NHS Lanarkshire

Guidance for the Use of Antipsychotic Depot and Long-Acting Injections (LAI)

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Endorsing Body:	**Mental Health and Learning Disabilities Drug & Therapeutic Committee**
Governance or Assurance Committee	**Area Drug & Therapeutics Committee; Mental Health and Learning Disabilities Clinical Governance Group**
Implementation Date	**December 2021**
Version Number:	**2.0**
Review Date:	**December 2024**
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1. Consultation and distribution

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Consultation Process/ Stakeholders	• Psychiatry • MHLD nursing • MHLD pharmacy
Distribution	• Dissemination to all MHLD, OAMH and CAMHS medical, nursing and pharmacy staff, wards and community teams • NHSL clinical guideline website and app • Medicines Matters and/or MHLD D&T newsletter

2. Change Record

Date	Author	Change	Version No.
01/08/18	Margaret McGreevy Mary Gilfillan	New Guideline	1.0
8/10/21	Lorna Templeton	Significant update to extend the scope to prescribing as well as administration including practical advice on test doses; pharmacokinetics; titration; dose selection; administration site; consent	2.0

3. Aim

To provide guidance to support the safe, effective and person-centred prescribing and administration of Antipsychotic depot and Long Acting Injections (LAIs).

4. Scope

This guidance applies to all staff involved in the prescribing, administration and supply of antipsychotic depot and LAIs across NHS Lanarkshire. It is the responsibility of senior managers to ensure that this guidance is implemented.

Only appropriately trained and competent staff may administer antipsychotic depot/LAIs. Newly qualified staff and staff returning to practice should undergo a period of supervised practice before they may administer depot/LAIs.

5. Definitions

Depot & LAI
An antipsychotic drug formulated in such a way allows the steady gradual release of a drug over a prolonged period. An antipsychotic depot refers to first generation antipsychotic (FGA) depot where the drug is delivered in an oil based depot containing an ester of the active antipsychotic. This is slowly released from the oil and hydrolysed to the active drug. Some second generation antipsychotic (SGA) long acting injections (LAIs) are also available in a variety of formulations and delivery vehicles. All depot and LAIs are administered by deep intramuscular injection.

6. Treatment recommendations and patient choice

Antipsychotic depots and LAIs provide some advantages over oral medication, especially in terms of adherence, and their use is supported by current clinical guidelines.

SIGN 131, 2013[1]
'Individuals with schizophrenia who request depot and those with medication adherence difficulties should be offered maintenance treatment with depot antipsychotic medication'.

NICE CG178, 2014[2]
***'**Consider offering depot/long-acting injectable antipsychotic medication to people with schizophrenia:*

- *who would prefer such treatment after an acute episode*

- *where avoiding covert non-adherence (either intentional or unintentional) to antipsychotic medication is a clinical priority within the treatment plan.'*

There are some potential disadvantages to antipsychotic depot and LAI use, including patient tolerability and managing side effects, which may be prolonged due to the extended release characteristics of the formulations.

7. Patient choice; information and consent

NICE CG178, 2014[2]
'Treatment and care should take into account patients' individual needs and preferences. Good communication, supported by evidence-based information, is essential.'

Patients should be encouraged to be active participants in their care when it comes to making decisions about medication.

Any decision to commence someone on an antipsychotic depot/LAI must follow evidence-based guidelines. Patients and, where appropriate, their next of kin/ carer/ welfare guardian, must have a full discussion with their consultant psychiatrist about the risks and benefits of treatment in order for them to make an informed decision regarding treatment. The discussion should also consider practical aspects of depot/LAI use in terms of frequency of treatment, location of clinics, site of administration etc.

Information must be tailored to the individual's needs, understanding and capacity. It is essential to reflect on the principles of the Montgomery ruling when considering the information offered to patients to support shared-decision making. Prescribers must ensure that patients are aware of any material risks involved in the treatment and of any reasonable alternatives.[3]

Written patient information should be used to support the discussion about the risks and benefits of treatment. Patient information leaflets on psychotropic medicines are available at www.choiceandmedication.org/nhs24/ hosted via NHS Inform. In particular, a handy fact sheet comparing the LAIs and oral antipsychotics as well as handy charts comparing the different antipsychotics are useful tools.

Where patients are detained under the Mental Health (Care and Treatment) (Scotland) Act 2003 or being treated under the Adults with Incapacity (Scotland) Act 2000, appropriate information must be provided according to their needs and capabilities and relevant legal paperwork that complies with the proposed treatment must in place prior to initiation of depot/ LAI treatment.

All staff involved in prescribing and administration must be aware of the contents of a treatment plan, have access to this at the point of prescribing and administration and follow the appropriate guidance with regards to treatment.

MWC 2017 Consent to treatment [4]

MWC 2021 Medical Treatment Under Part 16 MHA [5]

MWC 2021 Treatment Under Section 47 of the Adults With Incapacity Act [6]

8. Medication-related issues

There are a number of other issues that may impact on the decision to prescribe an antipsychotic depot/LAI;

Potential for High Dose Antipsychotic Prescribing
Where a patient is prescribed regular or as required oral antipsychotics in addition to a depot/LAI, this may result in reaching high dose antipsychotic status, which requires increased monitoring in line with local and national guidance.
NHSL High Dose Antipsychotic Therapy Guidelines

Concomitant medication and potential drug interactions
It is important that all health care professionals involved in the use of antipsychotic depot/LAIs are aware of the relevant clinically significant interactions in relation to the patient's other prescribed medication. Staff should refer to the current edition of the BNF, summary of product characteristics (SPCs)[7] for individual medications or contact pharmacy for advice.

Precautions and contraindications
Refer to current SPC [7] of individual antipsychotic depot/LAIs for cautions and contraindications with existing medical conditions and for any additional monitoring this may entail.

Switching
Consideration should be given as to the safest way to switch to or from an antipsychotic depot/LAI. Contact MHLD pharmacy services for advice if necessary.

Extremes of weight
There are practical issues when prescribing or administering antipsychotic depot/LAIs to patients with very low body weight or who are significantly obese. Muscle mass is important for effective absorption of antipsychotic depots/LAIs. The reduced muscle mass in patients with low body weight may affect absorption and may also result in increased discomfort on injection. Significant obesity may make successful administration of antipsychotic depot/LAIs more challenging. The most appropriate site of administration should be considered, as well as different needle sizes for injection. The risks/ benefits of oral antipsychotic versus depot/LAI should also be considered in these circumstances.

Changes to depot antipsychotic prescriptions
It is essential that all changes to an antipsychotic depot/LAI prescription are quickly and clearly communicated to all relevant staff. The use of the NHS Lanarkshire Community depot prescription and administration record facilitates this (*Appendix 6)*. Where the antipsychotic depot/LAI is supplied via primary care, a local system should be developed to ensure good communication.

9. Prescribing

Consideration should be given to prescribing first generation antipsychotics (FGAs) in line with NHSL Joint Formulary [8] www.medednhsl.com/meded/nhsl_formulary/
(*Appendix 4 Monthly costs of antipsychotic depot/LAIs)*

9.1 Choice of antipsychotic

The antipsychotics currently available as depot/LAIs are:

First generation antipsychotic (FGA) depots	
Flupentixol decanoate	possibly more alerting than other FGAs
Haloperidol decanoate	more commonly associated with EPSE than other FGAs
Zuclopenthixol decanoate	may be more effective at preventing relapse than other FGAs[9]
Second generation antipsychotic (SGA) LAIs	
Aripiprazole	
Risperidone	subject to cold chain storage
Paliperidone palmitate	paliperidone is the major active metabolite of risperidone
Olanzapine embonate*	*Olanzapine embonate is not approved for use in NHS Scotland and is therefore outwith the scope of this guidance SMC Olanzapine LAI decision. Contact MHLD pharmacy for further information

9.2 Test doses of FGA depots

Test doses for FGA depots are required to assess tolerability to the active drug as well as the theoretical and very rare risk of anaphylaxis associated with the oil component of the formulation. There are no test doses for any of the SGA LAIs, however, the patient should ideally be tolerant to and responsive to the oral form of the drug prior to initiating the LAI where possible. For tolerability prior to commencing paliperidone LAI, use oral risperidone.

Drug	Test dose	Comments
Flupentixol decanoate*	20mg	Oil vehicle is a fractionated coconut oil
Haloperidol decanoate	25mg**	Oil vehicle is sesame oil **there is no test dose documented within SPC
Zuclopenthixol decanoate*	100mg	Oil vehicle is a fractionated coconut oil

After giving test doses, monitor the patient for any reaction to carrier oil and tolerability to the drug. If there are no reactions or side effects, a treatment dose can be initiated 1 week after the test dose.

*Flupentixol and zuclopenthixol
Branded flupentixol and zuclopenthixol decanoate (Depixol® and Clopixol®) are formulated with the same fractionated coconut oil as the main excipient. They both belong to the thioxanthene class of antipsychotics and are chemically very similar in structure. Therefore,

provided a patient has not experienced adverse effects following treatment with flupentixol decanoate, there is no real need to give a test dose if switching to zuclopenthixol decanoate (and vice versa).

9.3 Site of administration

The licensed sites of administration for each FGA depot and SGA LAI are:

Drug	Licensed site for administration (as per SPC)[7]
Flupentixol decanoate	Upper outer buttock or lateral thigh
Haloperidol decanoate	Gluteal
Zuclopenthixol decanoate	Upper outer buttock or lateral thigh
Aripiprazole	Deltoid or gluteal
Risperidone	Deltoid or gluteal
Paliperidone palmitate	Deltoid or gluteal

9.4 Implications for administering outwith licensed sites of administration

If a depot/LAI is prescribed and administered into a site that is not covered by the marketing authorisation and stipulated in the SPC, this is an off-label (unlicensed) use of that medication. In the event this is being considered, advice should be sought from MHLD pharmacy services. When prescribing outwith the marketing authorisation, it is important that consent is obtained for this and that the patient/ carer is aware of the implications (this site of administration may not have been subject to the same rigorous trials regarding safety and efficacy). If an unlicensed site of administration is pursued, injection technique, rotating the site, monitoring for any nodule formation as well as monitoring to ensure ongoing efficacy (due to potentially altered absorption kinetics) is essential.

NHS Lanarkshire Unlicensed Medicines Policy [11]

Form C PC - Prescribing Request to Primary Care for Unlicensed Medicine
(Includes a patient consent form that can be used)

9.5 Titrating and maintenance doses

Principles of titrating depots

- For FGA depots, begin with the lowest therapeutic dose and titrate slowly to the minimum effective dose. Lower doses may be as effective as a higher dose range and potentially better tolerated.[12]

- Prescribe for the longest possible licensed interval to minimise injections (be aware of the maximum single dose as that may determine having to change the frequency).

- Adjust doses after an adequate period of assessment and be aware of the kinetics of the drug and formulation. Dose increases being made before steady state is reached may be required in terms of clinical and practical necessity, but where possible, these increases should not be made too quickly for risk of increasing the dose beyond what is required for the individual and putting them at risk of increased adverse effects.

- Commencing a SGA LAI should follow the guidance for initiation from the SPCs of each formulation.[7]

- When using depot/LAIs in an elderly population refer to individual SPCs and consider the need for lower test and maintenance doses as well as cautions, potential increased sensitivity and licensed indications in relation to age.

Drug	Dose range	Dosing interval*	Approximate time to steady state (weeks)*
Flupentixol decanoate	50mg every 4 weeks to 400mg a week	1-4 weeks	10-12 (*Bazire*)[13]
Haloperidol decanoate	50-300mg every 4 weeks	4 weeks	8-16
Zuclopenthixol decanoate	200mg every 4 weeks to 600mg every week	1-4 weeks	10-12 (*Bazire*)[13]
Aripiprazole	400mg every month (can be reduced as per SPC)	monthly	Following fourth dose (~16 weeks)
Paliperidone palmitate (1/12)	50mg to 150mg every month	monthly	2 (with titration as per SPC) (*Bazire*)[13]
Paliperidone palmitate (3/12)	175mg-525mg every 3 months	every 3 months	n/a should be at steady state with 1/12 prep before**
Risperidone	25mg-50mg every 2 weeks	2 weekly	6-8 (*Bazire*)[13]

*information taken from SPC for individual products unless otherwise specified
**Paliperidone palmitate 3 monthly LAI can only be considered for patients who are clinically stable on paliperidone monthly LAI for at least 4 months

Points to note for SGA LAIs:

Aripiprazole
• Treatment with oral aripiprazole should continue for 2 weeks after the first LAI has been administered to maintain therapeutic aripiprazole concentrations during initiation of therapy. • Lower doses of aripiprazole LAI can be administered as described in the SPC. • Doses lower than 400mg of aripiprazole must be administered via a vial (the pre-filled syringe is not graduated).
Paliperidone
• Paliperidone has initiation doses of 150mg on day 1; 100mg on day 8; followed by a monthly dose adjusted according to response. • The initiation doses must be administered into the deltoid. • The initiation doses are **not** required if the patient is being switched from another depot/LAI.
Risperidone
• Treatment with oral risperidone should continue for 3 weeks after the first LAI has been administered. Following injection of risperidone LAI, there is a lag period and the main release of risperidone starts from week 3 onwards.
Aripiprazole and paliperidone are administered every calendar month **not** every 4 weeks. From a practical perspective, it is recommended that monthly injections are prescribed and administered e.g. on the 1st X-weekday of the month, this avoids the potential of recurrent LAI administration falling on a weekend. If a monthly LAI is prescribed on a particular date and administration is due to fall on a weekend or public holiday, the administration can be altered temporarily in line with *Appendix 3 Frequency flexibility for antipsychotic depot/LAIs*

9.6 Switching and stopping antipsychotic depots/LAIs

9.6.1 Stopping

Discontinuation of FGA depots and SGA LAIs is relatively straightforward. The nature of the slow release formulation means that the drug will persist in the body for a number of months (*Appendix 1 for Pharmacokinetic of antipsychotic depot/LAIs including elimination half-lives).* In general, there is no rationale for decreasing the dose in preparation for stopping. The drug can generally be stopped from the patient's current dose and there will be a relatively consistent decrease in plasma levels over time.

9.6.2 General principles of switching

- Given the extended half-life of these preparations, there is the potential for interactions and additive adverse effects when moving from one preparation to another antipsychotic.
- When moving from one FGA depot or SGA LAI to an oral antipsychotic treatment, it would usually be reasonable to titrate up to an approximate equivalent oral dose when the depot/LAI would have been due to be administered.

- When moving from one FGA depot to another, there may still be a requirement to administer a test dose.
- When moving to a SGA LAI, follow the guidance within the SPC for the new product.
- For specific advice on switching one antipsychotic to another, consult MHLD pharmacy services.

9.7 Prescribing Practicalities

All FGA depots/SGA LAIs must be prescribed on an appropriate NHS Lanarkshire prescribing system with the administration recorded on corresponding recording system at the time of administration;

In outpatient settings, the community depot prescription and administration record should be used. It is the responsibility of the psychiatrist or designated deputy to ensure the depot/LAI is prescribed to enable administration by nurses in this setting.

In inpatient settings, prescribing of FGA depots and SGA LAIs should be done on the inpatient prescribing system (either HEPMA or on the inpatient cardex depending on the systems used in that area).

When a patient is admitted to a MHLD inpatient area, the community depot prescription should be discontinued and a new prescription written, if necessary, when the patient is discharged. This is to support robust medicines reconciliation processes at interfaces of care and to ensure there is minimal risk that the wrong dose or wrong drug is administered (in the event of changes to medication during the inpatient stay).

Only one NHSL prescription for administering FGA depots/SGA LAIs should be in use at any one time.

The community depot prescription and administration record must be legally written and signed by a prescriber before the depot/LAI can be administered to the patient.

The community depot prescription and administration record must be completed in full and include;

- Patient's name; CHI; DOB; address
- Any known allergies or sensitivities, including sensitivities to dressings/ plasters. If none, then '*no known drug allergies'* must be written
- The drug name, dose and frequency of administration
- Site of administration
- Special notes (e.g. injection site preference)

The community depot prescription should be reviewed by the responsible prescriber at an outpatient appointment at least every 12 months.

10. Administration

The following links include diagrammatic information on injection sites:

Administering drugs via the intramuscular route Nursing Times August 2018 [14]

Guidance on the Administration to Adults of Oil-based Depot and other Long-acting Intramuscular Antipsychotic Injections 6th edition [15]

There must be formal systems in place to confirm a patient's identity before a depot/LAI is administered.

All FGA depot/SGA LAI administrations must be recorded on a corresponding administration recording chart at time of administration.

10.1 Practical issues with administration

10.1.1 Nodule formation and site rotation
With repeated injections of depots/LAIs over years, there is a risk of hard lumpy nodule formation. It is imperative that sites of administration are rotated to minimise this risk, using all licensed sites of administration that the patient consents to and to use the smallest volume to deliver the prescribed dose (*Appendix 2 Dose selection for antipsychotic depot/LAIs*). Ultimately, nodule formation may necessitate a change in treatment if the patient suffers significant pain/ distress or if there is concern regarding reliable administration and/or absorption of the depot/LAI.

10.1.2 Extremes of weight
Needles need to be long enough to allow injection to the intended depth of muscle with a quarter of the needle remaining external to the skin. An assessment of the size of needle required to reach the muscle must be made taking into account any subcutaneous fat especially in obese patients.

3 commonly available needle sizes for IM administration are:

- 1-inch blue
- 1.5-inch green
- 2-inch yellow

Where needles are supplied with the injection e.g. SGA LAIs, these should be used.

10.1.3 Advice on managing late doses
The key benefit of depots/LAIs is that they are long-acting and, as a result, there is usually lee-way in terms of more flexible due dates of administration e.g. if someone is going on holiday, misses a scheduled appointment because they are unwell or depot/LAI is due to fall on a public holiday. In general terms, administering a depot/LAI a day or two at either side of the scheduled date will not cause significant problems. There are some exceptions and advice is given in *Appendix 3 Frequency flexibility for antipsychotic depot/LAIs*. If there is a significant delay to depot/LAI administration, there is a risk of drug plasma levels decreasing and the potential for symptom control to worsen, potentially precipitating the need for

short term adjunctive oral antipsychotic treatment. Individual circumstances need to be considered on a case by case basis and MHLD pharmacy services can be contacted for advice. Unless there is a change to the dose of depot/LAI, there is no need for the depot/LAI to be represcribed because of a late administration. The individual details should be well documented on the administration record and in the patient's notes.

10.1.4 Co-morbid substance misuse

In the event that a patient is due to receive their depot/LAI and they appear under the influence of substances, a risk assessment must be undertaken and decision to administer or delay made on a case by case basis. Given the sustained release characteristics of depots/LAIs, delaying administration by a day or 2 may be the most practical solution. For hard to engage patients, it may be more appropriate to administer the medication at the time they have presented.

10.2 Record keeping

Proper record keeping (hard copy and/or electronic) is essential to patient safety. Medication incidents have occurred because of poor record keeping e.g.

- Doses being given before or after the next due date in error.
- Wrong medication or dose being dispensed or administered.
- Doses missed completely.

The following details should be recorded on the appropriate documentation

	Depot administration record	Patient records
Date given	√	√
Drug and dose	-	√
Site administered	√	√
Name of NS administering	√	√
Next due date	√	√
Any noted side effects/ other relevant clinical info	-	√

The reasons for a depot/LAI not being administered, administered at a different time or any other relevant information must be recorded in the patient's notes, in addition to recording on the administration record. Discontinued or old prescription forms / cardexes and corresponding administration records must be retained in the patient's notes.

Wards and CMHTs must devise a local system for tracking the next due dates for all patients prescribed depot/LAI antipsychotics to minimise the risk of missed doses.

In addition, CMHTs must have a procedure in place for patients who have failed to attend their scheduled depot/LAI appointment, describing actions to be taken to reschedule, communication systems and documentation.

11. Communication

11.1 Communication between care settings

It is essential to good patient care that communication between patient settings and interfaces of care regarding depot/LAI prescriptions is robust.

When a patient is transferred between settings, the following details must be clearly communicated

- The antipsychotic depot/LAI preparation, the dose and dosage interval.
- Date last given, site of administration and the next due date.

Note for CMHT staff; in inpatient areas that use HEPMA, a copy of the patient's inpatient HEPMA 'prescription and administration record' (which will include the date the depot/LAI was last administered) can be found on the Clinical Portal.

11.2 Communication with Primary Care

In areas where supply of the depot/LAI is not via primary care and community pharmacy, the patient's primary care provider must be informed that a depot has been prescribed and requested to record the details on the primary care prescribing system as a 'HOSPITAL SUPPLY' medicine.

11.3 CAMHS

The off-label use of depots or LAIs is occasionally necessary within CAMHS. To facilitate the administration of the injection, the young person may have to access Adult Mental Health services. Arrangements for this should be in place before initiation of the depot/LAI or before discharge from inpatient services. Local Unlicensed Use Policies should be followed.

12. Side effect monitoring

A full list of possible side effects can be found in the SPCs for each drug.[7] The following are some important points to consider.

- Pain, erythema, swelling and nodules can occur at the injection site.
- Apart from local reactions and the theoretical risk of anaphylaxis, depot/LAI antipsychotics are unlikely to produce significant side effects, including extrapyramidal side effects, at the time of administration. They are more likely to occur after several days, particularly around the time of peak plasma levels.
- Rarer adverse effects such as rashes and agranulocytosis are well documented with antipsychotics, however anaphylaxis is not. Due to the very rare risk of anaphylaxis, test dose of FGA depots should be given in a healthcare facility that has access to the appropriate emergency equipment (disposable ambu-bag, airways, laerdal pocket mask and medicines) should any immediate adverse reactions occur.

General physical health monitoring in line with good practice guidance should be undertaken for all patients prescribed antipsychotics.[1,16] Standardised tools/ checklists should be used to monitor and assess side effects including the Glasgow Antipsychotic Side Effect Scale (GASS). GASS & Easy read GASS

Side effect monitoring during depot/LAI initiation and follow up	
Baseline monitoring prior to first dose/test dose	• Standard observations; weight • Physical health monitoring in line with national guidance
Monitoring post-test dose administration	• Observe for anaphylaxis (note very rare) • At 30 mins and 60 mins post administration, repeat standard observations; check general wellbeing
Monitoring side effects at peak plasma levels (around 1 week post dose - see *Appendix 1* for exceptions)	• Standard observations • Conduct GASS or easy read GASS with patient • Monitor for sedation or evidence of EPSE For inpatients, undertake monitoring 3 & 7 days post-test dose (and at peak levels)
Routine follow up	• Physical health monitoring in line with national guidance • If patient on High Dose Antipsychotic Therapy, NHSL HDAT guideline should be followed • Escalate if any concerns in relation to tolerability or response to treatment
At any point in treatment, escalate if any concerns in relation to tolerability or response to treatment	

13. Supply of depots/LAIs

13.1 Inpatients

Depots/LAIs are ordered directly from the hospital pharmacy department (via stock and/or non-stock requisitions).

13.2 Community Patients

There are some nuances in terms of depot/LAI supply for community patients. In general, they are prescribed through primary care via a GP10 and supplied via community pharmacy. The medication will be labelled by the community pharmacy for an individual patient's use.

SGA LAIs are relatively high cost items (*Appendix 4*) and community pharmacies are unlikely to keep stock of these formulations. They will tend to place an order on receipt of a prescription, therefore it is important for prescriptions to be ordered in a timely fashion to minimise delays in supplies being obtained.

For some areas (predominantly North), the supply of certain FGA depots has historically been via a CMHT stock order from the local hospital pharmacy. In this situation, the responsibility of storage remains with the clinic or CMHT.

In the event that prescribing via GP10 or supply via community pharmacy of a depot/LAI is potentially compromised/delayed, there may be an option to access from one of the acute hospital pharmacies via a hospital outpatient prescription as an interim measure, dependent on stock availability. This should be an exception to depot/LAI supply and not the rule and areas should liaise with MHLD pharmacy to discuss arrangements on a case by case basis.

14. Storage and transport

Medicinal products must be stored securely and in accordance with any specific recommendations from the manufacturer e.g. fridge conditions.

When medications are stored in a drug fridge, a daily log of the fridge temperature should be recorded and, if necessary, remedial action should be taken to ensure medications are stored as per manufacturers' guidance.

Clinical support workers can collect depot/LAI medication on behalf of the team. This should be checked and signed for by registered staff when this is received.

Medication audits should take place at least weekly to ensure stock levels for ordering and any potential discrepancies.

* For patients who have their depot/LAI dispensed via a community pharmacy, the dispensed medication is their own property and may be stored in their own home. The patient should be advised on how to store their antipsychotic depot/LAI appropriately. In some situations, it may be more appropriate for the depot/LAI to be stored in a health facility. This agreement may help ease of access and/or reduce safety concerns. It remains the property of the individual to whom it is prescribed and should not be used for any other patient.

Risperidone LAI (Consta) requires to be refrigerated and is subject to cold chain transportation. Risperidone LAI should be removed from the refrigerator and allow to sit at room temperature for at least 30 minutes before reconstituting If the cold chain is broken, risperidone LAI should be stored at room temperature and used within 7 days. Following reconstitution, risperidone LAI must be used within 6 hours.

Where depot/LAIs need to be transported for administration in the patient's home, ensure that medication is transported in a safe and secure manner and remains under the personal control of the member of staff at all times e.g. in the boot/ glove box of the car. Ensure that the correct procedure for safe disposal of sharps is adhered to.

15. Audit and review

There should be regular self and peer audits of compliance with these guidelines.

16. References

1. Scottish Intercollegiate Guidelines Network (SIGN). Management of schizophrenia. (SIGN publication no. 131). March 2013 www.sign.ac.uk
2. NICE guidelines [CG178]: Psychosis and schizophrenia in adults: prevention and management https://www.nice.org.uk/guidance/cg178
3. Montgomery v Lanarkshire Health Board 2015. https://www.supremecourt.uk/cases/docs/uksc-2013-0136-press-summary.pdf
4. Mental Welfare Commission for Scotland. Good Practice Guide. Consent to Treatment: A Guide for Mental Health Practitioners. January 2017
5. Mental Welfare Commission for Scotland. Advice Notes. Medical Treatment under Part 16 of the Mental Health (Care and Treatment) (Scotland) Act 2003. April 2021
6. Mental Welfare Commission for Scotland. Advice Notes. Treatment under section 47 of the Adults with Incapacity Act: overview and guidance. April 2021
7. Electronic Medicines Compendium. Summary of Product Characteristics. www.medicines.org.uk
8. NHS Lanarkshire Joint Formulary. www.medednhsl.com/meded/nhsl_formulary
9. da Silva Freire Coutinho E, Fenton M, Quaraishi SN. Zuclopenthixol decanoate for schizophrenia and other serious mental illnesses. *Cochrane Database of Systematic Reviews* 1999, Issue 3. Art. No.: CD001164.
10. Scottish Medicines Compendium Olanzapine LAI submission. https://www.scottishmedicines.org.uk/
11. NHS Lanarkshire Unlicensed Medicines Policy
12. Mahapatra J, Quraishi SN, David A, Sampson S, Adams CE. Flupenthixol decanoate (depot) for schizophrenia or other similar psychotic disorders. *Cochrane Database of Systematic Reviews* 2014, Issue 6. Art. No.: CD001470
13. Bazire S. Psychotropic Drug Directory. 2020/21. Lloyd-Reinhold publications
14. Shepherd E. Injection technique 1: administering drugs via the intramuscular route. Nursing Times. Aug 2018. Vol 144 (8); 23-25
15. Feetam C. & White J. Guidance on the Administration to Adults of Oil-based Depot and other Long-Acting Intramuscular Antipsychotic Injections 6th Edition (2020)
16. British National Formulary. https://www.medicinescomplete.com

17. Related Guidance/ Policy

The following guidelines and policies should be used in conjunction with this guidance

1. NHS Lanarkshire Code of Practice for Medicines' Governance
   http://firstport2/staff-support/care-assurance-accreditation-system/mental-health-learning-disability/Documents/Standard%2003%20-%20Medicines%20Management/Medicines%20Code%20of%20Practice%20-%20NHS%20Lanarkshire.pdf
2. Infection Control Policies firstport2/staff-support/infection-prevention-control/
3. NHS Lanarkshire Waste Disposal Operational Policy
4. Professional guidance on the safe and secure handling of medicines
   http://www.rpharms.com/recognition/setting-professional-standards/safe-and-secure-handling-of-medicines/professional-guidance-on-the-safe-and-secure-handling-of-medicines
5. Professional guidance on the administration of medicines in health care settings
   https://www.rpharms.com/Portals/0/RPS%20document%20library/Open%20access/Professional%20standards/SSHM%20and%20Admin/Admin%20of%20Meds%20prof%20guidance.pdf?ver=2019-01-23-145026-567
6. Storage and Handling of Vaccines and Pharmaceutical Products In GP practices, Health Centres and Clinics
   https://www.publichealth.hscni.net/sites/default/files/2020-02/Guidance%20on%20vaccine%20handling%20and%20storage%20in%20GP%20practices.pdf
7. Health Protection Scotland (2013): Infection Control
   https://www.hps.scot.nhs.uk/guidance/

18. Additional Training

The following additional training is available;

- Anaphylaxis
  https://nhslguidelines.scot.nhs.uk/media/1746/anaphylaxis-algorithm.pdf
  https://www.resus.org.uk/library/additional-guidance/guidance-anaphylaxis/emergency-treatment
- NHSL Needlestick Injury and BBV exposure, prevention and management
  http://firstport2/staff-support/needlestick-injury
- Learnpro - NES: Aseptic techniques
- TURAS Learn - Intramuscular injections
  https://learn.nes.nhs.scot/

Appendix 1- Pharmacokinetics of antipsychotic depots/ LAIs *

Please refer to NHSL joint formulary https://www.medednhsl.com/meded/nhsl_formulary for 1st line depot/LAI options

Long Acting Antipsychotic intramuscular Injection	Test dose	Peak plasma levels occur**	Half life
Aripiprazole (Maintena®)	Test dose N/A Oral aripiprazole must be used to establish tolerability and efficacy prior to initiation	Gluteal 7 days Deltoid 4 days	30 days for 300mg dose 46 days for 400mg dose
Flupentixol decanoate (Depixol®)	**20mg**	7 days	17 days following multiple doses (*Bazire*)[13]
Haloperidol decanoate (Haldol®)	**25mg** (12.5mg >65 yrs)	3-9 days	3 weeks
Paliperidone palmitate 1/12 (Xeplion ®)	Test dose N/A Oral **risperidone** must be used to establish tolerability and efficacy prior to initiation (**do not use** oral paliperidone) Initiation doses (as per SPC) Initiation doses not required if already prescribed a depot (as per SPC)	13 days	25-49 days
Paliperidone palmitate 3/12 (Trevicta®)	Test dose N/A Patient must be stabilised on the 1-monthly paliperidone palmitate LAI for at least 4 months	30-33 days	84-95 days deltoid 118-139 days gluteal
Risperidone (Risperdal Consta®)	Test dose N/A Oral risperidone must be used to establish tolerability and efficacy prior to initiation	5-6 weeks (*Bazire*)[13]	14-21 days (*Bazire*)[13]
Zuclopenthixol decanoate (Clopixol®)	**100 mg** (25-50mg >65 yrs)	4-9 days (*Bazire*)[13]	17-21 days (*Bazire*)[13]

*information taken from SPC for individual products unless otherwise specified

**Monitoring post first dose should be done around the time of peak plasma levels occurring.

As a rule, this should be 1 week after initial dose (with the following exceptions; paliperidone 1/12 at 2 weeks; paliperidone 3/12 at 4-5 weeks; risperidone at 5-6 weeks)

Appendix 2- Dose selection for antipsychotic depot/LAIs

Intramuscular injections can be painful and this can be especially true of the oily depot injections. Pain can be minimised by using the smallest volume possible. Ideally, no more than **2ml** should be administered into one site if possible. The following tables give guidance on product selection to minimise the volume of depot injection administered.

**** Different strengths of depot preparation should never be mixed**.**

Flupentixol decanoate		
Dose	**Product/ strength**	**Volume**
10mg	20mg/ml	0.5ml
20mg	20mg/ml	1ml
30mg	40mg/2ml	1.5ml
40mg	40mg/2ml	2ml
50mg	50mg/0.5ml	0.5ml
60mg	100mg/ml	0.6ml
70mg	100mg/ml	0.7ml
80mg	100mg/ml	0.8ml
90mg	100mg/ml	0.9ml
100mg	100mg/ml	1ml
120mg	200mg/ml	0.6ml
150mg	200mg/ml	0.75ml
200mg	200mg/ml	1ml

Zuclopenthixol decanoate		
Dose	**Product/ strength**	**Volume**
50mg	200mg/ml	0.25ml
100mg	200mg/ml	0.5ml
150mg	200mg/ml	0.75ml
200mg	200mg/ml	1ml
300mg	500mg/ml	0.6ml
400mg	500mg/ml	0.8ml
500mg	500mg/ml	1ml
600mg	500mg/ml	1.2ml

Haloperidol decanoate		
Dose	**Product/strength**	**Volume**
50mg	50mg/ml	1ml
100mg	100mg/ml	1ml
150mg	100mg/ml	1.5ml
200mg	100mg/ml	2ml
250mg	100mg/ml	2.5ml*

*a 2ml syringe is graduated to 2.5ml. Consider splitting dose especially if patient is very thin

Aripiprazole		
Dose	**Product/ strength**	**Volume**
400mg	400mg	2ml
300mg	400mg	1.5ml
200mg*	400mg	1.0ml
160mg*	400mg	0.8ml

*to deliver reduced dose with regards to specific drug interactions (see SPC)

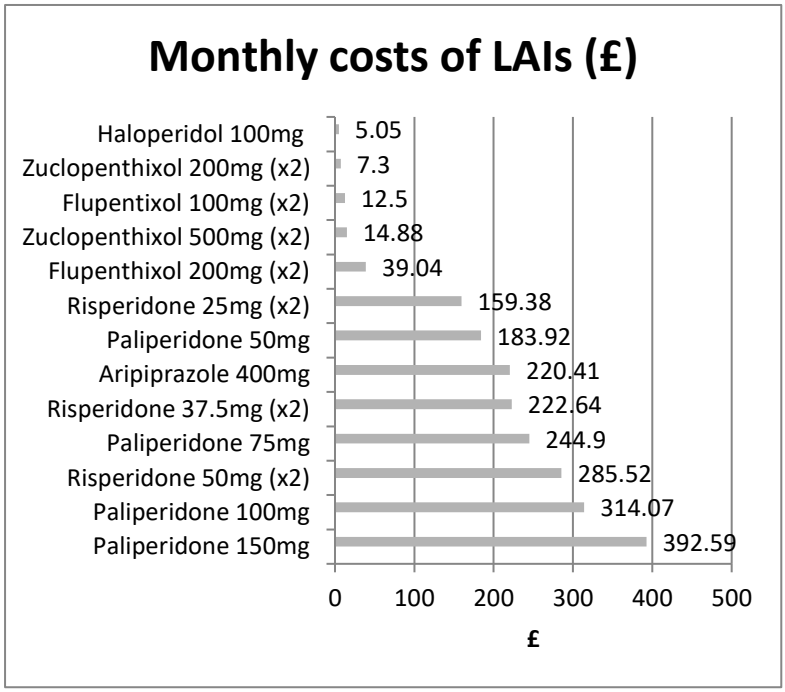
Appendix 3- Frequency flexibility for antipsychotic depot/LAIs

Any late/early administration of antipsychotic depot/LAI must be clearly documented. Seek advice from the patient's consultant psychiatrist/ MHLD pharmacy if the patient is not within the parameters below. In the event of late administration, some short-term adjunctive oral antipsychotic cover may be required.

Depot	1 weekly	2 weekly	4 weekly	3 monthly
Aripiprazole			No earlier than 26 days from last injection and 7 days after scheduled date	
Flupentixol decanoate	1-2 days either side	2 days either side	4 days either side	
Haloperidol decanoate	1-2 days either side	2 days either side	4 days either side	
Paliperidone 1/12			Can be 7 days either side of the monthly date	
Paliperidone 3/12				Can be 14 days either side of 3 monthly date
Risperidone		2 days either side		
Zuclopenthixol decanoate	1-2 days either side	2 days either side	4 days either side	

This advice was adapted from http://www.choiceandmedication.org

Appendix 4 - Monthly costs of antipsychotic depot/LAIs (from BNF 80)



Appendix 5 - Patient information resources

Patient information leaflets on psychotropic medications can be found at www.choiceandmedication.org/nhs24/ which can be accessed via NHS Inform.

Appendix 6- Community Depot Prescription and Administration Record

Community Depot Prescription and Administration Record

NHS Lanarkshire

Team:	**Drug Allergies/Sensitivities** ☐ None known ☐ Yes (provide details below)
First name: / Date of Birth: ..../........../..........	
Last name: / Sex: ☐ M ☐ F	Community Nurse: / Psychiatrist:
CHI number:	
Address and phone number:	Additional Information/Instructions:

Prescriptions are valid for a maximum of 6 months and must be reviewed/re-prescribed at regular intervals. Discontinue prescriptions following inpatient admission and re-prescribe following discharge.

TEST DOSE INJECTIONS OR ONCE ONLY DRUGS

Date	Drug	Dose	Route (and site*)	Prescriber (print and sign)	Date given	Time	Given by (print and sign)

REPEAT DEPOT AND LONG ACTING INTRAMUSCULAR INJECTIONS

Drug			**Date due**												
Dose	**Route (and site*) IM ( )**	STOPPED **Date:**	**Date given**												
Frequency		**Initials:**	**Site***												
Date	**Pharmacy**		**Side**												
Prescriber (print and sign)			**Given by** (initials)												

Drug			**Date due**												
Dose	**Route (and site*) IM ( )**	STOPPED **Date:**	**Date given**												
Frequency		**Initials:**	**Site***												
Date	**Pharmacy**		**Side**												
Prescriber (print and sign)			**Given by** (initials)												

Drug			**Date due**												
Dose	**Route (and site*) IM ( )**	STOPPED **Date:**	**Date given**												
Frequency		**Initials:**	**Site***												
Date	**Pharmacy**		**Side**												
Prescriber (print and sign)			**Given by** (initials)												

NOTE: To discontinue a prescription, initial and date appropriate boxes, draw diagonal line through section

Date:	**Comments:** (including any adverse effects)
Date:	**Comments:** (including any adverse effects)

Follow NHS Lanarkshire 'Policy for Unlicensed Medicines' when using unlicensed depot administration site. All use of medicines must comply with the Medicines Code of Practice.

***Abbreviations:** DEL = Deltoid (upper arm) VG = Ventrogluteal (hip site)
DG = Dorsogluteal (upper outer quadrant of buttock) VL = Vastus Lateralis (thigh)

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