Commentary: Collaboration for clinical innovation: a nursing and engineering alliance for better patient care

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This article demonstrates two examples of some of the fantastic innovation work happening with the NHS. Such collaborative design initiatives between clinical engineers and nurses are incredibly effective ways of doing this. Not only does the collaborative process result in better products and outcomes, but engaging the clinical workforce in such initiatives exposes them to the innovation skills and processes, which can only have a positive effect on their work in other areas. But we should stress that these initiatives are not new.

The Institute of Physics and Engineering in Medicine confirms that there are *at least* 17 clinical engineering departments who self-identify as designing and maintaining equipment, 70 as just maintaining and a further 61 departments for whom this status is unknown. Outside of clinical engineering departments, there are other UK design and engineering teams closely aligned to, even situated within hospitals. For example, Alder Hey Hospital have an active technology innovation hub led by Iain Hennessy bringing designers, engineers, developers and external tech company's together with staff and patients for the kinds of design processes described in this article. The Helix Centre at St Mary's Hospital in London do something similar. Joe Langley's team, Lab4Living based in Sheffield Hallam University, and has a close association with Sheffield Teaching Hospitals, Sheffield Children's Hospital and other hospitals in the wider Yorkshire Region. On a nationwide scale, The National Institute for Health Research (NIHR) provide infrastructure funding to dedicated staff who support the process. Nathaniel Mills works for two NIHR Med Tech Cooperatives; catalysts to facilitate the whole process. This enables experts who may not usually work together to form worthwhile, innovation focused collaborations. Designers and engineers work collaboratively with nurses, Dr's, therapists of all disciplines, administrators and managers in design processes, identifying needs and specifications, generating ideas and developing solutions using participatory design methods.

Internationally, similar other models exist in the USA. For example the Mayo Innovation Centre has a team of designers and developers who have taken over a ward space at the Mayo Clinic. They run design and innovation projects across the hospital with staff of all disciplines and even include rotating secondments for clinical and hospital IT staff to work in their team. The John Hopkins hospital have a digital innovation team based within the hospital in a similar way. Kaiser Permanente have a slightly different model; they have a warehouse called the Garfield Innovation Centre near San Francisco, home to designers and engineers. Here they build replicas of wards, patient rooms, surgical theatres and bring staff from the hospitals to this centre to focus on design and development work.

All these examples take collaborative and iterative design and development approaches. More activity like this is always welcome and along with articles reporting *how* such activity is undertaken. However, what we urgently need more of is two things;

1) articles and reports of where such activities are less successful. Here, authors, journals, editors and readers should see the value and constructively encourage such publications. This is a huge issue across the field in health research and innovation and well documented with regards to RCTs. Yet applies just as relevantly to device innovation as RCTs.
2) articles reporting about the later stages; how the device is certified, implemented, scaled up, commercialised – and, if possible, how collaborative activity in the design and development phase affected these later stages, as this is often where an innovation stalls.

We would strongly urge Journals to promote and even offer special editions under these themes.

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https://cypmedtech.nihr.ac.uk

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