Commentary on A Push-to-Talk Application as an Inter-Professional Communication Tool in an Emergency Department

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Abstract

We have demonstrated significant benefits of a novel communication system based on a walkie-talkie application in the ED for inter-professional communication upon receiving patients presenting with COVID-19 like symptoms. We recommend extending the application of the novel system in non-disastrous periods to improve and accelerate information sharing between healthcare providers. Future studies implementing a pre-test/post-test approach are needed to explore the impact of the walkie-talkie application and other innovative communication methods on the quality of communication that might influence other important aspects of care at EDs, such as patient outcomes due to noise, intershift handoff quality, intrahospital transfers, and time-to-bed allocation.

Keywords: Communication • Push to talk apps • Emergency medicine • Disaster communication

Description

The recent coronavirus disease (COVID-19) pandemic has placed a heavy burden on Emergency Departments (EDs) worldwide, causing a significant increase in the numbers of patients presenting with respiratory symptoms and other medical complications. Well-established communicative procedures between ED staff are central to effectively manage the presenting patients while controlling the risk of acquiring occupational infections. Sharing instant notifications to other ED staff members upon receiving a suspected patient is an integral part of the preparedness plan to wear Personal Protective Equipment (PPE). In a recently published cross-sectional study that included ED physicians, nurses, ED services staff, X-ray technicians, and administration employees, we explored the self-reported effects of a Push-to-Talk mobile application (PTT) on inter-professional communication, safety preparedness, and the clinical performance at the ED upon receiving a suspected patient with COVID-19. Approximately three-quarters of the respondents declared that exchanging PTT alarm messages has led to significant improvements in intradepartmental communication and shorter times to implement safety measures whilst maintaining the clinical performance. These findings pave the way for conducting future investigations on the effectiveness of these innovative methods in the context of increased influxes of patients during disasters and pandemics, such as the COVID-19.

Of note, notwithstanding the reported benefits of the PTT application during the ongoing pandemic, such an improved communication may be applicable in non-disastrous periods. We suggest that interpersonal communication may be further improved such that the PTT Walkie Talkie app can be used in the post-pandemic era (i.e. in day-to-day procedures). This technology-driven method of communication is also a valid tool to share one-to-many messages in the ED; thus, it allows for an iterative back-and-forth sharing between groups, a feature that is beneficial to accelerate communication in high-performance institutions (tertiary hospitals).

Furthermore, we believe that sharing short messages between the providers would help reduce staff voice within patient care areas, which has been considered an important source of hospital background noise (rather than noise induced by medical equipment, bedrails, alarms, etc.). Indeed, it has been reported that ED noise levels can substantially yield negative effects on job satisfaction and decision-making in resuscitation [1]. Additionally, occupational stress and job satisfaction are independently associated with noise sensitivity [2]. Importantly, noise in turn may cause communication breakdown by interfering with inter-professional interactions. However, there are no studies in the literature that addressed the relationship between ED noise and communication disruption, and the impact of accelerated communication via technological solutions on noise levels. Therefore, future relevant research is required, and the effects of PTT-driven communication on such aspects may warrant additional investigation.

Rather than noise-related factors, the PTT communication method may assist in improving patients' safety from another perspective. Patient care handoffs are known to be greatly influenced by communication breakdowns [3]. Actually, suboptimal communication during handoff is significantly associated with medical errors and malpractice claims [4]. Communication within a unit during shift change is the cornerstone of patient care, and unfavorable safety incidents might take place if unclear reporting and/or communication breakdowns have been in place. Moreover, miscommunication during handoffs between EDs and other medical departments may jeopardize patient safety [5, 6]. An important approach to optimize intra and inter-departmental handoffs is to formalize pretransport coordination procedures and standardize communication structures, which can be implemented via creating dedicated communication channels in the PTT application for such purposes.

Interestingly, the applied method of communication in our department may also influence ED congestion. Patient arrivals in a high volume associated with condition complexity might lead to congestion, which would have detrimental effects on morbidity and mortality if inpatient beds are not sufficiently available. An improved inter-professional communication at EDs would reduce wait times by effectively managing patient flow; thus, it reduces wait times to consultation and other management processes. Instant discussion via reliable communications systems would also reduce wait times between triage and bed assignment. Indeed, the time-to-bed factor is an integral part of care, particularly for highest acuity patients [7]. In a recent quality improvement project in Canada [8]. The implementation of a direct, two-way walkie-talkie communication tool to share notifications between the environmental service team and triage nurse has optimized time-to-bed periods for high-acuity patients from 120 to 66 minutes. However, such a study should be replicated using additional improvement methods and different models of medical care to ascertain the cost-effectiveness of PTT methods in EDs.

Other benefits of the wireless notification system may be evident. The application is readily available, and information sharing can be easily implemented. Accordingly, complex messages could be smoothly and rapidly conveyed with many subtleties. Compared to other electronic communication methods, such as electronic medical records, communication via the PTT application would be less formal and is useful for conveying short-term messages about urgent procedures. Additionally, the applicability of the PTT communication scheme in day-to-day procedures in EDs requires no advanced knowledge, and the operators would rapidly adapt to notification and information sharing with a single push of a button on the mobile screen. However, as with other digital communication systems, the PTT communication method may entail security vulnerabilities, which would impact the confidentiality of shared data. Network issues may also negatively affect interpersonal communication, and these disruptive events may be a matter of future research [9].

Conclusion

The first step to provide quality medical care to patients in EDs is to improving inter-professional communication. In line with the fact that EDs spend little time assessing the status of communication mediums, clinicians and administrators in EDs are required to plan a communication scheme by using multiple communication mediums which are flexible enough to meet the operational complexities of ED interactions. We have demonstrated significant benefits of a novel communication system based on a walkie-talkie application in the ED for inter-professional communication upon receiving patients presenting with COVID-19 like symptoms. We recommend extending the application of the novel system in non-disastrous periods to improve and accelerate information sharing between healthcare providers. Future studies implementing a pre-test/post-test approach are needed to explore the impact of the walkie-talkie application and other innovative communication methods on the quality of communication that might influence other important aspects of care at EDs, such as patient outcomes due to noise, intershift handoff quality, intrahospital transfers, and time-to-bed allocation.

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