CLINICAL GUIDELINE FOR THE MANAGEMENT OF INPATIENTS WITH PARKINSON'S DISEASE

1. Aim/Purpose of this Guideline

To assist all doctors and nurses in the care of inpatients with Parkinson's disease.

This guideline will cover the following:

Introduction
Principles of Parkinson's disease Medicines management
Nil by mouth patients (including conversion charts)
The confused / hallucinating patient
Contact details / where medicines are stored in RCHT

2. The Guidance

2.1 Introduction

Parkinson's disease (PD) is a common neurodegenerative disease affecting 2% or more of the population over the age of 80, characterised by a well recognised triad:

Bradykinesia (slowness of movement)
Rigidity (Increased muscle tone)
Resting tremor (absent in 30% of patients)

PD was first described by James Parkinson, and is primarily due to the degeneration of dopamine producing neurones.

Patients with PD present to a wide range of specialities, and may have a range of problems specific to PD including:

2.1.1 Drug-related complications such as dyskinesia, dopamine agonist withdrawal syndrome and rarely neuroleptic malignant like syndrome and even death.

2.1.2 Complications related to the motor control of their PD, such as poor swallow / aspiration, falls, rigidity / slow rehabilitation; these may occur as a result of difficulties ensuring compliance with complex medication regimes.

2.1.3 Non-motor complications such as constipation, depression, sleep disorders, postural hypotension, dementia and hallucinations.

It is well recognised that **patients with PD have increased morbidity, mortality, and longer lengths of stay than other patients**, and the purpose of this guideline is to assist in the management of these patients during their time on the ward.

2.2 Medicines management

2.2.1 Prescribe normal PD meds as taken at home if possible

2.1.1.1. Check times meds normally taken: these may not be the same as nursing drug rounds

2.1.1.2. Patients should self administer if deemed competent to do so: *please refer to current hospital guidelines on self – administration (SAM)*

2.1.1.3. Downloading last PD clinic letter from MAXIMS can be helpful

2.1.1.4. **Do not stop PD medication** – obtain from pharmacy / out of hours emergency drug cupboard etc

2.1.1.5. **Do not give patients with PD the following drugs, as they can exacerbate the symptoms of PD:**

Prochlorperazine(Stemetil)
Metoclopramide (Maxalon)
Cyclizine
Haloperidol and other antipsychotics
Chlorpheniramine and other older generation / sedating antihistamines
Lithium

Antiemetic of choice is **domperidone**. This can be given orally (10-20 mg TDS – tablet or liquid formulation), via NG (10-20 mg liquid TDS), or PR (30 mg BD suppository).
Note: higher doses of domperidone are associated with an increase cardiac risk (patients>60).

Antipsychotic of choice if absolutely necessary is **quetiapine** (25 mg once daily, increase to BD if necessary).

2.2.2 If patients are unable to take their normal medication

Missing PD meds may be tolerated in some patients with minimal consequences, in others may become immobile, rigid, or rarely develop neuroleptic malignant –like syndrome with fever, confusion, raised CK and even death.

PD meds is on the list of critical medicines. A DATIX must be completed if more than 2 doses missed / omitted.

2.2.2.1 Surgical patients

These patients are at **higher risk** of aspiration pneumonia and post op respiratory failure.

Consider regional anaesthesia if at all possible.

Try and plan timing of surgery to minimise missing of essential PD meds whist NBM.

For prolonged periods of NBM, please refer to NBM guidelines below.

2.2.2.2 Medical patients with poor swallow

Refer to **Speech and Language therapy** (SALT) as soon as possible.

Consider dispersible alternatives to tablets if patient can manage liquids.

If these are not appropriate please refer to NBM guidelines below.

2.3 Nil by Mouth patients

Place an NG tube a.s.a.p. after the patient is recognised as needing to be NBM.

2.3.1 The following medications can be given via NG tube:

Normal prescription	Method of administration / alternative
Madopar (cobeneldopa)	**Madopar dispersible**, same doses as tablets note: CR formulations require a slight dose reduction
Sinemet (cocareldopa)	Standard formulations **disperse in water**, alternatively convert to equivalent dose of dispersible madopar Note: CR formulations require a slight dose reduction
Entacapone (Comtess)	**Disperses less easily** Enteral tube needs to be flushed well after use Note: will not result in neuroleptic malignant like syndrome if omitted; therefore can be safely omitted, as long as Ldopa preparations continue to be given.
Stalevo (combination of cobeneldopa / entacapone)	**Give equivalent doses of madopar dispersible** as above + entacapone as above
Selegiline / rasagiline	Zelapar melt (dissolves on tongue) 1.25 mg equivalent to 10 mg selegiline
Amantadine	Liquid available (50mg / 5ml)
Ropinirole	Maintain same doses - CRUSH tablets
Ropinirole XL	Convert to standard ropinirole and crush as above
Pramipexole	Maintain same doses – CRUSH tablets
Pramipexole PR	Convert to standard pramipexole and crush as above

2.3.2 **Dopamine agonists can be continued, or converted to patch formulations**:

2.3.2.1 **Ropinirole (*Requip*)/ Pramipexole (*Mirapexin*)** can be given **short term** (48 hours) via NG by crushing as above (unlicensed use).

2.3.2.2 Longer term likely to block NG tube, therefore switch to rotigotine patch (see table below)

2.3.2.3 Patients already established on **rotigotine**(*Neupro,* transdermal patch) or **apomorphine** (SC rescue injections or pump) – continue normal doses

Rotigotine patch	Replacing patient's normal prescription
2 mg patch	Ropinirole XL 2mg OD Ropinirole 750 mcg TDS Pramipexole PR 260 mcg OD Pramipexole 88mcg TDS
4 mg patch	Ropinirole XL 4 mg Ropinirole 1 mg TDS Pramipexole PR 520 mcg Pramipexole 180 mcg TDS
6 mg patch	Ropinirole XL 6 mg Ropinirole 2 mg TDS Pramipexole PR 1.05 mcg Pramipexole 350 mcg TDS
8 mg patch	Ropinirole XL 8 mg Ropinirole 3 mg TDS Pramipexole PR 1.57 mcg Pramipexole 530 mcg TDS
10-12 mg	Ropinirole XL 10-12 mg Ropinirole 4mg TDS Pramipexole PR 2.1 mg Pramipexole 700 mcg TDS
14 mg	Ropinirole XL 16 mg Ropinirole 6mg TDS Pramipexole PR 2.62 mg Pramipexole 880 mcg TDS

A rotigotine patch may also be considered in patients on Ldopa preparations who do not tolerate an NG tube. Please ask for advice in this scenario.

Note: **apomorphine is not a suitable alternative dopamine agonist for most patients in the acute setting**: it has significant side effects, requiring pre-treatment with domperidone and discontinuation of other PD meds for 48 hours.
It should only be considered under expert guidance.

Please review response to alternative preparations and adjust doses if necessary.

2.4 Management of the confused/hallucinating PD patient

2.4.1 Exclude delirium

Please refer to the hospital guidelines for the management of acute confusion. Exclude infection or other underlying cause of worsening cognitive state.

2.4.2 If hallucinations are visual, and no other underlying cause found

2.4.2.1 Consider staged reduction in antiparkinsonian medication:

All anti PD treatments can worsen hallucinations.
The general principle is to **reduce by a small amount the last drug added** (eg: by one step of dopamine agonist ladder, or by one dose of madopar / 24 hours).
Make only one drug alteration at a time, leaving time to assess clinical response in between of at least 1-2 days.
The drugs most likely to cause hallucinations are MAOI inhibitors (selegiline/rasagiline), and dopamine agonists, followed by COMT inhibitors and L-dopa based drugs.

Note: Dopamine agonists are recognised as a cause of impulse control disorder, including pathological gambling, binge eating and hypersexuality. They may need a staged reduction, and indeed discontinuation, if these symptoms are evident.

2.4.2.2 Never stop an antiparkinsonian drug suddenly (see above).

2.4.2.3 Consider rivastigmine as an effective treatment for visual hallucinations:

If a reduction in treatment is not advocated, due to an unacceptable reduction in mobility (1.5 mg bd initially or 4.6 mg transdermal patch / 24 hours).

2.4.3 If patient's safety or that of others is at risk

When there is no time for assessing the response to medication changes, and immediate intervention is required:

2.4.3.1 a short acting benzodiazepine such as **lorazepam** may be used if necessary (see hospital guidelines on the management of acute confusion).

2.4.3.2 if an antipsychotic is necessary, the recommended drug of choice is **quetiapine** (25 mg initially, can be increased to twice daily).

2.5 Further guidance

2.5.1 Please seek guidance from:

PD eldercare specialist (Drs M Purchas, R Bland – ext 2447)

Geriatrician of the day (ext 2447 or via switch)

Attending neurologist of the week (via mobile – contact through switchboard)

PD nurse specialist (telephone support only on 1655)

Dr J Lack (CRCH only)

Jenny Duckham (secretary for the Parkinson's disease service, ext 1634)

Hospital pharmacist (Lorraine Lanchbury has a particular interest in PD)

2.5.2 Obtaining Parkinson's Medications in RCHT – see appendix 1

3. Monitoring compliance and effectiveness

Element to be monitored	*Prescribing in Parkinson's inpatients* *Patient Questionnaire*
Leads	*Madeleine Purchas, Eldercare consultant (RCHT)* *Lynne Osborne, Nurse consultant in Parkinson's disease (PCH)*
Tool	*Parkinson's UK Get it on Time audit tool*
Frequency	*Eldercare Governance Meetings (monthly)* *Parkinson's Disease group meetings (monthly)*
Reporting arrangements	*Parkinson's disease Group* *Monthly meetings are minuted.*
Acting on recommendations and Lead(s)	*Parkinson's Disease Group* *Leads: Madeleine Purchas* *Lynne Osborne*
Change in practice and lessons to be shared	*Implementation of the guideline will be publicized to the Medical Directorate via the Grand Round and the Eldercare Meeting. It will also be presented to the Parkinson's Disease Engagement event on 17/04/2013 at RCHT Knowledge Spa* *Any required changes to practice will be identified and actioned within 6 months. A lead member of the team will be identified to take each change forward where appropriate. Lessons will be shared with all the relevant stakeholders*

4. Equality and Diversity

4.1. This document complies with the Royal Cornwall Hospitals NHS Trust service Equality and Diversity statement.

4.2. Equality Impact Assessment

Clinical Guideline for the management of inpatients with Parkinson's Disease	
Directorate and service area: Eldercare Department	Is this a new or existing Procedure? New
Name of individual completing assessment: Madeleine Purchas	Telephone: 01872 252447
1. Policy Aim*	To improve the management of inpatients with Parkinson's disease, with particular reference to medication.
2. Policy Objectives*	To ensure staff caring for inpatients with Parkinson's disease have access to appropriate guidance regarding complex medication regimes.
3. Policy – intended Outcomes*	Guideline accessible via the Documents Library. Reduction in medication errors for patients with Parkinson's disease. Improved care for patients with Parkinson's disease. Potential reduction in morbidity, length of stay and even mortality in this group of patients.
4. How will you measure the outcome?	Prescribing in patients with Parkinson's disease, using the Parkinson's UK Get it on Time tool
5. Who is intended to benefit from the Policy?	All inpatients with Parkinson's Disease.
6a. Is consultation required with the workforce, equality groups, local interest groups etc. around this policy? b. If yes, have these groups been consulted? c. Please list any groups who have been consulted about this procedure.	Yes Yes Eldercare group Neurology Consultants Parkinson's Disease group

Equality Group	Positive Impact	Negative Impact	No Impact	Reasons for decision
Age	√			This guideline may improve care in elderly patients who have Parkinson's disease
Disability	√			This guideline may improve care in patients with disability due to Parkinson's disease
Religion or belief			√	
Gender			√	
Transgender			√	
Pregnancy/ Maternity			√	
Race			√	
Sexual Orientation			√	
Marriage / Civil Partnership			√	

Appendix 1. Obtaining Parkinson's Medications

Obtain medication as soon as possible. Parkinson medication should be annotated with the words CRITICAL MEDICINE on chart and on non stock order. This will ensure priority is given to obtaining these medications urgently. If the pharmacy is open, call your ward pharmacist for advice. Check patient's locker, medicines brought in and previous ward if necessary.
If the pharmacy is closed, check the emergency cupboard located at the top of the pharmacy ramp, or call the on-call pharmacist for further advice. All critical medicines should be included in the emergency cupboard, a list and locations can be found on the pharmacy intranet site.

Administering Parkinson's medications

Ensure patient is prescribed medication at correct times, if a medicines reconciliation has not been done ask the ward pharmacist to check medication and timings. If the patient is not swallowing or nil by mouth get advice before omitting dose.

Appendix 2. Governance Information

Document Title	CLINICAL GUIDELINE FOR THE MANAGEMENT OF INPATIENTS WITH PARKINSON'S DISEASE (PD)				
Date Issued/Approved:	*05.06.2013*				
Date Valid From:	*01.07.2013*				
Date Valid To:	*01.07.2016*				
Directorate / Department responsible (author/owner):	Madeleine Purchas, Consultant in Eldercare				
Contact details:	01872 25 2447				
Brief summary of contents	Outline of the management of PD medicines, guideline on how to manage PD patients safely, in particular if they have poor swallow, are nil by mouth, or are confused / hallucinating.				
Suggested Keywords:	*Parkinson's disease* *Parkinson's, PD, PD medications* *Nil by mouth* *Hallucinations*				
Target Audience	RCHT	✓	PCT	✓	CFT
Executive Director responsible for Policy:	Medical Director				
Date revised:					
This document replaces (exact title of previous version):	New Document				
Approval route (names of committees)/consultation:	*RCHT Eldercare Group* *Neurology Consultants* *Parkinson's Disease Group*				
Divisional Manager confirming approval processes	Duncan Browne				
Name and Post Title of additional signatories	*None Required*				
Signature of Executive Director giving approval	{Original Copy Signed}				
Publication Location (refer to Policy on Policies – Approvals and Ratification):	Internet & Intranet	✓	Intranet Only		

Document Library Folder/Sub Folder	*Clinical / Eldercare*
Links to key external standards	**Parkinson's Disease: Diagnosis and management in primary and secondary care, June 2006 www.nice.org.uk/nicemedia/live/10984/30088/30088.pdf**
Related Documents:	**1. J Reid: Acute management of Parkinson's, Fife Parkinson's Service 2011** **2. S Lord: Acute Management of Parkinson's Disease patients with compromised swallow or nil by mouth, Betsi Cadwaldr University Health Board, March 2011** **3. MJ MacMahon, DG MacMahon: Management of Parkinson's disease in the acute hospital environment, *JR Coll Physicians* Edinb 2012; 42:157-62** **4. R Davies, Z Dhakam: Guidelines for the manangement of patients with Parkinson's disease admitted acutely, Ashford and St Peter's Hospitals 2011** **5. OHH Gerlach et al: Clinical problems in the hospitalized Parkinson's disease patient: Systematic review, *Movement Disorders* 2011 Feb 26(2):197-208** **6. Brennan K, Genever R: Algorithm for estimating parenteral dosed of drugs for Parkinson's disease, BMJ 2012: 341** **7. www.rpharms.com/support-pdfs/dhpcfinaldomperidone.pdf**
Training Need Identified?	*No*

Version Control Table

Date	Version No	Summary of Changes	Changes Made by *(Name and Job Title)*
05 April 13	*V1.0*	*Initial Issue*	*Madeleine Purchas Eldercare Consultant*

All or part of this document can be released under the Freedom of Information Act 2000

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This document is only valid on the day of printing

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Keep one copy and send a copy to Matron, Equality, Diversity and Human Rights, c/o Royal Cornwall Hospitals NHS Trust, Human Resources Department, Chyvean House, Penventinnie Lane, Truro, Cornwall, TR1 3LJ

A summary of the results will be published on the Trust's web site.

Signed _____

Date _____