Torridge Health QOF 2019 Network Quality Improvement activity for NSAIDs

1. Introduction

In the 2019 GP contract, as part of QOF and worth a total of 37 points, we are required to take part in quality improvement activity (27 points) which is shared at network meetings (10 points) to allow collection of results, agreed actions and then re-audit to assess impact. The area of focus will change each year. This year we are to be looking at End of Life Care and prescribing related to NSAIDs, Valproate and Lithium. This is the Torridge Health plan for NSAIDs

2. Detailed contractor guidance from NHS England

Safe prescribing of NSAIDs is a potentially large topic. To ensure focus, we need to ensure we are attending to our **core requirements as outlined in national guidance**.

NHS England GMS contract guidance 2019
https://www.england.nhs.uk/wp-content/uploads/2019/05/gms-contract-qof-guidance-april-2019.pdf
Pages 96 to 106, some information copied below.

QOF indicators

- The contractor can demonstrate continuous quality improvement activity focused upon prescribing safety as specified in the QOF guidance. QI001
- The contractor has participated in network activity to regularly share and discuss learning from quality improvement activity as specified in the QOF guidance. This would usually include participating in a minimum of two peer review meetings. QI002

Aim is

- to reduce the rate of potentially hazardous prescribing, with a focus upon the safer use of non-steroidal anti-inflammatory drugs (NSAIDs) in patients at significant risk of complications such as gastro-intestinal bleeding.
- Improve collaboration between practices, networks and community pharmacists to share learning and improve systems to reduce harm and improve safety.

Practices will need to:

1. Evaluate the current quality of their prescribing safety and identify areas for improvement – this would usually include a baseline assessment of current prescribing (QI001)
2. Identify quality improvement activities and set improvement goals to improve performance in the three identified areas – see below (QI001) [NSAIDS, valproate, Lithium]
3. Implement the improvement plan (QI001)
4. Participate in a minimum of 2 network peer review meetings (QI002)
5. Complete the QI monitoring template in relation to this module (QI001 + QI002)

Identifying areas for improvement: All practices should undertake an audit of the current quality of their prescribing in relation to the following:

- **patients at significant risk of gastrointestinal adverse effects who have been prescribed a nonselective nonsteroidal anti-inflammatory drug (NSAID) without co-prescription of a proton-pump inhibitor (PPI) in the preceding 6 months.**

Verification – Commissioners may require contractors to provide a copy of the QI monitoring template as written evidence that the quality improvement activity has been undertaken. Commissioners may require the network clinical lead to provide written evidence of attendance at the peer review meetings. If a contractor has been unable to attend a meeting due to exceptional and unforeseen circumstances then they will need to demonstrate other active engagement in peer learning as review

3. Methodology

We have created and shared SystmOne searches across practices in the network. In each practice we have found **all prescriptions of oral NSAIDs prescribed in the last 6 months**

First we checked this list for contraindications, irrespective of gastroprotection with PPI:

- Known active GI bleeding
- Previous NSAID related bleeding
- Previous GI bleeding (contraindicated if recurrent)
- Previous GI ulcer (contraindicated if recurrent)

We then refined the previous search to those **without any prescription of PPI or H2 antagonist in the last 6 months**.

Then compare list against **GI bleeding risk factors**, following CKS guidelines,

- Aged > 65
- Prescribed SSRI medication (Citalopram, Sertraline, Fluoxetine etc)
- Prescribed Anticoagulation (warfarin, rivaroxaban etc)
- Prescribed Oral Steroid (prednisolone, dexamethasone)
- Prescribed Antiplatelet medication (aspirin, clopidogrel etc)
- Known Diabetes, Hypertension, Cardiovascular, Cirrhosis or Renal disease (last eGFR <45).
- Prolonged requirement for NSAIDs (indicated by NSAIDs issued from repeat prescribing AND issued more than once)

We considered **high risk of GI bleeding, those with 3 or more risk factors** as per CKS website.

4. Baseline Results, to be reviewed again in 6 months

Data for Peer Review, collected as above and based upon searches for patients issued oral NSAIDs during the last 6 months July 2019, **6 Month results in bold from January 2020, below initial results, again based on previous 6 months prescribing.**

Practice	A	B	C	D	E	F
List Size	2728	12385	8820	5125	6886	15330
NSAID (%)	109 (3.9%) **106 (3.9%)**	936 (6.0%) **898 (5.7%)**	591 (6.3%) **568 (6.1%)**	300 (5.7%) **310 (5.9%)**	329 (4.8%) **301 (4.4%)**	1069 (7.0%) **1035 (6.8%)**
NSAID no PPI(%)	46 (1.7%) **26 (0.9%)**	279 (1.8%) **199 (1.3%)**	207 (2.2%) **148 (1.6%)**	103 (1.9%) **86 (1.6%)**	92 (1.3%) **66 (1.0%)**	342 (2.2%) **203 (1.3%)**
No Risk Factor (%)	23 (0.8%) **11 (0.4%)**	156 (1.0%) **113 (0.7%)**	118 (1.3%) **83 (0.9%)**	55 (1.0%) **45 (0.9%)**	55 (0.8%) **39 (0.6%)**	160 (1.0%) **120 (0.8%)**
At least 1 Risk Factor (%)	23 (0.8%) **21 (0.8%)**	124 (0.8%) **86 (0.5%)**	89 (1.0%) **65 (0.7%)**	48 (0.9%) **44 (0.8%)**	38 (0.6%) **27 (0.4%)**	184 (1.2%) **97 (0.6%)**
At least 2 Risk Factor (%)	14 (0.5%) **3 (0.1%)**	54 (0.3%) **24 (0.2%)**	38 (0.4%) **25 (0.3%)**	22 (0.4%) **12 (0.2%)**	15 (0.2%) **11 (0.2%)**	106 (0.7%) **26 (0.2%)**
At least 3 Risk Factor (%)	4 (0.1%) **0 (0.0%)**	25 (0.2%) **6 (0.0%)**	17 (0.2%) **8 (0.1%)**	8 (0.2%) **3 (0.1%)**	6 (0.1%) **6 (0.1%)**	47 (0.3%) **11 (0.1%)**
At least 4 Risk Factor (%)	2 (0.1%) **0 (0.0%)**	12 (0.1%) **4 (0.0%)**	7 (0.1%) **5 (0.0%)**	2 (0.0%) **1 (0.0%)**	1 (0.0%) **1 (0.0%)**	21 (0.1%) **7 (0.0%)**
At least 3 risk factors **without** CVD risk, consider COX2	0 (0.0%) **0 (0.0%)**	1 (0.0%) **4 (0.0%)**	2 (0.0%) **0 (0.0%)**	0 (0.0%) **0 (0.0%)**	0 (0.0%) **0 (0.0%)**	0 (0.0%) **0 (0.0%)**

5. Discussion and actions to try and improve our prescribing safety

Patterns for patients with multiple risk factors prescribed NSAIDs without PPI and possible solutions

Cause of NSAID issue without PPI	Possible Solution
"One off" prescriptions, for flare of gout, back pain, shoulder pain, particularly for patients who have had NSAIDs in the past without PPI.	GPs to prescribe PPI as habit with acute NSAIDs, especially in those taking other medications for HTN, depression etc. Option to add PPI on as repeat template as a prompt for future acute issues.
PPI is available on repeat prescription, but patient has not requested / been issued.	Add script note to all NSAIDs on repeat ● **You should also take medication to protect your stomach** and the PPI on repeat should have script note ● **take daily to prevent gastrointestinal upset when taking [naproxen]**
Search identifies patient at risk of GI bleed, but clinical review suggests not appropriate due to coding errors, amount and duration of NSAID or similar.	Record NSAID review, using ardens NSAID monitoring for those practices who subscribe or add code as below ● Non-steroidal anti-inflammatory drug risk assessment completed (710421000000101)
NSAID on repeat without PPI in patients with additional risk factor(s)	Add PPI to repeat along with script message as above.

Intended outcomes for meeting in 6 months

- Reduce to zero patients those issued NSAIDs without PPI in high risk group (3 or more risk factors, as identified above.)
- Documentation of NSAID risk assessment in all patients with 2 or more risk factors and therefore potentially at risk.
- Regular searches 3 monthly to demonstrate the impact of changes above and to discover any further actions required
- Minimal extra clinician time required to achieve significant patient benefit due to working at scale within network.

Limitations of data above

- Does not take account of other potential unknowns such as OTC medications, alcohol, smoking, h.pylori

What about COX2 for those at High Risk of GI bleeding?

When considering COX-2 for those at high risk of bleeding, there are conflicting risks which makes it difficult to put actions in place to switch to these drugs. CKS advises as follows.

- For people with risk factors for cardiovascular disease and all elderly people, ibuprofen up to 1200 mg per day or naproxen up to 1000 mg daily should be prescribed.

Therefore the numbers who are both at high risk of bleeding, and without risk factors for cardiovascular disease are small. We have therefore agreed that all high risk groups issued NSAIDs should have a documented risk assessment, rather than a plan to switch these patients to COX-2 drugs. Individual cases could still be opportunistically reviewed.

Comments at 6 months

- We have seen a potentially clinically significant reduction in patients prescribed NSAIDs without PPI gastroprotection. We have not yet achieved our starting aim to reduce high risk prescriptions to zero.
- Some limitations from our search methodology, meaning that our 6 month searches which have been repeated 6 months after starting this work may be missing improvements in prescribing within recent months, we hope our numbers will continue to improve as we have established safety prompts and regular searches to help avoid edge cases.
- Ongoing issue with a few patients who have been advised to take NSAID along with PPI which is on repeat, but don't then order this alongside their NSAID. There is a process which will need to be continued to update and educate our patients regarding safe use of these medications.

6. Reference information

BJGP Editorial April 2016. The danger of NSAIDs
https://bjgp.org/content/bjgp/66/645/172.full-text.pdf

Bleeding is the better-known consequence with all types of NSAID use. Non-selective NSAIDs increase the risk of a GI bleed 4-fold, whereas COX-2 inhibitors increase this risk 3-fold. Co-prescription of NSAIDs with corticosteroids increases bleeding risk 12-fold, spironolactone 11-fold, and selective serotonin reuptake inhibitors (SSRIs) 7-fold.5 GI bleeds while taking NSAIDs are more likely to be fatal, with a mortality of 21%, whereas in patients not taking NSAIDs it is 7%. Older people have a higher baseline risk of cardiovascular events, GI bleeds, and impaired renal function, all of which are further increased by NSAIDs. NSAID prescribing is common in this older population, with 9% of patients aged >70 years receiving a prescription for >3 months. Self-medication is also extensive and 30% of a general population sample in the Netherlands reported NSAID use within the preceding 4 weeks.

from CKS website:

NSAIDs - prescribing issues: Summary

https://cks.nice.org.uk/nsaids-prescribing-issues#!topicSummary

- Nonsteroidal anti-inflammatory drugs (NSAIDs) have analgesic, antipyretic and, at higher doses, anti-inflammatory actions.
- NSAIDs inhibit prostaglandin synthesis by reversibly inhibiting cyclo-oxygenase (COX) enzymes — the two main types of COX enzyme are COX-1 and COX-2, which have different physiological functions.
    - COX-1 produces prostaglandins that help to maintain gastric mucosal integrity and platelet-initiated blood clotting. Inhibition is thought to be responsible for gastrointestinal toxicity.
    - COX-2 produces prostaglandins that mediate pain and inflammation. Inhibition is thought to be responsible for the anti-inflammatory action of NSAIDs.
- NSAIDs vary in how selective they are for COX-1 and COX-2 pathways and the degree of selectivity for COX-1 relative to COX-2 can be used to classify NSAIDs:
    - Standard NSAIDs — these are nonselective NSAIDs (inhibiting both COX-1 and COX-2), and include ibuprofen, indometacin, mefenamic acid, and naproxen. Diclofenac, etodolac, meloxicam, and nabumetone, are also nonselective NSAIDs, but are thought to have a preference for COX-2.

    - Coxibs — these are COX-2 specific NSAIDs, and include celecoxib and etoricoxib.
- When prescribing an NSAID, individual risk factors for adverse effects should be taken into account and include any contraindications, drug interactions, medical history, and any monitoring requirements.
- If an NSAID is indicated, the lowest effective dose should be used for the shortest possible duration.
- For people with:
    - Severe heart failure — NSAIDs should be avoided.
    - Mild, moderate, or severe heart failure — COX-2 inhibitors, diclofenac, and high-dose ibuprofen (2400 mg or more daily) should be avoided.
    - Mild to moderate heart failure — a standard NSAID should be prescribed (but not diclofenac or high-dose ibuprofen), and the person should be monitored closely.
        - Ibuprofen up to 1200 mg daily, or naproxen up to 1000 mg daily, should be first-line options.
- For people with ischaemic heart disease, cerebrovascular disease, or peripheral arterial disease, ibuprofen up to 1200 mg per day or naproxen up to 1000 mg daily, should be first-line options.
    - COX-2 inhibitors, diclofenac, and high-dose ibuprofen are contraindicated.
- For people with severe renal impairment (estimated glomerular filtration rate [eGFR] less than 30 mL/minute/1.73 m^2), ideally NSAIDs should be avoided.
    - If an NSAID is used, the person should be monitored closely.
- **For people with risk factors for cardiovascular disease and all elderly people, ibuprofen up to 1200 mg per day or naproxen up to 1000 mg daily should be prescribed [added highlight]**
- For people with uncontrolled hypertension (blood pressure persistently above 140/90 mmHg), etoricoxib and high-dose ibuprofen should be avoided.
- To prevent GI adverse effects associated with NSAIDs:
    - An alternative analgesic should be considered.
    - Prescribing more than one NSAID at a time should be avoided.
    - Concomitant use of an NSAID with low-dose aspirin should be avoided
    - Short-acting NSAIDs (such as ibuprofen) should be used in preference to long-acting formulations (such as naproxen).
- For people at:
    - High risk of GI adverse events — a COX-2 inhibitor should be prescribed with a proton pump inhibitor (PPI).

    - Moderate risk of GI adverse events — a COX-2 inhibitor should be prescribed alone, or an NSAID plus a PPI.
    - Low risk of GI events — a non-selective NSAID should be prescribed.

What are the risk factors for gastrointestinal (GI) adverse effects?

- Non-steroidal anti-inflammatory drugs (NSAIDs) inhibit cyclo-oxygenase-1 (COX-1) — this is thought to be responsible for gastrointestinal (GI) toxicity.
    - COX-2 inhibitors (such as etoricoxib and celecoxib) selectively inhibit cyclo-oxygenase-2 and have a reduced risk for GI toxicity.
- **Risk factors for NSAID–induced gastrointestinal (GI) adverse events include:**
    - Aged over 65 years.
    - A high dose of an NSAID.
    - A history of gastroduodenal ulcer, GI bleeding, or gastroduodenal perforation.
    - Concomitant use of medications that are known to increase the likelihood of upper GI adverse events (for example, anticoagulants, corticosteroids, selective serotonin reuptake inhibitors [SSRIs]).
    - A serious comorbidity, such as cardiovascular disease, hepatic or renal impairment (including dehydration), diabetes, or hypertension.
    - Heavy smoking.
    - Excessive alcohol consumption.
    - Previous adverse reaction to NSAIDs.
    - Prolonged requirement for NSAIDs.
- **People are considered at:**
    - **High risk** if they have a history of previously complicated ulcer, or multiple (more than two) risk factors.
    - **Moderate risk** if they have 1–2 risk factors.
    - **Low risk** if they have no risk factors.
- **Additional risk factors for NSAID-induced GI adverse events include:**
    - The type of NSAID used.
    - The presence of *Helicobacter pylori* infection.
    - For more information on risk factors, see the CKS topic on Dyspepsia - proven GORD.

How should I manage the risk of GI adverse effects?

- **To prevent gastrointestinal (GI) adverse effects associated with the use of a nonsteroidal anti-inflammatory drug (NSAID):**

    - Avoid prescribing more than one NSAID at a time.
    - Avoid concomitant use of an NSAID with low-dose aspirin (if possible) — if this is essential, monitor closely.
    - Prescribe the lowest dose of NSAID for the shortest period of time.
    - Use a short-acting NSAID (such as ibuprofen) in preference to a long-acting NSAID (such as naproxen).
    - Consider an alternative analgesic if appropriate.
- **For people:**
    - With osteoarthritis and rheumatoid arthritis — co-prescribe a proton pump inhibitor (PPI) with an NSAID (see Table 1 for licensed doses of PPIs for gastroprotection).
    - Who are elderly — co-prescribe a PPI with an NSAID.
    - With low back pain, axial spondyloarthritis, psoriatic arthritis and other peripheral spondyloarthritides — consider gastroprotection when prescribing an NSAID.
- **For people at:**
    - **High risk** of GI adverse events — prescribe a COX-2 selective NSAID (for example, etoricoxib, or celecoxib) instead of a standard NSAID, and co-prescribe a PPI.
    - **Moderate risk** of GI adverse events — prescribe a COX-2 inhibitor alone, or an NSAID plus a PPI.
    - **Low risk** of GI events — prescribe a non-selective NSAID.
- **Managing GI adverse effects**
    - The management of GI adverse effects in people using an NSAID depends on whether they have been investigated (for example, with endoscopy or a test for *H. pylori*) and whether 'alarm' symptoms are present. For full details, see the CKS topics on:
        - Dyspepsia - pregnancy-associated
        - Dyspepsia - proven functional
        - Dyspepsia - proven peptic ulcer
        - Dyspepsia - unidentified cause
- For detailed information on the use of low-dose aspirin, including advice on how to minimize the risk of GI adverse events, see the CKS topic on Antiplatelet treatment.

Licensed doses of proton pump inhibitors used for gastroprotection for people who require continued NSAID treatment

Table 1. Licensed doses of proton pump inhibitors used for gastroprotection for people who require continued NSAID treatment.

Proton Pump Inhibitor	**Dose for NSAID prophylaxis**
Lansoprazole	15–30 mg once daily
Omeprazole	20 mg once daily
Esomeprazole	20 mg once daily
Pantoprazole	20 mg once daily
Information from: [BNF 75, 2018]	

https://www.gov.uk/government/publications/cox-2-selective-inhibitors-and-non-steroidal-anti-inflammatory-drugs-nsaids-cardiovascular-safety/cox-2-selective-inhibitors-and-non-steroidal-anti-inflammatory-drugs-nsaids-cardiovascular-safety

https://www.primis.nottingham.ac.uk/registration/registration/default.asp
Register at PRIMIS

http://www.primis.nottingham.ac.uk/hub/file.php/2/CHART/2017/CHART-2017-instructions.pdf Instructions booklet

7. Notes for Reporting Template, to be completed for each practice

Practice name and ODS code
Hartland Surgery L83129
Diagnosing the issues
What issues did the practice identify with prescribing safety?
From 109 patients prescribed NSAIDs during previous 6 months, we identified 4 patients prescribed oral NSAIDs without PPI who were at high risk of GI bleeding, based upon clinical references including CKS website (3 or more risk factors). We also identified one patient prescribed with a history of peptic ulcer disease. At 6 months we found no patients in the high risk group, from 106 who were issued NSAIDs without a PPI. We found 3 patients with 2 risk factors who were issued without PPI cover.
What changes did the practice make to try to address issues identified with prescribing safety?
We looked at system causes for prescribing NSAID without PPI and identified ways to reduce risks, as discussed within the audit appendices. These included ● GP awareness of safety guidance ● Detailed medication review of those at risk identified by searches ● Popup prompt of NSAID monitoring when issued as acute, offer to issue PPI ● Adding PPI to repeats of those on regular NSAIDs ● Changed prescribing text to highlight NSAIDs should be taken alongside PPI. ● Regular automated searches each month to monitor for omissions or opportunities for further improvement
Results
What did the practice achieve?

Our prescribing of NSAIDs to high risk patients without PPI changed from 4 to zero at the follow up network meeting. Across the network of 55000 patients, we saw a reduction from 107 patients at high risk of GI bleed issued NSAID without a PPI, down to 34 at 6 months. We expect these figures to continue to improve as our processes and reviews are further embedded into our routine care across the network.
What changes will/ have been embedded into practice systems to ensure prescribing safety in the future?
As per changes box above
How did the network peer support meetings influence the practice's QI plans and understanding of prescribing safety?
● Encouraged network good practice for share improvement and learning. ● Benchmarking to help us see how our performance matched our peers. ● Shared use of network pharmacist skills.
Please attach the results of both prescribing audits (as appendices) [this document]