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British Committee for the Standards in Haematology (BCSH) - Blood Transfusion Guidelines

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Patient Blood Management: optimising the care of patients who may need transfusion

Nurse Authorisation
May 2014

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British Committee for Standards in Haematology

- Who are they?
- What do they do?
- The guideline development process
- The future

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Who are the BCSH?

- The BCSH is a sub-committee of the British Society for Haematology (BSH)
- The BCSH consists of 4 Task Forces:
  - Haemato-oncology
  - General Haematology
  - Haemostasis and Thrombosis
  - Blood Transfusion
- There is also a fifth Task Force:
  - Laboratory and Clinical Practice Committee, which provides guidance on aspects of haematological clinical and laboratory practice not covered by the other Task Forces.

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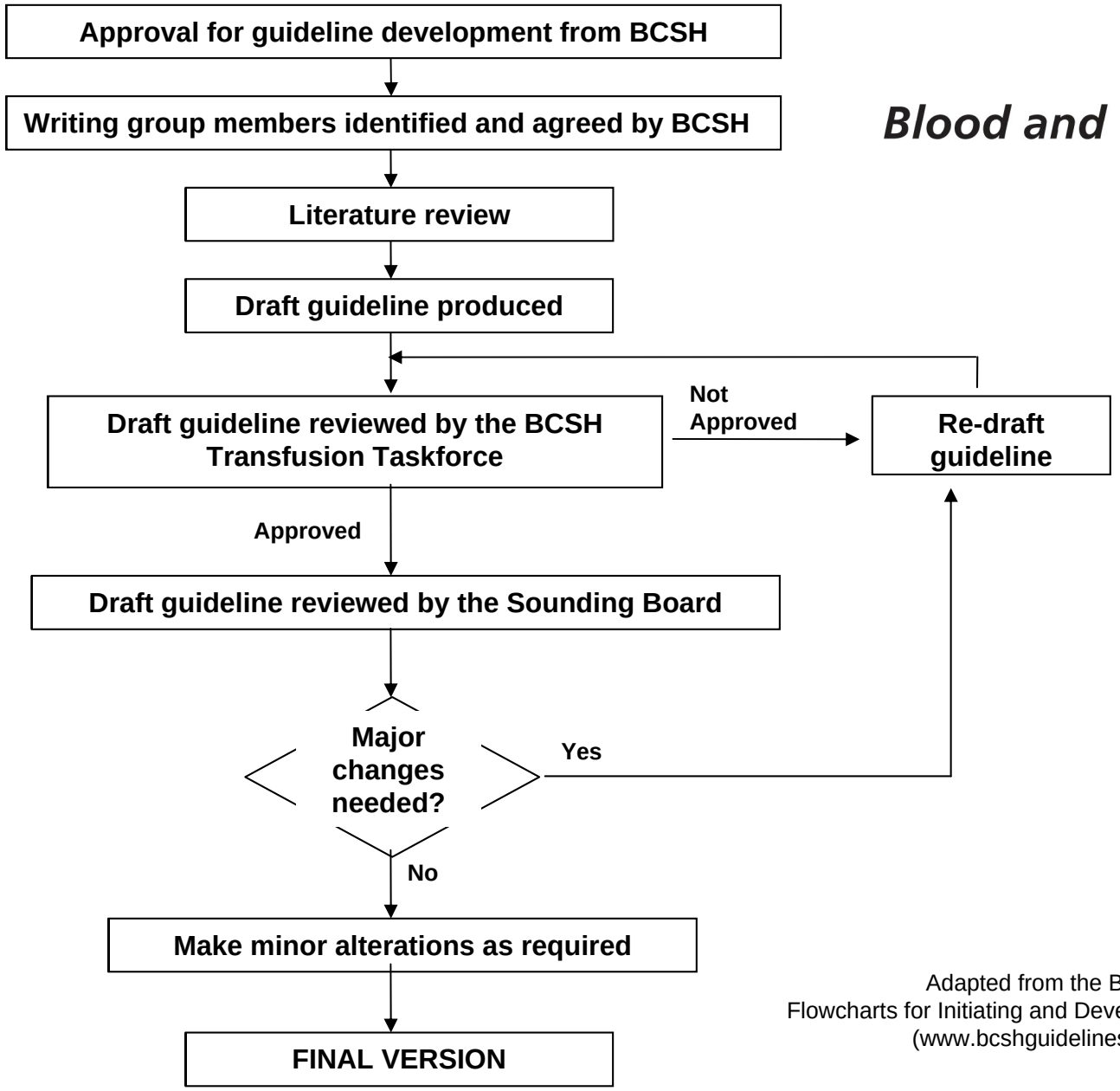
What do they do?

- Primary purpose:
  - To produce evidence based guidelines
- Guidelines are drafted by writing groups following specific guideline writing procedures
- Involves:
  - all relevant stakeholders
  - A wide range of experts
  - Where suitable, patient groups
- Final guideline reviewed by both:
  - The Task Force and
  - The Sounding Board:
    - Consultant Haematologists
    - Clinical Scientists
    - Professional bodies



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Adapted from the BCSH
Flowcharts for Initiating and Developing a Guideline
(www.bcshguidelines.com)

Evidence levels and grades of recommendations

- Pre 2010: US Agency for Health Care Policy and Research (AHCPR)
- Post 2010: Grading of Recommendations Assessment, Development and Evaluation (GRADE)
  - Strong (grade 1): are made when there is confidence that the benefits do or do not outweigh harm and burden. These recommendations can be applied uniformly to most patients. Regard as 'recommend'.
  - Weak (grade 2): where the magnitude of benefit or not is less certain a weaker grade 2 recommendation is made. These recommendations require judicious application to individual patients. Regard as ‘suggest’.

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Guidelines for Neonates and Children

- Transfusion guidelines for neonates and older children (2004)
  - Replaced the 1994 guideline
- 2005 Amendment to the guidelines on transfusion for neonates and older children
- 2007 amendment to the transfusion guidelines for neonates and older children
- Guideline is currently being revised

Transfusion Guidelines for neonates and older children (2004)

- Covers:
  - Blood and blood component specification
  - Intrauterine transfusion
  - Neonatal transfusion
  - Transfusion support for children with haemoglobinopathies
  - Transfusion support for haemopoietic SCT, aplastic anaemia and malignancies
  - Transfusion support for cardiac surgery, ECMO and acquired coagulopathies
  - Autologous transfusion in children
  - Blood handling and administration

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Blood and blood component specification

- Donations:
  - donors who have given at least once within the past 2 years
  - negative for all mandatory microbiological markers
- Cytomegalovirus (CMV):
  - CMV negative components for first year or life
  - Those at greatest risk of transfusion transmitted CMV:
    - Fetuses and infants weighing under 1.5kg
    - Immunodeficient patients
    - Stem cell transplant recipients

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Blood and blood component specification

- Irradiation:
  - Intrauterine transfusion (IUT)
  - Exchange transfusion of red cells after IUT
  - Top-up transfusion after IUT
  - Donation from a 1st or 2nd degree relative or a Human Leucocyte antigen (HLA) selected donor
  - Proven or suspected immunodeficiency

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Component volumes to be transfused

- Red cells:
  - Exchange:
    - Term infant 80-160ml/kg
    - Preterm infant 100-200ml/kg
  - Top-up transfusion usually 10-20ml/kg
- Platelets:
  - Children (<15kg) 10-20ml/kg
- Fresh Frozen Plasma:
  - 10-20ml/kg
- Cryoprecipitate:
  - Children (<15kg) 5ml/kg

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2005 Amendment

- Anti D prophylaxis is required if RhD +ve platelets are transfused to an RhD-ve child (dosage guidance given)
- The RhD status of FFP is not significant

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2007 Amendment

- Previous specification for imported FFP restricted donors to those who had virology testing within the previous 2 years
- This specification was relaxed to include first time donors because of the additional virus inactivation steps performed on imported plasma

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The New Guidelines: Draft

- Within parameters set by Cochrane
- Not too complex
- Further studies
  - Effects of Transfusion Thresholds on Neurocognitive Outcome (ETTNO)
    - 920 VLWB infants randomised

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Red Cells

Postnatal age	Suggested transfusion threshold Hb (g/L)		
	Ventilated	On oxygen /CPAP	Off oxygen
1st 24 hours	< 120	< 120	< 100
≤ week 1 (day 1-7)	< 120	< 100	< 100
week 2 (day 8 - 14) ≥ week 3 (≥ day 15)	< 100	< 95 < 85	< 75 - 85 depending on clinical situation

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Platelets

- Platelet count < 20 - 30 $x10^9$/l
  Neonates with no bleeding (NAIT if no bleeding and no family history of ICH: 30 $x10^9$/l).

- Platelet count < 50 $x10^9$/l
  Neonates with bleeding, current coagulopathy, surgery or exchange transfusion, infants with NAIT if previously affected sibling with ICH

- Platelet count < 100 $x10^9$/l Neonates with major bleeding or requiring major surgery (e.g. neurosurgery)

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FFP

- FFP may be of benefit in neonates with active bleeding/prior to surgery who have abnormal coagulation
  - PT or APTT > than 1.5 times the mid-point of the gestational and postnatal age-related reference range (taking into account local reference ranges where available)
  - no evidence to support the use of FFP to try to correct abnormalities of the coagulation screen alone
- FFP should not be used for simple volume replacement
- Prophylactic FFP should not be administered to non-bleeding children with minor prolongation of the PT or APTT

THINK CAREFULLY

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Prescribing transfusion volumes

- mL NOT ‘Units’
- Neonates often 10-20ml/kg
- ‘Transfusion formula’
  - NB new Hb units (g/L – prev g/dL)

$$\text{Volume (ml)} = \frac{\text{Desired Hb (g/L)} - \text{actual Hb (g/L)} \times \text{weight (kg)} \times \text{factor (4)}}{10}$$

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SaBTO

- Recommendations re CMV neg
  - neonates up to 44 weeks corrected gestational age
- Neonatal / Infant Specification
  - use up to 6 months
- MB Cryo
  - no AB
  - recommend group A alternative
    - note not HT tested

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Remember.....

- These are only guidelines and can be interpreted in different ways
- Please ensure you know how they have been incorporated into your Trust policies
- Review your Trust policy once the new guidelines are released

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BCSH GUIDELINES

www.bcshguidelines.org

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