite this, there is little information from an insurance perspective. This perspective offers a unique view on contributing factors beyond the research realm.

Insurance acts as a risk management tool and is used by pharmacists to protect them from a diverse range of consequences when errors are made. This paper outlines lessons from incident reports and how tackling the consequences of errors maintains the pharmacist's ability to

practice. Finally a range of risk management tools and techniques are offered to raise risk awareness and improve risk capability within the profession.

Australian pharmacy students' perceptions of environmental sustainability in pharmacy education and practice

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Background
Healthcare has a large carbon footprint, contributing 4% of England's total carbon footprint (TCF) in 2012, 7% of Australia's TCF in 2015, and 10% of the USA's TCF in 2016. Australia's healthcare sector is the third highest emitter per capita globally, with pharmaceuticals contributing approximately 19% to its TCF. Pharmaceuticals also negatively impact the environment through direct chemical effects, and environmental degradation negatively affects health. Pharmacists therefore have an obligation to reduce the environmental impact of pharmaceuticals. Environmentally sustainable pharmacy practice (ESPP) education can equip pharmacy graduates with the knowledge, skills, and competence to perform these roles. However, students' perceptions of ESPP and the extent to which this education is provided in Australian curricula are unknown.

Purpose
This research aimed to explore pharmacy students' environmental attitudes and knowledge, beliefs, and curriculum experience with ESPP content.

Method
This study utilised an anonymous online survey on the Qualtrics software platform, distributed via social media and professional networks. The questionnaire was developed from two validated instruments – Dunlap and Van Liere's New Ecological Paradigm (NEP) Scale and an international survey of dental students on their curricular experience with sustainability content. Response options included 5-item Likert scales and free text. Preliminary quantitative data are presented using descriptive statistics.

Results
Surveys were completed by 164 pharmacy students (3% response rate) from 16 different universities. Most respondents (98.8%) had received information on environmental sustainability, planetary health and/or climate change before commencing their pharmacy degree, mostly from secondary school (84.1%) and the internet (82.9%). Despite this, only 35% of respondents felt they understood sustainability concepts including climate change quite or extremely well. When asked what sustainability activities they had engaged in outside their educational experience, four participants (2.4%) mentioned protests and activism; many described recycling or volunteering to clean up rubbish in parklands; however, 38 (23.2%) reported none. Only 14 respondents (8.5%) from six universities were aware of any ESPP content in their pharmacy school curriculum and only nine (5.5%) were aware of being assessed on ESPP content. However, 62% were quite or extremely interested in learning about ESPP. Most respondents saw ESPP as relevant (70%) and important (70%) to their future practice as a pharmacist. In general comments, some students described sustainability issues they had observed in practice. Importantly, 93.9% of respondents (n=154) believed the pharmacy profession had a responsibility to undertake sustainability initiatives in the delivery of pharmaceutical care.

Conclusion
Despite a lack of knowledge about ESPP and limited curricular exposure to ESPP content, most pharmacy students in our study recognised ESPP as their responsibility and important for their future practice as a pharmacist. These results suggest that students recognise climate change as a health issue, and that a gap exists between current curricular content and the needs of future practitioners. A limitation of this study was the low response rate, with alternative distribution strategies recommended for future research. Future directions include exploring optimal content delivery strategies to improve student engagement and learning outcomes, and mapping of sustainability content to pharmacy accreditation standards.

Treatment burden and health-related quality of life of patients with multimorbidity: A cross-sectional study

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Background: Multimorbidity is the co-occurrence of two or more chronic conditions in an individual. It is increasing because of a rise in the aging population secondary to the increase in longevity. Patients with multimorbidity are at a higher risk of treatment burden. Treatment burden can be defined as "the workload of health care and its impact on patient functioning and well-being", and a higher treatment burden significantly diminishes the health-related quality of life (HRQoL). In Ethiopia, multimorbidity has become very prevalent. However, there is a paucity of data on treatment burden and HRQoL in patients with multimorbidity in low- and middle-income countries such as Ethiopia.

Purpose: The aim of this study was to assess the treatment burden and health-related quality of life (HRQoL) among patients with multiple chronic diseases.

Method: A cross-sectional study was conducted at the outpatient department of the University of Gondar Comprehensive Specialized Teaching Hospital between March 2019 and July 2019. Study participants were patients with multimorbidity taking prescription medications. The main variables included sociodemographic variables (age and sex), number of medications, number of morbidities, type of morbidities, level of treatment burden, and HRQoL status. Treatment burden was measured using the Multimorbidity Treatment Burden Questionnaire (MTBQ) while HRQoL was captured using the Euroqol-5-dimensions-5-Levels (EQ-5D-5L).

Results: A total of 423 patients participated in the study. Significant differences were observed in the mean EQ-5D-Index (F [2, 72.79] =49.65; p <0.001) and EQ-VAS (visual analog scale) score (F [2, 75.48] =72.87; p<0.001) among the treatment burden groups. In the multiple linear regression model, the standardized EQ-5D index (β = -0.37, 95% confidence interval (CI) -0.46 – -0.29, p <0.0001) and the EQ-VAS (β = -0.46, 95%CI -0.54 – -0.38, p <0.0001) scores had shown statistically significant association with the standardized global MTBQ score.

Conclusion: Treatment burden was found to be very common among patients with chronic multimorbidity, and findings indicated an inverse association between HRQoL and global MTBQ score. Healthcare providers should be conscious of balancing treatment exposure with patients' HRQOL.

Australian patients' perspectives on commencing oral anticoagulants in atrial fibrillation: A qualitative descriptive study

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Background: Atrial fibrillation (AF) is known to increase the risk of stroke five-fold. To prevent stroke in patients with AF, oral anticoagulants (OACs) are recommended, as they are associated with a 70% relative risk reduction. Existing evidence indicates that guideline-adherent OAC prescribing, OAC prescribing that is according to guideline recommendations, is associated with improved clinical outcomes in patients with AF. However, patient refusal to take oral anticoagulants (OACs) has been reported to contribute to OAC non-prescription in patients with atrial fibrillation (AF) who are at high risk of stroke.

Purpose: This study aimed to explore barriers and facilitators to patient agreement to commence OACs from the perspectives of patients with atrial fibrillation (AF) attending Australian general practices.

Method: A qualitative descriptive study, utilizing semi-structured individual interviews, was conducted from March to July 2022. The interview guide and data analysis were informed by the Theoretical Domains Framework (TDF) and the Capability, Opportunity, Motivation-Behaviour (COM-B) model.

Results: Ten patients completed the interviews (60% male, median age = 78.5 years). All three components of the COM-B model and 10 of the 14 domains of TDF were identified as influencing patient agreement to commence OACs. The passive role of patients in decision-making was identified as a facilitator to patient agreement to commence OACs. The majority of patients reported that they do as advised by their doctors, and hence, agree to commence the recommended OAC. Other prominent facilitators included alignment of doctors' recommendations with patients' overall health goals including prevention of stroke and associated disabilities, adequate explanations from doctors, and a clear understanding of the pros and cons of taking OACs. Reportedly insufficient explanations from doctors and the inconvenience associated with taking warfarin were identified as potential barriers.

Conclusion: Many patients with AF may play passive roles in thromboprophylaxis decision-making. However, other important factors affect patients' agreement to commence the OACs recommended by their doctors. These include alignment of doctors' recommendations with patients' overall health goals, adequate explanations from doctors, and a clear understanding of the pros and cons of taking OACs.

Development and pilot testing of a community pharmacist-delivered depression screening and referral model for older adults

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Background: Approximately 10-15% of older adults (≥65 years) experience late-life depression (LLD). LLD is often undiagnosed and untreated and may negatively impact the quality of life of older adults. Pharmacists are one of the most accessible healthcare professionals and are well-positioned to identify consumers at risk of LLD, thereby supporting the timely detection and treatment of LLD.

Purpose: To develop and pilot test a community pharmacist-delivered depression screening and referral model for older adults.

Method: A training package, consisting of Mental Health First Aid training and additional modules on the identification, screening, and management of LLD, was developed and pilot tested at a pharmacy conference in 2020 (n=124), then refined for broader implementation. Community pharmacies in New South Wales, Australia were recruited through professional pharmacy organisations and received the training package. Pre/post questionnaires, including validated instruments, explored the impact of the training on knowledge, attitudes, confidence, and acceptability of depression screening. Pharmacists identified at-risk consumers and provided screening using the Geriatric Depression Scale-15 (GDS-15). Consumers who scored ≥6 on the GDS-15 (suggesting depression) were referred to a primary healthcare provider and followed up in one week by the pharmacist. Investigators contacted all consumers who consented, regardless of GDS-15 score, for follow-up interviews after 6 weeks to explore the outcomes of, and their experiences with, the screening service. Follow-up semi-structured interviews with participating pharmacists were also conducted to explore barriers and facilitators affecting service delivery. Quantitative data was analysed descriptively, while interviews were transcribed and analysed via thematic analysis.

Results: Seven training sessions were conducted between 2020-2022. A total of 39 community pharmacies were recruited, and 15 consumers were screened, of which 67% were female. The median (IQR) age of recruited consumers was 74 (71-79) years, and consumers were taking a median (IQR) of 6 (5-12) medications. The median (IQR) GDS-15 score was 7 (5-10), with 67% of consumers scoring ≥6. 80% of consumers were referred to another healthcare professional, predominantly general practitioners (83%). Reasons for screening included having a current diagnosis of a chronic illness, being at risk of social isolation, and taking ≥5 medications daily. Follow-up interviews with consumers (n=5) explored the outcomes of the study (i.e., follow-up, referral, diagnosis, treatment initiation), and pharmacists (n=6) explored barriers and facilitators of the service. Consumers who were followed-up by investigators received GDS-15 scores of 0-10 and reported no depression diagnoses. However, pharmacist-led follow-ups reported antidepressant initiation in one consumer. Consumers viewed the screening as an acceptable and useful service. Pharmacists reported enablers to be pharmacists' confidence and prior relationship with consumers, while barriers included lack of time, increased workload due to the COVID-19 pandemic, and apprehensiveness from consumers.

Conclusion: Pharmacists in this study identified and screened consumers at risk of LLD, although service delivery was impacted by lack of time and COVID-19. Pharmacists reported improved confidence in depression screening following training. The findings of this study may be used to inform potential service delivery models to support the early identification and treatment of LLD.

Comparing burnout in hospital and community pharmacists during the COVID-19 pandemic in Australia

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Background. The COVID-19 pandemic led to unprecedented changes in the delivery of healthcare with pharmacists continuing to provide predominantly in person patient care during this challenging time. The duties and responsibilities of hospital and community pharmacists was diverse, resulting in the effect of the pandemic manifesting differently for these two important pharmacy practice areas Purpose. To measure burnout in pharmacists and to compare burnout, psychosocial and work-related effects of the global COVID-19 pandemic in hospital and community pharmacists.

Method. A national survey was distributed to pharmacists throughout Australia using convenience sampling through social media and pharmacy professional organisations during April and June 2020. Burnout scores were calculated using the Maslach Burnout Inventory (MBI) and descriptive statistics were used to describe the effect of COVID-19 on various work related and psychosocial variables. Statistical analysis (using Pearson's Chi-square) was used to compare community and hospital pharmacists' responses.

Results. A total of 647 responses were received that contained full datasets to be analysed, of which 269 (41.6%) were hospital pharmacists. There was a high proportion of pharmacists who had a high degree of burnout (61%) with more than 70% of community pharmacists experiencing burnout, and just over 50% of hospital pharmacists. Community pharmacists were more likely to report an increase in workload, working overtime, supply issues, exposure to morbidity and mortality, low staffing levels, providing advice to patients and being treated with incivility. Hospital pharmacists were statistically more likely to report working in a different area to usual, and to report sufficient personal protective equipment (PPE) compared with their community colleagues ($p<0.05$).

Conclusion. The COVID -19 pandemic has had a profound effect on the work and lives of Australian pharmacists, with many pharmacists experiencing burnout during this time. The experiences of hospital and community pharmacists have led to high burnout scores in both groups, but the work-related and psychosocial effects of the pandemic are different between the two groups.

Introducing a restorative support program to support pharmacy staff wellbeing

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Background. The significant professional and personal challenges that COVID has placed on healthcare professionals has necessitated workplaces prioritising the wellbeing of their employees. Pharmacists around Australia have described increased rates of burnout, high workloads and inadequate resources to cope with the increasing demands during this time. The use of clinical supervision, particularly restorative support has been shown to improve wellbeing and is a process that can be implemented within existing organisational structures. Clinical supervision is made up of three components, normative (operational), formative (learning) and restorative (support). The provision of clinical supervision is usual practice in pharmacy departments, with regard to the normative and formative components however, the restorative support component is less commonly practiced in pharmacy departments.

Purpose. To describe the process used by a pharmacy department to implement peer-to-peer restorative support.

Method: The entire department took part in information sessions and provided feedback on the implementation plan. Following these sessions, volunteers (pharmacists and pharmacy technicians) were provided with specific training in restorative support practices from a psychologist, and were allocated another staff member to whom they would provide restorative support. Staff who volunteered to receive restorative support were also provided with specific training on the role of the program. The pairs undertake regular meetings where the focus of the meeting is about the wellbeing, personal challenges at work and self-reflection. The staff providing support participate in regular meetings with a healthcare professional trained in restorative support where they can discuss their sessions and participate in ongoing skill development. The program is supported with rostering where needed and other support process to ensure that the sessions are prioritised even during busy times.

Results: The introduction of this program has been positively received in the department, and the evaluation on burnout will continue as the program progresses. The program is now being implemented throughout the department following requests from staff to broaden the program to facilitate all staff to receive restorative support.
Conclusion: The introduction of a structured restorative support program provides dedicated time for staff to discuss the personal side of work. Given the high reported rates of burnout in pharmacy, a structured program that provides employees an opportunity to connect and feel heard is an innovative and cost effective way to support organisational wellbeing.

Influencing upwards–An undervalued pharmacy leadership tactic in the new era: A qualitative study in Chinese hospital pharmacy directors

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Background:
In the process of meeting the increasing demand of healthcare reform in China, the competency requirements on management and leadership for hospital pharmacy directors is also rising. To better adapt to the new value-based healthcare era, the captains of the pharmacy department - hospital pharmacy directors need to continuously develop their leadership capacity. The specific challenges of leadership during this period includes effectively securing support from the leadership, aligning pharmacy department objectives with the hospital objectives, and presenting the professional value of pharmacy service to the hospital leadership. “Influencing upwards” is a well-established tactic in the business management environment. This tactic if used by hospital pharmacy leaders may contribute well in this period of pharmacy transformation.

Objective:
This research aims to understand more about leadership competencies that correlate strongly with leading the pharmacy to transform to more patient centered. This study aims to address the current dynamic where there is inadequate understanding of the professional pharmacy service by hospital management level. The research also aims to study the reason, the obstacles and the skills for “influencing upwards”.

Method:
This is a province-wide qualitative study that used the purposive sampling method. Semi-structured interviews were conducted with 29 hospital pharmacy directors from large-scale tertiary hospitals in representative cities of Anhui Province China. The Colaizzi seven-step method was applied to analyze the interview data.

Results:
Twenty-nine semi-structured interviews were conducted. Each interview lasted 35-80 minutes. By analyzing the leadership reflections of the pharmacy directors, four descriptive themes were categorized: (1) the importance of influencing upwards; (2) challenges encountered due to inadequate upward influence; (3) influencing upwards through task management; and (4) influencing upwards through personal interaction. The sub-themes for theme (1) included increased persuasive power to hospital leadership, increased support for future development of pharmacy department, and reputation of pharmacy in the hospital. The sub-themes for theme (2) included low recognition of the value of pharmacy by the hospital management, and inability to secure support resources from hospital leadership. The sub-themes for theme (3) included

understanding of national relevant policies, aligning with the hospital strategic development, prioritizing based on hospital clinical expertise, and effective management of results expectations. The sub-themes for theme (4) included providing professional value, being emotionally connected, matching personality styles and effectively building trust.

Conclusion:
In the era of pharmacy transformation, "influencing upwards" potentially can support the hospital pharmacy directors gaining resources needed and earning the recognition from the hospital leadership. This important tactic is of value for the pharmacy directors to develop and utilize.

A study of the knowledge and perception of pharmacists in Ghana towards the medicine reimbursement policies of the national health insurance scheme

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Background: Medicine reimbursement policies (MRPs) are instituted to ensure access to safe, quality and affordable medicines in Ghana. The National Health Insurance Authority (NHIA) utilises the following MRPs for its medicine's formulary: (1) the selection of medicines from the national Essential Medicines List (EML); (2) listing of medicines by generic name onto the National Health Insurance Scheme Medicines List (NHISML); (3) pricing of medicines based on prevalent generic prices of medicines and (4) reimbursement of medicines based on the level of credentialled healthcare facilities. Understanding these policies is relevant for correct application by healthcare professionals, however evidence from operational reports of the scheme suggests a lack of knowledge of the policies and a negative perception of the formulary and reimbursement guidelines among pharmacists.

Purpose: To ascertain the knowledge and perception of pharmacists towards the NHIS's medicine reimbursement policies.

Method: An assessment of knowledge and perception of pharmacists, using a Likert scale, was conducted by administering an online questionnaire via the Pharmaceutical Society of Ghana's WhatsApp platform. The intended sample size of 143 was calculated based on proportionate figures used in similar studies, with adjustments made for the finite population on the online platform based on literature. The questionnaire assessed knowledge of the: (1) development of the NHISML from the EML; (2) generic naming policy of the NHISML; (3) NHISML reviews based on prevalent generic prices; (4) reimbursement based on levels of prescribing.

Results: 123 pharmacists representing 86% of the intended sample size responded. 61% of respondents had knowledge of the existence of the ML but only 37.4% knew it was developed from the EML; 57.7% were aware of the generic policy of the NHIS ML with 64.2% of them perceiving it to be favourable; 26.9% had knowledge of the ML review and pricing processes but 83.7% were not in favour of the reimbursable prices. The level of prescribing policy was well known to 52% of respondents with 51.2% of them having a favourable perception of it. A regression analysis of the difference in level of satisfaction between pharmacists who have knowledge of the development and review processes of the NHISML and those who don't have any knowledge of these processes was significant (Coef. = 1.579, (95% Confidence Interval (CI): 0.793 to 2.366, p<0.001). There was however no significant difference in satisfaction between the two groups of pharmacists in relation to their knowledge of the generic policy (Coef. = 0.664, (CI: -0.073 to 1.401, p = 0.077).

Conclusion: There is a low level of knowledge and an unfavourable perception among pharmacists in Ghana of the MRPs of the NHIS. It is therefore important to create awareness about how the NHIS ML was developed and how it is reviewed periodically since these influence perception and satisfaction with the formulary and ultimately have implications on acceptability and implementation of the policies. The periodic review processes of the NHISML should therefore be publicised widely among pharmacists and health professionals to improve their knowledge, promote acceptance and facilitate implementation of the output.

Healthcare professionals' perspectives and experiences of osteoporosis medication treatment: A thematic synthesis of qualitative studies

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Background: Osteoporosis is a significant public health problem affecting more than 200 million people worldwide. It remains undertreated even after an incident of a fracture. Adherence to osteoporosis medication remains suboptimal ranging from 43-75%. Reasons for non-adherence include various healthcare-related factors, many of which relate to the ways in which patients interact with healthcare

professionals (HCPs). In a systematic review of the acceptability of bisphosphonates, clinicians and patients expressed uncertainties about its effectiveness and raised concerns about the side effects. Given the wide range of treatment options, it is crucial to extend our understanding to additional medication classes and also consider the broader context of treatment, beyond acceptability. Synthesising the perspectives of HCPs involved in various stages of the medication management cycle will provide insights into the challenges and barriers of osteoporosis medication treatment.

Purpose: To describe the perspectives and experiences of HCPs regarding osteoporosis medication treatment to improve practice, inform strategies to optimise medication adherence, and advise the design of the current clinical trial (Safer medicines To reduce falls and refractures for OsteoPorosis (#STOP)).

Method: Four electronic databases (Medline, Embase, PsycINFO, CINAHL) were searched from database inception until April 2023 in any language. Two rounds of screening were performed using Rayyan to assess eligibility for inclusion. Data were coded using NVivo and analysed through inductive thematic synthesis.

Results: From 6298 citations, 23 primary studies were included. The review incorporated the perspectives and experiences of 417 HCPs including 286 (68.6%) doctors, 73 (17.5%) nurses, 40 (9.6%) pharmacists, 11 (2.6%) dentists, and 7 (1.7%) other allied health. The themes and subthemes identified were in areas of disease prioritisation, treatment decision-making, communication, and collaboration:

- Low-priority disease (insidious and benign, underestimating fracture risk, too late to treat)
- Challenges in treatment decision-making (not sufficiently informed, lacking compelling evidence for treatment, pressured with time, someone else's responsibility)
- Minimising drug burden (advocating for safety and comfort, avoiding additional polypharmacy, constrained by financial barriers)
- Conscious of communication barriers (aware of transferring personal doubt, unable to convince the asymptomatic, fear of causing information overload)
- Fragmented care and advice (frustrated by poor interprofessional communication, lack of continuity in transitions of care, disappointed by being undermined)
- Confidence through experience and collaboration (aware and interested in osteoporosis, comfortable prescribing the familiar, strengthened by interdisciplinary collaboration and expertise, willing to provide optimal care)

Conclusion: HCPs expressed willingness to optimise osteoporosis care through interdisciplinary collaborations and building personal expertise in osteoporosis and drug knowledge as well as in risk communication and monitoring. They advocated for safety, comfort, and overall drug burden, particularly in patients with comorbidities. However, they had differences in opinions of who has responsibility for diagnosing and treating osteoporosis and struggled to provide optimal care due to competing priorities, limited time, and lack of adequate knowledge or evidence. The findings highlight the important and complementary role of different HCPs in identifying, investigating, treating, educating, and monitoring patients with osteoporosis. Furthermore, it informs the design of the #STOP trial registration no. ACTRN12622000261718.

Signals for quality assurance in medicinal products regulatory sciences

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Background: The perception and meaning of signalling and its evolution has transfigured thoroughly during recent decades. It is a concept which developed through diverse innovative methods in various domains including aviation, biological sciences, economics, engineering, linguistics, philosophy, road traffic management infrastructure and pharmaceuticals, where similar parameters can be identified. In the context of regulation of medicinal products, signals contribute to the three pillars of regulatory sciences namely safety, quality, and efficacy of medicinal product (Eduardo and Ramani,2020).

Purpose: To determine disruptive processes via signal management within operational pharmaceutical regulatory sciences which would steer towards enhanced quality assurance leading ultimately to support the availability of good quality, safe, and effective pharmaceutical products to meet patients' needs. The objectives of this study are to (i) identify potential signals from sources within the Quality Assurance Unit, (ii) categorise the identified signals in accordance with quantitative and qualitative factors, (iii) attain a proactive signal management procedure for timely identification of operational risks,(iv) develop signal minimisation action plans at the heart of the regulatory scientific field, (v) introduce new terminology, and educational tools for signal identification and qualification related to Quality Assurance in Medicinal Products Regulatory Sciences.

Method: The setting is at the Pharmacy Department of the University of Malta, and the Quality Assurance Unit at the Malta Regulatory Agency for Human Medicines. In Phase I of the study sufficient confidence and basic data is compiled in line with the five objectives. The results from Phase 1, will be collaborated and enhanced through Phase 2. During Phase 2, a survey is developed targeting, quality management professionals within the pharmaceutical regulatory sector such as the Working Group for Quality Managers at the Heads of Medicines Agencies in the European Union. Questions developed through data obtained in Phase I will seek to identify the perception of quality management professionals on the concepts of signal detection, analysis and mitigation, and any contributing factors such as employee burnout, remote working, knowledge, continuous education, gender, age, experience,

workplace environmental conditions, leadership values, and managing change controls.

Results: The significance of this study is to address the gap in the existing regulatory sciences framework of signal knowledge. The gap is manifested by the absence of a signal identification methodology and the markers identified from this study contribute to (i) identification of organizational exposure to uncertainty through coherent representation of the organisational structure, (ii) articulation of the way signals are related to the components of this structure, (iii) classification of the nature of signals, and (iv) formulation of the major criteria to identify and assess those signals.

Conclusion: This study reflects on the innovative science of signal management by using the assembled findings as an example on how a pharmaceutical regulator could transform scientific data into factual information, into learned knowledge, and significantly to the application of wisdom in decision-making.

The problem of imposter participants when conducting pharmacy practice research

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Background: Many aspects of pharmacy practice research require connecting with pharmacists and/or patients. But are the data sources authentic? Herein we report a series of imposters posing as pharmacists for a qualitative study.

Purpose: To share our experience of imposter participants and the lessons we have learned.

Methods: Our study was a qualitative study using photovoice methods. Pharmacist participants were recruited using electronic means including social media. In preparation for the interview, participants were asked to provide 3-5 photos that reflected what they did as a pharmacist during the COVID-19 pandemic. Ethical research conduct encourages only collecting the necessary information to conduct run a study. To explore the lived experience of self-identified participants, researchers take the participants' word to confirm that they have the required expertise to meet eligibility criteria. It is accepted practice for researchers to provide a small honorarium to participants as a thank you and recognition of time taken to participate in an interview. We provided a $100 gift cards to participants which was approved by the health research ethics board.

Results: We recruited 21 participants. It became apparent that three were imposter participants, impersonating licensed pharmacists to obtain the gift card honorarium. We verified this by checking names on the publicly available register of pharmacists in Alberta.
The following characteristics were noted for all 3 imposters: Asked for an interview date with little notice, provided their photos minutes before the interview started, refused to turn their camera on, provided obvious and predictable answers of pharmacists' roles, asked for the gift card to be emailed to them, refused to provide any additional personal information to verify their information, were all interviewed on the same day, and all had a similar accent.

Conclusion: This was our first experience with imposter participants. We were fortunate that the study was recruiting participants that were registered on a publicly accessible database enabling verification of credentials. In future studies, we have noted the characteristics described above and will collect information that will allow us to verify participants and maintain the integrity of pharmacy practice research.

An international portrait of pharmacists' professional role identities: A Q-methodology innovative study (The FIPP-Q Study)

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Background:
Professional identities shape who pharmacists are, what they do, and what they stand for as professionals. Professional role identity represents how professionals see themselves in relation to their roles leading to understanding who they are and how they should act. Traditional methods have resulted in similar findings and as such, novel research methodologies have the potential to illuminate pharmacists' professional identity and roles in new and innovative ways. Exploring pharmacists' professional identity and roles will provide valuable insight into the evolution of practice since the COVID-19 crisis started, shed light on deploying and sustaining change in practice, and act as the base for curriculum evolution.

Purpose:
We are partnering with FIP and aim to provide a global portrait of pharmacists' roles. It will explore pharmacists' professional identity through their reflection of their professional roles in a variety of work settings such as primary care, hospital, industry, policy, and academia. For this study we are clearly defining roles and identity as:
Roles = "How do I act?" (Things you do in your work), and
Identity = "Who am I?" (How do you see yourself as a pharmacist).

Methods:

Study Design: We will use a novel method to evaluate pharmacists' professional identity and roles at the FIP Congress 2023. Q methodology combines qualitative and quantitative techniques to study subjectivity. It allows researchers to identify and describe the shared viewpoints that exist on a topic revealing areas of consensus and disagreement across these views.
Setting: FIP 2023 Congress
Participants: Practicing pharmacists
Data Collection: Data will be collected using an electronic questionnaire on tablets. It involves Q-sorting, where individuals articulate their own viewpoint by ranking a set of statements (the Q-set). The Q-set for this study includes photos and short statements depicting pharmacists' roles. The addition of photographs to the Q-set enhances Q methodology with visual art-based methods to probe the subjective understanding of roles and professional identities. The questionnaire consists of 3 sections:

1. Demographics (e.g., what is your practice setting? Country? Job title? etc.)
2. Q-sort activity (i.e., ranking the role categories)
3. Post-activity reflection (e.g., professional identities, how they approached their Q-Sort activity)

Data Analysis: Data analysis combines factor analysis for the Q-sort to identify clusters of shared viewpoints and qualitative content analysis for the post-activity.

Discussion & Impact:
To our knowledge this is the first study to use Q methodology in identifying the shared viewpoints of international pharmacists on their roles and professional role identities. We believe this approach will be able to dig into the subjectivity of professional identity with an objective lens using Q Methodology. Results will inform the international viewpoint of pharmacists' roles and their professional identities. This study is timely after the impact of the COVID-19 pandemic on the global pharmacy profession. The COVID-19 pandemic has caused a paradigm shift of pharmacists' roles and responsibilities.
This work will contribute to the evidence-based foundation for an update to the FIP/WHO good pharmacy practice guidelines. Additionally, the study findings will be presented at the 2024 FIP congress.

New cases of breast cancer and uptake of antineoplastic medicines at a teaching hospital in North-Central Nigeria

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Introduction: The Global Cancer Observatory reported 124,815 new cases of cases of breast cancer (BCa) in Nigeria in 2020. Antineoplastic medicines have been very useful in changing the prognosis of BCA. There is dearth of information on new cases of breast cancer and their uptake of antineoplastic agents for 2021 in North-Central Nigeria

Objectives: To determine new cases of BCa and the uptake of antineoplastic medicines for 2021 at a teaching hospital in North-Central Nigeria.

Methods:
The study was a retrospective cross-sectional study that involved data abstraction from the cancer registry and patient medical records of the teaching hospital. Data collected were entered and analysed using Statistical Package for Social Sciences (SPSS) version 25. The data analyses involved descriptive and inferential statistics (Chi-Square and Fisher's Exact Test) with statistical significance set at $p < 0.05$. Antineoplastic medicines uptake was classified high, intermediate, and low if the % uptake was > 70%, 50 – 70% and < 50% respectively. Ethical approval for this study (ERCPAN/2022/02/0245) was obtained from the hospital's Ethical Review Committee.

Results:
There were 110 new cases of BCa in 2021 at the teaching Hospital, in Nigeria. However, data abstraction from patient medical folders was possible for only 60.9% (67) of the cases due to non-availability of the patient medical folders. Of the 67 cases whose medical data were abstracted, there was a case of male BCa (1.5%). The study subjects' median age was 49 years while the youngest and oldest were 21 years and 85 years respectively. Also, 79.1% were married, 58.2 % were Muslims, and 65.7% were self-employed. Only 7.5% were on Nigeria National Health Insurance Scheme. Most the study subjects (95.5%) had no family relation with history of cancer while only 17.9% were nulliparous. More than half of the study subjects were at post-menopausal stage. Also, 50.7% had left breast cancer, while 9.0% had bilateral BCa. The modal BCa stage (25.4%) at patient presentation at the oncology clinic was IIIB. Of the 67 BCa cases whose medical data were abstracted from the medical folders, there was 65.7% uptake of antineoplastic medicines. The modal antineoplastic therapy amongst the study participants was chemotherapy: combination regimen docetaxel + cyclophosphamide + epirubicin. However, 3.0% of the study participants were on hormonal therapy. Most of antineoplastic medicines were administered as neoadjuvant (47.7%). There were no significant associations between age, religion, BCa site, BCa stage, marital status and uptake of antineoplastic medicines. However, there was an association between employment status and the uptake of antineoplastic medicines ($p < 0.05$)

Conclusions: The number of new cases of breast cancer is of concern. The uptake of antineoplastic was intermediate. Further studies should be conducted to explore strategies that can improve antineoplastic medicines uptake. Non-availability of patients' medical folders calls for institutionalization of patients' electronic records.

Community engagement to advance the role of pharmacy: Building mutually beneficial partnerships with diverse stakeholders

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Posters Monday, September 25, 2023, 12:30 PM - 2:30 PM

Background: While it is generally understood that community engagement is critical to expanding pharmacy practice and to building mutually beneficial partnerships with diverse stakeholders, strategies for creating sustainable partnerships are often elusive.

Purpose: This presentation will explore ways pharmacists and pharmacy educators at all career stages across the globe can establish a variety of partnerships. These partnerships are critical to support current pharmacy practice, develop new pharmacy practice initiatives, and create mutually beneficial relationships with diverse stakeholders. Building trust is the foundation for developing mutually beneficial partnerships necessary for any expansion of pharmacy practice.

Method: Attendees will review a wide variety of partnership models, discuss best practices in creating, developing and leveraging partnerships, and review how to overcome barriers to trusting partnerships. Individuals and teams attending this session are encouraged to bring their own life examples, because they will benefit from group time and discussion to brainstorm ways they can develop their leadership in these partnerships and ways they can overcome barriers encountered in this critical work.

Results: Attendees will leave with a framework to engage with communities, agencies, and stakeholders. The outcome includes practical ways to navigate challenges often encountered in community-engaged work.

Conclusion: Community engagement is necessary to create opportunities for pharmacy, improve health outcomes for patients and communities, and advance global solutions for global health challenges.

Responsible work with indigenous communities: Global perspectives focused on advancing equity

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Background: Across the world Indigenous peoples share a common history of attempted cultural genocide and forced assimilation, across a spectrum, that was a result of colonialism. Through colonization, Indigenous communities were often stripped of their land, language, Traditional health and wellness practices, and ways of living holistically. The results of this historical trauma are still evident today, as Indigenous communities are often marginalized with lower socioeconomic status because of institutional racism; mainstream communities have the majority of access to healthcare and resources, which has resulted in perpetuated critical health inequities. Substance use is seen at higher rates in Indigenous communities that have experienced colonization, compared to mainstream populations.

Purpose: This diverse panel includes indigenous and non-indigenous pharmacists working to achieve health equity for the respective indigenous communities. They will share their experiences of working effectively with Indigenous communities to achieve health equity and improve substance use related outcomes, and together with the audience will explore ways that cultural strengths can be harnessed. Together we will identify best practices in working with Indigenous communities, as well as ways that good intentions can cause communities harm. We will share commonalities in working successfully with Indigenous communities across the world, as well as ways that each Indigenous community is unique.
Presenters will:
-Describe how historical events have led to historical trauma for Indigenous communities, and how those experiences have led to an over-representation of Indigenous people with substance use and mental health disorders, in the criminal justice system, and in marginalized society
-Explain how historical trauma combines with systemic racism, and sometimes isolated geographies, to create inter-related health disparities for Indigenous communities
-Describe approaches, tools, and resources that can effectively build relationships with Indigenous communities
Method: Attendees will leave with tools and ideas on how to effectively build relationships with Indigenous communities, how to approach these communities with curiosity and respect, the ways that reconciliation with Indigenous communities may look, and the ways that Indigenous communities may build on community strengths by combining Traditional and Western approaches. We will discuss how work with Indigenous communities may be compared to the trusting pharmacist/patient relationship, including the role that unconscious bias and our own blind spots may keep pharmacists from fulfilling their public health roles and working equitably with Indigenous communities.

Results: Participants will gain new considerations in culturally-sensitive interpersonal communication. This presentation will support pharmacists and academics who strive to incorporate justice into their work with Indigenous people and Indigenous communities.

Conclusion: Indigenous pharmacists in the field of community engagement with Indigenous communities will share ways they have improved health outcomes and community working relationships. The structure of this session will be a hybrid panel discussion interspersed with small table discussions. Facilitators will ask poignant questions to panelists in order to help understand the core outcomes. Attendees will assess ways they can incorporate community engagement into a pharmacy practice.

Application of an evidence to decision framework: Developing an opioid deprescribing guideline

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Posters Tuesday, September 26, 2023, 12:30 PM - 2:30 PM

Background:
Patients, their caregivers, and prescribers may be willing to pursue stopping or reduction (deprescribing) of opioids, but evidence is limited to guide this decision.

Purpose:
To develop an evidence based opioid deprescribing guideline for patients over 50 years of age.

Method:
A guideline group was created with equal opportunity memberships and evidence-based processes. Through a collaborative and systematic approach, the priority setting, target audience, topic selection and question generation was developed with inputs from engaged prescribers, researchers, statisticians, methodologists, and patient partners. Education was provided to patient partners to equip them for guideline development engagement. The GRADE evidence to decision process was used to critically review applicable evidence (e.g., effects, importance of outcomes and interventions, values, preferences and utilities, baseline risk, burden of disease, resource use, effects on equity etc.). The guideline group used the GRADE approach to evaluate the certainty of the body of evidence and determine the strength of recommendations.

Results:
Guideline group members included 24 national and international professionals / experts in the field including those with lived experience (patient partners). A scoping review (utilizing the PRISMA framework), environmental scan, Delphi process, and systematic review (utilizing the PRISMA framework including the GRADE approach) were the methods selected and implemented to create the scope of the guideline. The perspective of the guideline was selected with key outcomes identified and evaluated. Six supplemental literature reviews were conducted by guideline group members to determine if the drafted recommendation could be acceptable among individuals on long-term opioid therapy, their caregiver and prescribers; the cost-effectiveness of implementing drafted recommendations; the potential need for, and access to, patient and prescriber resources that support the recommendation and build implementation readiness among target population; and the feasibility of the recommendation within the reality of the current health system and the lives of those experiencing chronic pain. It was decided patient partners would be surveyed to confirm findings of these supplemental searches and approval of the drafted recommendation, and its affiliated evidence (Evidence-to-Decision Making Table), would be reviewed and approved by guideline group members prior to finalization and dissemination.

Conclusion:
A GRADE Evidence to Decision (EtD) framework was successfully applied, resulting in patient-informed, evidence-based opioid deprescribing recommendations that can be utilized in the context of providing care to individuals on long-term opioid therapy for adults over 50 years of age. Future avenues to explore include the dissemination, implementation, and evaluation of this recommendation in long-term opioid therapy contexts.

Addressing social determinant of health needs by community health workers during Covid-19

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Posters Tuesday, September 26, 2023, 12:30 PM - 2:30 PM

Background: Dorchester County, a medically underserved area in Maryland, suffers from high COVID-19 vulnerability rates due to minorities and non-English speakers, crowded living and working areas, older populations with comorbidities, housing and transportations issues, and people who are unemployed or low-income. Compared to other Maryland counties, Dorchester County is 75% more vulnerable, making it harder to recover physically and economically from COVID-19. Minority populations have had disproportionate morbidity and mortality rates with COVID-19 compared to other racial groups. During this time, 6,110 (19.1%) of residents were vaccinated with at least one COVID-19 vaccine dose and 3,439 (10.8%) were fully COVID-19 vaccinated. Community health workers (CHWs) are uniquely positioned to deliver services that address social determinants of health to connect rural communities to needed resources. This project determines social determinants of health (SDOH) needs from COVID-19 in minorities and the impact of the CHW in rural communities.

Methods: Community health workers participated in outreach activities with faith-based and community organizations as well as the health department to provide COVID-19 education in three zip codes in Dorchester County. All informational materials were disseminated to the community in both English and Spanish. Door-to-door individual educational services and group sessions to improve COVID-19 screening and vaccinations were performed. CHWs performed social determinants of health needs assessments for residents and provided referrals, personal protective equipment, and COVID-19 home test kits. Focus groups and interviews conducted on CHWs, their supervisors, the residents, and community stakeholders were conducted to measure the impact of the program.

Results: Community health workers provided 1,297 households and 1,809 minorities with COVID-19 education, mostly in African-American households. Additionally, they conducted 37 group COVID-19 educational sessions for 701

individuals. This resulted in 401 minorities being vaccinated for COVID-19. An analysis of social needs led to 83 referrals for outside services for transportation services (n= 166), COVID-19 home kit distribution (n= 571), behavioral health services (n= 12), mobile pantries (n= 15), and child care services (n= 23). Employment, housing and utilities, and social support were not challenges faced by the residents. There were 1,629 PPE distributed. Approximately 75% of the residents trusted the COVID-19 information provided by the CHWs. The main barriers to CHW effectiveness included COVID-19 misinformation, a lack of government support, coordination of services, and limited internet needed to implement the services.

Conclusion: Community health workers have a positive impact on minorities in Maryland to address SDOH needs and optimize outcomes in the setting of COVID-19. The pandemic worsened the existing healthcare access and challenges for those living in rural communities, and CHWs can connect minorities to necessary services.

Data linkage strategies to enhance community pharmacy participation in research and reduce research fatigue

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Background: Research participation may be a burden on healthcare settings and systems. Research fatigue is observed, particularly in settings with frequent requests for participation such as community pharmacies, often with little direct benefit but impacting on workloads and outputs. With significant amounts of information now available electronically, we sought to reduce the burden of participation in the community pharmacy setting by using data linkage strategies to collate most information required, rather than having pharmacists collect detailed patient demographic information available elsewhere.

Purpose: The DCMedsRec trial evaluated the impact of a community pharmacy intervention on the risk of 30-day unplanned readmission, underpinned by electronic access to the Hospital Discharge Summary via My Health Record. Most data used to measure factors related to the outcome was accessible electronically.

Method: DCMedsRec was a non-blinded randomised controlled trial of an intervention by community pharmacists in Melbourne, Australia. Eligible patients were randomised to either a usual care group or an invitation to a structured medication reconciliation service by community pharmacists within 30 days post hospital discharge. Full protocol available1.
Four databases were linked to evaluate the impact of the DCMedsRec service. The following discrete data sources were linked on conclusion of the trial to create a de-identified database for analysis.

1. Master Patient Randomisation Record - details for all patients randomised to the trial compiled from information recorded by the hospital pharmacist including allocation of a unique Trial ID.
2. A community pharmacy service report (REDCap® extract) - Pharmacies were reimbursed for services on submission of an electronic data collection/claim form using REDCap®. Community pharmacists used a streamlined REDCap® survey link to record patient data at the point of service delivery including the Trial ID to facilitate linkage to demographic data.
3. Hospital admissions data - Extracts from the hospital's electronic medical record (EMR) provided data on all admissions for the trial period including demographic information and up to 40 discharge diagnoses which were then linked to data collected by community pharmacists and hospital discharge prescription data.
4. Hospital discharge prescription data - The EMR was used to confirm participant eligibility status and generate a comprehensive medications list.

Data sets 1, 2 and 3 were linked to the trial master patient randomisation record generating a final de-identified trial dataset for analysis. The following identifiers enabled data linkage and cross checking for data integrity: Hospital Unique Record Number (URN), admission episode number, trial ID and date of birth.
Focus groups and interviews of community pharmacists were conducted to evaluate the impact.

Results: Data linkage information was a contributing factor to the high participation rate (50/200 pharmacies in catchment area). Pharmacists indicated that participation in the research was straightforward, enhanced their engagement with patients and was an enjoyable process. There was no negative feedback.

Conclusion: Using existing electronic patient information provides an opportunity to generate richer datasets for analysis, while reducing the burden of data collection on busy healthcare professionals.

Pakistani populations awareness and attitudes towards physician–Pharmaceutical company interaction: A cross-sectional study

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Posters Tuesday, September 26, 2023, 12:30 PM - 2:30 PM

Background: Drug promotion is a factor that may alter the patients behavior and trust on the physician.
Objective: This study was conducted to to determine the awareness and attitudes of the Pakistani population regarding physician–pharmaceutical company interactions and its affect on the patient trust.

Methods: The data were collected from pharmacy outlets and primary health care clinics located in cities of six randomly selected districts of Pakistan. Those individuals

(age ≥18 years) who have just completed their visit to the physician were approached. Descriptive analysis were performed for all variables by using SPSS (IBM version 26).

Results: A total of 3,852 participants fully completed the study with response rate 89.5%. Of total, 30.9% were female and two-thirds (66.7%) were aware of drug representatives' visits to clinics. The majority of respondents were aware of pharmaceutical company material presence (or absence) in the doctors room (56.6%), patient education materials (73.4%), and 60.8% thought that receiving gifts from companies was "wrong/unethical" practice for physicians. A minority said that they have lower trust on physicians for using drug company notepads or pens (16.7%), going on trips sponsored by the company (16.7%), accepting gifts <15,000 PKR (90.3 US$) (26.7%), and accepting gifts >15,000 PKR (90.3 US$) (40.0%).

Conclusion: Survey population were well aware of physician–pharmaceutical company interactions. The general population were more aware of pharmaceutical company presence (or absence) in physicians' offices than about gift-related practices of physicians. Trust on the physician was not affected by small gifts but altered by the large gifts.

Does our knowledge, attitudes and practices towards excipients ensure patient safety or do we need training?

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Background: Excipients pose an increased risk of adverse drug reactions occurring especially in vulnerable populations such as neonates, compared to other patient populations, due to their underdeveloped metabolic and excretory capabilities. Current regulatory requirements are a fundamental barrier to the advancement of research and awareness of the safety of excipients in neonates. Although neonates are frequently exposed to potentially harmful excipients, healthcare professionals, including pharmacists appear to lack the knowledge and attitude towards excipients, reflected in their practice to ensure patient safety.

Purpose: The objective of this study was to provide excipient training to pharmacists and pharma y students and investigate the impact and outcomes of this training on their knowledge, attitudes, and practices toward excipients.

Methods: A training workshop was designed for participants: to describe the role of excipients and recognize their impact on drug efficacy and stability of formulation; to identify patient groups such as neonates that are more susceptible to adverse reactions caused by excipients; to describe the impact of excipients on patient safety and examine how pharmacists can reduce adverse medicine events caused by excipients in practice. A mixed methods design was utilised to evaluate the training workshop utilising a multiple-choice quiz alongside pre and post surveys to determine the impact of the training, whilst semi-structured interviews were undertaken to determine the outcome of the training. Quantitative data were analysed using descriptive statistics and small sample statistics, and qualitative data were thematically analysed.

Results: Pharmacists and pharmacy students reported low levels of knowledge on excipients and did not exhibit the appropriate attitudes and practices towards ensuring the detection of any adverse effects due to excipients in the practice. However, the training workshop was well received with especially the knowledge and attitudes impacted with significant improvements after completion of the training, most notably in awareness of potentially harmful excipients, awareness of susceptible patient populations and practices relating to consideration of excipients when recommending or substituting products. The outcome of the training was also positive with participants reflecting their knowledge on excipients was lacking prior to the training, "Yeah, no, not for excipients. It wasn't good. I didn't have a good knowledge" with their practices improving after the training "I definitely take more time to consider excipients, or yeah if someone is having some type of reaction, I'll really look into it, even more so if there is poly drug use".

Conclusion: Whilst pharmacists are integral to the provision of accurate information on medication safety, there is clearly a gap in training regarding excipients and their safety. This novel pilot study has provided information to substantiate that excipient training is a feasible method to improve the knowledge, attitudes and practices of pharmacists and pharmacy students towards excipient safety. Future initiatives should involve the delivery of this training expanded to more pharmacists and to other healthcare professionals.

Building a contemporary clinical inpatient organisation structure-using the world health organization, workload indicators of staffing need tool

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Posters Tuesday, September 26, 2023, 12:30 PM - 2:30 PM

Background
SA Pharmacy services South Australian metropolitan and rural public hospitals, with a workforce of 627 full time equivalent. Approximately 35% of this workforce provide inpatient clinical pharmacy services. SA Pharmacy uses the Society of Hospital Pharmacist of Australia staffing ratios to determine staffing number and allocation. Over time, increased out of hospital services and reduced length of stay has changed the work of our clinical workforce. Increasingly staff have indicated our staffing ratios are less representative of the needs of prioritised patients and demand for other activities of the clinical pharmacy team.

Purpose
To build a contemporary clinical (inpatient) organisation structure based on the clinical care needs of prioritised patients and in consideration of adequate time allocation to non-core patient care activities that team members are required to undertake.

Method
A literature search identified the World Health Organization Workload Indicators of Staffing Need tool. The tool encourages reliance on workforce expertise to build understanding of the core patient care tasks and average time requirement for these tasks and additionally, to understand the tasks and time required by each profession and classification for other, no less important, non-core patient care activities such as protocol review, team meetings and knowledge sharing. These 'other' activities are referred to in the tool as allowance standards. The method utilised to gather this expert knowledge was via all-staff surveys. Human resource reports were sourced to complete the understanding of staffing availability through identifying the average staff leave each year.

Results
Overall 29 staff provided detail of average time core patient activities take and 40 staff on the time required for 'allowance standards'. The core patient care activities and average times were identified as follows:

- medication history, 60 minutes for a technician plus 20 minutes for a pharmacist clinical review; 52 minutes for a pharmacist (includes clinical review)
- mid admission clinical review 31 minutes
- discharge and transfer of care 36 minutes
- medication list provision 22 minutes (30 minutes if drafted by a technician with an extra 12 minutes for pharmacist review)

For every full time equivalent technician an additional 0.05 full time equivalent is required to cover the 'allowance standard' requirements of that professional classification stream. For base grade and senior pharmacists this requirement is 0.33, for pharmacists in team leadership positions 0.72 and for our resident pharmacists who have a research component to their roles 0.49 is required.

Conclusion
We now have a robust understanding of contemporary staffing requirements enabling us to allocate our existing budgeted staffing to optimise service delivery and staff wellbeing. SA Pharmacy has an evidence base to refer to in business plans and update as quality improvement projects changes occur. Further the structure provides us with a tool to redesign our workforce through the delegation of tasks to the most efficient workforce preserving our highest skill practitioner to provide the most complex care required.

Community pharmacy practice-based research networks (PBRNs): What works, for whom and in what contexts? A realist review protocol

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Background: Community pharmacy practice-based research networks (PBRNs) are collaborative networks of researchers and practising community pharmacists. PBRN research addresses problems and questions that arise in daily pharmacy practice. These networks are resource intensive; however, it has been proposed that the resource investments are justified—given the proposed improvements in healthcare quality and knowledge translation. Community pharmacy PBRNs have been established around the world, providing opportunities for pharmacists to be actively involved in research; however, it is not yet clear if community pharmacy PBRNs achieve their intended outcomes. This realist review aims to improve understanding of whether, how, for whom and in what contexts PBRNs support community pharmacists' research engagement and knowledge translation.

Purpose: The objectives of the realist review are:

1. To develop and refine a program theory to explain how and why community pharmacy PBRNs work or don't work to support research engagement and knowledge translation, for whom and in what contexts.
2. To use the program theory to provide preliminary recommendations for developing and implementing community pharmacy PBRNs.

Method: The review begins with the identification of an initial program theory to explain stakeholders' assumptions and ideas about whether, how and why community pharmacy PBRNs influence research engagement and knowledge translation. An iterative process will be used to search for evidence, select and appraise papers, extract, organise and synthesise the data. This data will be used to confirm, refute or refine each component of the initial program theory to produce a refined program theory. The realist review will follow the Realist And Meta-Narrative Evidence Synthesis (RAMESES) publication and quality standards for realist syntheses.

Results: This realist review of a broad range of literature sources will provide actionable guidance for researchers, professional organisations, policymakers and network staff. The findings will support community pharmacy PBRNs to achieve their intended outcomes.

Conclusion: This realist review is the first stage of a realist evaluation of a new community pharmacy PBRN. This review will contribute to the body of knowledge by generating a refined program theory to explain how, why, for whom and in what contexts community pharmacy PBRNs support research engagement and knowledge translation. The program theory will be used to generate recommendations for developing, implementing, and maintaining community pharmacy PBRNs.

The best thing that has ever happened to me: The NSW pharmacist-administered depot buprenorphine pilot

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Background: In 2022, around 55 000 Australians received opioid agonist therapy (OAT), a modality of choice in managing opioid dependence and opioid use disorder. Depot buprenorphine/long-acting injectable buprenorphine (LAIB) is a subcutaneous depot formulation with extended activity and reduced frequency of administration which has become an important OAT option in Australia. Community pharmacists provide about 85% of all OAT dosing in Australia, and administration of injectable medicines forms an important part of the evolving scope of pharmacists. During 2022-2023, 49 NSW pharmacies took part in a pilot program to undergo training and administer LAIB, with OAT clients receiving community dosing at no cost, and pharmacies receiving honorarium fees to provide LAIB dosing.

Purpose: To qualitatively evaluate a pilot LAIB program in NSW community pharmacies.

Methods: Semi-structured interviews and open-ended online surveys were administered to key stakeholder groups at various points throughout the pilot, with $20 gift cards offered for participation. Interviews explored experiences from different perspectives and the barriers and facilitators of community provision of LAIB services. Pharmacists volunteered to take part in the pilot program, then were offered research participation. Clients referred to pilot pharmacists for LAIB administration were offered research participation. Other stakeholders, such as OAT prescribers and clinic nursing staff were invited by convenience sampling. The pharmacist training was assessed both quantitatively using checkpoint assessment outcomes and qualitatively with interviews.

Results: As a result of pilot training, pharmacists "felt very confident providing the service" and reported high levels of satisfaction with training, being "quite prepared and trained up to administer". Clients had complex views, primarily around stigma, cost, and accessibility of care. Overall, clients described pharmacy LAIB dosing as "excellent" and "professional" as well as "convenient and safe". Clients strongly preferred community dosing, where "nobody looks down on you", noting dosing at pharmacy was "not as stigmatized as going to a drug clinic". Clients "couldn't be happier" and were "confident" in pharmacist abilities, with some expressing that "the pharmacist is way better trained" or when administering LAIB that their pharmacist "actually does it better than most nurses". Some clients contrasted this to "judgemental, painful, hostile and impersonal" experiences of clinic dosing. Clients consistently identified future fees as "really hard" and a barrier to community dosing after the pilot, noting LAIB "should be free" or "same as any other monthly medication". However, clients had nuanced perspectives, with some saying they would "rather pay", and avoiding clinics made pharmacy fees "definitely worth it". Prescribers and other stakeholders had positive opinions around "great" improvements to LAIB accessibility, though cited dosing fees as an unresolved issue.

Conclusion: The pilot was highly perceived by participants. Pharmacists were positive about their involvement in a novel professional service, and with the training received, and provided informative opinions regarding a new service and the provision of OAT in NSW. Clients were very satisfied with pharmacy LAIB services, though perceive dosing costs as a major concern.

Virtual reality simulation of suicide risk assessment performed by pharmacy learners

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Background: With the COVID-19 pandemic, there is an increased prevalence of suicide ideation and mental health concerns in health care system. Community pharmacists are often the first point of contact for patients with healthcare needs. It is crucial for pharmacists to be trained in interacting with patients at risk or with ideations of suicide. Virtual reality (VR) offers the opportunity for pharmacy learners to conduct a Suicide Risk Assessment (SRA) in a simulated clinical environment.

Purpose: This pilot study builds on preliminary findings from VR SRA user testing. The purpose of this study is to explore the feasibility and risks/benefits of using VR as a tool for pharmacy learners to be trained in conducting a SRA.

Method: Six pharmacy students participated in the VR SRA training session at the Centre for Addiction and Mental Health (CAMH). Students were given the opportunity to try two different patient profile simulations using VR headsets, where various pre-developed questions prompted specific dialogue. A self-reported pre- and post-training evaluation was used to identify changes in confidence pertaining to the learning objectives, engagement, general tolerability of VR, intention to change practice, and the overall training experience. A group debrief session was conducted after the training.

Results: Post-training evaluations showed that VR was associated with relatively high scores for meeting the learning objectives (M=3.17 out of 5, SD=0.79) and was regarded as an engaging training experience. User testing suggests that VR may have greater educational benefit than traditional desktop tools for teaching pharmacy students how to conduct a SRA.

Conclusion: Participants reported overall satisfaction with the training and gains in confidence were seen across most

of the learning objectives when comparing pre- and post-training evaluation scores. This pilot study will help inform the healthcare simulation community about the effectiveness of VR as a teaching modality in pharmacy education and practice.

Connecting dots to advance professional networking and the pharmacy profession in Taiwan

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Background: Professional networking is essential to support individual professional development and the advancement of a profession. Compared to the United States (US), there are relatively limited networking opportunities in Taiwan for pharmacy professionals across different practice settings and pharmacy students to engage in regular networking. To address this issue, a group of Taiwanese pharmacists in both Taiwan and US has established Taiwan-Overseas Pharmacy Networking (TOPharmNet), a social media based pharmacy organization, to promote professional networking for Taiwanese pharmacy professionals, including pharmacy students, pharmacists, and pharmaceutical scientists, globally with the aim of advancing the pharmacy profession in Taiwan.

Purpose: The purpose of this study is to describe the characteristics and key achievements of TOPharmNet since its inception in September 2020.

Method: In September 2020, TOPharmNet (started as a Facebook group) was founded to connect Taiwanese pharmacy professionals globally. To encourage member engagement, we hosted a variety of online professional development programs two to three times per month via Zoom, such as Pharm Talk (invited seminars from a variety of experts in the fields of pharmacy practice and pharmaceutical science), Pharm Forum (panel discussions collaborated with Taiwan Young Pharmacists' Group to address pharmacy-related issues as pharmacy continuing education with post-forum survey), and career development networking events. All events were hosted via Zoom and were also open to the public interested in the pharmacy profession and pharmaceutical science. All recordings were accessible to group members if consented by speakers. We used descriptive statistics to characterize the composition and performance of this innovative pharmacy networking platform.

Results: As of April 2023, we have recruited a total of 965 active members in the field of pharmacy, of whom 64% are female. Members reside in the following countries: 677 in Taiwan, 220 in the United States, 11 in the United Kingdom, 11 in Canada, 10 in Japan, 5 in Singapore, 4 in Germany, and 27 in other Asian and European countries. From November 2020 to April 2023, we have hosted 82 events, including 66 Pharm Talks (with 17% focused on academia, 42% on pharmaceutical industry, and 41% on pharmacist practice) and 16 Pharm Forums. A total of 2026 attendees participated in our Pharm Forums, and 72% of pharmacist attendees (n=1470) successfully claimed continuing education credits, which were accredited by the Taiwan Society of Health-System Pharmacists. The median number of attendees in Pharm Talks was 44, with an interquartile range ranging from 33 to 57. Of the 121 speakers/panelists invited, 63% (n=77) were overseas speakers, representing countries such as Japan, Singapore, Canada, United States, United Kingdom, Germany, Finland, and the Netherlands.

Conclusion: Our study suggests that a social media-based networking platform has potential to facilitate professional networking among Taiwanese pharmacy professionals globally. Our future direction is to incorporate TOPharmNet into a non-profit organization to continue supporting the professional development of Taiwanese pharmacy professionals both in Taiwan and overseas.

The uptake and the effectiveness of direct-acting antiviral agents in drug users in Southern Taiwan

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Background: Hepatitis C virus (HCV) infection is a public health issue in Taiwan. To fight against HCV endemic in Taiwan, the national health insurance in Taiwan covers pan-genotypic direct-acting antiviral agents (DAAs) treatment for HCV-infected patients. Drug users (DUs), especially injection DUs, have a much higher prevalence of HCV infection than the general public. Yet, it is unclear the uptake and effectiveness of DAAs in HCV-infected DUs in Taiwan.

Purpose: We aimed to investigate the access, acceptance, and completion rates of DAA treatments for HCV-infected DUs in Taiwan and to evaluate the effectiveness of the DAA treatments in DUs compared to non-DU HCV-infected patients.

Methods: Patients who attended the Methadone Clinics for HCV treatments from 2020/01/01 to 2022/03/11 in a tertiary medical center in Southern Taiwan were included. The patients' medical records were used to collect age, sex, comorbidities, virological data, and medication profile. The DU patients were then propensity score-matched to the non-DU patients who attended the Hepatobiliary Clinic with age, gender, HCV genotypes, DAA regimens, and liver disease status. Chi-square test and Mann-Whitney U test were used to compare the two groups. Robust Poisson regression was used to estimate the risk ratio (RR) and the 95% confidence interval (95% CI).

Results: There were 181 opioid DUs included in this study. All of them received anti-HCV antibodies screening and 172 (172/181, 95.0%) of them showed positive results. Ninety-eight (98/172, 57.0%) antibodies-positive patients were successfully referred to the Hepatobiliary Clinic for HCV RNA testing, and 82 (82/98, 83.7%) of them were HCV RNA positive. Seventy patients (70/82, 85.4%) received DAA treatments, and only 1 patient (1/70, 1.4%) failed to complete the treatment.
Fifty-nine of the DU patients were matched to 177 non-DU HCV patients. The median age of the DU group was 50 years old, and more than 90% were male. There were no significant differences in age and sex between the two groups. No patient in the DU group was DAA treatment-experienced, while 6.2% (11/177) of the non-DU patients were treatment-experienced. The leading HCV genotypes in the DU group and the non-DU group were genotype 6 (25/59, 42.4%) and genotype 2 (96/177, 54.2%), respectively. Pan-genotypic regimens were prescribed to over 84% of patients in both groups. There were no significant differences in sustained virological response at post-treatment week 12 (SVR12) (DU: 97.9%, non-DU: 96.9%, p=1.000). There were more patients in the DU group who did not return for 3-month follow-ups after the end of the DAA treatment than the non-DU group (DU: 17.2% vs. non-DU: 6.9%, p=0.019).

Conclusion: The current referral mechanism in Taiwan, which attributes the responsibility of HCV infection confirmation and treatment to Hepatobiliary Clinics, results in more than 40% of the antibodies-positive patients not confirming the diagnosis by the RNA testing and many of the treated DU patients losing follow-ups after the therapy. The adoption of HCV reflex testing or the engagement of psychiatrists in HCV infection care may increase the acceptance and follow-ups of DU patients in HCV treatments.

National trends in antidepressant use among Australian residential aged care facilities over fourteen years (2006-2019): The call for pharmacists to optimise safety and appropriateness

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Background: Older people living in residential aged care facilities (RACFs) experience high rates of depression, yet mental health services are accessed by less than 3% of this population. Australia has the third highest consumption of antidepressants among Organisation for Economic Cooperation and Development (OECD) countries. The recent Royal Commission into Aged Care Quality and Safety in Australia identified potentially inappropriate use of psychotropic medicines in RACFs, prompting increased attention to safe use of benzodiazepines and national monitoring of antipsychotics. However, antidepressant use, despite being the most frequently prescribed psychotropic medicine to residents of RACFs, remains largely unexplored.

Purpose: To investigate national trends in antidepressant use among older people living in RACFs in Australia between 2006 and 2019.

Method: A repeated, cross-sectional analysis was undertaken using linked pharmaceutical, health, and aged care data from the National Historical Cohort of the Registry of Senior Australians, which contains information for >3.5 million individuals accessing aged care services between 2002 and 2020. Individuals aged ≥65 years who were permanent, long term (≥100 days) residents of Australian RACFs were included. Annual prevalence of antidepressant use and number of defined daily doses (DDDs) per 1000 resident-days from 2006-2019 were determined from linked pharmaceutical claims dispensing data and reported overall, and by antidepressant type and class. Poisson and negative binomial regression models adjusted rates by age and sex and estimated incidence rate ratios (IRRs) and 95% confidence intervals (CIs). Analyses were conducted for the overall cohort from 2006 to 2019 and stratified by dementia status from 2009 onwards due to aged care assessment data availability.

Results: Overall, there were 779,659 residents included from 3,371 RACFs (786,227,380 resident-days analysed). The median age was 85 years (IQR 80-89), two-thirds (65.2%) were female, 48.6% were living with dementia and 33.6% had diagnosed depression. Age-sex adjusted prevalence of

use increased from 46.1% (95%CI 45.9-46.4) in 2006 to 58.5% (95%CI 58.3-58.8) in 2019 (IRR 1.02, 95%CI 1.02-1.02). Adjusted mirtazapine use increased from 8.4% (95%CI 8.2-8.5) in 2006 to 20.9% (95%CI 20.7-21.1) in 2019 (IRR 1.07, 95%CI 1.07-1.07), however, the trends in use of other antidepressants remained steady. In residents with dementia, crude prevalence of antidepressant use increased from 39.5% (95%CI 39.2-39.8) to 47.6% (95%CI 47.3-47.9) between 2009 and 2019, compared to 44.6% (95%CI 44.3-44.9) in residents without dementia in 2009 to 48.3% (95%CI 48.0-48.6) in 2019. Antidepressant utilisation increased from 350.3 (95%CI 247.6-353.1) to 506.0 (95%CI 502.8-509.3) age-sex adjusted DDDs per 1000 resident-days between 2006 and 2019 (IRR 1.03, 95%CI 1.03-1.03), whereby the number of DDDs of mirtazapine per 1000 resident-days had an overall increase of 6% annually (IRR 1.06, 95%CI 1.06-1.06).

Conclusion: This nationwide study shows increasing trends in antidepressant use among residents of Australian RACFs between 2006 and 2019, largely driven by increased use of mirtazapine. In 2019, there was enough quantity of antidepressants supplied to treat 50.6% of residents of Australian RACFs daily. The high prevalence of use indicates an opportunity for pharmacists to contribute to optimising antidepressant use in RACFs.

Starting a conversation with pharmacists about 'patient-centred care'

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Background: Contemporary definitions of patient-centred care (PCC) challenge practitioners to view patients as whole persons with emotional, personal and social lives outside of clinical encounters, and to support patient preference and active participation. Critics argue PCC is subject to interpretation, hollow claims, gaps between intention and reality, and consumerist (mis)use. At times PCC is an aspirational term, broadening practitioners' biomedical perceptions of patients as diseased organs needing treatment or poor health behaviours needing change - most notably in chronic conditions. Pharmacists would recognize conflict between individual patient preference and evidence-based guidance, for example, around adherence and self-management. We suggest the origins of PCC and why pharmacists adopted it are poorly understood. Furthermore, it is unclear if PCC is positively guiding the profession and the time pharmacists spend with patients delivering care for chronic conditions, and supporting prevention and selfcare.

Purpose: The objectives of this research are to identify the origins and current use of patient-centred care in pharmacists' professional practice standards across several health systems, and to seek evidence for its effects on pharmacist behaviours and patient outcomes.

Method: We sought and examined publicly available professional practice documents in Australia, New Zealand, Canada and the United Kingdom. Document analysis included a chronology of when PCC was introduced (for example, version) and how it appeared. We further conducted a scoping review of the evidence for PCC in pharmacy practice. Thematic analysis was conducted of study designs and conclusions.

Results: We found that PCC originated in 1960s psychotherapy, before crossing into generalist medicine this century with increasing use in the last decade. In all countries searched, PCC was found to be a leading term in current pharmacist practice standards, having been adopted wholeheartedly in professional competencies, ethics and standards of practice. Scoping review studies show there is little evidence of a positive effect on process (the actions and behaviours of pharmacists) or outcomes (what patients themselves find meaningful and beneficial from care) to support the place of PCC as a leading term in the profession's standards. Study designs include assumptions of the value of PCC and conclusions not justified by the data presented.

Conclusion: Pharmacy practice of the future requires a skilled workforce supported by clear professional practice guidelines. A nuanced and context sensitive use of PCC is needed if pharmacists are to positively affect health outcomes. We propose practical and demonstrable additions to PCC that can guide pharmacist behaviours, such as: 'curiosity', 'compassion and 'advocacy'. Undoubtedly, pharmacists want to do the right thing by their patients and developing therapeutic relationships with patients, particularly those with chronic conditions, includes navigating the tension between evidence-based guidance and holistic care. The question remains, and to which we wish to start a conference conversation: How does PCC in professional practice policy change practitioners' behaviours and, importantly, patient outcomes?

Pregnant women and opioids use in United States: Disparity in access to treatments and a need for policy reformation

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Pregnant women who use opioids face complex challenges that can have serious consequences and long-lasting effects for both the mother and the developing fetus. While the opioid epidemic has received considerable attention in recent years, pregnant women who use opioids continue to face disparities in access to opioid treatment.

The disparity in access to opioid treatment by pregnant women can be influenced by various factors, including limited access to opioid treatments, stigma and discrimination surrounding opioid use, socioeconomic status, race/ethnicity, geographic location, underutilization of Medication-Assisted Treatment (MAT), and limited or lack of insurance coverage. These factors can interact with one another, leading to complex barriers to treatment access.

Additionally, historical trauma and ongoing experiences of discrimination can lead to mistrust in the healthcare system, contributing to reluctance to seek care for Opioid Use Disorder (OUD) among communities of color.

Some states have laws and policies, such as mandatory reporting laws, that can deter women from seeking care for OUD. Policies criminalizing drug use or denying certain populations access to treatment can exacerbate this problem, hindering their ability to receive essential care, MAT, behavioral therapies, and other supportive services. Additionally, recent legislation and policies have resulted in negative consequences for women and their children, further perpetuating the stigma and fear associated with criminalization. Furthermore, many states require healthcare professionals to report or test for prenatal drug exposure which can be used as evidence in child welfare proceedings, but this strategy has been criticized for its potential to lead to racial profiling.

Having examined the risks and the existing policies criminalize and exacerbate disparity in healthcare access specifically towards this demography, a call for urgent policy reform that caters to their health needs. The existing policies have failed to address this issue, leading to adverse health outcomes for both the mother and child, especially in minority communities. To address this disparity, policy on decriminalization and redesign of child protective services, funding for treatment and support services, increasing awareness, peer support groups, and parenting education programs. At the community level, a comprehensive approach to includes policy reforms and community-based interventions to include telemedicine, increasing education and awareness campaigns, and addressing social determinants of health. At the institutional level, a renewed emphasis on patient privacy to ensure that pregnant women are protected and not penalized for seeking treatment and reducing stigma and discrimination by creating a safe and welcoming environment for patients, using non-stigmatizing language, and avoiding judgmental attitudes by healthcare professionals. Lastly at the individual level, a policy to encourage seeking medical help, collaborating with providers, and adopting a non-punitive approach to care to reduce stigma, improve engagement to treatments, and intentionally quitting behavior that triggers the use of opioids, follow-up, and adherence to medications and treatment regimens.

Community pharmacist-administered Covid-19 vaccinations in Abuja, Nigeria: A patient survey on satisfaction and motivation to get vaccinated

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Expanding the role of pharmacists in vaccination recently became a focus of Nigerian pharmaceutical organizations with Association of Community Pharmacists of Nigeria(ACPN) taking the lead in this advocacy. ACPN has organized in-service training for community pharmacists and has received authorization by National Primary Health Care Development Agency that validates trained pharmacists to vaccinate. This research assess patient level of satisfaction and factors determining their choice of taking COVID-19 vaccine at community pharmacies in Abuja, Nigeria. This study is being funded by FIP Social and Administrative Pharmacy Section.

An ethical approval was received from the National Health Research Ethics Committee(NHREC) and assigned an approval code. Twenty six trained community pharmacists were invited to participate, out of which eleven have already begun COVID-19 vaccination. Eight out of the eleven consent to participate in the study and validated the study survey tool during a stakeholders engagement meeting. At the community pharmacy level simple random sampling was used to set a sample size. Data collection is currently in process and will be completed by 30th June. Data will be analyzed using open source R and its packages. Descriptive and inferential analysis will be conducted where appropriate.

Little is known about patient perspectives particularly in developing countries such as Nigeria. This study will serve as a source of evidence; representing patient perspectives of the vaccination services received in Abuja Nigeria.

A comparative study of pharmaceutical storage facilities and stock levels of essential medicines in government healthcare institutions of different settings in a rural district in Sri Lanka: Study protocol

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Background:
Adequate supply of essential medicines is a vital factor in ensuring primary healthcare delivery. Adhering to good storage practices is essential to maintain the quality, safety, and efficacy of the medicines provided. Despite various guidelines and circulars promoting good storage practices, many healthcare institutions operate with sub-optimal warehouse facilities. Therefore, assessing pharmaceutical storage facilities and stock levels of essential medicines in government healthcare institutions of different settings is crucial. The Monaragala district in Sri Lanka is the second-largest district and predominantly rural, making it important to assess the facilities and stock levels of a rural district to ensure the availability of health facilities to the public.

Purpose:
This study aims to assess and compare the pharmaceutical storage facilities and stock levels of selected essential medicines in different settings of government healthcare institutions in the Monaragala district, Sri Lanka.

Method:
A descriptive cross-sectional design will be used for this study, with retrospective data collection methods applied where necessary. All government healthcare institutions of different settings in the Monaragala district will be the population. The study will be conducted at six selected government healthcare institutions, representing all six types of healthcare settings in the district. Data collection will be done using survey forms adapted from the WHO operational package for assessing, monitoring, and evaluating country pharmaceutical situations (WHO Geneva 2007). On-site observations of warehouses will also be conducted. Data will be analyzed in accordance with WHO Operational Package guidelines.

Results:
Ethics approval for this study has been applied by the Ethics Review Committee of the Open University of Sri Lanka. Permission to access the government healthcare institutions for data collection will be obtained from the relevant authorities. Essential medicines for 28 diseases including essential medicines for pediatric patients were selected with the assistance of a Clinical Pharmacologist. The study will be completed by July 2023.

Conclusion:
This study will assess the pharmaceutical storage facilities and stock levels of essential medicines in different settings of government healthcare institutions in the Monaragala district. It will identify whether these institutions possess adequate facilities and maintain the institutional buffer stocks of selected essential medicines. The findings of this study will help to improve current guidelines and aid policy decisions on the distribution of essential medicines to different settings of healthcare institutions.

Development of quality use of medicines indicators to guide best practice in medication assisted treatment of opioid dependence in outpatient services

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Posters Tuesday, September 26, 2023, 12:30 PM - 2:30 PM

Introduction and Aims:
Relevant, viable and effective Quality Use of Medicines (QUM) indicators support measurement of safe and effective medication use. Despite involving high-risk pharmacotherapies, no published indicators for auditing QUM in Medication Assisted Treatment of Opioid Dependence (MATOD) in Australia are available. This project aimed to develop a QUM indicator assessment tool to support best practice in prescribing, provision, monitoring, and clinical outcomes in MATOD outpatient practice.

Method:
A QUM indicator tool was developed within Drug and Alcohol Services SA (DASSA) using a three-step process. Step 1 identified potential indicators using a multifaceted approach, including review of existing guidelines, client feedback and incident data, and a DASSA-wide online survey exploring individual clinician experience and knowledge surrounding medication related incidents. In Step 2 indicators were refined through semi-structed interviews with multidisciplinary addiction medicine clinicians. Step 3 used an online Delphi survey with a panel of 9 addiction medicine experts to gain consensus on indicators to include in the tool, prior to final deliberation by the DASSA Drug and Therapeutics Committee.

Results:
56 potential indicators were identified, 44 remained after clinician interviews. Through the Delphi processes, 37 indicators reached consensus. Two additional indicators were added to the final tool post Drug and Therapeutics Committee review.

Discussion and Conclusions:
This 39-item QUM tool will be trialled to audit local practice. Other services delivering MATOD may elect to use the tool, or parts thereof, to monitor practice. Audit results can be used to guide quality improvement activities, ultimately facilitating improvements in MATOD and optimising patient outcomes.

The USask chronic pain clinic: Capitalizing on clinical pharmacists leadership, expertise, and skills to fill a gap in the provision of evidence-based chronic pain care

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Posters Tuesday, September 26, 2023, 12:30 PM - 2:30 PM

Background: One in 5 Canadians live with chronic pain and access to interdisciplinary chronic pain programs is limited. Prior to November 2019 there was only one traditional, physician led interdisciplinary chronic pain clinic available to the over 1.1 million individuals living in the province of Saskatchewan, Canada. The USask Chronic Pain Clinic (UCPC) is a pharmacist-led interdisciplinary chronic pain program situated on the University of Saskatchewan campus in that opened in March 2020. The UCPC was created with the overall goal of filling the need for comprehensive, evidence based chronic pain care in Saskatchewan.

Objectives: 1) To describe the structure of and services delivered by the UCPC, 2) To discuss the pharmacists' roles

on the UCPC team, and 3) To highlight opportunities for expanded pharmacist involvement in chronic pain care.

Methods: Descriptive poster

Results: The USask CPC clinical team includes 2.2 full time equivalent (FTE) pharmacists, 2.1 FTE social workers, 2.0 FTE physical therapists, and a part-time chronic pain physician (0.4 FTE) who all have advanced training in chronic pain management. The clinic is run by two pharmacy faculty members. The UCPC differs from traditional physician-led chronic pain clinics in that the pharmacist leads the patient care activities in close collaboration with the other clinicians on the team. The UCPC physician primarily serves a consultant role to support the clinical team and referring providers and is involved in direct patient care activities for select patients. The UCPC does not take over medication prescribing and instead works closely with patients' existing primary care team to implement care plans and treatment decisions. This supportive role of the UCPC, predominantly led by the clinical pharmacists, serves to increase capacity within the existing primary care system. The UCPC pharmacists are involved from the point of patient triage, where the pharmacists work with the UCPC physician to determine the initial patient care plan, and then lead and coordinate the patients' overall care through the program which includes the development and implementation of individualized pharmacotherapy care plans and involves connecting the patient with appropriate internal supports (i.e., physical therapy and social work) as well as external care providers (i.e., psychiatrists), as needed. Additionally, the UCPC pharmacist has a significant role in providing pain related education to both patients and referring healthcare providers as well as creating and revising UCPC policies and procedures on an ongoing basis.

Conclusion: The UCPC is an outpatient chronic pain program developed and led by pharmacists which has reconfigured the traditional structure of interdisciplinary chronic pain programs, such that clinical pharmacists have an expanded role to play. Future research could evaluate the cost-effectiveness of the UCPC model of care compared to traditional interdisciplinary chronic pain programs.

Is pharmaceutical care the only way to be a good pharmacist? Perspectives on professional identity in pharmacy

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Background:
Debates about professional identity in pharmacy are rampant in the literature. Questions as to whether there should be a collective identity for the profession, as well as how to support professional identity formation in pharmacy education and practice are hot topics of conversation. Pharmacy leaders from around the globe have long endorsed a universal health care provider identity, yet after decades of advocacy and educational reform it remains elusive in practice. The health care provider identity is housed within the practice philosophy known as pharmaceutical care, which prioritizes patient-centred pharmacist roles. Currently, little is known about how pharmaceutical care came to be the mission of the profession. This research explores the sociocultural conditions that gave rise to the pharmaceutical care philosophy and the discourses (institutionalized ideas, practices, and norms) that underpin it, which may shed light on the challenges associated with enacting the health care provider identity in practice. Given the international uptake of the this philosophy in pharmacy education and practice, it is crucial to step back and examine what is driving this movement as implementation continues to be fraught with tension.

Objectives:
The objectives of this study were to uncover the dominant discourse(s) underpinning the pharmaceutical care philosophy and the identities, activities and practices the discourse(s) construct as legitimate, and the implications of reproducing or resisting these discourses?

Methods:
This study was theoretically informed by the works of Michel Foucault. Specifically, a Foucauldian informed critical discourse analysis was used to expose the discourses of pharmaceutical care in an archive of fifty texts compiled from the international published pharmacy literature. This methodology allowed us to examine both the use of language and associated practices that inform the pharmaceutical care movement, including how these potentially impact professional identity. The goal of our analysis was to identify the specific discourses currently shaping and limiting the ways that individual pharmacists, the pharmacy profession and pharmacy institutions can think, speak, and conduct themselves in relation to delivery of care.

Results:
This study identified an overarching reprofessionalization discourse arising from social and political conditions that were threatening the professional status of pharmacy. The reprofessionalization discourse was realized through two distinct, but not mutually exclusive, discursive pathways, the saviour, and the guardian. These discursive pathways are responsible for advancing the pharmaceutical care philosophy by appealing to different public audiences.

Conclusions:
Through deconstructing discourses this study exposes how pharmaceutical care came to be accepted as the "truth" or universal practice philosophy for pharmacy around the globe. It remains the dominant discourse because it continues to promise an array of benefits, serving both professional and public interests: professional power, patient safety, and economic efficiency. The world is moving

beyond the information age and into the artificial intelligence age, hence if pharmacy is going to maintain its coveted role as a profession, it needs to be thinking beyond pharmaceutical care in education and practice.

Cognitive enhancers use among tertiary level students: A cross-sectional study

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Posters Tuesday, September 26, 2023, 12:30 PM - 2:30 PM

Background Cognitive enhancers (CEs) are substance that are taken to improve cognitive functions. A wide range of substances are considered as CEs, from simple daily beverages (coffee and tea) to some prescription-only medications such as amphetamines. Studying the prevalence of cognitive enhancer use among university students is important for understanding the risks and impacts of their use, as well as developing strategies to promote healthy and effective ways of managing the pressures of academic life.

Purpose. The objective of this study is to obtain a better estimate of the prevalence of CEs use in university students and their attitudes toward the use of psychostimulants.

Method. A 26-item questionnaire was distributed among the UCSI University students as online survey and hard copy questionnaires. Questions of yes/no/maybe, multiple choice, and 5-point Likert-type questions were included in the survey. Descriptive statistics were performed by means of means, medians, standard deviations, and ranges. Inferential statistics were made by means of binary logistic regression and Chi square analysis.

Results. A total of 351 students responded the questionnaire anonymously. About 28% of the respondents reported previous use of CEs. Coffee and tea (26% and 22% respectively) were the most commonly used CEs where cholinergic drugs (4.4%), nasal decongestants (2.9%) and amphetamines (1.1%) were in the bottom of the list. The lifetime use of illegal substances was 6%. The main barrier of using illegal substances and legal substances with unknown health consequences were cost (23.8%) and fear of adverse effects (19%). Nearly, 70% of CE users perceived pressure to achieve good academic results. The findings demonstrate an obvious tendency toward non-pharmacological cognitive enhancers among the participants.

Conclusion. Cognitive enhancers are widely used by the UCSI University students. However, a very small fraction of the students used illegal pharmacologic CEs. This can be interpreted as a sign of a balanced load of academic tasks.

Support for pharmacists' assisted dying practice: Development and validation of a reflection tool

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Background
Research can fill gaps by uncovering unmet needs and supporting adoption of new professional roles. In 2017 the Australian state of Victoria introduced Voluntary Assisted Dying (VAD). Initial research was undertaken to identify gaps in existing literature about pharmacists' roles in assisted dying practice. A second research project sought to understand what pharmacists, who were contemplating participation in VAD, wanted to know. This research produced a dimensional framework that was applied in a third study to explore pharmacists' actual experience with the practice of caring for patients who seek Medically Assisted Dying (MAiD) in Alberta, Canada. The findings revealed that the pharmacists' experiences were personal, relational, and emotional[1]. To support pharmacists caring for patients seeking MAiD, resources are needed to help reflect on emotions, to engage in conversations about their experiences, and to continually learn about their role in assisted dying practice. This unmet need was the impetus for the development of a reflection tool.

Purpose
To systematically develop and validate a reflection tool to support pharmacists involved in MAiD.

Method
Consistent with the preceding research, a systematic process was undertaken to maximise the fidelity and usefulness of the reflection tool. The initial protocol was to develop a reflection tool prototype, evaluate with users, and repeatedly revise. A graphic designer ensured that the tool was visually appealing. A second evaluation focused on usability by users. Engagement with external experts in psychology, assisted-dying practice, and ethics, provided feedback on the content and process presented in the tool. The research team was constantly involved in the development and evaluation processes. The dissemination plan for the reflection tool provides access for pharmacists and other health professionals worldwide.

Results
A flexible, systematic process was implemented to develop and validate a reflection tool. Evaluation data was sought from 11 interviews, 6 pharmacists and 1 pharmacy student who had participated in MAiD. This produced changes to the wording and order of the process outlined in the tool, but not the content. Experts provided valuable insights regarding the presentation and content, to enhance reflection on experiences with assisted dying. The reflection

tool will be accessible as a workbook and summary version through the Canadian Society of Hospital Pharmacists website, by the end of 2023.

Conclusion
The commitment to flexibility and evaluation in the planning and development processes were key to maximising usefulness of the tool. External experts provided valuable yet different insights that pharmacist and researcher groupthink did not. Managing these differences was a potential limitation as the ultimate arbiters were the researchers. Implementation will generate further questions including whether the aim of supporting pharmacists to reflect on their experiences with assisted dying was met, and whether further changes are needed to increase the scope, or professional and geographic applicability of the tool.

Ensuring appropriate use of psychotropic medicines in residential aged care: The people, processes and infrastructure

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Background. A wide range of policy, regulatory and clinical strategies have been employed to support wise use of psychotropic medicines in residential aged care. These strategies have only been partially successful, largely because this is a complex health setting involving multiple stakeholders in a clinical context that can be challenging. Recent regulatory changes in Australia have brought a renewed focus to system-level approaches to ensure appropriate use of psychotropics in aged care.

Purpose. This study examines the people, processes and infrastructure employed to ensure appropriate use of psychotropic medicines within four residential aged care organisations in Australia.

Method. Semi-structured interviews were undertaken with key stakeholders at participating aged care organisations. The interviews were transcribed and thematically analysed. Themes were developed inductively and deductively using a learning health systems framework.

Results. Thirty-two participants were interviewed across the participating aged care organisations. This included nurses working in a wide variety of roles (n = 15), dementia consultants (n = 2), pharmacists (n = 8), medical practitioners (n = 3), and residents and carers (n = 4).
The key themes identified in the interviews were
1. The context and structure of quality improvement processes for psychotropic medicine in the aged care organisations
2. The alignment of these processes with the development of a learning health system
3. The opportunities and challenges associated with the development of psychotropic registers to meet new regulatory requirements
4. The ways in which aged care organisations have developed inter-professional teams to meet care responsibilities for residents living with dementia and changed behaviours, and
5. The outcomes and areas of continuing focus for quality improvement as identified by stakeholders

Conclusion. A remarkable amount of change has occurred in policies, procedures and infrastructure regarding psychotropic medication management in each of the participating organisations over the past 2 years. Aged care organisations now have clearer oversight of psychotropic use and there has been a significant shift in individual and system approaches to the use of psychotropics within the sector. Future opportunities include improved navigation of the tension between regulatory and quality drivers and further developing the people, processes and infrastructure to support appropriate use of psychotropics. Pharmacists working in system-level knowledge-broker roles within aged care organisations can work with existing teams to facilitate continuous improvement.

Osteoporosis management by pharmacists in Australian aged care: A mixed methods study

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Posters Tuesday, September 26, 2023, 12:30 PM - 2:30 PM

Background: Osteoporosis related fractures impose a high level of morbidity and mortality among aged care residents, despite which management is widely reported to be sub-optimal [1]. Medication reviews, undertaken by pharmacists, are advocated as one strategy to improve osteoporosis management [1]. Exploration of the current involvement of aged care pharmacists in osteoporosis management could identify other means for pharmacists to contribute to fracture prevention.

Purpose: The purpose of this study was to quantify the use of osteoporosis therapy by Australian aged care residents and explore aged care pharmacists' perceptions and practices regarding osteoporosis management.

Method: This study had a mixed methods design. Aged care residents' medication review data completed between July 2021 and June 2022 was analysed using IBM SPSS™ software. Semi-structured interviews in relation to osteoporosis management were conducted in July and August 2022 with Australian aged care pharmacists. A constructivist grounded theory approach was used to analyse data with the aid of NVivo 12 Pro™ software.

Results: Data of 340 aged care residents from six states and territories of Australia were reviewed. The average patient age was 85.6 years (± 8.5), 222 (65.3%) were female and 85

(25.0%) had osteoporosis as a listed diagnosis. Of residents with a diagnosis of osteoporosis 45 (52.9%) were prescribed osteoporosis therapy. The most prescribed therapy was denosumab (90.9%), followed by risedronate (5.1%) and alendronate (2.5%). Osteoporosis management related recommendations represented 20.7% (185) of all review recommendations. Vitamin D and/or calcium supplements were the subject of 114 recommendations. Other osteoporosis management recommendations related to falls risk reduction (35), antiresorptive therapy (31) and medications adversely impacting bone health (5). Antiresorptive therapy recommendations predominantly related to denosumab, including 12 suggesting denosumab commencement and seven pertaining denosumab administration.
Analysis of interviews conducted with 21 pharmacists corroborated this data. Interviewed pharmacists identified denosumab as the most frequently prescribed osteoporosis therapy in this setting and indicated that they would recommend denosumab in preference to bisphosphonates. Interviewed pharmacists reported they regularly made recommendations regarding vitamin D and calcium supplements and placed emphasis on optimising medication regimens to prevent fractures. It was established, pharmacists could assist in fracture prevention by reducing the use of falls risk-inducing drugs and ensuring correct administration of denosumab. Many pharmacists reported that the six-month dose interval of denosumab is not conducive to standard aged care medication administration practices, resulting in therapy disruptions. This is exemplified by one pharmacist's comment "I come across lots of instances….where you find out that they actually haven't had their Prolia®[denosumab] for over a year or longer".

Conclusion: Osteoporosis undertreatment in Australian aged care facilities appears to persist with 47.1% of osteoporotic residents not prescribed therapy. For those residents prescribed therapy, denosumab is the predominant treatment choice and that preferred by pharmacists. In addition to completing medication reviews, pharmacist interventions to ensure continuous denosumab therapy present an opportunity to prevent osteoporotic fractures in aged care.

Drug supply and medication therapy management practice at designed mobile cabin hospitals during Covid-19 outbreaks at Shanghai

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Posters Tuesday, September 26, 2023, 12:30 PM - 2:30 PM

Background: Mobile cabin hospitals (MCHs) had been increasing constructed to quarantine and treat mild cases of infected patients during COVID-19 epidemic in China. However, the construction and management process of pharmacies in the mobile cabin hospitals (MCH) are usually lack of improvment and standardization.

Objectives: To retrieve and summarize the improvment and standardization of the construction and management process of pharmacies in the MCH in Shanghai.

Methods: The Chinese and English databases were searched for related articles, and clinical pharmacists worked in MCH were surveyed and interviewed.

Results: The construction and management process of pharmacies in the mobile cabin hospitals need to be improved and standardized from four aspects: hardware facilities requirements, drugs supply management, drugs delivery and pharmaceutical care. In order to conquer late delivery and short supply, the number of drug application was mainly based on the previous sales records form Hospital Information Systems (HIS). Besides, the traditional Chinese medicine decoction management were carried out by pharmacists. Pharmacists developed and implemented medication therapy management (MTM) approaches for patients with concomitant chronic diseases to promote medication compliance, effectiveness, and adaptability. Pharmacists shall review prescriptions according to medication instruction and uptodate database to reduce medication errors and ensure drug safety. Additionally, pharmacists developed individualized treatment with Paxlovid, participate multi-disciplinary diagnosis and treatment team, and provide remote services for patients by the means of telemedicine.

Conclusion: The improvment and standardization of hardware facilities requirements, drugs supply management, drugs delivery and pharmaceutical care played important roles in the construction and management process of pharmacies in the mobile cabin hospitals.

Sharing our experience of providing medical outreach to remote islands in Penghu during the pandemic

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Background: We conducted a medical outreach program in Penghu from March 11th to 13th, 2022. Since 2004, our hospital has been organizing annual medical outreach programs in Penghu, reaching out to remote areas and islands and bringing love to local residents. Due to the COVID-19 pandemic, this year's program was delayed for a year and only launched when the pandemic situation became more stable. We were delighted to have the opportunity to represent the Pharmacy Department in this program. Prior to departure, to ensure the safety of Penghu residents, all participants received three doses of the vaccine and underwent rapid testing, providing peace of mind for everyone involved. The three-day medical outreach program was quite busy, visiting various locations from Chikan to Niaoyu, Jibe, and finally Hujingyu, where residents could feel the warmth that we brought.

Methods: The lineup this time was quite impressive, including the chief of orthopedics who has been deeply committed to rural healthcare, as well as multiple specialty consultations such as infectious disease, nephrology, neurosurgery, obstetrics and gynecology, urology, family medicine, general surgery, hepatobiliary and gastrointestinal medicine, and traditional Chinese medicine. Besides basic blood pressure and blood sugar measurements, we also brought many sophisticated instruments to provide services such as bone density testing, abdominal, gynecological, breast ultrasound examinations, and cancer screening, which are not available in medically underserved areas. Our charity event not only provided medical services but also included diversified services such as medication consultations, health education, organ donation, and patient autonomy advocacy.Now let's talk about the pharmacy! Since we have a traditional Chinese medicine department, we provide medication dispensing services not only for Western medicine but also for Chinese medicine. After seeing the doctor, elderly patients slowly come to the pharmacy with their prescription. Here, we introduce the usage of the medicine slowly to them: take this red one before bedtime, take this yellow, round one after three meals, and take this yellow and white one in the morning. Some islanders are really enthusiastic. They bring their elderly, mothers with children, and village chiefs with villagers one by one to the pharmacy. Sometimes the pharmacy is so busy that I speak faster unconsciously, worrying that the elderly may forget our explanation, but we have dedicated and warm volunteers to accompany them and remind them again.

Discussion: In addition to the doctors seeing patients, they also did not forget to teach the medical students who accompanied them. Even during dinner, they would share their experiences with the students, which is truly admirable.. The whole team was full of warmth and strength, and everyone helped each other without distinction, working together to bring love to Penghu. Everyone did their best, hoping to bring some small help to the rural areas. I am very grateful that the hospital held such a meaningful event and I am honored to have participated. When I grow old, I will be able to sit on my doorstep and proudly tell others about this unforgettable activity from years ago.

The use of therapy dogs in pediatric Covid-19 vaccination at the university of Puerto Rico medical sciences campus

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Background: COVID-19 vaccination in children may represent a challenge, given pediatric patients' characteristics and their perceptions or hesitancy about vaccination. This makes it necessary to establish strategies to facilitate the massive immunization of children. The interprofessional COVID-19 vaccination center decided to implement child/friendly measures in the clinic in order to facilitate the immunization of pediatric patients.

Objective: Describe the use of therapy dogs as a support measure in a pediatric COVID-19 vaccination center.

Methods: When the Pfizer-BioNTech vaccine for children aged 5 to 11 years was granted emergency use authorization, the interprofessional vaccination center modified its space by adding cartoon posters and balloons, among other child-friendly measures. Additionally, several volunteers dressed as movie characters, and children were asked to make drawings during the post-vaccination observation period. The Dedicated Animals to the Service of Humans Always (DASHA) organization partnered with the center, and a schedule was established for the dogs' visits during vaccination days.

Results: By the end of the pediatric immunization schedule with therapy dogs at the COVID-19 vaccination center, there were no reported adverse experiences or issues related to the presence of the therapy dogs at the vaccine center. There were no immediate adverse events related to the vaccines. In addition, parents expressed that the COVID-19 immunization
seemed to be better accepted by children as they were distracted by the dogs in the center. Many children were in close contact with the dogs while receiving the shots, caressing them, or having the small dogs in their laps. The children's drawings reflected positive images of the experience.

Conclusions: The experience at this center supports using therapy dogs during immunization efforts for children and other special groups. To our knowledge, this was the only vaccine center in Puerto Rico that implemented therapy dogs to create a friendly environment for COVID-19 immunizations for children. Based on our experience, we encourage using therapy dogs in other immunization activities for pediatric patients.

Evaluation of the pharmacovigilance system in Qatar: A quantitative study on structure, process and outcome

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Posters Tuesday, September 26, 2023, 12:30 PM - 2:30 PM

Background: A centralized pharmacovigilance (PV) center does not exist in Qatar, and the national PV system was never comprehensively assessed.

Purpose: To evaluate the structure, process and outcome of the pharmacovigilance system in Qatar using a mixed-method study

Methods: This mixed-method case study (i.e. concurrent) has covered the case of Qatar's national PV system,

including subnational PV stakeholders' systems. The research design provided a comprehensive multiple case evaluation for: (a) in-depth subnational PV systems case evaluation; (b) a comparative case analysis across subnational PV systems; and (c) and evaluation of the overall national PV system. The quantitative approach included a cross-sectional descriptive study utilizing the World Health Organization (WHO) PV indicators tool (i.e. structure, process, and outcome). It included the public and private sectors. Descriptive statistics were used to describe systems' performance based on a scoring scheme. Qualitative approaches complemented the quantitative approach.

Results: All subnational PV systems obtained good total PV system performance. The MOPH system revealed a deficiency in performance status. The highest scores were for structural indicators, with most subnational PV systems demonstrating excellent performance. Most stakeholders reported the existence of core PV structures such as PV policies, a department or network overseeing PV, resources and reporting systems. MOPH's structural shortfalls included the lack of PV-specific legislation, a spontaneous reporting system, and a dedicated budget for PV. Process indicators revealed good performance status for both sectors. However, existing PV processes (e.g. passive surveillance and risk mitigation) are mostly at an early stage of advancement. Outcome indicators showed the weakest performance across the subnational PV systems.
Conclusions: Qatar does not have any of the 5 WHO minimum requirements for an operational PV system. The overall national PV system achieved an average total PV system performance status. The country's overall performance needs to be improved following a PV system-based approach.

Cost-effectiveness and cost-utility of palbociclib versus ribociclib in women with stage IV breast cancer: A real-world data evaluation

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Background: Palbociclib and ribociclib are indicated in the first-line treatment of hormonal-receptor-positive HER-2 negative (HR+/HER-2 negative) advanced breast cancer. Despite their clinical benefit, they can increase healthcare expenditure. Yet, there are no comparative pharmacoeconomic evaluations for them in developing countries, the Middle East, or Gulf countries.

Purpose: This study compared the cost-effectiveness of palbociclib and ribociclib in Qatar.

Method: A 10-year within-cycle-corrected Markov's model was developed using TreeAge Pro® software. The model consisted of three main health states: progression-free (PFS), progressed-disease (PD), and death. Costs were obtained from the actual hospital settings, transition probabilities were calculated from individual-patient data, and utilities were summarized from the published literature. The incremental cost-effectiveness ratio (ICER) and the incremental cost-utility ratio (ICUR) were calculated and compared to three gross domestic products per capita. Deterministic and probabilistic sensitivity analyses were performed.

Results: As per Markov's model, the 10-year cost of the palbociclib treatment strategy was QAR 372,663.3 per patient. In accordance, it yielded a gain of 71.62 life months (5.968 life years (LYs)) and, overall, gained quality-adjusted life years (QALYs) of 3.058 per patient (36.70 quality-adjusted life months), whereas, for the ribociclib treatment arm, the estimated 10-year cost was QAR 333,584.4 per patient. Similarly, the model produced a gain of 75.96 life months (6.330 gained life years) and 37.93 quality-adjusted life months per patient, with 3.160 QALYs per patient in the ribociclib treatment arm. Ribociclib dominated palbociclib in terms of costs, life-years gained, and quality-adjusted life-years gained. The conclusions remained robust in the different cases of the deterministic sensitivity analyses. Taking all combined uncertainties into account, the confidence in the base-case conclusion was approximately 60%.

Conclusion: In summary, in HR+/HER-2 negative stage IV breast cancer patients, the use of ribociclib is considered cost-saving compared to palbociclib.

Future proofing our medicines regulation and funding systems to provide timely access to new medicines

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Posters Tuesday, September 26, 2023, 12:30 PM - 2:30 PM

Background: Numerous policy approaches aim to address concerns regarding timely access to medicines. These may provide patients earlier access to medicines but also increase uncertainty surrounding safety, efficacy and cost-effectiveness. Stakeholder engagement is essential to determine the appropriate risk-benefit balance of such initiatives and therefore optimal policy approaches. The aim of this project was to explore physician and consumer attitudes towards accelerated access initiatives.

Setting: This study canvassed the views of Australian consumers and physicians from Sydney, NSW. Both patients and consumers were from a range of medical specialties and disease areas, including oncology, haematology, infectious diseases, palliative care, psychiatry, rheumatology and paediatrics—areas in which accelerated access is most actively discussed.

Methods: Semi-structured interviews were conducted with 18 Australian physicians and 13 patients and patient

advocates; two focus groups were conducted with patients. These were transcribed verbatim and analysed thematically.

Findings: There is significant diversity in stakeholder opinion. We identified three "types" of attitudes amongst physicians—Confident Accelerators, Cautious Accelerators and Opposed to Acceleration. Although all acknowledged potential risks and benefits, they disagreed on their magnitude and extent and how these should be balanced in both policy formation and clinical practice. Meanwhile, consumers recognised both the potential benefits and risks of these schemes. All participants emphasised procedural factors—such as transparency, relevant expertise and thorough consideration of evidence—needed for appropriate decision-making processes.

Implications: Stakeholder analysis suggests that there are a number of reasonable views on how to respond to calls for accelerated access. However, not all substantive positions can be simultaneously accommodated in policy processes. A focus on fair procedures will increase legitimacy and increase the acceptability of decisions about accelerated access to medicines; I offer a number of practical suggestions to achieve this. I also discuss how these apply to provision of therapies to treat COVID-19, illustrating how such an approach can ensure both that patients receive timely access to innovative new medicines and that healthcare systems receive the best value from scarce resources.

Post-market data collection, market withdrawal and disinvestment as components of accelerated access: Stakeholder perspectives

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Background: Provisional marketing approval allows medicines to be approved on the basis of earlier data, with post-market data collection used to confirm their safety and effectiveness. Similarly, "managed entry agreements" allow medicines to be listed on the PBS while further data is collected to determine their cost-effectiveness and ongoing subsidy. Timely and robust post-market data collection and regulatory withdrawal/disinvestment procedures underpin both initiatives.

Setting: This study explored the beliefs of patients and physicians from Sydney, NSW regarding post-market data collection and regulatory withdrawal/disinvestment as components of accelerated access. Both patients and consumers were from a range of medical specialties and disease areas, including oncology, haematology, infectious diseases, palliative care, psychiatry, rheumatology and paediatrics—areas in which accelerated access is most actively discussed.

Methods: Semi-structured interviews were conducted with 18 Australian physicians and 13 patients and patient advocates; two focus groups were conducted with patients. These were transcribed verbatim and analysed thematically.

Findings: Participants were optimistic about increased evidence generation in the post-market phase and emphasised its potential to improve the safety, effectiveness and cost-effectiveness of care provided. They also expressed a willingness to contribute data. Post-market data collection, coupled with swift and decisive action by regulators and funders, was seen to be sufficient to address the risks posed by accelerated access pathways.

Implications: Strong actions on the part of regulators and funders are needed to ensure the safety and efficacy of medicines made available via accelerated access pathways and that consumers can enjoy the benefits of innovative new medicines without compromising the sustainability of healthcare systems. These include allocating adequate resources and expertise for data collection and analysis, establishing clear thresholds for market withdrawal and disinvestment and ensuring that all stakeholders are alert to the difficulties of disinvesting from and removing medicines from the market.

The creation of a national pharmacy association focused on climate change and planetary health

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Background: The climate crisis is the greatest health threat of the modern era according to the World Health Organization; impacting cardiovascular mortality, changes to infectious disease patterns, and global mental health and wellbeing. At the United Nations Climate Change Conference in Glasgow (COP26), the impact of health systems on global greenhouse gas (GHG) emissions was highlighted. Global health systems contribute approximately 5% of GHGs, twice that of the aviation industry, and continue to increase. Within healthcare, pharmaceuticals represent 25-33% of health system GHG emissions – directly involving the pharmacy profession in this shared responsibility to manage, mitigate and adapt to this ongoing crisis.
Pharmacy plays a crucial role in mitigating the effects of pharmaceuticals on climate through interventions on anaesthetic gases and propellant inhalers, waste management of medications and medication optimization. Within climate adaptation pharmacists are tasked with developing disaster management policies, addressing clinical impact of extreme heat, and the management of drug shortages. Outside of climate change, the pharmacy team also addresses pharmaceutical and plastic pollution.
The Canadian Association of Pharmacy for the Environment (CAPhE) was rapidly established through leveraging existing pharmacy volunteer resources in Canada. The experience of

CAPhE can support development of similar bodies in other areas of the world.

Purpose: To share development methodology and early organizational learnings of a new volunteer-based association focused on planetary health through the lenses of pharmacy.

Method: During April and May 2022, founding members of the association reviewed current work on environmental sustainability within pharmacy across Canada. In June 2022, a post was made on an established Canadian pharmacy professional online forum where further recruitment efforts of the group were initiated. From September to December 2022, the team reviewed the strategic areas within planetary health and recruited co-leads for its eight pillars: supply chain management, operations, mitigation, adaptation, communications, education, partnerships/advocacy, and research. The team also finalized the constitution of the forming organization and a logo was approved. From January to March 2023, the team set objectives for each of the eight pillars and promoted the organization through conference presentations with key partners. In April 2023: CAPhE confirmed roll out of key initiatives within partnerships over the short term.

Results: Between June 2022 and April 2023, the organization completed recruitment of 17 core team members, six students, and six environmental pharmacy consultants. CAPhE also completed four university presentations, and five other presentations to other institutions, and established itself as a presence to 11 other pharmacy and climate-specific organizations across Canada.

Conclusion: Climate change and planetary health are niche areas which require urgently attention within the pharmacy profession. In addition, the pharmacy profession must be represented within climate change and planetary health arenas. The rapid formation of this new association has filled an identified professional gap in Canada, and can be a model for others across the world.

Optimising antimicrobial use in primary care by a novel general practitioner-pharmacist collaborative antimicrobial stewardship model

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Background: Primary care is the most important setting to substantially rationalise antimicrobial use by stewardship since approximately 75% of antimicrobial prescriptions occur in this setting and 30-50% are inappropriate either in choice, dose or duration. Collaboration between general practitioners (GPs) and community pharmacists (CPs) has central role to implement antimicrobial stewardship programs to optimise antimicrobial use in primary care. However, such a GP-pharmacist collaborative antimicrobial stewardship (GPPAS) model has not been firmly established in most parts of the world including in Australia.

Purpose: To design and evaluate the GPPAS model in optimising antimicrobial use in primary care in Australia.

Methods: Seven component studies were conducted in 2017 to 2022 by using an exploratory study design to inform and assess the GPPAS model. A systematic review, a scoping review, a rapid review, nationwide surveys of GPs and CPs, and a pilot study in Australian general practice produced secondary and primary evidence to inform the GPPAS model. A critical synthesis approach was used to collect evidence from multi-method research. Systems Engineering Initiative for Patient Safety framework guided the theoretical structure of the GPPAS model.

Results: Reviews informed the GPPAS interventions and meta-analysis found that the GPPAS interventions were effective to reduce antimicrobial prescribing by 12% and improve guideline adherence of antimicrobial prescribing by 16% by GPs over six months intervention period. The convergent and divergent attitudes, views and challenges of GPs and CPs to implement GPPAS interventions were identified through surveys and qualitative exploration. Using synthesised evidence, a seven component GPPAS model framework has been successfully designed: pharmacist-patient interaction, GP-patient interaction, GP-pharmacist collaboration, GPs and CPs' access to antimicrobial stewardship resources (e.g., guideline, antibiogram, patient education leaflet organisational structures and internal (e.g., GP-pharmacist quality circles) and external policy environment including GP-pharmacist collaborative practice agreements for antimicrobial stewardship. Five GP-pharmacist collaborative implementation submodels have been designed to guide implementation of i) antimicrobial stewardship education, ii) antimicrobial audits, iii) point-of-care diagnostic antimicrobial stewardship, iv) delayed prescribing and v) antimicrobial review and feedback intervention. A GPPAS education submodel showed potential in the pilot study in improving appropriateness of antimicrobial prescribing by GPs in Australia; choice of antimicrobial from 73.9% to 92.8% ($p < 0.001$), duration from 53.1% to 87.7% ($p < 0.001$) and guideline compliance from 42.2% to 58.5% ($p < 0.001$) post-intervention.

Conclusions: The GPPAS model is effective to optimise antimicrobial use in Australian primary care. The GPPAS model framework could be used as guide to foster the implementation of antimicrobial stewardship by improved GP-pharmacy collaboration and to make required policy and practice changes to optimise antimicrobial use in Australian primary care. The GPPAS model would have implications to define the extended role of community pharmacists in antimicrobial stewardship and to set up and promote a team-based antimicrobial care in primary care. Future investigations are required to determine the implementation feasibility of the GPPAS model to better understand how to integrate those models into existing GP-pharmacist interprofessional care models in Australia.

A systematic review exploring how mental health simulation is utilised in pharmacy practice and education

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Background: Simulation in healthcare enables acquisition, practice and maintenance of clinical and communication skills. Various simulation methods are utilised and described in mental health-related contexts such as medicine, nursing and psychiatry, however it is unclear how mental health simulation has been utilised specifically in pharmacy practice and education.

Purpose: To explore how mental health simulation has been utilised in pharmacy practice and educational settings, specifically focussing on the types of simulation techniques utilised and mental health content simulated.

Method: This review was reported with the guidance of the PRISMA-P checklist. The databases Medline, Embase, PsycINFO, CINAHL and Scopus were searched using the key terms: 'mental health' AND ('simulation' OR 'standardised patient' OR 'pseudo patient' OR 'role-play') AND 'pharmacy' from inception until 10 August 2022. Duplicate articles were removed, followed by screening for eligibility of title/abstract then full texts. The reference lists of eligible full texts were also hand-searched for additional articles for inclusion. Inclusion criteria included: studies utilising mental health-related simulation in a pharmacy-related context, either in practice or an educational setting or any other setting where pharmacists, pharmacy support staff, or pharmacy students were involved, either as the population actively involved in the activity, or as the population directly impacted by mental health-related simulation. All aspects of mental health and mental disorders, and all forms of simulation were included. Non-primary journal publications and conference abstracts were excluded. Data extracted included: country; setting; study aim; intervention; mental health-related content; simulation techniques; evaluation; key results or outcomes pertaining to pharmacy students or pharmacy staff.

Results: A total of 449 publications were retrieved, from which 26 articles pertaining to 23 studies were eligible for inclusion. Studies were conducted in Australia (n=11), the United States of America (n=8) and Canada (n=4). Studies conducted in pharmacy educational settings (n=15) commonly evaluated the impact of interventions on students' self-reported mental health knowledge and attitudes. Studies conducted in pharmacy practice (n=8) commonly observed mental healthcare skills of pharmacists in community practice settings. Live simulated/standardised patients were most utilised (n=13), followed by pre-recorded videos of scenarios (n=5) and role-play between peers (n=5). The most frequently identified simulated mental health content focused on depression (with or without suicidal thoughts) (n=5), mental health communication (n=5), followed by stress-induced insomnia (n=4), then hallucinations (n=3).

Conclusion: Various methods are utilised to simulate mental health in pharmacy practice and education. It is recommended that future studies explore other simulation methods such as virtual reality, and to consider expanding mental health content to include other types of mental health problems and crises, such as psychosis, anxiety and bipolar disorder. There is also a need for published literature to include greater detail on the development of simulated content, such as involving people with lived experience of mental illness in the development process, to enhance the authenticity of simulation training.

Engaging mental health consumers to co-design and deliver simulated psychosis care role-plays for mental health first aid-trained pharmacy students

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Background: Mental Health First Aid (MHFA) training improves pharmacy students' self-reported mental health confidence and attitudes. However, limited research evaluates post-training behaviours. Simulated patient (SP) role-plays are an effective assessment tool, allowing trained participants to practise newly acquired MHFA skills in safe learning environments. Mental health consumers have been involved in delivering SP role-play assessments, and literature has focused on evaluating skills when supporting a person experiencing symptoms of depression and anxiety. However, there is a need to develop and evaluate evidence-based educational materials for psychotic illnesses, including schizophrenia, and while mental health consumers have been involved in the delivery of pharmacy education, limited research explores their involvement in curriculum co-design.

Purpose: To engage mental health consumers in co-design, content validation and delivery of simulated psychosis care role-plays for pharmacy education, and to explore the student experience of this educational innovation.

Method: Mental health consumers were invited to co-design three SP scenarios. A panel of mental health consumers and healthcare professionals engaged in two rounds of content validation of the scenarios and associated marking rubrics. Round 1 involved completion of a survey to calculate content validity index (CVI) and content validity ratio (CVR) scores for relevance/clarity and essentiality of each item. Scores analyses and feedback comments informed preliminary revisions, discussed at the second-round meeting until consensus was attained to finalise content. Final year pharmacy students received MHFA training. Post-training, students participated in the developed role-plays with a trained actor, observed by peers, a mental health consumer, and tutor. Immediately following each role-play,

students engaged in debriefing, self-assessment and received feedback from the mental health consumer and tutor. All students were invited to participate in a focus group to explore their experiences of MHFA training and the SP role-plays. Focus groups were transcribed and thematically analysed.

Results: Two mental health consumers participated in co-design; four consumers and five healthcare professionals in content validation. Three scenarios were developed relating to first episode psychosis, a carer of someone living with schizophrenia, non-adherence to antipsychotics. All items across the three scenarios showed excellent content validity for relevance/clarity (I-CVI=0.89-1.00). Eleven items were revised for essentiality (CVR=0.11-1.00), discussed and re-rated until consensus was reached to finalise content. Final year pharmacy students (n=209) received MHFA training. Eighty-six students role-played with a trained actor (tutor scores=40-100%), while the remaining 123 observed and contributed to debrief discussions. Seven focus groups were conducted with 36 students in total, revealing that the scenarios were relevant and realistic to pharmacy practice. Students valued the opportunity to apply MHFA skills via SP role-plays with actors, reporting that this experience improved confidence to provide mental health support. Students appreciated receiving immediate feedback and learning from mental health consumers.

Conclusion: Engaging mental health stakeholders has enabled co-design of authentic, content valid educational materials for pharmacy students to provide psychosis care. Involving trained actors and mental health consumers in education delivery is well-received and may be adapted into continuing professional development activities and training programs to upskill practising pharmacists in providing mental health support.

The community pharmacist's role in emergency contraception in the United States of America: A rapid literature review

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Background: Emergency contraception (EC) is a crucial resource for women who cannot utilize other available contraceptive options. A recent report from the United States of America (USA) showed that 95% of unintended pregnancies are attributed to nonuse or inconsistent use of contraception. Considering that 9 in 10 Americans live within 5 miles of a community pharmacy, and Levonorgestrel being the only EC available over-the-counter (OTC), the pharmacist serves as a critical intervention point to influence public health outcomes. However, there is limited guidance defining the pharmacist's role in EC care in the USA.

Purpose: The purpose of this present rapid literature review was to evaluate qualitative and quantitative USA literature to explore further the role of pharmacists and pharmacy services for women seeking EC as OTC in the USA.

Methods: Two electronic databases, PubMed, and Ovid Medline, were searched over two months in 2022 using a combination of keywords, Medical Subject Headings (MeSH), and Emtree subject headings. The MeSH terms used were Emergency Contraception, pharmacists, counseling, OTC, and USA. The PRISMA guidelines were followed for a rapid literature review. The inclusion criteria were qualitative and quantitative studies conducted with pharmacists' role in emergency contraception in the USA and published after 2010. A total of 7 studies were reviewed independently by two researchers. After applying the inclusion criteria of identifying studies that pertained to the topic, 3 studies were excluded. Two researchers extracted data from the selected full text of these studies.

Results: Due to the limited studies conducted in this arena and the heterogeneity of these results, the difficulty was in synthesizing and determining the commonalities between these studies. The characteristics of these studies were evaluated as emergent themes in this rapid review.
The rapid literature review revealed a theme: Retaining a sustainable OTC stock.
A quantitative study conducted with independent and chain pharmacies reported a contrast in the accessibility of levonorgestrel as OTC in the independent versus chain pharmacies. Furthermore, the study highlighted that levonorgestrel was less available for purchase in independent pharmacies than in chain pharmacies. In the same vein, the study evaluated the availability of another EC, such as ulipristal. This study showed that ulipristal was offered in less than 10% of the sampled pharmacies. When comparing the availability of levonorgestrel and ulipristal, the authors concluded that there were no statistically significant differences between chain and independent pharmacies with the stock of either medication treatment.
Another study conducted in 2020 showed that 90% of USA pharmacists offered levonorgestrel when women inquired about the available possibilities to prevent pregnancy after unprotected sexual contact.

Conclusion: Due to discrepancies in OTC stock availabilities of EC, it becomes critical to assess it. Stock availability is crucial in states where pharmacists can prescribe EC. This rapid literature review suggests the value of providing continuing education updates regarding EC availability on the market to USA pharmacists. In addition, future research is essential to understand better the impact of the overturning of Roe v. Wade and its impact on EC in the USA.

The design, development and evaluation of a training program to support the implementation of a community pharmacist-led support service for people living with severe and persistent mental illness (the PharMIbridge RCT)

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Background

As medications are a major treatment modality for many physical and mental illnesses, including severe and persistent mental illness (SPMI), pharmacists are well-positioned to provide holistic physical and mental healthcare services. The Bridging the Gap between Physical and Mental Illness in Community Pharmacy (PharMIbridge) Randomised Controlled Trial, aimed to test the effectiveness of a pharmacist-led support service for people living with SPMI, a goal-orientated and flexible service provided by trained community pharmacists, compared to a standard in-pharmacy medication service (MedsCheck).

Purpose

To describe the design, implementation and evaluation of a training program to support the implementation of the PharMIbridge service, a pharmacist-led support service for people living with SPMI in Australia.

Method

A training program was designed with input from health educators, healthcare professionals and consumers through a training working group and the six-step intervention mapping framework. A 2-day (Intervention Group – IG) and 1-day (Comparator Group – CG) training program was developed and delivered across four Australian trial regions (Hunter New England, Northern Sydney, Australian Capital Territory and regional Victoria). Both IG and CG training programs incorporated Blended Mental Health First Aid (MHFA) training for Pharmacy. Additional IG training components included post-MHFA simulated role-plays with feedback and coaching, and four modules on (1) social determinants of health, (2) complex psychotropic medicines issues, (3) adherence and physical health issues, and (4) motivational interviewing and goal setting. IG training was co-delivered by a pharmacist and consumer mentor pair who supported intervention implementation in their region. A 66-item survey including validated scales was used pre/post-training to evaluate training impact on pharmacists' knowledge, confidence and attitudes towards people living with SPMI, as well as barriers and enablers to implementing a pharmacist-led service for people with SPMI. Post-MHFA simulated role-plays and debriefs were recorded, transcribed and thematically analysed.

Results

Survey responses were received from 140 pharmacy participants (IG, n=59; CG, n=81). Most participants were female (63.6%), aged 30-49 (57.1%), with up to 10 years practice experience (70.8%). Both IG and CG participants reported significant stigma reductions ($p<0.001$), post-training. Confidence and knowledge regarding metabolic monitoring significantly improved for IG participants compared to CG ($p<0.001$), and IG participants were significantly more confident and comfortable providing medication counselling, compared to CG ($p<0.05$). Qualitative analysis revealed pharmacists were able to use appropriate mental health crisis assessment language (e.g. when assessing for suicide risk), yet still reported feeling uncomfortable initiating conversations relating to suicide and conducting crisis assessments. However, pharmacists reported the training provided important opportunities to practice skills and reflect on practice.

Conclusion

A purpose-designed mental health training program provided pharmacists with the appropriate skills and confidence to implement a support service for people living with SPMI. MHFA training was considered vital; however, additional IG modules upskilled pharmacists to support the physical health care needs of consumer participants. Collaborating with mental health consumers in training design and delivery, as well as mentors, was critical to provide authenticity and strategies to engage with mental health consumers in future.

Ethical implications on allocation of medical resources: Case of Lebanon

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Lebanon has experienced the perfect storm with a political stalemate, economic crisis, social instability and an overarching pandemic. This has impacted all sectors of society including health. Considering that healthcare, access to care and access to medication is a human right, allocation of scarce resources during such challenging times and developing preventive plans and continuous refining of ethical frameworks for triage and treatment is imperative. The goal should be to ensure eliminate or minimize harm and sources of bias, maintain trust of the public and ensure transparency. Lebanon's case will be presented with emphasis on the shared responsibility of the numerous actors to ensure an ethical allocation of scarce resources.

Life-long learning in the pharmacists' professional journey: A framework for the stratification of the Portuguese pharmaceutical society training programme

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Background: The International Pharmaceutical Federation (FIP) Development Goal 9 (DG9) is focused in "Continuing Professional Development (CPD) Strategies", with CPD being defined as "the responsibility of individual pharmacists for systematic maintenance, development, and broadening of knowledge, skills, and attitudes, to ensure continuing competence as a professional, throughout their careers."
In 2004, the Portuguese Pharmaceutical Society (PPS), the pharmacy profession regulator in Portugal, introduced a mandatory credit-based system (CPD system) for all pharmacists. This system defines five-year periods in which pharmacists must accumulate 15 points to renew their licence to practise. A maximum of 2 points can be accumulated per year based on professional practice (10 for the 5 years), with the remaining 5 points being obtained through participation in CPD activities accredited by the PPS.
In line with this, the South and Autonomous Regions Branch (SARB) of the PPS develops a CPD training plan.

Purpose: To present a stratified CPD training plan that recognises life-long learning within pharmacists' professional journey, taking into account their educational needs and allowing them to select the activities based on their individual goals and desired career pathway.

Method: First, the educational needs of Portuguese Pharmacists were assessed by a survey. Then, a framework for the stratification of the South and Autonomous Regions Branch CPD training plan was created, and each activity of the plan was allocated into categories based on its complexity, target audience, the need of previous professional practice experience and possible career goals of the participants.

Results: Taking into account the previously mentioned, five categories for CPD activities were created: Undergraduate Training, aimed at student members of the PPS as a complement to their curriculum or pharmacists who want to remember basic concepts; Early Training, focusing in pharmacists with less than five years of professional experience, or pharmacists who recently changed their career pathway; Intermediate Training, aimed at pharmacists with more than five years of professional experience and/or who intend to obtain a title of "Professional Specialist" attributed by the PPS; Advanced Training, which is intended for pharmacists with more than 10 years of professional experience and specialists; and Specialized Training for pharmacists with more than 15 years of professional experience and/or who aspire to become leaders or reinforce their leadership in their field of practice.
Responses to the pharmacists' educational needs survey indicate that the main request is the review of basic concepts and in fact the high number of CDP activities (n=135, 71.81%) is classified as Early Training.

Conclusion: CPD strategies are important for pharmacists to maintain and develop their knowledge and skills throughout their career. In the process of life-long learning, the pharmacist should identify individual learning needs and develop a personal professional learning plan considering their desired career pathway. The stratified training plan of the PPS provides a guide for the aforementioned personal professional learning plan.

The antimicrobial stewardship clinical care standard: Evaluating and revising a national standard to improve practice

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Introduction
Audit data show that despite clinical practice guidelines, some patients in Australia miss out on evidence-based care, which is not explained by individual needs or preferences. Clinical care standards (CCSs) help support the delivery of evidence-based clinical care and promote shared decision making between patients and clinicians. They aim to reduce unwarranted variation and improve the appropriateness of care.
In 2014, the Antimicrobial Stewardship (AMS) CCS was developed by the Australian Commission on Safety and Quality in Health Care to ensure a consistent national approach to AMS by reducing variation in target areas. The AMS CCS also aims to ensure that a patient receives optimal antimicrobial therapy for the treatment or prevention of an infection, including reassurance when an antimicrobial is not needed.
In 2020, a review was conducted to assess the relevance and currency of the AMS CCS. The aim of this study was to identify barriers and facilitators to their implementation.

Methods
An electronic national survey of clinicians and health service staff in March 2020. Questions were asked around the respondent's demographics, awareness of the CCS, its

relevance to practice, changes that had been made to practice, and any barriers to making practice changes.

Results

213 survey responses were received from respondents who worked at organisations located across all states and territories of Australia. Most respondents worked at organisations that were in major Australian cities (71.7%).

The respondents consisting of nurses, pharmacists, clinical directors or safety and quality managers and officers, medical practitioners, and allied health professionals.Overall awareness of the AMS CCS was high. It was relevant to practice by 99% of respondents, with 67% indicating that they themselves had made changes to their own practice.

The AMS CCS was feasible to implement, with 72.8% of respondents indicating that changes had been at their organisation to implement it. A total of 696 changes were made, with the most common changes being: developing or improving policies related to patient care; making changes to service delivery, practice, or procedures; and providing access to new resources to support the implementation.

Some respondents (n=54) indicated that they, or their organisation, used the clinical care standard to initiate or amend a quality improvement activity. Examples included reviewing and establishing auditing, monitoring, and reporting processes by health services (n=29); reviewing and developing policies, protocols and guidelines that align with the CCS (n=17); and introducing new tools to implement the CCS (n=11).

Twenty respondents indicated their organisation had not made any changes to implement the clinical care standard. The most common reasons were insufficient funding or resources (n=3), and that the organisation lacked the skills or experience (n=2).

Discussion

Overall, survey respondents felt the AMS CCS was relevant (79.3%), had changed practice for the better (67.4%) and were used in their organisation (67.1%).

The CCS is an important and useful tool to improve current and future antimicrobial use and AMS practice.

The C-Senior trial: A community pharmacist and general practitioner collaborative deprescribing intervention of proton-pump inhibitors on community-dwelling older adults

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Background: Although indicating a major achievement in human development, increasing life expectancy poses serious challenges. Among others, older adults usually experience poor health and several chronic conditions, exposing them to multiple medicines which increase the risk of polypharmacy, non-adherence, drug-drug interactions, and use of potentially inappropriate medicines (PIM), accounting for a significant proportion of avoidable emergency department visits and hospitalizations. Preventing harm due to medicines is a global patient safety challenge. Deprescribing has gained attention as a mean to reduce PIM use and polypharmacy, improving medication use and outcomes, throughout patients' care pathways. However, the value of deprescribing interventions remains unclear, questioning the interest of their scaling-up.

Purpose: This study aims to investigate the effectiveness and cost-effectiveness of a community pharmacist and general practitioner (GP) collaborative deprescribing intervention on proton-pump inhibitors (PPIs) in Portugal, a PIM highly prevalent in community-dwelling older people

METHODS: The study is a 6-month multicentre, pragmatic, 2-arm non-randomized controlled trial. Overall, 222 patients are expected to be recruited from 20 community pharmacies in about 12 municipalities on Portugal mainland,

starting in April 2023. Participants in the experimental group will receive a multifaceted 3-step intervention delivered in coordination by the pharmacist and the GP (1. pharmacy-led educational delivery; 2. GP appointment and 3. pharmacy-led patient monitoring after GPs' medicine assessment). An educational brochure developed by the research team, based on the international literature, will be used in the intervention's first step. Pharmacists and GPs in the experimental group have already received on-site training. The primary outcome of this trial is the successful discontinuation or dose decrease of PPIs at 3- and 6-month follow-up. Patient-reported outcomes (adherence, beliefs about medicines, and quality of life) and patient-reported experiences regarding the intervention, will also be assessed. For both groups (experimental and control), data will be collected from structured patient questionnaires and dispensing pharmacy software. Additionally, for intervention characteristics and process assessment, the health professional's intervention registries will be collected. The study is expected to run until December 2023. An economic evaluation will be conducted alongside the trial, based on the collection of costs and outcomes data alongside the trial. The National Health Service perspective will be considered. This study was approved by the Ethics Committee for Health from the Local Health Unit Alto Minho.

Results: No study results are available to the abstract submission date.

Conclusions: This trial will add evidence about the effectiveness and cost-effectiveness of a patient-centred approach to discontinue a commonly inappropriate class of medicines among community-dwelling older adults. Furthermore, it will provide evidence to help implement future nationwide approaches for community pharmacist-general practitioner collaborative services in primary care in Portugal.

Identifying optimal ALK inhibitors in first- and second-line treatment of patients with advanced ALK-positive non-small-cell lung cancer: A systematic review and network meta-analysis

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Background: Despite several systemic treatments being available for ALK-positive non-small-cell lung cancer (NSCLC), the comparative efficacy and safety of first- or second-line treatments are still unknown due to the lack of clinical trial evidence on the relative efficacy. This highlights the necessity of indirect comparisons of these ALK-inhibitors. However, the existing meta-analyses gathered limited clinical evidence and overlooked some important indicators, and simply utilized proportional hazards models to compare the efficacy, even in case when non-proportional hazards were detected. Furthermore, the majority of phase Ⅲ randomized controlled trials (RCTs) are now disclosing or updating survival data. Consequently, there is a critical requirement for more precise and up-to-date evidence.

Objectives: To compare the efficacy, safety and effects on quality of life of multiple systemic treatments for global and Asian patients with advanced ALK-positive NSCLC.

Methods: The included RCTs were identified through a systematic search of PubMed, EMBASE, Cochrane Library, Clinical Trials.gov, and major cancer conferences. The assessment of progression-free survival (PFS), intracranial PFS, overall survival (OS), and patient-reported outcomes (PROs) was carried out using survival models (restricted mean survival time [RMST] model, fractional polynomial and Royston-Parmar model). Time-invariant hazard ratio (HR) models were also used to validate and supplement the primary analysis. Objective response rate (ORR) and adverse events with any grade, grade 3-4, and grade 5 or fatal were assessed through a Bayesian network meta-analysis. The primary measures for OS, PFS, and PROs were HR and difference in RMST (RMSD). Odds ratio was the metric for safety and ORR. The subgroup analysis considered the following factors: region, brain metastasis (BM), Eastern Cooperative Oncology Group score, gender, age, and smoking.

Results: A total of fifteen studies consisting of eight treatments (chemotherapy, crizotinib, alectinib, brigatinib, ceritinib, ensartinib, envonalkib, and lorlatinib) were included. In first-line, alectinib showed a significant advantage over crizotinib (HR: 0.67 [95% CrI: 0.46~0.98]) and was associated with the longest OS among all ALK-inhibitors. Lorlatinib had the best efficacy regarding PFS for global patients (RMSD: 15.52 months [95% CrI, 11.79~19.25]), followed by alectinib (10.17 [6.73~13,62]). The subgroup analysis showed a consistent conclusion overall. However, for Asian patients, alectinib had the best performance in PFS (RMSD: 14.09 months, [95% CrI, 9.40~18.82]). For patients with or without baseline BM, lorlatinib (RMSD: 6.86 months, [95% CrI, 4.74~8.95]) and alectinib (5.63 [3.73 ~7.55]) performed the best in intracranial PFS, respectively. In addition, alectinib (HR: 0.20 [95% CrI, 0.12~0.33]) was the optimal choice for patients pretreated with crizotinib, followed by brigatinib (0.19 [0.10~0.37]), lorlatinib (0.22 [0.15~0.32]) and chemotherapy. Low-dose alectinib and alectinib were the safest first-line options, while lorlatinib, brigatinib, and ceritinib had the worst safety profiles. Furthermore, alectinib was the safest ALK-inhibitor for crizotinib-resistant patients. In terms of ORR, low-dose alectinib and alectinib were the best choices for first- and second-line treatments, respectively. Brigatinib had the best performance in terms of patient-reported outcomes.

Conclusions: After considering both efficacy and safety, alectinib appears to be the preferable first-line treatment,

particularly for Asian patients. For second-line treatment of crizotinib-resistant patients, alectinib remains the the optimal option.

Antipsychotic withdrawal and patients' challenges in seeking support

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Background: People prescribed antipsychotic medication to treat the symptoms of psychosis in bipolar disorder or schizophrenia are given these medications on a long-term basis. However, in a randomised trial assessing antipsychotic medication efficacy, nearly 75% of service users discontinued their treatment within 18 months due to inefficacy of treatment, intolerable side effects or other reasons. Often discontinuation takes place without conversation or support from their prescriber. Abrupt discontinuation of antipsychotic medication has been associated with withdrawal symptoms leading to unintended patient harm. Service users are often unaware of withdrawal effects and need to reduce medication gradually.

Purpose: This research aimed to explore how people experiencing antipsychotic withdrawal communicate about it with healthcare professionals.

Method: The study used online survey with likert scale and open-ended sections. Follow up semi-structured interviews were conducted with a smaller sub sample. Questions in the survey focused on people's experiences of withdrawal and support they received.

Results: 53 participant from 15 different countries completed the questionnaire. Of the participants, 29 identified as female, 19 as male, two were non-binary, and one each as agender, gender-fluid and trans-male. More than 50% (n=27) had attempted withdrawal three or more times.
Only eight participants (15%) found it very easy communicating with health care professionals about their withdrawal, whereas 55% (n=34) found it very difficult to communicate their withdrawal experiences with health care providers. This was reflected in the qualitative answers were participants shared about the lack of belief and understanding about withdrawal symptoms.
"They always put the withdrawal symptoms onto the fact that see you need meds and more or a change in meds. I took these meds for anxiety and compared to what the meds have done to me as a person I was better off before with the anxiety."
Participants found it challenging to communicate how they felt and what they were experiencing to others, whether health care professionals or friends and family members.
"The whole experience is totally unrelateable to others…they simply have no concepts in their mind to relate it to. They don't know such horror, unless they have been through gruesome things themselves."
Many participant felt that the peer support they received from others experiencing similar symptoms was one of the most helpful things they had experienced. A few participants had also had experiences of health care professionals who understood and listened which had been valued.
"Finding others who had similar experiences, and knowing that my experiences were valid and real."

Conclusion: People experiencing antipsychotic withdrawal find it challenging talking to health care professionals. Lack of recognition about the existence of antipsychotic withdrawal by health care professionals and the lack of language in communicating about the withdrawal symptoms were the biggest challenges faced by the participants. This is a study with a small but international sample on very under researched topic. As experts in medicines, pharmacists have a crucial role in seeking to provide counsel and support people experiences withdrawal symptoms.

Role of community pharmacist in providing quality healthcare services thru non government organization

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North East Zone Chemists Educational & Welfare Trust's Samarpan Blood Centre-24x7, founded by Registered NGO in 1998, a trust of pharmacists/chemists situated in North East part of Mumbai with active support & fund required for setting up project was 100% contributed by them only. A unique concept of service to humanity in professional way-By the Pharmacists/Chemists-For the Society.

State of art facility in 5,500+ sq. ft. with fifty staff working under common branding of SAMARPAN HEALTHCARE CENTRE; Blood, Dialysis, Thalassemia & Pathology Centre/s and intend to start in near future; Eye-ball Collection, Skin Donation, Organ Donation Awareness & Skill Development Centre/s.

Samarpan in continuation with mission statement ensures easily accessible and adequate supply of safe & quality blood components at affordable charges procured from 100% voluntary non-remunerated regular blood donor/s by maintaining ethical practices & standards, managing two storage centre/s by fulfilling need of many hospitals with MoU, 24x7 free pick-up/drop services for blood to ailing patient with the help of fleet of five electric scooty & ambulance received in donation and thus retaining position within top 10 blood centres out of 350+ in Maharashtra.

Rotary Int. donated a bus for Blood Donation 1st in 2009 with five beds, and 2nd in 2018 with eight recliner chairs that has helped us a lot for smooth/regular conduct of

camps in hygienic conditions and so one more philanthropist donated 3rd small vehicle in 2022 so to penetrate in interiors for uninterrupted need of blood.

Managing Thalassemia Centre since October 2008, adopted 150+ Thalassemia Major Children's in 1st phase from Mumbai/adjoining Districts providing FREE OF COST Leuco-reduced components & transfusion under dedicated staff every 15 days which is otherwise costing US$ 1,500 per child/year and helps for their medicines/diagnostic check-ups at subsidized rate, takes care of their social life to make more happier to possible extent by arranging picnic, functions like felicitation for their success in various exams, birthday celebration & get-together.

Many children were transferred from other hospitals/centres, out of which 44 were sero-reactive (39-HCV, 3-HIV & 2-HBV) to whom we closely monitored for not adding new sero-reactive and under first innovative project in India, 13 HCV reactive children's who needed immediate attention and completed 24/48 week's treatment costed US$ 5,000/child including diagnosis & other expense resulted that they are now HCV negative for which majority of expenses were borne by our trust and some philanthropists and second such project was undertaken for another batch of children with same positive outcome. Due to regular monitoring, quality of blood, follow up for medication etc. frequency of transfusion as well number of blood bags has been reduced.

Rotary Int. helped for setting up state of art Dialysis Centre with 14 machines at very subsidized charges.

Pharmacist/Chemists being important pillar in healthcare system still considered as secondary contributor even after playing key role in providing healthcare services by leading from forefront coordinating with medico, para medico's using skill of data analytics, outcome based result proved unique & best in Mumbai region.

Improving communication with older patients about managing medication changes across transitions of care

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Background
As older patients move across transitions of care, such as hospitals, aged care facilities, and primary care, they encounter different health professionals including community pharmacists, general practitioners, hospital pharmacists and nurses. These encounters often involve communicating about medication changes. Due to the complexities involved in medication communication across transitions of care, there is an increased risk of medication-related problems, emergency department presentations and hospital admissions.

Purpose
To examine how communication occurs about managing medication changes as older patients move across transitions of care; and to utilise the perceptions and experiences of older patients, families and health professionals in developing guidelines for practice for prioritising shared decision making about medication changes.

Method
A reflexive ethnographic design was used, comprising interviews, observations and focus groups. Participants were older patients, their families and health professionals of different disciplines. Data collection was undertaken in an acute care hospital and a subacute care hospital in Melbourne, Australia. In focus groups, the findings from interviews and observations were discussed with participants to gauge their reflections on how to create opportunities for increased patient and family involvement. Guidelines for practice were developed based on patient, family and health professional reflections during focus groups.

Results
Participants involved 182 older patients aged between 65 and 104 years, 44 family members, as well as 95 health professionals comprising 66 nurses, 16 pharmacists and 13 doctors. Older patients experienced communication problems and confusion in having to relay the same information to different health professionals in various environments as they transferred between settings. Doctors rarely conveyed details to patients and families about anticipated medication changes, and when older patients sought clarification about medication changes with nurses, older patients were asked to direct their queries to doctors and pharmacists. Pharmacists spent extensive time with older patients before discharge to educate them about medication changes, but these education sessions did not provide opportunities for patients or families to relay their own preferences and goals of care about medication decisions. Health professionals tended not to alert patients or families to changes in regularly prescribed medications, and instead, the focus was on communicating about new medications. Guidelines for practice were developed, and translated into three common languages – simple Chinese, Hindi and Vietnamese. The guidelines for older patients and families included questions they could ask health professionals to promote enhanced involvement in decision-making, such as considering between various medication and non-medication options and clarifying the benefits and possible harms relating to medication changes.

Conclusion
Complexities of everyday communication encounters about medication changes were obtained from actual experiences in diverse clinical settings across acute care and subacute care settings, as older patients were preparing to transfer

between environments. Details about these communication encounters were reflected upon by participants to develop guidelines for practice. Future possible steps involve testing these guidelines to determine older patients' ability to monitor their medication regimen and to contribute to medication decisions as they move between environments, and to evaluate whether these guidelines prevent subsequent hospital admission or emergency department presentation.

Proposing concrete changes for a modern pharmaceutical sector in Portugal: Lessons learned from other countries

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Background: The Portuguese Association of Young Pharmacists (APJF) has identified several key areas for improvement in the pharmaceutical sector in Portugal through their White Book. This study aims to identify successful policies and practices implemented by other countries to overcome the challenges identified in the White Book.

Purpose: APJF has conducted a review of case studies from other countries to guide the advocacy work of the Association and provide a rationale for the proposals outlined in the White Book. This review will assist in showcasing examples that can support the Association's advocacy efforts.

Methods: We conducted a systematic review of the literature and analyzed case studies of countries that have implemented similar changes. We focused on proposals outlined in three main chapters of the White Book: A Better Informed Society for Health and Well-being, An Evolution of Pharmaceutical Intervention for the Society, and A Vision for Modernizing the Pharmacist's Competence Framework.

Results: We identified several successful policies and practices implemented by other countries that align with the proposals outlined in the White Book. By learning from the successes of other countries, and the steps that were taken to achieve those outcomes, we propose concrete changes to modernize the pharmaceutical sector in Portugal. These include ensuring structured clinical intervention in community settings by pharmacists, integrating pharmaceutical care across different levels of healthcare, and innovating the education model of Pharmaceutical Sciences in Portugal.

Conclusion: Through this study, we propose concrete changes that will help modernize the pharmaceutical sector in Portugal and by coordinating a peer to peer discussion throughout the next months with our peers it will be possible to present the key findings to relevant Portuguese stakeholders. By implementing successful policies and practices from other countries, we can ensure better health outcomes for the Portuguese population and increase the role of pharmacists in the national context.

From watch to recovery: A pharmacy emergency response conference workshop evaluation survey

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Background
The importance of pharmacists' involvement in disasters is becoming increasingly recognized in the literature. However, there is limited research on how to best train and prepare the pharmacy workforce (pharmacists and pharmacy staff) for disasters and emergencies. There are also limited opportunities for frontline pharmacy staff to learn about and train in disaster management and emergency preparedness.

Purpose
The aim of this project was to determine the effectiveness of a disaster workshop at improving pharmacy staff's perceived capabilities to prevent, prepare, respond, and recover from disasters.

Methods
A disaster workshop was provided at a pharmacy conference in the United State of America in June 2022. The workshop incorporated an evolving emergency scenario in which participants worked through activities pertaining to the prevention, preparedness, response, and recovery cycle. The attendees were invited to complete a previously validated pre-post survey assessing their perceptions of their skills and capabilities in the components of disaster management.

Results
The pre-post survey was completed by 31 attendees. After the workshop, participants' perceptions of their ability to prevent, respond, and recover from a disaster significantly improved ($p=0.004$, 0.013, and 0.013 respectively). Participants appreciated the realism of the workshop and found it useful with one participant commenting 'it was a great table top exercise. It helped me to identify caps hidden in plain sight'.

Conclusions
This study demonstrated that a conference disaster workshop can improve the understanding and perceived disaster capabilities of health-system pharmacy personnel.

Achieving medicines access equity for Māori– "As long as we are all aware of the words and the waiata, we'll sing it beautifully"

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Māori are the indigenous population of Aotearoa New Zealand. Compared to non-Māori, Māori experience reduced access and quality of healthcare across the spectrum of clinical contexts. These inequities include reduced access to appropriate medicines. Pharmacist effectiveness in improving medicines-related care is known yet pharmacists' role in achieving medicines access equity for Māori is understudied.

This current masters thesis was part three of a four-part research project conducted by the Māori Pharmacists Association and the National Hauora Coalition. A kaupapa Māori research project conducted by Māori, for Māori. The overall multi-phase project aims to utilise western knowledge and privilege while centring Māori voice and tools from te ao Māori (the Māori world) to drive development of real-world, pro-equity solutions that support medicines and treatment access equity for Māori.

Part three focused on stakeholder experiences with the Pharmacist Minor Ailment Service, adherence support and access equity for Māori. It followed part two which focused on Māori experiences and perceptions of access to medicines and allowed Māori to identify ways pharmacists can support this. By completing part two before this current thesis, the indigenous voice was able to be privileged in the stakeholder interviews, whānau (families) experiences and truth was able to be shared and Indigenous sovereignty upheld with those involved with health system planning in a bid to ensure whānau flourish by being able to access equitable health care services.

12 interviews were held with health system stakeholders including, health system planners, general practitioners, pharmacists and health system researchers with the aim of exploring the critical steps required to enable pharmacists to deliver equitable access to funded medicines for minor ailment treatments, adherence support and medicines access in general.

Thematic analysis of the interviews revealed four main themes when looking at the pharmacist minor ailment service and three themes in relation to discussions around adherence support for whānau. The following themes will be discussed during the presentation:

The Pharmacist Minor Ailment Service:
1. Pharmacists as providers of solutions to inequitable barriers
2. Planning and implementing for equity and sustainability
3. Providers need to be integrated and know their communities
4. Workforce development

Adherence support:
1. Culturally responsive patient-centred care
2. Integrated, intersectorial model needed
3. Legislation, funding and IT development

The title of this research "As long as we are all aware of the words and the waiata, we'll sing it beautifully" is a saying from famous Māori soprano Dame Kiri Te Kanawa. It encapsulates the essence of this research around the importance of relationships, communication and clear structures when pursuing excellence in Māori health outcomes.

Determining the availability of prescription drug repository programs in the United States of America

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Background: In the last decade, legislation in the United States of America (USA) has expanded to allow states to create drug repository programs. State prescription drug repository programs aim to increase medication access by collecting and redistributing unused prescription drugs to patients in need. Repository programs accept donations of non-hazardous and unused prescription medications. These programs differ from medication drop-boxes, as focus is on redistribution of unused medications compared to appropriate medication disposal or destruction. Repository programs promote medication access and distribution to patients in need to improve health outcomes. To date, limited reviews are assessing the availability of repository programs outlining the possibility of creating medication access and health outcomes in the USA.

Purpose: To assess the availability of drug repository programs in healthcare settings across the United States of America (USA).

Methods: Using data sourced from the 2023 National Conference of State Legislatures and State Boards of Pharmacy, in each of the fifty states in the USA were analyzed for the availability of state prescription drug repositories. If the resources lacked the necessary description to understand enacted legislation, the bill was searched for on the corresponding state legislature's website and assessed using key terms including state drug repository, prescription drug repository, and/or pharmacy. Using descriptive statistics with a focus on repository programs, each state legislation was viewed to determine if repository programs were available and operational.

Results: The data showed that 42 out of 50 (84%) states have legislation facilitating repository programs. These repository programs varied widely by state due to federal

and state legislation nuances. Out of 50 states, 29 had operational repository programs. Data illustrates that 55% of states with active repository programs (n=16) had a readily available list of repository locations. Furthermore, 26% of states (n=13) having repository programs accepted cancer medications for redistribution. Although legislation exists allowing for repository programs, data demonstrated 13 states (26%) did not have operational repository programs.

Conclusion: The data highlights existing legislation facilitating drug repositories is available in the majority of the states. Variability in state legislation enables for the expansion of drug repository acceptance of medications, such as cancer medicines for redistribution. Although, several states provide key information concerning accessing drug repository programs, there is opportunity for extension and development of existing resources to include readily available lists guiding patients to access the drug repository programs. Thus, the existence of drug repository programs enables enhanced medication access and redistribution programs for patients and communities.

The disaster preparedness and management of pharmacists: A systematic review of the assessment instruments

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Background: Disasters, whether natural or man-made have been, unfortunately, happening more frequently over the past 50 years. Disasters have traditionally been considered the main threat to healthcare delivery and security worldwide, with no country being immune to such events. The maintenance of flawless healthcare service delivery and helping society during disasters are significant duties and obligations of healthcare practitioners, including pharmacists, who should be ideally prepared to deal and manage disasters. However, it is not known if there is an assessment instrument that can accurately assess the disaster preparedness and management of pharmacists.

Purpose: The aim of this systematic review is to identify and evaluate the psychometric properties of disaster preparedness and management instruments that were developed for assessing the disaster preparedness and management of pharmacists.

Methods: A systematic review search strategy was designed to identify the relevant original research articles, which are published in English language, utilizing PubMed, ProQuest Public Health, and CINAHL databases. The key concepts used were: disasters, pharmacists, preparedness, management, and questionnaire. Quantitative and mixed-methods study designs were included. The identified tools were summarized according to their measurement scope/context, psychometric properties, and strengths and limitations. Data about the validity and reliability of the included questionnaires were summarized according to content validity, response process, internal structure, relation to other variables, and consequence validity.

Results: Out of seventy-one articles that met the inclusion criteria, only three studies were in the pharmacy profession. The included articles comprised instruments that were not developed and validated in a methodologically sound manner. None of the included instruments was based on a theoretical framework. The key domains measured in the included articles were knowledge, training, and willingness to report to work during disasters. The reviewed articles possessed minimal quality for validity and reliability evidence.

Conclusions:
The results of this review demonstrated a lack of well-designed and validated assessment tools that can be used to assess disaster preparedness and management of pharmacists, which necessitates further research to develop and validate assessment of preparedness and management of disasters tools. Developing and validating assessment of preparedness and management of disasters tools for pharmacists will help to understand the level of pharmacists' preparedness to dealing and manage disasters, potential barriers and enablers for their preparedness, and ultimately improve their abilities and willingness to manage disasters.

Capacitating the last mile pharmacy practitioner: Francophone vs Anglophone Sub-saharan Africa

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Background
The pharmacy educational system is very diverse, especially between Anglophone and Francophone nations of sub-Saharan Africa (SSA). With formal training ranging from 3-6 years, SSA countries have one or both systems which more often than not dictates the density of the skilled pharmacy workforce. Anglophone countries are generally more economically developed. Further, English dominates in health-related education: academic literature, and public/global health resources.
The Ecumenical Pharmaceutical Network (EPN), which has members in both French and English speaking SSA, conducted a needs assessment survey in remote health facilities which showed less than 25% of the church-based facility staff are qualified, yet they are managing and dispensing medicines. The role of a pharmacist is taken up by other health professionals or community volunteers, who only have basic education.

EPN, has instituted capacity building activities in both languages to fill this gap through training for last mile Health Care workers through tailored training sessions e.g. essential pharmaceutical practices and handling Antimicrobial Resistance, that have proven to yield positive results.

Purpose
The study highlights the gaps in the pharmacy workforce in the church health system SSA, more so in marginalized and remote areas where National government health services are limited.

Method
The study used both qualitative and quantitative study design analysis of 114 church health facilities (including dispensaries and health centers). Participants were mainly health facility administrators and pharmacy staff responded to an online questionnaire, and interviews on aspects of institutional, infrastructural and knowledge gaps.

Results
In francophone Africa, some countries like Niger only have 6-year Pharm.D program which is costly and lengthy hence the number of pharmacists enrolling for the programs is low and some leave the countries for better opportunities. Others like Central Africa Republic train Pharmacy Assistants in only one cohort of students at a time for 3 years before enrolling another class.
Within Anglophone countries, most countries offer certificate, diploma and degree programs (1, 3, 4-6 years respectively), resulting in diversity in cadres: dispensers/pharmacy assistants, pharmaceutical technologists and pharmacists respectively.
EPN training sessions are delivered as a hybrid of 3-10 days in-person training and up to 3 days online training with continuous follow-up, and practical implementation of knowledge acquired. This approach has yielded 39% increase in basic pharmaceutical knowledge and more than 90% success rate in implementing public health interventions in facilities with staff that have no skilled pharmacy practitioners.
EPN also offers scholarships, targeting scholarship program has been very successful with an 80% improvement rate in basic pharmaceutical services. Specialized training can be quite expensive and time-consuming but very impactful.

Conclusion
Synergistics efforts in both formal training and continuous on job training, are key bridging the gap in skilled workforce in both regions especially where there are no pharmacists. EPN's efforts to deliberately tailor make training opportunities for the francophone member countries resulted in improved pharmaceutical services.
There's still a need to empower the last mile pharmacy practitioner through varied innovative channels to bridge the existing gap to assure patient safety in handling medication.

Pharmacists are responsible for patient outcomes when dispensing opioids

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Introduction: Prescription opioids cause significant harm. Around the world, policy and regulation have been utilised to promote safety in response to opioid-related harm. Pharmacists play an important role in the supply of prescription opioids; this role has been expanded with the introduction of measures such as Prescription Drug Monitoring Programs. Clinical and professional health-system guidelines for opioid dispensing largely communicate high-level and general advice, whereas explicit and direct guidance for pharmacists dispensing opioids is uncommon.

Aim: This paper seeks to establish the specific responsibilities that pharmacists have when dispensing prescription opioids.

Methods: Specific responsibilities of pharmacists when dispensing opioids are established through ethical argument. The argument applies two widely accepted principles for pharmacy practice to the context and the complexities of opioid-related harm in the community. The argument is constructed around four premises: 1) opioid related harm is common and associated with prescribed and dispensed opioids, 2) pharmacists are able to reduce opioid-related harm, 3) pharmacists are responsible for patient outcomes within their scope of practice, and 4) pharmacists have an independent professional responsibility.

Results: Pharmacists are responsible for patient outcomes. Every time a pharmacist dispenses an opioid prescription, they are responsible for identifying the individual's risk of opioid-related harm and employing effective strategies to mitigate that risk. The justification for these responsibilities is provided by specifying more general pharmacist responsibilities. Key counter-arguments are discussed. One such counter-argument is the complexity of the health system, specifically where pharmacists often face barriers that affect their ability to fulfill their role. While perceived barriers in pharmacy practice are important to consider when implementing interventions to change the behaviour of pharmacists, it is contested that there remains a fundamental ethical responsibility for pharmacists to act to ensure positive patient outcomes, regardless of individually perceived practical barriers in professional practice. Other counter-arguments such as differing models of shared responsibility and the relative absence of clinical guidance are also addressed.

Conclusion: Pharmacists have an important role to play in reducing opioid-related harm. Clarity regarding the specific responsibilities of pharmacists when dispensing opioids is

important in addition to evolving clinical guidance and regulatory approaches to improve the safe and effective use of opioids.

Medication adherence inpills of polycystic ovary syndrome (PCOS) patients in the national capital region

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Polycystic ovary syndrome (PCOS) is a widespread hormonal condition mainly affecting women of childbearing age. Management of PCOS typically includes lifestyle modifications and medication therapy, but medication adherence among PCOS patients remains suboptimal. This study aimed to explore factors influencing medication adherence among PCOS patients and identify strategies for improving adherence.

A mixed-methods or quantitative-qualitative design with an explanatory sequential approach in determining the medication adherence in pills of PCOS patients was used, including a cross-sectional survey of 385 PCOS patients and in-depth interviews with a subsample of 10 patients. The survey assessed medication adherence, demographic and clinical characteristics, PCOS-related knowledge and beliefs, and barriers to adherence. Interviews were conducted to better understand patients' experiences and perceptions of medication use.

In conclusion, medication adherence among PCOS patients is suboptimal, with several factors contributing to poor adherence. Patient education, provider support, and patient-centered tailored interventions may improve medication adherence in this population.

To screen or not to screen: Exploring pharmacists' roles in perinatal mental healthcare

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Background: Perinatal depression (PND) affects approximately 20% of women worldwide with potentially far-reaching and long-term consequences for women and their families. PND often goes unrecognised and undetected, which can lead to a lack of treatment. Without access to treatment for PND, women are at greater risk of developing other mental and physical health conditions. Similarly, children of mothers with PND are more likely to experience delays in emotional, and behavioural development, as well as to develop depression themselves. Pharmacists are accessible primary care providers who regularly interact with perinatal women, with roles in screening for various chronic conditions including cardiovascular disease and diabetes; however, there is limited literature exploring pharmacists' roles in screening for mental illness. As PND screening facilitates the identification of at-risk women for referral and treatment, there is a need to support all primary care professionals, including pharmacists, to support perinatal mental healthcare and early detection initiatives.

Purpose: The aim is to explore pharmacists' roles in perinatal mental healthcare. Specifically, this presentation will present the findings of a systematic review of PND screening recommendations across Organisation for Economic Co-operation and Development (OECD) member countries and a qualitative investigation of perinatal women's acceptability of pharmacist-delivered PND screening and care.

Method: To identify the role of pharmacists in international PND screening recommendations, PubMed, Google and Guidelines International Network were searched PND screening endorsement recommendations, timing, frequency, responsible healthcare provider, tools/assessment, follow-up and referral recommendations were extracted from included publications. Semi-structured interviews with perinatal women were conducted, transcribed verbatim and inductively thematically analysed.

Themes and subthemes were then mapped to the Consolidated Framework for Implementation Research (CFIR) to explore perinatal women's acceptability of pharmacist-delivered PND screening and care.

Results: Conducted in September 2020 and with no date restrictions applied, the systematic review identified 21 publications across 5 countries. 20 of these publications recommended PND screening, enquiry into depressive symptoms or psychosocial assessment. However, generic terms, including 'clinicians' and 'healthcare professionals', were often used when referring to the providers responsible for conducting screening. The role of pharmacists in PND screening was explicitly highlighted in one of 21 publications. Thematic analysis and framework mapping of transcribed interviews with 41 perinatal women from six Australian states and territories highlighted that perinatal women's experience with existing PND services, knowledge of pharmacists' roles, pharmacists' visibility in PND care, patient-pharmacist relationships, time and privacy were factors influencing perinatal women's acceptability of pharmacist-delivered PND screening. Perinatal women were accepting of pharmacists' roles in PND screening and care, provided that pharmacists were trained and there was collaboration with other healthcare professionals.

Conclusion: Recommendations from a range of countries support primary healthcare professionals' roles in PND screening. Perinatal women find pharmacist-led PND screening acceptable when pharmacists are appropriately trained and have the space women need to feel comfortable in accessing PND care, indicating the potential to expand pharmacists' roles in this area. Further research on other stakeholders' views, as well as the development and evaluation of pharmacist-specific training on PND screening and care is required.

Prevalence and patterns of long-term antidepressant use in older Australian women

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Background:
Antidepressant use is common among people worldwide. Patients often use antidepressants longer than guideline recommendations (> one year), with long-term use associated with polypharmacy and increased adverse drug events. Women have a higher reported prevalence of depression and anxiety and are more likely to be prescribed antidepressants. Although literature suggesting long-term antidepressant use is substantial, no studies have focused on older Australian women.

Aim:
To determine patterns of antidepressant use among older Australian women and the relationship to guideline recommendations.

Methods:
We used data from the Australian Longitudinal Study on Women's Health, mid- and young- cohort (participants born: 1946-1951 and 1973-1978, respectively) and linked Pharmaceutical Benefits Scheme dispensing data (July 2012-December 2019). We estimated the duration of antidepressant use for each participant and compared it with several co-variates, including episodes of antidepressant use, cohort group (age), country of birth, level of education, residential location, and ability to manage on available income. To capture only the new antidepressant users, we excluded participants with any antidepressant dispensing in a 3-month wash-out period (July – September 2012). To distinguish different episodes of care, we recorded another episode of antidepressant use if medication dispensing for the same participant was more than 6 months apart. We recorded up to three episodes for each participant and compared the duration of use using the Kaplan-Meier estimator for each of the covariates. We also performed Cox-regression analyses to compare the effect of each of these co-variates on the outcome of measure.
Results:
Of 26,459 consenting participants, 4,416 eligible women had 5,553 episodes of antidepressant use. The mean estimated duration of first-time antidepressant use was 664 days (1.8 years). One in four women (26%) had only one prescription filled. One in three (32%) continued treatment beyond two years, with one in seven (14%) continuing use at five years. Older women and first-time users were found to have a longer duration of antidepressant use. Several factors were not associated with duration of antidepressant use: co-morbidities, level of education, country of birth, residential location, and ability to manage on available income.

Discussion:
Using real-world, longitudinal data, we identified potential gaps between guideline recommendations on antidepressant use and women's actual antidepressant use patterns, both early discontinuation and treatment well beyond recommended duration. Both scenarios have substantial implications for medication efficacy, safety, and costs. Many characteristics of Australian women were not associated with the duration of antidepressant use so therefore the potential influence of prescriber characteristics should be explored. Clear communication of expected time to effect, planned duration of use, and opportunities for patients to actively contribute to treatment expectations and goals are key considerations to improve the quality use of antidepressants.

Inappropriate prescribing of medicines in older Sri Lankan adults: A systematic review

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Background
The quality use of medicines is challenging, especially for older adults who often have multiple co-morbidities, age-related pharmacokinetic and pharmacodynamic changes and complex medication regimens. Appropriate prescribing of medicines can minimize the chance of potential or actual drug-related problems and enhance therapeutic outcomes. Assessment tools may be used to identify inappropriate prescribing in elderly populations. However, assessment of inappropriate prescribing in older Sri Lankan adults has not been systematically reported.

Purpose
The overall aim was to describe the use of assessment tools to identify inappropriate medicine use in older Sri Lankan adults.

Method
Studies were identified from MEDLINE, EMBASE, Web of Science and International Pharmaceutical Abstracts (Ovid). A search strategy with the following themes was conducted: “inappropriate prescribing” (A), “assessment tools” (B), “older adults” (C) and “Sri Lanka” (D), with the following conditions: (A OR B) AND C AND D. The review was conducted in accordance with the methodological manual of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). Articles published up to 12th April 2023 were included.

Results
A total of 2644 articles were identified. Following the elimination of duplicates and assessment of titles and abstracts, two studies were identified. Screening Tool of Older People’s Prescriptions (STOPP) and Screening Tool to Alert to Right Treatment (START) criteria served as the foundation for both studies. One study was conducted to assess the usefulness of STOPP/START criteria in assessing appropriate medicines in diabetic and psychiatric clinics in a tertiary care hospital and for the elderly living in a selected urban area of Sri Lanka. The second study was conducted to modify STOPP/STRAT criteria for Sri Lanka by Delphi consensus. STOPP/START is a physiological system-based screening tool consisting of explicit criteria, but they are not based on the disease prevalence and essential medicine list in Sri Lanka.

Conclusion
This review demonstrated the paucity of research on the inappropriate use of medicines in older adults in Sri Lanka. The included studies used a recognized assessment tool, however, the utility of this tool and applicability to the Sri Lankan context is unknown. No country-specific assessment tools specific to Sri Lanka were identified. There is a need for further research in this field in Sri Lanka.

Identifying self-care needs among international travellers and transient migrants: A meta-synthesis

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Background
Community pharmacists in tourism and migration destinations are likely to face international travellers and transient migrants (defined as those who work or study in a different country for a short period) seeking self-care advice to prevent, treat or manage illness. International travellers and transient migrants differ from long-term migrants, such as permanent residents and resettled refugees, because the latter groups are more familiar with the destinations. Since these transient groups might find self-care challenging, identifying their needs would help pharmacists develop strategies to provide healthcare services for this population.

Purpose
To identify the perceptions of international travellers’ and transient migrants' regarding self-care from the published literature via systematic review and meta-synthesis.

Method
A systematic literature search was performed in Ovid (MEDLINE, Embase, International Pharmaceutical Abstracts, PsycINFO) and EBSCO (CINAHL) platforms to find qualitative or mixed methods research on self-care in travellers or transient migrants. The Center for Evidence-Based Medicine’s Critical Appraisal of Qualitative Studies guide was used to assess the quality of selected articles. Noblit and Hare’s seven steps of meta-ethnography approach, as described by Mohammed, was applied. El-Osta’s Self-Care Matrix Framework, which proposes interlinked Self-Care Activities, Behaviours, Context and Environment, was used to help categorise codes.

Results
Of 2,114 articles retrieved, 11 articles were eligible for review after screening by two independent reviewers. Two studies were conducted among tourists, and nine were among transient or short-term migrants. Self-Care Activities included awareness of health risks, maintaining healthy diets, and bringing medical supplies. Common Self-Care Behaviours were identified, including self-diagnosis, self-treatment, and health information-seeking. Some self-care

strategies, such as self-injection practices, were not aligned with the destination's healthcare system. Regarding the Self-Care Context, travellers' and transient migrants' reliance on themselves and their immediate circle for self-care practices was more dominant than on health professionals. Community pharmacies were not always used as the first healthcare contact, even for ailments manageable with self-medication. Financial constraints, including lack of insurance, were a key barrier to self-care.

Conclusion
We propose an updated Self-Care Matrix Framework with the inclusion of social engagement as the eighth pillar of Self-Care Activities as well as self-assessment and self-diagnosis as Self-Care Behaviours. These findings provide a reference point for developing practices and policies that enable international travellers and transient migrants to self-care effectively and enable community pharmacy staff to better facilitate self-care in this population.

Exploring pharmacists' influences, attitudes and intentions towards medically assisted dying

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Background: Pharmacists are integral in optimising medicines therapy to improve health outcomes. And in palliative care aimed at improving the quality of life at the end of a patient's life. As the most accessible health professional in the community, pharmacists may also be central in responding to queries on medically assisted dying. As jurisdictions implement and establish laws relating to medically assisted dying, health professionals have had to consider the impact on their realm of practice, and navigate the intricacies of balancing conscientious objection with reasonable limits, both individually and as a profession. Few studies have focused on pharmacists' experience with medically assisted dying or their willingness to participate.
Aims: To explore the psychosocial antecedents, such as attitudes, subjective and ethical norms, and perceived behavioural control, that predict the intentions and behaviours of pharmacists in relation to medically assisted dying.

Methods: The study was conducted via an anonymous, online QualtricsTM survey of pharmacists in New Zealand. New Zealand registered pharmacists who agreed to receive questionnaires from the Schools of Pharmacy as part of their Annual Practicing Certificate renewal were invited to participate through an email with a Qualtrics URL link. The questionnaire contained questions regarding demographics, awareness, knowledge, support for and attitudes and willingness to participate. In addition, the psychological variables that affect behaviours, such as ethical and subjective norms and perceived behavioural control, were explored. The survey questions were adapted from a survey of nurses using the Theory of Planned Behaviour (TPB) framework to explore responses to requests for assisted dying, with permission from the researchers (Wilson et al., 2021).

Results Of the 3039 eligible pharmacists, 289 valid responses were received, giving a response rate of 9.5%. Most participants supported legally assisted medical dying (58%), almost a third of participants did not support it (29%), and 13% of respondents were unsure. There were significant differences in factors of influence of personal experiences, personal philosophies and ethical beliefs, religious beliefs, and research evidence across willingness to participate in providing services ($p < 0.05$). There is a negative correlation between ethical norms and perceived behavioural control. Participants perceived beneficial factors as respecting patient autonomy, ending suffering, and preserving dignity. The main concerns were legal, personal bias, palliation, stigmatisation, and vulnerability.

Conclusion: The influences on the decision by pharmacists to support and willingness to participate in the provision of services consistent with the End of Life Choice Act are complex and multifactorial. Carving a way forward in balancing the duality of private conscience and public role expectations requires greater clarity and standardised guidance to ensure congruence in how requests for information and the service is managed.

Examination of substance use policies at schools of pharmacy in the United States

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Policies restricting the use of legal and illegal substance use are fairly common in professional schools of pharmacy. Such policies are often motivated by local laws, licensure policies, or other ethical considerations concerning substance use. However, these policies are often inconsistent in their requirements and enforcement across various geographic areas and types of schools. The aim of this study was to identify patterns in substance use policies among all schools of pharmacy across the United States. Student pharmacist researchers at the University of Mississippi School of Pharmacy collected publicly available school of pharmacy handbooks between June and September of 2022. Substance use policies within student handbooks were identified and examined for mention of specific substances, restrictions, as well as methods of testing or enforcement. Results were presented as percentages and frequencies across different types of institutions. A total of 133 student handbooks were extracted from schools of pharmacy across the United States, of which 64 were public and 69 were private institutions. The most commonly mentioned substances included alcohol (74%), controlled substances (54%), illicit drugs (38%), tobacco (34%), and marijuana

(29%). It was found that over two-thirds of all institutions (private:74%; public: 58%) included drug tests as part of the enforcement of policies, and a third of institutions conducted random testing for the identification of substance use. There is significant variability in substance use policies at US schools of pharmacy, with significant differences between public and private institutions. These findings have to be considered in light of some limitations – student handbooks evaluated were likely applicable to the 2021-2022 academic year and may have been subject to updates. Consistency of policies with local policies or licensure regulations was not considered. National and international academic pharmacy organizations such as FIP, AACP, and ACPE, should work to develop supportive and inclusive guidelines for substance use policies for schools of pharmacy. Special attention needs to be paid to issues surrounding mental health and substance use disorder. As drug use experts, pharmacists have an opportunity to be at the forefront of substance use policies for all professional and even undergraduate programs.

Does training lead to a successful implementation of professional services in community pharmacy? A window into theory and practice via an online survey

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Background: Community pharmacies evolved from dispensaries to healthcare hubs, with over 50% of the community pharmacy workforce providing advanced professional services leading to a proliferation of research in this field. While implementation science focuses on the systematic uptake of evidence-based innovation into practice, implementation strategies form the 'how to' component of successful practice. A recently published systematic review demonstrated a lack of experimental studies comparing the effect of different implementation strategies on the implementation outcome (Seda et al., 2022). The review identified that staff training was the most frequently adopted strategy and that increased training improved the implementation of service delivery in four of six eligible studies.

Purpose: This study aimed to understand how Australian community pharmacists implement professional services in practice through a cross-sectional survey and explore if survey findings complement the review findings in relation to training as an implementation strategy. Therefore, the purpose was to describe pharmacists' training for the implementation of community pharmacy professional services.

Method: Following ethics approval, survey development included content and expert validity assessments before distributing via a web-based survey platform (RedCap) among practising community pharmacists in Australia. Descriptive analyses were employed on data specific to training as an implementation strategy.

Results: Eligible survey responses (n=108) from pharmacists practising in all Australian jurisdictions (Mean 18 years of practice, SD 14.67) revealed 40% (n=43) of pharmacists spent ten or more hours on professional services provided to 9,128 people, whether practising in a banner group (71%) or independent (29%) pharmacy. Immunisation services were most frequently delivered (45%), followed by dose administration aids (34%). Regarding training, a majority (53%) of respondents highlighted having the knowledge and clinical skills related to the service before implementation as important. From 75 responses to questions regarding training, 20% of pharmacists advised they received no training support. Of the 80% of pharmacists who received training, 53% specified a professional body as the training provider, while 35% undertook training by their pharmacy or banner group. Twelve percent of pharmacists engaged in self-directed learning alone. With respect to the type of training, 21% received mentoring or 'train the trainer' education, while 20% received direct peer education in their workplace.

Conclusion: A national survey of Australian community pharmacists reports inconsistent training prior to the implementation of professional pharmacy services. The training was delivered by a variety of providers, with a diversity of training modalities and content. Addressing training variability may be considered a potential area for intervention in enhancing the implementation of community pharmacist-delivered professional services.

An exploration of the impacts of the 2019 townsville floods on community pharmacy operations

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Background: Australia's warming climate has led to an increase in the frequency and severity of heatwaves, bushfires, droughts, storms, and floods. In late January 2019, an active monsoon trough and a slow-moving low-pressure system over tropical northern Queensland caused consecutive days of consistent extremely heavy rainfall. Between 29th January and 11th February 2019, the Townsville region recorded record-breaking rainfall levels experiencing major flooding which exceeded previous flood records over the last 120 years. There are many anecdotes and case studies in the media of how general practitioners (GPs) and pharmacists helped affected communities access healthcare during the North Queensland monsoon trough

event; however, there are no studies published in peer-reviewed journals.

Purpose: The aim of this study was to explore the impacts of this Townsville flood event on community pharmacy operations.

Method: This qualitative research study utilised semi-structured interviews. The interview questions explored changes to day-to-day operations, staffing, and provision of pharmacy services relating to the Preparedness and Response phases of the Prevention – Preparedness – Response – Recovery (PPRR) disaster management model. Six pharmacists who had worked at affected pharmacies during the flooding event were interviewed by phone. Each participant was assigned a unique ID code prior to commencement of their interview. Interviews took 20-30 minutes and were digitally recorded. The audio files were transcribed using intelligent verbatim.

Results: Thematic analysis utilising manual coding revealed five broad themes – 'government disaster management response', 'preparedness', 'workload pressures', 'collaboration and cooperation', and 'medication supply'. The theme 'government disaster management response' referred to responses that the Local Disaster Coordination Centre (LDCC) advised on whether to close, when to close, which pharmacies were already closed, as well as assisting with alternative medication supply routes through liaison with defence services. The theme 'preparedness' refers to participants' comments that some pharmacies were underprepared. 'Workload pressures' describes comments on pharmacists' increased workload from supplying medicines to people whose regular pharmacy was closed. Relative reductions in staff and austere working conditions further increased workload pressures. 'Collaboration and Cooperation' describes responses describing collaborations between pharmacies to consolidate resources including pharmacists working in other pharmacies when their pharmacy closed. 'Medication supply' encompasses concerns regarding continuing supply to the large number of patients receiving Dose Administration Aids (some pharmacies delivered to patients' homes) as well as dispensing for the community with some pharmacists reporting interruptions to supply. Pharmacists also noted that whilst most patients were able to pay for medicines, unfortunately, many patients who were supplied medicines without a prescription never returned to the pharmacy with the prescription. This meant the pharmacies could not claim reimbursement through Medicare and were out of pocket financially.

Conclusion: This research highlights a critical need for improved disaster preparedness among Townsville pharmacists. Despite this lack of preparedness, Townsville pharmacists went above and beyond to ensure continuity of medication supplies to their patients working in complex and austere conditions. Improving preparedness may pre-empt some of the workplace stressors during a disaster event.

A case study of medication access issues in Melbourne's public housing towers during the snap hard Covid-19 lockdown of July 2020

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Background: On 4th July 2020, approximately 3,000 public housing residents living in nine tower blocks were placed in a 'snap hard' lockdown without warning. Residents were not allowed to leave their units except for exceptional circumstances for a minimum of five days (one block for 14 days) and were not allowed to receive visitors. People visiting residents in the towers at the time of the lockdown were also unable to leave. The Victorian Ombudsman later found the Victorian government's actions breached human rights with residents traumatised due to the psychological damage caused by the lockdown itself and an inability to access food and medications.

Purpose: To explore the challenges of private sector engagement with public health sector-managed disasters by conducting a case study of the medication access issues experienced by public housing towers' residents during Melbourne's snap 'hard' lockdown in July 2020 from a pharmacy perspective. This research addressed medication access issues and disruption to pharmacy operations and service delivery during this period.

Method: This research utilised qualitative research methods with a conceptual framework developed from two theoretical frameworks:

1. the SEIPS 2.0 Human Factors Framework developed for studying and improving the work of healthcare professionals and patients, and,
2. the conceptual framework of the policy implementation process developed by Sabatier and Mazmanian.

Semi-structured interviews were conducted with pharmacists and pharmacy assistants who were working at the time of the snap lockdown in community pharmacies whose patients were among the residents. Interviews were conducted over Zoom and with participants' video turned off. Participants' confidentiality was also further ensured by the creation of a unique ID code. Interview transcription data were thematically analysed using manual coding techniques.

Results: Participants identified a lack of communication and planning on the government's part – no one implementing the policy including the police enforcing the rules knew what was happening in the first few days. This systems failure at the public-private sector interface resulted in disruptions to social systems including disruptions to medication access and risks to patient health outcomes. These tower residents included people from non-English speaking backgrounds, lower socioeconomic groups, vulnerable teenagers in transitions of care situations and people requiring staged supplies and controlled drugs. These unintended consequences of public policy implementation without

consultation with stakeholders resulted in disruptions to professional work processes, collaborative professional-patient processes, and collaborative relationships between pharmacists and general practitioners (GPs). One trapped visitor required insulin pens. Another was an asthmatic with no inhalers displaying breathlessness and no access to a GP, so the pharmacist made an ethical decision and 'prescribed' SymbicortTM without a legal prescription. Desirable outcomes included pharmacists deriving professional satisfaction amidst the chaos through problem solving and making a difference to these patients.

Conclusion: These findings identified challenges at the private-public sector interface and support our conceptual model. Policy implementation (snap hard lockdown) caused unintended consequences including disruptions to healthcare provision (a complex sociotechnical system). This can lead to both desirable and undesirable outcomes for patients, health professionals, and organisations.

Research on the correlation between pharmacy store size and home pharmacists using pharmacy big data

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In Japan, the division of labour has been progressing and the number of pharmacies in Japan has been increasing accordingly. In 1974, the first year of the division of labour, the number of pharmacies was approximately 26,000 . By 2006, the number had doubled to 52,000 . According to the Health Statistics Handbook published by the Ministry of Health, Labour and Welfare, by the end of 2019 there were 60,171 pharmacies, exceeding 60,000 for the first time. In addition, the number of out-of-hospital prescriptions issued in 2021 was 771,433,382 , a record high. In October 2015, the Ministry of Health, Labour and Welfare (MHLW) formulated the 'Pharmacy Vision for Patients' , shifting the work of pharmacists from object to person, from 'at the gate' to 'home practice' and 'in the community'. Accordingly, in the April 2016 revision of medical fees, the 'home pharmacist guidance fee' and 'home pharmacist comprehensive management fee' were newly established as dispensing fees to enable patients to realise the benefits of home pharmacies and are still in place, while the spread of the home pharmacist system will be promoted by the December 2020.
To become a home pharmacist, the pharmacist needs more time and effort than a non-home pharmacist to provide medication guidance, collect information from patients and provide information, such as exchanging consent forms with patients, understanding information on the medical institutions the patient visits and ensuring a 24-hour consultation system, as well as having sufficient experience to become a home pharmacist. The requirements are imposed, such as requiring sufficient experience to become a family pharmacist. Therefore, it depends on the number of years of experience of the pharmacists working there and the number of pharmacists working there, in general, large pharmacies have a higher ratio of physical work compared to small pharmacies, such as the time required for stock management, because they have a higher number of prescriptions filled and a higher number of pharmaceutical products employed, and they may not have sufficient time to shift to interpersonal work. This may not leave enough time to shift to interpersonal work.In this study, we investigated whether the size of the pharmacy shop , i.e. the number of prescriptions filled and the number of patients visiting the pharmacy, influenced pharmacists' 'home practice' behaviour and whether pharmacists' home practice behaviour varied with the size of the pharmacy shop . The size of the pharmacy shop, the number of prescriptions filled and the number of patients visiting the shop, may influence pharmacists' home practice behaviour and pharmacists' home practice behaviour may vary with the size of the pharmacy shop, The study used pharmacy big data to analyse the correlation between the size of pharmacy outlets and the fees for family pharmacist instruction and comprehensive family management, covering 3,827 pharmacies across the country. Correlations between pharmacists' family practice behaviour by pharmacy shop size are discussed to determine whether pharmacies or pharmacists are appropriately implementing family practice behaviour for patients in need, regardless of the size of the pharmacy shop.

The off-label prescribing of psychotropic medicines to children and adolescents in Australian primary care

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Background
Psychotropic medicine use in the paediatric population is increasing globally, despite limited regulatory approvals for these medicines. While the off-label use of psychotropic medicines in paediatric patients is sometimes necessary, concerns about unknown safety outcomes persist. Little is known about the extent of off-label prescribing (OLP) of psychotropic medicines in Australian paediatric primary care.

Purpose
To explore the extent of off-label prescribing of psychotropic medicines in Australian paediatric primary care, using data from the Bettering the Evaluation and Care of Health (BEACH) program.

Method
We conducted a retrospective analysis of data collected from 15,276 general practitioners between 2000 and 2016. Encounters with paediatric patients aged 3-17 years were

included. Psychotropic medicines were defined as those falling within the ATC codes N05 (Psycholeptics) and N06 (Psychoanaleptics), with the exception of prochlorperazine (N05AB04), which is generally indicated for nausea, vomiting and vertigo in Australia, rather than chronic mental health conditions. We assessed the age and indication for which the medicine was approved, and compared this with the age and indication for which the medicine was actually prescribed. OLP was defined as use outside of the product license with reference to age or indication.

Results
A total of 1,650 psychotropic medicines were prescribed to children aged 3-17 years, with the five most common medicines being sertraline (14.4%), fluoxetine (12.7%), methylphenidate (9.2%), diazepam (5.5%), and citalopram (5.3%). Overall, 75.0% (95% CI 72.0-78.1) of prescriptions for these medicines were off-label. Specifically, 97.1% (95% CI 94.9-99.2) of sertraline prescriptions, 100% of fluoxetine and citalopram prescriptions, 12.4% (95% CI 7.1-17.7) of methylphenidate prescriptions and 41.8% (95% CI 31.4-52.1) of diazepam prescriptions were off-label. The main reasons for off-label prescribing were age (51.7%, 95% CI 48.2-55.3) and indication (23.3%, 95% CI 20.3-26.3). Only 25.0% (95% CI 21.9-28.0) of prescriptions were on-label for their prescribed indications.

Conclusion
Off-label prescribing of psychotropic medicines to paediatric patients is common in Australian primary care. Our findings highlight the need for further research to address safety and efficacy concerns relating to off-label prescribing in this population and to ensure that paediatric patients receive optimal care. This study also underscores the importance of developing and implementing evidence and consensus-based prescribing guidelines for psychotropic medicines in paediatric patients.

Pharmacy-based screening and quality use of medicines in kidney disease: A cluster randomised trial

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Background. Chronic kidney disease (CKD) is a rapidly growing public health concern. Despite mounting evidence to support pharmacists' involvement in disease screening and medication management, community pharmacists have limited role in CKD care. This is largely due to the lack of access to patients' kidney function in the community pharmacy setting.

Method. This study is a multi-centre, pragmatic, two level cluster randomised controlled trial (cRCT) being conducted in New South Wales, Victoria, and Queensland (ACTRN12622000329763). The unit of randomisation is community pharmacy (clusters), and the unit of analysis is screening participants. The project aims to recruit 122 Australian community pharmacies located in metropolitan and rural areas. The trial has two arms: (i) Control Group: A risk assessment using the QKidney® CKD risk assessment tool, and (ii) Intervention Group: a risk assessment using the QKidney® CKD plus Point of Care Testing (POCT) for kidney function (serum creatinine and estimated glomerular filtration rate) followed by QUM intervention. The primary outcome is the proportion of patients newly diagnosed with CKD at the end of the study period (12 months). The co-primary outcome is rate of changes in the number of medications considered problematic in CKD, including the number of medications given at inappropriate doses based on kidney function and/or number of contraindicated medications.

Results. To date, 60 community pharmacies have been recruited over 3 months and randomised, representing approximately 50% of the targeted pharmacies. Most of these pharmacies are located in regional and rural areas of QLD and NSW (n=43, 73%). A total of, 32 pharmacies have completed the online training modules focused on CKD risk factors and optimal management, while 47 have completed the baseline survey assessing pharmacy preparedness in terms of capacity and staff to provide CKD screening services. Of those who have completed the survey, 28 pharmacies were chain pharmacies, while 18 were independent. MedsCheck and/or Diabetes MedsCheck services under the 7-CPA are provided by 40 of these pharmacies, while non-7-CPA-funded services such as blood pressure assessment, cardiovascular risk, and diabetes screening are provided by 38, 19, and 17 pharmacies, respectively. Ten pharmacies (six in NSW and four in QLD) have recruited 40 patient participants, including four patients who received a referral due to low kidney function and/or QUM issues.

Conclusions. The recruitment of almost 60 pharmacies to the trial over a relatively short period suggests that there is a growing interest in the potential role of community pharmacists in providing clinical care to at risk populations. The trial is expected to generate valuable evidence on the effectiveness of a community-pharmacy led collaborative screening and QUM service for CKD, which could lead to the expansion of the role of community pharmacists in providing clinical services as part of the primary healthcare team. If the intervention is found to be effective, it could have significant implications for the management and prevention of CKD, especially in areas where access to healthcare services is limited.

Understanding patient perspectives on the use of gamification and financial incentives in mobile applications for medication adherence

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Background: Medication non-adherence remains to be a significant health and economic burden in many developed

countries. Emerging smartphone interventions have started to utilize features such as gamification and financial incentives with varying degrees of effectiveness on medication adherence and health outcomes. A more consistent approach to applying these features, informed by patient perspectives, may result in more predictable and beneficial results from this type of intervention.

Objective: This qualitative study aims to identify patient perspectives on the use of gamification and financial incentives in mobile apps for medication adherence, in Australian patients taking medication for chronic conditions.

Methods: A total of 19 participants were included in iterative semi-structured online focus groups conducted between May and December 2022. The facilitator used exploratory prompts relating to mobile apps, gamification, and financial incentives, along with concepts raised from previous focus groups. Transcriptions were independently coded to develop a set of themes, with further content analysis conducted on the specific features within gamification and financial incentives.

Results: Three themes were identified: (1) purpose-driven design, (2) trust-based standards, and (3) personal choice. All participants acknowledged gamification and financial incentives as potentially effective features in mobile apps for medication adherence. However, they also indicated that the effectiveness heavily depended on implementation and execution. Main concerns relating to gamification and financial incentives were perceived trivialization and potential for abuse, respectively.

Conclusions: The study's findings provide a foundation for developers seeking to apply these novel features in an app intervention for a general cohort of patients. However, the study highlights the need for standards for mobile apps for medication adherence, with particular attention to the use of gamification and financial incentives. Future research with patients and stakeholders across the mobile health app ecosystem should be explored to formalize and validate a set of standards or framework.

Evaluation of pharmacist intervention for pediatric asthma: A systematic literature review and logic model

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Background
Asthma is a highly prevalent chronic condition in children and a major issue to be addressed in children's health. Studies have demonstrated effectiveness of pharmacist-led interventions in asthma management but limited studies focused on components involved in an interventional programme.

Purpose
This study aims to summarise empirical evidence of pharmacist-led interventions for pediatric asthma patients, and to identify the components of a logic model to inform evidence-based pharmacy practice in the management of pediatric asthma.

Method
A systematic literature review was conducted according to the PRISMA guidelines to retrieve literatures published from January 2013 to February 2023 from six English databases/search engines (PubMed, Web of Science, Embase, Scopus, ScienceDirect and Medline) and one Chinese database (CNKI). Studies concerning pharmacist-led interventions for pediatric asthma patients with an interventional design were selected for analysis. The primary search concepts were "pharmacist", "asthma" and "children". For data synthesis, a logic model with input, activity, output, outcome and contextual factor was developed using the evidence collected. Pharmacist interventions were classified according to the 2022 version of the Chronic respiratory diseases: A handbook for pharmacists by International Pharmaceutical Federation (FIP). Economic, Clinical, and Humanistic Outcomes (ECHO) model was used to summarise the outcomes in the logic model.

Results
A total of 35 studies, 15 in English and 20 in Chinese, were included. Components of the logic model were summarised. Settings of interventions mainly included hospitals (n=27) and community pharmacies (n=3). The most common input was written educational materials about asthma, inhaler prescribed and self-management. Interventional activities reported in literatures included optimising medicines use (n=35), prevention and control of asthma (n=26), screening tests for asthma (n=26), non-pharmacological management (n=10), and referral and interprofessional collaboration to support people with asthma (n=8) as described in the FIP handbook. Other activities including establishing patient profile (n=12) and resolving insurance problems (n=1) were also identified. Commonly reported outputs were medication adherence (n=21), knowledge (n=13) and inhaler technique (n=9). Economic outcomes identified included medication costs (n=3), clinic visit costs (n=1), transportation costs (n=1), hospitalization burden (n=2) and parental loss of wages (n=1); clinical outcomes included Childhood Asthma Control Test/ Asthma Control Test (C-ACT/ACT) scores (n=22), lung function test (FEV1% and/or PEF%) (n=8), and hospitalizations (n=8); humanistic outcomes included quality of life (n=6) and satisfaction (n=2) of patients. Social, economic, political, and technological factors were identified as contextual factors.

Conclusion
The inputs, activities, outputs, outcomes and contextual factors of different pharmacist-led interventions were summarised into a logic model, which can inform the evidence-based design of interventional programme for management of pediatric asthma. Further research can focus on validation of the model by interviewing stakeholders and consider the applicability of the logic

model in pharmacy practice, followed by research on training of pharmacists required to enable the implementation of the interventional programme.

A professional pharmacy association's work to address individual and systemic factors affecting pharmacy personnel well being

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Background:
As the world continues to manage through the COVID-19 pandemic, a global focus on health care professional well-being has emerged as a vital component to a sustainable global health system. In FIP's Development Goal 21 - Sustainability in Pharmacy, its workforce element calls for "strategies and systems [to be] in place that utilise the workforce to enhance sustainable pharmacy and services". Research shows that when health care professionals, including pharmacists, are practicing under mental distress, patient care can be negatively impacted, which could potentially threaten the sustainability of health care services.

In the United States, pharmacists and pharmacy personnel have been largely affected by a variety of systemic and individual factors that impact personal well-being, even before COVID. This requires intervention by multiple stakeholders, including professional associations, to address systemic and individual factors affecting pharmacy personnel well-being to ensure the sustainability of pharmacy services to the public.

Purpose:
This presentation will describe the American Pharmacists Association's work to address both systemic and individual factors affecting pharmacists and pharmacy personnel well-being in the United States over a five-year period beginning in 2018. Among tools that will be discussed include an individual well-being assessment tool, a prescriptive guidance document outlining what pharmacists and pharmacy personnel need in order to sustainably fulfill patient care responsibilities to the public, and a reporting tool dedicated to allowing anonymous reporting of workplace conditions that either positively or negatively impact personnel well-being. Further, the presentation will outline recommended actions and solutions developed through conferences and ongoing discussions with stakeholders including regulatory bodies, pharmacy associations, and pharmacy employers.

Method:
This presentation will be both a retrospective review and commentary on next steps in the process of enhancing systems where pharmacists and pharmacy personnel work in the United States to create more sustainable pharmacy services - consistent with FIP Development Goal 21.

Results/Conclusion:
This presentation will describe research conducted in the area of pharmacy personnel well-being in the United States as well as recommended strategies for enhancing workplace conditions that affect pharmacist and pharmacy personnel well-being. We believe many of these strategies are scalable to positively affect pharmacy practice in other parts of the world.

Analysis of drug shortages after the Covid-19 outbreak in Taiwan

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Background
In 2023, the COVID-19 epidemic control measures in various countries will be gradually relaxed, but drug shortages in Taiwan are frequently reported, which has become a serious public health issue. The current situation of Taiwan's drug shortages, and the current government's related responses, will be analyzed in this article.

Method
Data, analysis, and conclusions are based on public information from the Taiwan government's food and drug open data platform, from November 2020 to April 11, 2023. The data were analyzed to identify the sources, notification times, pharmacological classification (ATC code), and reasons for any shortage of medicines.

Results
During the period studied, a total of 322 cases were identified on the platform, of which 315 (97.8%) involved the use of alternative medicines. A total of 170 (52.8%) of the medicines in short supply were manufactured in Taiwan. For the year 2022, 105 (32.6%) cases were identified, and as of April 11, 2023, there were as many as 208 (64.6%) cases. The top three reasons for supply shortages involved 74 (23.0%) cases that experienced production problems, 70 (21.7%) cases involving raw material problems, and 70 (21.7%) cases of supply problems. The pharmacological classification of the top three items in short supply identified systemic antibiotics 29 (J01, 9.0%) items, cough and cold medicines 18 (R05, 5.6%) items, and 17 (A02, 5.3%) drug items for acid-related diseases. Although the epidemic has slowed down in 2023, it can be seen that the number of supply shortage notifications in Q1 in 2023 in Taiwan has nearly doubled from that of last year, including production problems 60 (29.3%) cases, raw material problems 51 (24.9%) cases, and supply problems 45 (22.0%) cases, which comprise the top three problems encountered. This year, Taiwan's National Health Insurance Bureau adjusted the price of 5,500 kinds of medicines and reduced their costs by a total of 8.18 billion yuan, exacerbating the existing shortage of medicines. Manufacturers choose not to import or adjust production lines to cope with items that do not

provide sufficient income to enable them to meet costs and generate profits.

Conclusion
To cope with the growing drug shortage situation, the Taiwan Food and Drug Administration has consolidated the current six major causes of drug shortages in the country: supply problems, manufacturing problems, increased clinical demand, uneven distribution of drugs, medication habits, and drug price issues. The government formulates strategies as a response:

1. Short-term: Actively schedule production lines, increase production and input quantities, etc.
2. Medium-term: Establish a drug shortage processing center, strengthen cross-departmental data integration, and active monitoring by the government.
3. Long-term: Review current healthcare drug price policies and encourage the production of domestic generic drugs.

However, due to factors such as the shortage of raw materials, the Russian-Ukraine war, or the lack of workers, short-term strategies have not achieved any significant improvement. How to effectively these problems remains a public health issue that countries must face.

Feasibility of implementing a novel antimicrobial stewardship program in a Vietnamese community pharmacy setting

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Background: There is little evidence in implementation of antimicrobial stewardship programs in the community pharmacy settings in Low- and Middle-Income Countries. Where often antibiotics are inappropriately dispensed for self-limiting viral upper respiratory tract infections (URTIs) by community pharmacies.

Purpose: The current aimed to investigate the feasibility of implementing multifaceted pharmacy interventions to improve dispensing of antibiotics for URTIs in community pharmacy settings in Vietnam.

Methods: A pre and post community pharmacy intervention study was conducted to improve the knowledge and antibiotic dispensing behaviour of pharmacists for URTIs. A random sample of 70 pharmacies from Ca Mau province in Vietnam was involved in the study. The study was implemented between August to November 2022.
Intervention: Dissemination of community pharmacy interventions on antibiotic dispensing for URTIs over two months period (including two workshops within two months apart, pharmacy guide for managing URTIs, discussion in a close social media group, in-service training, display posters in the pharmacies and distributing health promotion materials on appropriate use of antibiotics to customers in the pharmacy).
Pharmacists' knowledge about appropriate antibiotic use for URTIs was measured pre and post dissemination of intervention using a validated self-reported survey. Pseudo patient method of presenting symptoms of viral URTIs to the pharmacy was used to assess the pharmacy staff's antibiotic dispensing behaviour in the baseline and after the intervention. The baseline pseudo patient survey was conducted in late 2019 (prior to the COVID-19) and intervention implementation and the post intervention pseudo patient survey were delayed till late 2022 due to COVID restrictions.

Results: Representatives from 52.8% (n=65) of the pharmacies participated in the workshops from the invited 123 pharmacies. 71% (46/65) of invited pharmacy staff was actively participated in the closed social media discussion during the intervention period, almost all the pharmacies (98%) who took part the 1st workshop participated in the In-service training and the study pharmacies distributed 7000 health promotion materials to their customers on the appropriate use of antibiotics over two months periods.
Following the implementation of intervention programs over two months, the proportion of pharmacy staff's self-reported knowledge about appropriate management of symptoms of viral URTIs without antibiotics was significantly improved from 71.8% to 96.4% (P = .007). A proportion of pharmacy staff knowledge about appropriate recommendations for covid-19 management without antibiotics was also improved from 87.3% to 96.4%, however it was not statistically significant (P = .176). All the pharmacies responded to the in-service training very positively.
Pseudo-patients survey revealed that the proportion of pharmacists' behaviour in dispensing antibiotics inappropriately for the reported symptoms of viral URTIs was significantly decreased from 97.7% (43/44, baseline, in 2019) to 77.1% (54/71) after intervention in 2022 (P=.0027).

Conclusion: Results of this study demonstrated that multi-faceted intervention programs engaging pharmacy staff in the community pharmacy settings i feasible and well received by private community pharmacy staff in Vietnam. This study also revealed a proximal improvement in the knowledge and behaviour of pharmacists. Studies with controlled group and long follow-ups sought to measure the distal effectiveness of this intervention model.

The use of antidiabetic medicines in China from 2020-2022

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Background The prevalence of diabetes in China has increased 10-fold in the past decade and with 140 million people affected, China has the largest population with

diabetes. With the development of economy and the emergence of new drugs, the drug pattern for Chinese diabetic population has changed.

Objectives To assess the use and the trend of antidiabetic medicines in China.

Methods We conducted a descriptive analysis of the national procurement data of 29 non-insulin antidiabetic medicines and three insulin types in China from 2020 to 2022. We calculated the number of defined daily dose used nationwide for each antidiabetic medicines per quarter; We adjusted this data by the number of diabetic patients. For insulin and non-insulin antidiabetic medicines, we conducted subgroup analysis based on the chemical category of these medicines. We calculated the changes in drug use by comparing the usage in 2020 Q1 and that in 2022Q4.

Findings Between 2020 and 2022, the number of defined daily doses (DDDs) per patient nationwide increased from 8.58 to 12.06 (40.56%) for all the antidiabetic medicines, and the number of DDDs per patient for non-insulin antidiabetic medicines increased from 6.64 to 9.74 (46.69%), while that value for insulin increased from 1.94 to 2.32 (19.59%). The proportion of insulin in all antidiabetic drugs is decreasing, from 22.62% in 2020 Q1 to 19.27% in 2022 Q4. Among non-insulin antidiabetic drugs, the use of sulfonylurea slightly increased from 2.63 to 3.08 (17.11%), ranking first, but its proportion in non-insulin antidiabetic drugs has significantly decreased, from 39.6% to 31.6%; the number of DDDs for metformin increased from 1.73 to 2.29 (32.37%), while its proportion has decreased from 26.1% to 23.6%. The use of new drugs such as dipeptidyl peptidase-4 inhibitor (DPP-4i), glucagon-like peptide-1 (GLP-1), and sodium/glucose cotransporter-2 inhibitor (SGLT2i) are increasing; the number of DDDs for SGLT2i increased most, from 0.070 to 1.084 (1448.57%), ant its proportion also increased from 1.0% to 11.1%; although the use of GLP-1 have increased, the usage remained at a low level comparing with other old drugs. For insulins, the use of first-generation (animal) and second-generation (human) insulin remains stable, while the use of third-generation (analogues) insulin has increased significantly from 1.105 to 1.524 (45.14%); the proportion of third-generation among all the insulins increased from 50.1% to 60.3%, while the proportion of first-generation and second-generation insulins decreased, from 40.2% to 34.5% and 6.7% to 5.2%, respectively.

Conclusion The use of antidiabetic medicines has increased from 2020 to 2022, with both non-insulin antidiabetic drugs and insulins showing an upward trend. For non-insulin drugs, the sulfonylurea ranked first in usage, but with a decreasing trend in proportion; the use of new drugs increased greatly, however the usage remained at a low level comparing with those old drugs. The proportion of insulin in all antidiabetic medicines has decreased and the usage pattern of insulin has also changed; the usage and proportion of analogues increased, while the proportion of first-generation and second-generation insulins decreased.

Hospital pharmacist' cognition, attitude and practice towards national medicine volume-based procurement policy

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Background: In recent years, the Chinese government has been fully implementing the medicine volume-based procurement policy aimed at reducing medical expenses and reducing the drug burden on patients. As essential members of healthcare system, pharmacists play an important role in spreading awareness about the generic substitution policy. Pharmacists advise physicians on the selection, dosages, interactions and side effects of generic drugs in collaboration practice, and provide education and counselling about generic drugs for patients when dispensing drugs according to medical prescription.

Purpose: To investigate the cognition, attitude and practice of hospital pharmacists on the national volume-based procurement policy, in order to provide reference for the further improvement of the policy.

Method: Based on the questionnaire star platform, using online questionnaire survey, taking public hospital pharmacists as the research object and using KAP mode to quantitatively study the level of cognition, attitude and practice of hospital pharmacists and the influencing factors.

Results: There were 589 valid questionnaires. Among them, 55.0% of pharmacists had good cognitive level, 51.6% had positive attitude and 30.4% had a good practice. Binary logistic regression model showed that the cognition, attitude and practice level of pharmacists who had recently participated in related training were better. The lower the education level, the better the cognition level; The longer the working years and the higher the professional title, the better the practice; The better the cognitive level of pharmacists, the more positive the attitude; The more positive the attitude, the better the practice level.

Conclusion: The overall KAP level of hospital pharmacists of the policy is general and still needs to be improved. Hospitals or pharmaceutical associations should increase professional training. There are still some obstacles in the alternative use of volume-based purchased drugs. Improving the credibility of the quality of volume-based purchased drugs will help to promote the implementation of the policy. The pharmacist's approval has an important influence on the implementation of the policy.