To Improve the Efficiency of Prescribing Analgesic Pathway Medication for Primary Hip/ Knee and Spinal Surgery Using a Pre-printed Chart

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Introduction

•Hinchingbrooke Hospital, Huntingdon, embarked on a new NHS/Private venture after Circle Healthcare were awarded the contract to manage the district general hospital early in 2012. However in 2015 Hinchingbrooke reverted back to NHS management.

• As part of the venture with Circle/and Orthopaedic elective arthroplasty services were reviewed and project groups were established amongst clinicians who reviewed the pathways of patients from GP or self referral through to discharge from the acute setting. Hip and knee arthroplasty surgery were the areas identified as the project focus. Quality improvement measures were defined and results were expected to be achieved within 100 days.

•Circle supported the development of the teams' pre-existing clinical vision as financial constraints had previously compromised service improvements. The project team identified inconsistencies with anaesthetic/post-operative analgesic provision. Unacceptable post-operative pain control was reported by patients particularly following knee surgery. Also suboptimal medical management and delayed mobilisation was observed by staff. Blood transfusion rates were 34% and the average length of stay was 5.6 days. These factors were taken into consideration when setting the project aims.

•The multidisciplinary, (MDT), project team included nursing, physiotherapy, anaesthetic and pharmacy staff.

Aim

The project group set the overall aim to be that of improving the patient experience following arthroplasty surgery. This was subdivided into two project work streams.

Project 1: To promote early mobilisation and reduce length of stay ,(LoS).

Project 2: To reduce post-operative pain and optimise post-operative recovery.

For this poster presentation the authors are discussing the implementation of a pre-printed prescription chart only, as part of project 2

Method

A standardised analgesic /anaesthetic pathway was introduced following a review of current research/best practice.

PCA's usage was reviewed with a plan to reduce / stop use for this group of patients

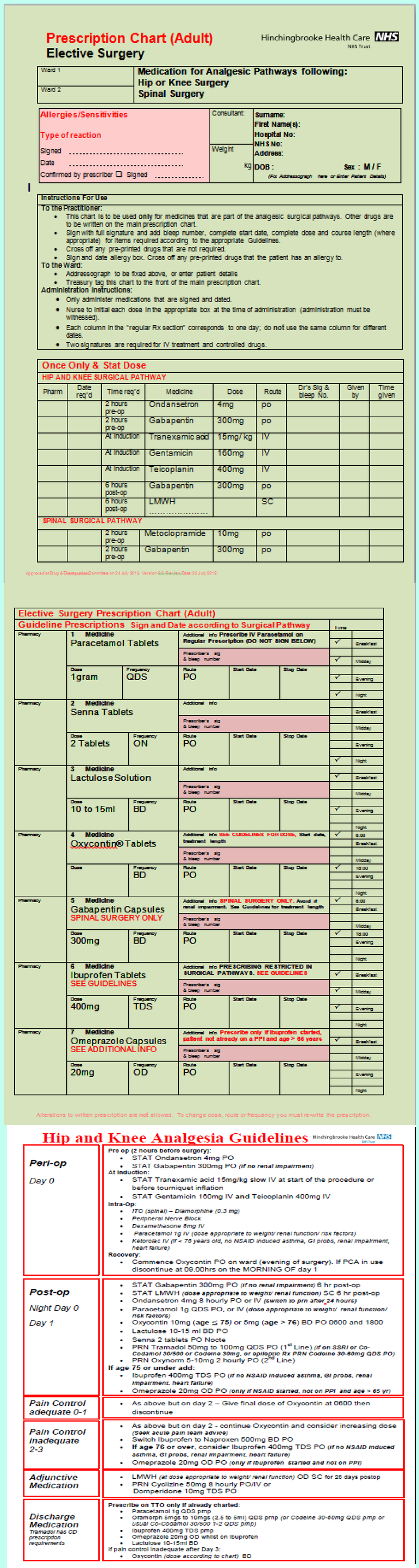
Robust data collection with regard to compliance with prescribing guidelines was commenced by the pain team and pharmacy

Identify issues around length of time required to prescribe medication

Designed a pre printed prescription chart with all planned pathway medication

Conduct an audit to assess impact on work load of the pre printed charts.

Extended the analgesic pathway to include Spinal surgery



Prescription Chart (Adult)
Elective Surgery

Hinchingbrooke Health Care NHS
NHS Trust

Ward 1
Ward 2

Medication for Analgesic Pathways following:
Hip or Knee Surgery
Spinal Surgery

Allergies/Sensitivities
Type of reaction
Signed .....
Date .....
Confirmed by prescriber ☐ Signed .....

Consultant:
Weight kg

Surname:
First Name(s):
Hospital No:
NHS No:
Address:
DOB : Sex : M / F
(Fix Addressograph here or Enter Patient Details)

Instructions For Use

To the Practitioner:
- This chart is to be used only for medicines that are part of the analgesic surgical pathways. Other drugs are to be written on the main prescription chart.
- Sign with full signature and add bleep number, complete start date, complete dose and course length (where appropriate) for items required according to the appropriate Guidelines.
- Cross off any pre-printed drugs that are not required.
- Sign and date allergy box. Cross off any pre-printed drugs that the patient has an allergy to.

To the Ward:
- Addressograph to be fixed above, or enter patient details
- Treasury tag this chart to the front of the main prescription chart.

Administration Instructions:
- Only administer medications that are signed and dated.
- Nurse to initial each dose in the appropriate box at the time of administration (administration must be witnessed).
- Each column in the "regular Rx section" corresponds to one day; do not use the same column for different dates.
- Two signatures are required for IV treatment and controlled drugs.

Once Only & Stat Dose

HIP AND KNEE SURGICAL PATHWAY

Pharm	Date req'd	Time req'd	Medicine	Dose	Route	Dr's Sig & bleep No.	Given by	Time given
		2 hours pre-op	Ondansetron	4mg	po			
		2 hours pre-op	Gabapentin	300mg	po			
		At induction	Tranexamic acid	15mg/ kg	IV			
		At induction	Gentamicin	160mg	IV			
		At induction	Teicoplanin	400mg	IV			
		6 hours post-op	Gabapentin	300mg	po			
		6 hours post-op	LMWH		SC			
SPINAL SURGICAL PATHWAY								
		2 hours pre-op	Metoclopramide	10mg	po			
		2 hours pre-op	Gabapentin	300mg	po			

Approved at Drug & Therapeutics Committee on 24 July 2015. Version 6.0 Review Date: 23 July 2018

Elective Surgery Prescription Chart (Adult)
Guideline Prescriptions Sign and Date according to Surgical Pathway

Pharmacy					Time
	1 Medicine: Paracetamol Tablets	Additional info: Prescribe IV Paracetamol on Regular Prescription (DO NOT SIGN BELOW)			✓ Breakfast
		Prescriber's sig & bleep number			✓ Midday
	Dose: 1gram / Frequency: QDS	Route: PO	Start Date	Stop Date	✓ Evening
					✓ Night
	2 Medicine: Senna Tablets	Additional info			Breakfast
		Prescriber's sig & bleep number			Midday
	Dose: 2 Tablets / Frequency: ON	Route: PO	Start Date	Stop Date	Evening
					✓ Night
	3 Medicine: Lactulose Solution	Additional info			✓ Breakfast
		Prescriber's sig & bleep number			Midday
	Dose: 10 to 15ml / Frequency: BD	Route: PO	Start Date	Stop Date	✓ Evening
					Night
	4 Medicine: Oxycontin® Tablets	Additional info: SEE GUIDELINES FOR DOSE. Start date, treatment length			✓ 6:00 Breakfast
		Prescriber's sig & bleep number			Midday
	Dose: / Frequency: BD	Route: PO	Start Date	Stop Date	✓ 18:00 Evening
					Night
	5 Medicine: Gabapentin Capsules SPINAL SURGERY ONLY	Additional info: SPINAL SURGERY ONLY. Avoid if renal impairment. See Guidelines for treatment length			✓ 6:00 Breakfast
		Prescriber's sig & bleep number			Midday
	Dose: 300mg / Frequency: BD	Route: PO	Start Date	Stop Date	✓ 18:00 Evening
					Night
	6 Medicine: Ibuprofen Tablets SEE GUIDELINES	Additional info: PRESCRIBING RESTRICTED IN SURGICAL PATHWAYS. SEE GUIDELINES			✓ Breakfast
		Prescriber's sig & bleep number			✓ Midday
	Dose: 400mg / Frequency: TDS	Route: PO	Start Date	Stop Date	✓ Evening
					Night
	7 Medicine: Omeprazole Capsules SEE ADDITIONAL INFO	Additional info: Prescribe only if Ibuprofen started, patient not already on a PPI and age > 65 years			✓ Breakfast
		Prescriber's sig & bleep number			Midday
	Dose: 20mg / Frequency: OD	Route: PO	Start Date	Stop Date	Evening
					Night

Alterations to written prescription are not allowed. To change dose, route or frequency you must re-write the prescription.

Hip and Knee Analgesia Guidelines Hinchingbrooke Health Care NHS

Peri-op *Day 0*	**Pre op (2 hours before surgery):** • STAT Ondansetron 4mg PO • STAT Gabapentin 300mg PO *(if no renal impairment)* **At induction:** • STAT Tranexamic acid 15mg/kg slow IV at start of the procedure or before tourniquet inflation • STAT Gentamicin 160mg IV **and** Teicoplanin 400mg IV **Intra-Op:** • *ITO (spinal) – Diamorphine (0.3 mg)* • *Peripheral Nerve Block* • *Dexamethasone 8mg IV* • *Paracetamol 1g IV (dose appropriate to weight/ renal function/ risk factors)* • *Ketorolac IV (if < 75 years old, no NSAID induced asthma, GI probs, renal impairment, heart failure)* **Recovery:** • Commence Oxycontin PO on ward (evening of surgery). If PCA in use discontinue at 09.00hrs on the MORNING OF day 1
Post-op *Night Day 0* *Day 1*	• STAT Gabapentin 300mg PO *(if no renal impairment)* 6 hr post-op • STAT LMWH *(dose appropriate to weight/ renal function)* SC 6 hr post-op • Ondansetron 4mg 8 hourly PO or IV *(switch to prn after 24 hours)* • Paracetamol 1g QDS PO, or IV *(dose appropriate to weight/ renal function/ risk factors)* • Oxycontin 10mg **(age ≤ 75)** or 5mg **(age > 76)** BD PO 0600 and 1800 • Lactulose 10-15 ml BD PO • Senna 2 tablets PO Nocte • PRN Tramadol 50mg to 100mg QDS PO (1st Line) *(if on SSRI or Co-Codamol 30/500 or Codeine 30mg, or epileptic Rx PRN Codeine 30-60mg QDS PO)* • PRN Oxynorm 5-10mg 2 hourly PO (2nd Line) **If age 75 or under add:** • Ibuprofen 400mg TDS PO *(if no NSAID induced asthma, GI probs, renal impairment, heart failure)* • Omeprazole 20mg OD PO *(only if NSAID started, not on PPI and age > 65 yr)*
Pain Control adequate *0-1*	• As above but on day 2 – Give final dose of Oxycontin at 0600 then discontinue
Pain Control inadequate *2-3*	• As above but on day 2 - continue Oxycontin and consider increasing dose *(Seek acute pain team advice)* • Switch Ibuprofen to Naproxen 500mg BD PO • **If age 76 or over**, consider Ibuprofen 400mg TDS PO *(if no NSAID induced asthma, GI probs, renal impairment, heart failure)* • Omeprazole 20mg OD PO *(only if Ibuprofen started and not on PPI)*
Adjunctive Medication	• LMWH *(at dose appropriate to weight/ renal function)* OD SC for 28 days postop • PRN Cyclizine 50mg 8 hourly PO/IV or Domperidone 10mg TDS PO
Discharge Medication *Tramadol has CD prescription requirements*	**Prescribe on TTO only if already charted:** • Paracetamol 1g QDS prn • Oramorph 5mgs to 10mgs (2.5 to 5ml) QDS prn *(or Codeine 30-60mg QDS prn or usual Co-Codamol 30/500 1-2 QDS prn)* • Ibuprofen 400mg TDS prn • Omeprazole 20mg OD whilst on Ibuprofen • Lactulose 10-15ml BD If pain control inadequate after Day 3: • Oxycontin *(dose according to chart)* BD

Results

- Better consistency of prescribing to protocol
- Reduction in prescribing errors due to increased legibility
- Pre-written pharmacy advice to Doctors & Nurses
- Increasing clinical time which had an impact on "Time to Care"
- Enhanced Nursing Care of patients by improving pain management
- Boosted patient experience feedback results for the ward

– Improved cost saving

Conclusion and Future Development

Due to achieving 100% compliance with this chart, pre printed charts for the surgical pathways below were implemented

- Fractured Neck of Femurs
- Colorectal Laparoscopic and open surgery

Future plan to

- To incorporate all elective analgesic pathways into the main body of the hospital prescription charts.
- The area of the chart will be the Acute Pain Management section and will be highlighted in green to differentiate between other sections.
- This is planned to further reduce the risk of errors.
- Audit to assess relative prescribing errors

SURGICAL ANALGESIC PATHWAYS ONLY

REGULAR PATHWAY MEDICATION
Sign and Date according to Guidelines

Medicine	Pharmacy	Time	Date	Date	Date	Date	Date	Date	Date
Paracetamol *MAXIMUM 3g I/V and 4g PO IN 24 HOURS* Dose* / Frequency TDS/QDS / Route PO/I/V Dr's Sig & Bleep No. / Start Date / Stop Date	*Dose Info 1g I/V only. If < 50 kg dose is 15mg /kg	✓ Breakfast ✓ Midday ✓ Evening ✓ Night							
Oxycodone MR Tablets *SEE NOTE BELOW FOR DOSE** Dose / Frequency BD / Route PO Dr's Sig & Bleep No. / Start Date	Pharmacy CD Additional info Stop Date After 3 days	✓ 06:00 Breakfast Midday ✓ 18:00 Evening Night							
Buprenorphine Patch # NOF SURGERY ONLY *NOT WITH OXYCODONE MR* Dose 5 microgram / Frequency 7days / Route TOP Dr's Sig & Bleep No. / Start Date	Pharmacy CD Additional info FOR PATIENTS NON-COMPLIANT WITH ORAL MEDICATION Stop Date After 7 days	✓ Breakfast Midday Evening Night							
Targinact® 10/5mg Tablet COLORECTAL SURGERY ONLY Dose 1-2 Tab / Frequency BD / Route PO Dr's Sig & Bleep No. / Start Date	Pharmacy CD Additional info Stop Date After 3 Days	✓ 06:00 Breakfast Midday ✓ 18:00 Evening Night							
Gabapentin Capsules SPINAL SURGERY ONLY Dose 300mg / Frequency BD / Route PO Dr's Sig & Bleep No. / Start Date	Pharmacy Additional info AVOID IF RENAL IMPAIRMENT Stop Date After 3 Days	✓ Breakfast Midday Evening ✓ Night							

***DOSE OF OXYCODONE MR:**
- **HIP, KNEE, SHOULDER SURGERY: 10mg (age ≤ 75) or 5mg (age ≥ 76)**
- **SPINAL, FRACTURED NECK OF FEMUR SURGERY: 5 mg**

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