Discontinuation of Ethinylestradiol tablets	**Discontinuation** 14 December 2023 Impact tier 2 · Medium impact BNF chapters 06 - Endocrine System **Medicines affected** Ethinylestradiol 10microgram tablets (UCB Pharma Ltd) Ethinylestradiol 50microgram tablets (UCB Pharma Ltd) Ethinylestradiol 1mg tablets (UCB Pharma Ltd) **Alternatives** Specialist importers can source unlicensed products. Lead times may vary. Use other available HRT products where appropriate. **Considerations and background** Any decision to prescribe an unlicensed medicine must consider the relevant guidance and/or local governance procedures. Further information is available at: • General Medical Council: Prescribing Unlicensed Medicines • MHRA guidance on the supply of unlicensed medicinal products ("specials") • Royal Pharmaceutical Society: Professional Guidance for the Procurement and Supply of Specials When prescribing a product that is not licensed in the UK prescribers must indicate on the FP10 prescription that an unlicensed product is required. This can be done by annotating the prescription with the following wording: "**special order**"
Shortage of Estradiol valerate 1mg/ Medroxyprogesterone acetate 5mg (Indivina) tablets	**Anticipated re-supply date**: 02.02.2024 **Actions** Prescribers should: not initiate patients on Indivina 1mg/5mg tablets consider prescribing an alternative continuous combined hormone replacement therapy (HRT) product containing estradiol 1mg but a different progestogen component to Indivina, ensuring that the patient is not intolerant to any of the excipients and is counselled on the appropriate dose (see Supporting information below) consider prescribing unlicensed products only where licensed alternatives are not appropriate. Prescribers should work with local pharmacy teams to ensure orders are placed within appropriate time frames as lead times may vary (see Supporting information below) **Alternative oral continuous combined HRT** Estradiol 1mg/ Dydrogesterone 5mg (Femoston Conti) tablets Estradiol 1mg/ Norethisterone 500mcg (Kliovance) tablets Estradiol 1mg / Progesterone 100 mg (Bijuve) capsules **Considerations and background** Supporting information DHSC will continue to provide updates on HRT stock availability on the Medicine Supply Tool and designated 'Prescribing available HRT products' page on the Specialist Pharmacy Service (SPS) website. **Clinical Information**

	The British Menopause Society (BMS) provides guidance from clinical experts on switching to alternative continuous combined HRT products. In this, BMS does acknowledge "The equivalence data included in this practical guide were based on a combination of pharmacokinetics, clinical trials and clinical experience. The dose equivalents included are subject to significant individual variations in absorption and metabolism." When switching patients to an alternative HRT product, prescribers will consider symptom control, side effect profiles, breakthrough bleeds etc. The BMS also provides advice on managing side effects of oestrogen and progestogens where the options for progestogen side effects are: change the type of progestogen, reduce the dose if available, change the route of administration, alter the duration. The following specialist importers have confirmed they can source unlicensed Indivina 1mg/5mg tablets (please note there may be other companies that can also source supplies): • Alium • Target **Medicine Supply Notification** MSN/2023/084 Guidance on ordering and prescribing unlicensed imports Any decision to prescribe an unlicensed medicine must consider the relevant guidance and NHS Trust or local governance procedures. Please see the links below for further information: • The supply of unlicensed medicinal products, Medicines and Healthcare products Regulatory Agency (MHRA) • Professional Guidance for the Procurement and Supply of Specials, Royal Pharmaceutical Society (RPS) • Prescribing unlicensed medicines, General Medical Council (GMC)
Shortage of Triamcinolone hexacetonide 20mg/1ml suspension for injection ampoules	**No resupply date given** Clinicians should consider prescribing an alternative steroid injection during this time. 1- Low impact **Medicines affected** Triamcinolone hexacetonide 20mg/1ml suspension for injection ampoules (Esteve Pharmaceuticals Ltd) 10 ampoule **Alternatives** Triamcinolone acetonide and other steroid injections remain available. **Considerations and background** **Further Information** **Please see the following links for further information:** • **SmPC Triamcinolone hexacetonide 20 mg/ml suspension for injection** • **SmPC Adcortyl® Intra-Articular/Intradermal Injection 10mg/ml** • **SmPC Kenalog® Intra-articular / Intramuscular Injection** **Enquiries about specific supply issue** You can send any enquiries about the individual supply issue raised to your Regional Pharmacy Procurement Specialist.
Shortage of Tetracosactide 1mg/1ml suspension for injection ampoules	**Anticipated re-supply date** 1 November 2024 **2 · Medium impact** **Actions**

	Where a short Synacthen test using tetracosactide 250 micrograms ampoules is not appropriate, consider prescribing an unlicensed import of tetracosactide 1mg/1ml suspension for injection. **Alternatives** **Licensed products** Synacthen (tetracosactide) Ampoules 250 micrograms remain available can support increased demand. **Unlicensed products** The following specialist importers have confirmed they can source unlicensed tetracosactide 1mg/1ml suspension for injection ampoules: • Durbin • Smartway Pharma **Considerations and background** **Guidance on ordering and prescribing unlicensed imports** Any decision to prescribe an unlicensed medicine must consider the relevant guidance and NHS Trust or local governance procedures. Please see the links below for further information: • The supply of unlicensed medicinal products, Medicines and Healthcare products Regulatory Agency (MHRA) • Professional Guidance for the Procurement and Supply of Specials, Royal Pharmaceutical Society (RPS) • Prescribing unlicensed medicines, General Medical Council (GMC) **Enquiries about specific supply issue** You can send any enquiries about the individual supply issue raised to your Regional Pharmacy Procurement Specialist. **All other enquiries** **DHSCmedicinesupplyteam@dhsc.gov.uk**
Shortage of Oxybutynin 5mg modified-release tablets	**Anticipated re-supply date** 5 April 2024 2 · Medium impact BNF chapters 07 - Obstetrics, Gynae & Urinary Tract Disorders **Medicines affected** Oxybutynin 5mg modified-release tablets 5 April 2024 **Actions** **Where patients established on oxybutynin 5mg modified-release tablets have insufficient supplies to last until the re-supply date, prescribers should:** • review patients to determine if this is still the most suitable therapy. Where appropriate, consider switching to (or re-trialling) immediate release oxybutynin tablets or oral solution, at the same total daily dose, but administered in divided doses – dose re-titration may be needed, based on symptoms and tolerability (see clinical information); or

- if above options are not suitable, consider use of another anticholinergic agent (see clinical information)

Alternatives

Oxybutynin immediate release formulations (tablets and liquid) remain available and can support increased demand, as can alternative anticholinergic agents.

Considerations and background

Clinical information

Oxybutynin is licensed:

- in adults for the symptomatic treatment of urge incontinence and/or increased urinary frequency associated with urgency as may occur in adult patients with unstable bladder.
- in children over 5 years for urinary incontinence, urgency and frequency in unstable bladder conditions due to idiopathic overactive bladder or neurogenic bladder disorders (detrusor overactivity), and nocturnal enuresis associated with detrusor overactivity, in conjunction with nondrug therapy, when other treatment has failed.

Dose of immediate release tablets

- In adults, the usual dose is 5 mg two or three times a day, which may be increased to a maximum of 5 mg four times a day (maximum dose 20 mg).
- In the elderly, elimination half-life is increased, therefore, a dose of 2.5 mg twice a day, particularly if the patient is frail, is likely to be adequate, which may be increased to 5 mg twice a day.
- In children, usual dose is 2.5 mg twice a day which may be increased to 5 mg two or three times a day. For nocturnal enuresis, the last dose should be given before bedtime.

The SmPC for the modified-release tablets does not include a dose conversion when switching from an immediate release to the modified-release formulation. It advises clinical judgement should be exercised in selecting the appropriate dose of the modified-release formulation, which should be adjusted to the minimum dose that achieves an optimal balance of efficacy and tolerability, taking into account the current immediate-release dose.

The BNF and BNFc suggest that patients taking immediate-release oxybutynin may be transferred to the nearest equivalent daily dose of a modified-release formulation. Pragmatic advice therefore is to switch patients currently on modified-release oxybutynin to the equivalent daily dose of immediate-release oxybutynin split into two or three divided doses. Oxybutynin has a very short half-life (2-3 hours) so some patients may require the dose to be re-titrated

Anticholinergic side effects

Dry mouth is the most common and troublesome adverse effect of anticholinergic medicines and is the main reason for discontinuing oxybutynin. As many of these adverse effects are dose-related, it is recommended that doses should be titrated according to response and side effects, with lower doses

	generally used in the elderly. For patients experiencing side-effects or with inadequate response at maximum dose, changing to a different anticholinergic agent may be beneficial as side-effect profiles differ. For example, solifenacin and tolterodine are considered to cause dry mouth to a lesser extent than oxybutynin. Extended-release formulations of anticholinergic medicines are also expected to reduce the risk of dry mouth. The SmPC for modified-release oxybutynin notes in clinical studies, dry mouth has been less frequently reported than with immediate release formulations Please refer to the links below for further information **Medicine Supply Notification Number** MSN/2023/116 **Links** • **Oxybutynin 5mg modified-release 5mg prolonged release tablets** • **SmPC: Oxybutynin products** • **SmPC: Tolterodine preparations** • **SmPC: Solifenacin preparations** • **BNF: Urinary incontinence in women** • **BNFc: Urinary frequency, enuresis and incontinence** • **BNFc: Nocturnal enuresis in children** • **CKS: LUTS in men - overactive bladder**
Shortage of Glucagon 1mg powder for injection kit (Glucagen)	**Anticipated re-supply date** 29 March 2024 BNF chapters 06 - Endocrine System **Medicines affected** GlucaGen Hypokit 1mg powder and solvent for solution for injection (Novo Nordisk Ltd) 29 March 2024 **Actions** **Pharmacy staff in secondary care** Pharmacy staff in secondary care should ensure any short dated GlucaGen stock in pharmacy is used up before it expires. **Clinicians in secondary care** Clinicians considering the use of glucagon in secondary care settings should: contact the National Poisons Information Service (NPIS) (Tel- 0344 892 0111) to discuss treatment options for severe hypotension following overdose of beta-blockers, calcium channel blockers or tricyclic antidepressants; further detail is also available on TOXBASE; use Ogluo pre-filled auto-injector pen to treat severe hypoglycaemic episodes when GlucaGen is not available; use an unlicensed import (see below) if UK stock is not available. **Ambulance services** Ambulance services should: conserve GlucaGen for use for severe hypoglycaemic episodes when IV glucose 10% has failed or there is no IV access; only use GlucaGen kit ONCE in patients who are unconscious and unresponsive to IV glucose 10%;

follow the JRCALC guidelines for the treatment of severe hypoglycaemic episodes.

Alternatives

Intermittent supply of GlucaGen 1mg powder for injection kit.
Ogluo 0.5mg and 1mg pre-filled auto-injector pens remain available via Alliance.
The following specialist importers have confirmed they can source some supplies of GlucaGen:

- Mawdsleys Unlicensed
- Target Healthcare

Other importers may also be able to source stock within Europe.

Considerations and background

Summary

There are two licensed glucagon preparations: GlucaGen (1mg powder for injection kit) and Ogluo (0.5mg and 1mg pre-filled auto-injector pens).
There will be intermittent supply of GlucaGen 1mg powder for injection kit until the end of March 2024.
Supply of GlucaGen 1mg powder for injection kit allows demand to be met in primary care.
Ogluo 0.5mg and 1mg pre-filled auto-injector pens are available (from Alliance) and can be used for the treatment of severe hypoglycaemic episodes; however, they are not suitable for treatment of beta blocker or other drug overdoses.

Clinical Information

Hypoglycaemia

Glucagon is indicated for treatment of severe hypoglycaemic reactions, which may occur in the management of insulin treated children and adults with diabetes mellitus. It is available in two formulations:

- GlucaGen (powder for reconstitution) — licensed to be given subcutaneously and intramuscularly. It is also licensed to be used diagnostically for testing gastric motility.
- Ogluo (pre-filled auto-injector pen containing solution) — only licensed to be given subcutaneously.

Beta-blocker and other Drug Overdoses

Intravenous glucagon (unlicensed) is a treatment option for severe cardiovascular instability in beta- blocker overdose, and some other drug overdoses including calcium channel blockers and tricyclic antidepressants. GlucaGen vials are normally reconstituted and given as an initial bolus which may be followed by an IV infusion.
Ogluo is not licensed nor suitable for the management of beta-blocker or other drug overdoses as this is a pre-filled device, and the solution cannot be removed to be added to an IV infusion.
Whilst there are supply problems with GlucaGen, clinicians treating severe hypotension in a poisoned patient e.g. with toxicity related to beta-blockers, calcium channel blockers or tricyclic antidepressants, should call the NPIS (0344 892 0111) to discuss treatment options; further detail is also available on TOXBASE.

Patient Counselling

Ogluo instruction videos for patients can be found on the manufacturer's website: Ogluo | Tetris Pharma

Medicine Supply Notification Number

MSN/2023/051UU

Guidance on ordering and prescribing unlicensed imports

Any decision to prescribe an unlicensed medicine must consider the relevant guidance and NHS Trust or local governance procedures. Please see the links below for further information:

- The supply of unlicensed medicinal products, Medicines and Healthcare products Regulatory Agency (MHRA)
- Professional Guidance for the Procurement and Supply of Specials, Royal Pharmaceutical Society (RPS)
- Prescribing unlicensed medicines, General Medical Council (GMC)

	Links • Glucagon | Drugs | BNF • SmPC: GlucaGen Hypokit 1mg • SmPC: Ogluo 1mg • SmPC: Ogluo 0.5mg • BNF: Poisoning, emergency treatment • RCEM/NPIS Guideline on Antidote Availability for Emergency Departments (December 2022) • Ogluo administration guide and video • TOXBASE (log in required) • Joint Royal College of Ambulance Liaison Committee JRCALC Guidelines (restricted access) **Enquiries about this supply issue** You can send any enquiries about this page or the individual supply issue raised to either: DHSCmedicinesupplyteam@dhsc.gov.uk or your Regional Pharmacy Procurement Specialist as below.
Shortage of Olanzapine (Zypadhera) 210 mg, 300mg and 405mg powder and solvent for prolonged release suspension for injection vials	**Anticipated re-supply date** 8 February 2024 BNF chapters 04 - Central Nervous System **Medicines affected** • **Olanzapine embonate 210mg powder and solvent for suspension for injection vials** • **8 February 2024** • **Olanzapine embonate 300mg powder and solvent for suspension for injection vials 1 vial** • **Olanzapine embonate 405mg powder and solvent for suspension for injection vials 1 vial** **Actions** NHS provider Trust pharmacy procurement teams should work with the appropriate mental health clinical leads and all relevant clinical areas to: • identify all patients requiring a dose of Zypadhera from now until early February 2024; • review current stockholding of Zypadhera 210 mg, 300mg and 405mg powder and solvent for prolonged release suspension for injection. Only order more where current supplies are insufficient for patients scheduled to have a dose before early February 2024 to ensure the maximum number of patients can receive treatment during this time; • use an alternative strength of Zypadhera injection (if available) to administer the prescribed dose if the appropriate strength is not available (see Supporting Information); and • work with their RPPS in urgent cases to facilitate mutual aid between NHS provider Trusts. **Considerations and background** **Summary** There will be limited supply of olanzapine (Zypadhera) 210 mg, 300mg and 405mg powder and solvent for prolonged release suspension for injections until early February 2024. Supporting information Zypadhera injection is licensed as maintenance treatment of adult patients with schizophrenia sufficiently stabilised during acute treatment with oral olanzapine. It should only be administered by deep intramuscular gluteal injection.

	Patients should be treated initially with oral olanzapine before administering Zypadhera, to establish tolerability and response. Following reconstitution, the final concentration of all presentations is 150mg/ml. Therefore, any presentation can be used to administer the prescribed dose – see SmPC for more information. **Medicines Supply Notification** MSN/2023/117 **Links** • **BNF Olanzapine embonate** • **SmPC Zypadhera**
Shortage of Somatropin (Genotropin MiniQuick) 0.6mg and 1.4mg powder and solvent for solution for injection pre-filled disposable devices and Somatropin (Genotropin GoQuick) 5.3mg powder and solvent for solution for injection pre-filled, multi-dose pens	**Anticipated re-supply date** 16 February 2024 BNF chapters 06 - Endocrine System **Medicines affected** • Somatropin (rbe) 600microgram powder and solvent for solution for injection pre-filled disposable devices 7 pre-filled disposable injection February 2024 • Somatropin (rbe) 1.4mg powder and solvent for solution for injection pre-filled disposable devices 1 March 2024 • Somatropin (rbe) 5.3mg powder and solvent for solution for injection vials 29 March 2024 **Actions** **Secondary care pharmacy teams should work with clinical specialists and their local pharmacy homecare leads to:** ensure that new patients are not initiated on Genotropin MiniQuick 0.6mg and 1.4mg powder and solvent for solution for injection pre-filled disposable devices, or Genotropin GoQuick 5.3mg powder and solvent for solution for injection pre-filled multi-dose pens until resupply; review all patients, including those under shared care arrangements, prescribed Genotropin MiniQuick 0.6mg and 1.4mg devices, and determine which patients need to remain on these devices (e.g. visual impairment or have no refrigerator). Remaining stock of Genotropin MiniQuick 0.6mg and 1.4mg devices are to be reserved for patients who cannot be switched. Please note, to obtain remaining stock contact Pfizer Customer Service Team (Tel- 0800 0327907) for patients who can manage a change in device AND all patients prescribed Genotropin GoQuick 5.3mg powder and solvent for solution for injection pre-filled, multi-dose pens issue a new prescription for: • Genotropin 5.3mg (0.1mg dose increments) or 12mg cartridges (0.2mg dose increments) to be used with a re-usable injection device (Genotropin 5.3 or 12 Pen corresponding to the cartridge prescribed) to deliver doses of 0.6mg, 1.4mg or 5.3mg or • Genotropin Miniquick 1.2mg, 1.6mg, 1.8mg or 2mg device for patients prescribed Genotropin GoQuick 5.3mg at increments to administer these doses or for those patients still being dose titrated and being considered for a change to these doses delivered by the Miniquick device ensure that patients switched from the single use MiniQuick injection devices to Genotropin 5.3mg or 12mg cartridges are aware these are multi-dose devices and need to be stored in a refrigerator;

ensure all new prescriptions are sent to their current homecare service provider or outpatient dispensary; and
communicate with home care providers if nurse led injection training is required on use of new device.

Homecare providers should:
ensure that once a new prescription for Genotropin 5.3mg or 12mg cartridges, or Genotropin MiniQuick 1.2mg, 1.6mg, 1.8mg or 2mg device is received, the patient's existing Genotropin MiniQuick 0.6mg or 1.4mg device or Genotropin® GoQuick 5.3mg powder and solvent for solution for injection pre-filled, multi-dose pens prescription is immediately cancelled;
call patients to inform them of the change to their prescription while arranging delivery and offer nursing support on how to use the new device; and
work with the prescriber and the Trust homecare lead to ensure nurse led training or, if available, administration support is offered where requested.
Outpatient dispensaries should ensure that:
once a new prescription for Genotropin 5.3mg or 12mg cartridges, or Genotropin MiniQuick 1.2mg, 1.6mg, 1.8mg or 2mg device is received, the patient's existing Genotropin MiniQuick 0.6mg or 1.4mg device or Genotropin GoQuick 5.3mg powder and solvent for solution for injection pre-filled, multi-dose pens prescription is cancelled;
patients receive a patient education pack and are counselled about the change in prescription at the point of first dispensing; and
patients are directed back to their specialist team if they highlight a need for additional nurse-led training or ongoing nursing support.
GP surgeries who prescribe Genotropin MiniQuick 0.6mg and 1.4mg or Genotropin GoQuick 5.3mg powder and solvent for solution for injection pre-filled disposable devices should:
proactively identify all patients on these products and refer them to their specialist for review and a switch to an appropriate alternative as above.

Alternatives
The following somatropin preparations remain available and will be able to support increased demand:
Somatropin (Genotropin) 5.3mg and 12mg powder and solvent for solution for injection multi-dose cartridges.
Somatropin (Genotropin MiniQuick) 1.2mg,1.6mg,1.8mg and 2mg powder and solvent for solution for injection pre-filled disposable (single dose) devices.

Considerations and background
Summary
Somatropin (Genotropin MiniQuick) 0.6mg powder and solvent for solution for injection pre-filled disposable devices will be in limited supply until the resupply date.
Somatropin (Genotropin MiniQuick) 1.4mg powder and solvent for solution for injection pre-filled disposable (single dose) devices will be in limited supply until the resupply date.
Somatropin (Genotropin GoQuick) 5.3mg powder and solvent for solution for injection pre-filled, multi-dose pens are out of stock until the resupply date.

Medicine Supply Notification Number
MSN/2023/089U

Links
- **SmPC Genotropin® MiniQuick**
- **SmPC Genotropin 5.3mg powder and solvent**
- **SmPC Genotropin 12mg powder and solvent**
- **BNF Somatropin**

Shortage of Hyoscine hydrobromide (Scopoderm) 1.5mg patches	**Anticipated re-supply date** 3 January 2025 BNF chapters 04 - Central Nervous System **Actions** Healthcare professionals in primary and secondary care should not initiate any new patients on hyoscine hydrobromide (Scopoderm) 1.5mg patches. Where patients have insufficient supplies to last until the re-supply date, clinicians should: • review patients to determine if this is still the most suitable therapy • prioritise any remaining stock of Scopoderm patches for patients who have no oral access • consider switching patients who have oral access to an alternative formulation of hyoscine hydrobromide; or if not appropriate, a glycopyrronium bromide preparation (see below) • consider prescribing unlicensed hyoscine hydrobromide (Scopoderm) 1.5mg patches if alternative options are not suitable, working with local pharmacy teams to ensure orders are placed within appropriate time frames, as lead times may vary (see below) • if the above options are not considered appropriate, advice should be sought from specialists on management options **Alternatives** **Other hyoscine hydrobromide formulations** These are other hyoscine hydrobromide formulations for the management of hypersalivation/ respiratory secretions. Hyoscine hydrobromide (Kwells) 150microgram and 300microgram tablets are used off label in this setting, with dosing titrated up based on response and tolerability. They are taken orally, sucked or chewed. In patients with swallowing difficulty, they can also be administered by sublingual or buccal route (off label route of administration). **Glycopyrronium bromide products** These are licensed for the symptomatic treatment of severe sialorrhoea (chronic pathological drooling/hypersalivation) in children and adolescents aged 3 years and older with chronic neurological disorders. Use in adults is off-label. They are an option if there is oral access/ patient can swallow. Preparations include: • Glycopyrronium bromide 1mg and 2mg tablets • Glycopyrronium bromide 1mg/5ml oral solution • Glycopyrronium bromide (Sialanar) 2mg/5ml oral solution As there are two separate glycopyrronium liquid products with different strengths, prescribing should clearly indicate the strength and dose to reduce the risk of selection and dosing error. **Prevention of travel (motion) sickness** NHSE guidance recommends that a prescription for treatment for motion sickness will not routinely be offered in primary care as the condition is appropriate for self-care. Alternative treatment options available OTC include: • Hyoscine hydrobromide (Kwells) 150 and 300microgram tablets • Promethazine teoclate 25mg tablets • Promethazine hydrochloride 10mg and 25mg tablets • Promethazine hydrochloride 5mg/5ml oral solution • Cinnarizine 15mg tablets **Considerations and background** **Clinical Information** Hyoscine hydrobromide patches are licensed for the prevention of travel sickness symptoms e.g., nausea, vomiting and vertigo and used off-label for the management of hypersalivation and drying up respiratory secretions. **Specialist Importers**

	The following specialist importers have confirmed they can source unlicensed hyoscine hydrobromide 1.5mg patches (please note there may be other companies that can also source supplies): • Alium • Mawdsley • Q MED **Medicine Supply Notification Number** MSN/2023/087 **Guidance on ordering and prescribing unlicensed imports** Any decision to prescribe an unlicensed medicine must consider the relevant guidance and NHS Trust or local governance procedures. Please see the links below for further information: • The supply of unlicensed medicinal products, Medicines and Healthcare products Regulatory Agency (MHRA) • Professional Guidance for the Procurement and Supply of Specials, Royal Pharmaceutical Society (RPS) • Prescribing unlicensed medicines, General Medical Council (GMC) **Links** • **BNF hyoscine hydrobromide** • **BNFc hyoscine hydrobromide** • **SmPC Scopoderm 1.5mg patches** • **SmPC: Kwells** • **BNFc: glycopyrronium bromide** • **SmPC glycopyrronium tablets** • **SmPC glycopyrronium liquid** • **SmPC glycopyrroinium liquid (Sialanar)** • **CKS: hypersalivation** • **BNF: Antimuscarinic drugs** • **CKS: Palliative care - secretions: Noisy respiratory secretions at the end of life** • **Scottish Palliative Care Guidelines: Alternatives to Regular Medication Normally Given via a Syringe Pump When this is Not Available** **Enquiries about page or supply issue** You can send any enquiries about this page or the individual supply issue raised to: DHSCmedicinesupplyteam@dhsc.gov.uk
Shortage of Methylphenidate (Equasym XL) modified release capsules	**Anticipated re-supply date** 5 February 2024 BNF chapters 04 - Central Nervous System **Medicines affected** Equasym XL 10mg capsules (Takeda UK Ltd) 5 February 2024 **Actions** A National Patient Safety Alert was issued on the 27 September 2023 for the shortage of methylphenidate prolonged-release capsules and tablets, lisdexamfetamine capsules, and guanfacine prolonged-release tablets. Please refer to the National Patient Safety Alert for information and advice. **Alternatives** Limited parallel imports of methylphenidate (Equasym XL) modified release capsules remain available but cannot support an uplift in demand. **Considerations and background** **Supply Overview** Equasym XL 10mg capsules are out stock Equasym XL 20mg and 30mg capsules are in stock.

	DHSC will continue to provide updates on stock availability on the Medicine Supply Tool and designated 'Prescribing available medicines to treat ADHD' page on the Specialist Pharmacy Service (SPS) website. **Links** • **SmPC Equasym XL capsules** **Enquiries about page or supply issue** You can send any enquiries about this page or the individual supply issue raised to: DHSCmedicinesupplyteam@dhsc.gov.uk
Shortage of Progesterone (Crinone) 8% vagina gel and Progesterone (Lutigest) 100mg vaginal tablets	**Anticipated re-supply date** 3 May 2024 BNF chapters 13 - Skin · 06 - Endocrine System **Medicines affected** Lutigest 100mg vaginal tablets (Ferring Pharmaceuticals Ltd) 3 May 2024 **Actions** Where patients have insufficient supplies to last until the re-supply date, prescribers should: • consider prescribing alternative progesterone products for supplementation of luteal phase as part of Assisted Reproductive Technology (ART), ensuring that the patient is not intolerant to any of the excipients and is counselled on the appropriate dose required (see Supporting Information below); • where the above option is inappropriate and for the indication of use as an adjunct to In Vitro Fertilisation (IVF) where infertility is mainly due to tubal, idiopathic or endometriosis linked sterility associated with normal ovulatory cycles, consider alternative management options (see Supporting Information below). **Alternatives** Alternative progesterone products and recommended doses for the supplementation of luteal phase as part of ART: Cyclogest 200mg and 400mg pessaries: • 400mg twice daily vaginally, starting at oocyte retrieval and continuing for 38 days once pregnancy is confirmed Utrogestan 200mg vaginal capsules: • 200mg three times daily from day of embryo transfer until at least week 7 of pregnancy up to week 12 of pregnancy Lubion 25mg/1.112ml solution for injection vials (in women for whom vaginal preparations are inappropriate): • 25mg injected subcutaneously or intramuscularly from day of oocyte retrieval up to week 12 of pregnancy **Considerations and background** **Supporting Information** **Clinical information** Progesterone (Lutigest) 100mg vaginal tablets are used for the supplementation of luteal phase as part of Assisted Reproductive Technology (ART). The recommended dose is 100mg administered vaginally three times daily starting at oocyte retrieval and continued for 30 days if pregnancy has been confirmed. Progesterone (Crinone) 8% vaginal gel is used for treatment of infertility due to inadequate luteal phase and for use as an adjunct to in-vitro fertilisation (IVF) where infertility is mainly due to tubal, idiopathic or endometriosis linked sterility associated with normal ovulatory cycles. For the treatment of infertility due to inadequate luteal phase, the recommended dose is one applicatorful applied once daily after ovulation or on the 18th to 21st day of the cycle. When used in IVF, it is applied daily starting on the

	day of embryo transfer and it should be continued for 30 days if there is laboratory evidence of pregnancy. **MSN Number** MSN/2023/093 **Links** • **SmPC Utrogestan Vaginal 200mg Capsules** • **SmPC Cyclogest pessaries** • **SmPC Lubion 25mg/1.112ml solution for injection vials** • **SmPC Lutigest 100mg vaginal tablets** • **SmPC Crinone 8% vaginal gel** • **BNF Progesterone**
Shortage of Bumetanide 5mg tablets	**Anticipated re-supply date** 3 May 2024 BNF chapters 02 - Cardiovascular System **Medicines affected** Bumetanide 5mg tablets **Actions** Healthcare professionals in primary and secondary care should not initiate any new patients on bumetanide 1mg and 5mg tablets until the supply issue has resolved. Where existing patients have insufficient supplies of bumetanide tablets to last until the re-supply date, clinicians should: • review patients to determine if this is still the most suitable therapy; • reserve any remaining stock of bumetanide 1mg tablets for patients using this strength who are unsuitable for a switch to furosemide; • consider prescribing furosemide tablets which are able to support the market during this time, ensuring that the patient is not intolerant to any of the excipients and is counselled on the appropriate dose to take (see Supporting information); • only consider prescribing unlicensed products where licensed alternatives are not appropriate. Prescribers should work with local pharmacy teams to ensure orders are placed within appropriate time frames as lead times may vary (see Supporting information) If the above options are not considered appropriate or symptoms are not controlled on furosemide, advice should be sought from specialists on management options. **A switch should be made before patients run out of tablets to avoid a break in therapy that could increase the risk of decompensation and unintentional fluid retention.** **Alternatives** Furosemide 20mg and 40mg tablets remain available and can support increased demand. Where these are not suitable, unlicensed supplies of bumetanide 1mg and 5mg tablets may be sourced, lead times vary. Bumetanide 1mg/5ml SF oral solution remains available but is unable to support increased demand. **Considerations and background** **Supporting information** **Clinical Information** Bumetanide is a loop diuretic licensed for the treatment of oedema associated with e.g., congestive heart failure, renal dysfunction including nephrotic syndrome and cirrhosis of the liver in adults. In oedema of renal or cardiac origin where high doses of a potent short-acting diuretic are required, a 5mg dose of bumetanide may be used in adults. Furosemide is a loop diuretic licensed for use in all indications where a prompt and effective diuresis is required. It is similar in activity to bumetanide; both act within 1

	hour of oral administration and diuresis is complete within 6 hours. The diuresis associated with these drugs is dose related. Loop diuretics produce the same response if given at equipotent doses. When kidney function is normal, a 40mg dose of furosemide is approximately equal to 1mg of bumetanide. Selecting an equivalent dose is determined on a case-by-case basis as effects will differ based on clinical status and stability of patient, fluid status, and renal function. Patients switched from a stable dose of bumetanide to furosemide may require follow up to assess response, with dose titration if required, to ensure fluid balance remains stable. **Medicine Supply Notification Number** MSN/2023/094 **Guidance on ordering and prescribing unlicensed imports** Any decision to prescribe an unlicensed medicine must consider the relevant guidance and NHS Trust or local governance procedures. Please see the links below for further information: • The supply of unlicensed medicinal products, Medicines and Healthcare products Regulatory Agency (MHRA) • Professional Guidance for the Procurement and Supply of Specials, Royal Pharmaceutical Society (RPS) • Prescribing unlicensed medicines, General Medical Council (GMC) **Links** • **SmPC: Bumetanide 1mg and 5mg tablets** • **SmPC: Furosemide 20mg and 40mg tablets** • **BNF: Loop diuretics** • **CKS: Chronic heart failure - managing diuretics**
Shortage of Minoxidil 2.5mg tablets	Anticipated re-supply date **19 January 2024 (supply returning)** BNF chapters 02 - Cardiovascular System **Actions** When the 2.5mg tablet is not available, clinicians should consider prescribing minoxidil 5mg tablets (supplied by Roma Pharmaceutical Ltd.) that are scored and can be divided into equal doses, in accordance with the SmPC. A change in prescription will be required to use the 5mg tablets. . **Alternatives** **Licensed alternative** Minoxidil 2.5mg tablets are available from Roma Pharmaceutical Ltd Minoxidil 5mg tablets remain available from Roma Pharmaceutical Ltd and Pfizer Ltd (see considerations and background). **Considerations and background** Roma Pharmaceutical Ltd's minoxidil 5 mg tablets are licenced to be divided into equal doses of 2.5mg, users should be counselled to discard the remaining half tablet. Pfizer Ltd's minoxidil 5mg tablets are not licenced to be divided. **Supply Summary** Roma Pharmaceutical Ltd's minoxidil 2.5 mg tablets are now available however there may still be shortages until the Pfizer Ltd's minoxidil 2.5mg tablets re-supply, currently estimated as stated. **Links** • **SmPC: Minoxidil 2.5mg tablets** • **SmPC: Minoxidil 5mg tablets (Roma Pharmaceutical Ltd)** • **SmPC: Minoxidil 5mg tablets (Pfizer Ltd)** • **BNF: Treatment Summary**

Shortage of Rabies vaccine	**Anticipated re-supply date** 3 May 2024 BNF chapters 14 - Immunological Products & Vaccines **Actions** Unlicensed rabies vaccines are available for travellers. UKHSA and Bavarian Nordic have emergency stock available for post exposure prophylaxis. **Alternatives** **Unlicensed products** The following specialist importers have confirmed they can source unlicensed rabies vaccine (please note there may be other companies that can also source supplies): • Smartway • Genetech • Mawdsleys • Durbin • Orifarm **Considerations and background** **Guidance on ordering and prescribing unlicensed imports** Any decision to prescribe an unlicensed medicine must consider the relevant guidance and NHS Trust or local governance procedures. Please see the links below for further information: • The supply of unlicensed medicinal products, Medicines and Healthcare products Regulatory Agency (MHRA) • Professional Guidance for the Procurement and Supply of Specials, Royal Pharmaceutical Society (RPS) • Prescribing unlicensed medicines, General Medical Council (GMC) **Links** • **SmPC Rabipur pre-filled syringe** • **BNF Rabies vaccine**
Shortage of Methylphenidate prolonged-release tablets	**Anticipated re-supply date** 1 February 2024 BNF chapters 04 - Central Nervous System **Medicines affected** Medicine Anticipated re-supply date Xenidate XL 18mg tablets (Viatris UK Healthcare Ltd) 26 April 2024 Xenidate XL 27mg tablets (Viatris UK Healthcare Ltd) 26 April 2024 Xaggitin XL 18mg tablets (Ethypharm UK Ltd) 1 February 2024 Xaggitin XL 36mg tablets (Ethypharm UK Ltd) 1 February 2024 **Actions** Where patients have insufficient supplies to last until the re-supply date, clinicians should: • consider prescribing alternative bioequivalent brands (see clinical information) that are available, ensuring that the patient is not intolerant to any of the excipients;

	• counsel patients to reassure them that Delmosart, Xaggitin XL and Xenidate XL tablets have a similar release profile to Concerta XL (see clinical information); and • reassure patients that any changes to their prescription will be short-term and for the duration of the supply issue only, and they have the option to switch back to their original brand once the supply issue is resolved or continue the brand they have been switched to. **Alternatives** DHSC will continue to provide updates on stock availability on the Medicine Supply Tool and designated 'Prescribing available medicines to treat ADHD' page on the Specialist Pharmacy Service (SPS) website. **Considerations and background** **Clinical Information** Methylphenidate is a central nervous stimulant available in the UK in various licensed immediate, modified-release, oral, and solid dosage forms. It is a schedule 2 controlled drug, licensed for the treatment of attention deficit hyperactivity disorder (ADHD) in children aged over 6 years and adolescents and is the usual first line treatment for this condition for both children and adults. All the modified-release methylphenidate preparations include an immediate-release component as well as an extended-release component. This allows for rapid onset of action while avoiding the need to take further doses during the day to maintain effect. The biphasic release profiles of these products, however, are not all equivalent and contain different proportions of the immediate-release and modified-release component. The BNF states that different versions of modified-release preparations may not have the same clinical effect. To avoid confusion between these different formulations of methylphenidate, prescribers should specify the brand to be dispensed. Considerations when prescribing modified-release methylphenidate contains a summary of the pharmacokinetic profiles for methylphenidate brands currently licensed in the UK. This can be used to support product selection. Please see the links below for further information. **Links** • **Concerta XL prolonged-release tablets SmPC** • **Delmosart prolonged-release tablets SmPC** • **Xaggitin XL prolonged-release tablets SmPC** • **Xenidate XL prolonged-release tablets SmPC** • **NICE guideline for attention deficit hyperactivity disorder**

Shortage of Pethidine 50mg tablets	**Anticipated re-supply date**
	5 April 2024
	
	BNF chapters
	04 - Central Nervous System
	
	Alternatives
	The following specialist importers have confirmed they can source unlicensed Pethidine 50mg tablets (please note there may be other companies that can also source supplies):
	• BAP Pharma
	• Mawdsleys
	Considerations and background
	Guidance on ordering and prescribing unlicensed imports
	• Any decision to prescribe an unlicensed medicine must consider the relevant guidance and NHS Trust or local governance procedures. Please see the links below for further information:
	  ○ The supply of unlicensed medicinal products, Medicines and Healthcare products Regulatory Agency (MHRA)
	  ○ Professional Guidance for the Procurement and Supply of Specials, Royal Pharmaceutical Society

	○ Prescribing unlicensed medicines, General Medical Council (GMC)
Shortage of Irinotecan hydrochloride 330mg/ 220ml and 360mg/ 240ml bags	**Anticipated re-supply date** 31 January 2024 BNF chapters 08 - Malignant Disease & Immunosuppression **Medicines affected** Irinotecan 360mg/240ml infusion bags (Sun Pharmaceutical Industries Europe B.V.) 31 January 2024 **Actions** NHS provider Trust pharmacy procurement teams, Aseptic units and their local Medication Safety Officer should: • assess current stock holding of irinotecan hydrochloride 330mg/ 220ml bags and 360mg/ 240ml bags to ensure current stock levels are correctly recorded in pharmacy systems • consider placing orders of irinotecan hydrochloride 330mg/ 220ml bags and 360mg/ 240ml bags from commercial compounders where there are insufficient supplies during this period (see Supporting Information); or • consider in-house aseptic preparation of irinotecan hydrochloride 330mg/ 220ml and 360mg/ 240ml bags for the duration of this shortage, ensuring work systems including appropriate documentation and worksheets are updated to support this **Alternatives** **Able to support demand** The following suppliers can provide a full uplift in demand with the following vials sizes. **Consilient** Irinotecan 40mg/2ml, 100mg/5ml, 300mg/15ml vials **Fresenius Kabi** Irinotecan 100mg/5ml, 300mg/15ml, 500mg/25ml vials **Seacross Pharmaceuticals LTD** Irinotecan 100mg/5ml, 300mg/15ml vials **Unable to support demand** The following suppliers cannot support an increase in demand with the following vials sizes. **Accord** Irinotecan 100mg/5ml, 300mg/15ml, 500mg/25ml vials, 1000mg/50ml vials **Pfizer** Campto (Irinotecan) 40mg/2ml ,100mg/5ml, 300mg/15ml vials **Considerations and background** **Supporting information** **Commercial Compounders** Commercial compounders have confirmed they have capacity to accept new customers for the compounding of irinotecan hydrochloride 330mg/ 220ml and 360mg/ 240ml bags during this period. The following commercial compounders have confirmed they can support with the compounding of Irinotecan hydrochloride 330mg/ 220ml and 360mg/ 240ml bags during this period and have provided contact email addresses (please note there may be other compounders that can also support): • ITH Pharma: commercial@ithpharma.com • Quantum: west@quantumpharma.co.uk: caroline.munday@quantumpharma.co.uk • Sciensus: Appleby@sciensus.com • Bath ASU: limited capacity – individual Trusts need to approach Bath ASU and they will advise on a case-by-case basis: gailey@pharmaxo.com **Medicine Supply Notification Number**

	MSN/2023/022 **Links** • **BNF - Irinotecan Hydrochloride** • **SmPC - Irinotecan hydrochloride**
Shortage of Lisdexamfetamine (Elvanse) capsules	**Anticipated re-supply date** 19 January 2024 BNF chapters 04 - Central Nervous System **Medicines affected** Elvanse 20mg capsules (Takeda UK Ltd) 19 January 2024 Elvanse 30mg capsules (Takeda UK Ltd) 26 January 2024 Elvanse Adult 50mg capsules (Takeda UK Ltd) 15 March 2024 Elvanse Adult 70mg capsules (Takeda UK Ltd) 2 February 2024 **Actions** A National Patient Safety Alert was issued on the 27 September 2023 for the shortage of methylphenidate prolonged-release capsules and tablets, lisdexamfetamine capsules, and guanfacine prolonged-release tablets. Please refer to the National Patient Safety Alert for information and advice. **Alternatives** The following specialist importers have confirmed they can source unlicensed imports of lisdexamfetamine (Vyvanse) capsules (please note there may be other companies that can also source supplies and lead times vary): • Alium • Target **Considerations and background** **Supply overview** DHSC will continue to provide updates on stock availability on the Medicine Supply Tool and designated 'Prescribing available medicines to treat ADHD' page on the Specialist Pharmacy Service (SPS) website. **Guidance on ordering and prescribing unlicensed imports** Any decision to prescribe an unlicensed medicine must consider the relevant guidance and NHS Trust or local governance procedures. Please see the links below for further information: • The supply of unlicensed medicinal products, Medicines and Healthcare products Regulatory Agency (MHRA) • Professional Guidance for the Procurement and Supply of Specials, Royal Pharmaceutical Society (RPS) • Prescribing unlicensed medicines, General Medical Council (GMC) **Links** • **SmPC Lisdexamfetamine**
Shortage of Betamethasone valerate 0.1% cream and 0.1% ointment	**Anticipated re-supply date** 16 February 2024 BNF chapters 13 – Skin **Actions**

	Where supply of betamethasone valerate 0.1% cream and 0.1% ointment is unavailable, clinicians should consider prescribing mometasone furoate 0.1% cream or 0.1% ointment. **Alternatives** Mometasone furoate 0.1% cream and 0.1% ointment remain available. **Considerations and background** **Summary** There are intermittent gaps in supply of betamethasone valerate 0.1% cream and 0.1% ointment until mid February 2024. **Supporting Information** **Clinical information** Betamethasone valerate 0.1% and Mometasone furoate 0.1% are both potent topical corticosteroids. **Links** • **SmPC Betamethasone cream** • **SmPC Betamethasone ointment** • **SmPC Mometasone cream** • **SmPC Mometasone ointment** • **BNF Topical Corticosteroids**
Shortage of Propantheline bromide 15mg tablets	**Anticipated re-supply date** 8 April 2024 BNF chapters 01 - Gastro-Intestinal System **Medicines affected** Pro-Banthine 15mg tablets (Kyowa Kirin International UK NewCo Ltd) 8 April 2024 **Actions** Where patients have insufficient supplies to last until the re-supply date, clinicians should: • review patients to determine if this is still the most suitable therapy • consider prescribing an alternative oral antimuscarinic agent in line with local formularies/guidelines, and current availability (see supporting information below); and • consider prescribing unlicensed products only where licensed alternatives are not appropriate. Prescribers should work with local pharmacy teams to ensure orders are placed within appropriate time frames as lead times may vary (see supporting information below) **Alternatives** Propantheline 15mg tablets are out of stock until early April 2024. Alternative oral antimuscarinic agents remain available. Where these are not suitable, unlicensed supplies of propantheline 15mg tablets may be sourced, lead times vary. **Unlicensed imports** The following specialist importers have confirmed they can source unlicensed propantheline 15mg tablets (please note there may be other companies that can also source supplies): • Alium Medical • Mawdsley's Unlicensed • Target Healthcare **Considerations and background** **Supporting Information** **Clinical Information**

	Propantheline is an oral antimuscarinic licensed for adjunctive use in adults with hyperhidrosis, adult enuresis, and gastrointestinal disorders characterised by smooth muscle spasm. **Alternative antimuscarinic treatment options;** Please consult your local formulary for other agents. **Indication** Adult enuresis: • oxybutynin • tolterodine • darifenacin • solifenacin Gastro-intestinal smooth muscle spasm: • dicycloverine hydrochloride • hyoscine butylbromide Hyperhidrosis: • oxybutynin (off-label), • glycopyrronium bromide (off-label) **Medicine Supply Notification Number** MSN/2023/113 **Guidance on ordering and prescribing unlicensed imports** Any decision to prescribe an unlicensed medicine must consider the relevant guidance and NHS Trust or local governance procedures. Please see the links below for further information: • The supply of unlicensed medicinal products, Medicines and Healthcare products Regulatory Agency (MHRA) • Professional Guidance for the Procurement and Supply of Specials, Royal Pharmaceutical Society (RPS) • Prescribing unlicensed medicines, General Medical Council (GMC) **Links** • **SmPC Pro-Banthine tablets** • **BNF propantheline** • **BNF Hyperhidrosis** • **CKS: Hyperhidrosis** • **BNF Antispasmodics** • **CKS: Irritable bowel syndrome-antispasmodic drugs** • **CKS: LUTS in men** • **CKS: Incontinence - urinary, in women** • **BNF Urinary Incontinence and pelvic organ prolapse in women** • **NICE Guidance NG123: Urinary incontinence and pelvic organ prolapse in women: management** • **SmPC Oxybutynin** • **SmPC Tolterodine** • **SmPC Darifenacin** • **SmPC Dicycloverine hydrochloride** • **SmPC Hyoscine butylbromide** • **SmPC Glycopyrronium**
Shortage of Estradiol (Estring) 7.5micrograms/24hours vaginal delivery system	**Anticipated re-supply date** 9 February 2024 BNF chapters 07 - Obstetrics, Gynae & Urinary Tract Disorders · 06 - Endocrine System **Medicines affected** Estring 7.5micrograms/24hours vaginal delivery system (Pfizer Ltd)

9 February 2024

Actions

Where patients have insufficient supplies to last until the re-supply date, clinicians should review patients to determine if this is still the most suitable therapy; and consider prescribing an alternative estradiol or estriol vaginal product taking into account current availability and patient preferences. Ensure that the patient is not intolerant to any of the excipients and is counselled on how to administer the treatment and new dosing schedule (see supporting information below).

Alternatives

Alternative estradiol or estriol preparations:

Vagirux vaginal tablet, Vagifem vaginal tablet, estradiol 10microgram vaginal tablet

Active ingredient: Estradiol 10microgram

Dose: One vaginal tablet daily for 2 weeks followed by maintenance dose of
One vaginal tablet twice a week.

Availability: Can support increased demand, except for Vagifem which can only support a partial increase in demand.

Imvaggis pessary

Active ingredient: Estriol 30microgram

Dose: One pessary daily for first 3 weeks followed by maintenance dose of one pessary twice a week.

Availability: Can support increased demand.

Estriol 0.01% cream

Active ingredient: Estriol 100microgram per 1gram

Dose: One applicator full per day until restoration of vaginal mucosa has been achieved then maintenance dose of one applicator full twice a week.

Availability: Can support increased demand.

Estriol 0.1% Cream

Active ingredient: Estriol 1000microgram per 1gram

Dose: 1 application per day for the first weeks (maximally 4 weeks), followed by a gradual reduction, based on relief of symptoms, until a maintenance dosage (e.g. 1 application twice a week) is reached.

Availability: Can support increased demand.

Considerations and background

Summary

Estring 7.5micrograms/24hours vaginal delivery system is out of stock until February 2024, with intermittent availability expected until November 2024.

Supporting Information

Clinical Information

Estring is licensed for the treatment of atrophic vaginitis (due to oestrogen deficiency) in postmenopausal women. Each ring releases estradiol at an average amount of 7.5 microgram per 24 hours, over a period of 90 days. Once inserted it is left in the vagina continuously for 90 days and replaced by a new ring as appropriate. The maximum recommended duration of continuous therapy is two years.

The following oestrogen products for vaginal application are also licensed for the treatment of vaginal atrophy due to oestrogen deficiency in postmenopausal women but have a more frequent dosing schedule. Women already stabilised on Estring can be put onto the twice weekly maintenance dose of the selected product. Women who are still symptomatic on Estring should start with the induction regimen as set out in the SmPC for that product.

Medicine Supply Notification Number

MSN/2023/119

Links

- **Vaginal and vulval conditions treatment summary – BNF**
- **SPC Estring® 7.5 microgram/24 hours vaginal delivery system**
- **SPC for Vagifem, Vagirux or estradiol 10microgram vaginal tablets**
- **SPC Imvaggis® 0.03mg pessaries**
- **SPC Estriol 1mg/g cream**

	• SPC Estriol 0.01% cream
Shortage of Sando-K (potassium chloride 600mg and potassium bicarbonate 400mg [total potassium 12mmol] effervescent tablets	**Anticipated re-supply date** 23 February 2024 BNF chapters 09 - Nutrition And Blood **Medicines affected** Sando-K effervescent tablets (Alturix Ltd) 23 February 2024 **Actions** **Clinicians in primary and secondary** Clinicians in primary and secondary care should review patients for appropriateness of ongoing therapy; Consider quantity to be supplied (pack size 20 tablets per tube) when prescribing existing supply of Sando-K to reduce wastage. Pharmacy teams should query any scripts that could potentially have the dose regimen adjusted to reduce wastage; Consider dietary replacement for mild hypokalaemia, seeking advice from dieticians if required; Consider prescribing potassium chloride 600mg modified release tablets, if patient is able to swallow solid dosage forms, is able to follow instructions for administration, and is not intolerant to any of the excipients, ensuring they are counselled on the appropriate dose required; Consider prescribing unlicensed supply of potassium chloride 75mg/ml oral solution or Chlorvescent effervescent tablets where licensed alternatives are not appropriate. Ensure that the patient is not intolerant to any of the excipients and is counselled on the appropriate dose (and volume) required. Prescribers should work with local pharmacy teams to ensure orders are placed within appropriate time frames as lead times may vary (see supporting information below); If the above options are not considered appropriate, primary care clinicians should seek advice from specialists on management options. **Secondary care only** NHS provider Trust pharmacy procurement teams and clinical teams should work together to review local stock holdings and conservatively order stock of Sando-K in line with projected demand until the supply issue is resolved. If Sando K is not available, consider use of potassium chloride 600mg modified release tablets and unlicensed oral preparations as detailed above or appropriateness of intravenous potassium replacement therapy in line with local guidelines. **Alternatives** **Licenced alternatives** • Potassium chloride 600mg (total potassium 8mmol) modified release tablets remain available and can support an increase demand. • Kay-Cee-L syrup (potassium chloride 75mg/ml) remains available but cannot support an increase in demand. • Supply of intravenous ready-to-administer potassium chloride infusions remain available. **Unlicensed alternatives** The following Specials manufacturer have confirmed they can supply unlicensed potassium chloride 75mg/ml (total potassium: 1mmol/ml) oral solution (please note there may be other companies that can also source supplies): • Easstone Ltd • Nova Laboratories Ltd The following specialist importer have confirmed they can source unlicensed Chlorvescent effervescent tablets (contains potassium chloride 595mg, potassium carbonate 152mg and potassium bicarbonate 384mg; total 14mmol potassium per tablet) (please note there may be other companies that can also source supplies):

	• Alium Medical **Considerations and background** **Clinical Information** Sando-K is licensed for the prevention and treatment of hypokalaemic states such as those associated with: • Use of drugs which can induce potassium depletion e.g. furosemide, thiazide diuretics, corticosteroids, carbenoxolone and cardiac glycosides, especially in combination with diuretics; • Potassium loss resulting from severe diarrhoea, vomiting or fistulas; • Acid-base disturbances e.g. alkalosis, renal tubular acidosis, states in which there is aldosterone excess, Cushing syndrome; • Decreased intake of potassium e.g. malnutrition, alcoholism, some elderly patients with deficient diets; • treatment of hypokalaemia associated with hypochloraemic alkalosis since Sando-K contains chloride. The summary of product characteristics states to store Sando-K in the original tube, kept tightly closed in order to protect from moisture. The tablets are highly hygroscopic. The tube contains an internal desiccant and is designed to protect the medicines from moisture. Alturix have not conducted tests on storage in any other containers. Any decision taken locally to pack down is outside the terms of the medicine's marketing authorisation and should only be made following a risk/benefit assessment that identifies risk mitigation measures. **Further clinical considerations** • Dietary replacement of potassium may be suitable for mild hypokalaemia; 1 medium banana contains approximately 12mmol of potassium. • Kay-Cee-L syrup (cannot support uplift in demand) contains 40% w/v sorbitol which can cause induce diarrhoea. • Switching between alternative oral potassium supplements is on a mmol per mmol basis so monitoring requirements are not expected to change. • For symptomatic or severe hypokalaemia (potassium less than or equal to 2.5mmol/L) which would necessitate rapid replenishment, intravenous potassium supplementation is usually indicated. **Medicine Supply Notification Number** MSN/2023/120 **Guidance on ordering and prescribing unlicensed imports** Any decision to prescribe an unlicensed medicine must consider the relevant guidance and NHS Trust or local governance procedures. Please see the links below for further information: • The supply of unlicensed medicinal products, Medicines and Healthcare products Regulatory Agency (MHRA) • Professional Guidance for the Procurement and Supply of Specials, Royal Pharmaceutical Society (RPS) • Prescribing unlicensed medicines, General Medical Council (GMC) **Links** • **SmPC: Sando-K effervescent tablets** • **BNF: Potassium chloride** • **BNF: Electrolyte replacement therapy** • **Patient information: Dietary potassium**
Shortage of Phosphate Sandoz effervescent tablets	**Anticipated re-supply date** 29 March 2024 BNF chapters 09 - Nutrition And Blood

Medicines affected

Phosphate Sandoz effervescent tablets (Alturix Ltd)

29 March 2024

Actions

Clinicians in primary and secondary care

Clinicians in primary and secondary care should review patients for appropriateness of ongoing therapy;

Consider quantity to be supplied (pack size 20 tablets per tube) when prescribing existing supply of Phosphate Sandoz to reduce wastage. Pharmacy teams should query any scripts that could potentially have the dose regimen adjusted to reduce wastage;

Consider dietary replacement, with advice from a dietician if required;

Consider prescribing unlicensed sodium acid (dihydrogen) phosphate 1mmol in 1ml oral solution from Specials manufacturers or unlicensed imports of Phosphate Phebra (16.1mmol phosphate) effervescent tablets. Ensure that the patient is not intolerant to any of the excipients and is counselled on the appropriate dose (and volume) required.

Prescribers should work with local pharmacy teams to ensure orders are placed within appropriate time frames as lead times may vary (see supporting information below);

If the above options are not considered appropriate, primary care clinicians should seek advice from specialists on management options.

Secondary care only

NHS provider Trust pharmacy procurement teams and clinical teams should work together to review local stock holdings and conservatively order stock of Phosphate Sandoz in line with projected demand until the supply issue is resolved.

If Phosphate Sandoz is not available, consider use of unlicensed oral preparations as detailed above or appropriateness of intravenous phosphate replacement in line with local guidelines.

Alternatives

The following specialist importer have confirmed they can source unlicensed Phosphate Phebra (16.1mmol phosphate) effervescent tablets (please note there may be other companies that can also source supplies):

- Smartway

Please note- the unlicensed oral solutions may differ in shelf life and storage requirements once opened.

The following Specials manufacturer have confirmed they can supply unlicensed sodium acid (dihydrogen) phosphate 1mmol in 1ml oral solution (please note there may be other companies that can also source supplies):

- East-Stone
- IPS Pharma
- Nova Laboratories Ltd
- Quantum Pharma

Polyfusor phosphates infusion 500ml (50mmol phosphate, 81mmol sodium, 9.5mmol potassium in 500mL) remain available but cannot support an uplift in demand.

Sodium glycerophosphate 4.32g/20ml concentrate for solution for infusion vials/ampoules (20mmol phosphate and 40mmol sodium per 20ml) remain available and can support a partial uplift in demand.

Considerations and background

Clinical Information

Phosphate Sandoz is licensed for treatment of:

- hypercalcaemia associated with such conditions as hyperparathyroidism, multiple myeloma and malignancy; and
- hypophosphataemia associated with vitamin D resistant rickets and vitamin D resistant hypophosphataemic osteomalacia.

The summary of product characteristics states to store Phosphate Sandoz in the original tube, kept tightly closed in order to protect from moisture. The tablets are highly hygroscopic. The tube contains an internal desiccant and is designed to protect the medicines from moisture. Alturix have not conducted tests on storage in any other containers. Any decision taken locally to pack down is outside the terms of the

	medicine's marketing authorisation and should only be made following a risk/benefit assessment that identifies risk mitigation measures. Further clinical considerations • The licensed dose range for Phosphate Sandoz is 2 to 6 tablets daily in 2 to 4 divided doses. Switching between alternative oral phosphate supplements is on a mmol per mmol basis so monitoring requirements are not expected to change. • The unlicensed oral solutions may differ in shelf life and storage requirements once opened. • For severe phosphate deficiency intravenous replacement as per local guidelines, repeated over several days according to serum phosphate levels, may be required. **Medicine Supply Notification Number** MSN/2023/121 Guidance on ordering and prescribing unlicensed imports Any decision to prescribe an unlicensed medicine must consider the relevant guidance and NHS Trust or local governance procedures. Please see the links below for further information: • The supply of unlicensed medicinal products, Medicines and Healthcare products Regulatory Agency (MHRA) • Professional Guidance for the Procurement and Supply of Specials, Royal Pharmaceutical Society (RPS) • Prescribing unlicensed medicines, General Medical Council (GMC) Links • SmPC: Phosphate Sandoz effervescent tablets • BNF: Phosphate imbalance • BNF: Phosphate
Shortage of Alteplase (Actilyse Cathflo) 2mg powder for solution for injection vials	**Anticipated re-supply date** 28 June 2024 BNF chapters 02 - Cardiovascular System **Medicines affected** Alteplase 2mg powder and solvent for solution for injection vials 28 June 2024 Actions NHS provider trust pharmacy procurement teams should work with appropriate clinical leads and their local Medication Safety Officer (MSO) to: • consider switching to an alternative treatment option most appropriate to meet patient requirements following a local risk assessment, considering unlicensed products only where licensed alternatives are not appropriate; • be aware that nursing staff will require education and training on the administration of an alternative agent or dilution of Syner-KINASE 100,000IU vials; • put measures in place to reduce the risk of a dose error when diluting the product, for example, ensure clear advice on dilution is available in all clinical areas using Syner-KINASE and consider additional warning labels on the 100,000IU product regarding the potential need to dilute; and • consult a specialist pharmacist or nurse for advice when required. Alternatives See clinical information Considerations and background Summary

- Alteplase (Actilyse Cathflo) 2mg powder for solution for injection vials are out of stock with resupply expected in mid-2024.
- Other alteplase (Actilyse) formulations remain available, however, they cannot support the increase in demand. A National Patient Safety Alert has been issued for the shortage of alteplase and tenecetplase; the actions within this alert should be followed.
- TauroLock™- U25.000 devices remain available and can support an increase in demand.
- Urokinase (Syner-KINASE) 10,000IU and 25,000IU vials are currently out of stock.
- Urokinase (Syner-KINASE) 100,000IU vials remain available, however, are currently experiencing supply constraints due to the recent increase in demand.
- Where the above alternatives are not suitable, unlicensed imports can be sourced, lead times vary.

Clinical Information

- Actilyse Cathflo is the only recommended presentation of alteplase licensed for use as thrombolytic treatment of occluded central venous access devices including those used for haemodialysis.
- TauroLock™- U25.000, classified as a medical device, is ONLY recommended for instillation in central venous access systems as a dwell-lock solution to prevent infection and catheter occlusion. It comprises two separate components, urokinase (25,000IU) freeze dried powder in a vial and an ampoule of Taurolock™, which contains an antimicrobial (cyclo)-taurolidine and citrate, as a solvent.

In 2021, Syner-MED, the manufacturer of urokinase (Syner-KINASE) 100,000IU injection issued a Dear HCP Letter regarding dilution of their high strength product to desired concentration (as a substitute for Syner-KINASE 25,000IU). Restrictions on supply of Syner-KINASE 100,000IU injection have currently been implemented to ensure equitable supply across Trusts. Syner-Med will liaise with all affected customers on a case-by case basis.

Unlicensed imports

The following specialist importers have confirmed they can source unlicensed alteplase 2mg injection. Lead times vary (please note, there may be other companies that can also source supplies):

- Alium Medical
- BAP Pharma
- Clinigen
- Durbin PLC
- Genetech Pharmaceuticals
- Mawdsley's Unlicensed
- Orifarm UK
- Smartway
- Target Healthcare

Guidance on ordering and prescribing unlicensed imports

Any decision to prescribe an unlicensed medicine must consider the relevant guidance and NHS Trust or local governance procedures. Please see the links below for further information:

- The supply of unlicensed medicinal products, Medicines and Healthcare products Regulatory Agency
- Professional Guidance for the Procurement and Supply of Specials, Royal Pharmaceutical Society
- Prescribing unlicensed medicines, General Medical Council (GMC)

Medicines Supply Notification Number

MSN/2022/045

Shortage of Diazepam 5mg/2.5ml rectal solution tube	**Anticipated re-supply date** 8 March 2024 BNF chapters 04 - Central Nervous System **Actions** Diazepam 5mg/2.5ml rectal solution tubes remain available however there may be limited supplies until week commencing 4th March 2024. Where diazepam 5mg/2.5ml rectal solution tubes are unavailable, clinicians should consider prescribing unlicensed diazepam 5mg/2.5ml rectal solution tubes. Alternatives **Unlicensed products** The following specialist importers have confirmed they can source unlicensed diazepam 5mg/2.5ml rectal solution tubes (please note there may be other companies that can also source supplies): • Smartway • Target **Considerations and background** Guidance on ordering and prescribing unlicensed imports Any decision to prescribe an unlicensed medicine must consider the relevant guidance and NHS Trust or local governance procedures. Please see the links below for further information: • The supply of unlicensed medicinal products, Medicines and Healthcare products Regulatory Agency (MHRA) • Professional Guidance for the Procurement and Supply of Specials, Royal Pharmaceutical Society (RPS) • Prescribing unlicensed medicines, General Medical Council (GMC) Links • SmPC Diazepam Desitin 5mg Rectal solution • BNF Diazepam
Shortage of Licensed and Unlicensed Epidural Infusion Bags	**Anticipated re-supply date** 27 January 2024 BNF chapters 15 - Anaesthesia Actions Refer to the National Patient Safety Alert for further information. **Considerations and background** **Summary** There are supply issues impacting Fresenius Kabi (FK) unlicensed epidural bags containing bupivacaine only and levobupivacaine with fentanyl. These are also impacting Sintetica's licensed epidural bags containing bupivacaine only and bupivacaine with fentanyl. This National Patient Safety Alert contains actions for acute care hospitals, and any other organisations providing procedures that require epidural infusions. NatPSA Reference Number NatPSA/2023/002/CMU

Shortage of Valganciclovir (Valcyte) 250mg/5ml oral solution	**Anticipated re-supply date** 29 February 2024 BNF chapters 05 - Infections **Medicines affected** Valcyte 50mg/ml oral solution (Neon Healthcare Ltd) 100 ml – **Actions** NHS provider Trust pharmacy procurement teams and clinical teams should work together to review local stock holdings and where there is insufficient stock until the resupply date: • consider prescribing valganciclovir 450mg tablets as a first line option to deliver full doses, where appropriate; • contact Regional Pharmacy Procurement specialist in urgent cases as they may be able to facilitate mutual aid between hospitals; and • consider prescribing unlicensed valganciclovir 250mg/5ml oral suspension available from Specials manufacturers or unlicensed imports of valganciclovir 250mg/5ml oral solution during this period (see Supporting Information). **Alternatives** **Licensed alternatives** Valganciclovir 450mg tablets remain available and can support an uplift in demand. **Unlicensed alternatives** **Unlicensed specials** The following Specials manufacturer can manufacturer valganciclovir 250mg/5ml oral suspension (please note there may be other Specials manufacturers that can provide supplies): • Nova Labs **Unlicensed Imports** The following specialist importers have confirmed they can source unlicensed valganciclovir 250mg/5ml oral solution, lead times may vary (please note there may be other companies that can also source supplies): • Alium Medical • Target Healthcare **Considerations and background** **Supporting information** • Stock held in NHS provider hospitals may allow for mutual aid between hospitals; local procurement teams should contact Regional Pharmacy Procurement Specialists to discuss if this is possible. **Clinical Information** Valganciclovir is licensed for: • Induction and maintenance treatment of cytomegalovirus (CMV) retinitis in adult patients with acquired immunodeficiency syndrome (AIDS). • Prevention of CMV disease in CMV-negative adults and children (aged from birth to 18 years) who have received a solid organ transplant from a CMV-positive donor. Valganciclovir is marketed as a 250mg/5ml sugar free oral solution and 450mg film-coated tablets. The off-label crushing and dispersal of the tablets in water is not recommended as valganciclovir is teratogenic. **Medicine Supply Notification Number** MSN/2023/092 **Guidance on ordering and prescribing unlicensed imports** Any decision to prescribe an unlicensed medicine must consider the relevant guidance and NHS Trust or local governance procedures. Please see the links below for further information:

	• The supply of unlicensed medicinal products, Medicines and Healthcare products Regulatory Agency (MHRA) • Professional Guidance for the Procurement and Supply of Specials, Royal Pharmaceutical Society (RPS) • Prescribing unlicensed medicines, General Medical Council (GMC) **Links** • **BNF Valganciclovir** • **SmPC valganciclovir products**
Shortage of Rifampicin 150mg capsules	**Anticipated re-supply date** 29 March 2024 BNF chapters 05 - Infections **Medicines affected** Rifampicin 150mg capsules 100 capsule 29 March 2024 Actions Primary care prescribers should: • consider prescribing rifampicin 100mg/5ml oral suspension, where appropriate. NHS provider Trust pharmacy procurement teams and clinical teams should work together to review local stock holdings and where there is insufficient stock until the resupply date: • consider prescribing rifampicin 100mg/5ml oral suspension, where appropriate; or • in patients being treated for tuberculosis (TB), liaise with specialists if the above option is not suitable, to discuss appropriateness of directly observed therapy (DOT) using 300 mg capsule-based regimen administered three times a week (see supporting information); or • consider prescribing unlicensed imports of rifampicin 150mg capsules, only where licensed alternatives are not appropriate. Prescribers should work with local pharmacy teams to ensure orders are placed within appropriate time frames as lead times may vary (see Supporting Information below). **Alternatives** Rifampicin 100mg/5ml oral suspension. This can support an uplift in demand. Rifampicin 300mg capsules remain available. The following specialist importers have confirmed they can source unlicensed rifampicin 150mg capsules (please note there may be other companies that can also source supplies): • Alium Medical • Durbin • Mawdsleys • Q Med Pharma • Tanner Pharma Considerations and background Supporting Information Rifampicin is licensed for the treatment of tuberculosis, prophylaxis of meningococcal meningitis in close contact adult and paediatric patients, prophylaxis of Haemophilus influenzae type b disease in close contacts, and other infections including, brucellosis, legionnaires disease, leprosy, and serious staphylococcal infections. A 150mg rifampicin capsule is equivalent to 7.5ml of the oral suspension. For TB, the 450 mg daily dose is recommended for patients weighing up to 50 kg, which is equivalent to 22.5ml of the oral suspension. For DOT, a supervised regimen for patients with TB, those weighing up to 50 kg receive a dose of 600 mg three times a week. This is an alternative regimen using the 300 mg capsules.

	Medicines Supply Notification MSN/2023/104 Guidance on ordering and prescribing unlicensed imports Any decision to prescribe an unlicensed medicine must consider the relevant guidance and NHS Trust or local governance procedures. Please see the links below for further information: • The supply of unlicensed medicinal products, Medicines and Healthcare products Regulatory Agency (MHRA) • Professional Guidance for the Procurement and Supply of Specials, Royal Pharmaceutical Society (RPS) • Prescribing unlicensed medicines, General Medical Council (GMC) Links • BNF Rifampicin • SmPC Rifampicin 150mg capsules • BNF Tuberculosis • TB Drug monographs: rifampicin
Shortage of Liraglutide (Victoza) 6mg/ml solution for injection	**Anticipated re-supply date** 6 January 2025 BNF chapters 06 - Endocrine System **Actions** A National Patient Safety Alert was issued on the 18 July 2023 for the shortage of GLP1 RA medicines. This has been superseded by a further National Patient Safety Alert issued on the 3rd January 2024. Please refer to the National Patient Safety Alert for information and advice on alternatives.
Shortage of Disopyramide 100mg capsules	**Anticipated re-supply date** 19 January 2024 BNF chapters 02 - Cardiovascular System **Medicines affected** Disopyramide 100mg capsules 84 capsule 19 January 2024 Disopyramide 250mg modified-release tablets 60 tablet 1 February 2024 **Actions** **Prescribers and pharmacy teams should:** • identify patients prescribed disopyramide 100mg capsules and establish if they have sufficient supply to last until the resupply date; and • reserve remaining supply of 100mg disopyramide capsules for these patients with insufficient supply. Where licensed disopyramide 100mg capsules are unavailable: • consider prescribing unlicensed imports of disopyramide 100mg capsules, taking into account lead times; • if the above option is not possible due to lag time in obtaining supply, convert patients to disopyramide 250mg prolonged release tablets at same total daily dose, if the formulation allows, or as close a dose as possible, and titrate dose as needed (see Supporting information);

- where licenced (parallel import) disopyramide 250mg prolonged release tablets are unavailable, consider prescribing unlicensed imports, taking into account lead times; and
- seek advice from cardiology specialists on management of unstable patients or patients newly started on treatment, or where there is uncertainly or concern about switching formulation and or/dose conversion.

For patients commencing treatment with disopyramide, prescribers should:

- not prescribe 100mg capsules until the shortage has resolved and consider initiating patients on disopyramide 250mg prolonged release tablets; and
- if the above option is unsuitable, consider prescribing unlicensed imports of disopyramide 100mg capsules, taking into account lead times.

Patients should be counselled on any change in formulation and/ or dose change and advised to report adverse effects and/or recurrence of symptoms after switching.

Alternatives

Parallel imports:

- Limited supply of disopyramide 100mg capsules are available and can partially cover the demand for the 100mg capsules.
- Disopyramide 250mg modified release tablets remain available and can fully cover the demand for the 250mg MR tablets for the duration of the shortage.

Orders can be placed directly with the following suppliers:

- DrugsRUs Limited – via DrugsRUs Limited by contacting Veer@drugsrus.co.uk

Unlicensed imports:

The following specialist importer companies have confirmed they can source unlicensed disopyramide 100mg capsules (please note there may be other companies that can also source supplies):

- Alium
- Durbin

The following specialist importer companies have confirmed they can source unlicensed disopyramide 250mg tablets (please note there may be other companies that can also source supplies):

- Mawdsley
- Durbin

Considerations and background

Summary

- Disopyramide (Rythmodan)100mg capsules are out of stock until mid-December 2023.
- Disopyramide (Rythmodan) 250mg prolonged release tablets are out of stock until mid-December 2023 but parallel imports remain available and can fully cover demand.
- Limited stock of parallel imports of disopyramide 100mg are available and can partially cover demand for 100mg capsules.
- Unlicensed imports of disopyramide 100mg capsules and disopyramide 250mg prolonged release tablets have been sourced, lead times vary (see Supporting information).

Supporting information

Clinical Information

Disopyramide is licensed for the treatment of cardiac arrhythmias, with dose adjusted according to response. In addition to the immediate release capsule formulation, it is also formulated as a prolonged release tablet. As disopyramide tends to be a last line antiarrhythmic agent, alternative treatment options are limited, and require specialist input.

Dosing information

Disopyramide

Half-life: 5 to 8 hours

Immediate release capsules (100 mg)

Licensed dose range: 300 mg to 800 mg daily in divided doses (usually every 6 to 8 hours)

Prolonged-release tablets (250 mg)

One side has a break-line and the tablets are licensed to be halved.

Licensed dose range: 250-375 mg (one to one and a half tablets) twice daily.

Switching

The total daily dose of the 100mg immediate release capsules should be converted to the closest equivalent dose of the prolonged release tablets, administered twice daily. A decision will have to be taken on whether to go under or above current dose for those patients on doses that cannot be exactly delivered by the prolonged release tablets. In practice, lower dose conversions are likely to be used and the dose titrated up as needed, based on response and tolerability.

Immediate release capsules total daily dose (mg)	Prolonged release tablet dose regimens (mg)	Prolonged-release tablet total daily dose after switch (mg)
300	125 BD or 250 am 125 pm	250 or 375
400	250 am 125 pm or 250 BD	375 or 500
500	250 BD	500
600	375 am 250 pm	625
700	375 BD	750
800	375 BD	750

Guidance on ordering and prescribing unlicensed imports

Any decision to prescribe an unlicensed medicine must consider the relevant guidance and NHS Trust or local governance procedures. Please see the links below for further information:

- The supply of unlicensed medicinal products, Medicines and Healthcare products Regulatory Agency (MHRA)
- Professional Guidance for the Procurement and Supply of Specials, Royal Pharmaceutical Society (RPS)
- Prescribing unlicensed medicines, General Medical Council (GMC)

Links

- **Disopyramide presentations**
- **BNF disopyramide**

Shortage of Liraglutide (Saxenda) 6mg/ml solution for injection 3ml pre-filled disposable devices

Anticipated re-supply date

28 June 2024

BNF chapters

06 - Endocrine System

Medicines affected

Saxenda 6mg/ml solution for injection 3ml pre-filled pens (Novo Nordisk Ltd)

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Actions

Actions for Clinicians / Weight Management Programme Specialists

- Do not initiate new patients on liraglutide (Saxenda®) during the national shortage

	• Identify patients prescribed liraglutide 6mg/mL solution for injection (Saxenda®) and determine how much supply they have at home to prioritise the urgency for review • Review the clinical need against the licensed indication and NICE Obesity guidance • Discontinue liraglutide 6mg/ml solution for injection (Saxenda®) if at least 5% of initial body-weight has not been lost after 12 weeks at maximum dose • Consider the use of Orlistat for patients who have not previously tried this medicine • Avoid switching to using any other GLP1-RA off-label • Review all patients under a multidisciplinary team with dietetic and psychological support in place to discuss further non-pharmacological options during the time where liraglutide 6mg/ml solution for injection (Saxenda®) is unavailable **Alternatives** Liraglutide is one of three medicines recommended by NICE for weight loss in adults; the other two include another GLP-1 analogue, semaglutide (Wegovy) injection, which has not yet been launched, and orlistat. See NICE obesity guidance for further information and non-pharmacological advice **Considerations and background** Liraglutide (Saxenda®) is a glucagon-like peptide-1 (GLP-1) analogue. GLP-1 is a physiological regulator of appetite and food intake. Liraglutide taken up in specific brain regions involved in regulation of appetite, where via specific activation of the GLP-1R, increases key satiety and decreased key hunger signals, thereby leading to lower body weight. **Supply overview** Liraglutide 6mg/ml solution for injection (Saxenda®) is currently out of stock and there will be intermittent supply available until mid-2024. There are very limited, intermittent supplies of all glucagon-like peptide-1 receptor agonists (GLP-1 RAs) • Supply is not expected to return to normal until at least mid-2024. • A National Patient Safety Alert was issued on the 18 July 2023 for the shortage of GLP1 RA medicines. This has been superseded by a further National Patient Safety Alert issued on the 3rd January 2024.Please refer to the National Patient Safety Alert for information and advice on alternatives. **Links** • **BNF: Liraglutide** • **SmPC: Saxenda 6 mg/mL solution for injection in pre-filled pen** • **BNF: Orlistat** • **SmPC: Xenical 120 mg hard capsules** • **BNF: Obesity** • **NICE guidance: Obesity: identification, assessment and management** • **SPS: Prescribing available GLP-1 receptor agonists for diabetes**
Shortage of Permethrin 5% cream	**Anticipated re-supply date** 29 February 2024 BNF chapters 13 - Skin **Medicines affected** Permethrin 5% cream 29 February 2024 Actions

	Where scabies has been diagnosed and where individuals have been confirmed as contacts[b], clinicians should follow the below actions: • Existing stock of permethrin 5% cream should be prioritised for use in confirmed cases and their immediate contacts. • In secondary care, where there are insufficient stocks, the organisation should request mutual aid, facilitated by their Regional Pharmacy Procurement Specialist. • If licensed permethrin 5% cream is unavailable, prescribe unlicensed permethrin 5 % cream. Where permethrin 5% cream is unavailable, consider prescribing unlicensed special-order benzyl benzoate 25% emulsion if locally available. • If both alternatives are unavailable, consider prescribing unlicensed ivermectin 3mg tablets. • For all unlicensed alternatives, prescribers should work with local pharmacy teams to ensure orders are placed with special-order manufacturers within appropriate time frames as lead times may vary. • Infection prevention and control measures to prevent further scabies spread should be applied rigorously. For further details on alternatives see the Treatment for scabies section below. Patients and close contacts should receive counselling on how to apply the product, the frequency and duration of treatment. [b]Contacts are defined as anyone who has close physical contact with the case without appropriate PPE, for example, providing personal care with skin-to-skin contact, sharing a room or other similar household setting, and sexual partners, within the 8 weeks prior to diagnosis. Alternatives Unlicensed permethrin 5% cream The following specialist importers have confirmed they can source unlicensed permethrin 5% cream (please note there may be other companies that can also source supplies): • Orifarm **Unlicensed ivermectin 3mg tablets** The following specialist importers have confirmed they can source unlicensed ivermectin 3mg tablets (please note there may be other companies that can also source supplies): • Alium • Mawdsleys • Orifarm • Target Healthcare **Unlicensed benzyl benzoate emulsion** The following special-order manufacturers have confirmed they can manufacture unlicensed benzyl benzoate emulsion (please note there may be other companies that can also source supplies): • Eaststone • Target Healthcare Considerations and background Supply overview Permethrin 5% w/w cream is expected to be in limited supply until further notice due to an increase in demand. Malathion liquid, an alternative to permethrin for treatment of scabies, is now available. Crotamiton 10% Cream (Eurax), which is licensed for the treatment of scabies, remains available but can only meet its current demand for other conditions. Ivermectin 3mg tablets are also licensed for treatment of scabies but are not currently marketed in the UK. Unlicensed supplies of ivermectin 3mg tablets may be sourced, lead times vary. Supporting information

	If the cases seen are suspected of being part of an outbreak in a setting associated with vulnerable people, clinicians should refer to UKHSA guidance on the management of scabies cases and outbreaks in long-term care facilities and other closed settings including the appropriate infection prevention and control measures with advice on coordinated cleaning of clothing and bedding. Treatment for scabies Permethrin 5% w/w cream Licence Licenced in the UK Indication Treatment of scabies for adults and children 2 months of age and above. **Method of application** ~ 90% individuals cured after single application. If there are no signs of original lesions healing or if new lesions have appeared, second application can be made not less than 7 days after first application. Comments First line agent. Considered suitable for use in pregnancy and breastfeeding. Benzyl benzoate 25% w/v Application Cutaneous Emulsion Licence Not licenced in the UK (but licensed in Republic of Ireland (RoI)) Available from special-order manufacturers (see guidance on ordering and prescribing below) Indication Treatment of scabies in adults, children and infants. Method of application Applied to entire body at night from soles of feet, omitting head and neck (although BNF considers that application should be extended to scalp, neck, face, and ears), for 2 consecutive nights. It is left in place for 8-12 hours on each night and may be followed by a repeated application at night 7 days later. It may be diluted with equal quantity of water for older children and with three parts of water for infants to minimise risk of irritation, although this also reduces efficacy. Comments Generally, no longer recommended as not as effective as permethrin or malathion and may cause skin irritation. The SmPC for the licensed RoI product states although no studies on effects on human pregnancy or lactation have been carried out, drug is for topical use and is unlikely to represent a hazard to the pregnant or lactating patient. Irritant to eyes and mucous membranes and may be irritant to skin. Hypersensitivity reactions have been reported. Systemic symptoms have been reported following excessive topical use. BNF advises avoid in children. Ivermectin 3mg tablets Licence Licenced product is not currently marketed in the UK but unlicensed imports available Indication Treatment of human sarcoptic scabies. Treatment is justified when the diagnosis of scabies has been established clinically and/or by parasitological examination. Without formal diagnosis treatment is not justified in cases of pruritus. Method of application The recommended dosage is a single oral dose to provide ivermectin 200 microgram/kg body weight (e.g. 12mg [4 tablets] for a 60kg patient). Common scabies Recovery will be considered as definite only after 4 weeks from the treatment. Persistence of pruritus or scraping lesions does not justify a second treatment before this date.

	Administration of a second dose within 2 weeks after the initial dose should only be considered: 1. when new specific lesions occur 2. when the parasitologic examination is positive at this date Profuse and crusting scabies In these heavily infected forms, a second dose within 8 to 15 days of ivermectin and/or concomitant topical therapy may be necessary to obtain recovery. Comments Ivermectin tablets are now a licensed product, although sources like the BNF, CKS, and UKHSA guidance have yet to update to reflect this, and still describe oral ivermectin as an unlicensed product. **Medicine Supply Notification** MSN/2023/083 Guidance on ordering and prescribing unlicensed imports Any decision to prescribe an unlicensed medicine must consider the relevant guidance and NHS Trust or local governance procedures. Please see the links below for further information: • The supply of unlicensed medicinal products, Medicines and Healthcare products Regulatory Agency (MHRA) • Professional Guidance for the Procurement and Supply of Specials, Royal Pharmaceutical Society (RPS) • Prescribing unlicensed medicines, General Medical Council (GMC) Links • SPC Permethrin 5% w/w Cream • BNF – Drugs for scabies and head lice • UKHSA guidance on the management of scabies cases and outbreaks in long-term care facilities and other closed settings • CKS: Scabies • BASHH 2016 UK National Guideline on the Management of Scabies • European guideline for the management of scabies • American Academy of Dermatology Association. Scabies: diagnosis and treatment • Health Products Regulatory Authority: Datasheet benzyl benzoate
Shortage of Levobupivacaine 25mg/10ml, 50mg/10ml and 75mg/10ml solution for injection ampoules	**Anticipated re-supply date** 15 March 2024 BNF chapters 15 - Anaesthesia **Medicines affected** Medicine Anticipated re-supply date Levobupivacaine 25mg/10ml solution for injection ampoules 15 March 2024 Levobupivacaine 50mg/10ml solution for injection ampoules 15 March 2024 Levobupivacaine 75mg/10ml solution for injection ampoules 15 March 2024 **Actions** NHS provider Trust pharmacy procurement teams and clinical teams should: • regularly review current usage requirements and local wholesaler depot stock holdings to determine if sufficient stock is available to meet demand, and continue to order in line with current demand as over ordering will be challenged. • review and update local clinical protocols and policies to include bupivacaine in place of levobupivacaine, where appropriate • order additional bupivacaine from established contracted suppliers, if required.

	• liaise with anaesthetist on selection of alternative agent if bupivacaine is not considered an appropriate option. **Alternatives** Sterile overwrapped vials remain available from Fresenius Kabi but cannot support an uplift in demand. Bupivacaine 50mg/10ml vials remain available and can support a full uplift in demand. **Considerations and background** **Supporting Information** **Clinical information** Levobupivacaine is an isomer of bupivacaine. It has similar anaesthetic and analgesic properties to bupivacaine but is claimed to have an improved side effect profile. Levobupivacaine is licensed in adults for the following indications. **Surgical anaesthesia** • Major e.g. epidural (including for caesarean section), intrathecal, peripheral nerve block. • Minor e.g. local infiltration, peribulbar block in ophthalmologic surgery **Pain management** • Continuous epidural infusion, single or multiple bolus epidural for the management of pain especially post-operative pain or labour analgesia. **Paediatric use** It is also licensed in the paediatric population for use as analgesia (ilioinguinal / iliohypogastric block). **Bupivacaine** Bupivacaine is licensed for the production of local anaesthesia by peripheral nerve block(s) and central neural block (caudal or epidural), and for the relief of labour pain. In the paediatric population, it is licensed for surgical anaesthesia in adults and adolescents, and for acute pain management in adults, infants and children above 1 year of age. **Medicines Supply Notification** MSN/2023/102 **Links** • **BNF local anaesthesia** • **BNF Levobupivacaine** • **BNF Bupivacaine** • **SmPC Levobupivacaine** • **SmPC Bupivacaine**
Shortage of Tenecteplase (Metalyse) 10,000 units powder and solvent for solution for injection	**Anticipated re-supply date** 27 December 2024 BNF chapters 02 - Cardiovascular System **Medicines affected** Medicine Anticipated re-supply date Tenecteplase 10,000unit powder and solvent for solution for injection vials 27 December 2024 **Actions** **Update to communications** A National Patient Safety Alert was issued on the 3rd August 2022 regarding the shortage of alteplase and tenecteplase injections, and highlighting restrictions that had been put in place. The supply situation of alteplase has since improved, and this communication now supersedes the management advice previously provided with an update on the restrictions. **NHS provider Trust pharmacy procurement teams and their local Medication Safety Officer should:** • assess stock holding of alteplase and tenecteplase injections to ensure current stock levels are correctly recorded in pharmacy systems;

- reduce wastage by selecting appropriate vial sizes and using the most appropriate doses, giving consideration to rounding down to the nearest whole vial;
- where a local shortage does exist consider the feasibility of alternative therapeutic options to alteplase and tenecteplase if appropriate;
- pharmacy staff should order alteplase injections in line with their allocations and order tenecteplase injection in line with historic order patterns acknowledging that unusual orders will be challenged; and
- pharmacy staff should liaise with their Regional Pharmacy Procurement Specialist to manage allocated stocks of alteplase. Ensuring proactive stock management and prompt liaison should stock levels become critically low.

Alternatives

Streptokinase 1,500,000 unit vials and urokinase 100,000 units remain available and can support a partial uplift in demand.

Streptokinase 250,000 unit vials is subject to a supply disruption, see Archived: Shortage of Streptokinase 250,000unit powder for solution for infusion vials

Considerations and background

Supply overview

- There will be limited supplies of tenecteplase (Metalyse) injections for the remainder of 2023.
- Supply constraints remain in place for alteplase (Actilyse) 10mg, 20mg and 50mg injections and tenecteplase 10,000 units injection for the remainder of 2023 and therefore cannot support an uplift in demand.
- Trusts will now have access to approximately 100% of normal demand across 10mg, 20mg and 50mg alteplase injections, but additional demand cannot be met.

Tenecteplase (Metalyse) shelf-life extension

Approval has been granted to extend the shelf-life of the following batches of tenecteplase (Metalyse) by 6 months.

Batch Number: 004839

Current expiry date: 31 May 2022 (displayed as 05/2022)

New expiry date: 30 Nov 2022

Batch Number: 006917

Current expiry date: 31 July 2022 (displayed as 07/2022)

New expiry date: 31 Dec 2022

Batch Number: 102596

Current expiry date: 30 September 2022 (displayed as 09/2022)

New expiry date: 31 Mar 2023

Alternative thrombolytic treatments

Stroke

Only alteplase is licensed for the treatment of ischaemic stroke. Stroke teams may also have experience of using tenecteplase from participation in clinical trials, though this would be an unlicensed use. Mechanical thrombectomy is also used to treat some patients with acute ischaemic stroke but should be used in conjunction with alteplase in the majority of patients. There are no other therapeutic options for the treatment of acute ischaemic stroke.

Myocardial Infarction and dissolution of thrombi and emboli

Streptokinase

- The 1,500,000 units strength is licensed for the treatment of acute MI within 12 hours of onset with persistent ST-segment elevation or recent left bundle-branch block.
- The 250,000 and 750,000 units strengths are licensed for intravascular dissolution of thrombi and emboli in: acute massive pulmonary embolism, acute, sub-acute or chronic (not older than 6 weeks) occlusion of peripheral arteries, extensive deep vein thrombosis, and central retinal venous or arterial thrombosis (arterial occlusions not older than 8 hours, venous occlusions not older than 10 days).

	Repeat treatment with streptokinase administered more than 5 days and less than 12 months after initial treatment may not be effective due to increased likelihood of resistance as a result of antistreptokinase antibodies. Also, the therapeutic effect may be reduced in patients with recent streptococcal infections such as streptococcal pharyngitis, acute rheumatic fever and acute glomerulonephritis. **Urokinase** Urokinase is licensed for: • thrombosed intravascular catheters and cannulae, • extensive acute proximal deep vein thrombosis, • acute massive pulmonary embolism, and • acute occlusive peripheral arterial disease with limb threatening ischaemia Supplies of urokinase 10,000 units and 25,000 units are not available however, urokinase 100,000 units is meeting demand and can support a small increase in use; please refer to Shortage of Urokinase injection, which includes a link to a Dear HCP letter regarding dilution of this high strength product. **Off label uses** For the thrombolytic treatment of occluded central venous access devices including those used for haemodialysis; please refer to Shortage of Alteplase (Actilyse Cathflo) 2mg powder for solution for injection vials. For paediatric use, alteplase should only be used as rescue therapy to preserve vascular access in children on haemodialysis when other agents have been ineffective. For prophylaxis of central venous line occlusion in paediatrics, alteplase should only be used for the highest risk patients i.e. infants and small children. For other off label uses, discuss locally with the relevant specialist noting the advice contained within this alert. Please see the links below for further information. **Updated guidelines for use in stroke** Although the use of intravenous tenecteplase remains off-label, recent recommendations (National Clinical Guideline for Stroke) opened the way for a broader use of tenecteplase in Acute Ischaemic Stroke patients. However, the current global shortage of tenecteplase will limit the initial extent to which Recommendation 3.5A (Patients with acute ischaemic stroke, regardless of age or stroke severity, in whom treatment can be started within 4.5 hours of known onset should be considered for treatment with alteplase or tenecteplase) can be implemented, at least until early 2025. As such we caution against its use outside of the licensed indication and clinical trials (where a prespecified and coordinated supply has been assured). **Medicine Supply Notification Number** MSN/2022/084 – this also refers to Shortage of Alteplase (Actilyse) 10mg, 20mg and 50mg powder and solvent for solution for injection and infusion vials. **Links** • **SmPC alteplase** • **SmPC tenecteplase** • **SmPC streptokinase** • **SmPC urokinase** • **NICE guideline for the management of acute ischaemic stroke in adult patients** • **NICE guidelines for management of acute coronary syndromes** • **NICE guideline for the diagnosis and management of atrial fibrillation** • **National Clinical Guideline for Stroke**
Shortage of Microgynon 30 ED tablets	**Anticipated re-supply date** 9 February 2024 BNF chapters 07 - Obstetrics, Gynae & Urinary Tract Disorders **Actions** Clinicians should: • Prescribe alternative brands of oral contraceptives that provide ethinylestradiol 30mcg and levonorgestrel 150mcg providing appropriate counselling to ensure

	the patient understands the difference between the ED regimen and the 21-day cycle regimen • If the above option is unsuitable and it is considered necessary to prescribe an ED presentation, prescribe an alternative contraceptive which comes as ED packs ensuring that the patient is not intolerant to any of the excipients **Alternatives** **Alternative ethinylestradiol 30mcg and levonorgestrel 150mcg preparations (21-day pack) available:** • Ambelina 150microgram/30microgram tablets • Elevin 150microgram/30microgram tablets • Levest 150/30 tablets • Maexeni 150microgram/30microgram tablets • Microgynon 30 tablets • Rigevidon tablets **Alternative ED preparations:** • Logynon ED • Femodene ED **Considerations and background** Alternative ED preparations: • Logynon ED involves taking ethinylestradiol 30mcg and levonorgestrel 150mcg on days 1-6 and days 12-21 but on days 7-11 the tablets contain ethinylestradiol 40mcg rather than 30mcg. Placebo tablets are provided for days 22-28 • Femodene ED contains 30mcg of ethinyloestradiol but the tablets contain gestodene instead of levonorgestrel. A switch to this oral contraceptive would seem more problematic as it may be associated with a slightly higher risk of VTE in the short-term at least and therefore should only be viewed as a 3rd line option in managing this shortage **Links** • **SmPC: Ambelina 150microgram/30microgram tablets** • **SmPC: Elevin 150microgram/30microgram tablets** • **SmPC: Levest 150/30 tablets** • **SmPC: Maexeni 150microgram/30microgram tablets** • **SmPC: Microgynon 30 tablets** • **SmPC: Rigevidon tablets** • **SmPC: Logynon ED** • **SmPC: Femodene ED**
Shortage of Acetazolamide (Diamox SR) 250mg modified-release capsules	**Anticipated re-supply date** 26 February 2024 BNF chapters 11 – Eye **Medicines affected** Acetazolamide 250mg modified-release capsules (Mercury Pharma Group Ltd) 30 capsule 3 x 10 capsules 26 February 2024 **Actions** For patients with insufficient supplies, clinicians should consider: • deferring initiating any new patients on acetazolamide (Diamox SR) 250mg modified-release capsules until the supply issue is resolved. • prescribing acetazolamide immediate release 250mg tablets and monitoring patients after the switch (see clinical information); • If acetazolamide immediate release 250mg tablets are not appropriate, consider prescribing one of the following unlicensed medicines: ○ acetazolamide SR 250mg capsules (imported)

- acetazolamide oral suspension (various strengths available)

Alternatives

Acetazolamide immediate release 250mg tablets remain available and can support an uplift in demand.

Unlicensed Imports

The following specialist importer(s) have currently confirmed availability of unlicensed acetazolamide SR 250mg capsules (please note, there may be other companies that can also source supplies):

- Smartway

Specials

The following companies have indicated they can supply specials of acetazolamide oral suspension in various strengths (please note, there may be other companies that can manufacture supplies):

- Eaststone Specials
- IPS Pharma
- Nova Labs
- PCCA Ltd
- Quantum Pharmaceutical
- Rokshaw Ltd

Considerations and background

Clinical Information

Acetazolamide is a carbonic anhydrase inhibitor. In the eye, it decreases the secretion of aqueous humour and results in a drop of intraocular pressure. Acetazolamide (Diamox SR) modified-release capsules are a sustained release formulation designed to obtain a smooth and continuous clinical response. This formulation is licensed for the treatment of glaucoma and is administered at a dose of 250-500mg daily.

The licensed dose in glaucoma of acetazolamide immediate release tablets is 250-1000mg per 24 hours, usually in divided doses (plasma half-life of acetazolamide ~ 4 hours).

Advanz Pharma has advised that for glaucoma, patients on acetazolamide (Diamox SR) 250mg modified-release capsules twice daily could possibly be switched to acetazolamide 250mg tablets four times daily. This conversion is based simply on the maximum licensed dose of each formulation and would be at the discretion of the prescriber, as there are no bioequivalence studies comparing the two formulations.

The following data provided by the manufacturer from a single dose study of tablets and modified-release capsules may be helpful when making a dosing decision:

Formulation	Onset (hours)	Peak (hours)	Duration (hours)
Immediate release tablet	1	1-4	8-12
Modified release capsule	2	3-6	18-24

Modified-release capsules may be better tolerated than the equivalent dose of immediate release tablets, possibly due to the avoidance of high peak levels. Alternatively, oral suspension specials are available in various strengths. If the liquid is used, dosing will be as for the immediate release tablets, with the aforementioned caveats.

Guidance on ordering and prescribing unlicensed imports

Any decision to prescribe an unlicensed medicine must consider the relevant guidance and NHS Trust or local governance procedures. Please see the links below for further information:

- The supply of unlicensed medicinal products, Medicines and Healthcare products Regulatory Agency (MHRA)
- Professional Guidance for the Procurement and Supply of Specials, Royal Pharmaceutical Society (RPS)
- Prescribing unlicensed medicines, General Medical Council (GMC)

Medicine Supply Notification Number

	MSN/2023/033 **Links** • **BNF Acetazolamide** • **SmPC acetazolamide (Diamox SR) 250mg modified release capsules** • **SmPC acetazolamide 250mg immediate release tablets**
Shortage of Posaconazole (Noxafil) 300mg/16.7ml solution for infusion vials	**Anticipated re-supply date** 16 February 2024 BNF chapters 05 – Infections **Actions** NHS provider Trust pharmacy procurement teams and clinical teams to work together to: Review local stock holding of posaconazole 300mg/16.7ml solution for infusion vials; Ensure remaining supplies of posaconazole infusion are reserved for use in patients already initiated on a treatment course, and that the IV route is only used for as long as it is considered clinically necessary; Consider prescribing alternative antifungals following specialist advice, where there are insufficient supplies of posaconazole infusion (see supporting information); Consider prescribing unlicensed products only where licensed alternatives are not appropriate. Prescribers should work with local pharmacy teams to ensure orders are placed within appropriate time frames as lead times may vary (see supporting information); and Where there is insufficient stock, and in urgent cases where clinical judgement determines that a patient should remain on posaconazole infusion, liaise with pharmacy services to request mutual aid, facilitated by their Regional Pharmacy Procurement Specialist. **Alternatives** Alternative parenteral antifungals (liposomal amphotericin [*AmBisome*], voriconazole, isavuconazole [*Cresemba*]) remain available and can support increased demand. Itraconazole 250mg/25ml concentrate and solvent for solution for infusion is out of stock until early 2025. Posaconazole tablets remain available. The following specialist importers have confirmed they can source unlicensed supplies of posaconazole injection (please note there may be other companies that can also source supplies), lead times vary: • Clinigen • Target Healthcare **Considerations and background** **Clinical Information** Posaconazole is a triazole antifungal agent licensed for the treatment of the following fungal infections: • Invasive aspergillosis in patients with disease that is refractory to amphotericin B or itraconazole or in patients who are intolerant of these medicinal products; • Fusariosis in patients with disease that is refractory to amphotericin B or in patients who are intolerant of amphotericin B; • Chromoblastomycosis and mycetoma in patients with disease that is refractory to itraconazole or in patients who are intolerant of itraconazole; • Coccidioidomycosis in patients with disease that is refractory to amphotericin B, itraconazole or fluconazole or in patients who are intolerant of these medicinal products. Posaconazole is also licensed for prophylaxis of following invasive fungal infections:

	• Patients receiving remission-induction chemotherapy for acute myelogenous leukaemia or myelodysplastic syndromes expected to result in prolonged neutropenia and who are at high-risk of developing invasive fungal infections; • Hematopoietic stem cell transplant recipients who are undergoing high-dose immunosuppressive therapy for graft versus host disease and who are at high-risk of developing invasive fungal infections. Alternative management options depend on treatment(s) the patient has already received. In refractory invasive aspergillosis, posaconazole, liposomal amphotericin B (AmBisome) and voriconazole are potential treatment options in the salvage setting. Isavuconazole (Cresemba) is also a possible option in those who cannot tolerate or are not responding to above options. In all cases, advice from microbiologists should be sought. **Medicine Supply Notification Number** MSN/2024/002 **Guidance on ordering and prescribing unlicensed imports** Any decision to prescribe an unlicensed medicine must consider the relevant guidance and NHS Trust or local governance procedures. Please see the links below for further information: • The supply of unlicensed medicinal products, Medicines and Healthcare products Regulatory Agency (MHRA) • Professional Guidance for the Procurement and Supply of Specials, Royal Pharmaceutical Society (RPS) • Prescribing unlicensed medicines, General Medical Council (GMC) **Links** • **SmPC: posaconazole** • **SmPC: Cresemba** • **SmPC: AmBisome** • **SmPC: voriconazole** • **BNF: Antifungals, systemic use**
Shortage of Dulaglutide (Trulicity) 0.75mg, 1.5mg, 3mg and 4.5mg solution for injection devices	**Anticipated re-supply date** 27 December 2024 BNF chapters 06 - Endocrine System **Medicines affected** Medicine Anticipated re-supply date Trulicity 0.75mg/0.5ml solution for injection pre-filled pens (Eli Lilly and Company Ltd) – Trulicity 1.5mg/0.5ml solution for injection pre-filled pens (Eli Lilly and Company Ltd) – Trulicity 3mg/0.5ml solution for injection pre-filled pens (Eli Lilly and Company Ltd) – Trulicity 4.5mg/0.5ml solution for injection pre-filled pens (Eli Lilly and Company Ltd) – **Actions** A National Patient Safety Alert was issued on the 18 July 2023 for the shortage of GLP1 RA medicines. This has been superseded by a further National Patient Safety Alert issued on the 3rd January 2024. Please refer to the National Patient Safety Alert for information and advice on alternatives.

Shortage of Semaglutide (Ozempic) solution for injections	**Anticipated re-supply date** 27 December 2024 BNF chapters 06 - Endocrine System **Medicines affected** Medicine Anticipated re-supply date Ozempic 0.5mg/0.37ml solution for injection 1.5ml pre-filled pens (Novo Nordisk Ltd) 1 pre-filled disposable injection 27 December 2024 Ozempic 1mg/0.74ml solution for injection 3ml pre-filled pens (Novo Nordisk Ltd) 1 pre-filled disposable injection 27 December 2024 Ozempic 0.25mg/0.19ml solution for injection 1.5ml pre-filled pens (Novo Nordisk Ltd) 1 pre-filled disposable injection 27 December 2024 **Actions** A National Patient Safety Alert was issued on the 18 July 2023 for the shortage of GLP1 RA medicines. This has been superseded by a further National Patient Safety Alert issued on the 3rd January 2024. Please refer to the National Patient Safety Alert for information and advice on alternatives. **Considerations and background** Wegovy (semaglutide) is now available, further information regarding access on the NHS can be found at the following link
Shortage of GLP-1 receptor agonists (semaglutide, dulaglutide, liraglutide, exenatide)	**Anticipated re-supply date** 27 December 2024 BNF chapters 06 - Endocrine System **Actions** A National Patient Safety Alert was issued on the 18 July 2023 for the shortage of GLP1 RA medicines. This has been superseded by a further National Patient Safety Alert issued on the 3rd January 2024. Please refer to the National Patient Safety Alert for information and advice on alternatives.
Shortage of Exenatide (Byetta) 10microgram/0.04ml solution for injection	**Anticipated re-supply date** 16 February 2024 BNF chapters 06 - Endocrine System **Medicines affected** Medicine Anticipated re-supply date Exenatide 10micrograms/0.04ml solution for injection 2.4ml pre-filled disposable devices 16 February 2024 **Actions**

	A National Patient Safety Alert was issued on the 18 July 2023 for the shortage of GLP1 RA medicines. This has been superseded by a further National Patient Safety Alert issued on the 3rd January 2024. Please refer to the National Patient Safety Alert for information and advice on alternatives. **Alternatives** DHSC will continue to provide updates on GLP-1 RA's stock availability on the Medicine Supply Tool and designated 'Prescribing available GLP-1 receptor agonists' page on the SPS website.
Shortage of Isosorbide mononitrate 40mg modified-release tablets and capsules	**Anticipated re-supply date** 26 January 2024 BNF chapters 02 - Cardiovascular System **Medicines affected** Isotard 40XL tablets (Evolan Pharma AB) 2 February 2024 Nyzamac SR 40mg capsules (Martindale Pharmaceuticals Ltd) 26 January 2024 **Actions** No new patients should be initiated on Isotard 40XL or Nyzamac SR 40mg capsules until the supply issues have resolved. Where existing patients have insufficient supply to last until the re-supply date(s), prescribers should consider prescribing one of the following to make up a dose as close as possible to that taken by patient (see supporting information): • an alternative 40mg MR presentation, if available • a 50mg MR tablet if the 40mg MR preparation(s) are not available • a 60mg MR tablet (which can also be halved to provide 30mg doses) if the 40mg MR preparation(s) are not available When changing brand or dose of a modified-release nitrate preparation, prescribers and pharmacy teams should counsel patients on the change and possible adverse events they may experience, particularly in the first few days, the most important being hypotension, tachycardia, and worsening headaches. If they have concerns, patients should be advised to contact their doctor. In addition, prescribers should: • consider previous nitrate preparations tried and allergies to excipients when selecting a product; • titrate dose according to response and side effects; and • not switch patients to an immediate release preparation without clinical review of risk of worsening angina. **Alternatives** Any isosorbide mononitrate 40mg MR presentations where available: • From early January, Zemon 40 XL tablets can support a partial increase in demand. Any isosorbide mononitrate 50mg MR presentations: • Isotard 50XL tablets are available and can support an increase in demand Any isosorbide mononitrate 60mg MR presentations: • Isotard 60XL tablets are available and can support an increase in demand, tablets may be halved to deliver a 30mg MR dose. • Tardisc XL 60 tablets are available and can support an increase in demand, tablets may be halved to deliver a 30mg MR dose. • Chemydur 60XL tablets are available and can support an increase in demand, tablets may be halved to deliver a 30mg MR dose. **Considerations and background** **Supporting Information**

	Zemon 40 XL tablets, Isotard 40XL tablets and Nyzamac SR 40mg capsules are licensed for the prophylactic treatment of angina pectoris. They are administered once daily in the morning, up to a maximum dose of 120mg once daily (whole dose to be given together as a daily nitrate free period is required to prevent the development of tolerance). The 50mg and 60mg MR preparations are administered once daily in the morning, up to a maximum dose of 100mg and 120mg once daily, respectively. Isosorbide mononitrate immediate release tablets remain available, however, patients should not be changed to these without clinical review. **Medicine Supply Notification Number** MSN/2024/001 **Links** • **SPC Zemon 40 XL tablet** • **SPC Isotard 40XL tablet** • **SPC Nyzamac SR 40mg capsule** • **EMC Isosorbide mononitrate MR 50mg presentations** • **EMC Isosorbide mononitrate MR 60mg presentations** • **BNF Treatment Summary - Nitrates** • **CKS Choice of nitrate**
Shortage of Extavia (interferon beta-1b) 300mg powder and solvent for solution for injection	**Anticipated re-supply date** 23 February 2024 BNF chapters 08 - Malignant Disease & Immunosuppression **Medicines affected** Interferon beta-1b 300microgram powder and solvent for solution for injection vials 23 February 2024 **Actions** NHS provider Trust pharmacy procurement teams, working with the apropriate clinical specialists and their local pharmacy homecare lead should: • initiate new patients on the alternative brand Betaferon(interferon beta-1b) 300 microgram powder and solvent for solution for injections and liaise with their regional homecare specialist to understand framework options for an NHS funded service in their area; and • be aware that patients established on Extavia (interferon beta-1b) 300 microgram powder and solvent for solution for injections will continue to receive supplies but may have their delivery schedule reduced to ensure supplies remain available for all patients. Homecare providers should ensure affected patients are notified of any changes to their delivery cycle and volume of supplies during this period. **Alternatives** • Betaferon (interferon beta-1b) 300 microgram powder and solvent for solution for injections remain available and can support increased demand for new patient referrals. **Considerations and background** **Summary** • Extavia (interferon beta-1b) 300 microgram powder and solvent for solution for injections are very limited until mid-February 2024. • Patients already established on Extavia (interferon beta-1b) 300 microgram powder and solvent for solution for injections should continue to receive supplies, although delivery cycles may be altered to ensure supplies remain available for all patients. • New patient referrals for Extavia (interferon beta-1b) 300 microgram powder and solvent for solution for injections will not be accepted. • Betaferon (interferon beta-1b) 300 microgram powder and solvent for solution for injections will **not** be offered via a manufacturer sponsored homecare

	scheme. Therefore, NHS Trusts should seek alternative homecare medicine service provision arrangements to ensure continuity of supply to patients where appropriate. **Supporting information** Alcura Health and Lloyds Pharmacy Clinical Homecare and Sciensus Pharma Services, currently provide Extavia (interferon beta-1b) 300 microgram powder and solvent for solution for injections via Novartis manufacturer sponsored homecare scheme. All the homecare providers listed are impacted by the current issue. They have implemented management plans to ensure continuity of supplies to established patients during this period. **Medicines Supply Notification** MSN/2024/005 **Links** • **BNF Interferon beta** • **SmPC Extavia** • **SmPC Betaferon**
Shortage of Itraconazole 250mg/25ml concentrate and solvent for solution for infusion	**Anticipated re-supply date** 29 March 2025 BNF chapters 05 - Infections **Medicines affected** Itraconazole 250mg/25ml solution for infusion ampoules and diluent (Neon Healthcare Ltd) 29 March 2025 **Actions** NHS provider Trust pharmacy procurement teams and clinical teams to work together to: • review local stock holding of itraconazole 250mg/25ml concentrate and solvent for solution for infusion; • ensure remaining supplies of itraconazole 250mg/25ml infusion are reserved for use in patients already initiated on a treatment course, and that the IV route is only used for as long as it is considered clinically necessary; • consider prescribing alternative antifungals following specialist advice, where there are insufficient supplies of itraconazole infusion; and • where there is insufficient stock, and in urgent cases where clinical judgement determines that a patient should remain on itraconazole infusion, liaise with pharmacy services to request mutual aid, facilitated by their Regional Pharmacy Procurement Specialist. **Alternatives** • Itraconazole capsules and oral solutions remain available. • Alternative parenteral antifungals (liposomal amphotericin [*AmBisome*], voriconazole, isavuconazole [*Cresemba*]) remain available and can support an uplift in demand. • Posaconazole (Noxafil) infusion cannot support current demand. **Considerations and background** **Clinical Information** Itraconazole is a triazole antifungal. The infusion is licensed for the treatment of: • Histoplasmosis • Aspergillosis, candidosis and cryptococcosis (including cryptococcal meningitis) in immunocompromised patients with cryptococcosis and in all patients with cryptococcosis of the central nervous system, when first-line systemic anti-fungal therapy is inappropriate or has proved ineffective.

	Selection of an alternative agent will be dependent on factors such as underlying pathology, sensitivity of the pathogen, drug toxicity, and previous treatments, so advice should be sought from specialists. **Medicine Supply Notification Number** MSN/2024/003 **Links** • **BNF: Antifungals, systemic use** • **SmPC: Cresemba** • **SmPC: voriconazole** • **SmPC: AmBisome**
Shortage of Tegretol 200mg and 400mg prolonged release tablets	**Anticipated re-supply date** 17 January 2024 BNF chapters 04 - Central Nervous System **Medicines affected** **Tegretol Prolonged Release 200mg tablets (Novartis Pharmaceuticals UK Ltd)** **17 January 2024** **Tegretol Prolonged Release 400mg tablets (Novartis Pharmaceuticals UK Ltd)** **2 February 2024** **Actions** **Prescribers should not initiate new patients on Tegretol prolonged release (PR) tablets until the shortages have resolved.** **Where patients have insufficient supply of Tegretol 200mg PR tablets to last until the re-supply date, clinicians should:** • **advise patients on a dose regimen comprising of Tegretol 200mg PR and Tegretol 400mg PR tablets who still have sufficient supplies of the 400mg PR strength to last until the resupply dates, to use half a 400mg PR tablet to make up 200mg doses;** • **consider prescribing Tegretol immediate release (IR) tablets, taking into account the total daily dose, as dose frequency for patients on high doses may need to be adjusted to accommodate the different release profile of IR tablets (see Supporting Information);** • **consider prescribing Curatil 200mg PR tablets noting that this option is available only in secondary care (see Supporting Information); and** • **if the above options are not considered appropriate, advice should be sought from specialists on alternative management options.** **For the shortage of Tegretol 400mg PR tablets, where patients have insufficient supplies to last until the re-supply date, clinicians should:** • **consider prescribing Tegretol 200mg PR tablets to make up the required dose when this is back in stock.** **Patients should be monitored after a switch in brand or formulation for loss of seizure control and adverse effects.** **Alternatives** **The following products remain available:** • **Tegretol immediate release tablets** • **Curatil 200mg PR tablets (for secondary care only)** **Considerations and background** **Supporting Information** **Clinical Information** **Carbamazepine is a category 1 anti-epileptic drug. Different formulations of carbamazepine may vary in bioavailability and therefore patients should be monitored after any switch in brand for loss of seizure control and adverse effects. Tegretol PR tablets are administered at the same total daily dose as Tegretol IR dosage forms. Tegretol PR tablets are usually administered in two divided doses and**

	Tegretol IR tablets in two or three divided doses. Tegretol PR tablets are scored and are licensed to be halved to enable flexibility of dosing. When starting treatment with Tegretol PR, 100-200mg once or twice daily is recommended. This may be followed by a slow increase in dosage until the best response is obtained, often 800-1200mg daily. In some instances, 1600mg or even 2000mg daily may be necessary. **The SmPC notes that the Tegretol PR formulation shows about 15% lower bioavailability than IR preparations due mainly to the reduction in peak plasma levels. In practice it may be difficult to adjust for this difference in bioavailability with available formulations unless the patient is on high doses, so a switch to the same total daily dose of IR tablets could be considered, and dose adjustment can be made depending on clinical response.** **A change in dose frequency from a twice daily regimen of PR formulation to a three or four times daily regimen of IR tablets may be required for doses of PR formulation at or above 400mg twice daily. This will depend on factors such as indication, dose, adherence to treatment, previous side effects, and available tablets. As a switch in treatment may cause anxiety in some patients, it is important to provide reassurance, and counselling on any change in dose regimen, and to seek advice if they experience loss of seizure control and/or side effects after switching.** **Medicine Supply Notification Number** **MSN/2024/004** **Links** • **SmPC Tegretol 200mg prolonged release tablets** • **SmPC Tegretol 400mg prolonged release tablets** • **SmPC Tegretol 100mg tablets** • **SmPC Tegretol 200mg tablets** • **SmPC Tegretol 400mg tablets** • **SmPC Curatil 200mg prolonged release tablets** • **BNF Carbamazepine** • **BNF Epilepsy** • **MHRA anti-epileptic advice on switching products**
Shortage of Levomepromazine 25mg and 50mg tablets	**Anticipated re-supply date** 2 February 2024 BNF chapters 04 - Central Nervous System **Medicines affected** Levomepromazine 25mg tablets (Morningside Healthcare Ltd) 2 February 2024 Levomepromazine 50mg tablets (Morningside Healthcare Ltd) 23 February 2024 **Actions** Where supply of generic levomepromazine 25mg tablets are unavailable, clinicians should: • consider prescribing the branded levomepromazine (Nozinan) 25mg tablets. Where supply of generic levomepromazine 50mg tablets are unavailable, clinicians should: • consider prescribing the branded levomepromazine (Nozinan) 25mg tablets; • counsel patients on the requirement to take two tablets to make a 50mg dose for those patients who are usually prescribed levomepromazine 50mg tablets; • if the above is not appropriate, consider prescribing Levomepromazine (Levorol) 5mg/ml oral solution, **taking into consideration any cautions and contraindications** (see Supporting Information). **Alternatives**

	• Levomepromazine (Nozinan) 25mg tablets remain available from Neuraxpharm UK Limited and are able to fully support demand. Stock is available via Phoenix and Alliance Healthcare. • Levomepromazine (Levorol) 5mg/ml oral solution remains available from Galvany Pharma Limited and are able to support with covering demand. Hospitals can order from either Alloga UK or Alliance Healthcare. Retail/community pharmacies can order from Alliance Healthcare. **Considerations and background** **Supporting Information** **Clinical Information** Levomepromazine oral solution is contraindicated in children and adolescents under 16 years old. The oral solution has cautions linked to its excipients and therefore prescribers would need to ensure patients do not have liver or renal impairment before prescribing this medicine: • Benzyl alcohol – this medicine contains 0.03 mg of benzyl alcohol in each 1 ml of oral solution. It may cause allergic reactions. High volumes should be used with caution and only if necessary, especially in patients with liver or kidney impairment because of the risk of accumulation and toxicity (metabolic acidosis). • Propylene glycol – this medicine contains 150.95 mg of propylene glycol in each 1 ml of oral solution. Medical monitoring is required in patients with impaired renal or hepatic functions because various adverse events attributed to propylene glycol have been reported such as renal dysfunction (acute tubular necrosis), acute renal failure and liver dysfunction. While propylene glycol has not been shown to cause reproductive or developmental toxicity in animals or humans, it may reach the foetus and was found in milk. As a consequence, administration of propylene glycol to pregnant or lactating patients should be considered on a case by case basis. **Links** • **BNF Levomepromazine** • **SmPC Nozinan 25 mg tablets** • **SmPC Levorol 5 mg/ml oral solution**
Shortage of Dicycloverine 10mg/5ml oral solution	**Anticipated re-supply date** 29 March 2024 BNF chapters 01 - Gastro-Intestinal System **Actions** **Where patients have insufficient supplies to last until the re-supply date, prescribers should:** review patients to determine if this is still the most suitable therapy; review if patients are able to swallow solid dosage forms and consider prescribing dicycloverine 10mg tablets if appropriate; and consider prescribing a liquid formation of an alternative antispasmodic for patients unable to swallow solid dosage forms (see supporting information below). **In patients unable to swallow solid dosage forms for whom dicycloverine liquid is determined to be the most appropriate therapy:** consider prescribing dicycloverine 10mg tablets and counsel patients on crushing and mixing with water for administration (off-label); and if the above option is not considered appropriate, consider prescribing unlicensed dicycloverine 10mg/5ml oral solution. Prescribers should work with local pharmacy teams to ensure orders are placed within appropriate time frames as lead times may vary (see supporting information below). **Secondary Care only:** where there is insufficient stock, and where clinical judgement determines that a patient should remain on dicycloverine 10mg/5ml oral solution, liaise with pharmacy

	services to request mutual aid, facilitated by their Regional Pharmacy Procurement Specialist. **Alternatives** **Licensed products** Dicycloverine 10mg tablets remain available and can support increased demand. Mebeverine 50mg/5ml sugar free oral suspension. Peppermint water BP 1973. **Unlicensed products** Unlicensed dicycloverine 10mg/5ml oral solution is available from the following suppliers (other suppliers may be available) lead times vary; • Alium Medical **Considerations and background** **Supporting Information** **Clinical Information** Dicycloverine is an anticholinergic antispasmodic, licensed for the treatment of functional conditions involving smooth muscle spasm of the gastrointestinal tract. The liquid is licensed for use in patients from age 6 months and above. There are no other oral anticholinergic antispasmodics available in a liquid formulation. NEWT guidelines suggest dicycloverine tablets may be crushed and mixed with water for administration (off-label manipulation). Other antispasmodics available as a liquid include: • Mebeverine 50mg/5ml sugar free oral suspension (licensed for use from age 10 years and above but BNFC includes off-label use from 3 years and above) • Peppermint water BP 1973 (licensed for use from age 12 years and above, but off-label use in paediatric practice from age 3 months and above, consult local formulary) **Medicines Supply Notification Number** MSN/2023/109 **Guidance on ordering and prescribing unlicensed imports** Any decision to prescribe an unlicensed medicine must consider the relevant guidance and NHS Trust or local governance procedures. Please see the links below for further information: • The supply of unlicensed medicinal products, Medicines and Healthcare products Regulatory Agency (MHRA) • Professional Guidance for the Procurement and Supply of Specials, Royal Pharmaceutical Society (RPS) • Prescribing unlicensed medicines, General Medical Council (GMC) **Links** • **SmPC: Dicycloverine 10mg/5ml oral solution** • **SmPC: Dicycloverine 10mg tablets** • **SmPC: Mebeverine 50mg/5ml sugar free oral suspension** • **SmPC: Peppermint water BP 1973** • **BNFC: Antispasmodics** • **BNF: Antispasmodics** • **CKS: Irritable bowel syndrome-antispasmodic drugs**
Platinum-based Chemotherapy Agents: Cisplatin, Carboplatin and Oxaliplatin	**Anticipated re-supply date** 30 November 2023 **Medicines affected** Cisplatin 100mg/100ml solution for infusion vials 26 July 2024 Cisplatin 50mg/50ml solution for infusion vials 30 November 2023 **Actions** **Cisplatin and Carboplatin** NHS provider pharmacy procurement teams in **all** regions should:

- urgently place orders for unlicensed imports (see Supporting Information) to meet the needs of patients during this period;
- work with the aseptic and quality assurance leads in trusts to be ready to use unlicensed imports in aseptic units on receipt (see Supporting Information); and
- work with their pharmacy aseptic lead to ensure appropriate mitigations are put in place to minimise the risk of product confusion and dosing errors in the event that trusts have multiple unlicensed products in use within the organisation at the same time.

Oxaliplatin

NHS provider pharmacy procurement teams in **all** regions should continue to order oxaliplatin in line with historic order patterns acknowledging that unusual orders will be challenged.

Alternatives

Oxaliplatin

Whilst oxaliplatin solution for infusion vials remain available, these, cannot support any uplift in demand.

Cisplatin and carboplatin unlicensed imports

Cisplatin and carboplatin unlicensed imports are available from a range of suppliers. The SPS Quality Assurance team has produced advice on both available cisplatin products and available carboplatin products. These lists and assessments will be kept up-to-date with advice and available unlicensed products as the situation changes.

Considerations and background

Supporting information

- There are supply constraints facing the platinum-based chemotherapy agents.
- Supplies of all strengths of cisplatin solution for infusion vials are in very limited supply and unable to meet full UK demand until at least early October 23. A resupply date is yet to be confirmed.
- Supplies of all strengths of carboplatin solution for infusion vials are in limited supply and unable to meet full UK demand until mid- September 2023.
- Availability of carboplatin 600mg/60ml solution for infusion vials are expected to be significantly impacted during this period.
- Supplies from Independent Aseptic Compounders will remain available, but they will not be able to increase capacity or accept new customers during this period. Any new or increased ordering will be challenged.
- Trusts should place orders immediately for unlicensed imports to support during this period.
- The NHSE Commercial Medicines Unit is actively working with the appropriate clinical advisers to provide clinical guidance in to support management during this time. Further information will be shared when finalised.
- Please note, this MSN supersedes MSN/2023/066 Cisplatin 50mg/50ml and 100mg/100ml solution for infusion vials.

Medicine Supply Notification Number

MSN/2023/072

Guidance on ordering and prescribing unlicensed imports

Any decision to prescribe an unlicensed medicine must consider the relevant guidance and NHS Trust or local governance procedures. Please see the links below for further information:

- The supply of unlicensed medicinal products, Medicines and Healthcare products Regulatory Agency (MHRA)
- Professional Guidance for the Procurement and Supply of Specials, Royal Pharmaceutical Society (RPS)
- Prescribing unlicensed medicines, General Medical Council (GMC)

Links

- **BNF Cisplatin**
- **SmPC Cisplatin**
- **BNF Carboplatin**
- **SmPC Carboplatin**

	• **BNF Oxaliplatin** • **SmPC Oxaliplatin**
Shortage of Lanreotide 60mg/0.5ml, 90mg/0.5ml and 120mg/0.5ml solution for injection pre-filled syringes	**Anticipated re-supply date** 26 January 2024 BNF chapters 08 - Malignant Disease & Immunosuppression **Medicines affected** Lanreotide 120mg/0.5ml solution for injection pre-filled syringes 26 January 2024 Lanreotide 90mg/0.5ml solution for injection pre-filled syringes 26 January 2024 Lanreotide 60mg/0.5ml solution for injection pre-filled syringes 26 January 2024 **Actions** NHS provider Trust pharmacy procurement teams, working with the appropriate clinical specialists and their local pharmacy homecare lead should: • not initiate new patients on any strength of Advanz Pharma's lanreotide solution for injection pre-filled syringes until the shortage resolves; • prescribe Somatuline Autogel (lanreotide) solution for injection pre-filled syringes for new patient initiations; • be aware that patients on Advanz Pharma's lanreotide 60mg and 90mg pre-filled syringes may receive Somatuline Autogel 90mg pre-filled syringes as a substitution during this period to ensure continuity of treatment (see supporting information below); and • be aware that all patients established on Advanz Pharma's sponsored homecare scheme for all strengths of lanreotide solution for injection pre-filled syringes may have their delivery schedule reduced to 4 weekly to ensure supplies remain available for all patients. Homecare providers should: • ensure that every affected patient is notified of any changes to their delivery cycle and volume of supplies during this period; • ensure that patients receiving substitution with Somatuline Autogel pre-filled syringes are informed directly of the switch and offered nursing support; and • work with the prescriber and the Trust homecare-lead to ensure nurse led training is provided or, if available, administration support is offered where requested. **Alternatives** Ipsen's lanreotide (Somatuline Autogel) 60mg/0.5ml, 90mg/0.5ml and 120mg/0.5ml solution for injection pre-filled syringes remain available and can support increased demand. **Considerations and background** **Supporting Information** **Summary** Advanz Pharma's lanreotide 60mg/0.5ml and 90mg/0.5ml solution for injection pre-filled syringes are out of stock until early January 2024. Advanz Pharma's lanreotide 120mg/0.5ml solution for injection pre-filled syringes are in limited supply until early January 2024. **Clinical Information** Sciensus and HealthNet currently provide generic lanreotide 60mg/0.5ml, 90mg/0.5ml and 120mg/0.5ml solution for injection pre-filled syringes via Advanz Pharma's manufacturer sponsored homecare scheme. HealthNet currently have sufficient supplies to maintain established patients on Advanz Pharma lanreotide syringes without any changes to existing supply cycles.

	Sciensus is impacted by the current issue and issued a Dear Healthcare Professional Letter to its customers on 17 November 2023 outlining the management plans implemented to ensure continuity of supplies to patients during this period. This includes: • The annotation of all affected prescriptions to allow for the substitution with lanreotide (Somatuline Autogel) 90mg/0.5ml for injection pre-filled syringes • Clarifying that all delivery fees and nurse support fees irrespective of the brand of lanreotide dispensed would be funded by Advanz Pharma • Clarifying that where there is substitution of Ipsen Somatuline Autogel pre-filled syringes, the Ispen price will be charged to the NHS. **Medicines Supply Notification** MSN/2023/111 **Links** • **BNF Lanreotide** • **SmPC Lanreotide**
Shortage of Mannitol 50g/500ml (10%), 75g/500ml (15%) infusion viaflo bags and mannitol 50g/500ml (10%) polyfuser infusion bottles	**Anticipated re-supply date** 9 February 2024 BNF chapters 02 - Cardiovascular System · 03 - Respiratory System **Medicines affected** Mannitol 75g/500ml (15%) infusion bags 9 February 2024 Mannitol 50g/500ml (10%) infusion bags 9 February 2024 Mannitol 50g/500ml (10%) infusion polyethylene bottles – **Actions** NHS provider trust pharmacy procurement teams and their local Medication Safety Officer should work with the appropriate clinical leads to ensure clinical areas using mannitol are consulted (this is likely to include involvement from anaesthetists, neurology, operating theatres, intensivists, critical care units and emergency medicine departments and ophthalmology) to; • identify and agree if there are any indications that should be prioritised for mannitol use; • ensure remaining licensed supplies are preserved for use in these priority indications and clinical areas as agreed locally until further stock becomes available; • review and update local guidelines to reflect any agreed changes at Trust level including use of alternatives such as hypertonic saline, where required; and • ensure all impacted clinical areas are made aware of this issue and any changes. Additionally, where there is insufficient supply to meet required demand during this period and supplies of mannitol are essential, NHS provider trust pharmacy procurement teams should: • urgently place order for unlicensed imports; and • where appropriate work with their RPPS in urgent cases to facilitate mutual aid between NHS provider trusts. **Alternatives** Mannitol 50g/250ml (20%) polyfuser infusion bottles remain available but **cannot** support an uplift in demand. Mannitol 50g/500ml (10%) polyfuser infusion bottles are also out of stock and have been discontinued. The following specialist importers have confirmed they can source unlicensed mannitol 50g/500ml (10%) infusion (please note there may be other companies that can also source supplies): • Genetech Pharmaceuticals

	• Qmed Pharma The following specialist importers have confirmed they can source unlicensed mannitol 75g/500ml (15%) infusion (please note there may be other companies that can also source supplies): • BAP Pharma **Considerations and background** **Supporting Information** **Clinical Information** There is very limited use of mannitol as an osmotic diuretic agent across licensed indications including the promotion of diuresis in the prevention and/or treatment of the oliguric phase of acute renal failure, the reduction of elevated intraocular pressure and the promotion of elimination of renally excreted toxic substances in poisoning. When used for the reduction of intracranial pressure, there is a view that hypertonic saline solutions may be as effective as mannitol. Hypertonic saline solutions (2.7%, 5% and 30% sodium chloride) remain available. **Medicines Supply Notification** MSN/2023/114 **Guidance on ordering and prescribing unlicensed imports** Any decision to prescribe an unlicensed medicine must consider the relevant guidance and NHS Trust or local governance procedures. Please see the links below for further information: • The supply of unlicensed medicinal products, Medicines and Healthcare products Regulatory Agency (MHRA) • Professional Guidance for the Procurement and Supply of Specials, Royal Pharmaceutical Society (RPS) • Prescribing unlicensed medicines, General Medical Council (GMC) **Links** • **BNF Mannitol** • **SmPC Mannitol**

All Serious Shortage Protocols (SPP's) can be found:
Medicines Supply Tool – SPS - Specialist Pharmacy Service – The first stop for professional medicines advice
Shortage update taken from SPS Medicines Supply Toolkit on 18th January 2024. Information provided by DHSC and NHSEI Medicines Supply Teams and published on Specialist Pharmacy Services Medicines Supply Tool. Not formally reviewed by NHS Kent and Medway Medicines Optimisation. Practices are encouraged to register for access to the SPS website https://www.sps.nhs.uk/ and access this tool directly in real time.