

Controlled drugs - Advice for checking stock balances of liquid preparations

The use of liquid controlled drugs preparations such as methadone solution can be fairly common place within mental health services. Current advice from the NHS GG&C [Safe and Secure Handling of Medicine](#) advises that the ward stock of every controlled drug must be checked at least once every 24 hours. This has a number of practical implications for liquid preparations such as methadone;

- There is a potential discrepancy in the volume of methadone in each bottle (current manufacturer quotes +/- 5%, therefore each bottle may contain between 95 and 105ml in each 100ml bottle). There is likely to be similar discrepancies in other liquid controlled drug preparations. Note: underage is unlikely, shortage of a liquid controlled drug is usually due to a miscalculation.
- It is inevitable that some liquid will be lost each time an amount is measured out, especially if the liquid is viscous and is not allowed to drain thoroughly from the measure.
- There will be a risk of contamination of the liquid if it is continually being poured out in order to measure it.
- There is a lack of consistency in the way staff measure liquids.

In order to address these issues and have a consistent approach to dealing with liquid preparations of controlled drugs, the following advice has been developed for use across GG&C Mental Health Services and has been approved by GG&C Controlled Drugs Governance team.

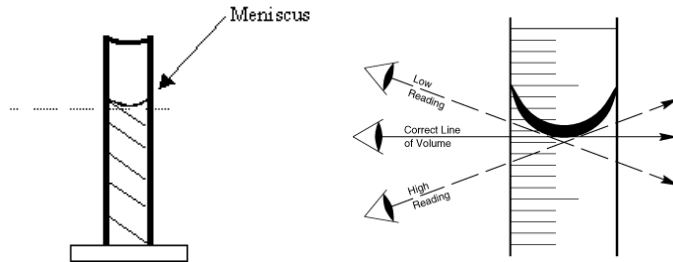
1. Liquid preparations of controlled drugs should not be physically measured at every shift changeover. Instead, a visual estimation approach to checking balances should be used.
2. Qualified nursing staff should undertake a physical check of open bottles of liquid controlled drugs on a weekly basis. (It should be assumed that sealed bottles contain the amount stated on the label). If a ward is ordering and using large amounts of controlled drugs over a week e.g. >1000ml methadone, consideration should be given to doing a physical check of the balance more regularly than weekly. Weekly checks should be undertaken during pharmacy opening hours to ensure a timely response if a problem is encountered (see points 7 & 8 below).
3. Ensure that there is a suitable conical glass cylinder available to allow for precise measuring. (Plastic medicine cups are not appropriate for accurately measuring controlled drugs).
4. When measuring liquid controlled drug preparations, ensure that this is done consistently:
 - Place the measure on a flat hard surface
 - Ensure sight line at the same height as the bottom of the meniscus

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- The bottom of the meniscus is the accurate measurement.



<http://www.morrisonlabs.com/meniscus.htm>

5. After measuring, use a prolonged drainage period until there are no further drops (around 3 seconds).
6. Staff should check back to the last time a controlled drug balance reconciliation was carried out to ensure that each arithmetic calculation is correct and the reason for a discrepancy is not a miscalculation.
7. Discrepancies of less than 5% over the total amount of liquid controlled drug received since the last reconciliation, should be corrected by 2 members of nursing staff at the weekly balance check.

e.g. Ward has received 8 x 100ml (800mls) of methadone since the last reconciliation. At the next balance check, there is an actual overage of 35ml compared to the controlled drug register. This can be adjusted by nursing staff (as cumulative overage is < 5%).

The controlled drug register should be annotated along the lines of:

Weekly balance check- balance found to be XXmls and adjusted accordingly

with the signatures of the 2 staff undertaking the check and the new balance in the balance column. Please annotate the register entry in a different colour of ink from routine entries to distinguish it clearly.

8. Any discrepancies greater than 5% over the total amount of liquid controlled drug received since the last reconciliation should be communicated to pharmacy staff, the ward senior charge and appropriate local nurse management immediately. The discrepancies will be reviewed and adjusted by a pharmacist as soon as possible.

e.g. Ward has received 8 x 100ml (800mls) of methadone since the last reconciliation. At the next balance check, there is an actual overage of 50ml compared to the controlled drug register. This must be communicated to pharmacy in order to be adjusted (as cumulative overage is > 5%).

9. Any shortage that is not due to spillage or miscalculation should be communicated to pharmacy and the ward senior charge nurse and appropriate local nurse management immediately.
10. Discrepancies in excess of 5% and any unexplained shortages should be reported on Datix.

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