

## Blood product use during the COVID-19 pandemic

To minimise risk to both our team and donor owners, we have had to change the way we run our donation sessions, which has had an impact on the number of donors attending and thereby stock levels. Due to this, we want to encourage considerate use of blood products over the coming weeks and months while there continues to be significant restrictions in place in all parts of the UK.

With help from the RVC, we have put together some guidelines below to help guide you on blood product usage. Our [transfusion advice service](#) remains open if you would like to discuss your individual case and whether blood would be the best option for your patient.

These guidelines refer specifically to the use of red blood cells. Our stocks of plasma remain very healthy and we encourage all practices to store plasma to allow easy access when required.

You can download this page as a PDF by using the link at the bottom.

When considering whether a patient needs a red cell product transfusion please consider the following:

### Physical examination findings

- Anaemic dogs and cats should be carefully assessed for signs of decreased oxygen delivery:
  - Tachycardia
  - Bradycardia in cats
  - Bounding pulses
  - Decreased quality pulses/hypotension (more common in cats)
  - Pallor
  - Decreased mentation
  - Decreased activity
  - Tachypnoea
- If anaemia is due to blood loss, volume resuscitation with isotonic crystalloids should be performed to ensure the clinical signs seen are secondary to anaemia rather than hypoperfusion.

### Chronicity of anaemia

- Patients with a more chronic anaemia (e.g. bone marrow mediated anaemia such as that caused by chronic kidney disease) can often cope with a lower PCV than those with a sudden decrease (e.g. IMHA or blood loss).

### Planned procedures

- General anaesthesia results in a decrease in PCV and decreases cardiac output and oxygen delivery. Therefore, if a GA is planned (e.g. fracture repair in a trauma patient) that patient might require a transfusion even if they are stable (see below).
- If it is unclear whether a transfusion is required to allow safe GA, blood products can be placed on hold for a patient and only used if needed.
- Restraint and stress increase oxygen demand, so this should be minimised in the anaemic patient. Gentle handling and staging of procedures are vital.

*Content kindly supplied by Karen Humm MA VetMB MSc CertVA DACVECC DipECVECC FHEA MRCVS, Associate Professor in Transfusion Medicine and Emergency and Critical Care, RVC, and edited by Jenny Helm BVMS Cert SAM Dip-ECVIM CA MRCVS, Pet Blood Bank UK Trustee.*

### Likely disease progression

- Consider if the anaemia is likely to worsen.
- If the underlying cause has been addressed (surgical removal of a bleeding mass) or is over (e.g. trauma) then the anaemia present is likely to be the nadir. If the patient is coping it should not need a transfusion.
- Disease processes which are not controlled or which may progress (IMHA either pre treatment during investigation or while waiting for immunosuppression to be effective) may need a red cell product transfusions when the patient has a higher PCV/fewer clinical signs to prevent progression to a critical point.
- Patients where transfusion need is borderline can be monitored closely in ICU as an 'observation' patient (if ICU facilities are available).

### Predicted patient outcome

- The commitment and financial resources of the owner should be assessed prior to the administration of any blood product.
- The likely patient outcome should be considered, with the use of blood products to allow a very short increase in lifespan discouraged at this time.
- If repeated transfusions are deemed likely, the resources this would require should be considered.

### PCV

- There is no definitive PCV whereby a patient requires a transfusion and there is little literature in this area.
- Clinical experience suggests that dogs with a PCV greater than 17% can generally cope with this level of anaemia if they are euvoelaemic (and often they can cope with even lower PCV).
- Clinical experience suggests that cats with a PCV greater than 14% can generally cope with this level of anaemia if they are euvoelaemic (and often they can cope with even lower PCV).
- General anaesthesia results in a decrease in PCV and decreases cardiac output and oxygen delivery, so a PCV of over 20% in dogs and over 15% in cats is ideal in patients where anaesthesia is planned, particularly if it will be for longer than 30 minutes.

### Practical decisions about the use of blood products

#### Calculations

- As a rule of thumb, 1ml/kg of PRBC or 2ml/kg of WB will increase recipient PCV by 1%.
- We should not aim to return PCV to 'normal', but to a level where the patient is comfortable and coping. This will depend on the other factors described here, but 20-25% is often an appropriate PCV to aim for in terms of improving patient morbidity while maintaining stocks and minimising cost to owner.
- For help with calculating how much blood you require for a case, please visit our [website](#).

#### Use of half units

- If it is unclear whether a half unit would be enough for a patient, this could be administered and then the response assessed prior to administering a second half unit (this would then only be charged as one unit).

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- If a whole unit is breached but not all the blood product is required, surplus blood can be aseptically removed from the bag into capped syringes prior to starting the transfusion. This can be stored in a fridge at 4°C for up to 24 hours.

### **Autotransfusion**

- This can be lifesaving due to speed of administration in emergency situations where donated PRBC or WB is unavailable.
- It can save owners money in large patients with large bleeds and will decrease the risk of transfusion reactions (as no allogenic product is administered) and decreases use of stock.
- It is contraindicated in patients with septic contamination of the haemoabdomen or haemothorax.
- The risk of increasing the probability of metastasis if the bleed is from a neoplasm is unknown, but it should be explained to the owner that it may be present.
- Strict asepsis should be adhered to when collecting blood from the thorax or abdomen.
- A cell saver can be used for autotransfusion pre-op, intra-op or post-op (if available).
- Anticoagulant is not required if the blood has been in the cavity for longer than an hour.
- Autotransfusion blood must be administered via a blood giving set and a transfusion monitoring form used as with all transfusions.
- Any blood which is not transfused can be stored in capped syringes in a fridge at 4°C for up to 24 hours.