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# Future of digital technology in paramedic practice: blue light of discernment in responsive care for patients?

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## Abstract

This discussion explores the significance of digital technology to responsive patient care in applied paramedic practice. The authors' previous research identified the relative ambiguity of the role of digital technology in facilitating and supporting patients in practice, and the findings revealed the relative transferability of this finding to wider allied healthcare clinical and professional practice. The discussion encompasses two key debates, namely a) How best the quality of the digital technology patients engage with can be discerned with regard to the vast availability of information and b) what the fundamental pedagogical implications to the way paramedic education in the UK is currently delivered might be in relation to equipping the future paramedic workforce to empower patients and their families and carers in emergency situations. The discussion paper concludes with an overview of the tensions that unregulated apps pose in practice and how engaging with the public about the use of digital technology could be a key aspect for review in UK undergraduate curricula and staff development.

### Key words

● Digital technology ● Patient engagement ● Pre-hospital care ● Paramedics

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Our recent research provided an insight into the place of social media and technology for bariatric patient support and examined the perceptions of the allied healthcare practitioners (AHPs) who occupy pivotal roles in the bariatric multidisciplinary team. The findings revealed a degree of generic transferability to other allied healthcare professional disciplines in relation to the need to aid patients and their families and carers in discerning the best information sources to access from online platforms. This interpretivist overview of the engagement of patients with social media and mobile apps highlighted

the evident need for Allied Health Professions, of which paramedics are an integral part, to address issues of ambiguity of the role of digital technology in facilitating and supporting patients in practice (Graham et al, 2017). The wider significance of this work is evident in the context of clinical paramedic practice, where the role of technologies has the potential to become increasingly more commonplace over the next decade. The aim of this discussion paper is to highlight the role and potential value of digital interactivity in paramedic practice and the implications this will potentially have in terms of paramedic education and the pragmatics of the everyday clinical contexts paramedic practice and emergency response occupies.

This discussion encompasses two key areas for debate, which we hope might stimulate interest amongst the Paramedic profession.

## 1. How best can we assure the quality of the digital technology patients engage with and why this is pivotal in reducing the ambiguity of information with which they engage?

In an ever-increasingly digital society, the profile of IT literacy of patients seen in everyday paramedic practice is a significant factor in how they approach understanding their medical conditions and how potentially they can be empowered in health behaviour change (Wellde and Miller, 2016). The role of paramedics as emergency responders at the front line of care, remains pivotal in the context of wider interdisciplinary and multidisciplinary team working where patients need support, encouragement and

recognition for discerning the extent of their need for paramedic intervention. Whilst our research focused specifically on the role of digital technologies in supporting patients in the medical and surgical field of bariatrics, it revealed wider, potentially transferrable aspects of technological support to the wider context of Paramedic practice (Graham et al, 2017). The most common long term conditions whose infrastructures of care would potentially lend them to the integration of digital technology are the multi-disciplinary team management of conditions such as diabetes mellitus and hypertension (Stoke on Trent Clinical Commissioning Group, 2016), two of the most common predisposing long term conditions for cerebro-vascular accidents (CVAs) and pathological cardiovascular incidents, where paramedics are first responders in emergency situations (Rudd et al, 2016). We would like to invite debate as to how best the 'digital natives' we teach, as the next generation of the paramedic workforce will best be equipped via paramedic curricula across the UK, to facilitate patients in a future world characterised by information technology (Harrington, 2016).

Effective facilitation will ultimately be dependent upon three key areas in the context of clinical practice:

- Relative interactivity; the potential for paramedic practitioners to interact with fellow clinical staff, patients and their families and carers as a direct consequence of digital technology use
- Patient/paramedic interface; the devices and computer programs that enable processes of interactivity for the paramedic practitioners using them (i.e. their potential usability and accessibility)
- Patient Content; the interaction that takes place between the patient or their families and carers and the digital content of relevance to their emergency condition(s)

There is also the need for Paramedic staff to be able to assess the quality of apps and available software packages before being able to recommend specific digital interfaces. This raises the need for the potential regulation of digital technology such as medical apps, where it may not be possible for patients and their families and carers to discern content in relation to quality and clarity of advice.

The use of videoconferencing and telehealth to facilitate patient support is already well established and these are generally strategic developments within specific hospital trusts, rightly informed by professionals with medical and surgical expertise (Stevens et al, 2014). Smartphone apps however, are not, and whilst they are readily downloadable, there are clear quality issues to address, particularly in relation to the accuracy of self-reported measurements (Cameron et al, 2015).

## 2. What are the fundamental pedagogical implications to the way paramedic education is delivered if embedding digital technologies into clinical paramedic practice is to be advocated and how best are we equipping our future workforces to facilitate and empower patients and their families and carers for emergency situations?

Responses to educational reform have meant that in terms of the future potential employability of students, there has been a corresponding rise in needs led curriculum design and new and innovative pedagogic approaches in digital interactivity in UK Higher Education (Tsiotakis and Jimoyiannis, 2016).

The vast majority of paramedic programmes across the UK now operate via social constructivist curricula, of which digital technology has become an integral part. Essentially, these curricula necessitate access to an IT and traditionally equipped learning environment with access to information retrieval resources, and where appropriate, situated or experiential learning that can support active learning. It is here that the pedagogic expertise of the facilitator is pivotal in relation to the content specific expertise necessary to support paramedic students' capacity to learn. However, in relation to the development of recommending and advising patients on the use of digital technology to empower them in managing their medical conditions, little exists on present paramedic curricula to ensure this can be facilitated.

We posit that an address of this need ought to:

- re-analyse the situated context of knowledge construction for both potential patients and their families and carers and paramedic students – since authenticity of the learning context impacts on human capacity to engage and transfer acquired knowledge to different settings.
- integrate and triangulate assessment processes which ascertain paramedic student's capacity to discern and knowledgeably advise patients on digital apps and technology available to empower them as an integral part of their healthcare journeys in practice.
- become another area of paramedic practice characterised by critical reflective practice and ongoing processes of reflexivity.

## Conclusion

The context of caring is now a fundamental driver of sustainability in paramedic clinical practice and undergraduate allied healthcare education. The potential to embed digital technology not only into

existing paramedic practice but also as a recognisable means of empowering future patients and their families and carers, in time of emergencies, brings with it several tensions. In particular, how best do we address the tensions of unregulated apps and the present lack of undergraduate training of paramedics to prepare for supporting and facilitating patients in discerning the technology best suited to support their individual needs when this relates to a potential emergency situation. We hope our discussion of these issues will inspire active debate in the context of clinical paramedic practice and undergraduate paramedic educational provision.

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