Calibration guidelines for the infusion pump analyzer applied in secondary laboratories in Thailand

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The flow laboratory of the National Institute of Metrology, Thailand (NIMT), in cooperation with the department of medical sciences, and the department of health service support, ministry of public health developed the periodic testing and maintenance procedures of the infusion pumps according to the international standards, IEC 60601-2-24 particular requirements for the safety of infusion pumps and controllers, and requirements from the authorities in Thailand. The testing procedures are now widely used in hospitals across country. Since the infusion analyzer is used as a tester in one of the methods applied in the infusion pump testing procedures. Then, the calibration guidelines for the infusion analyzer have been developed to support the secondary laboratories for calibrating the devices.The guidelines provide characteristic of the three main elements used for calibration which are the supply and flow control, the weighing system and the data acquisition system. The infusion analyzer has to be calibrated at least three points; 50, 100 and 300 ml/h that are required by the authorized person and normal conditions for patients in the hospitals. The uncertainties of calibrations are range from 0.31% to 0.57%.