



TO: Medical Staff, House Staff, Patient Care Centers,
Outpatient Clinics and UC MedLabs Clients

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DATE: October 12, 2017

RE: Heparin Monitoring Changes Due to New Lot of aPTT Reagent

SUMMARY

aPTT reference interval unchanged at 24.0-34.0 seconds

New relationships between aPTT and anti-Xa Levels:

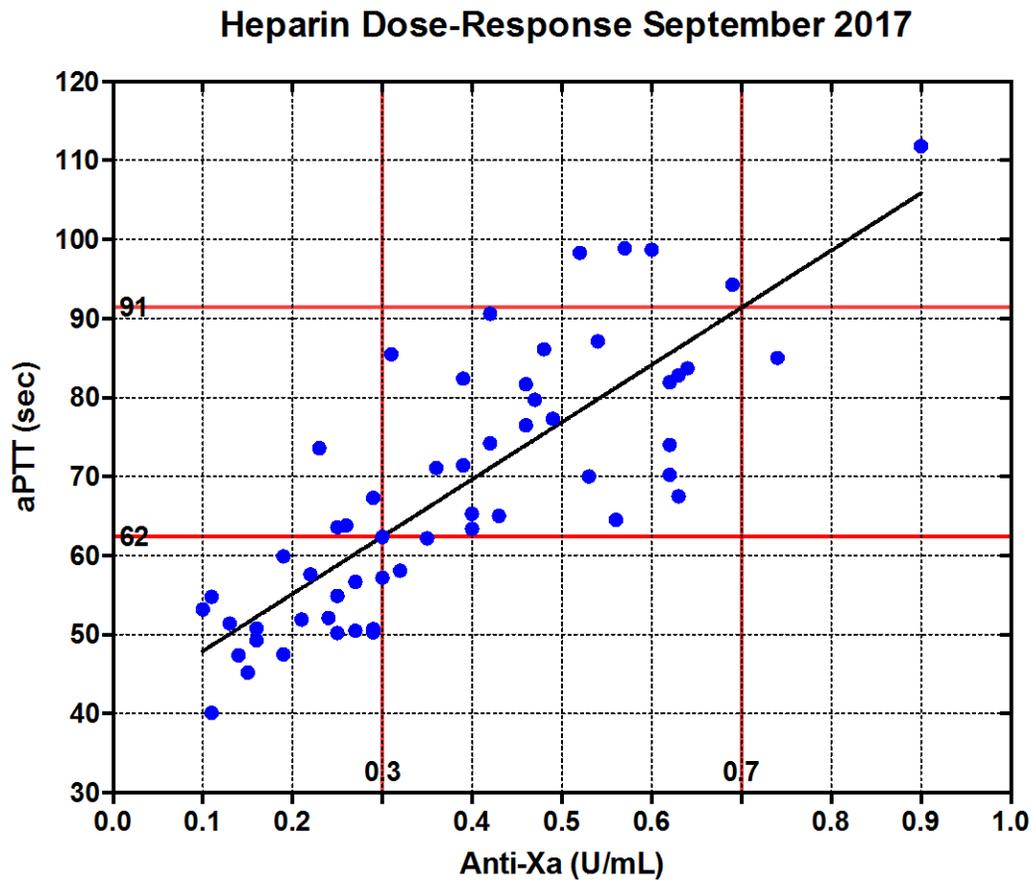
- **0.3-0.7 anti-Xa units corresponds to 62-91 seconds**
- **0.3-0.5 anti-Xa units corresponds to 62-77 seconds**
- **0.2-0.5 anti-Xa units corresponds to 55-77 seconds**
- **0.35 anti-Xa units corresponds to 66 seconds**
- **50-70 seconds corresponds to 0.13-0.41 anti-Xa units**

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Each year the Coagulation Laboratory must reassess reference intervals for the activated PTT (aPTT), due to replacement of new reagent lots. This reagent lot change will take place at 12:01 am on 10/18/2017. This change of reagent lot has resulted in ***no change of the aPTT reference interval, which remains at 24.0-34.0 seconds.***

Heparin Monitoring: Using a new reagent lot for the aPTT, for 56 patients currently receiving unfractionated heparin, we determined the population relationship between aPTT and heparin activity as determined by the “gold standard” of anti-factor Xa activity. For example, an anticoagulation intensity goal range of 0.3-0.7 anti-Xa units will now correspond to aPTTs of 62-91 seconds with this reagent lot. However, as is readily apparent from the graph below, for any *individual patient*, simply using an aPTT value directly obtained from the *population*

linear regression relationship between aPTT and anti-Xa activity can potentially lead to under- or over-anticoagulation.



Accordingly, consideration should be given to performing an initial anti-Xa measurement in parallel with an aPTT measurement following heparin initiation, to verify that the desired intensity of heparin anticoagulation has been achieved. Moreover, for the occasional patient having a lupus anticoagulant (LA) interfering with aPTT measurements, or a deficiency of an aPTT-dependent “contact factor” such as factor XII, the patient’s pre-heparin baseline aPTT may simply be too elevated to permit the aPTT to be used to follow heparin treatment. In such instances, the anti-Xa level may actually be required in order to follow heparin levels.

aPTT values over 100 seconds will be called as critical values.

Please contact the Technical Director of the Coagulation Laboratory, Mr. Krzysztof Mikrut, or the Medical Director of the Coagulation Laboratory, Dr. Jonathan Miller, at (773) 702-1315, with any questions.