
METHOD OF MONITORING THE AMOUNT OF ADMINISTERED MEDICINE FOR USING INFUSION PUMPS SAFELY

E.Yu. Barysheva
A.O. Nikolaenko
I.A. Kudashov

barykaterina@yandex.ru

Bauman Moscow State Technical University, Moscow, Russian Federation

Abstract

We developed a prototype (laboratory mock-up) of a hardware and software solution for counting the drops falling in a drip chamber by means of recording vibrations caused by each drop. The solution proposed makes it possible to accurately estimate the infusion therapy mode and ensure the required patient safety level during therapy by remotely notifying nursing staff about failures in the preset infusion mode

Keywords

Drip chamber, digital signal processing unit, audible error indication system, infusomat, vibration recording method, infusion therapy, vibration sensor

© Bauman Moscow State Technical University, 2017

References

- [1] McCormick B. Control leaf of WHO — safety of surgical intervention. *Update in Anaesthesia*, 2009, vol. 14, pp. 5–6.
- [2] GOST R MEK 60601-2-24-201. Izdelya meditsinskie elektricheskie. Obshchie trebovaniya bezopasnosti s uchetom osnovnykh funktsional'nykh kharakteristik k nasosam infuzionnym i kontrolleram [State standard R MEK 60601-2-24-201. Medical electrical devices. General safety requirements taking into account functional characteristics of infusion pumps and controllers]. Moscow, Izdatelstvo standartov Publ., 2014. 49 p. (in Russ.)
- [3] Braun B. Infusomat®fmS. Instructions for use. Franks hospital workshop: website. URL: http://www.frankshospitalworkshop.com/equipment/documents/infusion_pumps/user_manuals/B.Braun%20Infusomat%20fmS%20-%20User%20manual.pdf (accessed 24.02.2017)
- [4] Ministerstvo zdravookhraneniya SSSR. Gosudarstvennaya farmakopeya SSSR. XI izdanie. Vypusk 2. Obshchie metody analiza, lekarstvennoe i rastitel'noe syr'ye [USSR Ministry of Health. USSR state pharmacopoeia. XI ed. Vol. 2. Analysis general methods, drug and plant raw materials]. Moscow, Meditsina Publ., 1987. 592 p. (in Russ.)

Barysheva E.Yu. — student, Department of Engineering in Medicobiologic Practice, Bauman Moscow State Technical University, Moscow, Russian Federation.

Nikolaenko A.O. — student, Department of Engineering in Medicobiologic Practice, Bauman Moscow State Technical University, Moscow, Russian Federation.

Kudashov I.A. — Cand. Sc. (Eng.), Assoc. Professor, Department of Engineering in Medicobiologic Practice, Bauman Moscow State Technical University, Moscow, Russian Federation.

Scientific advisor — V.I Sinopalnikov, Dr. Sc. (Med.), Professor, Department of Engineering in Medicobiologic Practice, Bauman Moscow State Technical University, Moscow, Russian Federation.
