Using visual prompts to aid analgesia prescribing

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Abstract

Analgesia prescribing is fundamental to a patient's journey, affecting length of stay and patient experience. Laminated prompts are used throughout the NHS Foundation Trust to aid doctors prescribing.

A baseline questionnaire was carried out to gather doctors' prescribing habits and current ability to convert opioids to their morphine equivalent. Ninety three percent of doctors said they were moderately to extremely confident when prescribing analgesia. However, when asked to carry out a simple opioid conversion only 14% answered correctly. Eighty three percent of doctors said they were prescribing laxatives alongside opioids frequently (57%) or almost all the time (25%). When actual rates were sampled only 14% of patients were prescribed a concurrent laxative.

Laminated pain management guideline cards were created and distributed to doctors at sign in for weekly teaching.

Doctor interviews were carried out to see if they were in possession of a prompt card and a simple opioid conversion question was asked. If they did not have a prompt card at the time of interview they were issued with one after answering the conversion question. Rates of concurrent laxative prescribing were collected from the electronic prescribing record of patients on the acute medical unit. Posters were displayed in doctors' offices and drug rooms. Laxative prescribing rates were re-collected and compared with the survey responses.

Distribution of laminated prompts increased accuracy of opioid conversion by 86%. Error rates fell as prompt prevalence increased until there was 100% prevalence and 0% error. Concurrent prescribing of laxatives increased to 50% after posters were displayed around the acute medical unit.

Doctors reported they were confident when prescribing analgesia. They reported that they often prescribed concurrent medications, however this did not relate to actual prescribing practices. Visual prompts improved doctors analgesia conversion knowledge and prescribing practices.

Laminated prompt cards are now incorporated in new doctors' induction packs.

Problem

Appropriate analgesia prescribing is fundamental to a patient's journey, affecting length of stay and patient experience.[1] Pain management is a large part of whether a patient is ready for discharge. Junior doctors are often good at prescribing both ends of the pain ladder, starting with paracetamol and ending with morphine. However, it is the middle ground between the two steps that seem to be a little less concrete in prescribing practices. The pain team at the Great Western Hospital (GWH) in Swindon, UK, noted steps being left out and missed. They also noted that when patients were already on weak opioid analgesia there was poor knowledge of conversion to its morphine equivalent. Since the reclassification of tramadol as a controlled drug the Trust has encouraged the use of codeine as first line weak opioid.

Background

The "pain ladder" or "analgesic ladder" was devised by the World Health Organisation to describe the steps to take when prescribing analgesia.[2] It was originally applied to the management of cancer

pain and is now widely used by medical professionals for all types of pain. It describes three steps when managing pain:

1. Prompt administration of a non-opioid eg paracetamol
2. If pain persists, administer an additional weak opioid eg codeine
3. Then administer strong opioids eg morphine until the patient is pain free.

Opioid prescribing has well known common adverse effects for the patient including constipation and nausea.[3,4] These side effects can be managed with appropriate concurrent prescribing of laxatives and antiemetics alongside opioids. Often these concurrent medications are not prescribed until the patient is actively complaining of symptoms. At GWH it is seen as good practice to prescribe these medications early to limit patient discomfort and distress.

The aim of this project was to improve both the quality and safety of analgesia prescribing at GWH. Within such a vast area two points were chosen to focus on that could be measured. Firstly, with regards to quality, are laxatives being prescribed alongside opioids?

And secondly, with regards to safety, are doctors accurate when converting opioids to its morphine equivalent?

Baseline measurement

A baseline survey using SurveyMonkey was carried out to gather information concerning doctors' prescribing habits and their current ability to convert opioids to its morphine equivalent. The survey was live for four weeks and junior doctors were asked to complete it via a group email with the link attached. One additional reminder email was sent after two weeks.

The survey had 29 responses, including eight foundation year one (F1) doctors, eight foundation year two (F2) doctors, seven core trainees year one and above (CT1+), and six other.

Of the responders, 25% had accessed the Trust pain management guidelines. Four doctors already had a laminated prompt card. Ninety three percent said they were moderately confident to extremely confident when prescribing analgesia. However, when asked to carry out a simple opioid conversion only 14% (those with a prompt card) answered correctly.

Eighty three percent of doctors who responded said that they were prescribing laxatives alongside opioids frequently (57%) or almost all the time (25%). Actual rates of concurrent laxative prescribing were gathered from the electronic prescribing record of all patients that were currently prescribed an opioid on the acute medical unit.

See supplementary file: ds6307.pdf - "Pain management guidelines laminated prompt card."

Design

Laminated prompts cards are used throughout the Trust to aid prescribing choices for example when prescribing an antibiotic. They are liked by junior doctors and referred to on a daily basis. They are also cheap and quick to implement. There is evidence to support the use of visual prompts to improve clinicians' prescribing behaviours.[5]

Laminated pain management guideline prompt cards were designed by the pain team's specialist nurse. They were based on the Trust's acute pain management guidelines. They were distributed to F1, F2, and acute medicine doctors at sign in for weekly teaching as this was a good opportunity when a large number of doctors were together at once.

Rates of concurrent laxative prescribing alongside opioids were collected from the electronic prescribing record of patients on the acute medical unit.

Posters were displayed in doctors' offices and drug rooms. Laxative prescribing rates were then re-collected. This was then compared with the doctor survey responses.

Strategy

The first aim was to distribute laminated cards to junior doctors and improve their morphine conversion accuracy.

PDSA Cycle 1 Good distribution of prompt cards to doctors was identified as a requirement in the first PDSA cycle. Many doctors working busy jobs could not always make it to teaching, with around 30% attendance.

PDSA Cycle 2 In the second PDSA cycle random doctor interviews were carried out to see if they were in possession of a prompt card and a simple opioid conversion question was asked. If they did not have a prompt card at the time of interview they were issued with one after answering the conversion question. This was to ensure cards reached doctors on the busy acute receiving wards. This method was seen to improve card prevalence and in turn reduce error conversion.

PDSA Cycle 3 For the third PDSA cycle the same method as used in cycle two was repeated two weeks later to target doctors that had been missed either due to annual leave or shift patterns.

The second aim was to improve concurrent prescribing of laxatives alongside opioids.

PDSA Cycle 1 In the first PSDA cycle doctors were encouraged to remember to prescribe concurrent medications alongside opioids when given their laminated card. It was recognised that although doctors reported they were prescribing concurrent medications alongside opioids (as shown in the baseline survey), this was not reflected in their prescribing practices.

PDSA Cycle 2 In the second PDSA cycle reminder posters were created and displayed in doctors' offices and drug rooms. This improved concurrent prescribing rates, but only by 12%.

PDSA Cycle 3 The findings were presented at the departmental acute medicine teaching and doctors were encouraged to remember concurrent prescribing. Nursing staff were also asked to encourage doctors to prescribe a laxative with any opioids when requesting analgesia to be prescribed. Alongside the reminder posters this improved prescribing rates to 50%. It was recognised that although better this still meant half of the patients receiving opioids were not also being prescribed a laxative. By taking advantage of the new e-prescribing system a prescribing protocol is currently under construction. When prescribing codeine, morphine, tramadol, and oxycodone, a laxative will automatically also be added; the prescriber will need to consciously opt out if not required.

Results

Error rates when converting opioids fell as prompt prevalence increased until there was 100% prevalence and 0% error.

Although 83% of doctors reported they were prescribing laxatives alongside opioids frequently or almost all of the time this was not shown in the results. However, actual concurrent prescribing rates

BMJ Quality Improvement Reports

of laxatives alongside opioids increased by 36%, from 14% to 50%.

See supplementary file: ds6287.pdf - "A graph showing as prevalence of laminated cards increased, error in opioid conversion rates decreased."

Lessons and limitations

This project was carried out over three months which is a relatively short time period to instigate behaviour change. It was done as part of a management and leadership course run by Severn Deanery.

Behaviour change is difficult. As stated by The Kings Fund, "They know, they know the knowledge. We often start from the assumption that people need to be told all this stuff, that they need to have it reinforced. But it isn't about that. It isn't about more guidelines; it's about getting that behaviour changed." [6] This was illustrated in the project by the difference between what doctors say they are doing and what they are actually doing. Behaviour is changed by visual prompts, and laminated prompt cards have been added to the junior doctor induction packs ensuring this knowledge will be passed on to the next cohort of doctors.

However, a more fixed solution needs to be found to ensure longevity. Installing a prescribing protocol in our e-prescribing system will take away this conscious need to decide to do something and prescribers will instead have to remove additional medications if not clinically indicated.

Conclusion

Visual prompts improve doctors' analgesia prescribing knowledge and prescribing practices. Although doctors report they are confident in analgesia prescribing this is not always translated into actual prescribing habits.

When converting opioids to its morphine equivalent, doctors error rates fell to 0% when in possession of a laminated analgesia prompt card. Concurrent prescribing of a laxative increased by 36% with the help of posters and verbal encouragement from both peers and nursing staff.

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Declaration of interests

Nothing to declare

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Ethical approval

This project was exempt from ethical approval as it was an improvement study which posed no risks to participants.