DERBYSHIRE JOINT AREA PRESCRIBING COMMITTEE
SHARED CARE AGREEMENT

Liothyronine in combination with levothyroxine for existing patients

(Liothyronine is DNP for new patients- see liothyronine position statement)

1. REFERRAL CRITERIA

- Shared Care is only appropriate if it provides the optimum solution for the patient.
- Prescribing responsibility will only be transferred when it is agreed by the consultant and the patient's GP that the patient's condition is stable or predictable.
- Patients will only be referred to the GP once the GP has agreed in each individual case.
- When transferred, the patient will be given a supply of liothyronine sufficient for 4 weeks maintenance therapy after a minimum of 3 months treatment (See appendix 1)

2. AREAS OF RESPONSIBILITY

GP responsibilities	Consultant responsibilities
1. To not initiate liothyronine in any new patients 2 Encourage patients to attend their annual follow-up appointment with a NHS endocrinologist for patients established on liothyronine 3 Follow specialist dosing and monitoring recommendations 4 To monitor side effects of treatment and seek advice from the specialist if necessary 5 Report any adverse events via the Yellow Card Scheme of the Medicines and Health Care Regulatory Agency (MHRA) at www.yellowcard.mhra.gov.uk 6 To liaise with the specialist regarding any complications of treatment 7 To deal with general health issues of the patient 8 To check for possible drug interactions when newly prescribing concurrent medication	**1.** To ensure that all alternative causes of symptoms have been excluded (See appendix 2) **2.** To assess the patient, establish the diagnosis and confirm the need for liothyronine **3.** Undertake baseline ECG if deemed appropriate. **4.** To prescribe, monitor and assess response biochemically and assess physical and psychological wellbeing after at least 3 months of treatment and until treatment dose is stabilised. **5.** Advise GP of frequency of TSH, free T4 and free T3 monitoring. **6.** For established patients agree a follow up schedule. At each appointment, after clinical review and discussion with patient, consider feasibility of switching to levothyroxine and/ or dose reduction in liothyronine. **7.** Inform GP of clinical reasons for continuing liothyronine and include dosing and monitoring information. **8.** If patient is suitable for switching, manage the switch to levothyroxine before transferring care of the patient back to the GP **9.** To be available for advice if the patient's condition changes and to arrange for the patient to be followed up as necessary

Patient responsibilities

1. Report to the specialist or GP if he/she does not have a clear understanding of the treatment.
2. Share any concerns in relation to treatment with liothyronine
3. Present rapidly to the GP or secondary care specialist should their condition significantly worsen.
4. Report any other adverse effects to the specialist or GP whilst taking liothyronine
5. Agree to attend for blood tests, specialist appointments and monitoring when required.

3. COMMUNICATION AND SUPPORT

i. Hospital contact:	ii. out of hours contact and procedures:
University Hospitals of Derby & Burton NHS Foundation Trust. Consultant/nurse via switchboard:01332 340131 Endocrinology team. **Chesterfield Royal Hospital Foundation Trust** Consultant via switchboard: 01246 277271	Pharmacy, UHDB, ask for on-call pharmacist via switchboard: 01332 340131 Endocrinology, UHDB, ask for on-call Endocrinologist Consultant via switchboard: 01332 340131 Contact the CRH on-call Medic for the relevant specialty via switchboard: 01246 277271

iii. Define the referral procedure from hospital to primary care prescriber & route of return should the patient's condition change As outlined in consultant responsibility.	

4. CLINICAL INFORMATION

i. Prescribed indications	• Liothyronine in combination with levothyroxine can be used to treat ongoing symptoms of hypothyroidism that have a significant impact on quality of life despite adequate biochemical resolution of hypothyroidism with levothyroxine monotherapy.
ii. Therapeutic summary	Liothyronine is a manufactured form of triiodothyronine, a thyroid hormone.
iii. Dose & Route of administration	Initially 10-20 micrograms daily; increased to a maximum of 60 micrograms daily in 2-3 divided doses, dose should be increased gradually, smaller initial doses given for the elderly. Daily doses of liothyronine over 60microcgram per day is outside of this shared care agreement. Method of administration Liothyronine should be taken orally. Based on cost effective grounds & information provided by the company the local Trusts have agreed that the **liothyronine tablets may be halved**, using the score line of the tablet, to help administer doses.
iv. Duration of treatment	Indefinite
v. Adverse effects Refer to the SPC for a full list of adverse effects & further information http://www.medicines.org.uk	**Frequency not known** (BNF) Angina pectoris; anxiety; arrhythmias; diarrhoea; fever; flushing; headache; hyperhidrosis; insomnia; muscle cramps; muscle weakness; palpitations; tremor; vomiting; weight decreased

Adverse Event	Action to be taken	By whom
Angina, arrhythmia	Stop Liothyronine, check TSH & discuss with specialist.	GP
Palpitations, restlessness, tremor, diarrhoea, headache, muscle cramps	Continue liothyronine, check TSH	GP

For a full list of all potential adverse event please refer to the SPC

vi. Monitoring Requirements	• Monitoring is by TSH levels measured from blood tests taken prior to the morning medication. • The aim of the treatment is to maintain TSH of 0.4-2.5mU/L with theT3 and T4 in the normal range. **<u>Consultant/ Specialist responsibility:</u>** Initial biochemical monitoring and treatment for at least 3 months and also following a dose change for at least 6-8 weeks. Annual follow-up to consider feasibility of switching to levothyroxine **<u>GP responsibility:</u>** Monitoring after dose stabilization which should only be required annually unless there is a change in symptoms that may warrant the checking of TSH levels.

vii. Clinically relevant drug interactions Refer to the SPC for a full list of adverse effects & further information http://www.medicines.org.uk	• Liothyronine sodium therapy may potentiate the action of anticoagulants. Phenytoin levels may be increased by liothyronine. Anticonvulsants, such as carbamazepine and phenytoin enhance the metabolism of thyroid hormones and may displace thyroid hormones from plasma proteins. Initiation or discontinuation of anticonvulsant therapy may alter liothyronine dose requirements. • If co-administered with cardiac glycosides, adjustment of dosage of cardiac glycoside may be necessary. • Colestyramine and colestipol given concurrently reduces gastrointestinal absorption of liothyronine. • Liothyronine raises blood sugar levels and this may upset the stability of patients receiving antidiabetic agents. • Liothyronine increases receptor sensitivity to catecholamines thus accelerating the response to tricyclic antidepressants. A number of drugs may affect thyroid function tests and this should be borne in mind when monitoring patients on liothyronine therapy. • Co-administration of oral contraceptives may result in an increased dosage requirement of liothyronine sodium. • Amiodarone may inhibit the de-iodination of thyroxine to triiodothyronine resulting in a decreased concentration of triiodothyronine with a rise in the concentration of inactive reverse triiodothyronine. • As with other thyroid hormones, Liothyronine may enhance effects of amitriptyline and effects of imipramine. • Metabolism of thyroid hormones accelerated by barbiturates and primidone (may increase requirements for thyroid hormones in hypothyroidism). • Requirements for thyroid hormones in hypothyroidism may be increased by oestrogens. **This list is not exhaustive. The manufacturer's summary of product characteristics (SPC) and the most current edition of the British National Formulary should be consulted for full information on contra-indications, warnings, side-effects and drug interactions.**
viii. Contraindications/ caution	Liothyronine is contraindicated in: • Known hypersensitivity to the drug or any of its excipients • Thyrotoxicosis Discuss with NHS Endocrinologist • Cardiac arrhythmias • Angina • Pregnancy
ix. Pregnancy, paternal exposure and breastfeeding	Pregnancy: Specialist to review. Safety during pregnancy is not known. The risk of foetal congenital abnormalities should be weighed against the risk to the foetus of untreated maternal hypothyroidism. Breastfeeding: Specialist to review. Liothyronine sodium is excreted into breast milk in low concentrations. This may interfere with neonatal screening programmes.
x. Additional information	Where patient care is transferred from one specialist service or GP practice to another, a new shared care agreement must be completed
xi. Supply of ancillary equipment	Not applicable
xii. Supply, storage and reconstitution instructions	Not applicable
xiii. To be read in conjunction with the following documents	• RMOC Shared Care Guidance • NHSE/NHSCC guidance – items which should not be routinely prescribed in primary care: guidance for CCGs

	• NHSE policy- Responsibility for prescribing between Primary & Secondary/Tertiary Care
xiv. Prepared by **Reviewed (2022)**	Dominic Moore- Lead Pharmacist Commissioning University Hospitals of Derby & Burton Derbyshire Guideline Group

This does not replace the SPC, which should be read in conjunction with it.
Date Prepared: October 2019 **Reviewed November 2022 Next Review Date**: October 2025

Sample transfer letter

{Insert Hospital Logo here}

Hospital No: «HOSPITAL_NUMBER» NHS No:
«NHS_NUMBER»

{Insert date}

PRIVATE & CONFIDENTIAL
«GP_TITLE» «GP_INITIALS» «GP_SURNAME»
«GP_ADDRESS_1»
«GP_ADDRESS_2»
«GP_POSTCODE»

DERBYSHIRE JAPC SHARED CARE AGREEMENT LETTER

Dear «GP_TITLE» «GP_SURNAME»

«FORENAME_1» «SURNAME» «DATE_OF_BIRTH»
«CURRENT_ADDRESS_1» «CURRENT_ADDRESS_2» «CURRENT_POSTCODE»

Your patient was seen on ***{Insert date}*** with a diagnosis of ***{Insert diagnosis}***. I have initiated the following medication ***{Insert drug name}*** and am writing to ask you to participate in the shared care for this patient.

This medication has been accepted as suitable for shared care by the Derbyshire Joint Area Prescribing Committee (JAPC). I agree to the secondary care responsibilities set out in the shared care agreement for this medication (available from www.derbyshiremedicinesmanagement.nhs.uk/clinical_guidelines/shared_care_guidelines). I am therefore requesting your agreement to share the care of this patient. Where preliminary tests are set out in the agreement I have carried these out and results are below.

Dose Regimen	Date ***{Insert medicine name}*** started	Date for GP to start prescribing ***{Insert medicine name}*** from
The baseline test results are (if applicable):		

I can confirm that the following has happened with regard to this treatment:

	Specialist to complete
The patient has been initiated on this therapy and has been on an optimised dose for the ing period of time:	
Baseline investigation and monitoring as set out in the shared care documents have been completed and were satisfactory	*Yes / No*
The condition being treated has a predictable course of progression and the patient can be suitably maintained by primary care	*Yes / No*
The risks and benefits of treatment have been explained to the patient	*Yes / No*
The roles of the specialist/specialist team/ Primary Care Prescriber / Patient and pharmacist have been explained and agreed	*Yes / No*
The patient has agreed to this shared care arrangement, understands the need for ongoing monitoring, and has agreed to attend all necessary appointments	*Yes / No*
I have enclosed a copy of the shared care protocol which covers this treatment/the SCP can be found here (insert electronic/ web link)	*Yes / No*
I have included with the letter copies of the information the patient has received	*Yes / No*
I have provided the patient with sufficient medication to last until	
I have arranged a follow up with this patient in the following timescale	

If you do **NOT** wish to participate in shared care for this patient, usually under clinical grounds, please complete the attached form.

Yours sincerely

{Consultant name}

GP RESPONSE TO SHARED CARE (only complete & send if **NOT** participating in shared care*)

* For completeness please record medication on GP clinical system as per guidance- 'Recording medicines prescribed and issued by other Healthcare Providers'

Shared care is produced by GPs and specialists knowledgeable in the field of that drug usage. The shared care has been approved by the JAPC. This allows a more convenient service to the patient and cost effective use of NHS resources.

Patient:	NHS No:
Consultant:	Medicine requested for shared care:

I will **NOT** be undertaking the GP responsibilities as described in the agreed shared care guideline. My clinical reasons for declining shared care for this patient are listed in the box below:

		Tick which apply
1.	**The prescriber does not feel clinically confident in managing this individual patient's condition, and there is a sound clinical basis for refusing to accept shared care** As the patients primary care prescriber I do not feel clinically confident to manage this patient's condition because *[insert reason]*. I have consulted with other primary care prescribers in my practice who support my decision. This is not an issue which would be resolved through adequate and appropriate training of prescribers within my practice. **I have discussed my decision with the patient and request that prescribing for this individual remain with you as the specialist, due to the sound clinical basis given above.**	
2.	**The medicine or condition does not fall within the criteria defining suitability for inclusion in a shared care arrangement** As the medicine requested to be prescribed is not included on the national list of shared care drugs as identified by RMOC or is not a locally agreed shared care medicine I am unable to accept clinical responsibility for prescribing this medication at this time. **Until this medicine is identified either nationally or locally as requiring shared care the responsibility for providing this patient with their medication remains with you**	
3.	**A minimum duration of supply by the initiating clinician** As the patient has not had the minimum supply of medication to be provided by the initiating specialist I am unable to take clinical responsibility for prescribing this medication at this time. Therefore can you please contact the patient as soon as possible in order to provide them with the medication that you have recommended. ***Until the patient has had the appropriate length of supply the responsibility for providing the patient with their medication remains with you.***	
4.	**Initiation and optimisation by the initiating specialist** As the patient has not been optimised on this medication I am unable to take clinical responsibility for prescribing this medication at this time. Therefore can you please contact the patient as soon as possible in order to provide them with the medication that you have recommended. ***Until the patient is optimised on this medication the responsibility for providing the patient with their medication remains with you.***	
5.	**Shared Care Protocol not received** As legal responsibility for clinical care lies with the clinician who signs the prescription, I need to ensure that I am in possession of sufficient clinical information for me to be confident to prescribe this treatment for my	

	patient and it is clear where each of our responsibilities lie to ensure the patient is safely managed**.** For this reason I am unable to take clinical responsibility for prescribing this medication at this time, therefore would you please contact the patient as soon as possible in order to provide them with the medication that you have recommended. ***Until I receive the appropriate SCP, responsibility for providing the patient with their medication remains with you.***	
6.	**Other (Primary Care Prescriber to complete if there are other reasons why shared care cannot be accepted)**	

Please do not hesitate to contact me if you wish to discuss any aspect of my letter in more detail and I hope to receive more information regarding this shared care agreement as soon as possible.

Yours sincerely

{GP name}
{Surgery}

Please send a copy of this response to the specialist/consultant requesting shared care

APPENDIX 1 Prescribing of liothyronine in combination with levothyroxine in Endocrinology: Hypothyroidism

Liothyronine Monotherapy

Liothyronine monotherapy is not recommended or supported by local endocrinologists in hypothyroidism.

Combination Levothyroxine and Liothyronine General Guidance

- Combination levothyroxine / liothyronine should not be used routinely in the management of hypothyroidism as there is insufficient population based clinical evidence to show that combination therapy is superior to levothyroxine monotherapy.

- There is insufficient evidence at present to specify the quality of life measures to be adopted during a trial of combination levothyroxine and liothyronine, or during a trial titration from liothyronine to levothyroxine.

APPENDIX 2 Some possible causes of persistent symptoms in euthyroid patients on levothyroxine

Endocrine /autoimmune	Haematological	End organ damage	Nutritional	Metabolic	Drugs	Lifestyle	Other
Diabetes mellitus Adrenal insufficiency Hypopituitarism Coeliac disease Pernicious anaemia	Anaemia Multiple myeloma	Chronic liver disease Chronic kidney disease Congestive cardiac failure	Deficiency of any of the following: Vitamin B12 Folate Vitamin D Iron	Obesity Hypercalcaemia Electrolyte imbalance	Beta-blockers Statins Opiates	Stressful life events Poor sleep pattern Work-related exhaustion Alcohol excess	Obstructive sleep apnoea Viral and postviral syndromes Chronic fatigue syndrome Carbon monoxide poisoning Depression and anxiety Polymyalgia rheumatic Fibromyalgia