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Why spend billions on hospital beds when you can care for patients at home?

Patients and the public need to be actively involved in the development and spread of new "hospital at home" models of care including virtual wards, says Tessa Richards

Tessa Richards *associate editor*

It's not hard to see why interest in "Hospital at Home" programmes is escalating.

Hospitals are costly to run and stressful to be in. It's also well known that many patients contracted covid-19 in hospital and the risks of non-covid related adverse events are high. A recent study found one in four hospital admissions was associated with an adverse event, of which a quarter were preventable.[1]

The galvanising impact of the pandemic on developing new forms of acute medical care for people outside hospital was much in evidence at the recent World Hospital At Home Congress which attracted 670 participants from 34 different countries. The participants were mostly doctors and nurses in the vanguard of running Hospital at Home (HaH) programmes.

Joe Smith, a former cardiologist and now chief scientific officer of BD, a US medical technology company, underlined that industrial style medicine delivered in hospitals is hugely expensive, too often unsafe, not patient centred, and associated with high rates of "moral injury and burnout" among staff.

New technologies, including point of care diagnostic tests, enable patients to be fully assessed and safely treated and monitored in their own homes. Patients and carers welcome this. There are now over 250 HaH programmes operating in the US, and many others under development. While the number of admissions to them is relatively small they are attracting policy makers' attention.

Spain, the US, Israel, France, Australia, the UK, and Singapore are among the leaders in running HaH programmes. Mutual interest in these models of care, dedicated national societies, and two previous World Hospital At Home Congresses, have fostered a close knit international community of HaH practitioners.

The success of HaH programmes depends on multidisciplinary teamwork, streamlined communication, integrated records, and effective use of new technologies. Skilled (mostly) nurses and paramedics, provide hands on care in patients' homes and others man the central hub which monitors data, collects feedback, coordinates care, and oversees treatment. The teams work alongside the patient's carers and supports them to be active team members

Reaching consensus on what HaH is, and what it includes, is important, speakers suggested, to help policy makers, funders, managers, patients, carers, and the public understand this model of care. The prevailing view put over at the meeting is that its use should be confined to programmes which provide hospital level care at home—and exclude chronic disease management and non acute care. And its aim, according to Jared Conley Assistant Professor of Emergency Medicine Harvard Medical School who was the chief convener/organiser of the conference, should be to:

" .. improve lives of sick people who need hospitals by changing the culture of hospitals to provide care at home."

Discussion on definitions and (later) terminology seemed a tad arcane, but I could see the logic of it. The varied models and terms currently in use are hard to get your head round. Hospital at Home is the commonest term used, but some countries refer to Hospital in the Home, Intensive Home Care, Intensive Home Medicine, Admission Avoidance and—in the UK only—Virtual Wards, which have strong policy backing.[2]

The multidisciplinary nature of HaH programmes has resulted in a research literature scattered across a wide range of journals. Cross country learning would be facilitated if it were collated, and the idea of a new multidisciplinary journal dedicated to all forms of Medical Care at Home was mooted at the congress.

The range of "hospital level" care being delivered at home is impressive, where presentations covered post-operative recovery and rehabilitation programmes, bone marrow transplant, complex chemotherapy regimens, IV antibiotics and antivirals, transfusions of blood products, and respiratory support.

Speakers cited convincing evidence of the safety of care delivered at home, cost savings, and high patient and carer satisfaction rates. Findings in line with a 2021 systematic review of reviews which concluded that HaH services generally deliver as good or better outcomes than inpatient care, with comparable or shorter lengths of stay and readmission rates.[3]

Use smart tech wisely—and meet patients where they are

Roaming the floors between sessions provided the opportunity to try out new monitoring technologies. Smart watches get smarter by the day, handheld ultrasounds not only produce amazing pictures, but analyse them too. Sensitive radar systems can detect patients' every move and the most minor change in respiratory rate.

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Then there is artificial intelligence (AI). David Levine, a general internist at Brigham Health and Harvard Medical School described how AI is being used to identify patients suitable for HaH care. Selection is based on a combination of clinical criteria, where patients live, who their carers are, and their preferences. AI selects suitable candidates in minutes. Manually trawling through notes takes ages.

Inevitably, this triggered discussion about bias in the algorithms and fears of widening socioeconomic disparities. And an equally lively debate centred on the merits of continuous monitoring (associated with high false alarm rates) versus intermittent monitoring.

Capitalising on machine learning and new monitoring technologies is central to HaH models, but Bruce Leff, a geriatrician at Johns Hopkins University School of Medicine, warned that they were "enablers not solutions," and their design, and adoption, must be informed and steered by clinical need.

New regulatory and payment frameworks are needed to scale up HaH programmes and entrenched hospital orientated medical cultures must be challenged and changed. Clinicians also need training to work in multidisciplinary teams and empower and support patient's carers. It's crucial to "meet patients where they are," speakers agreed, and understand their home circumstances, as well as their medical conditions. In Barcelona, nurses undergo formal training before they work in our HaH unit, said David Nicholas, a physician at the University Hospital of Barcelona, who has just launched the first formal two year multidisciplinary masters programme in HaH.

After three days of listening to presentations, looking at posters, and talking to clinicians, I was converted. HaH programmes not only can, but surely should, take over much of the acute care currently provided in hospitals—provided standards of care are kept high.

But I was frustrated too. A repeated message was that the success of HaH programmes depends on "buy in" from patients, carers, and the public. So why had they not been invited to participate in this meeting?

The HaH movement would do well to recognise the value of partnership with patients and carers. Not only to inform policy, practice, and the research agenda, but help advocate for a form of care which—given the chance—I bet most patients would opt for.

The Patients Association is holding a free webinar on Virtual wards: brining the hospital home on 25 May https://www.patients-association.org.uk/Event/virtual-wards-bringing-the-hospital-home

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2 Digital Health. Government plans 500 explansion of virtual wards. https://www.digitalhealth.net/2023/01/government-plans-500-expansion-of-virtual-wards/

3 Leong MQ, Lim CW, Lai YF. Comparison of Hospital-at-Home models: a systematic review of reviews. *BMJ Open* 2021;11:e043285. doi: 10.1136/bmjopen-2020-043285. pmid: 33514582

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