

# Healthcare Technology Letters

**Special Issue: Advanced assistive technologies and rehabilitation therapies**

**Assistive technologies (AT) and rehabilitative therapies (RT) are harnessing advances in sensor technology, wireless communications and the Internet of Things to provide a new level of evidence upon which to base clinical decisions.**

How people use technology beyond the clinic, and in their everyday lives, is becoming simpler and easier to collect and integrate into clinical practice. Similarly, systems to measure and monitor the quality of prescribed rehabilitation exercises, completed in the home or community setting, are being developed and used to help people rehabilitate in their home environment.

These advanced assistive technologies and rehabilitation therapies deliver this new level of evidence by developing relevant metrics for the patient, carers and clinicians. These systems also open up the opportunity for patients to share their data with other patients and to develop novel patient-to-patient support systems through the rehabilitation process, especially following discharge from hospital.

The use of technology to monitor AT use and RT adherence has developed differently in different sectors. For example, companies developing lower limb prosthesis regularly measure usage patterns, while wheelchair manufacturers do not. Instead, rehabilitation therapists have used off the shelf sensor systems to measure wheelchair user activity levels. Others have simply relied on apps or activity monitors to measure activity levels. However, design of advanced AT and RT systems is reaching a critical point, with the advances in 3D printing and the reducing cost of sensors, including virtual reality environments there is an exciting opportunity to develop new types of rehabilitation practices, which are monitored and adjusted remotely and AT which can capture information and send feedback to clinicians and end users as problems arise.

The aim of this Special Issue is to capture and collate the rapid advances which are taking place in the fields of AT and RT. We are particularly interested in :

1. novel feedback mechanisms to patients, their carers and healthcare professionals
2. development of smart assistive technologies
3. rehabilitation therapies which take advantage of the advances in virtual reality.

Therefore, we are interested in papers, which cover the following areas:

- Design and development of novel sensors and systems to measure healthcare outcomes relevant to AT and RT
- AT and RT that make use of the Internet of Things
- Collection of AT and RT outcome measures in the wild (i.e. outside of the clinical environment)
- Algorithm development for clinically relevant outcome measures and/or user-friendly metrics
- Co-development of next generation AT and RT with clinicians and/or end users
- Use of virtual reality in the rehabilitation process
- Best practice in user centered design of AT and RT
- The use of social media in the rehabilitation process
- Design of patient and clinician friendly feedback interfaces
- Integration of new technologies into clinical practice in the areas of AT and RT



**Submission deadline: 1<sup>st</sup> July 2016**

See overleaf for details ►

**To find out more or to submit a paper, visit [www.ietdl.org/HTL](http://www.ietdl.org/HTL)**

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## *Healthcare Technology Letters* Editorial Board

Editor-in-Chief, **Professor Christopher James**, is Professor of Biomedical Engineering, University of Warwick, UK. He is supported by an international editorial board of respected healthcare technology researchers.

This Special Issue will be guest edited by **Dr Catherine Holloway**, University College London.

### Submit your paper

Submitted articles should not have been previously published or be currently under review by other journals or conferences/symposia/workshops.

Papers previously published as part of conference/workshop proceedings can be considered for publication in the special issue provided that they are modified to contain at least 40% new content and no passages of text are identical. Authors of such submissions must clearly indicate how the journal version of their paper has been extended in a separate letter to the editorial office at the time of submission. Moreover, authors must acknowledge their previous paper in the manuscript and resolve any potential copyright issues prior to submission.

Papers should be a maximum of 6 pages and formatted according to the *Healthcare Technology Letters* Author Guide, found at <http://digital-library.theiet.org/journals/htl/author-guide>. Submissions should be marked as being for the Healthcare Technologies Decision Support Special Issue. All submissions are subject to the journal's peer-review procedures.

## Important dates

Submission deadline:  
**1<sup>st</sup> July 2016**

Final manuscripts:  
**20<sup>th</sup> October 2016**

Publication:  
**December 2016**

E-first  
publication  
on final  
acceptance

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