

# **Parkinson's Disease – Management of Inpatients Clinical Guideline**

**V 3.0**

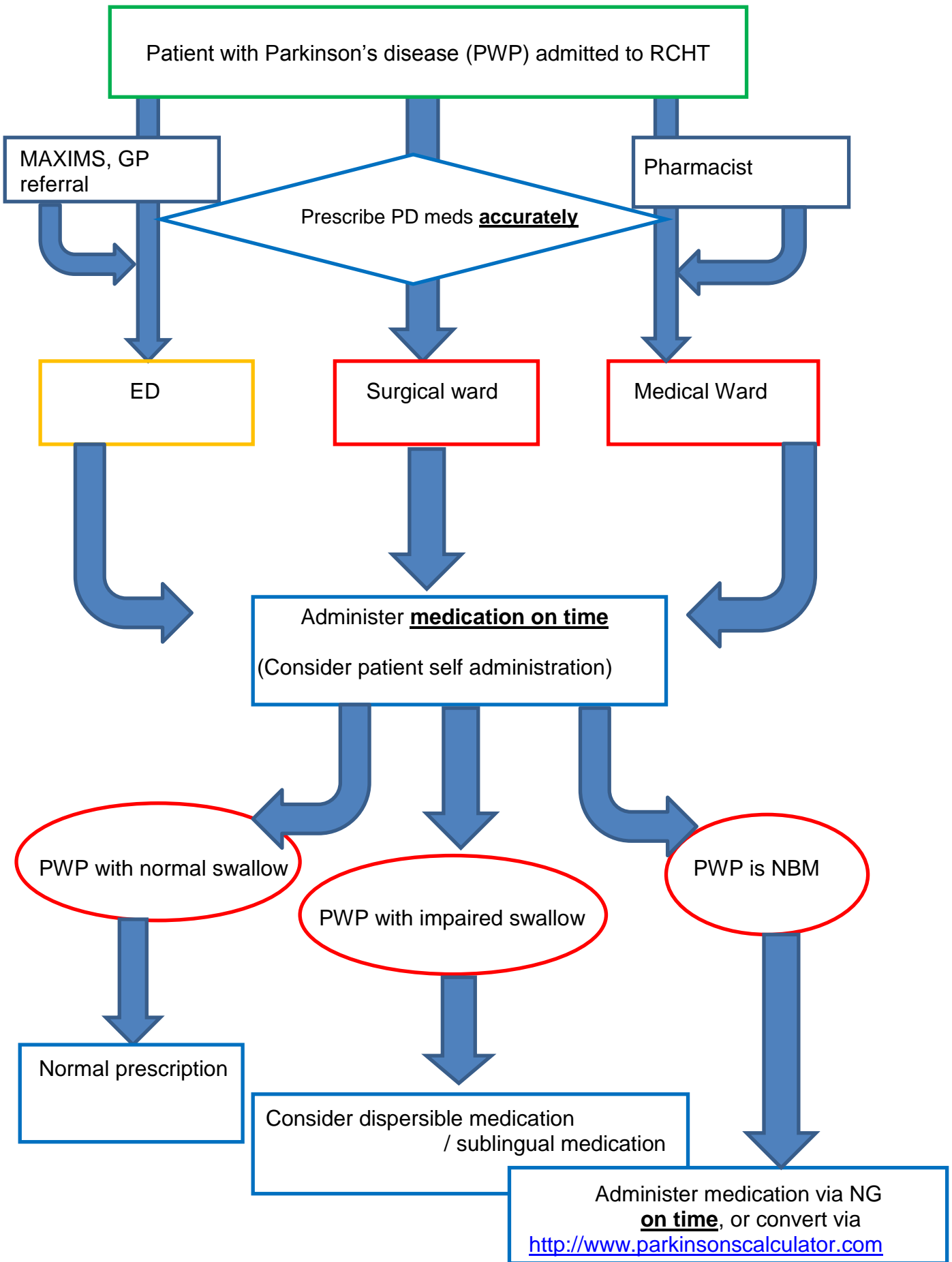
**January 2019**

## **Summary**

This guideline covers the management of patients with Parkinson's disease including management of medication, confusion, deep brain stimulation, contact list.

The management of medication is outlined on the flowchart below.

If urgent advice is required please ring geriatrician via RCHT switchboard 01872 250000.



## 1. Aim/Purpose of this Guideline

1.1 The aim is to assist all doctors in the care of inpatients with Parkinson's disease. This guideline will cover the following:

- Principles of Parkinson's disease Medicines management
- Nil by mouth patients (including conversion charts)
- The confused / hallucinating patient
- Deep Brain Stimulators
- Contact details / where medicines are stored in RCHT
- Supporting patients with PD in hospital

### 1.2. Data Protection Act 2018 (General Data Protection Regulation – GDPR) Legislation

The Trust has a duty under the DPA18 to ensure that there is a valid legal basis to process personal and sensitive data. The legal basis for processing must be identified and documented before the processing begins. In many cases we may need consent; this must be explicit, informed and documented. We can't rely on Opt out, it must be Opt in.

The DPA18 covers how the Trust obtains, hold, record, use and store all personal and special category (e.g. Health) information in a secure and confidential manner. This Act covers all data and information whether held electronically or on paper and extends to databases, videos and other automated media about living individuals including but not limited to Human Resources and payroll records, medical records, other manual files, microfilm/fiche, pathology results, images and other sensitive data.

DPA18 is applicable to all staff; this includes those working as contractors and providers of services.

For more information about your obligations under the DPA18 please see the 'information use framework policy', or contact the Information Governance Team [rch-tr.infogov@nhs.net](mailto:rch-tr.infogov@nhs.net)

## 2. The Guidance

### 2.1 Introduction

2.1.1 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)

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

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

- **Drug-related complications** such as dyskinesia, dopamine agonist withdrawal syndrome, rarely neuroleptic malignant like syndrome and even death.
- **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.
- **Non-motor complications** such as constipation, depression, sleep disorders, postural hypotension, dementia and hallucinations.

2.1.4 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

### PRINCIPLES

1. **Prescribe PD medication regime usually taken at home as far as possible**  
(times may not be the same as nursing drug rounds).
2. **Use the freeform tick box on EPMA to prescribe specific times**
3. **Patients should self-administer if deemed competent to do so**  
(refer to current hospital guidelines on self – administration)
4. **Do not stop PD medication abruptly**  
(obtain from pharmacy / out of hours emergency drug cupboard etc.)
5. **Do not give patients with PD the following drugs (dopamine antagonists), as they can exacerbate the symptoms of PD:**

**Prochlorperazine**(Stemetil)

**Metoclopramide** (Maxalon)

**Cyclizine**

**Haloperidol** and other antipsychotics

Chlorpheniramine and other sedating antihistamines

Lithium

6. **Remember, people with PD and their carers have valuable expertise**

2.2.1 **Antiemetic** of choice is **domperidone**:

- orally (10-20 mg TDS – tablet or liquid formulation)
- via NG (10-20 mg liquid TDS)
- PR (30 mg BD suppositories)

*Note: higher doses of domperidone (more than 30 mg/24 hours) are associated with an increase cardiac risk (patients > age 60).*

2.2.2 **Antipsychotic** of choice is **quetiapine**:

- 25 mg once daily, increase to BD if necessary
- Only prescribe if absolutely necessary

2.2.3 **Please download** the last PD clinic letter from MAXIMS.

2.2.4 **If patients are unable to take their normal medication**

2.2.4.1 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.

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

## 2.3 Surgical patients

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


2.3.2 To reduce risks, consider the following:


- Consider **regional anaesthesia** if at all possible.
- **Plan surgery** to minimise missing essential PD meds whilst NBM (if possible).
- If prolonged periods of NBM, please refer to **NBM guidelines** below.
- Deep Brain Stimulators **should be switched off** prior to surgery (see below).

## 2.4 Patients with poor swallow

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

2.4.2 **Consider dispersible alternatives** to tablets if patient can manage liquids:

Cobeneldopa/ cocareldopa     dispersible form of cobeneldopa (Madopar)

Selegiline/rasagiline     melt form of selegiline (Zelapar)

Oral dopamine agonists     Convert to rotigotine patch (see table 2)

## 2.5 Nil by Mouth patients (NBM)

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

2.5.2 Medications given **via NG** are usually **preferable** to conversion to the transdermal route (closer to their normal medication regime)

2.5.3 For guidance on NG administration of medication – **see table 1**

2.5.4 If unable to place NG tube:

- Oral dopamine agonists can be converted to **Rotigotine** patch – **see table 2**
- Da agonist +Ldopa or Ldopa alone can be converted **via the calculator link: [www.parkinsonscalculator.com](http://www.parkinsonscalculator.com)**

**Table1 - NG Parkinson's drugs administration**

<b>Normal prescription</b>	<b>NG administration / alternative</b>
Madopar (co-beneldopa)	<b>Madopar dispersible</b> , same doses as tablets  note: CR formulations require a slight dose reduction
Sinemet (co-careldopa)	Standard formulations <b>disperse in water</b> , alternatively convert to equivalent dose of dispersible madopar  Note: CR formulations require a slight dose reduction
Entacapone (Comtess)	<b>Disperses less easily</b> Enteral tube needs to be flushed well after use  Note: will <u>not</u> result in neuroleptic malignant like syndrome if omitted; therefore can be safely omitted, as long as Ldopa preparations continue to be given.
Stalevo/StaneK (combination of co-beneldopa/ entacapone)	<b>Give equivalent doses of madopar dispersible</b> 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 (standard release)	Maintain same doses - <b>crush</b> tablets*
Ropinirole XL (Requip /Ippinia XL)	Convert to standard Ropinirole, divide over 3 doses and crush as above*
Pramipexole	Maintain same doses – <b>crush</b> tablets*
Pramipexole PR (Pipexus / Mirapexin)	Convert to standard Pramipexole, divide over 3 doses and crush as above*

\*Ropinirole and Pramipexole can be given short term (48 hours) via NG by crushing as above (unlicensed use). Longer term likely to block NG tube, therefore switch to Rotigotine transdermal patch



**Table 2 – Conversion of oral to transdermal dopamine agonist**

<b>Rotigotine patch</b>	<b>Replacing patient's normal prescription of agonist below</b>
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

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 any change in medication and adjust doses if necessary.

## 2.6 Management of the confused / hallucinating PD patient

### 2.6.1 Exclude delirium first

Please refer to RCHT guidelines for the management of delirium.  
Exclude infection/other underlying cause of worsening cognitive state.

2.6.2 If hallucinations are visual, and no other underlying cause found, consider staged reduction in PD medication, as all PD treatments can worsen hallucinations.

### PRINCIPLES - reducing PD medication

1. **Reduce by a small amount the last drug added** (e.g. reduce dopamine agonist to the next available dose down, or by 125mg dose of madopar /24 hours).
2. Make only **one drug alteration at a time**, leaving time to assess clinical response in between (at least 1-2 days).
3. **Never stop an antiparkinsonian drug suddenly**
4. **Consider rivastigmine as an effective treatment for visual hallucinations:** if reduction in PD treatment is not advocated, due to an unacceptable reduction in mobility (Rivastigmine 1.5 mg bd initially or 4.6 mg transdermal patch / 24 hours).

2.6.3 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.

### 2.6.4 If patient's safety or that of others is at risk:

2.6.4.1 Where there is no time for assessing the response to medication changes, and immediate intervention is required: a short acting benzodiazepine such as **Lorazepam** may be used if necessary (see RCHT guidelines on the management of delirium).

2.6.4.2 If an antipsychotic is necessary, the recommended drug of choice is **Quetiapine** (25 mg initially, can be increased to twice daily).

## 2.7 Deep Brain Stimulators and other advanced therapies

2.7.1 A very small number of patients with PD in Cornwall have been fitted with an implantable deep brain stimulator (DBS).

2.7.2 This device can be found under the skin, below the clavicle in a similar position to a pacemaker, and is controlled and adjusted by an **external hand held programmer**. Deep brain stimulators improve motor function and reduce the amount of PD medication required by the patient.

2.7.3 DBS usually needs to be **turned off prior to surgery**, so as not to be affected by cauterising equipment, for example. The person best able to do this is either the patient or the patient's partner/carer. **Do not alter the settings** on the DBS without further advice.

2.7.4 If you experience a problem with a DBS please contact the specialist nurse from the tertiary centre (see below).

**Support with Deep Brain Stimulators available from:**

DBS Specialist nurses for the Southwest (based in Bristol)

0117 4148269

0117 4148268

0117 4148260

PD Nurse Consultant (based CRCH)

01209 318048

Technical Support – 01923 212213

Out of hours please phone Bristol neurosurgical department – 0117 3403926

**2.7.5 Apomorphine infusion** – this is a dopamine agonist administered subcutaneously. If a patient is established on this treatment, it needs to be continued at the same dose/ rate. If assistance required please contact:

**APO – go Helpline:** 0844 880 1327

Or PD Nurse consultant 01209 318048

**2.7.6 Duo-DOPA** - this is cocareldopa in a gel form, delivered into the jejunum via a PEJ-J tube. This must be continued at the same prescribed rate the patient is usually on. If assistance required please contact:

**Duodopa helpline** 08004584410

Duodopa lead PD nurse

Duodopa nurse specialist: 07736 617642

Or PD Nurse consultant: 01209 318048

Problems with the PEJ-J tube – please liaise with Interventional Radiology.

Duodopa information folder is kept on the left (above the printer) in the Eldercare consultants' office.

## **2.8 Obtaining Parkinson's Medications in RCHT**

2.8.1 Obtain medication as soon as possible.

2.8.2 When ordering Parkinson medications, these should be annotated with the words **CRITICAL MEDICINE** on non-stock order. This will ensure priority is given to obtaining these medications urgently.

2.8.3 If the pharmacy is open, call your ward pharmacist for advice. Ask the ward pharmacist to check medication and timings (medicines reconciliation). Check medicines brought in, previous ward / patient's locker as appropriate.

2.8.4 If the pharmacy is closed, the **emergency cupboard is located at the top of the pharmacy ramp**. Please call the on-call pharmacist for any further advice.

2.8.5 Note: all critical medicines should be included in the emergency cupboard, a list and locations can be found on the pharmacy intranet site.

## **2.9 Supporting a good hospital admission for patients with PD**

Addressing other common issues in patients with PD can improve patient experience and outcomes.

### **2.9.1 Orthostatic hypotension**

This is a common problem in patients with PD, which is unfortunately further exacerbated by PD medications.

Non-pharmacological interventions include a good fluid intake.

Pharmacological treatments to be considered include **fludrocortisone** or **midodrine**.

### **2.9.2 Gastrointestinal symptoms**

**Constipation** and faecal impaction are common, and can exacerbate PD symptoms. Ensure good fluid intake, treat with laxatives as required.

### **2.9.3 Pneumonia**

Patients with PD are at risk of hospital acquired pneumonia. This can be due to aspiration if swallow is impaired, or simply as a result of immobility and/or a lengthier admission. Monitor chest signs and treat appropriately.

### **2.9.4 Falls / deterioration in mobility or function**

Patients with PD are at higher risk of falls, and hip fractures in particular. Their mobility can deteriorate rapidly, especially if their medication regime is not adhered to. Please involve physiotherapists and occupational therapists at an early stage. Consider if their bone health needs to be addressed.

**2.9.5 Nutrition, sleep, pain, saliva management** may also need to be addressed.

### **2.9.6 Involvement of carers**

Carers often play a vital role in supporting patients with PD. This may involve practical support – reminding to take medications, physical assistance with ADLs (Activities of Daily Living), and emotional support. They often have a wealth of knowledge about the patient's condition. They may also know about the existence of advanced directives, in patients approaching end of life care. Please **use their expertise**, and involve them with discharge planning from the outset.

## **2.10 Further guidance / advice**

### **2.10.1 Medical Advice available from:**

PD eldercare consultants with an interest in PD

RCHT secretary telephone: 01872 252084/2447

Geriatrician of the day via RCHT switch 01872250000

Neurologist of the week (via mobile – contact through switchboard)

MAXIMS referrals to eldercare / neurology

**2.10.2 Support with medication issues/EPMA available from:**

Prescribing Hospital pharmacists

**2.10.3 Nursing support available from:**

Specialist nurse for Older persons (RCHT based): 07990945829

PD nurse specialist - **01209 318048** (telephone support only)

Secretary - 01209 318005

Consultant nurse: 01209 318048

### 3. Monitoring compliance and effectiveness

Element to be monitored	Prescribing in Parkinson's inpatients (EPMA) Patient Questionnaires (PD audit alternate years – PD UK)
Leads	Madeleine Purchas, eldercare consultant (RCHT) Lynne Osborne, Nurse consultant in Parkinson's disease (PCH)
Tool	PD UK audit
Frequency	Eldercare Governance Meetings (monthly) Parkinson's Disease Strategy Group meeting (6 monthly)
Reporting arrangements	Meetings are minuted.
Acting on recommendations and Lead(s)	Madeleine Purchas, Lynne Osborne
Change in practice and lessons to be shared	Implementation of the guideline to be publicised to the Medical Directorate via Grand Round / Eldercare Meeting / email.  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 which can be found in the ['Equality, Diversity & Human Rights Policy'](#) or the [Equality and Diversity website](#).

### **4.2. Equality Impact Assessment**

The Initial Equality Impact Assessment Screening Form is at Appendix 2.

## Appendix 1. Governance Information

<b>Document Title</b>	Parkinson's Disease – Management of Inpatients Clinical Guideline V3.0		
<b>Date Issued/Approved:</b>	07/09/2018		
<b>Date Valid From:</b>	January 2019		
<b>Date Valid To:</b>	January 2022		
<b>Directorate / Department responsible (author/owner):</b>	Madeleine Purchas		
<b>Contact details:</b>	01872 252447		
<b>Brief summary of contents</b>	The guideline is aimed at clinical staff to support their management of inpatients with Parkinson's disease, with particular reference to medication		
<b>Suggested Keywords:</b>	Parkinson's disease, medicine management, deep brain stimulation, hallucination		
<b>Target Audience</b>	RCHT ✓	CFT	KCCG
<b>Executive Director responsible for Policy:</b>	Mark Daly		
<b>Date revised:</b>	September 2018		
<b>This document replaces (exact title of previous version):</b>	Clinical guideline for the management of inpatients with Parkinson's disease V2.0		
<b>Approval route (names of committees)/consultation:</b>	Eldercare governance group, Divisional governance group, Neurology Consultants Parkinson's Disease group		
<b>Divisional Manager confirming approval processes</b>	Naomi Wakeley		
<b>Name and Post Title of additional signatories</b>	'Not Required'		
<b>Name and Signature of Divisional/Directorate Governance Lead confirming approval by specialty and divisional management meetings</b>	{Original Copy Signed}		
	Name: Andy Virr		

<b>Signature of Executive Director giving approval</b>	{Original Copy Signed}		
<b>Publication Location (refer to Policy on Policies – Approvals and Ratification):</b>	Internet & Intranet	✓	Intranet Only
<b>Document Library Folder/Sub Folder</b>	Clinical/Eldercare		
<b>Links to key external standards</b>	Parkinson's Disease in Adults – NICE NG71, July 2017		
<b>Related Documents:</b>	<p>1.UK Parkinson's Excellence Network – Consensus statement for the Optimisation of Parkinson's Medicines in Hospital (2017), parkinsons.org.uk</p> <p>2.J Reid: Acute management of Parkinson's, Fife Parkinson's Service 2011</p> <p>3. S Lord: Acute Management of Parkinson's Disease patients with compromised swallow or nil by mouth, Betsi Cadwaldr University Health Board, March 2011</p> <p>3. MJ MacMahon, DG MacMahon: Management of Parkinson's disease in the acute hospital environment, <i>JR Coll Physicians</i> Edinb 2012; 42:157-62</p> <p>4. R Davies, Z Dhakam: Guidelines for the management of patients with Parkinson's disease admitted acutely, Ashford and St Peter's Hospitals 2011</p> <p>5. OHH Gerlach et al: Clinical problems in the hospitalized Parkinson's disease patient: Systematic review, <i>Movement Disorders</i> 2011 Feb 26(2):197-208</p> <p>6. Brennan K, Genever R: Algorithm for estimating parenteral doses of drugs for Parkinson's disease, <i>BMJ</i> 2012: 341</p> <p>7. <a href="http://www.rpharms.com/support-pdfs/dhpcfinaldomperidone.pdf">www.rpharms.com/support-pdfs/dhpcfinaldomperidone.pdf</a></p>		
<b>Training Need Identified?</b>	No		

### Version Control Table

<b>Date</b>	<b>Version No</b>	<b>Summary of Changes</b>	<b>Changes Made by (Name and Job Title)</b>
05 April 13	V1.0	Initial Issue	Madeleine Purchas Eldercare consultant
January 2015	V 2.0	Additional guidance on Deep brain Stimulators Updated contact details for additional advice	Madeleine Purchas Eldercare consultant



Sept 2018	V 3.0	Updated version Including Parkinson's calculator link, updated contact details	Madeleine Purchas
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**This document is to be retained for 10 years from the date of expiry.**  
**This document is only valid on the day of printing**

**Controlled Document**


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## Appendix 2. Initial Equality Impact Assessment Form

***This assessment will need to be completed in stages to allow for adequate consultation with the relevant groups.***

<p><i>Name of Name of the strategy / policy /proposal / service function to be assessed</i></p> <p>Parkinson's Disease – Management of Inpatients Clinical Guideline V3.0</p>						
<p><b>Directorate and service area:</b></p> <p>Medical directorate / Eldercare department</p>			<p><b>Is this a new or existing Policy?</b></p> <p>Existing</p>			
<p><b>Name of individual completing assessment:</b></p> <p>Madeleine Purchas</p>			<p><b>Telephone:</b></p> <p>01872 252447</p>			
<p>1. <i>Policy Aim*</i></p> <p><i>Who is the strategy / policy / proposal / service function aimed at?</i></p>		<p>The guideline is aimed at clinical staff to support their management of inpatients with Parkinson's disease, with particular reference to medication</p>				
<p>2. <i>Policy Objectives*</i></p>		<p>Improve the management of PD patients in RCHT</p>				
<p>3. <i>Policy – intended Outcomes*</i></p>		<p>Reduce medication errors in patients with Parkinson's Disease Ensure PD patients receive medication on time Reduce complications and thereby length of stay in PD patients</p>				
<p>4. <i>*How will you measure the outcome?</i></p>		<p>EPMA monitoring of PD prescriptions (whether medications are received on time) PD audit (PD UK)</p>				
<p>5. <i>Who is intended to benefit from the policy?</i></p>		<p>Patients with Parkinson's Disease</p>				
<p>6a <i>Who did you consult with</i></p>		<p>Workforce</p> <p>√</p>	<p>Patients</p>	<p>Local groups</p>	<p>External organisations</p> <p>√ (CFT)</p>	<p>Other</p>
<p>b). <i>Please identify the groups who have been consulted about this procedure.</i></p>		<p><b>Please record specific names of groups</b> Eldercare Department Neurology</p>				
<p>What was the outcome of the consultation?</p>		<p>Ratified</p>				

<b>7. The Impact</b>				
Please complete the following table. <b>If you are unsure/don't know if there is a negative impact you need to repeat the consultation step.</b>				
Are there concerns that the policy <b>could</b> have differential impact on:				
Equality Strands:	Yes	No	Unsure	Rationale for Assessment / Existing Evidence
<b>Age</b>		√		
<b>Sex</b> (male, female, trans-gender / gender reassignment)		√		
<b>Race / Ethnic communities /groups</b>		√		
<b>Disability -</b> Learning disability, physical impairment, sensory impairment, mental health conditions and some long term health conditions.		√		
<b>Religion / other beliefs</b>		√		
<b>Marriage and Civil partnership</b>		√		
<b>Pregnancy and maternity</b>		√		
<b>Sexual Orientation,</b> Bisexual, Gay, heterosexual, Lesbian		√		
<b>You will need to continue to a full Equality Impact Assessment if the following have been highlighted:</b>				
<ul style="list-style-type: none"> <li>You have ticked "Yes" in any column above and</li> <li>No consultation or evidence of there being consultation- this <u>excludes</u> any <i>policies</i> which have been identified as not requiring consultation. <b>or</b></li> <li>Major this relates to service redesign or development</li> </ul>				
8. Please indicate if a full equality analysis is recommended.			<b>Yes</b>	<b>No</b>
				<b>X</b>
9. If you are <b>not</b> recommending a Full Impact assessment please explain why.				
There are no adverse effects on any of the protected characteristics.				
Signature of policy developer / lead manager / director Frances Harrington			Date of completion and submission September 2018	

Names and signatures of members carrying out the Screening Assessment	1. Frances Harrington 2. Human Rights, Equality & Inclusion Lead	
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**Keep one copy and send a copy to the Human Rights, Equality and Inclusion Lead**  
c/o Royal Cornwall Hospitals NHS Trust, Human Resources Department, Knowledge Spa,  
Truro, Cornwall, TR1 3HD

**This EIA will not be uploaded to the Trust website without the signature of the Human Rights, Equality & Inclusion Lead.**

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

Signed \_\_Frances Harrington \_\_\_\_\_

Date \_\_\_\_September 2018\_\_\_\_\_