ABSTRACT

The use of medical devices in the long term can cause changes in accuracy of the devices. That will have an impact on patient safety if the flowrate and volume of syringe pump or infusion pump are not controlled. Therefore, calibration is required, namely activities to determine the correctness of the value of the appointmend of measuring instruments based on the Minister of Health Regulation No. 54 of 2015. The purpose of this study was to create an Infusion Device Analyzer with LCD TFT Graphical Display of flowrate parameters. The contribution of this research is the tool can calculate the flowrate value using infrared photodiode sensor and can see the graph in real time on 4.3 inch TFT LCD. The results obtained by the sensor will be processed by arduino and stored in SD Card. In order to facilitate the user in analyzing the stability of flowrate in real time so that it can be done retrieving tool performance data from the use of several brands of spuits and infusion sets. This tool has an average error value of mean measurement data results in syringe pump (spuit A and spuit B), infusion pump (infusion set A and infusion set B) after compared with comparison device (Infusion Devize Analyzer Brand Rigel) which is 0.18%, 7.22%, 0.79% and 0.52%. It can be concluded that the overall system can work quite well in accordance with the infusion sets / spuits used. The use of hot selenoids affects the error values of each measurement.

Keywords : Calibration, Flowrate, Arduino