

# IMPROVING POST-OPERATIVE ANALGESIA AND ASSOCIATED PRESCRIBING IN THE ORTHOPAEDIC SETTING

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## BACKGROUND

The HSE issued “GUIDANCE FOR OPIOID PRESCRIBING FOR ACUTE NONCANCER PAIN, POSTOPERATIVE PAIN AND POST-PROCEDURE PAIN” in Jan 2022<sup>1</sup>. The purpose of the guidance is to: “provide best evidence and expert opinion to help improve quality and safety of opioid prescribing in the acute hospital setting and reduce harm from their use”.

A key recommendation is the avoidance of post-operative long-acting opioid prescribing in opioid naïve patients. New local guidance documents were developed by a multidisciplinary team consisting of consultant ortho-geriatrician, consultant anaesthetist, clinical pharmacist and pain management CNS with the aim of addressing and meeting the recommendations of the HSE guidance document.

The documents developed give clear post-operative prescribing guidance on appropriate dosing, advice on agent selection for  $\geq$  &  $\leq$  65 years as well as guidance on contraindications and cautions for use of medicines. These documents included: Post-Operative Opioid Conversion Table <sup>1,2,3,4&5</sup>, Orthopaedic Analgesia Guideline <sup>1,2,6,7,8,9&10</sup> and a Patient Information Leaflet on the safe use of Opioids. All documents were presented to and approved by the local Drugs and Therapeutics Committee (OLOL).

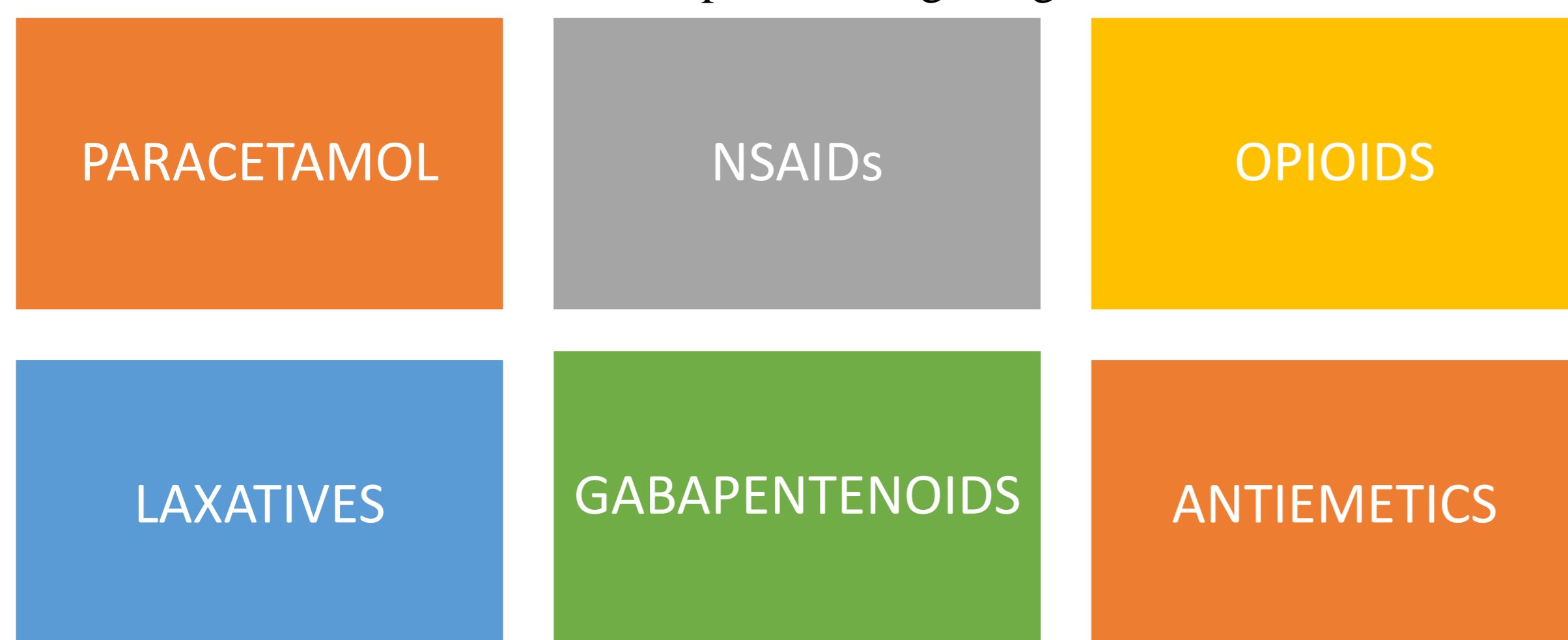
## AIM

The aim of the project was to implement the recommendations of the HSE Opioid Prescribing Guideline (Jan 2022)<sup>1</sup> to improve analgesia and associated prescribing on the orthopaedic ward in line with best practice.

## METHODS

### AUDIT:

A point prevalence baseline audit was undertaken to examine analgesia and associated prescribing on the orthopaedic ward on July 4<sup>th</sup>, 2022. The audit measured compliance of prescribing for the classes of medicines as outlined in the orthopaedic analgesia guideline:



Data was collected via a proforma to gather relevant data from each patient’s kardex, laboratory results, ECG and medical notes.

### EDUCATION:

Education sessions were intensified at the time of NCHD team changeover and were offered to all ward staff, orthopaedic teams and anaesthetics teams and included feedback on the findings of the baseline audit. Goals for improvement were outlined to all relevant stakeholders.

The Post-Operative Opioid Conversion Table and the Orthopaedic Analgesia Guideline were shared with the teams and intensive education was provided at team meetings, journal clubs, team education sessions and daily pop-up education sessions took place on the ward at set times.

Posters of the Post-Operative Opioid Conversion Table and the Orthopaedic Analgesia Pathway were printed and prominently displayed in clinical areas throughout the ward and were placed on the local online document management system to facilitate ease of access for all ward staff.

### REAUDIT:

A point prevalence reaudit of prescribing on the orthopaedic ward was undertaken on November 15<sup>th</sup>, 2022, using the same proforma audit tool to enable direct comparison of prescribing before and after the introduction of the prescribing guidelines.

## RESULTS

### Patient Demographics:

The patient groups audited on July 4<sup>th</sup>, 2022, and November 15<sup>th</sup>, 2022, were comparable as depicted in *Table 1*. The most prevalent injury noted was hip related in both audits.

Parameter	4 <sup>th</sup> July 2022	15 <sup>th</sup> November 2022
Number of Patients	29	28
Mean Age	68 years	68 years
Mean Weight	73 KG	74 KG
Injury Type:		
Hip Related	41%	56%

*Table 1:* Patient Profile for Audit and Re-Audit

### Audit Results:

The baseline audit undertaken on July 4<sup>th</sup>, 2022, highlighted several significant issues with analgesia and associated prescribing practices as depicted in *Table 2*.

Medicine Group	No of Patients Prescribed	% of Patients Prescribed	No of Appropriate Prescriptions	% of Appropriate Prescriptions	No of Inappropriate Prescriptions	% of Inappropriate Prescriptions
Paracetamol	29	100%	27	93%	2	7%
NSAID's	4	14%	1	25%	3	75%
Opioids	26	90%	24	77%	7	23%
Laxatives	20	69%	28	68%	13	32%
Gabapentenois	2	7%	2	100%	0	0%
Antiemetics	19	66%	18	95%	1	5%

*Table 2:* Analysis of prescribing noted in baseline audit July 4<sup>th</sup>, 2022.

The medicines least compliant with the orthopaedic analgesia guideline were **Opioids, Laxatives & NSAIDs**. We focused on improving these 3 areas before completion of the reaudit.

### Reaudit Results:

The reaudit was undertaken on 15<sup>th</sup> November 2022 and the results are detailed in *Table 3* below.

Medicine Group	No of Patients Prescribed	% of Patients Prescribed	No of Appropriate Prescriptions	% of Appropriate Prescriptions	No of Inappropriate Prescriptions	% of Inappropriate Prescriptions
Paracetamol	26	93%	20	74%	7	26%
NSAID's	6	21%	5	83%	1	17%
Opioids	26	93%	28	80%	7	20%
Laxatives	24	86%	40	74%	14	26%
Gabapentenois	7	25%	7	100%	0	0
Antiemetics	21	75%	33	91%	3	9%

*Table 3:* Analysis of prescribing on reaudit November 15<sup>th</sup>, 2022.

In direct comparison with the baseline audit results as depicted in *Table 2*, the reaudit showed improvements in the prescribing of Opioids, NSAIDs and Laxatives.

### Comparison Audit and Reaudit Results:

Improvements were noted in the prescribing of opioids with no long-acting opioids prescribed to any opioid naïve patients  $\geq$ 65 years. There were improvements in the prescribing of regular and PRN opioids post-op for minimum 4 days; as well as notable improvements in the prescribing of NSAID's and laxatives as indicated in *Table 4* below. However, poorer results were noted in prescribing of paracetamol and antiemetics due to NCHD team changeovers and focus on prescribing of other classes of medicines.

Parameter	July 2022	November 2022	P value
No Opioid naïve patient > 65years to be prescribed a long-acting opioid post-op	15%	0%	P= 0.0184
Patient $\leq$ 4 days post-op to be prescribed a regular and PRN short acting opioid	65%	93%	P= 0.0050
All patients prescribed an opioid to be prescribed at least one regular laxative	73%	92%	P= 0.0415
Lactulose to be charted as regular not PRN	75%	91%	P= 0.3907
Avoid inappropriate NSAID's in patients >65 years	75%	17%	P= 0.0413
Paracetamol to be dose adjusted for reduced weight and impaired hepatic function	93%	74%	P= 0.0558
Antiemetics to be prescribed taking account of +QTc and Parkinson's disease	95%	91%	P= 0.5983

*Table 4:* Comparing Results of Audit and Reaudit

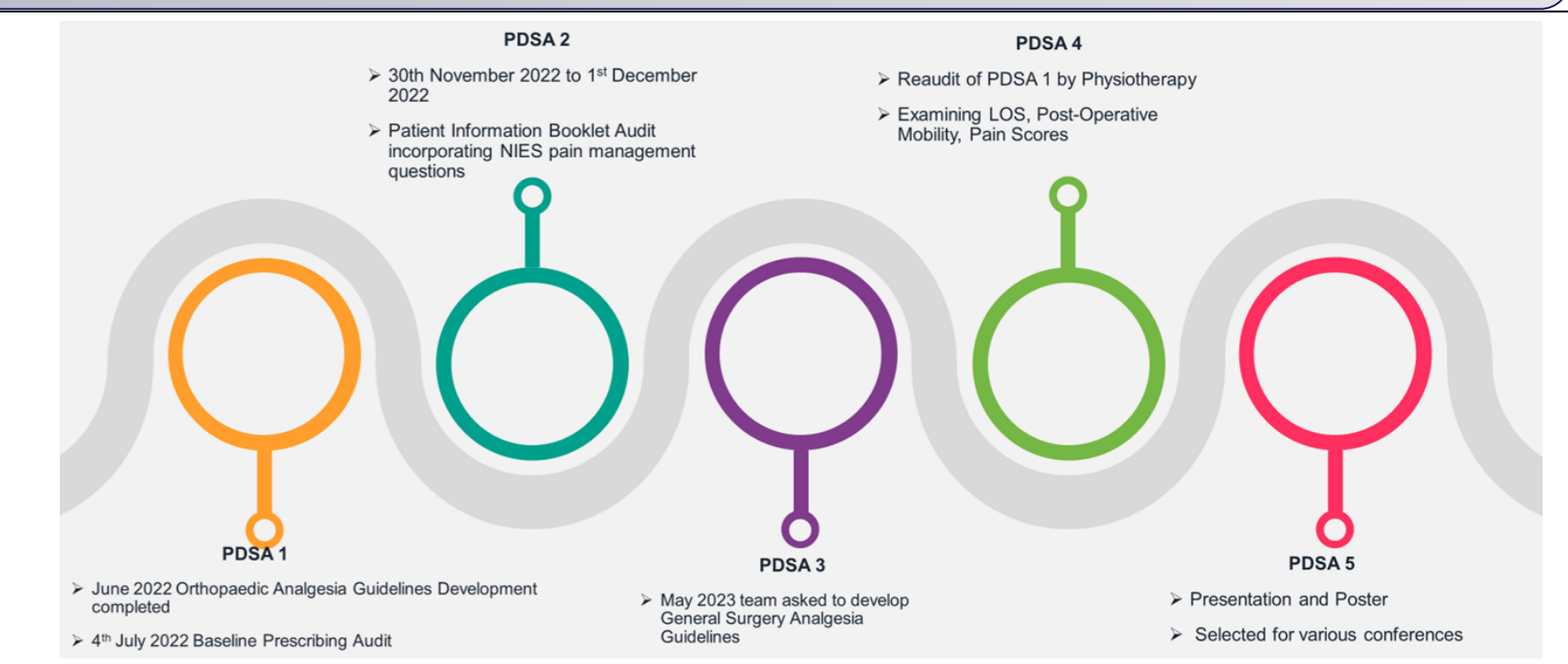
## CONCLUSIONS & FUTURE DEVELOPMENTS

Prescribing of analgesia and associated medicines can be improved with the provision of local guidelines accompanied by education and training which is intensified at the time of staff rotations. Staff were receptive to clear informative guidelines which are readily accessible on the orthopaedic ward.

**Project Developments:** The project has spread to general surgical areas, with a QI initiative to develop adapted documentation for this setting.

A separate audit surveyed patients experience from the perspective of pain management and incorporated relevant questions of the National Inpatient Experience Survey (NIES) and asked to them review the content of a Post-Operative Opioid Analgesia Patient Information Leaflet.

Physiotherapy reaudited all patients from the perspective of mobility and found a 30% improvement in the ability to mobilise patients within 24 hours of surgery between the baseline audit and reaudit groups.



References: 1-GUIDANCE FOR OPIOID PRESCRIBING FOR ACUTE NONCANCER PAIN, POSTOPERATIVE PAIN & POSTPROCEDURE PAIN HSE Jun 2022 <https://www.hse.ie/eng/collect/ceec97d-pharmacological-management-of-cancer-pain-in-adults/>; 2-Our Lady's Hospice Harold's Cross <https://www.hse.ie/eng/collect/ceec97d-pharmacological-management-of-cancer-pain-in-adults/>; 3-Renal Drug Database <https://www.hse.ie/eng/collect/ceec97d-pharmacological-management-of-cancer-pain-in-adults/>; 4-Pharmacological Management of Cancer Pain in Adults, National Clinical Effectiveness Committee Nov 2015 <https://www.gov.ie/en/collect/ceec97d-pharmacological-management-of-cancer-pain-in-adults/>; 5-Mellar et al 9(2020)Tapering opioids: a comprehensive qualitative review <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7318313/>; 6- WHO Analgesic Ladder Aabha A. Anekar, Marco Cascella, May 17, 2020. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7318313/>; 7. Controlled-release opioids cause harm and should be avoided in management of postoperative pain in opioid naïve patients British Journal of Anaesthesia Editorial October 19, 2018 <https://doi.org/10.1016/j.bja.2018.09.005>; 8. Management of Post-operative Nausea and Vomiting (PONV) Greater Glasgow and Clyde(GGC) NHS Medicines Adult Therapeutics Handbook November 2020 <https://handbook.ggcmedicines.org.uk/guidelines/pain-post-operative-nausea-and-vomiting-pov/>; 9. Pathophysiology and management of opioid-induced constipation: European expert consensus statement by Adam D; Asbjorn M Drewes; Giuseppe Chiaroni; Roberto De Giorgio; Tony O'Brien; Bart Morlion and Jan Tack. United European Gastroenterology Journal 2019, Vol. 7(1) 7–20 <https://journals.sagepub.com/doi/10.1177/2050641618819305>; 10. Considerations for the inpatient management of Parkinson's disease The Pharmaceutical Journal 20 March 2020 By Maria Nawaz & Oyinkansola Close <https://pharmaceuticaljournal.com/articles/considerations-for-the-inpatient-management-of-parkinsons-disease>

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