

## **Reporting Prothrombin Times using the International Normalized Ratio**

The Methodist Hospital coagulation laboratory will report Prothrombin Times using only the INR effective August 11, 2005. The seconds will no longer be reported. The INR will be reported as "INR Prottime".

**The normal range for the PT/INR is 0.8-1.2.**

**This normal range will be reported with all PT/INR results and will replace the current protocol of reporting the lowest therapeutic range of 2.0-3.0.**

The therapeutic ranges for patients receiving oral anticoagulant therapy using the INR system as recommended by international INR guidelines for acceptable oral anticoagulant effect (Chest, Vol. 108. October, 1995) are as follows:

### **INR 2.0 - 3.0**

- Prophylaxis of venous thrombosis (high risk surgery).
- Treatment of venous thrombosis or pulmonary embolism.
- Prevention of systemic embolism:  
Tissue heart valves, valvular heart disease, acute myocardial infarct, valvular heart disease, atrial fibrillation

### **INR 3.0 – 4.0**

- Mechanical prosthetic valves (high risk)
- Prevention of recurrent myocardial infarction.

These recommendations are supported by the American College of Chest Physicians, the National Heart, Lung and Blood Institute, and the British Society for Hematology. This reporting system provides a reliable, standardized means of reporting the state of anticoagulation with minimal variability between different laboratories, reagents, and instrumentation used to perform testing.

The INR reporting format improves the management of patients on oral anti-coagulants, however, the INR is to be used for patients who are on stabilized oral anticoagulant therapy. For patients recently started on oral anti-coagulant therapy, a more complete evaluation of the coagulation system is recommended. Secondly, patients with liver disease should not be monitored with the INR alone since they frequently lack coagulation factors. Lastly, patients being screened for clotting factor deficiencies should not be evaluated using the INR. Thus, Prothrombin Time in seconds will continue to be reported for the following panels:

### **Coagulation Panel**

### **DIC Panel**

### **Hemorrhage Panel**

## **Background**

Prothrombin time (PT) is the test of choice for monitoring patients on oral anticoagulants. The international normalized ratio (INR) is the recommended method for reporting prothrombin time results for control of oral anticoagulation. It is now widely accepted that the anticoagulation level and the appropriate drug regimen are best determined on the basis of the INR. This standardization system was introduced by the World Health Organization (WHO) in 1983 to provide a common basis for the interpretation of the PT results independent of the sensitivity of the thromboplastin reagent which tends to vary from one manufacturer to another. To resolve the problem of PT's varying widely between methods, the use of the INR system has been recommended for monitoring patients on oral anti-coagulant therapy. In 1985, the International Committee on Thrombosis and Hemostasis/International Committee for Standardization in Hematology recommended adoption of the INR system to facilitate international agreement on therapeutic ranges.

Please contact Dr. Gene Herbek at 402-354-4781 if you have questions or comments regarding PT/INR testing.