



## Mobile robotic telepresence in the Emergency Department

**Purpose:** To determine the feasibility of using mobile robotic telepresence (MRT) to support the care of emergency department (ED) patients, who were isolated in a high-risk zone because of respiratory or COVID-19 symptoms.

**Methods:** A single-site, prospective, pre-post, interventional study conducted at RBWH ED. Population consisted of patients treated in the isolated high-risk respiratory zone. Intervention was a remotely-operated, semi-autonomous service robot on a wheeled pedestal with audio-visual capability via a top-mounted wifi-enabled tablet personal computer, and 3kg payload. The MRT allowed hands-free, telehealth consultations. Patients received MRT-facilitated interactions based on clinical need and availability of a suitable MRT operator (convenience sampling). Perceived usefulness and ease-of-use were assessed by the Technology Acceptance Model. The primary outcome was 'actual' use of the MRT, measured as the number of clinical interactions per isolated patient. The characteristics and technical quality of the interactions were assessed.

**Key:** MRT = Mobile robotic telepresence, ED = Emergency Department

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### Results:

Use of MRT	n (%)
Nursing	61 (91)
Pharmacy	3 (4.5)
Social Work	1 (1.5)
Medicine	1 (1.5)
Other	1 (1.5)
<b>TOTAL</b>	<b>67</b>

Purpose of MRT interactions	n (%)
Delivery of items	51 (76)
Information gathering	8 (12)
Patient assessment	6 (9)
Social/family support	2 (3)
<b>TOTAL</b>	<b>67</b>



While over 80% of interactions were completed satisfactorily, almost 30% experienced some degree of technical problem. In 53% of interactions the MRT improved the patient experience but only 33% of patients found the MRT easy to use. Staff feedback suggested limited acceptance of the MRT due to technology 'fear' and a preference for 'hands-on' interactions, the MRT being 'too slow' or unsuitable for cognitively impaired patients.

**Conclusions:** MRT usefulness depends upon the size, layout and technical capacity of the space in which it is operating. The lower-than-expected burden of COVID-19 in Queensland and reconfiguration of the ED layout mid-way through study, reduced opportunities for MRT use.

Mark Baldwin<sup>1,2</sup>  
Nathan Brown<sup>1,2</sup>  
Darren Lourensen<sup>1</sup>  
Sean Rothwell<sup>1,2</sup>  
Kevin Chu<sup>1,2</sup>

1. Emergency and Trauma Centre, RBWH
2. Faculty of Medicine, The University of Queensland (UQ)