Combo Infusion

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Many Hospitalized patients receive multiple drugs intravenously using an Infusion system, as part of their treatment. In such cases, any interaction between the various drugs must be prevented. As a result, the medical staff must manually set up an infusion for each drug, and for the saline solution for washing the system. There is no convenient solution today, to give a patient a sequence of several of liquid drugs. The current procedure lengthen the treatment time and increases the chance of human mistakes. We created an autonomous infusion system for adhering a sequence of drugs to the patient. The designed system reduces the treatment time, prevents potential human errors, saves resources and improves the patient comfort. The system is composed of a disposable tubing kit and a reusable control box. The tubing kit connects all the drug bags and the washing saline bag to an accumulation chamber, and from there to the needle which enters the human vein. The control box consists of a unique liquid selector that allows the liquid flow of one or none of the drugs, 2 peristaltic pumps, an ultrasonic sensor and an Arduino controller with touchscreen. The system fits in the current medical staff work and greatly simplifies it. The required procedure is selected from a predefined medical protocols, and activate the system. During the Infusion process the system sends notifications to the medical staff station, after each stage and if errors occurred. The system is mobile, small and operates from a rechargeable battery.

Awards Won: