

## Transport and storage of samples: Best Practice Guideline for Primary Care

### Introduction

This document is for use by GP practices in order to provide information regarding stability and best practice for blood and urine sample storage.

### Sending Samples to the Laboratory

1. Specimens should ideally be sent to the laboratory as soon as possible (via the next transport on the day of sample collection).

2. If samples cannot be sent to the laboratory on the day of collection (e.g. venepuncture performed after the last van pick-up):

- **Biochemistry samples** (lithium heparin and serum) should ideally be centrifuged and stored refrigerated (4-8°C)
- **Biochemistry samples** (fluoride oxalate) should **not** be centrifuged; these should be stored refrigerated (4-8°C)
- **Haematology samples** (EDTA and citrate) should **not** be centrifuged; these should be stored refrigerated (4-8°C)
- **Urine samples** (random 'spot' and 24-hour samples) should be stored refrigerated (4-8°C)
- **If centrifugation facilities for Biochemistry samples do not exist within the surgery,** Biochemistry blood samples may be stored refrigerated (4-8°C), but please be aware that the integrity of these samples will be compromised, resulting in spurious results, particularly (but not limited to) plasma sodium, potassium, phosphate, LDH.

These samples should be sent to the laboratory the next morning. They need to reach the laboratory within 24 hours of being taken. **Do not freeze blood samples** unless specifically advised by the laboratory to do so.

3. Please note that samples that are taken on Fridays or Saturdays but will not arrive in the laboratory until Monday and/or are greater than 24 hours since the sample are taken may produce inaccurate results, even if they are centrifuged. This is due to leakage out of cells or due to poor stability of the analyte. It is best that samples are not stored over the weekend.

Specific examples include but are not limited to:

- Sodium, Potassium, Bicarbonate
- Calcium, Phosphate, Magnesium
- LDH
- Glucose, Lactate (fluoride-oxalate preservative in the grey-topped tube inhibits glycolysis for a limited period of time only)

For more information, please contact the laboratory or refer to their respective departmental websites:

<https://www.ouh.nhs.uk/biochemistry/>

<https://www.ouh.nhs.uk/services/departments/laboratory-medicine/haematology-laboratories/>