NOTE: THIS DOCUMENT SUPERSEDES ALL EXISTING SHARED CARE GUIDELINES FOR AZATHIOPRINE AND MERCAPTOPURINE CURRENTLY IN-USE IN NORTH EAST LONDON

NHS
North East London
Barts Health NHS Trust
Homerton Healthcare NHS Foundation Trust
Barking, Havering and Redbridge University Hospital NHS Foundation Trust

SHARED CARE GUIDELINE

Azathioprine and mercaptopurine for patients within adult services (non-transplant indications)

This shared care agreement outlines suggested ways in which the responsibilities for managing the prescribing of **Azathioprine or Mercaptopurine** can be shared between the specialist, the patient and the patient's general practitioner (GP).

The patient's GP has been invited to participate in the shared care agreement. Sharing of care assumes positive communication and a decision between the clinical specialist (usually from secondary care, the GP based in primary care, patient and their carers where applicable). Note that not all treatments will be suitable for a shared care agreement.

Shared care criteria
Patients will have been stabilised, receiving a therapeutic dose of the drug with time allowed for common adverse events and side effects to have occurred before referral to the GP.

Response to shared care request
The patient's GP must agree in writing to the request for shared care within **14 days** of receiving the request. Shared care should **not** be assumed if a response is not received. The specialist should contact the patient's GP practice directly or the North East London Pharmacy and Medicines Optimisation Team (nelondonicb.prescribingqueries@nhs.net) if they do not receive a response within the expected timeframe. Template letters can be accessed here: https://primarycare.northeastlondon.icb.nhs.uk/home/meds/

Document control	
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This document should be read in conjunction with the NHSE policy – Responsibility for prescribing between Primary & Secondary/Tertiary Care

Contents

1. Indications State whether licensed or unlicensed locally agreed use	**Azathioprine** The licensed indications for azathioprine include: • Auto-immune chronic active hepatitis • Auto-immune haemolytic anaemia • Chronic refractory idiopathic thrombocytopenic purpura • Dermatomyositis • Inflammatory bowel disease (IBD) • Pemphigus vulgaris • Polyarteritis nodosa • Polymyositis • Pyoderma gangrenosum • Rheumatoid arthritis • Systemic lupus erythematosus (SLE) This shared care guideline also includes treatment of chronic inflammatory conditions where off-label use of azathioprine is appropriate, including, but not limited to the following specialities and conditions: • Dermatology (e.g. atopic eczema, immunobullous diseases) • Neurology (e.g. myasthenia gravis, demyelinating conditions) • Ophthalmology (e.g. uveitis, scleritis) • Oral medicine (e.g. Behçet's disease, refractory inflammatory oral disease) • Renal medicine (e.g. immune-mediated nephritis) • Respiratory disease (e.g. interstitial lung disease) • Rheumatology (e.g. inflammatory arthritis, connective tissue disease, vasculitis, giant cell arteritis) • Hepatology (e.g. IgG4 related disease)

Mercaptopurine

This shared care guideline includes treatment of chronic inflammatory conditions where off-label use of mercaptopurine is appropriate, including, but not limited to the following conditions:

- Inflammatory bowel disease
- Autoimmune encephalitis
- Autoimmune hepatitis
- Hepatology (IgG4 related disease)

This shared care guideline applies to adults aged 18 and over. **It does not include use of azathioprine or mercaptopurine for transplant or oncology indications.**

2. Patient pathway

Brief summary of the patient pathway

Indication/specialty	Prescribing initiated by	When prescribing would be transferred to primary care	Monitoring responsibilities	Treatment duration
Dermatology, Neurology, Ophthalmology, Oral Medicine, Renal, Respiratory Medicine, Rheumatology, Hepatology, Gastroenterology, Haematology	Specialist Clinic	• 2 – 3 months depending on patient specific factors. • Once dose is stable and investigation results are satisfactory as per specialist.	**Specialist:** Baseline investigations & blood tests **Gastroenterology / IBD**: Initial monitoring at week 2, 4, 8 and 12 **All other indications:** Initial monitoring every 2 weeks until stable dose for 6 weeks, then monthly for 3 months More frequent monitoring is appropriate in patients at higher risk of toxicity (see section 7)	Long term

					Further monitoring will be required following any changes in dose (see section 8) **Maintenance:** Blood tests every 3 months and more frequently in patients at higher risk of toxicity, as advised by the specialist team (see section 8) Vaccines (see section 8)	

Please see below for detailed prescribing information and specific monitoring parameters

3. Initiation and ongoing dose regime

Note

- ***Transfer of monitoring and prescribing to primary care is normally once the patient is on a stable dose and investigation results are satisfactory/stable.***
- ***The duration of treatment and frequency of review will be determined by the specialist, based on clinical response and tolerability.***
- ***All dose or formulation adjustments will be the responsibility of the initiating specialist unless directions have been discussed and agreed with the GP.***
- ***Termination of treatment will be the responsibility of the specialist.***

Initial stabilisation ***The loading period must be prescribed by the initiating specialist***
There is a wide dose range depending on the indication. The selected dose will be tailored to the individual patient and decided by the specialist. **The initial stabilisation period must be prescribed by the initiating specialist.**

Transfer of monitoring and prescribing to primary care is usually once patient is on a stable dose and investigation results are satisfactory/stable (usually 2 – 3 months depending on patient specific factors). The duration of treatment will be determined by the specialist based on clinical response and tolerability.

Maintenance dose (following initial stabilisation)

The initial maintenance dose must be prescribed by the specialist until GP agrees to take over shared care

Maintenance dose (following initial stabilisation):

Usual dose range**:**

- **Azathioprine: 0.5–3 mg/kg daily**, adjusted according to response. The maximum dose rarely exceeds 200mg and patients may require increased monitoring if going above this dose.
- **Mercaptopurine: 1-1.5mg/kg daily,** adjusted according to response.
- If **Thiopurine methyltransferase** (**TPMT)** low (known as carrier status): Start with 50% of normal dosage and consider monitoring more frequently.

Some patients may respond to lower doses. Please note patients may be initiated on more than one DMARD.

The initial maintenance dose must be prescribed by the initiating specialist.

Concomitant allopurinol usage (Gastroenterology/IBD)

Allopurinol has a clinically significant interaction with azathioprine/mercaptopurine that can lead to increased toxicity. However, this combination may be recommended by the hospital specialist, particularly in patients who are unable to tolerate or do not respond to treatment with azathioprine/mercaptopurine. The use of low dose azathioprine/mercaptopurine in combination with allopurinol will increase the possibility of patients tolerating/responding to immunomodulator therapy.

- Reduce dose of azathioprine or Mercaptopurine to 25% of original dose if concomitant allopurinol use

Conditions requiring dose adjustment (and adjusted doses)

N.B. Shared care can be continued if a minor dose change is required during the maintenance phase

Conditions requiring dose adjustment:

	Lower doses may be required if there is significant renal or hepatic impairment, in elderly patients, and in patients with mild/moderately impaired bone marrow function, TPMT deficiency or NUDT15 mutation.
4. Contraindications and cautions Please note only **key cautions and contraindications should be listed here.** This does not replace the Summary of Product Characteristics (SPC) and should be read in conjunction with it.	**The following list is not exhaustive; please see the BNF or SPC for comprehensive information and recommended management.** **Contraindications** • Known hypersensitivity to the active substance or any excipients. Hypersensitivity to 6-mercaptopurine (6-MP) should alert the prescriber to probable hypersensitivity to azathioprine. • Absent or very low TPMT activity – risk of life-threatening pancytopaenia. **Cautions** • Live vaccines (e.g. oral polio, oral typhoid, MMR, BCG, yellow fever): • **Barts Health Guidance** for Gastroenterology/IBD, Rheumatology or Dermatology – patients should not be given live vaccines if on any dose of azathioprine or mercaptopurine • **Green book guidance** is that live vaccines should be avoided in patients taking azathioprine at a dose greater than 3 mg/kg/day, or mercaptopurine greater than 1.5 mg/kg/day. • Please refer to the Green Book Chapter 6 for current advice regarding the use of live vaccines in patients taking immune modulators. Contact the specialist if further guidance is required. • Patients with active/history of pancreatitis. • Concomitant prescribing of allopurinol: A 75% dose reduction of azathioprine/mercaptopurine is required, see section 6. • Patients receiving azathioprine or mercaptopurine are at an increased risk of developing lymphoproliferative disorders and other malignancies, notably skin cancers, sarcomas and uterine cervical cancer in situ. Exposure to sunlight and UV light should be limited and patients should wear protective clothing and use a sunscreen with a high protection factor to minimize the risk of skin cancer and photosensitivity. • Patients with low TPMT activity are at increased risk of myelosuppression. Substantial dose reduction is generally required.

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- Severe infection.
- Severely impaired hepatic or bone marrow function.
- Pregnancy and breastfeeding (see section 11).

Treatment may need to be monitored more frequently in the following:

- Elderly patients
- Impaired renal function
- Mild/moderately impaired hepatic function
- Mild/moderately impaired bone marrow function

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<tr><td rowspan="2">5. Pharmaceutical aspects</td><td>Route of administration</td><td>Oral</td></tr>
<tr><td>Formulation</td><td>Azathioprine – available as 25mg and 50mg tablets. Liquid must not be prescribed as it is a ‘special’. Tablets can be crushed and dispersed in water. The preferred method is to disperse azathioprine tablets in 10 mL of water in the barrel of a syringe, as this is a closed system. Gloves should be worn during this procedure in case of accidental spillage (Handbook of Enteral Drug Administration. Third edition 2015. White, Rebecca and Bradnam, Vicky)

Azathioprine 25mg and 50mg tablets

Please note: 75 mg and 100 mg Azathioprine tablets are now manufactured but should not be prescribed or supplied due to the risk of dose errors. See alert letter here: https://www.gov.uk/drug-safety-update/letters-and-medicine-recalls-sent-to-healthcare-professionals-in-september-2023

Mercaptopurine
Mercaptopurine 50mg tablets - only 50mg strength should be prescribed. Do not prescribe 25mg preparation or liquid as they are ‘specials’
Mercaptopurine 50mg tablets</td></tr>
</table>

		DO NOT confuse Mercaptopurine with ***Mercaptamine***; care must be taken to ensure the correct drug is prescribed and dispensed
	Administration details	The tablets should be swallowed whole and not split/crushed. Can be taken either with or without food, but patients should standardise which method is chosen. Tablets should be taken at least 1 hour before or 2 hours after milk or dairy products. Taking with or after food may relieve nausea, however the oral absorption of azathioprine or mercaptopurine may be reduced. Consideration should be given to monitoring therapeutic efficacy more closely if patient is taking azathioprine or mercaptopurine consistently with food.
	Other important information	Providing the film coating of azathioprine tablets remains intact, there is no risk or additional precautions required when handling tablets. Azathioprine and mercaptopurine are cytotoxic. It is recommended that they are handled following local recommendations for the handling and disposal of cytotoxic agents. Mercaptopurine tablets are not bioequivalent with respect to peak plasma concentration; increased haematological monitoring is advised if switching between formulations. When prescribing mercaptopurine, remain vigilant with regards to the similarity in name with mercaptamine.
6. Significant medicine interactions Please note only key interactions should be listed here	**The following list is not exhaustive; please see the BNF or SPC for comprehensive information and recommended management.** **Interactions and suggested management** **The following drugs must not be prescribed without consultation with the specialist:** • **Allopurinol** has the potential to cause thiopurine toxicity and should be avoided, except with specialist input. Allopurinol may be recommended in combination with thiopurines by the specialist for IBD patients, particularly in those who are unable to tolerate to or do not respond to treatment with a thiopurine alone. The dose of azathioprine or mercaptopurine should be reduced by 75% if used concurrently with allopurinol. If considering prescribing allopurinol, discuss with the specialist for advice and a dose adjustment. • **Febuxostat** has the potential to cause thiopurine toxicity; avoid in combination with azathioprine or mercaptopurine. • **Live vaccines** (e.g. oral polio, oral typhoid, MMR, BCG, yellow fever) see guidance below:	

		• **Barts Health Guidance** for Gastroenterology/IBD, Rheumatology or Dermatology patients should not be given live vaccines if on any dose of azathioprine or mercaptopurine • **Please refer to the Green Book Chapter 6** for current advice regarding the use of live vaccines in patients taking immune modulators. Contact the specialist if further guidance is required. can be given to patients on stable long term low dose corticosteroid therapy (defined as ≤20mg prednisolone per day for >14 days) alone or in combination with low dose non-biological oral immune modulating drugs (e.g. azathioprine up to 3mg/kg/day or mercaptopurine up to 1.5mg/kg/day). Clinician discretion is advised. Please refer to the Green Book Chapter 6 for current advice, and advice for patients taking higher doses. • **Warfarin** – thiopurines may reduce anticoagulant effects of warfarin. • **Co-trimoxazole / trimethoprim** – possible increased risk of haematological toxicity, however evidence is conflicting and this combination is often used in practice. • **Clozapine** – avoid due to increased risk of agranulocytosis. • **Ribavirin** – increased risk of haematological toxicity when azathioprine given concurrently and this combination should be avoided. • **Aminosalicylates** (sulfasalazine, mesalazine or olsalazine) – increased risk of haematological toxicity with concomitant thiopurine due to TPMT inhibition. Dose adjustment of azathioprine or mercaptopurine and additional monitoring of FBC may be required. *Please note in gastroenterology patients aminosalicylates are commonly prescribed alongside azathioprine/mercaptopurine.* **The following drugs may be prescribed with caution:** • **ACE inhibitors** - increase the risk of anaemia and or leukopenia. • **Cimetidine and indomethacin** - concomitant administration of thiopurines may increase the risk of myelosuppression.
7. Baseline investigations, initial monitoring and ongoing	**Baseline investigations**	• Height and weight • Blood pressure (if possible –if unavailable or remote consultation not to delay starting therapy) • Full blood count (FBC)

monitoring to be undertaken by the specialist		• Urea and electrolytes (U&Es) & creatinine clearance (CrCl) • Alanine aminotransferase (ALT) and/or aspartate aminotransferase (AST) and albumin • Baseline thiopurine methyl transferase (TPMT) status • Screening for viral infections as per local policy, e.g. HIV (HIV 1 and 2 antibody), hepatitis B (hepatitis B surface antigen and hepatitis B core total antibody), hepatitis C (hepatitis C virus IgG), varicella zoster virus (VZV IgG), Epstein Barr virus (EBV VCA IgG), cytomegalovirus (CMV IgG) • Screening for lung disease, including tuberculosis, should be undertaken at clinician discretion on a case-by-case basis • Confirm cervical screening is up to date Provide or request appropriate vaccination prior to treatment initiation, according to local arrangements (e.g. pneumococcal, shingles, influenza, COVID-19)
	Initial monitoring	**To be repeated:** • FBC • U&Es, including creatinine and CrCl • LFTs, including ALT and/or AST, and albumin *Gastroenterology/IBD* – at week 2, 4, 8 and 12 *Other specialties* – every 2 weeks until the dose has been stable for 6 weeks, then monthly for 3 months. **Additional monitoring:** Some gastroenterology/IBD centres check thioguanine/ methyl mercaptopurine levels (6TGN/MMP) between week 4-8 following initiation and dose changes. • TGN /MMP level

	Ongoing monitoring	After each review, advise primary care whether treatment should be continued, confirm the ongoing dose, and whether the ongoing monitoring outlined in section 8 as appropriate. Further monitoring is normally required following changes in dose – the specialist will advise on the monitoring schedule. The NHS England shared care guideline advises the following schedule below for dose increases: **Dose increases**: • FBC, LFTs (including ALT and/or AST, Albumin), U&Es (inc. creatinine and CrCl). • Monitor every 2 weeks until on stable dose for 6 weeks then revert back to previous schedule. **For Gastroenterology/IBD patients in centres where TGN/MMP levels are checked after dose changes** • TGN/MMP levels are checked between week 4-8 Please note additional or more intensive monitoring may be required if the patient has a high risk of toxicity. Shared care can be continued if a minor dose change is required during the maintenance phase, however, the **patient will be transferred back to hospital-led prescribing and monitoring after a significant dose change** – GP will be informed by the hospital if this is the case. Shared care will be re-requested by the hospital once the patient had been stabilised after a significant dose change. The specialist will retain the responsibility for monitoring the patient's ongoing response to treatment and advise if a dose change or treatment cessation is appropriate. This should usually be undertaken annually.
	Other important information	Nil

8. Ongoing monitoring requirements to be undertaken by primary care

Monitoring parameter	Frequency
• FBC • U&Es including creatinine and CrCl • AST and/or ALT, and albumin	Every 3 months, and more frequently in patients at higher risk of toxicity, as advised by the specialist team. **The exact frequency of monitoring to be communicated by the specialist in all cases**.

	Additional monitoring dependent on specialty: • CRP (gastroenterology/IBD, rheumatology) • ESR (rheumatology)		
	• Patients turning 65 after September 2023 or those aged between 70-79 are eligible for the shingles vaccine (varicella zoster). • Immunosuppressed individuals aged 50 years and over are also eligible for the shingles vaccine. The Green Book includes patients on the following regimens: azathioprine >3.0mg/kg/day & 6-mercaptopurine >1.5mg/kg/day (for a full list of eligible immunosuppressant therapies please see the Green Book Chapter 28a) • **Barts Health Guidance:** Gastroenterology/IBD, Rheumatology or Dermatology patients should not be given live vaccines if on any dose of azathioprine or mercaptopurine. • **Green Book guidance:** For patients taking prednisolone exceeding 20mg daily or azathioprine exceeding 3mg/kg/day a non-live vaccine should be used. Specialist input may be required. If patient is taking additional DMARDs, check advice for all drugs. Please refer to Green Book Chapter 6 and Chapter 28a (Shingles) for further details.	• Shingles Vaccination: Shingrix is replacing Zostamax as the routine immunisation for shingles in the U.K. Shingrix is two doses a minimum of eight weeks apart rather than a single dose like Zostamax. Please see the Green Book Chapter 28a for further information. • Influenza vaccination: annual. It is advisable to add the patient to the influenza vaccine list. • COVID-19 vaccination as per national schedule.	

	Annual influenza (The Green Book, Chapter 19) vaccinations are recommended COVID-19 vaccination is safe and recommended (see The Green Book, Chapter 14a). Repeat pneumococcal vaccine may be indicated. See Green Book Chapter 25 for advice.	

Please see below section for further guidance on management of adverse effects/out of range test results

9. Management of adverse effects/ out of range test results

Any serious adverse reactions should be reported to the MHRA via the Yellow Card scheme www.mhra.gov.uk/yellowcard

Adverse effect/out of range test result	Action for GP
Full blood count**:** • White blood cells less than $3.5x10^9$/L • Lymphocytes less than $0.5x10^9$/L • Neutrophils less than $1.6x10^9$/L • Platelets less than $140x10^9$/L - unless known to have liver cirrhosis. • Eosinophilia greater than $0.5x10^9$/L	**Discuss urgently with specialist team and consider interruption.** NB: Isolated lymphopenia or eosinophilia is often a feature of the underlying autoimmune indication and is rarely an indication to discontinue azathioprine. When used for hepatology indications in cirrhotic patients, continue treatment and discuss with specialist urgently if platelet count drops by greater than 30% or to less than 70x $x10^9$/L
Mean cell volume >105 fl **NB:** Reversible, dose-related increases in mean corpuscular volume are a known effect of thiopurines. Because of this guidance may differ depending on indication i.e. European Crohn's and Colitis Organisation (ECCO) advises an upper limit of MCV **>115 fl**	Consider interruption in treatment if there is a significant increase from baseline. Check serum folate, B12, alcohol history and TSH and treat any underlying abnormality. If results of these additional investigations are normal discuss with specialist team urgently.

	Signs or symptoms of bone marrow suppression, e.g. unexplained bleeding or bruising with or without sore throat, mouth ulcers	Consider interruption in treatment. Check FBC immediately and discuss with the specialist team. See haematological monitoring above.
	Infections: Infection requiring antibiotics	Temporarily withhold thiopurine until the patient has recovered. Consider additional investigations (e.g. FBC), if clinically appropriate.
	Liver function tests / liver dysfunction: > 2-fold rise in AST, ALT (from upper limit of normal) OR Sudden increases from baseline (e.g. double of baseline) Unexplained fall in serum albumin <30g/L Signs of jaundice	Withhold and discuss with specialist team. When used for hepatology indications continue treatment, and discuss with specialist urgently. Check any other reason for risk of hepatic dysfunction such as alcohol history and drug interactions, including OTC or complementary medication.
	Renal function: Creatinine rise >30% over 12 months, or calculated GFR reduces to <60ml/min	Withhold and discuss with specialist team
	Gastrointestinal disorders: Nausea, vomiting, diarrhoea	Review for reversible causes. Advise patient to take with food. An anti-emetic or dose reduction may help (or splitting the dose into divided doses) If no improvement or if severe contact specialist team.
	Upper abdominal and back pain, Suspected pancreatitis	Withhold and discuss with specialist team. If pancreatitis is suspected, the patient should be referred to an emergency department.

Process for referring back to secondary care (due to adverse effect/out of range test result)

The specialty team should be informed via the contact details listed in the SCG. Advice or further assessment and or medication will then be organised by the specialty team.

10. Advice to patients and carers

The specialist will counsel the patient with regard to the benefits and risks of treatment and will provide

The patient should be advised to report any of the following signs or symptoms to their GP without delay when being initiated on treatment:

Signs or symptoms indicating haematological toxicity, e.g. sore throat, infection, unexplained or abnormal bruising or bleeding.

Signs or symptoms of pancreatitis, e.g. abdominal pain, nausea, or vomiting

the patient with any relevant information and advice, including patient information leaflets on individual medicines.	Signs of symptoms of hepatic toxicity, e.g. Jaundice (yellowing of the skin or whites of the eyes) **The patient should be advised to:** • During a serious infection azathioprine or mercaptopurine should be temporarily discontinued until the patient has recovered from the infection. • That vaccination in line with current national advice (e.g. for COVID-19, influenza) is safe and recommended. • Tell anyone who prescribes them a medicine that they are taking azathioprine or mercaptopurine. Always ask a pharmacist before purchasing any medicines over the counter, including herbal remedies, and ask if they are safe. • To inform their specialist or primary care prescriber promptly if pregnancy occurs or is planned. • All women aged 25-64 years old should be encouraged to participate in national cervical cancer screening programmes. There is no need to attend more frequently than recommended. • Patients have a small increased risk of skin cancers so should be advised to wear high factor sunscreen and to wear a hat and protective clothing when in strong sunshine. Sun beds should be avoided. Patients should be advised to carry out regular self-examination of the skin and report if there are any new lesions and/or changes to skin. • Patients taking azathioprine or mercaptopurine at any dose should be advised to avoid contact with people with chicken pox or shingles and report any such contact urgently to their primary care prescriber. If the patient is exposed, contact the specialist for advice. • For detailed advice on risk assessment and post exposure prophylaxis following exposure to chicken pox and shingles, see: the Green Book (Chapter 34) UKSHA guidance: Guidelines on post exposure prophylaxis (PEP) for varicella/shingles April 2022 Patient information: • General information: https://www.nhs.uk/medicines/azathioprine/ • General information: https://patient.info/medicine/azathioprine-azapress-imuran • Gastroenterology: https://www.crohnsandcolitis.org.uk/about-crohns-and-colitis/publications/azathioprine-mercaptopurine https://gutscharity.org.uk/advice-and-information/conditions/crohns-disease/

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<tr><td></td><td colspan="2">https://gutscharity.org.uk/advice-and-information/conditions/ulcerative-colitis/
• Rheumatology: https://www.versusarthritis.org/about-arthritis/treatments/drugs/azathioprine/
• Dermatology: https://www.bad.org.uk/for-the-public/patient-information-leaflets/azathioprine
• Patient information leaflets are also available from https://www.medicines.org.uk/emc/search?q=azathioprine and https://www.medicines.org.uk/emc/search?q=mercaptopurine</td></tr>
<tr><td rowspan="3">11. Pregnancy, paternal exposure and breast feeding
It is the responsibility of the specialist to provide advice on the need for contraception to male and female patients on initiation and at each review but the ongoing responsibility for providing this advice rests with both the GP and the specialist.

All patients should be informed of the risks and benefits of taking this medicine during pregnancy and breastfeeding. The specialist team should be contacted if a patient becomes pregnant or is planning to become pregnant or breastfeed.</td><td>Pregnancy</td><td>The BSR and BHPR guideline on prescribing DMARDs in pregnancy and breastfeeding advises that azathioprine is compatible throughout pregnancy at doses ≤2mg/kg/day.
Current available data do not suggest that mercaptopurine exposure during pregnancy increases the risk of miscarriage, congenital malformation, intrauterine death, fetal growth restriction, or preterm delivery but the data are limited for some outcomes. A careful assessment of risk versus benefit should be made before mercaptopurine is prescribed to patients who are pregnant.
The British Society of Gastroenterology consensus guidelines on the management of inflammatory bowel disease advises that both maintenance and flares can be treated as normal with thiopurines (azathioprine and mercaptopurine) during pregnancy.

Information for healthcare professionals: https://www.medicinesinpregnancy.org/bumps/monographs/USE-OF-AZATHIOPRINE-OR-MERCAPTOPURINE-IN-PREGNANCY/
Information for patients and carers: https://www.medicinesinpregnancy.org/Medicine--pregnancy/Azathioprinemercaptopurine/</td></tr>
<tr><td>Breastfeeding</td><td>Azathioprine is compatible with breastfeeding, although the active metabolite mercaptopurine is present in breast milk. A risk versus benefit assessment is advised. If used during breastfeeding, monitor for signs of infection or immunosuppression. If high doses of azathioprine are used, monitor infant blood counts. If mercaptopurine is used, monitor infant's blood count and liver function.

Information for healthcare professionals:
• https://www.sps.nhs.uk/medicines/azathioprine/
• https://www.sps.nhs.uk/medicines/mercaptopurine/</td></tr>
<tr><td>Paternal exposure</td><td>Azathioprine and mercaptopurine are compatible with paternal exposure. There is currently no evidence of adverse fetal effects relating to paternal use.</td></tr>
</table>

		Information for healthcare professionals: https://www.medicinesinpregnancy.org/bumps/monographs/PATERNAL-USE-OF-AZATHIOPRINE-OR-MERCAPTOPURINE/
	Effect on fertility	There's no evidence to suggest that taking azathioprine reduces fertility in either men or women.
12. Contact information	**See appendix 1 for the shared care contacts list. Note that some specialties may also have Advice & Guidance service available for primary care to contact for queries.** **Additional information** • The list contains contact details for applicable trusts in NEL, please ensure the correct specialist team from the hospital that initiated treatment is contacted (e.g. only contact Whipps Cross Hospital team if patient initiated by Whipps Cross Hospital). • Also refer to the latest clinic letter for contact details. The NEL Pharmacy and Medicines Optimisation Team may be contacted for escalation of any shared care issues on nelondonicb.prescribingqueries@nhs.net – note that it may take up to 3 working days for the team to respond, therefore they should not be contacted for urgent queries.	
13. Additional information	**Where patient care is transferred from one specialist service or GP practice to another, a new shared care agreement must be completed.** **Please do not assume that the GP has accepted shared care of a patient once a request has been made. Please ensure patients have enough supply of their medication to last until their next hospital appointment, until shared care acceptance has been confirmed and added to the patient's hospital notes.**	
14. References	**As per links in the SCG**	
15. Shared care responsibilities	**Specialist Team** • Ensure that the patient/carer is an informed recipient in therapy. • Ensure that the patient/carer understands their treatment regimen and any monitoring or follow up that is required (using advocacy if appropriate). Issue any local patient information leaflets where appropriate. • Ensure baseline investigations (if applicable) are normal before commencing treatment. • Initiate treatment and prescribe until the GP formally agrees to share care. • Send a letter to the GP requesting shared care for the patient. • Clinical and laboratory supervision of the patient by blood monitoring (if applicable i.e. during initiation period, responsibilities laid out in section 7) and routine clinic follow-up on a regular basis. • Send a letter/results notification to the GP after each clinic attendance ensuring current dose, most recent blood results and frequency of monitoring are stated. Note that GPs within NEL may be able to access results via ELPR. • Evaluation of any reported adverse events by GP or patient.	

	• Advise GP on review, duration or discontinuation of treatment where necessary. Where urgent action is required following tests the hospital team will telephone the patient and inform GP. • Inform GP of patients who do not attend clinic appointments. • Ensure that backup advice is available during working hours. The GP/patient should contact on-call/A&E out of hours or during an emergency. **Primary Care Prescriber** • Ensure that the patient understands the nature, effect and potential side effects of the drug before prescribing it as part of the shared care programme and contact the specialist for clarification where appropriate. • Monitor patient's overall health and well-being. • Report any adverse events to the consultant, where appropriate. • Report any adverse events to the MHRA via the Yellow Card Scheme, where appropriate. • Help in monitoring the progression of disease. • Prescribe the drug treatment as described and monitor as per responsibilities laid out in section 8. **North East London Pharmacy and Medicines Optimisation Team** • To provide feedback to acute trusts via the FPG (or dedicated working group of the FPG). • To support GPs to make the decision whether or not to accept clinical responsibility for prescribing. • To support acute/mental health trusts in resolving issues that may arise as a result of shared care. **Patient/Carer** • Report any adverse effects to their GP and/or specialist. • Ensure they have a clear understanding of their treatment. • Report any changes in disease symptoms to GP and/or specialist. • Alert GP and/or specialist of any changes of circumstance which could affect management of disease e.g. plans for pregnancy. • Take/administer the medication as prescribed. • Undertake any monitoring as requested by the GP and/or specialist.

Appendix 1: Relevant contact details for all relevant hospitals

Homerton Healthcare NHS Foundation Trust – Homerton Hospital	
Switchboard	020 8510 5555 (contact Consultant or Registrar on-call via switchboard)
Medicines information	**Tel:** 0208 510 7000 **Generic email:** huh-tr.medicines.information@nhs.net
Dermatology	**Helpline:** 0208 510 7388 **Generic email:** huh-tr.dermatology@nhs.net
Gastroenterology	**Helpline:** 0208 510 5906 **Generic email:** huh-tr.homertonibdcns@nhs.net
Haematology	**Helpline:** 0208 510 7309 **Generic email:** huh-tr.haematologyadmin@nhs.net
Hepatology	**Helpline:** 07825315724 **Generic email:** huh-tr.hepatology@nhs.net
Respiratory	**Helpline:** 0208 510 7769 **Generic email:** huh-tr.respiratory.department@nhs.net
Rheumatology	**Helpline:** 0208 510 7200 **Generic email:** huh-tr.rheumatologyadmin@nhs.net

Barking, Havering and Redbridge University Hospitals NHS Trust	
Switchboard	0330 400 4333 or 0170 843 5000 (contact Consultant or Registrar on-call via switchboard)
Medicines information	0170 843 5000 ext 3354
Dermatology	**Helpline (both sites):** 0170 843 5000 ext 4869
Gastroenterology	**Helplines:** 0208 970 8161 (King George Hospital) 0170 843 5347 (Queen's Hospital) **Generic email (both sites):** bhrut.ibdhelp@nhs.net
Hepatology	**Helpline (both sites):** 0170 843 5000 ext 2096 **Generic email:** bhrut.liverteam@nhs.net
Neurology	**Helpline (both sites):** 0170 843 5000 ext 2644 and 2535
Renal	**Helpline (both sites):** 0170 843 5000 ext 2277 and 2223 **Generic email (both sites):** bhrut.renal.team@nhs.net
Respiratory	**Helplines:** 0170 843 5000 ext 8254 (King George Hospital) 0170 843 5000 ext 3097 (Queen's Hospital)
Rheumatology	**Helplines:** 0208 970 8160 (King George Hospital) 0170 843 5000 ext 2721 and 2723 (Queen's Hospital) **Nurse Specialist:** 0208 970 8408 (King George Hospital) 0170 843 5000 ext 4821 (Queen's Hospital) **Generic email (both sites):** bhrut.rheumatologydepartmentbhrut@nhs.net

Barts Health NHS Trust	
Switchboard	020 7377 7000 (contact Consultant or Registrar on-call via switchboard)
Medicines information	**Tel:** 0208 535 6971 **Email:** bartshealth.pharmacymedicinesinformation@nhs.net
Dermatology	**Royal London Hospital** **Generic emails:** bartshealth.general-dermatologyrlh@nhs.net bartshealth.med-dermadmin@nhs.net (Admin) **Whipps Cross Hospital** 020 7377 7000 (contact Consultant secretary via switchboard)

Gastroenterology	**Newham Hospital** **Helpline:** 07761 405 192 **Generic email:** bartshealth.medicinepod@nhs.net **Mile End Hospital and Royal London Hospital** **Generic email:** bhnt.ibdhelpline@nhs.net **Whipps Cross Hospital** **Helpline:** 0208 539 5522 ext 4210
Hepatology	**Newham Hospital** **Generic email:** bartshealth.medicinepod@nhs.net **Royal London Hospital** **Generic email:** bartshealth.hepatology.services@nhs.net **Whipps Cross Hospital** **Generic email:** bartshealth.gastroenterologywxmedsecs@nhs.net
Neurology	**Generic email:** bhnt.neuroscienceppc@nhs.net (all sites)
Ophthalmology	**Helpline:** 0208 539 5522 ext 5205 (all sites) **Generic email:** bartshealth.eyepatientenquiry@nhs.net (all sites)
Oral Medicine	**Royal London Hospital only (for Behçet's disease)** **Generic email:** bhnt.londonbehcetscentre@nhs.net
Respiratory	**All sites except Newham Hospital** **Helpline:** 07955 435 775 **Generic email:** bartshealth.ildadvice@nhs.net
Rheumatology	**Mile End Hospital (covering Royal London and Newham patients)** **Helplines:** 0208 223 8859 (Secretaries) or 0208 223 8407 (Nurse Specialist) **Generic email:** bhnt.rheumatology@nhs.net **Whipps Cross Hospital** **Generic Email:** wxrnh.bartshealth@nhs.net

Appendix 2: Shared Care Request letter (Specialist to Primary Care Prescriber)

Letter to be amended as appropriate

Date [insert date]

Dear [insert primary care prescriber's name]

Patient name: [insert patient's name]
Date of birth: [insert date of birth]
NHS Number: [insert NHS Number]
Diagnosis: [insert diagnosis]

As per the agreed shared care guideline (SCG) for [insert medicine name] for the treatment of [insert indication], this patient is now suitable for prescribing to move to primary care. **This letter should be read in conjunction with the following SCG: [insert SCG title]**

The SCG can be accessed under the 'Shared Care Guideline' section of the NEL ICB primary care portal via: https://primarycare.northeastlondon.icb.nhs.uk/home/meds/

The patient fulfils criteria for shared care and I am therefore requesting your agreement to participate in shared care. Where baseline investigations are set out in the SCG, I have carried these out.

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

	Checklist for specialist (to tick)

The patient has been initiated on this therapy and completed the initiation period as set out in the SCG	*Yes* ☐
Baseline investigation and monitoring as set out in the SCG have been completed and were satisfactory	*Yes* ☐
The condition being treated has a predictable course of progression and the patient can be suitably maintained by primary care	*Yes* ☐
The risks and benefits of treatment have been explained to the patient	*Yes* ☐
The roles of the specialist team and primary care team have been explained to the patient	*Yes* ☐
The patient has agreed to this shared care arrangement, understands the need for ongoing monitoring, and has agreed to attend all necessary appointments	*Yes* ☐
I have provided the patient with sufficient medication to last until primary care takes over prescribing (at least 28 days)	*Yes* ☐

Advice regarding live vaccine use in patients on azathioprine or mercaptopurine differs between centres across NEL. Please indicate whether you would like your patient to receive live vaccines as per Green Book criteria or if they are to be excluded completely. Please note this advice can change if patients are started on additional immunosuppressant therapies.

Live vaccination choice	**Specialist to tick one box**
Green book guidance: *live vaccines should be avoided in patients taking azathioprine at a dose greater than 3 mg/kg/day, or mercaptopurine greater than 1.5 mg/kg/day.*	☐
*Patients should **NOT** be given live vaccines if on any dose of azathioprine or mercaptopurine*	☐

Treatment and follow up details	**Specialist to complete**
Treatment was started on	[insert date]
The current dose is	[insert dose]
Follow up date	[insert date]
If you are in agreement, please undertake monitoring and treatment from (N.B. see SCG for time to transfer prescribing to primary care)	[insert date]
Monitoring should be continued in line with the SCG. Next blood monitoring is due on	[insert date]

Please email [insert department's generic email] to reply to this request for shared care and initiation of the suggested medication, to either **accept** or **decline** within **14 days**. Please contact the specialist team if you need additional time to discuss the case with the practice/NEL Pharmacy and Medicines Optimisation Team before making a decision for shared care. They can be contacted via email at: nelondonicb.prescribingqueries@nhs.net

The template response letters can be accessed under the 'Shared Care Guideline' section of the NEL ICB primary care portal via: https://primarycare.northeastlondon.icb.nhs.uk/home/meds/

Yours sincerely,

[insert specialist's name]
[insert specialist's role]

Electronically signed

Reference

This letter has been adapted from the Regional Medicines Optimisation Committee's (RMOC) shared care template letter which is accessible here: https://www.sps.nhs.uk/articles/rmoc-shared-care-guidance/

Appendix 3: Shared Care Agreement Letter (Primary Care Prescriber to Specialist)

Date [insert date]

Dear [insert specialist's name]

Patient name: [insert patient's name]
Date of birth: [insert date of birth]
NHS Number: [insert NHS Number]

Thank you for your request for me to accept prescribing responsibility for this patient under a shared care agreement and to provide the following treatment.

Medicine	Route	Dose & frequency
[insert medicine name]	[insert administration route]	[insert dose and frequency]

I can confirm that I am willing to take on this responsibility from [insert date] and will complete the monitoring as set out in the shared care guideline for this medicine/condition.

Yours sincerely,

[insert primary care prescriber's name]
[insert primary care prescriber's role]

Electronically signed

Reference

This letter has been adapted from the Regional Medicines Optimisation Committee's (RMOC) shared care template letter which is accessible here: https://www.sps.nhs.uk/articles/rmoc-shared-care-guidance/

Appendix 4: Shared Care Refusal Letter (Primary Care Prescriber to Specialist)

Date [insert date]

Dear [insert specialist's name]

Patient name: [insert patient's name]
Date of birth: [insert date of birth]

NHS Number: [insert NHS Number]

Thank you for your request for me to accept prescribing responsibility for this patient.

In the interest of patient safety, NHS North East London ICB, in conjunction with local acute trusts have classified [insert medicine name] as a Shared Care drug, and requires a number of conditions to be met before transfer can be made to primary care.

I regret to inform you that in this instance I am unable to take on responsibility due to the following reason(s). Please note that prescribing responsibilities lies with the specialist until shared care is accepted in primary care.

		Select
1.	**The prescriber does not feel able to accept shared care request due to specific patient factor(s)** I do not feel able to manage the prescribing (+/- monitoring) for this patient's condition because [insert reason]. I have consulted with other primary care prescribers in my practice and/or the NEL ICB Pharmacy Medicines Optimisation Team* (PMOT) 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.*** *Pharmacy and Medicines Optimisation Team email: nelondonicb.prescribingqueries@nhs.net*	☐
2.	**The prescriber does not feel able to accept shared care request due to insufficient information received** The following information have not been received: [add details here] Please forward me the following information in order to further consider this shared care request: [add details here]	☐
3.	**Initiation and optimisation by the initiating specialist** As the patient has not been stabilised on optimised dose of 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.***	☐
4.	**Other (Primary Care Prescriber to complete if there are other reasons why shared care cannot be accepted)** [insert reason(s) here]	☐

I would be willing to consider prescribing for this patient once the above criteria have been met for this treatment.

NHS England 'Responsibility for prescribing between Primary & Secondary/Tertiary care' guidance (2018) states that "when decisions are made to transfer clinical and prescribing responsibility for a patient between care settings, it is of the utmost importance that the GP feels clinically competent to prescribe the necessary medicines. It is therefore essential that a transfer involving medicines with which GPs would not normally be familiar should not take place without full local agreement, and the dissemination of sufficient, up-to-date information to individual GPs." In this case, we would also see the term GP being interchangeable with the term primary care prescriber.

Please do not hesitate to contact me if you wish to discuss any aspect of my letter in more detail.

Yours sincerely,

[insert primary care prescriber's name]
[insert primary care prescriber's role]

Electronically signed

Reference

This letter has been adapted from the Regional Medicines Optimisation Committee's (RMOC) shared care template letter which is accessible here: https://www.sps.nhs.uk/articles/rmoc-shared-care-guidance/