<table>
<thead>
<tr>
<th>Type</th>
<th>Treats</th>
<th>Lab</th>
<th>Normal Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole Blood</td>
<td>Replace Volume</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Monitor for hemolytic reaction/sepsis/febrile</td>
<td></td>
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<tr>
<td>Packed RBC (infused 2-4 hours)</td>
<td>Anemia</td>
<td>Hbg</td>
<td>F= 12-16 M= 14-18</td>
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<tr>
<td></td>
<td>Monitor for hemolytic reaction</td>
<td></td>
<td></td>
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<tr>
<td>Platelets (infused 15-30 min)</td>
<td>Thrombocytopenia</td>
<td>Platelets</td>
<td>150,000 - 400,000</td>
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<tr>
<td></td>
<td>Monitor for sepsis or fever</td>
<td></td>
<td></td>
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<tr>
<td>Albumin</td>
<td>Burns/Hypovolemia</td>
<td>Albumin</td>
<td>3.5-5</td>
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<tr>
<td></td>
<td>Monitor for hypervolemia and pulmonary edema</td>
<td></td>
<td></td>
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<tr>
<td>FFP (infused 30-60 min)</td>
<td>Bleeding r/t warfarin</td>
<td>PT</td>
<td>11-12.5</td>
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<tr>
<td></td>
<td>Monitor for hemolytic reaction</td>
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</tbody>
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- **Growth Factors**
  - **Epoetin Alfa (Epogen/Procrit)**
    - Stimulates RBC production
    - Subcutaneous or IV
    - Monitor H/H
  - **Filgrastim (Neupogen)**
    - Stimulates WBC/neutrophil production
    - Subcutaneous or IV only
    - Monitor CBC
  - **Oprelvekin**
    - Stimulates platelet production
    - thrombocytopenia related to cancer (6-24 hrs post chemo)
    - SE- cardiac dysrhythmias or fluid retention
    - Subcutaneous only
- **Iron (Ferrous sulfate, ferrous gluconate, ferrous fumarate)**
  - Treats Iron deficiency
  - S/E → constipation, black stools
  - Oral:
    - Vitamin C helps increase absorption
    - Avoid taking with milk, antacids, tannin (in coffee, tea)
    - If GI upset occurs, take with food

Resources:
- If taking liquid prep, use straw (iron stains teeth) - rinse mouth
- Babies taking iron, mix it with something because it will cause bradycardia if given alone
  - Parenteral (Iron Dextran)
    - If given IM, z track method (iron stains skin)

<table>
<thead>
<tr>
<th>Anticoagulant</th>
<th>Antiplatelet</th>
<th>Thrombolytic</th>
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</thead>
</table>
| • Interferes with clotting  
• Prevents DVT, stroke  
• Heparin/Warfarin  
  - Heparin monitor aPTT and protamine sulfate for toxicity  
  - Warfarin monitor PT/INR & Vitamin K for tox  
• Supplements may increase bleed risk | • Interferes with platelet aggregation  
• Prevents stroke and MI  
• Aspirin, Plavix (Clopidogrel)  
• Ecchymosis, tarry stools may indicate prolonged bleeding | • Breaks down clot/dissolves clot  
• Treat MI, DVT, PE, Ischemic Stroke  
• Alteplase/Reteplase  
• NOT for hemorrhagic stroke or any active internal bleeding such as aortic dissection or brain tumor  
• Ischemic stroke ONLY - given 4-6 hrs after signs of having stroke |

Anticoagulants:
- Dabigatran (Pradaxa) - thrombin inhibitor
  - Reduces the risk of clot formation and stroke in patients with chronic A Fib
  - Educate pt about bleeding precautions → soft bristle toothbrush, shaving with an electric razor
  - Should be kept in original container or blister pack until time of use to prevent moisture contamination
  - Swallow the whole capsule with a full glass of water
- Enoxaparin (Lovenox)
  - Low molecular weight heparin
  - May be prescribed for up to 10-14 days following hip/knee surgery to prevent DVT
  - Teaching
    - Pinch an inch of skin upwards - insert needle at 90 degree angle
    - Continue to hold the skin - remove
    - Mild pain, bruising, irritation or redness of the skin at the injection site is common. Do not rub
    - Avoid aspirin, NSAIDS, and herbal supplements (Ginkgo biloba, vitamin E) → can increase bleeding risk
    - Monitor CBC to assess for thrombocytopenia and aPTT
- Warfarin

Resources:
○ Therapeutic INR - 2-3
○ Antibiotics can affect the INR value
○ Take the same time daily
  ■ Do not double up on a dose
○ Do not have to avoid leafy-green vegetables but they should eat a consistent quantity and have their INR checked periodically
○ Interventions to prevent injury
  ■ Removing scatter rugs - to reduce the risk of tripping and falling
  ■ Avoid aspirin - drugs containing aspirin, NSAIDs, and alcohol - due to increased risk of bleeding
○ Usually admin - for 3-6 months following PE to prevent further thrombus formation
○ PT and INR must be monitored regularly
○ Should wear a MedicAlert tag
○ Preventative measures for bleeding - soft-bristled toothbrush, avoid use of alcohol-based mouthwash, avoid contact sports,
○ Large amounts of vitamin K rich foods can decrease the anticoagulant effects of warfarin
  ■ Leafy green vegetables, asparagus, broccoli, kale, brussel sprouts, and spinach
  ■ Green tea, grapefruit juice and cranberry juice

Antiplatelets
○ Clopidogrel, ticagrelor, prasugrel, aspirin
  ○ Prevent platelet aggregation and given to prevent stent re-occlusion
  ○ Prolong bleeding time
    ■ Should not be taken by pts. With bleeding peptic ulcer, active bleeding, or intracranial hemorrhage
    ■ **assess for bruising, tarry stools, hematuria, bleeding gums, epistaxis - nose bleeds
○ Ginkgo biloba - should not be taken with antiplatelets
○ Normal platelet level
  ■ 150,000-400,00

Thrombolytic Medications
○ Alteplase, tenecteplase, reteplase
  ○ Dissolve clots that have already formed
  ○ Use to treat: acute MI, DVT, PE, Ischemic stroke(alteplase)
  ○ Contraindicated in intracranial hemorrhage, active bleeding, aortic dissection and brain tumors and surgery within the last 2 weeks

Resources:
○ Caution with severe HTN
○ Adverse
  ■ Hypotension
  ■ Serious bleeding risks
○ Must be given within 4-6 hour of symptom onset

- Erythropoietin (Epogen/ Procrit, epoetin)
  ○ Anemia associated with chronic kidney disease
  ○ Initiated to achieve Hgb of 10-11.5 and alleviate the symptoms of anemia (fatigue) and the need for blood transfusions
  ○ **Hypertension** is a major adverse effect of erythropoietin
    ■ Uncontrolled HTN is **contraindicated**
    ■ BP should be taken prior to administration and well controlled

Resources: