
Perception of Mobile Robotic Systems



A new study reports on how wider public and patients perceive the use of a mobile robotic system (MRS) in healthcare settings (Chai et al. 2021).

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In light of the COVID-19 pandemic, the use of robotic systems in healthcare has been receiving much attention. A team of U.S. researchers set to find out if the patient evaluation in the emergency department (ED) could be performed with an MRS and what would be the reaction to this.

They arranged a two-fold research first surveying 1,000 people nationwide through an online analytic platform and then 40 patients who presented to the ED of a large urban academic hospital in Boston, MA, all of the respondents being U.S. residents. For the first survey, the participants had to complete a questionnaire on their attitudes towards robotic systems and their views on whether those could be useful in the healthcare setting to facilitate specific tasks, e.g. obtaining a nasal or oral swab, or turning a patient in bed, both in the contexts of general interaction and interaction during the COVID-19 pandemic. At the second stage, the participants were exposed to the robotic triage system and then asked to evaluate their experience. The MRS consisted of a four-legged robot controlled by an operator.

The overwhelming majority of participants (92.5%) were satisfied with their interaction with an MRS, and reported that the deployment of an MRS in the hospital setting for facilitating specific healthcare tasks was acceptable. A smaller, but still significant share of respondents (82.5%) equalled the quality of their MRS-facilitated triage interview in the ED to an in-person interview conducted by a clinician.

Specifically, respondents reported the MRS deployment being somewhat useful/extremely useful for facilitating telehealth interviews (37.3%/41.3% of the cohort), turning a patient in bed (37.1%/37.1%) acquiring vital signs (35%/41.3%) and obtaining nasal or oral swabs (30.7%/19.2%). In the context of the COVID-19 pandemic, the share of respondents who thought of applying MRSs as acceptable increased for completing telehealth interviews, obtaining nasal and oral swabs, placing an intravenous catheter and performing phlebotomy.

The authors concluded that “interaction with robotic systems to facilitate traditional in-person interviews in the ED is feasible and acceptable to patients” and emphasised the potential of the MRS use for the minimisation of exposure of healthcare staff to individuals with COVID-19.

Image credit: Chai et al. (2021)

Published on : Sat, 6 Mar 2021