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Library Current Awareness Bulletin: Pharmacy – August 2021

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Alerts

Alerts and Recalls for Drugs and Medical Devices (GOV.UK)
View the June and July Alerts

Letters and drug alerts sent to health professionals (GOV.UK)
View the June letters and alerts

Guidance

NICE Guidance and Advice List – Latest Updates

Specialist Pharmacy Service – Latest Updates

Vaccination Information

COVID-19 vaccination programme
NHS England

Vaccination information from other organisations
NHS England

News

Aligning the upper age for NHS prescription charge exemptions with the State Pension age
Department of Health and Social Care
July 2021
[This consultation is seeking views on changing the upper age of age exemptions on prescription charges. The consultation closes on 2nd September 2021.]

BBC News articles on the pharmaceutical industry
[Articles published by BBC News on the pharmaceutical industry are collected here.]

Improving the care of patients discharged following a pulmonary embolism, in line with NICE Guidelines (NG158)
NICE Shared Learning Database
July 2021
[A Clinical Nurse Specialist from Nottingham Universities Hospitals Trust presents an overview of a project, involving pharmacists, to determine if patients are provided with sufficient information and education regarding monitoring of anticoagulant treatment upon discharge.]

Our new strategy for managing concerns about pharmacy professionals is now published
General Pharmaceutical Council
July 2021
[The new strategy outlines how the GPhC will take action to protect patients when needed, while at the same time promoting and encouraging a learning culture that allows pharmacy professionals to deal with any concerns and go back to practising in appropriate circumstances.]

Pharmacists could assess patients' suitability for COVID-19 monoclonal antibody treatment
The Pharmaceutical Journal
July 2021
[NHS documents seen by The Pharmaceutical Journal show the development of plans for a neutralising monoclonal antibody treatment service for COVID-19.]

Pharmacists jailed for a combined total of 57 months for illegal supply of prescription medicines
Medicines and Healthcare products Regulatory Agency
July 2021
[Pharmacists Dean Dookhan and Narvinder Nandra diverted hundreds of thousands of doses of prescription medicines, controlled as Class C drugs, from the legal supply chain onto the black market.]

RPS England calls for action on pharmacist independent prescribers
Royal Pharmaceutical Society
July 2021
[The RPS in England is calling on the NHS to help improve patient care through greater use of pharmacist independent prescribers (PIPs).]

RPS England urges Government to think again on COVID-19 vaccine indemnity
Royal Pharmaceutical Society
July 2021
[RPS England urges Government to think again on COVID-19 vaccine indemnity.]

Community Pharmacy

Delivery of pharmacogenetic testing with or without medication therapy management in a community pharmacy setting

Haga S.B., Mills R., Moaddeb J., Liu Y., and Voora D

Pharmacogenomics and Personalized Medicine, vol. 14 pp. 785-796

July 2021

[**Objective**: The delivery of pharmacogenetic (PGx) testing has primarily been through clinical and hospital settings. We conducted a study to explore the feasibility of delivering PGx testing through community pharmacies, a less-studied setting. **Method(s)**: We conducted a cluster randomized trial of community pharmacies in North Carolina through two approaches: the provision of PGx testing alone or PGx testing with medication therapy management (MTM). **Result(s)**: A total of 150 patient participants were enrolled at 17 pharmacies and reported high satisfaction with their testing experience. Participants in the PGx plus MTM arm were more likely to recall a higher number of results (p=0.04) and more likely to clearly understand their choices for prevention or early detection of side effects (p=0.01). A medication or dose change based on the PGx results was made for 8.7% of participants. **Conclusion(s)**: Limited differences were observed in the provision of PGx testing as a standalone test or combined with MTM. A limited number of treatment changes were made based on PGx test results. Patient acceptance of PGx testing offered through the community pharmacy was very high, but the addition of MTM did not impact patient-reported perceptions about PGx testing or medication adherence.]

Skin disorder management in oral anticancer drugs by collaboration of hospital pharmacists and community pharmacists.

Urakawa R., Hashimoto S., Hirohata H., Sakai K., Matsuura K., Ito Y., Tarutani M., Kubota K., Ueda M., and Uejima E.

Supportive Care in Cancer, vol. 29 (7); p. 3577-3583

July 2021

[**Background**: In Japan, the multidisciplinary team approach in cancer chemotherapy has become quite widespread. However, patients treated with oral anticancer drugs in outpatient clinics usually receive short medical examinations from doctors without any intervention of pharmacists. To improve this medical circumstance, we made a skin disorder manual for community pharmacists and evaluated its feasibility. **Methods**: Patients who underwent oral skin toxic chemotherapy from May 1, 2017, to October 31, 2017, were enrolled. The severity of skin toxicities was evaluated based on NCI-CTCAE ver4.0. Skin care and skin disorders were assessed by community pharmacists based on the assessment document arranged by the investigator. Numbers of patients who replied to the assessment, numbers of replies, numbers of assessments and instructions for skin care, and numbers of prescription proposals were evaluated to assess the value of intervention of community pharmacists. **Results**: Sixty-two patients were enrolled in this study. Community pharmacy responded to 55 patients (88.7%), for a total of 335 replies. The data described in the replies were as follows: 317 assessments of skin disorders (94.6%), 307 assessments of skin care (91.6%), 248 instructions for skin care (74%), and 19 prescription proposals (5.7%). **Conclusions**: Community pharmacists have high motivation for prevention and early detection of skin disorders. Although the number of prescription proposals is small, some proposals have contributed to improving side effects. Collaboration of hospital pharmacists and community pharmacists is important for prevention, early detection, and treatment of skin disorders caused by oral anticancer drugs.]

Hospital Pharmacy

An evaluation of pharmacist activity in hospital outpatient clinics

Snoswell C.L., Barras M., and Draper M.J.

Journal of Pharmacy Practice and Research, online ahead of print

July 2021

[Multidisciplinary healthcare teams embedded into outpatient clinics enhance patient outcomes; it is therefore important that when medications are a focus of treatment in these clinics that clinical pharmacists are included in the team. At the start of the 2019/2020 financial year, the Princess Alexandra Hospital added 13 clinic pharmacist positions to their outpatient services. The aim of this study is to describe the results of a retrospective appraisal of the contents of clinical notes written by pharmacists in these outpatient clinics during the first two months. This appraisal is a preliminary investigation into the activities undertaken in these new clinic roles. A sample of notes was

randomly selected from each clinic. Data included the number and type of activities undertaken by the pharmacists and the recommendations they recorded in their notes. It was found that of the 249 clinic pharmacist notes that were assessed, new patients made up 75.5% of the cohort. Recommendations were documented in 91 (37%) notes and included both dose adjustments to promote the judicious use of medicines and advice on how to withhold medications prior to surgical procedures. Although the results are preliminary, it is expected that the patients and hospital will benefit from embedding these pharmacists in these outpatient clinics; however, further research is required. Additionally, further standardisation of clinic pharmacist notes will improve future evaluation of these roles and allow for clearer conclusions to be drawn regarding the clinical benefits for patients and the hospital from the addition of clinical pharmacists in outpatient clinics.]

Attitudes, barriers and facilitators of hospital pharmacists conducting practice-based research: a systematic review
Reali S., Penm J., Lee T., Bishop J., Mirkov S., Johnson J., McCourt E., Hughes J., Pont L., and Page A.T.
Journal of Pharmacy Practice and Research, vol. 51 (no. 3) pp. 192-202
Jun 2021
[**Introduction**: Practice-based research is essential in enhancing medication knowledge, quality use of medicines, the scope of the pharmacy profession and improving patient outcomes. This systematic review aims to uncover the attitudes of hospital pharmacists towards practice-based research and their perceptions of the barriers and facilitators to undertaking practice-based research. **Method(s)**: A systematic search of MEDLINE, Embase, International Pharmaceutical Abstracts and Cumulative Index to Nursing and Allied Health Literature databases from 1 January 2000 to 11 March 2021 was conducted. Peer-reviewed empirical studies exploring hospital pharmacists' perceptions of - as well as barriers and facilitators to - practice-based research were included and a descriptive synthesis used to identify common themes. **Result(s)**: Nine studies were included in this review. Barriers and facilitators across four broad themes were related to pharmacist capacity and capability, workplace environment, research resources, and research culture. Hospital pharmacists had a high interest in conducting research, but limited research experience. Common barriers identified were lack of time, workplace support, funding, research culture, and competing priorities. Having a post-graduate qualification and a positive attitude towards research facilitated research participation. Departmental support, designated research time and creation of research networks and forums were seen as facilitators for practice-based research. **Conclusion(s)**: Hospital pharmacists recognise the importance of practice-based research in improving knowledge, patient care and advancing pharmacy practice. However, large variation has been reported for their confidence and experience in practice-based research. Building research capacity and capability by supporting post-graduate research qualification, providing designated time and creating research networks may strengthen the research culture amongst hospital pharmacists.]

Impact of medication characteristics and adverse drug events on hospital admission after an emergency department visit: Prospective cohort study.
Lohan L., Marin G., Faucanie M., Laureau M., Macioce V., Perier D., Pinzani V., Giraud I., Castet-Nicolas A. et al
International Journal of Clinical Practice, vol. 75(7)
July 2021
Objectives: Emergency department (ED) overcrowding is a problem for the delivery of adequate and timely emergency care. To improve patient flow and the admission process, the quick prediction of a patient's need for admission is crucial. We aimed to investigate the variables associated with hospitalisation after an ED visit, with a particular focus on the variables related to medication. **Methods**: This prospective study was conducted from 2011 to 2018 in subacute medical ED of a French University Hospital. Specialised EDs (paediatric, gynaecologic, head and neck and psychiatric) and the outpatient unit of the ED were not included. Participation in this study was proposed to all adult patients who underwent a medication history interview with a pharmacist. Pharmacists conducted structured interviews for the completion of the medication history and the detection of adverse drug events (ADE). Relations between patient characteristics and hospitalisation were analysed using logistic regression. **Results**: Among the 14,511 included patients, 5,972 (41.2%) were hospitalised including 69 deaths. In total, 7,458 patients (51.4%) took more than 5 medications and 2,846 patients (19.6%) had an ADE detected during the ED visit. In hospitalised patients, bleeding (32.2%) and metabolic disorders (16.8%) were the most observed ADE symptoms. Variables associated with increased hospital admission included 2 demographic variables (age, male gender), 4 clinical variables (renal and hepatic failures, alcohol addiction, ED visit for respiratory reason) and 6 medication-related variables (medications >5, use of blood, systemic anti-infective, metabolism and antineoplastic/immunomodulating medications and ADE). **Conclusion**: We identified variables associated with

hospitalisation including drug-related variables. These results point out the importance and the relevance of collecting medication data in a subacute medical ED.]

Positive evidence for clinical pharmacist interventions during interdisciplinary rounding at a psychiatric hospital.
Stuhec M., and Tement V.
Scientific Reports, vol. 11(1)
July 2021
[Clinical pharmacists have not yet become an integral part of interdisciplinary ward rounds in most psychiatric hospitals across the European Union. This retrospective observational pre-post study examined the impact of clinical pharmacist recommendations in an interdisciplinary medical team during psychiatric hospital rounding. The study included all patients in a Slovenian psychiatric hospital who were hospitalized 2019-2020. The clinical pharmacist made 315 recommendations for a total of 224 participants (average age M = 59.4, median = 56). Psychiatrists accepted 295 (93.7%) of the recommendations. After the recommendations, the number of expressed and potential drug-related problems decreased in 166 (93.8%) and 129 (93.8%) interventions, respectively. Three months after discharge, 222 accepted recommendations were continued (70.5%). The most common recommendations were related to antipsychotics (19.4%, N = 61) followed by antidepressants (16.8%, N = 53). Including a clinical pharmacist in the interdisciplinary ward rounds at a psychiatric hospital reduced the number of expressed and potential drug-related problems with a very high recommendation acceptance rate. These results are the first in Central Europe to explore the benefits of including a clinical pharmacist in ward rounding.]

Provision of clinical pharmacy services during the COVID-19 pandemic: Experiences of pharmacists from 16 European countries.
Paudyal V., Cadogan C., Fialová D., Henman M.C., Hazen A., Okuyan B., Lutters M., and Stewart D.
Research in Social & Administrative Pharmacy, vol. 17(8) pp. 1507-1517
August 2021
Background: The pharmacy profession has an important role in the frontline healthcare response to COVID-19 across all settings. **Objective**: This study sought to explore the views and experiences of clinical pharmacists in relation to the provision of clinical pharmacy services during COVID-19. **Methods**: Semi-structured qualitative interviews were conducted with pharmacists working in clinical roles in healthcare settings across Europe. Participants were recruited through professional organisations of clinical and hospitals pharmacists combined with a snowballing technique. The Pharmacy Emergency Preparedness and Response Framework and Disaster Preparedness Framework for pharmacy services were used to generate data which were analysed using the thematic framework method. **Results**: Twenty-two participants from 16 European countries described a range of measures to protect patients, public and healthcare staff against virus transmission including developing and disseminating educational materials. Most described their involvement in aspects of evidence provision such as facilitating clinical trials, gathering and appraising evidence and disseminating clinical information. Many hospital-based pharmacists were reassigned to new roles such as intensive care. Routine clinical services were extensively interrupted and remote forms of communication were used. Most were motivated by a strong sense of professionalism to continue delivering services. A number of facilitators and barriers to prevention, preparedness and response actions were identified which related to uptake of new roles, recognition of pharmacists' roles in the healthcare team, information gathering, communication with patients and healthcare professionals, and provision of routine clinical services. **Conclusions**: Participants in this multinational qualitative study described a range of service adaptations and adoption of novel roles to prevent and mitigate the public health impact of the pandemic. The study findings may help to inform governments, public health agencies and healthcare systems in harnessing ongoing service provision and adapt to any future interruptions.]

Reducing the risk of non-sterility of aseptic handling in hospital pharmacies, part C: applying risk assessment and risk control in practice.
Boom F.A., Le Brun P.P.H, Ris J.M., Veenbaas T., and Touw D.
European Journal of Hospital Pharmacy, online ahead of print
July 2021
[**Objectives**: To describe the application of the model described in part A and part B of this series of articles for risk assessment (RA) and risk control (RC) of non-sterility during aseptic handling. The model was applied in nine hospital pharmacies. **Methods**: The starting point was an audit of each hospital pharmacy. The determined risk reduction and remaining risks were entered into a risk assessment model. The corresponding risk prioritisation numbers (RPNs) for

each source of risk were calculated and these values were summed up to a cumulative RPN. Subsequently, all hospital pharmacies started an improvement programme, using the risk assessment as input. Results of aseptic process simulation (APS) and microbiological monitoring (MM) were also collected. The participants were informed about their progress of risk reduction and results of APS and MM during the study period. At the end of the study (about 4 years after the start), a final assessment was executed by using a checklist with risk reducing measures for each source of risk. Additional risk reduction and remaining risks were put in an RA and RC template and corresponding RPN values and a new cumulative RPN were determined. **Results**: At the start of the study differences in cumulative RPN values were relatively small (from 630 to 825). At the end they were relatively great (from 230 to 725), which illustrates a different sense of urgency for reducing the risk of non-sterility. Of all the risk reducing measures, a yearly audit of all operators had the greatest impact on reducing the risk of non-sterility. Except for glove prints, there was no correlation between process improvement (lower cumulative RPN) and results of microbiological controls. **Conclusion**: A systematic and science-based reduction of the risks of non-sterility can be done by using a checklist with risk reducing measures and an RA & RC template. Prospectively, the relevance of each risk reducing measure can be demonstrated by RPN calculations. Microbiological controls are an important part of the overall assurance of product quality. However, the results are less useful for assessing the risk of non-sterility.]

The evidence for pharmacist care in outpatients with heart failure: a systematic review and meta-analysis.
Schumacher P.M., Becker N., Tsuyuki R.T., Griese-Mammen N., Koshman S.L., McDonald M.A., and Bouvy M.
ESC heart failure, online ahead of print
July 2021
[**Aims**: Patients with heart failure (HF) have poor outcomes, including poor quality of life, and high morbidity and mortality. In addition, they have a high medication burden due to the multiple drug therapies now recommended by guidelines. Previous reviews, including studies in hospital settings, provided evidence that pharmacist care improves outcomes in patients with HF. Because most HF is managed outside of hospitals, we aimed to synthesize the evidence for pharmacist care in outpatients with HF. **Methods and results**: We conducted a systematic literature search in PubMed of randomized controlled trials (RCTs) and integrated the evidence on patient outcomes in a meta-analysis. We found 24 RCTs performed in 10 countries, including 8,029 patients. The data revealed consistent improvements in medication adherence (independent of the measuring instrument) and knowledge, physical function, and disease and medication management. Sixteen RCTs were included in meta-analyses. Differences in all-cause mortality (odds ratio (OR) = 0.97 [95% CI, 0.84-1.12], Q-statistic, P = 0.49, I2 = 0%), all-cause hospitalizations (OR = 0.86 [0.73-1.03], Q-statistic, P = 0.01, I2 = 45.5%), and HF hospitalizations (OR = 0.89 [0.77-1.02], Q-statistic, P = 0.11, I2 = 0%) were not statistically significant. We also observed an improvement in the standardized mean difference for generic quality of life of 0.75 ([0.49-1.01], P < 0.01), with no indication of heterogeneity (Q-statistic, P = 0.64; I2 = 0%). **Conclusions**: Results indicate that pharmacist care improves medication adherence and knowledge, symptom control, and some measures of quality of life in outpatients with HF. Given the increasing complexity of guideline-directed medical therapy, pharmacists' unique focus on medication management, titration, adherence, and patient teaching should be considered part of the management strategy for these vulnerable patients.]

Medicines Managment

Application of failure mode and effects analysis (FMEA) to improve medication safety in the dispensing process - a study at a teaching hospital, Sri Lanka.
Anjalee J.A.L., Rutter V., Samaranayake N.R.
BMC Public Health, vol. 21(1)
July 2021
[**Background**: Failure mode and effects analysis (FMEA) is a prospective, team based, structured process used to identify system failures of high risk processes before they occur. Medication dispensing is a risky process that should be analysed for its inherent risks using FMEA. The objective of this study was to identify possible failure modes, their effects, and causes in the dispensing process of a selected tertiary care hospital using FMEA. **Methods**: Two independent teams (Team A and Team B) of pharmacists conducted the FMEA for two months in the Department of Pharmacy of a selected teaching hospital, Colombo, Sri Lanka. Each team had five meetings of two hours each, where the dispensing process and sub processes were mapped, and possible failure modes, their effects, and causes, were identified. A score for potential severity (S), frequency (F) and detectability (D) was assigned for each failure

mode. Risk Priority Numbers (RPNs) were calculated (RPN=SxFxD), and identified failure modes were prioritised. **Results**: Team A identified 48 failure modes while Team B identified 42. Among all 90 failure modes, 69 were common to both teams. Team A prioritised 36 failure modes, while Team B prioritised 30 failure modes for corrective action using the scores. Both teams identified overcrowded dispensing counters as a cause for 57 failure modes. Redesigning of dispensing tables, dispensing labels, the dispensing and medication re-packing processes, and establishing a patient counseling unit, were the major suggestions for correction. **Conclusion**: FMEA was successfully used to identify and prioritise possible failure modes of the dispensing process through the active involvement of pharmacists.]

Evaluation of a Pharmacist-Led Remote Warfarin Management Model Using a Smartphone Application (Yixing) in Improving Patients' Knowledge and Outcomes of Anticoagulation Therapy
Jiang S., He Q., Yan J., Zhao L., Zheng Y., Chen P., and Chen X.
Frontiers in Pharmacology, vol. 12
July 2021
[**Background**: The management of warfarin-treated patients has been recognized as a challenge due to narrow therapeutic range and food and drug interactions in warfarin therapy. We aim to evaluate the effect of a pharmacist-led remote warfarin management model using a smartphone application (app) on anticoagulation therapy. **Method(s)**: Eligible patients who had received warfarin therapy after mechanical heart valve replacement were enrolled. The intervention group was offered a pharmacist-led remote warfarin management model using the app named Yixing. Yixing incorporates functions including automatic daily reminder, personal health record, educational program, and online counseling. The control group received traditional pharmacy services without Yixing. Co-primary outcomes were patients' awareness score of warfarin therapy obtained from questionnaire, the medication adherence measured by the percentage of the correct-warfarin-taken days in the monitored period, the fraction of time in therapeutic range (FTTR), and the incidence of anticoagulation-related complications. The needed information of the patients was acquired via electronic medical records from the hospital, Yixing system and telephone follow-up when necessary. **Result(s)**: 64 and 66 patients were initially in the intervention and control groups respectively. After propensity score matching, 50 patients were assigned in each group. The intervention group had a median age of 51.0 years, in which 27 (54%) were male. The control group had a median age of 50.5 years, in which 28 (56%) were male. Patient awareness score in the intervention group was 8.00 (2.00), which was higher than that in the control group, with score at 6.50 (2.50) (p = 0.001). No significant difference was found in the percentage of the correct-warfarin-taken days between the two groups (p = 0.520). The median (interquartile range) value of FTTR was 80.3% (21.9%) and 72.1% (17.7%) in the intervention and control groups respectively (p = 0.033), and no significant differences in the incidence of anticoagulation-related complications were observed (p = 0.514). **Conclusion(s)**: The pharmacist-led remote warfarin management model using Yixing improves patients' awareness of warfarin therapy and increases FTTR, but may not have significant improvements on medication adherence and safety.]

How do hospital pharmacists approach substitution of nanomedicines? Insights from a qualitative pilot study and a quantitative market research analysis in five european countries
Sofia N., Di Francesco T., Fluhmann B., Muhlebach S., Musazzi U.M., Khatib R., Martinez Sesmero J.M., Lipp H.-P. et al
Pharmaceutics, vol. 13(7)
July 2021
[We conducted research to assess hospital pharmacists' familiarity with/interpretation of data requirements for the different regulatory approval frameworks and the impact of this on their approach to substitution in the formulary. The online questionnaire included a small molecule (acetylsalicylic acid-follow-ons approved via the generic pathway), two biologic drugs (insulin glargine and etanercept-follow-ons approved via the biosimilar pathway), a non-biologic complex drug (NBCD; glatiramer acetate-follow-ons approved via the hybrid pathway) and a nanomedicine, ferric carboxymaltose (no follow-ons approved as yet). The study was conducted in two phases: An initial qualitative pilot study with 30 participants, followed by a quantitative stage involving 201 pharmacists from five European countries. Most expected negligible safety/efficacy differences between reference and follow-on products. Head-to-head clinical data showing therapeutic equivalence as a prerequisite for reference product/follow-on substitution was perceived to be needed most for biologics (47%), followed by NBCDs (44%)/nanomedicines (39%) and small molecules (23%). Overall, 28% did not know the data requirements for follow-on approval via the hybrid pathway; 16% were familiar with this pathway, compared with 50% and 55% for the generic and biosimilar pathways, respectively. Overall, 19% of respondents thought the European Medicines Agency

(EMA) was responsible for defining the substitutability of follow-ons. Education is required to increase hospital pharmacist's knowledge of regulatory approval frameworks and their relevance to substitution practices.]

Safety: Medicines and Prescribing

A global survey on opioid stewardship practices in hospitals: A cross-sectional pilot study
Al-Samawy S., Varughese N., Vaillancourt R., Wang X.Y., and Penm J.
Pharmacy, vol. 9(3)
September 2021
[**Objective**: The objectives of this study are to describe opioid stewardship practices in hospitals being implemented globally, in addition to investigating the attitudes and perceptions of health professionals regarding opioid stewardship in the hospital setting. **Method(s)**: A survey was developed by the research team to ask about participants' attitudes and perceptions regarding opioid stewardship practices. The survey was piloted for performance by five independent third-party healthcare professionals prior to being made available online, being hosted using Research Electronic Data Capture software, with invitations distributed by the International Pharmaceutical Federation (FIP). Descriptive analyses were used to describe the features of the study, and responses obtained from the survey were further categorised into subgroups separating answers relating to attitudes and perceptions, and policies and regulations. **Result(s)**: Overall, there were 50 respondents from 18 countries, representing an 8% response rate from the FIP hospital pharmacy section mailing list. In total, 33/50 (66%) participants agreed opioids are overused nationally, with 22/49 (45%) agreeing they are overused at their workplace. Furthermore, 32/50 (64%) agreed the opioid crisis is a significant problem nationally, and 44/50 (88%) agreed opioid stewardship would reduce problems associated with the opioid crisis. Policies to educate providers about safe opioid prescribing were uncommon, not exhibited in 26/46 (57%) of hospitals, with all EMR and SE Asia hospitals not displaying this policy. Policy for investigation of narcotic discrepancies was present in 34/46 (74%) of hospitals, and there was a policy for reporting discrepancies at 33/46 (72%) hospitals. **Conclusion(s)**: In conclusion, healthcare professionals in the American region are more likely to perceive the opioid crisis as a problem, as opposed to those from the European region. Regardless of the presence or absence of a crisis, the implementation of further opioid education and stewardship practices are necessary globally and will contribute to safer prescribing and utilisation practices in hospitals.]

Direct oral anticoagulant-related medication incidents and pharmacists' interventions in hospital in-patients: evaluation using reason's accident causation theory.
Haque H., Alrowily A., Jalal Z., Tailor B., Efue V., Sarwar A., and Paudyal V.
International Journal of Clinical Pharmacy, online ahead of print
July 2021
[**Background**: Direct oral anticoagulants (DOACs) have revolutionised anticoagulant pharmacotherapy. However, DOAC-related medication incidents are known to be common. **Objective**: To assess medication incidents associated with DOACs using an error theory and to analyse pharmacists' contributions in minimising medication incidents in hospital in-patients. **Setting**: A large University academic hospital in the West Midlands of England. **Methods**: Medication incident data from the incident reporting system (48-months period) and pharmacists' interventions data from the prescribing system (26-month period) relating to hospital in-patients were extracted. Reason's Accident Causation Model was used to identify potential causality of the incidents. Pharmacists' intervention data were thematically analysed. **Main outcome measure**: (a) Frequency, type and potential causality of DOAC-related incidents; (b) nature of pharmacists' interventions. **Results**: A total of 812 reports were included in the study (124 medication incidents and 688 intervention reports). Missing drug/omission was the most common incident type (26.6%, n = 33) followed by wrong drug (16.1%, n = 20) and wrong dose/strength (11.3%, n = 14). A high majority (89.5%, n = 111) of medication incidents were caused by active failures. Patient discharge without anticoagulation supply and failure to restart DOACs post procedure/scan were commonly recurring themes. Pharmacists' interventions most frequently related to changes in pharmacological strategy, including drug or dose changes (38.1%, n = 262). Impaired renal function was the most common reason for dose adjustments. **Conclusion**: Prescribers' active failure rather than system errors (i.e. latent failures) contributed to the majority of DOAC-related incidents. Reinforcement of guideline adherence, prescriber education, harnessing pharmacists' roles and mandating renal function information in prescriptions are likely to improve patient safety.]

GMO Medicines and hospital pharmacy practice: a review

Webb T.L. and Hong E.

Journal of Pharmacy Practice and Research, vol. 51(3) pp. 203-210

June 2021

[Research into gene therapy and genetically modified organism (GMO) medicines is intensifying. Whilst there are only a small number of GMO medicines which have successfully reached registration, Australian hospital pharmacy departments may find themselves in a position where they are required to handle, prepare and dispense this emerging class of therapy in a clinical trial setting. This article explores current literature concerning the management of GMO medicines in a hospital setting. Currently, the bulk of GMO medicines employ the use of viral vectors to deliver therapeutic genetic material into patients. The use of biohazardous agents such as viral vectors presents a new set of safety risks to both patients and pharmacy staff. Pharmacists need to be aware of the safety risks surrounding the use of GMO medicines and implement procedures to handle these medicines safely. Further, pharmacists will need to be familiar with the Gene Technology Act 2000 in addition to the state and federal regulations governing the use of medicines in Australia.]

Strategies supporting sustainable prescribing safety improvement interventions in english primary care: qualitative study.

Shamsuddin A., Jeffries M., Sheikh A., Laing L., Salema N-E.; Avery A.J., Chuter, A., Waring J., and Keers R.N.

BJGP Open

Jul 2021

[**Background**: Whilst the use of prescribing safety indicators (PSI) can reduce potentially hazardous prescribing, there is a need to identify actionable strategies for the successful implementation and sustainable delivery of PSI-based interventions in general practice. AIM: To identify strategies for the successful implementation and sustainable use of PSI-based interventions in routine primary care. **Design & setting**: Qualitative study in primary care settings across England. **Method**: Anchoring on a complex pharmacist-led IT-based intervention (PINCER) and clinical decision support (CDS) for prescribing and medicines management, we conducted a qualitative study using sequential, multiple methods which comprised of documentary analysis, semi-structured interviews and online workshops to identify challenges and possible solutions to the longer-term sustainability of PINCER and CDS. Thematic analysis was used for the documentary analysis and stakeholder workshops, whilst template analysis was used for the semi-structured interviews. Findings across the three methods were synthesised using the RE-AIM framework. **Results**: We analysed 48 documents, undertook 27 interviews and two workshops involving 20 participants. Five main issues were identified, which aligned with the adoption and maintenance dimensions of RE-AIM: fitting into current context (adoption); engaging hearts and minds (maintenance); building resilience (maintenance); achieving engagement with secondary care (maintenance); and emphasising complementarity (maintenance). **Conclusions**: Extending ownership of prescribing safety beyond primary care-based pharmacists and achieving greater alignment between general practice and hospital prescribing safety initiatives is fundamental to achieve sustained impact of PSI-based interventions in primary care.]

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