Four-factor prothrombin complex concentrate (Kcentra®) may be ordered by Emergency Department, Trauma Surgery, Emergency General Surgery, Surgical Critical Care, Anesthesiology, Neurosurgery, and Pulmonary Critical Care Attendings only (no residents or fellows) without requiring approval by pharmacy or hematology departments.

**Indications for Use:**

Patients taking warfarin, rivaroxaban (Xarelto®), edoxaban (Savaysa) or apixaban (Eliquis®) and one of the following criteria:

- Serious or life-threatening bleeding (i.e. intracranial, gastrointestinal, retroperitoneal)
- Trauma
- Patients who require emergency surgery of invasive procedure
- Large hematoma

a. In the bleeding patient who presents with known oral anticoagulant use but laboratory results are unavailable, the default trauma dose is 35 units per kg and is restricted to a single dose.

b. Recommendations for reversal of warfarin:

- If INR 2 – 3.99, give 25 units per kg
- If INR 4 – 5.99, give 35 units per kg
- If INR ≥ 6, give 50 units per kg

c. Recommendations for reversal of novel anticoagulants: 35 units per kg

d. Repeat doses do not improve efficacy and increases risk for thromboembolic complications.

e. Hematology consult is required if more than 1 dose is needed unless patient is still actively bleeding.

f. Maximum cumulative dose = 50 units/kg/day

g. Use 100 kg if weight > 100 kg

h. **In all cases where PCCs are being administered for warfarin reversal, Vitamin K IV (10 mg IV) should be given IMMEDIATELY.**

***For patients taking dabigatran* (Pradaxa®), physician should consider emergent Nephrology consult for immediate hemodialysis (HD) or continuous renal replacement therapy (CRRT) in the absence of active hemorrhage. If intra-cranial or non-compressible hemorrhage is present, FEIBA (activated 4-factor concentrates 25 IU/kg) will be made available in a similar ordering/acquisition fashion. R-TEG should be obtained on all bleeding patients taking dabigatran. The r-TEG’s ACT is usually prolonged (>128 sec) with these newer oral anticoagulants in the presence of bleeding. Alternatively, a thrombin time (TT) may be obtained and therapy guided (and re-dosed) based on these results.

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**Original Date:** 12/2005  
**Supercedes:** 06/2011  
**Last Review Date:** 10/2014

**Purpose:** To facilitate emergency release of PCC.
Ordering:

a. Utilize the “Kcentra” MPP for the specific anticoagulant trying to reverse (“warfarin” or “bleeding reversal” for novel anticoagulants)
b. Notify ED Pharmacy (43540) at the time the order is entered to expedite delivery of PCCs
c. For patients located in the ICU or in the Operating Room, call O.R. Pharmacy (42838).
d. No order will be overridden or cancelled by a pharmacy phone call to the attending. Such a process requires a direct phone-to-phone (or face-to-face) discussion between ordering Faculty and Hematology Faculty on call.
e. Should delivery of the drug be delayed, the Main Pharmacy should be contacted (43568)

Monitoring:

a. Both fatal and nonfatal arterial and venous thromboembolic complications have been reported with Kcentra® in clinical trials and post marketing surveillance. Patients initiated on this product should be monitored for these complications of thromboembolic events.
b. For patients taking warfarin, an INR should be obtained immediately and should be repeated 2 hours after administration of Kcentra®.
c. In patients taking dabigatran, rivaroxaban or apixaban, the use of rapid TEG (thrombelastography) may be more appropriate but further data is needed before it can be standardized. ACT is usually prolonged (>128 sec) with these newer oral anticoagulants in the presence of bleeding. However, until standardized, in patients receiving PCC for reversal of rivaroxaban or apixaban (and in those taking dabigatran receiving FEIBA), a TT should also be obtained if possible and repeated 2 hours after administration and in the face of continued clinical bleeding.

** While the r-TEG can be run in the ED Stat Lab, a TT must be sent to main lab for processing.
**Understanding this, the processing and results of TT should NOT delay preparation and administration of the drugs above.
References:


Hemostatic therapy in experimental intracerebral hemorrhage associated with the direct thrombin inhibitor dabigatran. Stroke. 2011;42:3594–3599


Kcentra® Prothrombin Complex Concentrate—CSL Behring Full Prescribing Information.

Still need order for drug either via pharmacy or call to pharmacy