

## **Interlaboratory variation of the INR and local system calibration.**

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The INR system was developed aiming at harmonization of the results of prothrombin time tests in patients treated with vitamin K antagonists (VKA). External quality assessment schemes (EQAS) have shown that there is considerable variation in INR between laboratories and between thromboplastin reagents. Many attempts have been made to reduce interlaboratory variation of the INR by means of local calibration using a set of lyophilized or deep-frozen plasmas with certified (assigned) values. In many studies, a reduction of the interlaboratory variation was observed when local calibration was performed. The magnitude of the reduction was influenced by the type of plasma used for local calibration. The greatest reduction was observed when the test plasma was similar to the calibration plasmas. If calibration plasmas would be similar to fresh patient samples, their INR should be independent of the reagent or instrument used. In reality, lyophilized artificially depleted plasmas show different INR values with different international standards for thromboplastins. In other words, lyophilized artificially depleted plasmas are not commutable. Deep-frozen plasmas from VKA patients are more similar to fresh patients' plasmas and may be more reliable for local system calibration.

In principle, international standards should be used for the certification of calibration plasmas. If calibration plasmas are not commutable, the certified values depend on the type of thromboplastin used for certification. Validation of each set of calibration plasmas is an important requirement.

In the Netherlands, a set of deep-frozen pooled plasmas is used on a limited scale for local calibration. Reagent-specific INR values have been assigned with a few popular commercial reagents.