Great North Pharmacy Research Collaborative Conference 2023

Foundation Pharmacist Poster Submission

Poster No	
1	**Name:** Jack Ritson **Organisation:** County Durham and Darlington NHS Foundation Trust **Email:** jackritson@outlook.com **Project Title** Improving Penicillin Allergy De-labelling: Implementation of Oral Challenges in an Acute Hospital Trust **Abstract** Introduction Approximately 10% of patients have an unverified penicillin allergy label and only 10-20% of self-reported penicillin allergies are formally evaluated. Patients with penicillin allergy labels have been shown to have increased rate of resistant infections, longer hospital stays, more re-admissions, greater healthcare costs and increased morbidity.[1] This is likely caused by the avoidance of first-line penicillin antibiotics, and instead the use of broad-spectrum antibiotics. Reports in peer reviewed journals and several national and international allergy groups show that penicillin allergy de-labelling can improve patient's treatment and lower cost of healthcare.[1] A recent study in the UK estimated that £503,932 could be saved in costs of excess bed days if 50% of patients who self-reported penicillin allergies could be de-labelled.[2] A study on oral penicillin challenges found that 3.41% of low-risk allergy labelled patients experienced reactions to the oral challenge, all of which were mild to moderate, with no severe reactions.[1] The objective of the study was to improve the existing penicillin allergy de-labelling tool to include oral challenges and safely use this to de-label patients presenting to an acute hospital trust. Method Over a six week period, patients with penicillin allergies with history suggesting a non-allergy were identified using EPR. They were then evaluated to determine eligibility via an algorithm that assesses probability of hypersensitivity. Using the suggested policy, patients were given co-amoxiclav as an oral challenge, and if successful, the patient's allergy history was updated. Amendments were also made if symptoms were typical of intolerance rather than allergy and a challenge was not necessary. Patients were given patient information leaflets and consent was confirmed prior to amendments/challenges. Allergy details, history amendments and allergy challenges were documented and primary care were informed of changes via discharge letter. Results Of the 50 patients identified, 34 (68%) met the criteria for de-labelling. However, 15 (44%) patients were more likely to be de-labelled based on their allergy history alone rather than with an oral challenge due to having a course of penicillin after they had been labelled, or the symptoms were not indicative of an allergy. 19 (56%) patients were suitable for an oral penicillin challenge and were identified as low risk of reaction. 14 (28%) patients were successfully de-labelled. 9 of the 14 (64%) patients identified were de-labelled with no challenge necessary. 5 out of 14 (36%) patients identified were given an oral challenge. Conclusion This research demonstrates the success that penicillin allergy de-labelling protocols could have on cost savings for the NHS and patient care. Furthermore, it supports evidence suggested from reports that many patients have false allergy labels. The study illustrated the difficulty in getting patients to agree to the challenge as most were not receptive to the idea that they may not be allergic. Improvements could be made by surveying the effect that this has had on primary care records. Many studies have shown that this is variable and despite the effort put forth to remove the allergy label, they may not be removed in GP records.

2	**Name:** Bradley Smith **Organisation:** County Durham and Darlington NHS Foundation Trust **Email:** bradley.smith7@nhs.net **Project Title** Assessing the appropriate prescribing of Piperacillin-tazobactam within an acute NHS trust **Abstract** Antimicrobial resistance (AMR) was estimated to have killed 1.27 million people in 2019 and was predicted to kill 10 million per year by 2050(1,2). Overuse of broad-spectrum antibiotics (BSA) contributes substantially to AMR(3). Appropriate use of BSA reduces mortality and economic burden on healthcare systems(3). One BSA is piperacillin with tazobactam (PT). A retrospective study was performed to assess appropriate PT prescribing across a national health service (NHS) trust. The gold standard for PT prescribing was the trust antibiotic formulary. This specified PT was only to be used in sepsis of unknown origin (SOUO), as well as urinary, abdominal, puerperal, and neutropenic sepsis (PT was also indicated in some Pseudomonas aeruginosa infections). The formulary also included treatment alterations for patients with allergies, intermediate sensitivities, and resistance. Additionally, the formulary specified diagnostic considerations when prescribing PT. The data of 30 patients was collected using an electronic patient record (EPR), including: indication, dosage, course length, sepsis screening tool (SST) usage, blood culture usage and compliance with formulary. Orders placed in emergency departments/admission units of two acute sites (23 patients) were also compared . Data was collected within a 1-week period from December 2022, ethical approval was not required. The findings were checked and validated by an antibiotic clinical pharmacist. 40% of patients had sepsis indicated. 80% of patients had the correct dose. Average course length was 4 days, 56.7% > 72 hours, 30% ≥ 7 days. SST were used in 57.6% of patients (3 positive). 30% of patients had blood cultures sent; in sepsis indications 50% requested (2 positive). 2 patients had resistance identified. 2 patients had penicillin allergies listed. Of non-sepsis indications: 83.3%: respiratory infections, 5.6%: 'frailty syndromes', 11.1%: not specified. In these SST were either not recorded (44.4%) or negative (55.6%). No significant difference observed in all parameters between acute sites (CI 95%). 66.7% of all prescribing was inappropriate upon review. Over half of sepsis indications did not investigate blood cultures despite trust policy requirements. The trust formulary specified a 'start smart then focus' approach, wherein all intravenous antibiotics are reviewed within 72 hours. Unfortunately, there was no comprehensive review documentation on EPR, omitting reviews from this audit. In the patients where resistance was identified, PT was continued for multiple doses, however it was unclear when clinicians were made aware of the sensitivity results. These factors, plus the variation in course length supports auditing review processes and implementation of formal review documentation. The inappropriate prescribing results suggest the need for more in-depth training for prescribers in differentiating sepsis from other infections. Mandatory incorporation of SST/decision tools before commencement of PT and increased awareness of the formulary may also improve prescribing. The concordance between acute sites indicated the causation was likely diffuse. However, this study was conducted in a limited timeframe, population, and locality (single NHS trust). The prescribers were not actively involved in this audit, also the virtual-retrospective approach may have omitted their rationale. Re-auditing over wider parameters would provide greater perspective to PT prescribing in relation to AMR prevalence.

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Project Title

Management of long-term bisphosphonate treatment in primary care

Abstract

Background

Bisphosphonates are the first line choice for the treatment of osteoporosis and management of fracture risk in patients with or at risk of developing low bone mineral density (BMD). They require consistent long-term administration for good efficacy (1). As such, the National Osteoporosis Guidelines Group (NOGG) recommends regular reviews and appropriate treatment holidays to maximize patient safety (2). NOGG recommends the use of the fracture risk assessment tool (FRAX) score and T-scores calculated using dual energy x-ray absorptiometry (DEXA) scans, as part of an appropriate review. Due to the long-term nature of treatment, bisphosphonate reviews can be missed and inappropriately continued in patients.

Objective

All patients on long-term bisphosphonate treatment should be reviewed after 5 years. Treatment appropriateness and efficacy should be assessed by carrying out a DEXA scan and/or FRAX scores. This audit aims to assess the appropriate reviews of patients receiving long-term bisphosphonate treatment at a large GP surgery, in keeping with the latest guidance by NOGG (2021).

Method

Patients with bisphosphonates on repeat prescription for ≥5 years from October 2022 until February 2023, were identified using our electronic patient records. Using the NOGG guidelines, these patients were screened for timely and appropriate reviews of their bisphosphonate treatment, the proportion of patients requiring reviews were identified. Data collected included: duration of treatment, compliance, age, signs of atypical fracture, concomitant steroid/letrozole use and most recent DEXA and/or FRAX.

Results

Of the 78 patients identified in the initial data search, 75 were still receiving active bisphosphonate treatment. Screening showed that 24 patients were overdue for their 5 yearly review. Of these, 7 patients would be recommended to continue treatment, either due to age or concomitant use of medications that affect BMD. 12 patients were established on treatment ≥10 years and were potentially eligible for a treatment holiday. A further 5 patients were potentially eligible for a treatment holiday as they were on treatment for ≥5 years, without an additional risk factor (e.g., >70 years old and concomitant use of medication affecting BMD). Moreover, 6 patients were previously referred for a DEXA scan as part of treatment review, but half did not attend, and 3 referrals were not actioned.

Conclusion

The data showed that 68% of patients had timely reviews and DEXA scans and thus were not compliant with the NOGG guidelines in relation to long-term monitoring. Further investigation is needed to determine the reasons for missed reviews. As mentioned above, follow up reviews were attempted for 6 patients but were abandoned, with lack of patient engagement a potential contributing factor. Moreover, the lack of a re audit is a limitation of this audit. A further audit is recommended 6 months after a review is attempted for all remaining patients. This should include patient and clinician perspectives as the long-term nature of treatment and lack of perceived 'immediate benefit' may be a challenge in the management of long-term bisphosphonate treatment (3).

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Project Title

Review of lidocaine patch prescribing in an Acute Trust before and after Implementation of a Trust Wide formulary review to ensure appropriate indications.

Abstract

Background: In the financial year 2021/2022, County Durham & Darlington Foundation Trust spent approximately £44K on lidocaine plasters. The Trust remained a regional outlier in the prescribing of lidocaine patches. As clinicians in the trust estimated that it presented benefits as adjunct and had minimal associated risk, prescribing was not restricted. On rationalisation of the trust formulary to achieve best practice and to control drug expenditure in this area, the decision was made to limit prescribing of lidocaine patches to three specific indications; multiple rib fractures, on advice of pain team, on advice of palliative care team and in post-herpetic neuralgia as per the marketing authorisation and NICE guidelines [1-2]. Effective December 5th, lidocaine plasters were removed from stock list across wards, plasters were only available from the pharmacy team on a named patient basis. The evidence base supports this decision as the literature reported a lack of high-quality trails for lidocaine patch use in variety of pain indications[3-5], showing less than 50% reduction in pain relief when compared to placebo.
Objectives: To review trends in lidocaine patch prescribing across an acute trust in relation to implementation of a restricted formulary status.

Method: A report was generated using the Ascribe dispensing system to obtain the number of lidocaine patches supplied from the pharmacy department from March 2022 to March 2023. Data was then specifically recorded for the month prior and the month after the implementation of the formulary guidance. A Discern report was carried out on the Cerner electronic prescribing system, filtering to lidocaine 5% medicated plaster prescribing within the trust from November 2022 to March 2023. Indication and pain team review data was recorded for a sample of these patients to review if indications given met the formulary guidance after the change was implemented. A questionnaire was circulated around the wards to gain opinions of nursing staff on the use of lidocaine plasters including perceived benefits and awareness of the change.
Results: Data showed a 38.7% reduction in the supply of lidocaine patches from pharmacy across the trust from November 2022 to February 2023. 61% of patients had been reviewed by the pain team were given patch for reason other than those approved on formulary. The questionnaire showed that nursing staff were aware of the changes made to the formulary however felt lidocaine had more uses than the formulary indicated.
Conclusion: The data highlights needs for further discussion and review of prescribing opinions throughout the Trust. The Trust's Pain team is only funded for surgery; it may be beneficial to the trust to consider if having a trust-wide pain team would affect the management of pain medication prescribing. The audit provided advice on control weaknesses, showing that nursing personnel dialogue with prescribing clinicians concerning patient's pain medication concerns may be influencing prescribing. Displaying posters around the trust, which depict the disparity in cost for lidocaine patches when compared with other drugs in its class, showing it as a non-cost-effective treatment option, may aid in educating ward staff on the importance of cost-effective, evidence-based prescribing. The trust may benefit from an update of the electronic prescribing system to only allow prescribing within formulary parameters and a future audit to check again for Formulary adherent prescribing.

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Project Title

Antipsychotic monitoring: A review of patients with health inequalities at risk of prolonged QTc interval.

Abstract

Background

In September 2016, reports commissioned by NHS England highlighted a significantly higher rate of prescribing antipsychotic medications among people with learning disabilities (PwLD) than in the general population.[1] Patients taking antipsychotic medication are at higher cardiovascular risk due to the side effects; therefore, National Institute for Health and Care Excellence (NICE) CG178 guideline states patients should receive annual monitoring.[2] This includes Electrocardiogram (ECG) monitoring if the patient is taking an additional medication that can prolong QTc. However, a British Medical Journal (BMJ) project demonstrated compliance with annual ECG monitoring was 43% in June 2016.[3]

Objective

This audit investigates if patients with health inequalities at the General Practice (GP) receive their annual ECG monitoring due to taking an antipsychotic medication plus another medication with a risk of QTc prolongation.

Methods

During the first week of January 2023, the GP software, SystmOne, was used for data collection by running a report to identify patients taking one antipsychotic medication. The patient list was exported to an excel spreadsheet, and patients taking another medication with a QTc prolongation risk were highlighted. An intervention was made to contact patients requiring their annual ECG and book a routine appointment. After a month, a re-audit occurred with the patients contacted.

Results

A total of 90 patients were identified to be prescribed antipsychotic medication. 41 patients were excluded as they did not meet the ECG monitoring criteria, or they had regular monitoring by secondary care clinics. Of the 49 patients eligible, 39 patients had not received their annual ECG monitoring. 14 of those patients were identified to have a health inequality because they have a learning disability (11/14) or are housebound (3/14).

After a month, the 39 patients without annual ECG monitoring were reviewed. 18 patients (46%) had an annual ECG monitoring after the re-audit, of which 6 patients had abnormal ECG: including 1 prolonged QTc. 2 PwLD could not undergo ECG monitoring because of agitation and anxiety during the procedure. The 3 housebound patients did not receive their ECG monitoring in this time frame due to the nurse strikes. 16 patients were yet to book their routine ECG appointment due to other commitments.

Conclusion

This audit indicates a disparity in patients with health inequalities receiving ECG monitoring as part of their annual antipsychotic monitoring. This could be due to multiple reasons; for example, they have less access to healthcare if they are housebound or cannot undergo the ECG procedure due to anxiety. Nonetheless, there is ongoing research at the GP to address the health inequalities in PwLD requiring ECG monitoring. Overall, compliance with ECG monitoring did not meet the NICE CG173 standard by the end of February 2023 because all eligible patients had not received an annual ECG monitoring. However, limitations of this audit should be noted, such as a short timeframe and nursing strikes. Changes will be implemented to SystmOne to highlight patients requiring annual ECG monitoring and automatic reminders will be generated. I propose a re-audit in 12 months to determine if these changes have had a beneficial effect.

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Project Title

Audit of compliance with the national Valproate Safety Dashboard

Abstract

Background

Valproate in the form of Valproic acid and sodium valproate is a medication used in treatment of epilepsy, bipolar disorder, and prophylaxis of migraine. Due to teratogenic effects of valproate, which can result in physical birth defects in 10 in every 100 babies, the Medicines and Healthcare products Regulatory Agency (MHRA) has advised that valproate must not be used in anyone of childbearing potential, unless a Pregnancy Prevention Programme (PPP) is in place (1, 2). The PPP ensures that all female patients prescribed medicines containing valproate have been informed of risks in pregnancy; have signed a Risk Acknowledgement Form, are on highly effective contraception if necessary, and see their specialist at least annually (3). The valproate PPP is also supported by a patient guide and alert card to be provided to those of childbearing potential to inform of the associated risks.

Objectives

To establish compliance with the national Valproate Safety Dashboard and ensure that outcomes of the valproate Pregnancy Prevention Programme are demonstrated, in order to reduce the risk of harm from valproate prescribing in patients of childbearing potential at a NHS Foundation Trust between April 2022 and January 2023.

Methods

Patients prescribed valproate between 01/04/2022 and 17/01/2023 were identified using the Trust's electronic prescribing systems. Moreover, patients of childbearing potential were filtered out and their notes and clinical letters were reviewed in order to extract information evidencing enrolment onto a PPP, documentation, specialist follow up, contraception, and any potential reason for not having a PPP. Ethics approval was not required for this project.

Results

Twenty-seven patients of childbearing potential who were prescribed valproate were included. Seventeen patients (≅63%) had documentation of PPP in place. Six out of 17 patients (≅35%) were prescribed effective contraception, and the remainder were not using any form of contraception due to the permanent absence of risk of pregnancy, severe learning difficulty, sterilisation, or hysterectomy. Nineteen patients (≅70%) were receiving routine specialist follow-up ranging from two-monthly to annually.

Conclusions

Overall, this study highlights the proportion of patients within the Trust enrolled onto a PPP. It is essential for all patients of childbearing potential on valproate to be enrolled onto a PPP in order to reduce the risk of harm to the foetus. In order to further improve compliance with the national Valproate Safety Dashboard, further research is required to investigate the reasons for patients not being enrolled onto a PPP, and ways to improve enrolment rates. Limitations of this study include: lack of access to all of the patient clinical notes and letters which could also include evidence of PPP, valproate prevention, or specialist follow-up. Furthermore, a designated documentation section may improve clarity and accessibility of information around PPP enrolment allowing for improved identification of patients at risk of harm, and subsequently minimising the teratogenic effects of valproate on the foetus.

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Project Title

Assessing how medications are being managed for patients' diet by pharmacists and technicians

Abstract

Background

Drugs commonly contain excipients such as alcohol, pork and other animal derived ingredients which can cause problems when patients follow strict diets such as vegetarians, vegans, Muslims and Jews. Pharmacists can assist in reviewing the medication and suggest alternatives for patients following strict dietary requirements and to healthcare professionals looking for guidance on alternative medication. It is therefore important to allow for consideration of patients diets when prescribing medication as this will potentially allow for better agreement and adherence to treatment.

Objectives

To assess pharmacist and technicians experiences and opinions of dealing with dietary requirements regarding medications and finding and using guidelines. To identify whether a guideline might be required and assist in producing an initial draft to assist pharmacists and technicians.

Method

An initial qualitative survey was designed and sent to each pharmacist and clinical technician within an NHS foundation trust, with no ethics approval required. The survey had 7 questions and data was collected over 2 weeks from 10/1/23 to 24/1/23 and received 25 responses. The survey focused on staff's experiences upon encountering patients with strict dietary requirements on the ward and whether they knew where to find guidance and if so, which sources they used.

Results

The responses to the survey highlighted that while 63% of respondents having been asked to review patients medication in line with their diet, 92% of respondents felt unsure of how to do this and the best resources to use. Following these responses, a guideline was drafted outlining a basic template which respondents could use when completing patient histories which also contained information about the key sources. One of the key sources is the electronic medicines compendium which contains information about the excipients in drugs, however websites such as the specialist pharmacy service which contained useful information about vegan/halal/kosher medicines were also included. Guidance was also included regarding contacting the next most suitable person such as local religious leaders and verified websites. The guideline is currently in the approval process by the medicines governance group, with the plan to re-audit once this is completed.

Conclusion

It was identified that one of the barriers facing pharmacist and technicians was the difficulty finding guidelines due to the lack of a universal reference of medications, and that the most effective way to address this was by accessing a wide range of sources which informed the production of the draft guideline. The limitations of the study are the small sample size included and lack of follow up survey to assess the effectiveness of the new guidelines

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Project Title

An audit assessing the appropriate prescribing of anti-epileptic medications in end of life care

Abstract

Background

Seizures at the end of life are traumatic for both the patient and their loved ones therefore ensuring the correct use of anti-epileptic medications at the end of life (EoL) is key. The increased risk of seizures in EoL can be attributed to a range of factors including a past medical history of epilepsy, brain tumours and metabolic disturbances among other factors (1). Commonly used medications used for seizures in EoL include levetiracetam which has been shown to be safe and effective in EoL care and benzodiazepines such as midazolam although these can cause increased sedation at the expense of preventing seizures (2).

Objectives

To assess the management of patients requiring anti-epileptic medications in EoL care over a defined period by evaluating whether patients have the appropriate anti-epileptic regime prescribed. This includes the correct drug, whether this is by an appropriate route and whether a crisis dose of midazolam is prescribed in line with the trust guidelines.

Methods

Patients who were on EoL observations within the hospital were identified using NerveCentre. The patient's medications were reviewed to identify any anti-epileptic medications prescribed on the online prescribing system. This data was compared to the standards set out in the trust guideline for the management of seizures in EoL care to determine if the guideline had been followed.

Results

Using the search criteria, 37 patients were identified as requiring anti-epileptic medications in EoL care. Of the patients identified, 43.24% (16 patients) required anti-epileptic medication for the prevention of seizures with the remaining patients requiring midazolam for agitation or in case of catastrophic bleeds. Overall compliance with the guidelines was higher in patients with no history of seizures as 100% (9 patients) of patients correctly had midazolam 10mg PRN via subcutaneous injection (SC) as a crisis dose prescribed. Prescribing was in line with guidance in 42.86% (3 of 7) patients who had history of epilepsy. 81.25% (13 patients) of patients had anti-epileptic medications prescribed correctly by either the oral route if still able to tolerate or via subcutaneous injections or infusions. Medication was incorrectly prescribed intravenously in 2 patients who had previously been taking oral anti-epileptic medications and in 1 patient where no alternative anti-epileptic was prescribed when they were unable to swallow tablets. Crisis doses of midazolam 10mg when required for seizures was correctly prescribed in 81.25% (13 patients) of patients.

Conclusions

This study indicated that overall prescribing of anti-epileptic medications had a higher incidence of being in line with guidance in patients who had not previously been on anti-epileptic medications. However, there were multiple errors in switching patients' previous oral anti-epileptics to the correct SC equivalent indicating that more education for prescribers related to the management of patients with pre-existing seizures in EoL may be required. This study was limited by the small sample size due to the specific inclusion criteria of being on EoL observations, therefore further research could be carried out over a longer duration to strengthen the findings. This study did not require ethics approval.

9	**Name:** Lydia Askew **Organisation:** Gateshead Health NHS Foundation Trust **Email:** lydia.askew@nhs.net **Project Title** Reviewing appropriateness of multi-compartment compliance aids (MCCAs) in hospital inpatients with carers who administer their medication at home **Abstract** Background: MCCAs are a much debated subject, with the Royal Pharmaceutical Society discouraging routine usage without a patient adherence assessment(1). There is a lack of high-quality published research on their use and consequently they have an unknown impact on adherence(2). MCCAs have claimed benefits such as helping patients remember to take their medication and maintaining patient independence(3). However, MCCAs have increased risk of dispensing(4), administration and transfer of care errors(5), difficulty in identifying medicines(6), stability and licensing issues by not having medication in original packaging(7) and have environmental impact from single use plastic(8). The project focus was patients using an MCCA whose carers administer the medication without the patient's involvement. In this scenario there are no benefits in using MCCAs and so these patients are unnecessarily exposed to the risks highlighted above. Hospital pharmacists are well placed to review such patients on admission to hospital and when a change in care arrangements occurs. Analysis and Assessment: Over the past 12 months, 8 % of all dispensing errors that left the inpatient pharmacy were MCCA related and this was identified as an area for improvement. Initial analysis of emergency admissions over a 3-week period indicated 22% of patients were existing users of MCCAs. Analysis of patient records also revealed 48% had neither information recorded about who administered their medication or any pharmacist review of MCCA suitability. All regional care providers were contacted, and the majority confirmed policy supported the use of their carers administering medication from original packaging. Intervention An assessment tool was developed for patients using MCCAs and a week-long pilot was conducted on two elderly wards. Patients were assessed for both MCCA use and having their carers administering their medication using frailty team reviews via the digital patient record. A patient-centred discussion was conducted with each patient and their carers to decide if use of MCCA was appropriate. Where MCCAs were inappropriate, a process was followed to revert to original packaging involving verbal and written communication with patients, care providers, GP practices and community pharmacies. Measurement of improvement: Of the 62 elderly patients, 20 were found to be using an MCCA. Of these, 12 were assessed with tool, with 6 (50%) to be using MCCAs without sufficient cause. Of those, 3 were stopped, 1 declined and 2 were to be discharged to 24-hour care so the MCCA would have stopped anyway. Conclusions: Over a 5-day period, 12 patients were assessed to review their MCCA use. Whilst the sample in this study was small, it indicated that 50% of assessed patients were dispensed MCCAs inappropriately. Patient-centred discussions ensured patient involvement in changing to original packaging, which was then communicated to care providers. Utilizing an MCCA review tool in the acute hospital setting promotes a patient centred review of how medicines are managed and has the potential to reduce inappropriate MCCA use with consequent patient safety improvements. Further work is required to assess process efficacy, ensure MCCAs are not restarted inadvertently and to embed the tool into pharmacy review practice.

10	**Name:** Jaspanth Kaur **Organisation:** Horden Group Practice **Email:** jazkaur111@outlook.com **Project Title** Utilising WHO 2022 guidance on falls prevention to help minimise falls risk by identifying orthostatic hypotension caused by medication in a care home population. **Abstract** Introduction Falls within the elderly frail population is a growing concern due to its link to morbidity, mortality, and hospitalisation [1, 2, 3]. Recent Worlds Falls Guidelines (WFG) published in 2022 set out key multifactorial assessments to help reduce risk of falls. One part of the assessment was to screen for orthostatic hypotension (OH) routinely [4]. OH is an abnormal drop in blood pressure of >20mmhg systolic or >10mmhg diastolic on standing [5]. OH can occur from several different factors, including volume depletion, diseases such as Parkinson's disease and medication such as alpha blockers [6,7]. The WFG identified older patients who live in settings such as care homes as being at an increased risk of falls [4]. Therefore, the aim of this project was to try and implement one part of the assessment guidance by identifying and reviewing patients with orthostatic hypotension, focusing on the care homes aligned to the general practice. Method Patients across two care homes were assessed. A review of each patient's medication took place in the practice to identify anyone on medication that had potential to cause orthostatic hypotension. Patients identified on such medication had a sitting and standing blood pressure taken at the care home. Values obtained were then reviewed to identify patients with orthostatic hypotension defined as a drop in blood pressure of >20mmhg systolic or >10mmhg diastolic on standing. Patients who were borderline were also identified with a deviation of 2-3mmhg. Identified patients were then reviewed, looking at their overall falls risk (as documented by care home staff), if it was deemed appropriate medication that had potential to cause orthostatic hypotension was identified and flagged to the multi-disciplinary team (MDT) for a review. Results 34 patients were identified as being at risk of orthostatic hypotension. 25 of the 34 patients were able to give sitting and standing blood pressure readings. 6 of the 25 patients were identified as having orthostatic hypotension or being borderline. 5 out of the 6 patients had interventions made after input from the MDT. Interventions included reducing or stopping medication. The classes of medication that were stopped were anti-hypertensives and beta blockers. Conclusion Screening patients for OH allowed for changes to be made to medication that was potentially causing or worsening the OH subsequently putting patients at a higher risk of falls. This intervention has shown practices can proactively engage with care homes to help reduce patients falls risk. It is recognised only 20% of the 25 patients had interventions made, however it is important to remember only one part of the multifactorial assessment recommended by the WFG was implemented. As more of the guideline is implemented potentially more interventions can be made further reducing falls risk and its associated morbidity and mortality risk.

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Project Title

A Case Finding Hypertension Service Review

Abstract

Background:

Hypertension is a public health challenge worldwide despite it being easily treatable and preventable. It is a condition if untreated, significantly increases the chance of heart failure, coronary artery disease, stroke, CKD, and vascular dementia. Around 1 in 4 adults in the UK have high blood pressure [1] and for every 10 individuals diagnosed, 7 patients are left undiagnosed. People who live in the most deprived areas are statistically more likely to have high blood pressure than those that live in the least deprived areas [1], this is likely to be due to the association between low socioeconomic background and poor lifestyle choices. The GP surgery in which this project was conducted in was situated in the 8th most deprived area (Byker) in the North East [2]. A case finding hypertension service and education amongst this demographic is therefore, of great importance.

Objectives:

To invite all patients at the GP practice, that fit the inclusion criteria, in for a blood pressure check, to identify, treat, monitor, and educate those who have high blood pressure.

Inclusion criteria:

1.Have not had a blood pressure check in the set time frame according to the Quality and Outcomes Framework (QOF).

2.Have had a recent high blood pressure reading.

Methods:

In 2022, a list of patients that fitted the inclusion criteria was put together by completing searches on the practices clinical system. These patients were then invited to appointments by admin staff and trainee pharmacists. The patients that attended had their blood pressure checked in a clinic which was ran once a week by trainee pharmacists from September 2022 – March 2023. Upon a reading over the individuals target blood pressure, either home blood pressure monitoring (HBPM), or ambulatory monitoring (ABPM) was organised to ensure that white coat syndrome was not affecting the in surgery reading. If the average reading was high and a hypertension diagnosis was made, and the patient was booked in for the appropriate investigations including an ECG, U&Es, HbA1c, and an ACR. Then a discussion about initiating medication and lifestyle interventions was had with the patient. All decisions were discussed with a prescriber before initiation of medication. If medication was commenced, then the appropriate monitoring was booked in.

Results:

Of the 190 patients contracted, 135 patients attended. 65 patients then completed HBPM or ABPM and 51 patients were started on medication through this case finding service. Occasionally medication titrations and changing the antihypertensive agent due to adverse effects was needed. 8 patients were referred to the GP due to severe hypertension presentation (>180/120 mmHg) or due to being under 40 years old.

Conclusions:

The service identified patients that are unlikely to have been diagnosed otherwise, unless they presented to the GP for another reason. Hypertension rarely has symptoms; therefore, a proactive approach needs to be made to identify those with the condition to enable the best possible health outcomes for patients.

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Project Title

An Audit Reviewing SGLT2 Inhibitor Prescribing in Adult Hospital Inpatients

Abstract

Background

Sodium-glucose co-transporter-2 (SGLT2) inhibitors are indicated for the management of type 2 diabetes and heart failure (1,2). They reversibly inhibit SGLT2 in the renal convoluted tubule which reduces glucose absorption into the blood and increases glucose excretion in the urine. The Medicines and Healthcare products Regulatory Agency (MHRA) issued a warning that these medicines increase the risk of euglycaemic diabetic ketoacidosis (DKA) and, as good practice, they are suspended on admission to hospital for patients diagnosed with diabetes and whom present with serious illness or major surgery (3). Changes to eating and drinking habits in hospital increases the risk of euglycaemic DKA in those with diabetes but this is not applicable for those with heart failure only (1,2). It is therefore arguable that SGLT2 inhibitors prescribed for heart failure, in the absence of diabetes, could be continued in hospital. There appears to be a lack of clarity on the approach to prescribing SGLT2 inhibitors in hospital for patients with heart failure.

Objective

To review the prescribing of SGLT2 inhibitors for adult inpatients in line with trust guidance and the MHRA warning for euglycaemic DKA risk (4).

Methods

Patients admitted to hospital between 08/12/2022 to 02/01/2023 were reviewed retrospectively for the prescribing of SGLT2 inhibitors. This data collection was conducted by a trainee pharmacist using PowerChart Message Centre to collate a sample of 60 patients who were prescribed a SGLT2 inhibitor pre-admission. Data was obtained for the prescribed indication, whether the drug was continued or suspended, whether capillary ketones were measured, the appropriateness to suspend the medicine, education on the sick-day rules provided to the patient and documentation of the plan to continue treatment post-discharge. This study did not require ethics approval.

Results

Of the 60 patients, the SGLT2 inhibitor was suspended for 52 patients. It was deemed appropriate to suspend this medication (for serious illness or major surgery) for 36 of those patients. The number of patients who were prescribed a SGLT2 inhibitor for heart failure, and it was suspended in hospital, was 19. Counselling advice on the sick-day rules was provided to 10 patients; 9 of which were diagnosed with diabetes. Documentation on restarting the medicine on discharge was present in the notes of 46 patients.

Analysis and Conclusions

It is apparent that trust and national guidelines are abided by for the majority of patients in this hospital setting but clarification is still required, especially for cases of heart failure, on the prescribing of SGLT2 inhibitors in hospital. This audit presents some limitations that the authors aim to address, such as the lack of cardiology input, which may be beneficial to establish the rationale for the prescribing of SGLT2 inhibitors in hospital for patients with heart failure. Education for prescribers on the prescribing of SGLT2 inhibitors in hospital, particularly for patients with heart failure, would improve the consistency in the prescribing of these medicines. Re-auditing the prescribing practice, following this education, would enable us to evaluate the effectiveness of the audit.

13	**Name:** Sarah Ludkin **Organisation:** Newcastle Upon Tyne Hospitals NHS Foundation Trust **Email:** sarah.ludkin@nhs.net **Project Title** A retrospective review of meropenem prescribing. **Abstract** Background Meropenem is a broad spectrum carbapenem, for intravenous administration, with excellent activity against many pathogens (1). Meropenem exerts its bactericidal activity by inhibiting bacterial cell wall synthesis in Gram-positive and Gram-negative bacteria through binding to penicillin-binding proteins (PBPs) (2). Resistance to meropenem may result from: decreased permeability of the outer membrane of Gram-negative bacteria, reduced affinity of the target PBPs, increased expression of efflux pump components, and production of beta-lactamases that can hydrolyse carbapenems. Clusters of infections due to carbapenem-resistant bacteria have been reported in the European Union (2). As antibiotic resistance is a growing concern this project looks in to the appropriateness of prescribing meropenem considering indication and trust guidelines/ policies. Standard: 100% of patients have meropenem prescribed for the correct indication and appropriate treatment length. Objectives: 1. Review appropriateness of the indications for meropenem from the prescribing line against trust guidelines (3). 2. Check culture and sensitivity results have been recorded. 3. Consider microbiology specialist input and review if advice had been followed accurately. 4. Record if an antibiotic review had been documented within 72 hours of initiation of meropenem. 5. Review of the overall duration of antibiotic treatment was appropriate in line with specialist advice and trust guidelines. Methods A selection of patients prescribed a course of meropenem during September 2022 and October 2022 were extracted from E-record. Exclusion criteria included critical care patients. 100 patents were reviewed within E-record including a review of all documentation associated with meropenem prescribing. The results were analysed using excel to create pivot tables and charts. Results Data was collected for 100 patients across the trust. 99% of prescribed meropenem was considered appropriate for the correct indication and duration. In 84% of patients meropenem was prescribed under microbiology advice. 92% of patients had a culture and sensitivity test conducted prior to initiation of meropenem and 98% of patients had their antibiotics reviewed after 72 hours. 1% of patents did not have a documented review and 1% of patients had a late review. 6% of patients given meropenem did not have the antibiotic for the correct duration because microbiology advice was not followed correctly. 23% of patients were prescribed meropenem second line (correctly as per guideline) due to penicillin allergy. Conclusions Overall the results are positive showing antimicrobial guidelines have predominantly been followed accurately and medicine reviews of the antibiotics have been timely documented. Microbiology advice was common in the prescribing of meropenem which is appropriate due to meropenem not being classed as first line treatment for example it is second line in neutropenic sepsis. The microbiology plans were generally followed well and patient's treatment outside of microbiology following guidelines was appropriate. To further findings from this audit, consideration in to the need for more culture and sensitivity tests could be considered and investigation in to how allergies have affected increased meropenem prescribing. It may be interesting to consider challenging

	penicillin allergies in the future as false allergy statuses may be a factor in to increased meropenem prescribing.
14	**Name:** Charlotte Taylor **Organisation:** Newcastle upon Tyne Hospitals NHS Foundation Trust **Email:** charlotte.taylor85@nhs.net **Project Title** Inequalities in Children and Young People's (CYP) Weight Management Services **Abstract** Background More than a fifth of children leaving primary school in England are obese. (1) CYP from socioeconomically deprived areas are around twice as likely to be living with obesity compared to less deprived areas; CYP in the North East have the highest prevalence of obesity in England at reception age and school year 6. (1) Effective solutions to the obesity epidemic are required to prevent severe public health consequences. (2) The NHS long term plan has prioritised and allocated funding for up-stream prevention programmes for avoidable illnesses including obesity services. Their main aim is to reduce health inequalities across the country (3) Currently, there is one tertiary service for managing CYP obesity in the North East. This project aimed to estimate the size of the population in the North East that would be eligible for a tier 3 paediatric obesity service in a tertiary and quaternary referral paediatric hospital. The criteria for a tier 3 service is children with bodyweight greater than 3.3 standard deviations (SD) on Royal College of Paediatrics and Child Health's (RCPCH) BMI growth charts. Methods Data was collected from attendances to paediatric endocrine/general clinics over a 3-month period (December 2021 – February 2022). Telephone encounters were excluded due to lack of data. Body mass index (BMI) and growth centiles were calculated according to RCPCH BMI growth charts. (4) This study did not require ethics approval. Results Total patients: 783 Excluded patients: 141 (lack of height and weight data) Morbidly obese patients (SD ≥ 3.3): 21/642 (3%) Obese patients (SD ≥ 2): 73/642 (11%) Overweight patients (>91st centile): 73/642 (11%) Age and gender did not correlate to higher BMIs. Discussion The population of CYP under 18 in the North East is estimated to be 438,000. (5) This could give a potential population of CYP in the region that are morbidly obese of 13,000. However, the true scale of the problem cannot be assessed by this study due to the lack of data from the community. This data shows there is a need for obesity service development in the North East. Lifestyle interventions alone have limited efficacy in reducing BMI. (6) Tier 3 services provide a dedicated multi-disciplinary team, including pharmacy staff, which has been proven to decrease body fat and BMI values in children, as well as increasing quality of life. (7) The government has pledged to halve childhood obesity and significantly reduce the gap in obesity between children from the most and least deprived areas by 2030. Considering the gap in services available in the North East, the data from this study was presented to the integrated care board in a bid to obtain funding for a tier 3 service in the area; funding decisions are now being made. Conclusion The data collected shows a need for a service to manage children living with obesity in the North East of England. These services are running in other parts of England which have lower rates of obesity thus highlighting a disparity in CYP services across the country.

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Project Title

Cancer Patient's Experiences of The DPYD Pharmacogenomic Testing Service at a Cancer Care Centre in the North East

Abstract

The DPYD gene encodes an enzyme known as dihydropyrimidine dehydrogenase (DPD). Deficiency of the DPD enzyme can lead to life-threatening toxicity following exposure to 5-fluorouracil and capecitabine. Pharmacogenomic testing for DPYD gene polymorphisms which cause DPD deficiency was mandated in 2020 (1). There is limited research exploring the patient perspective of the DPYD gene testing pathway. This project will therefore inform local service development and generate recommendations for education resources.

Aim: The aim of this project is to explore service users' experiences of DPYD pharmacogenomic testing at a Tertiary Cancer Centre.

Objectives:

- To describe patient experiences of the DPYD gene testing pathway including test counselling and receiving of results.
- To describe the patient experience and attitudes towards available patient educational resources for DPYD pharmacogenomic testing in order to see where this can be improved.

Methods:

- A patient experience survey was developed in collaboration with specialist cancer pharmacists and the patient experience team.
- Purposive sampling was used to identify patients with service user experience of DPYD testing.
- Quantitative results were analysed in terms of percentages and similar quantifiable measures. Thematic analysis was used to analyse qualitative data.

Results: Three patients (age range 65-75) were surveyed during the pilot phase of the project in February 2023. Verbal consent was obtained to take part in the survey. 2/3 respondents had a diagnosis of stomach cancer were receiving treatment with capecitabine, and 1/3 had a diagnosis of oesophageal cancer and were receiving treatment with fluorouracil. 2/3 of people surveyed reported hospital staff explained the DPYD test and 1/3 received a patient information leaflet. Two participants advocated for comprehensive educational videos for patients and their relatives. Broader themes outside of this project were also reported, such as a sense of being overwhelmed with information, whilst simultaneously not having enough information about some aspects of treatment, which is supported by Omel et al's finding in breast cancer diagnoses experiences. (4)

Discussion:

Data collection terminated after the pilot phase because the survey was insufficiently sensitive to meet the project objectives and was causing confusion for participants. The participants included in the pilot were not able to separate their experience of cancer diagnosis from DPYD pharmacogenomic testing experience. This may be due to fundamental limitations with surveys which are more likely to provide a less in-depth picture than other data collection methods or with enough sensitivity (5). Another contributing factor may be limited understanding of pharmacogenomic testing which caused confusion for participants in the pilot. Furthermore, a small sample size means conclusions cannot be drawn from the data. However, this work provides an indicator for where future work may focus and how this should be carried out; for example in-depth interviews or focus groups which are more suited to the topic.

Conclusion: Clinical implementation of pharmacogenomics in the NHS will require careful consideration and continuous monitoring and review to drive service improvement. Although, the survey design used in this project was unsuitable, the learning from this project will inform future service improvement design.

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Project Title

A Review of Patients' Experience of Bortezomib Self-administration for Multiple Myeloma.

Abstract

Background

The project focused on haematology patients who had been initiated on bortezomib, dexamethasone and thalidomide for new or relapsed myeloma. Bortezomib is administered via subcutaneous injection once or twice a week and originally required the patients to attend the outpatient department each time they received a dose. A self-administration scheme was introduced, with the aim of enhancing patient experience by reducing hospital admissions; increasing independence; creating fewer delays to treatment initiation; and reducing the risk of infection in neutropenic patients.

Aim

The project aim was to determine the possibility of including a larger population into this service and determine ways to improve patient experience and satisfaction. To achieve this, telephone surveys were conducted with patients who had experience of bortezomib self-administration.

Methods

Patients who met the criteria were identified by the information analyst team; patient contact details were then retrieved through eRecord. Survey questions were compiled and clarified with the patient experience team prior to data collection. Participants' responses were recorded by hand and transcribed onto a digital spreadsheet for analysis. Eight patients met the inclusion criteria.

Analysis

Nine patients were identified; one was deceased, one did not answer the phone, and one did not self-administer. Content analysis techniques were used to convert verbal data into categories with quantitative values and determine the overarching opinions of the participants.

Results

Five out of six participants rated the experience of self-administration 'very good'. The main benefit to 83% of the participants was a reduction in travel time and costs. Further benefits included reduced environmental impact, reduced patient stress, decreased burden on hospital staff, and a reduced infection risk. All participants felt they were well supported throughout treatment. 66% of participants said nothing could be improved, while the remainder said pharmacy waiting times were too long.

Discussion

It is clear from the results that the service improves patients' experience, particularly for those living further from the hospital. A hospital-based patient stated they would have considered joining the service if it had been offered at the start of their treatment. To increase the number of participants it is vital that prescribing clinicians offer the service to all patients meeting the criteria and ensure the patients are educated to make a well-informed decision.

A collection date and time could be added to the prescription to allow timely preparation of the product by the pharmacy department. Training pharmacy team members or displaying posters may improve knowledge of the service.

Study limitations include the small data sample. This could be improved by sampling from other bortezomib or subcutaneous regimens. Further research should be conducted, into: pharmacy wait times; reasons patients may have turned down the service; and reasons patients were not offered the service. An audit could also be performed to determine the number of patients meeting the criteria who were or were not offered the service.

Conclusion

In conclusion, the service has had a clear positive impact on this cohort of patients, and every effort should be made to increase the number of participants.

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Project Title

An audit reviewing appropriate co-amoxiclav prescribing for mixed infections in adults

Abstract

Background:

Antibiotic prescribing and resistance are inextricably linked, with antibiotic overuse and misuse being the main contributors to resistance and has the potential to cause adverse effects such as Clostridium difficile infection(1). Co-amoxiclav is a broad-spectrum antibiotic in the 'watch' group of the WHO AWaRe classification and like any antimicrobial should be prescribed appropriately to minimise the spread and emergence of antimicrobial resistance, maintaining its effectiveness(2). Antimicrobial stewardship is an important element of both the UK Five Year Antimicrobial Resistance and the 2011 CMO report which advises that antibiotics should be managed with the Start Smart-then focus approach(3), where prescriptions are prescribed per Trust guidelines and reviewed within 48-72hrs. This audit is focusing on the appropriate prescribing of co-amoxiclav.

Standard:

100% of co-amoxiclav inpatient prescriptions should be in line with antibiotic guidelines, cultures and microbiology advice where applicable.

Objectives:

Review and establish if:

- indication and initial lengths are in line with co-amoxiclav guidelines(4)
- cultures were taken before initiation
- definite diagnosis was made
- appropriate switches made
- antibiotics were reviewed within 48-72hrs of prescribing

Method:

Clinical informatics identified patients prescribed co-amoxiclav during October 2022. Mixed infection diagnoses were filtered and information regarding the objectives stated above were assessed. Ethics approval was not required for this study.

Results:

Prescriptions for 35 patients prescribed co-amoxiclav for mixed infections were reviewed. 11% had microbiology input and 91% of patients had cultures taken. 100% of patients had a 24-72hr review. 12 prescriptions (34%) were deemed initially appropriate pending definitive diagnosis, as the suspected cause of infection was being treated appropriately as per trust guidelines. On review, 8 from the 12 patients (67%) were kept on co-amoxiclav and 33% were switched to alternative antibiotics.

Co-amoxiclav prescribing was deemed initially inappropriate for 23 patients (66%) on review. 2 had it stopped (9%), 12 had it switched to alternative antibiotics (52%) and 9 remained unchanged (39%). From these, 45% had clinical signs of infection but no definitive sources, 33% for respiratory, 11% for urine/sepsis, and 11% for cellulitis. These should have been switched or stopped.

Once all 35 patients had been reviewed, 21 patients remained on co-amoxiclav and from this 6 were deemed to be appropriate for indication and duration: 2 for pyelonephritis, 1 for GI/pyelonephritis, 1 for chest/COPD, 1 for chest/cellulitis and 1 for cellulitis where flucloxacillin was not appropriate. 15 prescriptions were inappropriate: 3 were indicated for respiratory/urinary (20%), 5 had no sources identified (33%), 1 for post-partum infection (7%), 4 for respiratory (27%) and 2 for urinary (13%).

Conclusion:

Overall, results indicate that co-amoxiclav is being initially prescribed inappropriately and upon review continued when a switch should have occurred. The audit therefore highlights the need for further education to improve antibiotic prescribing by using guidelines and contacting

	microbiologists in a timely manner for advice on choice. The trust should consider developing oral option(s), a guideline in mixed infections or educating clinicians not to prescribe antibiotics until the source of the infection is identified. A follow-up audit would be useful, looking at obstacles clinicians face around switching.
18	**Name:** Leah Mactaggart **Organisation:** Newcastle Upon Tyne Hospitals NHS Foundation Trust **Email:** leah.mactaggart@nhs.net **Project Title** Pharmacist Views on the Use, Implementation, Purpose and Development of Pharmacy Contact Forms **Abstract** Research in relation to how pharmacists record pharmaceutical care information in patient electronic care records in a secondary/tertiary care centre was conducted. It was identified that there were inconsistencies in relation to how pharmacists were using the recording tool currently integrated into electronic systems (pharmacy contact form), meaning pharmacist contributions to patient care were not always recorded in a consistent manner and used optimally. Semi-structured interviews were conducted using a questionnaire to assess usability, purpose, and areas for development to help improve practice. Interviewees were found by identifying pharmacists qualified for less than five years to ensure roles were not yet too specialised, where contact forms may be used less regularly. Interviewees from multiple specialities (medicine, critical care, surgery, and cardiology) were approached in person to be involved in research. Data was analysed using a deductive method and this was based on previous research (1) which identified the following common themes; Use, Implementation, Purpose and Development as being critical in successful electronic patient record deployment. Respondents generated the following significant contributions for each theme: Use - all pharmacists interviewed regularly use contact forms, however there are inconsistencies between specialities in how forms are used. Implementation - pharmacists deemed forms to be reasonably user friendly to pharmacy staff, but less so to other members of the multidisciplinary team (MDT). Purpose – discrepancies between how different specialties of pharmacy are using contact forms were identified. Also identified debate in relation to how contact forms are currently used by other healthcare professionals and whether other members of the MDT are aware of the form and the contribution to patient care and benefits it can provide. Development – The most identified areas for development highlighted providing standardisation as to the purpose of a contact form and allowing them to be more easily accessible to other health care professionals. These themes for system improvement can be further classified as technical, educational, and behavioural reflecting the socio-technical model of system as identified by Cresswell (2) (3). Suggested technical changes include standardisation of what should be recorded in pharmacy contact forms and changing where pharmacy contact forms currently sit within patient electronic records. Pharmacists felt that if these were stored with clinician notes, doctors would be more likely to read and action their work. Educational and behavioural changes include the need for increased awareness of pharmacy contact forms within the context of the MDT, further understanding of if/how other health care professionals currently use pharmacy contact forms within their practice and an improved understanding of the basic purpose of pharmacy contact forms. These actions would aim to improve the use of pharmacist time, therefore meaning it could be better spent in other areas and ultimately improve patient care. This illustrates the need to view digital healthcare holistically within a socio-technical framework, with an ongoing cycle of improvement and identifies that shifts in behaviour are as or more critical than the technology and my work will be important in stimulating this.

19	**Name:** Aaron Fisher **Organisation:** Newcastle upon Tyne Hospitals NHS Foundation Trust **Email:** aaron.fisher2@nhs.net **Project Title** Documentation of postoperative venous thromboembolism prophylaxis plans in orthopaedic surgery. **Abstract** Background Venous thromboembolism (VTE) is one of the leading preventable causes of death in hospital, the risk is increased by 30% in patients undergoing major surgical procedures [1,2]. Sobieraj et al [3] found optimal pharmacological prophylaxis following major orthopedic surgery reduced risk of VTE events by 50%. Low molecular weight heparin (LMWH) is the preferred choice due to a favorable risk-benefit ratio [4] and is recommended by national and local guidelines [5]. A previous audit identified a ward with poor compliance to VTE prophylaxis, hence this project is focused on this ward. Objectives • To quantify the percentage of patients that have documented VTE prophylaxis plan within the operation report (the current standard stipulates 100% of patients) • To measure the clarity of VTE prophylaxis plans • To assess the impact of VTE prophylaxis plans on administration of LMWH Method This audit was conducted on a trauma and orthopedics ward in a large hospital. Surgical patients on the ward from 01/11/22 to 14/11/22 were identified using the hospital's electronic system. The hospital record and operation report for each patient was accessed retrospectively and the documentation of a postoperative VTE prophylaxis plan (YES/NO) was recorded. The prophylaxis plans were categorised as follows; no documented plan (N), vague (V) or clear (C). The number of patients that received incorrect administration of postoperative LMWH (e.g. missed dose, sub-optimal dose) during the first 72 hours after surgery was determined. This project was added to the trust's clinical effectiveness register and did not require ethics approval. Results Sixty surgical patients were included in the data collection process. The percentage of patients that had a documented VTE prophylaxis plan within the operation report was 71.1% (n=43). The difference in clarity of VTE prophylaxis plans between groups C (35%; n=21) and V (37%; n=22) had no significant impact on administration of LMWH. Excluding patients that did not require LMWH (e.g. upper limb surgery, TED's or patient refusal), the percentage of patients that received incorrect administration of LMWH was increased 2-fold in group N. With 27% (n=3/11) of patients that had no documented plan receiving sub-optimal administration of LMWH, in comparison to 12.5% (n=4/32) for patients with a plan. Conclusions The findings from this audit show documented VTE prophylaxis plans within the operation note increase the likelihood of patients receiving optimal prophylactic LMWH. Lack of documentation meant patients were twice as likely to receive incorrect administration, placing them at a greater risk of VTE events. The limitations of this project are the small sample size, differences in operation report templates and lack of trust approved guidelines for surgical VTE prophylaxis which is instead locally agreed based on current practice. The variability in templates and local practice makes it difficult to generalise the findings to other wards. The project has highlighted a need for improvement in the documentation of post operative VTE prophylaxis plans as the current standard is not being met. This data will be used to encourage a change in practice and introduce a standardized operation report template.

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Project Title

Battle Against Clostridioides difficile Infection (CDI): Broad-Spectrum Antibiotic Prescribing in Primary Care

Abstract

Background: Clostridioides difficile infection is a significant health concern associated with the widespread use of antibiotics, particularly broad-spectrum antibiotics. To ensure appropriate and evidence-based prescribing of broad-spectrum antibiotics, an audit was conducted to assess the management of CDI in primary care. The audit aimed to identify areas for improvement in the prescribing practices of broad-spectrum antibiotics, with the goal of reducing the incidence of CDI and improving patient outcomes.

Objectives: The aim of the audit was to extend and support the ongoing efforts of the local NHS Clinical Commissioning Group by evaluating the appropriateness of prescribing practices for broad-spectrum antibiotics with respect to the prevention of CDI.

Method

1. Patient searches were conducted using EMIS Web.
2. A database search was performed utilising the EMIS Population Reporting Tool to identify patients who were prescribed 'Cephalosporins', 'Co-amoxiclav', or 'Quinolones' from 1/12/2021 to 30/11/2022.
3. Population reports were created for each medication by consolidating the results obtained from the above searches.
4. Data associated with each search was subsequently reviewed, extracted, and saved as CSV files.
5. The data collection procedure involved using Microsoft Excel to record relevant information. These were the patients' age, indication for prescribing, and details of the antibiotic prescribed (name, dose, and duration).
6. The data for each patient was screened to determine whether the prescribing practices adhered to local antimicrobial guidelines.
7. Patient data that did not adhere to the guidelines were critically evaluated to assess the appropriateness of prescribing.
8. Following the evaluation, the final results were visually depicted as bar charts.

Ethical Approval: Patient participation was not required for this audit, thus no ethical approval was deemed necessary.

Results

- 88 patients were included within the initial data collection. 30 patients were removed during the initial filtering process due to lack of clear indication for prescribing.
- A final cohort of 58 patients were screened against North Cumbria Integrated Care NHS Foundation Trust's Antimicrobial Guideline.
- Co-amoxiclav (n=42) was identified as the most commonly prescribed, followed by cefalexin (n=9) and ciprofloxacin (n=7) respectively.
- It was found that 31 out of 58 (53%) were prescribed antibiotics in line with local antimicrobial guidelines.
- Upon further analysis of the 27 cases that were not in line with the guidelines, 9 of them were considered clinically appropriate after taking patient factors into account.
- Therefore, the final analysis revealed that 40 out of 58 (69%) patient cases were clinically appropriate in terms of the prescribed antibiotics.

Conclusion

The results of this audit show that there are significant gains to be made in the safe prescribing of broad spectrum antibiotics in primary care. Whilst appropriate prescribing was identified in 69% of cases, this could be further improved through better education to ensure adherence to local

	guidelines. One limitation of the study was the absence of recorded indications within the patient record. Future work should aim to adopt a more tailored and dynamic approach to antimicrobial prescribing which adheres to local guidelines whilst ensuring reasons for both prescribing and for any deviation from guidelines is clearly recorded.
21	**Name:** Alex Winter **Organisation:** North Cumbria Integrated Care NHS Trust **Email:** alexwinter1999@outlook.com **Project Title** In-patient Smoking Identification and Cessation in an Acute Care Trust **Abstract** Background: Tobacco contributed to an estimated 500,000 hospital admission, and 75,000 deaths in 2019, while also costing the National Health Service (NHS) £2.6 billion[1,2]. The UK has an estimated 6.5 million smokers, and the NHS aim to be smokefree(<5% prevalence) by 2030[3,4,5]. Current smoking cessation standards for secondary care state all inpatients are asked if they use tobacco, and those identified are advised on quitting, offered nicotine replacement therapy (NRT), and referred to smoking services[6]. Objective: Assess the identification, advice, and support (NRT, and referrals) of smokers by both the medical and pharmacy team during an in-patient episode. Method: Patients admitted to the acute medical unit (AMU), cardiology, respiratory, and stroke unit (HASU) were all included. Data was collected between 09/01/2023-12/01/2023. Medical notes completed by doctors, and the pharmacy medicines reconciliation document was assessed to identify if smoking status was documented, and if applicable, was advice, NRT, and a smoking services referral provided. If both medical and pharmacy notes was not completed, the patient was consulted to yield relevant data. Any patient unable to participate due to medical needs was excluded from the study. Results: 127 patients were included, and smoking documentation was completed in the medical notes of 33.1%(n=42) of patients, while 66.9%(n=85) was not completed. Of the 42 completed, 7 patients were identified as smokers. Alternatively, 35.4%(n=45) of patients had smoking documentation completed by the pharmacy team, with 44.9%(n=57) not completed, and the remaining 19.7%(n=25) of patients not yet seen. Of the 45 completed, 7 patients were current smokers. Upon consulting patients as per criteria, 18 smokers were identified, 4 of which had been missed by both the medical team and pharmacy team. Of the 18 identified smokers; 10(55.6%) received advice about quitting, 7(38.9%) were offered NRT, 5(27.8%) were prescribed NRT, and 2(11.1%) were referred to smoking services. Conclusion: Overall, 40.94% (n=52) of patients were not asked if they smoke by either the medical or pharmacy team, which is significantly lower than the standard target of 100%. Furthermore, 10/18 smokers received advice about quitting, 5/18 received NRT, and 2/18 were referred to smoking services, suggesting below standard support to in-patient smokers. Results suggest the medical and pharmacy team are both underperforming with the identification and support of in-patient smokers. As a result, patients may not be receiving critical information and support which leads to successful smoking cessation; impeding patient and public health. Additionally, a lack of support (such as NRT) may contribute to a more uncomfortable in-patient experience, impacting recovery, and the reputation of the trust. To improve, teaching sessions to staff, improving confidence to advise on smoking, and raised awareness surrounding NHS targets may be beneficial. The use of smoking related symbols on electronic clinical programmes used in wards could help identify smokers during ward transfers and treatment planning; ensuring the support required is provided. Additionally, clarity regarding the roles and responsibilities of identifying and supporting in-patient smokers between medics, nurses, and pharmacy teams would be beneficial. Future work to increase the sample size would improve accuracy.

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Project Title

An audit to review the adherence to the EUCAST guidance for Piperacillin/Tazobactam infusions

Abstract

Background

In 2019, the European Committee on Antimicrobial Susceptibility Testing (EUCAST) released changes to the definitions of the S, I and R categories of antimicrobial susceptibility; "S-susceptible", "I-Susceptible, increased exposure", and "R-resistant"1. The greatest change was in the "I" category; which was redefined from "intermediate" to "susceptible, increased exposure"1. The new definitions emphasise the relationship between therapeutic effectiveness of antimicrobials and their exposure at the site of infection. EUCAST released guidance on how to achieve increased exposure which can be obtained through increasing dose, frequency and/or infusion rate2.

This audit focused on the adherence to the EUCAST guidance for piperacillin/tazobactam infusions prescribed in hospital. Piperacillin/tazobactam has time-dependant activity; so therapeutic effectiveness increases with the time during which plasma concentrations remain above the minimum inhibitory concentration (T>MIC)2,3. Increased exposure to piperacillin/tazobactam can be attained by increasing dosing frequency and utilising extended infusions4. Extended infusions of piperacillin/tazobactam have been associated with significantly reduced mortality risk and improved clinical outcomes in severely ill patients4,5.

Objectives

To assess the appropriateness of piperacillin/tazobactam doses and infusion rates prescribed in hospital with regards to antimicrobial susceptibility testing (AST) results, and the new EUCAST AST definitions.

Methods

This audit included patients that were prescribed piperacillin/tazobactam in hospital based on culture and sensitivity results. Patients were identified for inclusion over 6 weeks (3/1/23-17/2/23) using the trust's electronic prescribing system (Trakcare), and the clinical tests reporting system (ICE). Trakcare was used to confirm the doses and indications for piperacillin/tazobactam, and ICE was used to confirm the culture types, isolates and sensitivity results. The nursing staff on the patients' wards were contacted to confirm infusion rates. Data was collected prospectively and inputted into a data collection tool on Microsoft Excel to aid analysis of results. Ethics approval was not required for this audit.

Results

A total of 33 patients were identified for inclusion in this audit. 12/33 (36%) patients had cultures that were susceptible with increased exposure to piperacillin/tazobactam, of which 0/12 (0%) received the increased exposure dose of 4.5g every 6 hours, and 0/12 (0%) received 3-hour extended infusions. However, 2/12 (17%) of the patients had an appropriate dose based on their renal function. All 12 patients had grown Pseudomonas aeruginosa in their cultures.

The rest of the patients, 21/33 (64%), had cultures that were sensitive to piperacillin/tazobactam, and 21/21 (100%) of these patients received an appropriate dose of piperacillin/tazobactam which is the standard dose of 4.5g every 8 hours (reduced in renal impairment if necessary).

Conclusions

The results show the remarkable lack of compliance to the EUCAST guidance for cultures susceptible with increased exposure to piperacillin/tazobactam in comparison to cultures that are sensitive. The implications of these findings include sub-therapeutic treatment of certain infections. This could be attributed to inadequate awareness of the new AST definitions and their clinical significance in antimicrobial prescribing. To improve future compliance, educational material surrounding the new EUCAST guidance could be disseminated within clinical teams, along with consistent definitions within ICE reports. The effectiveness of this approach could be evaluated through a re-audit.

23	**Name:** Sadie Scott **Organisation:** North Tees and Hartlepool NHS Foundation Trust **Email:** sadie.scott1@nhs.net **Project Title** An audit to assess the appropriateness of co-amoxiclav prescribing for acute infections **Abstract** Background Co-amoxiclav (amoxicillin and clavulanic acid) is a broad-spectrum antibiotic used for many indications, including community acquired pneumonia (CAP), pyelonephritis and biliary infections. Overuse of broad-spectrum antibiotics is associated with Clostridium difficile infection, increased patient mortality and increase of resistance [1]. Antimicrobial resistance poses challenges in treating patients and puts pressure on healthcare systems globally. Hospital trusts use evidence-based guidelines for empirical antibiotic treatment and to reduce unnecessary and inappropriate use of broad-spectrum agents. Public Health England (PHE) recommends that as part of antimicrobial stewardship, hospital trusts must conduct regular audit and feedback to ensure prudent prescribing of antibiotics [2]. Objectives To assess the appropriateness of co-amoxiclav prescribing for acute infections on the emergency admissions unit (EAU), against local and national guidelines [3]. Method Patients admitted to the EAU at a secondary care hospital and prescribed co-amoxiclav between 30/01/2023 - 17/02/2023 were identified opportunistically using electronic prescribing software. No ethical approval was required for this study; however, the patient list was screened via the MESH database to exclude those who opted out of data sharing. Seven standards were developed from the trust's antibiotic guidelines and PHE's Antimicrobial Stewardship Toolkit to assess the appropriateness of prescribing: indication, dose, frequency, route of administration, stop/review date and duration of co-amoxiclav as well as documentation of a CURB-65 score for CAP. Where a CURB-65 score had not been documented, this was calculated retrospectively. Results 50 patients were included. In 86% (43/50) of patients, the indication for co-amoxiclav was documented. For 38% (19/50) the prescription of co-amoxiclav was inappropriate. 10% (5/50) were treated with no clear source of infection documented and 6% (3/50) were prescribed co-amoxiclav without any indication or signs of an infection. Route of administration and dose/frequency were correct in 100% (31/31) of patients that were prescribed co-amoxiclav for an appropriate indication, however in 6/31 patients duration of treatment was shorter than the guideline recommendation. 36% (18/50) were prescribed co-amoxiclav for CAP. Of these, only 50% (9/18) had a CURB-65 score documented in the notes. However, in 66% (6/9) co-amoxiclav was an appropriate choice when CURB-65 was calculated retrospectively or sepsis screening was considered. 6% (3/50) were prescribed co-amoxiclav for mild/moderate CAP when a more narrow spectrum agent could have been used. Conclusions This audit highlighted that over one third of patients prescribed co-amoxiclav on the EAU were prescribed it unnecessarily or for an inappropriate indication. Although the study was limited by a small sample size and opportunistic data collection, the results provide a snapshot of overall prescribing. Identified areas for improvement are documentation of indication, treatment duration, inappropriate use of co-amoxiclav and CURB-65 guided treatment for CAP. Existing literature supports interventions such as education and direct concurrent feedback to prescribers to improve practices around antibiotic prescribing, and there is potential to utilise existing electronic prescribing system notifications too [4, 5]. Results of this audit should be

	discussed with prescribers to inform the next steps and prescribing should be re-audited to assess the impact of any interventions.
24	**Name:** Ifeoluwa Ojo **Organisation:** North Tees and Hartlepool NHS Foundation Trust **Email:** ifeoluwa.ojo@nhs.net **Project Title** An Audit to assess the accuracy of weight based Thromboprophylaxis doses of Enoxaparin prescribed to Orthogeriatric Patients **Abstract** Background Venous thromboembolism (VTE) represents a potentially life-threatening complication in orthopaedics. Nevertheless, thromboprophylaxis has shown a significant reduction of VTE events with low molecular weight heparin considered as the mainstay prophylactic regimen. For adequate anticoagulation to be achieved, enoxaparin should be dosed based on patient's weight to avoid the risk of suboptimal dosing1 which can predispose patient to various health complication such as stroke, prolong hospital stay which can in turn put more pressure on NHS resources. While appropriate thromboprophylaxis has been shown to reduce the incidence of VTE in hospitalized elderly patients undergoing major orthopaedic surgery, weight-based dosing of enoxaparin especially amongst orthogeriatric patients has been an issue within the National Health Service. Objectives • To assess if enoxaparin for prevention of VTE in orthopaedic ward is prescribed based on weight • To Identify limitations and bottlenecks with regards to weight-based prescribing of enoxaparin within the ward Standards: Enoxaparin dose guidance for thromboprophylaxis2 Method: For two weeks from 9th-20th of January (excluding weekends), 50 geriatrics patients prescribed a prophylaxis dose of enoxaparin on the orthopaedic ward were identified randomly. Patient's weight and enoxaparin dose were recorded and for those not weighed, it was also noted. Although ethical approval was not required for this audit, an audit proposal form was sent to the trust's audit team for approval. Results : From the 50 patients, it was discovered that 52% (26/50) had their weight measured and were started on the right dose, 10% (5/50) had dose adjusted once they were weighed, 10% (5/50) were dosed based on historic body weight, 26% (13/50) were not weighed at all and were dosed empirically and 2% (1/50) were dosed inappropriately. Conclusion: 36% of patients were dosed either based on an empirical or historic body weight both of which are not appropriate as these may not reflect the patient's current weight and may result to an underdose potentially putting patient at risk of subclinical outcome like VTE, stroke or bleeding in the case of an overdose. Certain factors such as the physical state of the patient during admission as patients may be so unwell or too unstable to be weighed on a traditional scale could have led to this issue of patient not been weighed during or before enoxaparin initiation. In terms of the audit, a significant issue encountered is the use of paper file rather than the Trust's electronic patient's file (Trakcare) to record patient's weight, these paper files were not always readily available to be assessed. To ensure accurate dosing of enoxaparin in the orthopaedic ward, the ward could adopt other non-traditional means of weighing patients especially those who are too unstable to stand such as: pat slide scale or weighing bed. In addition, to prevent cases of inappropriate dosing, an electronic prompt can be included on the prescribing software to issue an alert at the point of prescribing to include the weight and notify about wrong doses.

25	**Name:** Kayla Jones **Organisation:** Northumbria Healthcare NHS Foundation Trust **Email:** kayla.jones@nhct.nhs.uk **Project Title** Review of the prescribing and monitoring of DOACs within a General Practice setting **Abstract** Background Direct oral anticoagulants (DOACs) are the most frequently prescribed anticoagulants in England, with almost 1 million people patients currently prescribed this therapy [1]. According to the ORBIT-AF II trial, 12.5% of patients prescribed DOACs are either taking under or overdoses in regard to the recommended doses for their renal function [2]. Both can increase the risk of adverse events; an underdose increasing the risk of a vascular event whilst an overdose increases the risk of bleeding. Objectives To audit the accuracy of DOAC dosing in a general practice (GP) setting. Methods The number of patients prescribed a DOAC in the GP surgery were identified by completing a search on practice clinical system. The searches were refined to find the number of DOAC patients who did not have their estimated creatinine clearance recorded and who didn't have a documented review of their dose since April 2022. Estimated creatinine clearance was calculated for those who hadn't had it recorded. The DOAC doses were then reviewed in accordance with NICE guidelines. Where the dose was not within guidelines, a shared decision-making conversation was undertaken with the patient followed by recommendation to a prescriber in the practice. Doses were modified where there was congruence between the prescriber and the patient. Results Of the 241 patients prescribed a DOAC in the GP surgery, 43 patients (18%) didn't have their creatinine clearance recorded and 102 (42%) didn't have a documented review of their DOAC dose since April 2022. The DOAC doses for 145 patients were reviewed. 15 patients (10%) were on the incorrect dose based on their renal function. Seven of these patients had their dose changed in accordance with NICE guidelines whilst the other seven patients remained on the same dose due to either risk of bleeding, low creatinine clearance in the past, or old age and frailty. All changes were made in consultation with the prescriber and the patient. One patient was referred for a same day GP appointment due to haemoptysis which is undergoing further investigation. Conclusions This audit showed that one in ten patients reviewed were taking the incorrect DOAC dose and half of them have now had their dose changed. A standard operating procedure has been created to ensure all patients have a DOAC review annually. This will ensure patients continue to stay on the correct dose, reducing the risk of patient harm.

26	**Name:** Simrandeep Kang **Organisation:** Northumbria Healthcare NHS Foundation Trust **Email:** simrandeep.kang2@northumbria-healthcare.nhs.uk **Project Title** Quantifying the difference in carbon emissions associated with consumables use in the administration and disposal of common intravenous and oral antibiotics **Abstract** BACKGROUND Antimicrobial resistance is an ever-growing issue with the increased dissemination of resistant bacterial organisms threatening the effectiveness of antibiotics. 1-in-3 patients are prescribed antibiotics during their hospital admission at any one time within the NHS, half of which are given intravenously. Prolonged use of intravenous (IV) antibiotics poses clinical implications such as prolonged hospital admissions [1]. Furthermore, IV antibiotics require single-use consumables which carry a 'carbon cost' which are not associated with the equivalent oral (PO) options. Timely IV to PO switching (IVOS) remains an unmet need with many unnecessary doses of IV antibiotics being given [2]. Common factors which may influence clinician decisions regarding IVOS are focussed around clinical and financial impact. We propose that sustainability could provide additional motivation to clinicians for timely IVOS. AIM This project aims to quantify the difference in the carbon-footprint of common IV antibiotics compared to the oral equivalent. METHOD Using surveillance software (RxInfo®), we identified the 3 most commonly prescribed IV and PO antibiotics within the hospital (Piperacillin-Tazobactam(IV), Co-amoxiclav(IV&PO), Flucloxacillin(IV&PO), Amoxicillin(PO). Dosing was standardised for the purposes of comparison according to the ATC/DDD index set out by WHO [3]. A bottom-up process-based analysis was used to estimate the carbon cost of antimicrobial administration. Primary activity data was collected in the form of average weights and materials used for each antibiotic and consumable. These were applied to relevant emission factors [4,5] to estimate the embodied carbon from the raw materials and the emissions associated with waste disposal. RESULTS: The total carbon-footprint (gCO2e) associated per dose of IV antibiotics is as follows: Piperacillin-tazobactam–458.64, Co-amoxiclav–438.57, Flucloxacillin–436.50; for each medication, 369.78g can be attributed to single-use consumables alone. The carbon-footprint (gCO2e) associated with the PO antibiotics per dose is as follows: Co-amoxiclav-2.94, Amoxicillin–1.89, Flucloxacillin–1.43. Switching just one dose of, for example, from Piperacillin-Tazobactam(IV)-to-Amoxicillin(PO) would save 452.75g CO2e; which when scaled up to 100patients, equates to 45.28kg carbon, equivalent to 132 miles in an average car. DISCUSSION: We intentionally adopted a simplified approach to a complex process, making the project viable and within a clinical context. Due to limited availability of data and time constraints, the study focused on elements of the medication lifecycle which primary data could be collected. More complete analysis of these produce would likely require cooperation from pharmaceutical companies. The degree to which the findings of this study can be compared to another study is limited by the boundaries set and methods used. CONCLUSION: This is one of the first carbon footprint studies in this area and can act as a benchmark for other studies in highlighting areas for emissions reduction which has not yet been quantified. Sustainability should be considered when IV antibiotic dosing regimens are designed as there is potential for reduction with the possible side-effects of saving costs and improving patient care. Internal communication alerts and developing resources are methods that can be used to embed good practice around IVOS, maximising the opportunity to combine two overwhelming issues; antimicrobial overuse and carbon crisis.

27	**Name:** Liam Mullen **Organisation:** Northumbria Healthcare NHS Foundation Trust **Email:** liam.mullen2@northumbria-healthcare.nhs.uk **Project Title** Using a software tool to identify harmful prescribing in the hospital inpatient setting **Abstract** Background: The PINCER study was carried out in primary care settings to assess the impact of pharmacist-led IT-based interventions on medication related harm reduction.(1) The PINCER study found that the pharmacist-led intervention group was associated with greater reduction in harm, and fewer patients continuing on harmful combinations of medications. There is a well-established evidence base for medication-related harm beyond the PINCER study, including the NHS medications safety indicators specification(2), along with several initiatives for harm reduction, including the WHO's medication without harm pledge(3). The aim of this project was to assess whether an IT interface (Triscribe) could be used to effectively identify pre-defined combinations of potentially harmful medicines within an acute hospital inpatient setting. Analysis and assessment: Within primary care, there are systems to identify harmful combinations, with targets set for harm reduction. However, no such infrastructure is currently in place in secondary care. The project team reviewed the evidence base for medication-related harm and three combinations were chosen. These include: Patients aged 65 or over prescribed an oral Non-Steroidal Anti-Inflammatory Drug without gastro-protection(NSAID9), aspirin prescribed concomitantly with antiplatelets without gastro-protection(ANTIPLAT6), and oral anticoagulants prescribed concomitantly with antiplatelets without gastro-protection(ANTIPLAT7). Combinations were chosen due to the simplicity of harm-reducing interventions. There is reliance on clinicians to identify harmful combinations of medications, with no interventions guaranteed. Utilising software to automate harm-identification, this study sought to assess the impact on intervention rate. Intervention: Triscribe is a software which synthesises data from electronic medicine charts. The medication combinations were inputted into Triscribe to highlight at-risk patients across two hospital sites. Baseline data was collected for five days. Before intervention week, an educational video designed by a trainee-pharmacist covering the harmful drug combinations, interventions and software training was distributed to staff at both sites. The passive site (Site A) ran Triscribe twice daily for five days, whilst the active site (Site B) also received a trainee-pharmacist led support and coaching intervention which guided pharmacists on how to conduct shared decision-making discussions for patients prescribed potentially harmful drug combinations. Measurement of improvement: Patient hospital numbers, site, ward, harmful combination code, medications involved and intervention status were recorded on excel. At baseline, 9 patients were identified on at-risk combinations (2 at site A and 7 at site B) of which 3 had an intervention without prompting, all at site B. During intervention week, Triscribe highlighted 6 patients at site A, of which 1(16.7%) received an intervention. Whereas at site B, 4/4 patients (100%) highlighted by the software received an intervention. Conclusions: Site B had a higher intervention rate than baseline week and site A. Triscribe identified at-risk patients effectively but for a wider-scale rollout, the service may benefit from a pharmacist or trainee-pharmacist-led intervention. This data has limitations; it is from a small sample and does not provide conclusive evidence for the use of these technologies in a hospital setting. Further work is needed on the parameters included in the software, with plans to roll out to more areas with a wider range of combinations.

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Project Title

Assessing which people in a General Practice have not attended for a Cardiovascular Disease health check using digital searches and Core20PLUS5 criteria

Abstract

Background

In North East of England, Cardiovascular disease (CVD) accounts for 24% of deaths. (1) NHS Health checks are offered to people between 40-76 years of age, providing an opportunity to assess CVD risk. National average for attendance at NHS Health checks is 48%.(2) Core20PLUS5 is an NHS England approach to support identification and reduction of health inequalities, including targeting the most deprived 20% of the population as identified by the Index of Multiple Deprivation (IMD).

Objectives

The focus of this project is to understand the characteristics of people who did not attend an NHS Health check, based on CORE20PLUS5 criteria, and explore reasons for non-attendance.

Methods

A digital search of primary care records was undertaken in a single general practice to identify people who had been invited for an NHS health check between July and November 2022. The presence of cholesterol blood results in the clinical record were used to identify two groups; those who attended for a health check and those who did not attend. Home postcodes were used to establish the IMD and those in the most deprived 20% were compared for gender, ethnicity and distance from the practice for each group. A chi-squared test was used to determine significance of any differences between groups. 25 people were selected randomly from the non-attendance group who were in the 20% most deprived areas and contacted by telephone to identify reasons for non-attendance.

Results

1443 people were invited for an NHS Health check using the text messaging system AccuRx. 64% did not attend and 36% attended. In the non-attendance group 56% were males and 44% females. In the attendance group 43% were males and 57% females. For ethnicity, in the non-attendance group 89% were White/British background. 11% were other ethnicities. In the attendance group 90% were White/British and 10% were other ethnicities. The distance from practice was divided into <2-miles and >2-miles. In the non-attendance group 89% lived less than 2-miles from practice, 11% lived greater than 2-miles. In the attendance group 94% lived less than 2-miles from practice, 6% lived greater than 2-miles. Chi-squared results indicated no significant differences for attendance for factors of IMD decile ($p=0.12$), ethnicity ($p=0.82$) and distance from practice ($p=0.22$). Gender ($p=0.018$) demonstrated a statistically significant difference for attendance. From the people who were contacted, key themes for non-attendance included: lack of understanding of need for NHS health check, lack of convenient or accessible appointments, and reporting that text invites were not received.

Conclusion

For this sample, none of the factors of IMD, ethnicity nor distance from practice were demonstrated as being important determinants for whether or not a patient attended for a health check. Gender was shown to be statistically significant but the study did not explore reasons for this. The qualitative data highlighted that communication could be improved to ensure that all people do receive an invite and understand the importance of attending for an NHS health check. Further work is needed to incorporate this patient feedback to maximise uptake of NHS Health checks.

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Project Title

Evaluating the impact of a referrals into community pharmacy process

Abstract

Background

One in five patients have been reported to experience adverse events within three weeks of discharge; 60% of which could have been ameliorated or avoided [1]. The Discharge Medicines Service is a national service where inpatients can be referred to their community pharmacist for a follow-up consultation and a clinical review of their medication post discharge. A 30-day readmission can be avoided for every 10 to 23 referrals to community pharmacy for this type of follow up. [2,3]

Objectives

To evaluate the effectiveness of the Discharge Medicines Service referral system from a single NHS trust, across four hospital sites, to community pharmacies in the North East of England.

Methods

Calldicot approval was sought to undertake this audit. Data from the Trust's DMS database was used to identify all patients referred into the NHS DMS. The NHS numbers of these patients were cross referenced against the 30-day readmissions dataset to identify those who had been referred and subsequently readmitted. Data compared to departments where there were similar patients to the patients referred into DMS; frailty/elderly wards, orthopaedics.

Results

1041 inpatients were referred from 5 April 2022 to 24 February 2023. 19% (n=198) were readmitted into hospital within 30 days. Data from November 2019 – 2021 (prior to NHS DMS) showed an overall 30-day readmission rate of 11%. 30-day readmission rates from elderly care/ frailty wards (25%), orthopaedics (31%) were used as a comparator.

Conclusions

The overall readmission rate was slightly lower than comparator groups (elderly/ frailty and orthopaedics) but higher than the overall Trust average. Whilst this is a positive finding, there are limitations to this study. The number of referrals compared to discharges are comparatively low, we don't know if referrals were actioned by community pharmacy and the cause of the readmission. The findings will be used to further develop the Trust's quality improvement project on embedding DMS referrals.

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Project Title

The appropriateness of prescribing Paxlovid course to treat incidental hospital-onset COVID-19 in patients aged 70 and over

Abstract

Background

COVID-19 is linked to an increased risk of mortality, especially in frail patients who may be at a greater risk of deterioration. Guidelines have recommended the use of Paxlovid (nirmatrelvir/ritonavir), an anti-viral drug, to treat incidental hospital-onset COVID-19 in frail patients to prevent deterioration (1). Studies have proven the ability of Paxlovid to significantly reduce mortality and viral load (2). However, there are limitations that may change the appropriateness of the course. These include drug interactions, gastrointestinal side effects, formulation limitations for patients with swallowing difficulties, and limited use in renal and hepatic impairment (3).

Aims

An audit was carried out to assess the appropriateness of prescribing the Paxlovid course in incidental hospital-onset COVID-19 patients aged 70 and over.

Methods

Inpatients aged 70 years and over across a single NHS Trust with four main hospitals who were prescribed Paxlovid for incidental hospital-onset COVID-19 between March and November 2022 were reviewed to assess the appropriateness of the course, pre and post pharmacist intervention using the Trust's clinical systems. Results were presented descriptively.

Results

183 inpatients aged 70 and over were prescribed the Paxlovid for incidental hospital-onset COVID-19 between March and November 2022.

Of these 183 patients, 27 (14.8%) had Paxlovid changed or stopped following pharmacy review: 12 (6.6%) patients were stopped due to low body weight (1), nil-by-mouth (1), low renal function (2), patient refusal (1), COVID-19 was not incidental hospital-onset (1) and unknown reasons (6). 15 (8.2%) patients were switched to remdesivir due to drug interactions (7), hepatic impairment (1), vomiting (1), swallowing difficulties (1) and unknown reasons (3). 2 patients were switched to sotrovimab due to drug interactions and unknown reasons.

Of the remaining 156 patients, 55 were discharged and lost to follow up. The remaining 101 patients were reviewed; 55 of these patients (54.5%) completed the course. The remaining 47 patients (46.5%) did not complete the course. Reasons include tolerability with nausea and vomiting (2), patient refusal (4), drug interactions (3), swallowing difficulties (5), low renal function (2), no longer indicated due to oxygen requirements (2), recent Clostridium difficile infection (1), unknown reasons (4), and clinical decision to stop (24).

Conclusions

Pharmacists highlighted the potential risks in prescribing Paxlovid and educational needs for prescribers on the common contraindications and drug interactions of Paxlovid. This audit also showed many patients do not tolerate Paxlovid well so closer monitoring needed. The results of this audit will be used to develop safer prescribing guidance for Paxlovid.

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Project Title

The potential use of inclisiran for secondary cardiovascular disease prevention in primary care.

Abstract

Background

Cardiovascular disease is the leading cause of death worldwide, accounting for 16% of deaths in 2019. [1] 7-8 million people in the UK are prescribed a statin to treat hypercholesterolaemia, however a study found half of patients in primary care fail to reach 'healthy' cholesterol levels after two years of statin treatment. [2] Inclisiran is an injectable small interfering RNA, which was approved by NICE for secondary prevention in August 2021. It is given every 6 months, by sub-cutaneous injection. [3] It prevents the production of PCSK9 proteins, which destroy used LDL receptors in the body, resulting in decreased low-density lipoproteins (LDL) in the blood. [4] Trials have shown that inclisiran can reduce LDL levels by 50%. [5] The aim of this project is to identify patients in the GP surgery who are eligible for inclisiran and initiate them on this therapy.

Methods

A protocol was created from the inclusion criteria [3] and a search was completed based on this. The initial search identified patients who were intolerant or allergic to statins, or on maximum statin therapy, and had not met the target non-high-density lipoprotein (non-HDL) level of ≤2.5 mmol/L. The search was then refined to only include patients who were prescribed or intolerant to ezetimibe, to ensure they had maximum oral lipid-lowering therapy before considering initiating an injectable therapy. A review of the patient record was undertaken to determine if they had a previous cardiovascular event, and therefore were eligible for treatment with inclisiran.

Results

Of the approximately 16,000 patients across the 3 sites, 334 patients met these criteria, with 42 patients who were potentially eligible for inclisiran. Of the 42 patients identified, 4 were non-adherent to statins. These patients had a medication review, where one patient was found to be intolerant, and another was struggling to swallow tablets so her medication was converted to liquids. The final patients have become adherent since their reviews. There were 17 patients who had a previous cardiovascular event so were eligible for inclisiran. Of these patients, 12 were booked into an education appointment. Following this session, if they want treatment they will be booked in for an appointment with a nurse. These patients will have their lipid levels checked after 3 months to monitor non-HDL reduction. Education for the nurses will be produced to aid administration. Information was also sent to the practitioners, regarding inclisiran eligibility and treatment, so they can continue to refer patients.

Conclusion

This project has been successful in using a population approach to identify patients whose lipid-lowering therapy is inadequate and identifying ways in which this could potentially be improved, either via the introduction of inclisiran, ezetimibe or via reviews. The lipid profile of the patients who consent for treatment will then be reviewed at 3 months to review efficacy of treatment. The initial searches found 247 patients were on maximum statin therapy and had not met target non-HDL levels, therefore reviews of these patients and initiating ezetimibe would be beneficial for future interventions.

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Project Title

A Thematic Analysis of Trust Wide Insulin Supply Issues

Abstract

Insulin is a high-risk medication due to its nature of dosing and how time-critical it is. Any errors or delay in treatment can have adverse consequences for patients; it is vital they are identified as being insulin dependent and the correct regime confirmed as quickly as possible (1). This report is a thematic analysis of trust-wide reported incidents relating to the supply of insulin between October 1st 2022 and December 26th 2022, and is part of a larger quality improvement (QI) project looking at safer insulin use.

Incidents involving insulin resulting in datix's being reported were reviewed after December 26th and themes were identified and were then presented to different members of the pharmacy team who are currently involved in the prescribing and supply of insulin, to discuss potential solutions to the incidents that had occurred. The key themes identified were; delayed supply, no supply on discharge, wrong insulin type or strength supplied, or insufficient supply. A mapping process was carried out to show the process of supplying insulin, as per trust policies, alongside the incidents that have occurred and solutions were co-developed by the team.

Based on the solutions suggested, interventions have either been put in place or are in the process of being rolled out to the trust. These are; education to non-clinical staff to help reduce dispensing errors, a new SOP outlaying correct process when supplying insulin, an up to date list of stocked insulins across different sites to help with patient transfers. The SOP is expected to have the biggest impact as it includes guides on; correct storage of insulin so pens aren't left in the fridge as well as so that they are transferred with patients, history taking advice to help identify insulin types or doses for patient, safe and smart supply so that there is not an excess supply of insulin wasting medicines and administration help. The wider project will monitor the impact of this intervention. Datix's will continue to be monitored after implementing the previously stated interventions and compared to determine if the number of incidents have been reduced and what areas are still affected. Following this, further interventions can be put in place should there still be a reoccurrence of incidents. Future iterations of this project will look to involve other members of the health care team in developing solutions.

The themes from incidents and subsequent interventions identified potential solutions to making insulin care safer; the ongoing QI project will build upon this small project to further develop and in bed safer practice.

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Project Title

The impact of missed primary care appointments of chronic respiratory patients on disease control in the North East of England. Nehal Hassan1,2, Regan English1, Helen Watson2 1Priory Medical Group, 2Northumbria Healthcare Foundation Trust

Abstract

Introduction: Air pollution kills 28000 to 36000 individuals annually in the UK. In 2017, the NHS estimated costs from air pollution was £157 millions.(1) The highest incidence of mortality and Emergency hospitalisation due to Chronic Obstructive Pulmonary Disease (COPD) and Asthma is in the North East,(2) with a predominance among females.(2) One of the potential causes could be missing regular follow up for respiratory conditions in primary care, leading to higher likelihood of disease exacerbations.(3) Missing GP appointments is a significant burden on the NHS, with a total cost of 216 million annually, and cost of £30/missed appointment.(4) This study aims at exploring the impact of missed primary care appointments for asthma and COPD patients on disease control, in terms of hospitalisation and disease exacerbations.

Method: This is a cross-sectional retrospective study, that included patients who missed their Asthma/COPD review appointments in the duration between Oct 2021 and Oct 2022; patients' data were collected through SystemOne© digital records. The outcome was measuring the number of hospitalisation and respiratory exacerbations requiring a rescue pack. The inclusion criteria were patients registered at Large general practice (GP) group which covers three GP surgeries in the North East of England, and had a diagnosis of asthma or COPD recorded either by ICD or SNOMED coding. Patients younger than 18 years, and those with other respiratory conditions were excluded. Statistical analysis was performed using IBM SPSS for windows, version 28.

Results: There were 1175 patients with COPD and Asthma registered with the group in the specified duration, where 208 (17.7%) patients missed their appointments for respiratory reviews. The mean age of the included cohort was 57.5±15.7 years. Of those who missed their appointments (N=208), 134 (64.4%) were females, 161 (77.4%) were asthmatic, 86 (41.3%) patients were from one geographical area, and 88 patients (42.3%) were smokers. Only nine patients (4.3%) were hospitalised due to a respiratory exacerbation, 55 (26.4%) got an asthma exacerbation, and 38 (18.3%) got COPD exacerbation. Turning to medications, 97 (46.6%) patients were on medium dose inhaled steroids, 14 patients (6.7%) were on ICS/LABA, and 27 patients (13%) were on ICS/LABA/LAMA combination. On sub-group analysis using independent sample T-test analysis, exacerbations among asthmatic patients missing their appointments was significantly higher compared to COPD patients (p-value< 0.001), with a corresponding higher incidence of rescue pack use among asthmatic patients (p-value=0.010). However, there was non-significant difference in hospitalisation due to respiratory exacerbation between asthmatic (66.7%) and COPD patients (33.3%) (p-value=0.431). Furthermore, the incidence of smoking among asthmatic patients (62.5%) was significantly higher, compared to COPD patients (37.5%) (p-value<0.001).

Conclusion: The incidence of missed appointments among chronic respiratory patients is relatively high, and showed significant impact on the rate of annual respiratory exacerbations among the included cohort, without a significant increase in hospitalisation. Future qualitative studies are needed to explore the factors contributing to missing clinic appointments, from patients perspective. This study is limited by its dependence on SNOMED codes only for the diagnosis of asthma and COPD, and missing information on patients records.

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Project Title

Challenging the 9-5; surveying pharmacy staff views on the current and future options for the working week: a service improvement project

Abstract

Background

The debate over the shift to a 4-day working week has become increasingly prominent in recent years, and is thought to have multiple benefits, ranging from an improved work-life balance to reduced carbon emissions related to commuting (1, 2). In hospital pharmacy settings, out of hours working is often viewed to have a detrimental impact on staff's wellbeing and work-life balance (3, 4). This project aims to evaluate hospital pharmacy staff's views on working patterns and determine if increased flexibility can improve staff wellbeing whilst maintaining or improving effective pharmacy services.

Method

An electronic survey was distributed to all (188) hospital pharmacy staff at an NHS Hospital Trust (Trust name removed for anonymity) for five weeks during autumn 2022 using a variety of platforms including email, the department weekly huddle and the department communication app.

Results, Intervention & Measures of Improvement

There were 92 responses to the survey. A total of 79 respondents work full time over five days. Results showed 75% of respondents currently working full-time stated they would prefer a four-day working week, while 25% said they would prefer a five-day working week.

Due to the results gathered from this survey, staff in the pharmacy department were encouraged to submit flexible working requests to trial 4 day working patterns. As a result of this, 12 staff members are now working a four-day week through the implementation of longer working hours over fewer days of the week. The involved staff are required to collate data to determine if and how this change to working pattern impacts the clinical service and the department's key performance indicators, which have been evaluated in a separate project (5). The staff members have been surveyed using the WHO-5 wellbeing index to determine if their wellbeing has improved since changing to a four-day working week, 3 months after implementation of the new work pattern (6).

A total of 9 out of 12 staff responded to the wellbeing survey. When working five days a week the average quality of life (QOL) (calculated from the WHO-5 wellbeing index, with 0% being the worst and 100% being the best QOL) was 33%; Contrastingly, when working four days a week the average QOL has increased to 73%.

Conclusion

It can be evaluated that the majority of staff working in a hospital pharmacy department would prefer to work flexibly over 4 days instead of 5. A pilot of working 4 days a week has demonstrated improved QOL for a selection of pharmacists working in a hospital setting. Result from this study will be considered if other staff within the department submit flexible working requests. This study was limited due to the time constraints meaning that long term impact on QOL could not be determined. The trail of 4 day working has evaluated impact on pharmacists, and has not included other pharmacy staff groups.

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Project Title

A service improvement: Are patients with specific dietary requirements making a fully informed decision when consenting to VTE prophylaxis?

Abstract

Background: All low molecular weight heparin's (LMWHs) used in the UK are of porcine-origin. NHS trust guidelines state if this is a cause for objection from members of certain religious or dietary groups then fondaparinux or one of the direct oral anticoagulants can be used as an alternative in most clinical scenarios. Patient consent should be sought (1). The aim of this service improvement is to explore the awareness in hospital staff that heparins are of porcine-origin, and to assess the outcomes if patients are fully informed and are included in the decision making around venous thromboembolism (VTE) treatments.

Analysis and assessment: Data collection was split into two phases. In phase 1, a staff survey was conducted to explore their awareness of the porcine-origin of LMWHs. Phase 2 identified patients with dietary requirements, and investigated if the patient had been asked if they had any dietary objections to their LMWH, and then offered an alternative if this was clinically appropriate.

Results: A staff survey was completed by 218 participants (52.75% medical and non-medical prescribers, 26.15% non-prescribing pharmacists and pharmacy technicians, 21.10% non-prescribing nurse or other HCP). Out of all respondents, 19.27% stated they were aware of LMWH's porcine-origin. The staff survey increased awareness of alternative VTE prophylaxis options. Consequently, eight patients with dietary requirements were asked if they would like to be switched to an alternative. Six of the eight patients requested to be switched (five fondaparinux, one warfarin). Phase 2 data collection is in progress and due for completion in April 2023.

Limitations: The lowest response was observed from non-prescribing nurses/other HCP, who are responsible for administering LMWH's, therefore it is vital for them to know when to query medication. This can be overcome with the trust-wide informational poster and the educational session as discussed within interventions below.

Analysis and interventions: The main goal of the interventions would be to update trust guidelines and create resources for staff that prompt the checking of patient dietary requirements as well as a reference guide for alternatives to LMWH's. The following interventions are being made alongside the anticoagulation team: changing the trust VTE prophylaxis patient information leaflet to state that this is a porcine-based product, creating an alternative to LMWH's guidance resource and adding a dietary requirement check box to the VTE risk-assessment. These changes must be finalised through governance and therefore cannot be promoted immediately. An approved trust-wide poster will be distributed to promote staff to check patients dietary requirements in March 2023. An educational teaching session for trust staff to promote the new changes will be held in May 2023. To prepare for this, various strengths of fondaparinux have been added to the trust formulary.

Conclusion: This study found 75% of patients requested a change in treatment once they were aware their VTE was a porcine-based product. This highlights that when given the choice, patients may prefer an alternative. By implementing these interventions and educating staff, patients will be able to give fully informed consent when consenting to VTE prophylaxis.

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Project Title

A service improvement project: the impact and understanding of experiential learning for pharmacy undergraduates by the wider pharmacy workforce in a hospital setting.

Abstract

Background: Recent changes in the MPharm curriculum have centred on an increase in experiential learning for undergraduate students in order to support pharmacists to register as IPs (independent prescribers) at the point of qualification [1]. To implement this change, hospital pharmacy needs to adapt to the curriculum. This project is aimed to explore the opinions of pharmacists' and address any barriers such that the safety of patients remains unchanged, with the hopes of also increasing the efficiency within the workforce.

Analysis and Assessment: Both qualitative and quantitative methods were used to survey the impact and understanding from hospital pharmacists, band 6-8, regarding undergraduate students. A total of 25 anonymous responses were obtained from a questionnaire which focused on questions regarding how comfortable pharmacists would be in taking on students, facilitating their learning and any issues they may have. A focus group was also conducted to add to project findings. This included 8 pharmacists covering a total of 6 rotations. Key themes identified reflected that pharmacists were uncomfortable in trusting undergraduate students to carry out tasks independently and too much time taken out of their day to prepare.

Intervention: A rota was made whereby 4th year undergraduate students were to work on the same ward every other week to increase familiarity and rapport for the pharmacists in their second term. In addition to this, a new medicine reconciliation worksheet was created as a "log" allowing students to carry out their tasks whilst acting as an aid to increase the pharmacists' trust in their ability.

Measurement of improvement: To ensure consistency, both a focus group and survey were carried out. Both the focus group and survey had shown a positive response. The rota also included up to 8 rotations to eliminate bias such as staffing issues. 100% of pharmacists found that no time had been taken to prepare for students (an increase of 73%) with a mean increase of 25.13% in confidence in trusting students to complete tasks independently such as medicine reconciliations. This had shown that both interventions positively impacted the identified barriers of experiential learning.

Conclusions: The interventions made were successful (18% vs. 85% of pharmacists now finding students useful). Hospital pharmacists have shown an increased understanding of experiential learning (94% reporting their perceptions have changed for the better). A way of implementing such a change for both pharmacists' and students was found. This change now highlights a possible method to pave the way for future undergraduate pharmacy students whilst also encouraging their role within the workforce – with the hopes of, not only increasing efficiency but also allowing students to become more competent. Limitations of the study included information bias with focus groups where professionals may not feel comfortable to speak. Additionally,
a small sample size was used, which focused one year group of undergraduates at one site. Further work would need to be required to assess the point of view of undergraduate students and whether these changes impact the success of training and competence of the trainees.

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Project Title

Surveying staff understanding of the difference between estimated Glomerular Filtration Rate (eGFR) and Creatinine Clearance (CrCl)

Abstract

Background: eGFR and CrCl are tests to detect changes in renal function and indicate kidney disease [1]. Clinical studies have highlighted the benefits of using CrCl to interpret renal function [2]. In a secondary care setting, many healthcare professionals (HCPs) are expected to distinguish between the two and interpret results for patient investigations. Calculating CrCl using the Cockcroft-Gault equation includes age, gender and serum creatinine; as CrCl does not overestimate renal function in the elderly, it more accurately depicts how efficiently the kidneys are functioning [3].
HCPs must also be knowledgeable in drugs that are contraindicated in renal impairment and those that require dose adjustments. The aim is to decrease hospital admissions/length of stay by improving medication dosing in renal impairment and promptly diagnosing and treating acute kidney injury and chronic kidney disease.
Objectives: Healthcare professionals in secondary care should understand the difference between eGFR and CrCl. This audit assessed staff understanding of the basic differences between these tests.
Methods: A pilot survey was distributed in December 2022 on paper to nurse prescribers, doctors, and pharmacists. These were delivered to clinical wards where the purpose of the audit was explained to respondents. When analysing data, it was clear that staff engagement needed improvement as answers were frequently rushed and lacked practical data. Free-text questions were replaced with multiple-choice which saved time for respondents without compromising the research.
In January 2023, an online survey was distributed to the same professionals as in the pilot survey, with the addition of pharmacy technicians, and measured over a two-month period. A paper QR code was also created and distributed to wards to engage doctors. A survey link was emailed to nurse prescribers, pharmacists, and pharmacy technicians. As this was a clinical audit in a secondary care setting with no patient involvement, ethical approval was not required.
Results: A total of 175 responses were gathered from the online survey. Of these, 57% of participants chose CrCl when asked test was better to determine renal function and 10% felt ‘very confident’ interpreting both eGFR and CrCl. It was clear that implementations are needed due to the variation in responses and the frequency of incorrect answers, such as 36% of respondents unaware of which eGFR range indicated renal failure.
Interventions include an educational poster distributed to wards, and face-to-face teaching implemented for staff requiring additional learning. This will be re-audited in 6 months after education and staff engagement.
Conclusions: Conclusions drawn from the data highlighted that within each profession, there was confusion regarding the difference between eGFR and CrCl, and which ranges are expected in renal failure compared to a healthy patient. There was no clear majority as to which test was superior to interpret renal function and why. This is concerning as patient safety may be compromised if staff are lacking understanding, especially within a high-risk area like renal.
A small sample size of 175 respondents may be a limitation as it is difficult to generalise from less data and does not represent the wider professions.

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Project Title

A review of smoking cessation support and NRT supply at the point of discharge

Abstract

Background

Tobacco use is recognised as one of the largest public health threats, killing over 8 million people annually (1). The severity of tobacco use has resulted in the development of interventions designed to either prevent acquisition of the habit, or to promote cessation of the habit. In September 2022, the trust implemented a new smoking cessation service that will aim to provide an improved outcome regarding smoking cessation and NRT. Having a robust smoking cessation service could help prevent respiratory exacerbations and hospital admissions (2).

Objectives

To identify if:

1. Patients who smoke are being offered NRT
2. Clinically appropriate dosing of NRT is chosen
3. An adequate amount of NRT is prescribed at the point of discharge.
4. A referral was made to smoking cessation services in primary care following discharge

Method

The audit is retrospective, allowing to investigate what the practice has been from June-August 2022, to provide a comparison when the new service has been implemented. A patient list was generated using an electronic system to identify eligible patients. Specific patient identification numbers were used to review medical notes to find out the required information.

The inclusion criteria were patients over the age of 18 years, who were discharged from a respiratory ward from the trust between June-August 2022. Respiratory wards were chosen to target the study population. The audit did not require ethical approval however it was approved by the departmental research group.

Results

Overall, 33 patients were included in the study analysis, 26 (24.8%) were current smokers, 30 (28.6%) were ex-smokers and 5 (4.76%) had recently quit within the last two months. Four (3.8%) patients in the population used electronic cigarettes. Included in the data analysis were the current smokers, electronic cigarette users and the patients who had recently quit. From the study set, 17 out of 33 (51.5%) were offered NRT on discharge and of these, 12 (36.4%) were supplied it. Seven (58.3%) out of the 12 patients had clinically appropriate prescriptions. Nine patients were referred to a Stop Smoking Service in primary care, however 2 were current smokers, 1 recently quit and 6 did not smoke, the reason for this is unknown.

Discussion

Audit limitations include small sample size as it poses the possibility to generate bias. A larger sample size should be considered in the future to compound significant findings. The time scale the audit was to be completed in due to the deadline for the study was a limitation as it hindered the amount of data that could be collated and analysed, contributing to the overall study size.

Conclusion

The NRT service needs development to provide optimum patient care. SOPs need to be put in place to ensure all patients are being offered, supplied, and given the clinically correct NRT. Linking together primary and secondary care is imperative to enable the continuation and support for smokers who are wanting to quit.

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Project Title

DPYD Testing for Patient Initiated on Fluoropyrimidines

Abstract

Background: Fluoropyrimidines are widely used in cancer treatments including breast, colorectal or head and neck. 5-fluorouracil and its oral pro-drugs, capecitabine and tegafur are among the most commonly used fluoropyrimidines. Despite their effectiveness in treating solid tumour malignancies, the narrow therapeutic window of fluoropyrimidines has resulted in severe fluoropyrimidines-related toxicity or even death. The known primary cause of fluoropyrimidines-related toxicities is dihydropyrimidine dehydrogenase (DPD) deficiency. DPD is an enzyme in the liver that is required for the metabolism and inactivation of fluoropyrimidine drugs. Patients with mutations in the DPYD gene may have DPD deficiency and are more likely to have fluoropyrimidines accumulate in the blood, resulting in an increased risk of developing severe and fatal toxicity. DPYD genotyping is a promising strategy in the prediction and prevention of the potentially life-threatening complications. The current standard published by the NHS's Clinical Commissioning Urgent Policy Statement is to provide routine pre-treatment DPYD screening test to all eligible patients initiated on fluoropyrimidines within the criteria set out by the NHS prior to administering fluoropyrimidines.
Aim: The aim of this project is to evaluate the adherence of the Trust to the NHS Policy Statement (August 2020) on DPYD testing before the initiation of fluoropyrimidines therapies.
Method: Clinical records of patients started on fluoropyrimidines were collected via in-house data extraction of the Meditech EPMA system. The project covered the months from July to October 2022. Data collected include patient details, fluoropyrimidines drug details, clinical indication and relevant information from the DPYD tests. Data analysis was conducted using Microsoft Excel. The inclusion criteria for the analysis were all eligible patient planned to initiate a systemic fluoropyrimidine treatment. Exclusion criteria for the study were: (1) patients who have previously been treated with fluoropyrimidines without excess toxicity, (2) fluoropyrimidines used for non-cancer indications. Simple frequency tests and percentages were calculated to determine the proportion of: 1) DPYD tests provided to eligible patients prior to initiating fluoropyrimidines, 2) if all DPYD test results are available before the chemotherapy treatment date and 3) clinical data on prescribing decisions by the requesting specialists. No ethical approval was required for this project.
Results
46 (66.7%) patients who were within the criteria set out by the NHS and initiated on fluoropyrimidines at the Trust hospitals were included in the data analysis. DPYD test rate was 100% for both Trust hospitals. The number of patients reported to have homozygous wild-type DPD gene and heterozygous carriers of DPYD variants were 44 and 2 respectively. There were no patients with homozygous variant genes identified. Treatment dose was reduced to 50% for both patients with partial DPD deficiency in line with the UK Chemotherapy Board guidelines. However, of 46 eligible patients, 2 patients were given chemotherapy despite no DPYD test results being available at the time of chemotherapy. Informed decision had been made by specialists and patients were started on 50% first dose which was reviewed after the DPYD test results showed that they were wild-type and could be escalated back to 100%.
Conclusion
Although the Trust shows overall promising adherence to the NHS Policy Statement, specialists or clinicians vary in terms of reporting and uploading the test results or treatment decision which could potentially cause patient harm during multidisciplinary care. DPYD testing policy is needed within the Trust to standardise the practice such as keeping test results at designated area within the system and guidance for treatment dosing as per UK Chemotherapy Board to ensure a more effective and efficient treatment management to keep patient safe.

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Project Title

Medicines reconciliation on admission to and discharge from critical care.

Abstract

Medicines reconciliation on admission to and discharge from critical care.

Background

Patients admitted to critical care are frequently complex with complex pharmaceutical requirements. During their critical care stay long-term medicines may be stopped, withheld or restarted. There is robust evidence timely medicines reconciliation (MR) provides an opportunity to identify and implement pharmaceutical care interventions whilst obviating any potential medication errors, MR therefore correlates with improved patient outcomes, ensuring that patients receive the right medication at the right time whilst avoiding the risks associated with unnecessary medication (1,2,3). The benefits of MR have been demonstrated on critical care wards (4,5,6).

Objective

This audit aims to explore the MR rate on admission to, and discharge from, critical care and if MR are completed within 24 hours of each event as per NICE guidelines standards (7,8).

Methods

Trust admissions to Critical care during November 2022 were received from the ward clerk for Site-A and the ward pharmacist for Site-B. Patients deceased during admission were excluded. Times of admissions, discharges, and pharmacy reviews were recorded using patient records. The “pharmacy care plan”, “pharmacy ward round”, and “discharge letter – pharmacy” documents were reviewed to determine when MR has taken place.

This audit did not require ethical approval but was approved by the department’s research group. Data analysis was performed using Excel (version 2302), identifiable patient data was anonymised during analysis.

Results

There were 93 critical care trust admissions (74 Site-A, 19 Site-B) between 1st-30th November; 13 were excluded from Site-A. A total of 27 weekend admissions; 22 at Site-A and 5 at Site-B. Additionally, 20 discharges occurred at weekends; 18 at Site-A and 2 at Site-B.

A total of 66 (82.5%) patients received MR during admission; 51 patients at Site-A (83.6%), 15 at Site-B (78.9%).

A total of 40 (50%) of admissions received MR within 24 hours of admission; 33 (54.1%) patients at Site-A, 7 (36.8%) at Site-B.

A total of 40 (50%) patients received MR within 24 hours of discharge; 32 (52.5%) at Site-A, 8 (42.1%) at Site-B.

Conclusion

MR is completed for a high proportion of admissions to critical care; however a low rate is completed within 24-hours of admission to, or discharge from, the ward. During November, 33% of critical care admissions and 25% of discharges occurred during the weekend when there is no ward pharmacist, reducing overall adherence to standards and missing potential pharmaceutical care interventions. This suggests increased pharmacist presence during weekends could contribute to abrogating this trend and improve critical care provision during a 7-day service. Additionally, implementing a formal process may aid MR completion, such as a critical care pharmaceutical plan. Such a document would provide the status of regular medicines and if held/stopped a rationale provided with criteria to restart, this could include when to discontinue acute critical card medicines still prescribed on discharge/transfer. Further work could explore the impact of reduced MR and consequences such as missed doses or failure to discontinue acute critical care medicines. Data collection for Site-B is a limitation of this study, the full admission list was unavailable and may introduce selection bias.

41	**Name:** Ruth Chapman **Organisation:** South Tyneside and Sunderland NHS Foundation Trust **Email:** ruth.chapman8@nhs.net **Project Title** Pharmacy Care Plan Completion on Care of the Elderly Wards **Abstract** Background Care of the Elderly (COTE) patients pose a challenge to healthcare as many of these patients are high-risk through polypharmacy regimes with 37% of men and 36% of women aged 75-85 years taking at least 5 medications [1] predisposing these patients to harm through increased risk of medication errors, interactions between medications, poor patient adherence and reduced quality of life [2] as well as changes to pharmacodynamics and kinetics [3]. Medicines reconciliation has demonstrated reductions in medication discrepancies and potential adverse drug events, particularly in high-risk patients [4]. Through completion of pharmacy care plans (PCPs), encompassing medicines reconciliation principles and knowledge of pharmacodynamic and pharmacokinetic principles, pharmacists are ideally placed to reduce patient risk. Objectives Objectives included identification of: the percentage of PCPs completed within 24 hours of admission to COTE wards at an acute hospital [5], potential causes and trends for incomplete PCPs over 24 hours and potential changes in practice that could achieve 100% PCPs completed within 24 hours. Methods A retrospective audit with data gathered between 29/06/22-30/07/22 using electronic data retrieval, was approved by the trust however ethical approval was not required. Data from 8 COTE wards was collated into an Excel document including dates and times of document creation, admission to wards, time to create the PCPs, patients age and length of stay. Results In total, 239 patients were identified admitted to COTE wards with 218 (91%) of PCPs completed within 24 hours. PCPs taking over 24 hours were identified for 21 (9%) patients, these patients and PCPs were analysed further to establish any trends and causes that could be identified. At least one PCP taking over 24 hours to be completed was identified on 7/8 COTE wards. Mean time to complete PCPs in under 24 hour was 14 hours with those over 24 hours taking 31 hours. Thursdays and Sundays were the most frequent day of the week to complete PCPs over 24 hours. For PCPs over 24 hours, 10 (48%) of patients were admitted within normal pharmacy working hours, distributed throughout the day. The most frequent ward for transfer was the Emergency Assessment Unit with 13 patients and patients were admitted to 7 COTE wards. The mean stay for patients whose PCPs were over 24 hours was 430 hours, 118 hours longer than the mean patient stay on COTE wards. Conclusion NICE standard 120 for PCP completion within 24 hours was met for 91% of patients between 29/6/22-30/7/22 [5]. Most PCPs taking over 24 hours after admission to be completed were completed on Thursdays and Sundays which could indicate higher workloads for pharmacists on Wednesdays and Saturdays with more discharges and/or queries, short-staffing or sickness. However, this audit is unable to establish the significance of correlations identified due to time restrictions and limits to data availability. This audit would benefit from re-audit over a longer timeframe to establish the validity of the trend seen in July 2022 and access to staffing rotas and workload to investigate contributing factors in more depth.

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Project Title

Are SGLT2 inhibitors being appropriately prescribed to inpatients?

Abstract

Are SGLT2 inhibitors being appropriately prescribed to inpatients?

Introduction

Diabetic ketoacidosis (DKA) is a rare but known risk associated with the medications Sodium Glucose Co-Transporter 2 Inhibitors (SGLT-2i). DKA while taking SGLT2 inhibitors may develop as euglycaemic DKA which can delay diagnosis.

Patients who are acutely unwell or undergoing surgery who take SGLT2is while in hospital are at an increased risk of DKA. Trust guidelines recommend that these drugs should be stopped on admission. (1) They should not be continued/restarted without discussion with the consultant-in-charge. This is following a patient safety alert in 2016 which was updated in 2020 (2). The exception is for people who are taking SGLT2 inhibitors for heart failure or chronic kidney disease who do not have diabetes as they are not at an increased risk of developing euglycaemic DKA.

Aim

To determine the indication for the SGLT2 inhibitors for each patient and whether it was appropriately prescribed/stopped on admission. Also whether any doses were given during their admission before being stopped.

Method

A data retrieval tool was used to find patients who were prescribed SGLT2 inhibitors (dapagliflozin, canagliflozin, empagliflozin and ertugliflozin). The search parameters were for inpatients prescribed one of the SGLT2 inhibitors between 17/22/23 and 17/1/23. Launchpad provided X numbers for patients prescribed these medications which allowed access to patient records. Patient records were used to determine the indication for the SGLT2 inhibitor. The reason for admission into hospital was also checked to determine if the patient was acutely unwell/undergoing surgery etc. Almost all inpatients were considered unwell as it was determined they required admission into hospital.

No ethics approval was required for this project. The project was approved through the departmental research group.

Results

94 patients were identified who were inpatients prescribed SGLT2 inhibitors between 17/12/22 and 17/01/23. There were 61 patients prescribed SGLT2 inhibitors with T2DM (65%), 12 with HF (13%) and 21 with a dual diagnosis of the T2DM and HF (22%). Of the patients with T2DM 30 were appropriately withheld on admission (50%). Of the patients who had their SGLT2 inhibitors inappropriately continued they were given an average of 1.9 doses before their medication was held. There were a wide variety of reasons for the inappropriate continuation of the medicines. All the patients with heart failure had their SGLT2 inhibitors continued appropriately, 1 patient had theirs stopped due to an AKI.

Conclusion/Discussion

The results show that the trust guidelines are not being fully followed. SGLT2 inhibitors were given for multiple days or not stopped at all when patients were acutely unwell. Only 50% of patients with T2DM had their medication appropriately withheld before the first dose was given. There is evidence that awareness of the guidelines needs to be improved. A reflex set on the electronic prescribing system that prompts prescribers to hold SGLT2 inhibitors and the reason for doing so may improve these results. There were some limitations of this study however due to poor documentation making it difficult to determine whether patients were unwell and determining reasoning of why patients' medications were held/continue/restarted etc.

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Project Title

Appropriate use of AWaRe (Access, Watch, Reserve) in Community-Acquired Lower respiratory tract infection (LRTI)

Abstract

Background:

Appropriate use of antimicrobials is a top priority to take action against antimicrobial resistance (AMR). The World Health Organisation (WHO) has developed the AWaRe index (Access, Watch and Reserve) to promote antimicrobial stewardship efforts globally [1].

Lower respiratory tract infection (LRTI) is a broad terminology including acute bronchitis, pneumonia and infective exacerbations of chronic obstructive pulmonary disease (IECOPD) [2].

The current standard of care for community-acquired LRTI is empiric treatment with beta-lactam or macrolide [3]. However, the rising prevalence of antibiotic resistance among commonly isolated respiratory tract pathogens has complicated antimicrobial selection.

Objectives:

To determine the adherence to the AWaRe index for the management of Community-Acquired LRTI.

Standards:

1. 100% of prescribed antibiotics should follow Trust guidelines.
2. 100% of allergy status must be documented.
3. 100% of patients should have a review or stop date documented.
4. 100% of the treatment duration should not exceed that recommended unless clearly documented.
5. 100% of treatment should be reviewed once antibiotic sensitivities are available.
6. 100% of patients should have IV to oral switch plan or have a clear plan documented.
7. 100% of patients diagnosed with Community-Acquired Pneumonia (CAP) must have documentation of CURB-65 score.

Method:

The audit was completed retrospectively, and the patient list was generated using an internal database. The study population was 80 patients diagnosed with IECOPD and CAP between October - November 2022.

Electronic notes were used to access information using the patients' hospital numbers. The Trust guideline was used to assess the appropriateness of prescribed antibiotics. The inclusion criteria were all patients 18 years and above diagnosed with CAP or IECOPD. Anyone under 18 and COVID-19-related infections were excluded. No ethical approval was required for this audit. The project was approved by the internal research group.

Results:

A total of 80 patients were selected from respiratory and emergency wards on both sites.

Only 5 out of 7 standards were met (standards 2-6).

Only 50/80 (62.5%) of antibiotics were compliant with the Trust guidelines.

Only 15/80 (19%) of patients diagnosed with CAP, had their CURB-65 documented.

A total of 35 patients received Co-amoxiclav, of which:

- 15 mild CAP
- 6 severe CAP
- 14 IECOPD

A total of 23 patients received Doxycycline which was appropriate for the indication of IECOPD.

Only 1 patient was given Colistin, 'Reserved' agent, which was advised by the microbiologist.

Conclusion:

The results show the adherence and efficacy of the guidelines require further work to achieve the standards. Co-amoxiclav 'Watch' agent was the most used antibiotic and Doxycycline 'Access' agent, the second most prescribed antibiotic during audit period.

	Antibiotics were only given in line with the Trust guidelines in just over half of the patients and where guidelines were not followed, there was a lack of documentation of rationale for the decision. The limitation of this audit would be that it is a retrospective audit thus no interventions can be made in real-time. It would be useful to reaudit this prospectively and compare the results. Actions: 1. Review if there is a function within the electronic prescribing system which could prompt the CURB-65 score to be documented. 2. Education for the doctors and practitioners reiterating the importance of complying with the AWaRe classification and the use of 'Access' over 'Watch' agents where appropriate. 3. Review and create an order set within the electronic prescribing system which includes 'Access' agents for Mild-Moderate CAP and 'Watch' agents for severe CAP.

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Project Title

An Investigation Into The Accurate Prescribing of Direct Oral Anticoagulants

Abstract

The direct oral anticoagulants (DOAC), apixaban, rivaroxaban, edoxaban and dabigatran, are licensed for a variety of indications, including non-valvular atrial fibrillation and venous thromboembolism. [1] In recent years, guidance has been produced surrounding the switch of patients from warfarin to DOACs owing to increasing evidence of efficacy and safety. DOACs require monitoring throughout treatment as clinical considerations such as renal function can affect the dosing. [1] Unfortunately, due to the predictability and less rigorous monitoring required, assessment of patients often does not occur as required resulting in inappropriate doses prescribed. [2] Subsequently, the importance of assessing the correct dosing of DOACs is necessary, owing to their high-risk nature.

To investigate the incidence of accurate prescribing of DOACs, dependent on the indication, age, weight, renal function, and the presence of interacting medication. The aims involved identifying the licensed indication for each DOAC, alongside the clinical parameters required. From this, creatinine clearance (CrCl) was calculated and the accuracy of prescribed doses was established.

This retrospective audit occurred within an acute hospital trust. The patient list was generated using the hospital's electronic system to identify those prescribed a DOAC during admission in June 2022. The patient's medical records were accessed to collect the parameters necessary to identify correct DOAC prescribing, including: age, weight, renal function, indication and interacting medication. The exclusion criteria were; patients newly initiated on a DOAC during admission, acute kidney injury and missing patient parameters, such as weight and blood results.

Of the 200 patients identified, 157 (78.5%) were excluded mainly due to a lack of documented patient parameters. A total of 43 (21.5%) patients were included to assess the accuracy of prescribing. Within this cohort, 7 (16%) were prescribed the wrong dose during admission, all of whom were prescribed apixaban. For all incorrect doses prescribed, a reduced dose was required, owing to the patients either being >80 years old and <60kg or having a CrCl <30ml/min. No interacting medication was identified. Of the incorrect doses, 4 patients (57%) were switched to the appropriate dose in the hospital.

More than half of the wrong doses within the audit were identified in hospital and changed appropriately, upon recommendation from pharmacists. Of those not changed, one involved specialist involvement from renal services, with the others investigated to assess any adverse effects. To increase the accuracy of DOAC prescribing, the introduction of a trust protocol or education sessions could increase awareness. Nevertheless, high accuracy rates were still apparent indicating monitoring does occur, despite increased pressure on the switching of warfarin to DOACs. Increased benefit of additional resources utilised for medication reviews within General Practice may account for higher rates of accurate prescribing.

DOAC prescribing was not entirely concordant with licensed dose adjustment requirements, however high accuracy rates were still identified. A limitation of this project involved the sample size, where the inclusion population may have been higher if parameters were documented completely. A further audit could involve collaboration with primary care to identify the incidence of patients within the community prescribed incorrect doses.

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Project Title

Missed dose audit due to drug availability on care of the elderly (COTE) wards at an acute trust.

Abstract

Background

Drug availability is a potential barrier to medicine administration and can disrupt patients' smooth transition from primary to secondary care. Although some of these missed doses have little clinical impact on patients, some medicines if missed could be detrimental. Missed doses are recorded and coded by reason on patients' medication administration chart (MAR).

In 2010 the National Patient Safety Agency (NPSA) published a report detailing the dangers caused by omitting or delaying medications in hospital (3). The action from the rapid response report was to identify a list of critical medicines where timeliness of administration is crucial. All staff should be aware of critical medicines, and they are listed in the trusts standard operating procedures (SOPs) (1).

By quantifying the number of missed doses due to drug availability, an evaluation can suggest changes to systems for the supply of urgent medications to minimise the risk of an omitted dose.

Objectives

- Identify and quantify medicine availability issues on COTE wards.
- Audit whether the trusts aim of 0% of critical medicines missed is being met, just looking at drug availability.
- Audit the % of non-critical medicines missed due to drug availability, aim for no more than one missed dose within 72 hours.

Methods

Data was collected retrospectively between 5th-11th December 2022 using patient lists generated from the trusts electronic prescribing system. Data was collected across six COTE wards. Each missed dose was investigated by reviewing patients MAR chart and reasons behind missed doses explored. Stock lists for each ward were then reconciled. This audit did not require ethics approval.

Results

A total of 141 doses were missed due to drug availability, two of these were critical medicines. Of the six wards audited, 44.7% (63) of the total missed doses came from a contingency ward and this included two critical medicines. This was followed by 35 (24.8%) on a general COTE ward, 23 (16.3%) on a border ward, 13 (9.2%) on a specialist COTE ward, 4 (2.8%) on another general COTE ward and finally 3 (2.1%) on another specialist COTE ward. Two doses of the same critical medicine were missed on one ward and the ward accounted for the highest number of missed doses. It is unclear if this was due to a mixed patient population and variety of medicines prescribed.

Conclusion

Missed doses, including critical medicines due to drug availability are occurring on COTE wards. The audit standard of 0% of critical medicines missed was not met.

The ward with the least missed doses had recently been audited; this could demonstrate effectiveness of the previous audit.

Doses were occasionally not documented; nursing staff need to be reminded to sign electronically immediately after administration or no administration, to accurately report why medicines have been missed and the steps taken to obtain stocks.

The trust could possibly benefit from more technical support on the wards, for example, a pharmacy technician accompanying nursing staff on drug rounds. Ensuring staff administering medications are educated on the correct supply process to ensure timely administration of medicines.

46	**Name:** Katie Bonnar **Organisation:** South Tyneside and Sunderland NHS Foundation Trust **Email:** katie.bonnar@nhs.net **Project Title** An audit of missed doses on two emergency wards in a secondary care setting **Abstract** An audit of missed doses on two emergency wards in a secondary care setting Background High rates of medication omissions were highlighted on two acute secondary care wards (short stay and assessment unit), the importance of omissions has been highlighted within the Francis report.1 Standard operating procedures (SOPs) are in place for safe medication administration. These are in line with the trusts quality improvement strategy's aim of reducing rates of missed doses by 50% by 2023. 2 This study looked at rates and reasons of missed medications and determining if pharmacy could prevent future omissions. Methodology A 7-day period (23/5/22-29/5/22) was identified to provide a list of all medications prescribed on two acute wards was created. This included medication administered and omitted and reasons why. Inclusion criteria was patients who had prescribed medication omitted this one-week period. Omitted medications were analysed, looking in detail at nurse decision to omit due to a clinical reason. This audit was approved by the research department. Objectives - To determine rates of missed medicines over a 7-day period on two acute wards. - Quantification of reasons behind why all medicines are missed and compare to standards set by medicines administration SOP. - Trends of critical medications missed to determine if there are any common medicines being missed. - Check rates of nurse justification and document reasons behind missed doses as per medicines administration policy. Results The total number of medications prescribed on ward A and B were 447 and 2092 respectively, of which 86 (19.24%) and 368 (17.59%) were omitted respectively. This table includes some reasons for omission however minor reasons were not included: Reason for omissions WARD A WARD B 1. Nurse omit-med not available9(10.47%) 53(14.40%) 3. Nurse omit-clinical reason 13(15.12%) 136(36.96%) 5. Electronic prescribing system downtime-recorded elsewhere 4(4.65%) 107(29.08%) 7. Dr omit 35(40.70%) 62(16.85%) Critical medications omitted using code nurse omit due to clinical reason: ward A: 0, ward B: 6 (10.91%). Critical medication omitted due to not being available: ward A: 0, ward B: 1. Conclusion Overall, both wards did not reduce missed doses by the 50% target; they increased from 2018-2019 figures; ward A 19.24% and ward B 17.59%. 10.91% of critical medications were omitted through 'nurse omit-clinical reason' however upon investigation the code picked was incorrect, hence staff education on the system would be useful, also if it was selected a pop-up alert would be helpful. Selecting wrong codes could be linked to electronic prescribing system inexperience or time pressures on wards. Many records of the electronic prescribing system downtime were recorded as the reason of omission, as well data collected from only one week period were limitations.

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Project Title

Management of steroid dependant patients undergoing a surgical procedure

Abstract

Background

Patients with primary and secondary adrenal insufficiency are dependent upon steroid medication. Surgery induces physiological stress therefore patients require additional steroids to prevent life threatening adrenal crisis. This group of patients may have adrenal, pituitary or hypothalamic disease/injury or past surgery. [1]

Aims and Objectives

The audit assessed if steroid doses were managed in accordance with Trust Clinical Guidelines 0306 and Standard Operating Procedure 0105, implemented in April 2022.

The following interventions should be made:

1. All patients with primary or secondary adrenal insufficiency should receive 100 mg hydrocortisone intravenously at induction of anaesthesia.
2. If required, this should be followed by an intravenous infusion of hydrocortisone 200mg/24hrs. (Or alternatively, hydrocortisone 50 mg intramuscularly every 6 hours)
3. Once oral intake established double the daily steroid dose for 48 hours if recovery is uncomplicated.
4. Thereafter return to normal daily steroid dose. [1]

Methodology

The design is a retrospective study, for which ethical approval was not required. A 6-month timeframe May-October 2022 was used. Inclusion criteria were all steroid dependant patients admitted to surgical wards having undergone a surgical procedure within the timeframe, taking daily doses equal to or greater than 5mg oral prednisolone or 20mg oral hydrocortisone.

Steroid management was assessed against the standards documented in CG0306. [1] All doses administered during the perioperative period should be documented in the Electronic Medical Record, not on the anaesthetic chart in line with SOP0105. The Medication Administration Record was cross referenced to ensure the patient has received all prescribed steroid doses. [2]

Additionally, post-operative instructions should clearly document the plan for doubling the steroid dose and returning to the patient's maintenance dose. [1]

Results

A total of 29 patients were audited during the 6-month timeframe. Of those audited 28 (97%) were given intravenous hydrocortisone upon induction of anaesthesia, with the remaining patient undergoing a Rhinoplasty procedure where IV hydrocortisone was deemed unnecessary. All doses were correctly prescribed on the EMR.

Additionally, 15 (51%) received subsequent doses of hydrocortisone, with the remainder being recorded as not required in medical notes. All doses were correctly prescribed on the patients EMR and not the anaesthetic chart.

Daily steroid doses were doubled in 22 patients (76%) for 48 hours once oral intake was established. Of the 7 patients (43%) were not doubled intentionally, due to a dose increase preadmission, aim to reduce infection risk and poor oral absorption; for which IM hydrocortisone was administered instead. For the remaining 4 patients, 2 (29%) were clearly documented in medical notes to receive a doubled dose for 48 hours yet this was ignored, with their preadmission dose being administered. For the final 2 patients (29%) the documentation was unclear, and they received their preadmission steroid doses.

Conclusion

Since the guideline introduction 100% of patients received IV hydrocortisone on induction if deemed clinically appropriate. Additional hydrocortisone doses were all correctly prescribed and documented. Errors occurred in postoperative dose increases due to unclear documentation or non-

	adherence to instructions provided. Further work is required to achieve full compliance with the guidelines.
48	**Name:** Kanika Girdhar **Organisation:** South Tyneside and Sunderland NHS Foundation Trust **Email:** kanika.girdhar@nhs.net **Project Title** Audit Into Compliance of Post-Operative Instructions with NICE Guidance on T+O Wards **Abstract** Background Venous thromboembolisms (VTE) can affect 1 in 2000 people in the UK. Risk factors such as obesity, idleness, and surgical procedures lead to increased risks of morbidity and mortality(1). Without prophylactic management, the incidence of a DVT in total hip replacements (THR) is 44% and 27% in total knee replacements (TKR)(2). Trust guidelines reflect that The National Institute for Health and Care Excellence (NICE) guidance NG89 stated to prescribe holistic mechanical/chemoprophylaxis following orthopedic procedures(3). Patients' risk of VTE should be considered against their risk of bleeding, and managed accordingly (4). Objectives Analysis into inappropriate prescribing practices will identify compliance in prescribing against the following standards (based on NICE recommendations). Elective Hip Replacement Offer VTE prophylaxis to people undergoing elective hip replacement surgery whose risk of VTE outweighs their risk of bleeding. Choose any one of: LMWH (enoxaparin) for 10 days followed by aspirin (75mg or 150mg) for a further 28 days LMWH (enoxaparin) for 28 days combined with anti-embolism stockings (until discharge) Elective Knee Replacement Offer VTE prophylaxis to people undergoing elective knee replacement surgery whose VTE risk outweighs their risk of bleeding. Choose any one of: Aspirin (75mg or 150mg) for 14 days LMWH (enoxaparin) for 14 days combined with anti-embolism stockings until discharge These findings will be shared with staff to encourage evidence-based prescribing to minimise undesirable patient outcomes such as post-operative complications, and delays in discharge. Methods Inpatient/post-operative/secretary notes of both 50 primary complete TKR and THR patients were screened over a two-month period August and September of 2022 through trust electronic prescribing software. Exclusion criteria included patients that have contraindications for treatments in NG89. Patients already on treatment or prophylaxis for a VTE prior to their surgery. Data collected was anonymised for interpretation and analysis. This audit did not require ethics approval. Results After exclusions, 37 THR and 39 TKR patients were evaluated. Only 32 (86.4%) THR patients, and 22 (56.4%) TKR patients were prescribed prophylaxis in line with trust guidelines. There no documentation was identified that indicated why alternative regimes were chosen over evidence-based ones. Many prescribers were choosing alternative timescales for how long to use the aspirin/LMWH either shortening the recommended treatment length or lengthening it. Discussion Patients should be prescribed VTE prophylaxis in line with guidelines post-operatively. Some patients had no documentation within their profiles that justified how prophylaxis was tailored to them. Patients with complications post-operation, could have been avoided if prescribed prophylaxis within trust guidelines. Despite analysing a small cohort of patients, undesirable patient outcomes can be seen. A larger cohort of patients would help ensure a more holistic view of prescribing. Patients on anticoagulation/aspirin/warfarin were not included in this study. Patients

	with previously diagnosed comorbidities that put them at a higher risk for VTE would mean they would have a higher chance of a thrombotic event after an operation. Conclusion Prescribing in line with recommended guidelines is important as these are based on effectual treatments that best reduce instances of mortality and morbidity(5). This cohort shows that not prescribing in line with trust guidelines can cause adverse patient outcomes. Further work is required to increase compliance with prescribing standards to minimise patient risk.

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Project Title

Pre-medication dexamethasone: Is it prescribed by consultants before the first cycle of docetaxel?

Abstract

Background

A frequent adverse effect of docetaxel is fluid retention, thought to be due to increased permeability of capillaries. 2% of docetaxel patients experience severe anaphylactic reactions so dexamethasone is prescribed before docetaxel treatment as a preventative measure for this inflammatory response, taken for 3 days, starting the day before docetaxel.[1,2] Dexamethasone is included in order sets for chemotherapy regimens starting from the second cycle of docetaxel. Consultants need to prescribe dexamethasone in clinic when the patients consent to treatment, before chemotherapy as it needs to be taken before patients attend for docetaxel treatment. Not all docetaxel-containing regimens have pre-assessment appointments so if dexamethasone is not already prescribed by the consultant, treatment has to be deferred, delaying treatment and having negative connotations for patients particularly if their treatment intent is neo-adjuvant or adjuvant.

Objectives

It is recommended by the manufacturer who conducted clinical trials that 100% of patients starting treatment with docetaxel should be prescribed a 3-day course of dexamethasone starting the day before docetaxel chemotherapy.[3]

The aim of this audit is to:

- Identify if pre-med dexamethasone was missed and establish why.
- Assess the impact of missing dexamethasone.
- Recommend solutions that can be implemented to ensure pre-med dexamethasone is prescribed correctly which would then improve patient care.

Method

From January–June 2022, 72 patients who were started on a chemotherapy regimen containing docetaxel were identified from two hospital sites. Information including regimen, cancer diagnosis, dates of treatment, prescribers and if dexamethasone was prescribed before first cycle docetaxel was obtained from the electronic medical records. If consultants did not prescribe dexamethasone, who ended up prescribing dexamethasone and when, was established. This audit did not require ethical approval.

Results

Out of 72 patients identified, 70 patients were included in the study. 40% of patients (n=28) did not have dexamethasone prescribed by their consultant before first cycle docetaxel, 100% of these patients were then prescribed dexamethasone at a later date by a non-medical prescriber (NMP) such as an Advanced Pharmacist Practitioner (APP), Advanced Nurse Practitioner (ANP) or by a consultant. However, a total of 7 patients had treatment deferred due to dexamethasone not being prescribed at the correct time.

Conclusions

Despite dexamethasone being often missed by consultants, NMP's were able to prescribe dexamethasone when the missing dexamethasone was noticed.

Nurses would also give patients the next cycle's dexamethasone which they had on hand. Regimes where docetaxel was started mid-way through the treatment plan e.g., FEC-T, EC-PTH, had a higher rate of dexamethasone prescribing due to a reminder on the electronic prescribing system, prompting prescribers about dexamethasone. To improve the prescribing rate, the consultants with the lowest rates of prescribing dexamethasone could be reminded, nurses can be trained/educated on the importance of dexamethasone being prescribed and understand that NMP's can prescribe too. Oncology specialised pharmacists can take initiative when reviewing prescriptions to remind consultants about dexamethasone or prescribe themselves if they are prescribers.

50	**Name:** Rihaab Ali **Organisation:** South Tyneside and Sunderland NHS Foundation Trust **Email:** rihaab.ali@nhs.net **Project Title** An Audit on the efficacy of fluid overload during hospital admission for heart failure patients **Abstract** Background Heart failure (HF) is a clinical syndrome recognised through cardinal symptoms experienced by a patient and signs observed by a practitioner, fluid overload characterised as peripheral oedema is common (1). HF accounts for 1 million bed days per year, 2% of the NHS total and 5% of all emergency hospital admissions, placing a large burden on the NHS (2). In the management of acute HF, loop diuretics are recommended first line in the NICE guidelines (3). This project has investigated the management of fluid overload during an admission with HF. Aims and Objectives: The aims of this project were to understand how well fluid overload was managed during an admission by viewing changes in diuretic prescribing in response to DFWs. The guide for effective diuresis was set to be weight loss of 1≥kg per day. Methodology: This is a trust wide retrospective observational cohort study. Patients were identified through a National heart Failure Audit (NHFA) data extraction of patients admitted to hospital where the primary cause of admission was HF between August to November in 2022. A total of 92 patients were identified of which, 43 patients met the inclusion criteria of moderate or severe oedema at the point of admission. Further data was then retrieved from the hospital's electronic health records (Meditech V6). This audit did not require ethics approval. Results The study population consisted of 23 (53%) men; the mean cohort age was 76 (+/- 10.6) years. Twenty-five (58%) of the cohort were over the age of 75 years. Of the 43 patients that were analysed, 35 (81%) of them showed a loss of weight from admission to discharge. Only 6 (14%) of the patients received complete DFWs during their hospital admission. Thirty-eight (88%) were converted to intravenous (IV) Furosemide on admission. The remainder of these patients received either oral Furosemide 3 (7%), as they were diuretic naive on admission or Spironolactone was added to the existing diuretic regimen, 2 (5%). Of the 38 patients that were converted to IV Furosemide, 7 patients (18%) lost 1kg or more within 24 hours and 12 patients (32%) lost 1 kg or more within 48 hours of receiving IV Furosemide. There were 35 (79%) patients where their weight increased or was static over a 2-day period at least once throughout their admission. Doses were appropriately increased, or additional diuretic agents were added in response to this in 11 (31%) patients. In 10 (29%) patients, no action was taken in response to a weight increase or static weight. Fourteen (40%) patients had appropriate diuretic dose changes in response to some of their weight increases or a static weight. Conclusion This audit has highlighted that DFWs were not routinely completed for patients admitted to hospital with HF, therefore limiting the ability to fully interpret effective fluid management. Most patients achieved weight loss during their admission, indicating a reduction in the degree of peripheral oedema from admission to discharge. The most common medication to achieve this was IV Furosemide. Almost a third of patients did not have diuretic dose adjustment after a 2-day weight increase or static DFWs. All patients, except for 1, went home on either a higher oral diuretic dose or were prescribed a new diuretic. Due to the limitations of a small population size and lack of DFWs, research on a larger cohort to further investigate this would be recommended.