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WARWICK BUSINESS SCHOOL
THE UNIVERSITY OF WARWICK

For the Change Makers

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November 2024

NHSE Midlands
Virtual Ward Implementation
Regional evaluation

Forewords

NHS England Midlands Region

Professor Helen Bevan

We are proud at NHS England Midlands to have worked in partnership with the Warwick Business School to review and evaluate models of virtual wards and approaches to their implementation. This aims to strengthen the evidence-base in the expansion of virtual wards across the region. The evidence base for virtual wards is emerging but is not yet sufficiently robust to demonstrate the full potential of where and how virtual wards add the most value for patients, staff and the NHS. Virtual wards represent a complex service innovation, which has grown since the implementation of covid virtual wards in 2020. We were keen to review practice with key stakeholders to share learning, and to understand the benefits and application of virtual wards more fully.

Virtual wards support patients who would otherwise be in hospital, to get the acute care, remote monitoring, and treatment they need in their own home. There is wide variation across the Midlands in Virtual ward models and how they have been established. Fundamentally they are underpinned by patient choice and clinical suitability with access to timely specialist advice and guidance as required, through safe and appropriate clinical pathways and governance. We were keen to contribute to the evidence which may support future growth. It is well known that moving care from hospitals to community care can improve a person's quality of life at home as it supports people to remain active and independent. It also reduces the risk of hospital acquired infections and deconditioning during hospital admission through early discharge or avoiding a hospital admission.

Through consultation and co-design with the regional virtual ward steering group and support of the National team, we were able to commission this work. It is the first time a comprehensive picture of virtual ward development has been portrayed across the region. This review demonstrates our commitment to improvement initiatives in the big shift from hospital to community care, which is now a high priority in building the future operating model of the 'new NHS' .

Researchers conducted 80 interviews and site observations across 10 service providers, with a focus on three Integrated Care service models. They were asked to evaluate the following:

1. Implementation enablers & barriers
2. Extent of Operationalisation
3. Contribution to acute capacity

The importance of collaborative working both within and between systems and service providers and professional and clinical leadership across the pathways were critical to their success.

Our aim is to share learning regarding what has been achieved, how this was made possible, and the benefits to our staff, our patients, and our communities. We want to share the principles of successful virtual wards with other organisations, so we can learn from, recognise, celebrate, and inspire each other. We are excited to continue to drive this agenda forwards and grow a collective culture of person centred care through shared learning.

Thank you to all staff involved in the development of virtual wards from across the region, with particular thanks to the study participants for all of their fantastic contributions.

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(SRO for Virtual Wards)
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Martin Sandler
Regional Clinical Lead
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Helen Bayley
Deputy Director of Nursing
NHS England Midlands

Lina Ramsden
UEC Transformation Lead
NHS England Midlands

NHS England

“As an NHS change leader for more than three decades, I welcome the contribution that this Virtual Ward Implementation Regional evaluation makes. The evidence-based messages it contains need to be heard by policymakers and practitioners as we seek to accelerate the big shift from hospitals to community. At the heart of the community is people’s own homes.

This evaluation tells us that we need to:

•**Put frontline clinical staff in control of the process of change to the care they provide to their patients**. It is about creating real change in real work in clinical environments.

•**Understand that the implementation of Virtual Wards is a socio-technical intervention.** It needs to focus as much on the socio (co-creation, collaboration, peer-to-peer spread and relationships) as it does on the technical (practices, tools and metrics). To date, most of the implementation and evaluation focus on Virtual Wards has been technical. Recalibrating the balance towards the socio will create a “pull” as Virtual Wards are spread – people mobilised through their peer groups and networks rather than Virtual Wards being “pushed” onto them.

•**Create a systematic design and development process for Virtual Wards** – co-producing it with multi-disciplinary teams and developing it incrementally through testing and refining, with effective change leadership support.

•**Give clinical teams time out, resources, skills and space** to be “changemakers” and rethink their services.

I hope that this evaluation is widely distributed and discussed and has the impact it should have – not just for Virtual Ward implementation, but for other complex change interventions in health and care.”

Helen Bevan,
Professor of Practice in Health and Care Improvement, Warwick Business School
Strategic Advisor, NHS Horizons team
Senior Fellow, Institute for Healthcare Improvement

Contents

Summary of key findings

Headline Findings

1. Current Virtual Ward (VW)/Hospital at Home (HaH) services have been implemented consistent with NHSE policy guidance (2022) and are contributing to acute care capacity across integrated care systems (ICS) in the Midlands region. The implementation of these service models, however, represents a complex service innovation, where the available evidence base is very limited. Virtual Ward/HaH operationalization is currently associated with a wide variety of service configurations, with clinicians and managers trying to establish best fit for their locality. This is consistent with recognized early-stage innovation processes. As the innovation journey continues and services mature, the evidence base will develop and support more standardized practice across service models over time.
2. During innovation, clinicians and managers need to maintain compliance with professional standards whilst reconfiguring care processes and MDT arrangements to deliver acute care in a geographically dispersed way, often via support from various electronic communication-based technologies. This presents a more challenging innovation context for clinicians and managers relative to innovation processes involving hospital-based models of acute care. This complexity needs to be acknowledged, with resourcing tailored to supporting skills development across managerial and clinical change agents.
3. Resourcing needs to be organized across system and service levels to foster stronger innovation environments which support:
    i. collaborative, interdisciplinary learning both within and between systems and service providers
    ii. professional leadership development focused on change management and innovation upskilling
    iii. clinical skills development across the full MDT during the innovation journey

Research objectives key findings

1.Implementation enablers & barriers	•The evidence base for organizing and implementing Virtual Ward/HaH models is not well established (Wallis et al., 2024). In this study we found service implementation was influenced by the following factors: •**Enablers**-i) change agents with experience of adapting professional practice; ii) opportunities to test & experiment with practice innovations iii) resourcing & support from senior management; iv) multidisciplinary relationships which support shared learning & collective innovation; v) active dialogue about innovative practices with clinicians delivering traditional hospital-based models of care. •**Barriers**- i) change agents without experience of adapting professional practice; ii) lack of resourcing & support from senior management iii) sustained disagreements within multidisciplinary teams about innovating clinical protocols and roles during set up.
2. Extent of Operationalization	•All models considered in this study are consistent with national NHS guidance (NHS England, March 2022) •Guidance, however, has been interpreted in different ways to accommodate local system contexts and service needs. • The wide variety of service configurations we observed are consistent with complex innovation processes (Garud et al., 2013) and the limited, emerging evidence base on service implementation (Wallis er al., 2024; Levine et al., 2024) •Further experimentation and exploration needs to be encouraged to support development of the evidence base, and identification of best practices over time.
3.Contribution to acute capacity	•There has been a substantial increase in VW/HaH beds across the Midlands region. As of May 2024 there were 144 virtual wards across the 11 ICBs accounting for 2282 beds. This is a 249% increase relative to December 2022 when there were 914 beds. •Different VW/HaH service configurations focus on different acuity levels. For lower acuity models, we saw evidence of services focusing on chronic disease management/ social care activities to support faster discharge/reducing readmissions. In contrast, HaH models tended to see higher acuity but lower volumes of patients compared to other models. •Contribution to acute capacity cannot be specified more precisely because traditional measures of hospital based acute care capacity do not translate easily to VW/HaH models of care.

Introduction

What is a virtual ward and Hospital at Home?

-Policy context

-Key definitions

-Key differences between hospital-based, virtual ward and Hospital at Home acute care

National context

- In 2020, NHSE implemented covid virtual wards to support the remote monitoring of covid positive patients in the community which was successful in supporting the pandemic efforts.
- In 2021 the potential for virtual wards to support other medical conditions was recognized and NHSE published guidance notes for virtual ward implementation.
- Funding was provided for all ICBs to develop 40-50 virtual ward beds per 100,000 population.
- Initial emphasis was on implementing technology enabled virtual wards and over time this has extended to encompass hospital at home models of care (NHSE, March 2022)*.
- Policies tend to assume that delivering virtual ward care will translate into a 'net bed benefit' to systems. (NHSE, April 2022)*.

*These documents have now been superseded by the operational framework released in August 2024. https://www.england.nhs.uk/long-read/virtual-wards-operational-framework/

National policy

Supporting information on virtual wards including hospital at home (March 2022)

In March 2022, NHS England published guidance on implementing virtual ward and hospital at home services*. This provided *"blueprint guidance notes for two virtual ward pathways: acute respiratory infection virtual wards and frailty virtual wards otherwise known as Hospital at Home."*

In summary, this document:

- provided an overview over possible models, identifying key expectations for service providers;
- stated generalized processes and actions;
- encompassed virtual ward and hospital at home models.

*These documents have now been superseded by the operational framework released in August 2024 https:// www.england.nhs.uk/long-read/virtual-wards-operational-framework/

Definitions of Virtual Ward & Hospital at Home

In this study, we used the following definitions to evaluate different service models.

Hospital at Home

"Hospital at Home/ Hospital in the Home (HaH/ HITH) is an acute clinical service that takes staff, equipment, technologies, medication and skills usually provided in hospitals and delivers that hospital care to selected people in their homes or in nursing homes. It substitutes for acute inpatient hospital care."

Consensus definition presented by Prof Michael Montalto at World Hospital at Home Congress 2023

Virtual Ward*

"A virtual ward is a safe and efficient alternative to NHS bedded care that is enabled by technology. Virtual wards support patients who would otherwise be in hospital to receive the acute care, monitoring and treatment they need in their own home."

NHSE Enablers for success: Virtual wards including hospital at home 2022 (https://www.england.nhs.uk/publication/enablers-for-success-virtual-wards)

* This definition is from the 2022 guidance which was current at the time of the study. This has been superseded by the operational framework released in August 2024 where NHSE moves to a more integrated definition of VW/HaH.

Development of HaH & Virtual Ward models

Virtual Ward and HaH service models originated through different routes (see below). Service innovation and change management is facilitated in healthcare settings when top-down policy requirements can be aligned with bottom-up professional activities (Mintzberg, 2017; Pettigrew et al., 1992; Woolley and Currie, 2023)

Hospital at Home

- Bottom up, clinically led initiative recognized globally
- Grown organically and incrementally through clinicians and international community
- Emphasis on clinical intervention and integrating point of care diagnostics

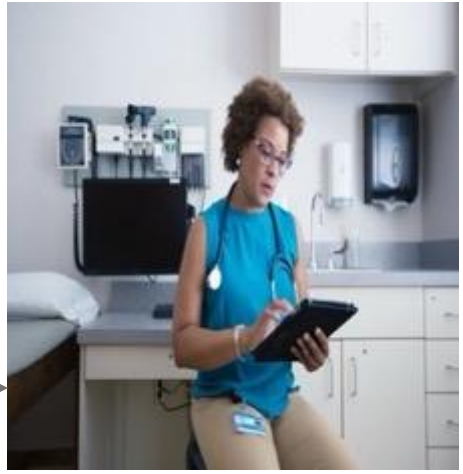
Virtual Ward

- Initially termed during the covid pandemic and was implemented rapidly in response to crisis
- Introduced as a national top-down policy requirement to build on the covid virtual wards
- Emphasis was initially on use of technology rather than face to face care delivery

How a hospital-based approach to acute care happens

Patient situated in ward bed
High frequency physical interaction between professionals and patients
Care monitored and controlled by professionals

Professionals have easy access to each other.
More expertise, clinical tools & technologies to hand



How care in a hospital at home/virtual ward model happens

Professionals are dispersed across buildings and locations **Challenge of how expertise is accessed.**

Care tools
Monitoring devices?
Diagnostics ? Medication?
Patient records ?
MDT communication?
Challenge of how these are adapted to work at distance.

Patient & family members may deliver treatment & monitor own care in consultation with professionals

Patient at home-situated in life with family
Lower frequency physical interactions between professionals & patients

Project design

Study Objectives: What were were asked to do.

This evaluation study was commissioned by NHSE Midlands region. The project brief set out the following requirements:

”This evaluation will consider **implementation optimization relative to the national policy objectives and definitions of virtual wards set out by NHSE.** The purpose of this review is to support **learning and knowledge transfer to assist virtual ward implementation for clinicians** and operational delivery teams to meet the ambitions and expectations set out within this policy framework. The current study will evaluate:

1. The enablers and barriers to the implementation of virtual wards across integrated care systems and service providers across the Midlands, including how any barriers might be overcome
2. To what extent Integrated Care Systems (ICS) and service providers (e.g. hospitals and community services) have operationalised virtual ward care processes across the Midlands, including impacts on service and patient outcomes.
3. The contribution virtual wards are making to extending acute care capacity across the Midlands."

Research design

We used a **comparative qualitative case study design** (Keen, 2006; Pope and Mays, 2006). This is a methodology for studying health policy implementation and change practices, within real world contexts (Keen, 2006; Pope and Mays, 2006). The evaluation was undertaken between March 2023 and August 2024.

Cases comprised:

- 3 Integrated Care Systems (reflecting inner city and more rural conurbations)
  - 2/3 virtual ward provider sites per ICS
  - All at different stages of implementation
  - Represented a variety of service configurations and levels of care (as per NHSE typology)

Data collection:

- Interviews-80
- Site observations -10 service providers
- Document review (policies, procedures, protocols, reports etc. in use at time of study.)*

*(Please note that some policy documents have been updated following completion of this study. Where this has occurred, we ha ve highlighted this in our findings.)

NHS England Midlands Region

Our three research sites were drawn from the NHSE Midlands region.

Midlands

1. Staffordshire and Stoke on Trent
2. Shropshire and Telford and Wrekin
3. Derbyshire
4. Lincolnshire
5. Nottinghamshire
6. Leicester, Leicestershire and Rutland
7. The Black Country
8. Birmingham and Solihull
9. Coventry and Warwickshire
10. Herefordshire and Worcestershire
11. Northamptonshire

The midlands region is a geographically diverse area covering a population of 5.7 million people.
There are 11 ICBs and 42 trusts in the region.

Project findings

Literature review

Findings

Literature review

- A literature review was conducted for peer reviewed literature on Embase, Cochrane, Medline and Pubmed search databases. (see Appendix 1 for full search strategy)
- There is currently limited literature on implementation of virtual wards (15 studies). This mostly focuses on covid virtual wards
- More is available when using expanded search terms including hospital at home and remote patient monitoring (28 studies)
- Literature included in our review comprises:
  - 12 policy documents
  - 43 peer reviewed articles
- Our full literature review is attached at Appendix 1.

Cochrane systematic review of HaH Implementation
(Wallis et al., 2024)

- This recent Cochrane review examined 52 qualitative studies exploring implementation of hospital at home services, although it noted all had minor or major methodological concerns.

- The review identified 12 findings across 4 main themes that affected implementation either positively or negatively:

  1) **development of stakeholder relationships and systems prior to implementation**,
     - *'Prior to implementation, identifying how Hospital at Home services fit with existing care pathways, regulation, governance, budgets and existing workload will help to ensure that the services function as intended,'*

  2) **processes, resources and skills required for safe and effective delivery,**
     - *'A recognised clinical champion, prompt delivery of equipment and assessment of patients using a clinical record that is shared by healthcare providers from different sectors facilitates the set-up and delivery of Hospital at Home care*
     - *A crucial element is training staff to equip them with the skills to adopt an extended role and support teamwork and task sharing, and the impact of these services on the existing workforce'*

  3) **acceptability and caregiver impacts**
     - *'The benefits of receiving health care in the home are widely understood to support a faster recovery, but this could be undermined by a lack of support for carers '*

  4) **sustainability of services**
     - *'Staff and patients expressed concern that without widespread implementation and expansion, the perceived benefits of Hospital at Home to patients and the healthcare system would be limited.'*

- 16 of the studies included in this review were delivering subacute or rehabilitation care.

- The review noted a lack of evidence at system level.

Literature review, implementation – facilitators

Our review identified the following factors as supporting implementation:

- **Covid-19 Pandemic**
  - The pandemic served as a catalyst for the rapid setup of Covid-19 virtual wards, prompting a collaborative approach between primary and secondary care, acceptance of novel working methods and access to redeployed staff.
- **Policy Support**
  - NHS England produced documents to support the implementation of virtual wards, providing financial, technological, and workforce recommendations.
- **Leadership and workforce**
  - Strong leadership was identified as crucial in articulating the value of providing care at home and managing financial impacts. Multidisciplinary team collaboration and upskilling were found to be important for successful implementation.
- **Patient Preference**
  - Many patients preferred home-based care for reasons such as maintaining independence and quicker recovery.
- **Technology including remote monitoring and point of care testing**
  - Integration of electronic health records and communication tools improved efficiency and safety.

Literature review, implementation – barriers

Our review identified the following factors as impeding implementation:

- **Limited Evidence Base**
  - There is a scarcity of evidence on the implementation of virtual wards, HaH and remote patient monitoring, particularly outside the COVID-19 context.
- **Technology Challenges**
  - Digital illiteracy, lack of internet access, data protection concerns, and technology costs posed barriers to some patients and healthcare providers. Challenges in implementing electronic health records and ensuring data security were also noted.
- **Regulatory Hurdles**
  - Regulatory barriers and health system policies complicated the implementation process, especially in the US.
- **Patient Eligibility**
  - Identifying eligible patients and convincing them to enroll in home-based care was challenging in some settings, along with excessively restrictive medical criteria. Some patients preferred the perceived safety of remaining in hospital rather than home care.
- **Reimbursement and payment**
  - Funding and reimbursement models for HaH services posed challenges in both private and public healthcare systems.
- **Clinician Concerns**
  - Some clinicians had reservations about safety and efficiency of home-based care, including physician hesitancy to refer patients.
- **Caregiver Burden**
  - At times, home-based caregivers experienced strain and felt that there was insufficient guidance/ professionalism from nursing staff.

Objective 1: Implementation Part 1: Service level findings

Barriers and Enablers

Finding 1.1: There are a variety of virtual ward/HaH configurations implemented across The Midlands region

- Services included in this study were at a different stages in their implementation journey and had approached implementation in a range of ways.
- Services covered a variety of specialties including frailty, respiratory, pediatrics, surgery, palliative care and cardiology.
- We saw sites providing broadly 3 models of care:
  - Face to face hospital at home
  - Hybrid face to face and remote monitoring
  - Remote monitoring only
- This variation in service configuration is consistent with global findings (Levine et al.2024).

Examples of service types in our study

- **Face to face hospital at home**
  - Delivering face to face acute care in the home using point of care diagnostics, intravenous medications and oxygen
  - This included patients who were early supported discharge from hospital or admitted directly from community-based settings
- **Hybrid face to face and remote monitoring**
  - Remote monitoring of patients usually to support early discharge from hospital
  - Staff were available within the VW/HaH or wider team to assess patients at home and perform acute interventions when required
- **Remote monitoring only**
  - Remote monitoring of patients to support early discharge from hospital
  - This relied on referrals to other teams to get patients assessed either at home or in a hospital setting for assessment or acute interventions

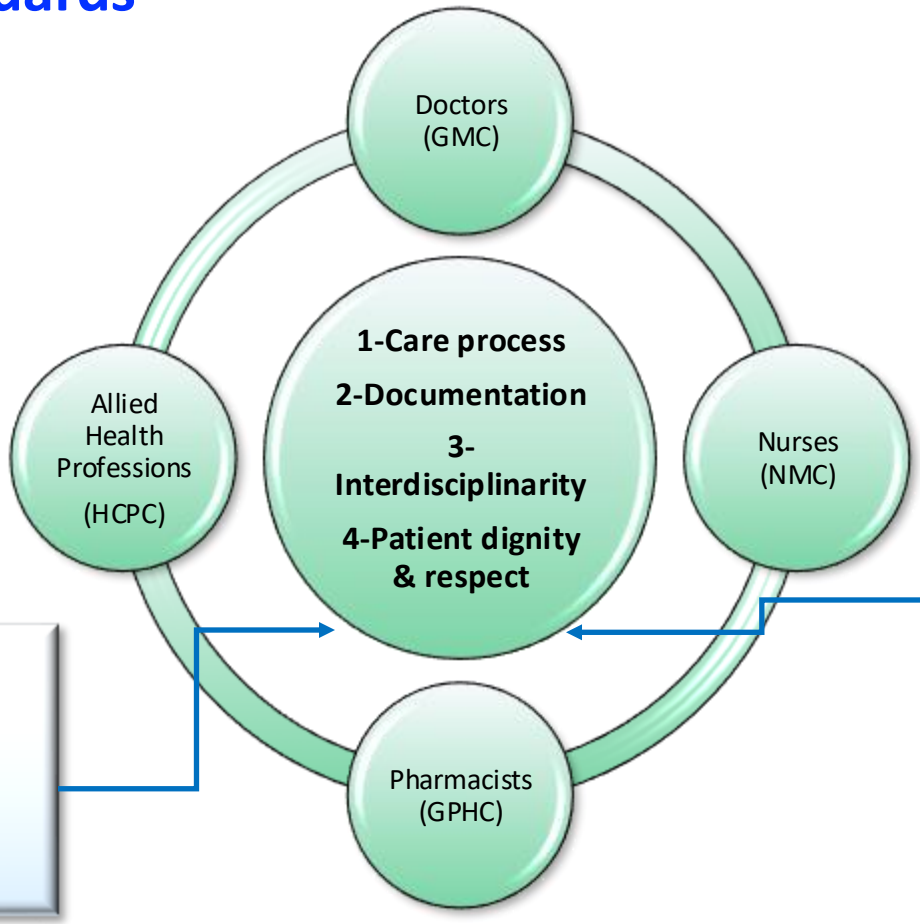
Finding 1.2:
Implementation requires a complex bundle of clinical practice adaptions

- The interventions occurring within the Virtual Ward and HaH services have not been well described in comparison to traditional ward-based settings (Wallis et al., 2024).
- Services need to innovate new care models through a complex range of change management activities including clinical practice adaptations, regardless of the model of care or clinical conditions. This arises from the need to:
  - deliver acute care in a geographically dispersed way, at distance and;
  - accommodate multiprofessional practice standards across four domains;
    i. care process
    ii. documentation
    iii. interdisciplinarity
    iv. patient dignity & respect.

Professional Standards of Practice

Professionals implementing change will need to ensure they accommodate their professional standards within their adaption processes.

This may create tension at an individual, professional or team level



Adaption involves changing multi-professional clinical practices to accommodate **standards across geographically distributed locations**

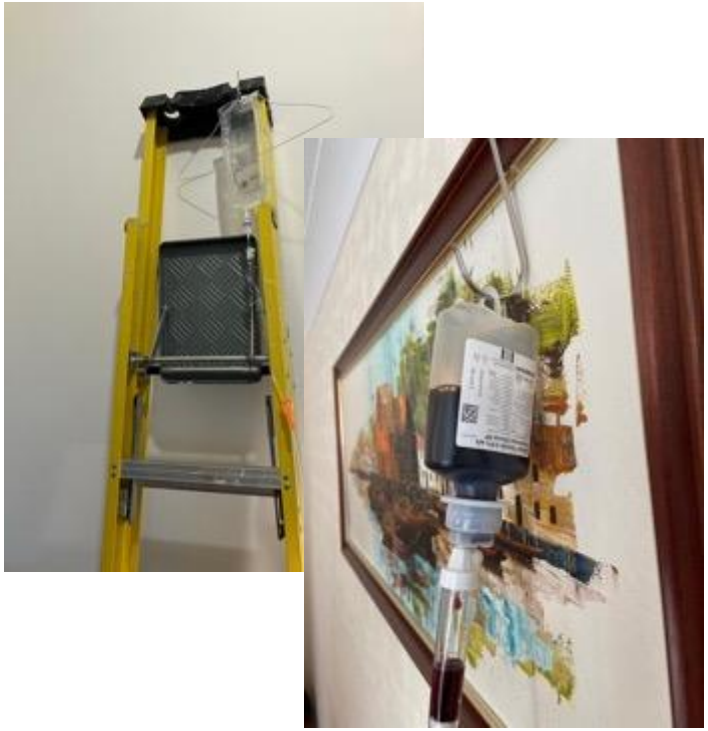
Implementation therefore involves a **complex range of innovation & change management activities** including:

- Staffing
- Multi professional relationships
- Equipment
- Technology
- Medication
- Re-skilling
- Interdisciplinary learning

Example practice adaption 1
Clinical care/treatment

- The types of care or the way of delivering care may be different or outside the usual scope of the professional.
- For example, not having access to typical equipment for drug delivery; modifying processes clinical examination and observation

"I mean, it can be, it can be more difficult, I guess, because when you're examining someone in a chair it's different to examining them in their bed, moving them around the room. It can… it can be more intense, labour intensive. Erm, whereas I think sometimes a patient may need to just suddenly open their bowels, in hospital you just move on to the next patient and come back, whereas, in the home you have to get your hands dirty. Erm, you can't just kind of say, "All right, I'll be, I'll be back soon." – service clinician



Example practice adaption 2
Documenting care

- New technologies and/or new ways of documenting care were embraced to ensure services maintain their governance standards

"probably the single biggest issue that we've resolved is our documentation. Patient documentation we are recording on an Excel spreadsheet that isn't properly backed up. That doesn't meet information governance standards, and I'm not comfortable running a service with that standard of documentation that to me falls below the line." – service clinician

Example practice adaption 3
Interdisciplinary working

- The roles of the clinicians in the MDT have to change in order for services to work efficiently. This involved shared leadership and responsibilities for patient care across the full MDT.

  "We, we don't really have that in the hospital. So I think they work in silos, doctors and nurses. But, here they're working together….I think it needs a lot more team working and it's not necessarily that the traditional doctor role wouldn't work… sometimes the doctor needs to put in the cannula and take the blood as well or Clinical Practitioners also taking on roles that traditionally would be doctor roles." - service clinician

Example practice adaption 4
Patient dignity & respect

- Clinicians described finding it easier to develop a more holistic picture of patients by seeing them in their home setting.
- This contrasts strongly relative to clinicians' experience of hospital-based care where they described having less understanding of the patient's social history and lived experience.
- Clinicians described establishing more egalitarian relationships with patients and carers, in contrast to hospital-based care.

"within the virtual ward , you're on the patient's terms, I think that's the biggest thing. Its more person centred because you see them as the real person in their own environment" – service clinician

Finding 1.3: Implementation enablers (1)

In sites where implementation was more established, we saw the following combination of factors:

- Change agents/leaders with prior experience of adapting professional practices (n.b. not necessarily in an acute care discipline) e.g.
  - ITU nurse to the critical care outreach team and then HaH ACP.
  - Ward nurse to community care navigator nurse and then lead nurse virtual ward service.
  - Lead consultant had previously implemented virtual ward type service at another provider earlier in career.
- Attention to testing and experimenting with new practices (tools/tech/people) (N.B.-but still accommodating standards)

"we started off with a respiratory virtual ward, and we had two test patients go through that, and we did PDSA cycles for each patient to see if we could capture good practice and bad practice and sort of streamline that pathway" – service manager

Finding 1.3: Implementation enablers (2)

- Access to resourcing and support/encouragement from senior management.

  "I've obviously, been pushing it forward and I think there's buy in from everybody, really, that it's the right thing to do. So, yeah, I think it's the managers here are on board."- service clinician

- Multidisciplinary relationships which supported shared learning and collective innovation.

  "what we're delivering is a complete blurring of those boundaries, and therefore how do you bring together…numerous MDT members, but then kind of have this expectation that they all work to the same style and the same model."- service clinician

- Active and ongoing dialogue about innovative practices with clinicians delivering traditional hospital-based models of care.

  "it was really difficult through that first year, 18 months. And there was almost a riot in the grand round about we're not taking on any more work and things. And that's why our frailty consultants have been pretty pivotal in being like the beacons of positivity for it and showing how it can be done." service clinician

Finding 1.4: Implementation barriers

In sites where implementation was progressing more slowly, we saw the following combination of factors:

- Change agents/clinical leaders who lacked prior experience of adapting professional practices.
- Difficulties in accessing funding and support from senior management

  "so we did have heart failure, which we don't do anymore, which is a shame actually, erm, but I think that was to do with funding issues from trust's side more than anything…the acute side wouldn't fund the consultants time, which is a real shame."- service clinician
- Sustained disagreements within the multidisciplinary team about clinical protocols and roles during set up.
  - Primarily linked to perceived risks to patient care and arrangements for professional accountability/risk sharing across MDT

  "There is there is such a fear of taking clinical responsibility for people who you may not see face to face. It always comes down to if that patient dies in a virtual ward, and I haven't seen them, I'll get hauled before the coroner." - clinician

Objective 1: Implementation Part 2: System level findings

Barriers and Enablers

Finding 1.5: System governance structures

- We found that systems put in place a variety of governance structures to support policy implementation. This included for example, multi provider collaboratives, system wide steering groups and ad hoc support.
- Governance arrangements tended to emphasize governance reporting [e.g. monitoring operational managerial throughput (e.g volume of patients seen)] and cost performance measures in implementing virtual wards at service level.

  "NHSE targets of 80% and 40 to 50 beds does not drive quality anywhere in that at all. It drives number crunching and it drives moving patients around and pushing them out. I struggle to see the quality agenda in it and I think that's where our clinicians have struggled as well." – System manager
- Systems have experienced challenges with clinical engagement at times

  "Successfully implementing Virtual Wards? I think absolutely, number one, you've got to have very senior clinical engagement, clinical buy in and clinical drive to push this across a system where you're trying to bring five providers together who've never worked together. I think it's fair to say we probably didn't have that. We had the level, but we didn't have the input that we needed from that level.' - system manager

  "And then different ways of delivering it. You could have to go and and in fact, [Site 1] kept turning round and said oh, it's no use for our patients. We can't possibly use it. Our patients aren't digitally literate enough or it's too difficult for them to use it. And yet [Site 2] were like, no, they can." – system manager
- Implementation support roles were subsumed into individuals more generalized roles or had been externally contracted. We did not see dedicated roles at system level to support implementation.

Finding 1.6: Centralised funding supported service providers innovation journey but also brought implementation challenges

- Access to funding supported staff recruitment, team expansion and service developments.

  "So, the kind of scaling up of it was in large part really just about better recording and better documentation. We then also, we got some money from virtual ward money to employ a ward clerk... And that really helped with improving our recording of the numbers" – Service manager

- However, service providers found the flow of money from systems to services was complex and experienced delays. In some places, the temporary nature of funding has created issues with staff recruitment at service level (e.g. redeploying staff to other areas, staff to temporary posts or training staff to the appropriate level).

  "Because you can say, well, if you expand, if you double your virtual ward how many more staff will you need? Well, I've no idea, but I can guess. So, we put together some numbers, submitted them and then it was, well, you've asked for too much, you need to cut the numbers down. So, we kind of say, well, how much money is there and then we'll work around the money? Oh, no, we can't tell you that, you need to tell us what you need. So, frustrating, there's a lot with finance about what we can and can't afford." – service clinician

  "the change in funding means that we employed people where we've now had to move them around....so the funding issue has been absolutely disastrous… it's changed what we intended to deliver, not all bad, but the human impact, the human, fallout of that has been huge…so therefore, the people cannot go there, where they were recruited for." – clinical service lead

Finding 1.7 : Opportunities for shared learning between providers and systems are limited (1)

- Systems told us about a variety of learning activities they were encouraging and participating in. This included events and meetings for sharing learning internally.

  "I think sharing and learning the PDSA part of it has been absolutely key to our implementation as well. And we do a lot of that as soon as Virtual Wards go live as part of the provider development session, they do-do the PDSA and review and refine. A lot of shared learning, I think a lot of learning from other areas as well." – system manager

- However, we found that sharing of knowledge and learning through the implementation process has been ad hoc and not usually clinically lead. Most systems relied on the national NHS Futures platform as the primary resource to share knowledge and learning across services and systems.

  "I would say NHS Futures has been good generally. There's a point about the emails in the depository to one side. The fact that you can go in and find stuff, if you go hunting and look and do stop, you probably find some bits and pieces. ' – system manager

Finding 1.7 : Opportunities for shared learning between providers and systems are limited (2)

- At service level, individual change agents created opportunities to learn from each other, but again, this was ad hoc.
- Good practice examples we found included:
  - accessing independent expertise from more established sites (e.g. visiting services in different localities)

    "I came to meet [clinical lead A] in [site 1], I spoke to [clinical lead B] in [site 2], you know, I'm trying to keep up to date with the different ways different people are doing things." – service clinician
  - establishing professional interest groups to share learning.

    "So, actually this afternoon I've started to hold an MDT meeting as well. So, we've got a pharmacy only weekly meeting where we come together and just talk about pharmacy issues. And then we've got a monthly more of an MDT with the community nursing and matrons'"– service clinician

Recommendations to strengthen implementation

Service level

- Recognize the complexity of practice adaptions necessary for implementation and set realistic innovation goals and change trajectories.
- Carefully select change agents and service leaders who have prior experience of innovation/practice adaption.
- Ensure change agents have access to resources and support of senior management.
- Encourage service experimentation during implementation journey.
- Identify opportunities for peer mentoring or utilize professional bodies e.g. UK Hospital at Home society.
- Support change agents with managing complex change processes via:
    - access to peer clinical professional mentoring (e.g. from more experienced implementers);
    - access to interdisciplinary clinical professional learning collaboratives (e.g. via HaH Society or system-wide arrangements);
    - access to professional leadership development;
    - access to clinical skills development across full MDT.

System level

- Support systems to build on current arrangements.
- Review and consider dedicated virtual ward roles at a system level supporting ongoing implementation and leadership.
- Consider creating longer term financial resourcing models to support recruitment and training for longer term sustainability and scaling of services.
- Consider clinical co design and introduction of more quality focused metrics to strengthen supporting service and clinician buy in.
- Consider building on and formalize emerging clinically led learning opportunities and collaboratives both within and across systems.
- Expect, recognize and tolerate variation across systems and providers (providing that clinical practice standards are maintained) as part of the innovation journey.

Objective 2: Operationalization

Finding 2.1 : System and provider operationalization is consistent with guidance

- We found that ICS and service providers had operationalized virtual ward /hospital at home models consistent with NHS guidance (NHS England, March & April 2022)*.
- As we discussed earlier in Section 1 findings, the general nature of the guidance has given scope for clinicians and managers to interpret this and implement a variety of VW and HaH models that accommodate local system and service provider contexts.
- However, some change agents described definitions of HaH and VW as unclear, leading to some confusion about how to apply service models in practice.

  "This kind of hospital-at-home or virtual ward and there's a bit of confusion, kind of my understanding of a virtual ward as what it should be is that it's an alternative to bedded hospital care… Hospital at home is a bit more nebulous." – system manager

  "I think it's [the definition] really important… if they thought all they were getting is something virtually, I think that they may not feel that that was an adequate choice, whereas they thought what they were getting was a hospital at your home, I think they would be very [happy]." – service clinician

  "you are very limited in what you can do, and the expectation that's put on you. So we're told we're to deliver the same level of care… Level of care as you would do in a hospital, which is impossible at the end of a phone" – service clinician

*This guidance was superseded by the 2024 operational framework and services may not meet these later guidelines

Finding 2.2 : Virtual Wards and HaH service models represent complex innovations.

Complex innovation: interrelated set of changes involving technical (e.g. new information technology; diagnostics) and social components (e.g. range of professional communities need to develop new working practices across an organization). Introducing a new clinical prescribing system is an example of this type of innovation.

Focal innovation: intervention is focused and highly bounded at micro level, e.g. introducing a new drug or treatment to a given clinical community.

(Ferlie et al., 2005:118-119)

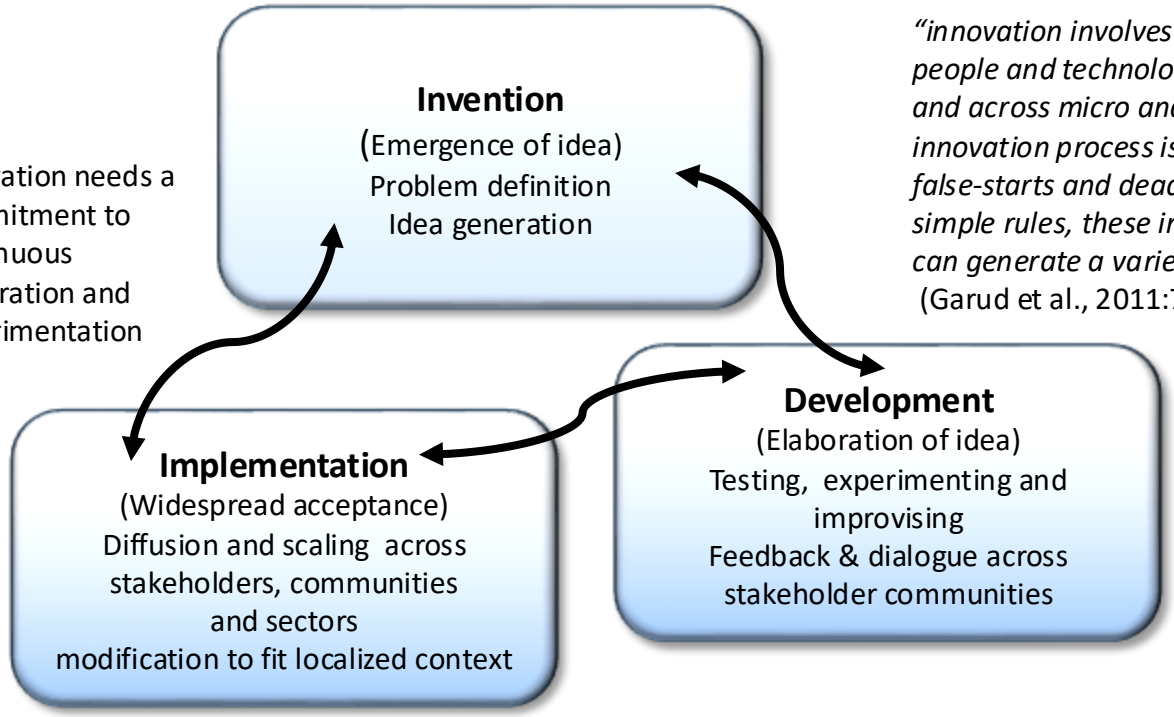
The variety of service configurations we observed, and the issues systems/services reported are consistent with the extant evidence base on innovating new services, across healthcare and wider industry contexts (see next slide) (Garud et al., 2013; Kerridge et al., 2024; Pettigrew et al., 1992)

Virtual Ward/HaH models represent a relatively early-stage innovation where professional communities and healthcare organizations need to work collaboratively on experimenting and exploring different service models and interventions, whilst working towards building the evidence base, standardizing practices and progressing towards wide scale implementation. (Garud et al., 2013)

Innovation processes evidence base (Garud et al., 2011; 2013)

Innovation is an inherently complex process for organizations, professionals and sectors to accomplish. It is an iterative jo urney involving three interrelated processes: invention, development and implementation. Creating and sustaining new services and products involves repeating innovation cycles, where ideas (and their associated services and products) are continuously refi ned and modified.

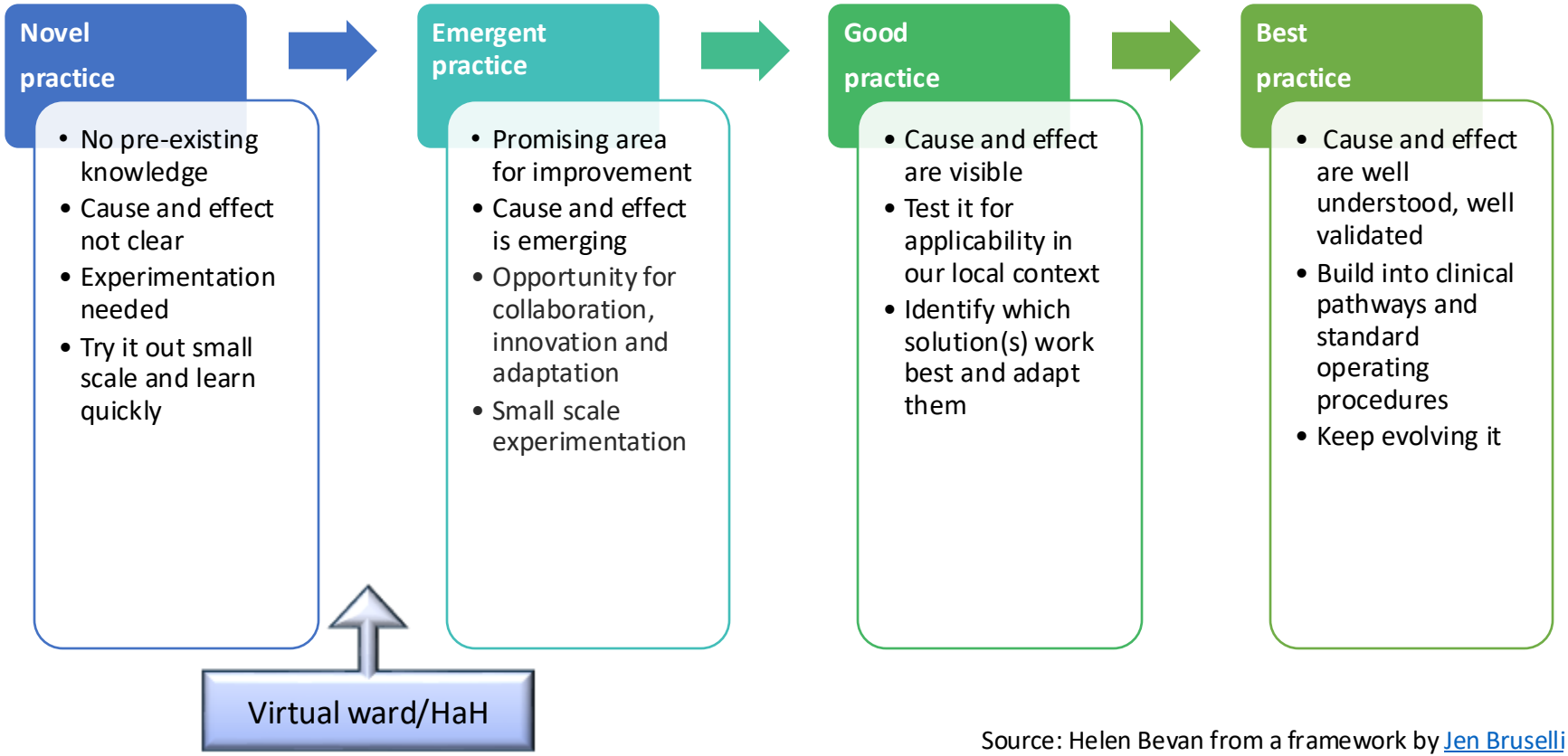
Innovation needs a commitment to continuous exploration and experimentation



"innovation involves interactions among networks of people and technologies from different practice domains and across micro and macro levels of an organization. The innovation process is nonlinear, full of ups and downs, false-starts and dead-ends. Even when governed by simple rules, these interactions and innovation processes can generate a variety of outcomes" (Garud et al., 2011:737-8)

"Innovation processes are culturally determined and how specific innovation processes unfold is dependent on the cultural setting." (Garud et al., 2013: 804)

The journey from novel practice to best practice



Source: Helen Bevan from a framework by Jen Bruselli

Recommendations to strengthen operationalization

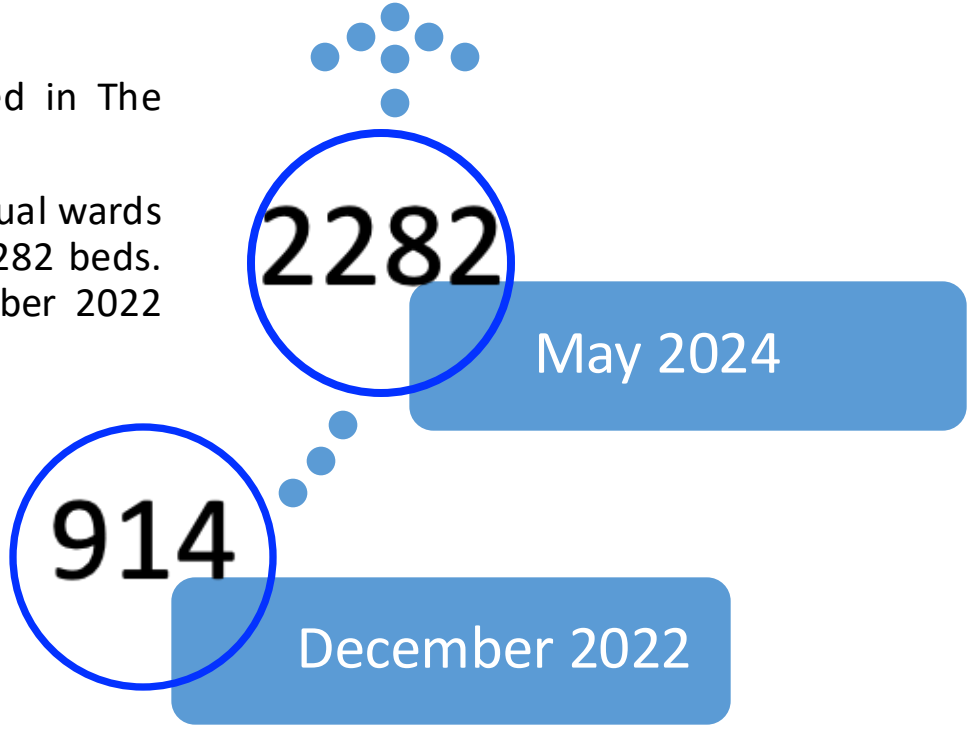
- System and provider service support arrangements for Virtual Ward and HaH implementation need to be designed to accommodate:
  - stage of service at different provider sites and experience of change adaption clinical, service and/or organizational levels;
  - interprofessional relationships within and across service providers (i.e. cultural determinants of innovation);
  - further experimentation with service model configurations and interventions;
  - extending opportunities for clinicians and managers to share practice and learn together.
- Nationally, more research is required to:
  - establish which service configurations work best, in which contexts;
  - understand how to adapt practices and develop clinical skills to deliver VW/HaH services;
  - define best practice at service level.

Objective 3:Contribution to acute capacity

Finding 3.1 : Virtual ward (including HaH) capacity has increased across NHS England Midlands Region

Virtual ward capacity has expanded in The Midlands region.

As of May 2024 there were 144 virtual wards across the 11ICBs accounting for 2282 beds. This is a 249% increase on December 2022 when there were 914 beds.



Finding 3.2 : Most Virtual Ward models delivered traditional acute care activities

- We found that across most sites, Virtual Ward/HaH models involved delivering traditional acute care activities, however, different models (slide 28) had varying emphasis on acute care provision.
- In sites where the most advanced VW/HaH models were in operation, services were seeing and treating patients that would normally be seen in hospital acute care environment.
- For lower acuity models, we saw evidence of services focusing on chronic disease management and social care activities (e.g. welfare checks), which contributed to enabling faster discharge/reducing readmission.
- VW/HaH based models that tended to see higher acuity but lower volume of patients compared to lower acuity remote models.
- It is difficult to quantify contribution more specifically because traditional measures of hospital based acute care capacity do not translate easily to VW/HaH models of care (e.g. bed/ward occupancy; bed days; length of stay). This is because modes of delivery are so different (see slides 30-35). Further research is required to understand how to best to assess contribution to acute capacity.

Conclusions

“everyday in our personal and professional lives we innovate. Nothing matters more to our success and survival and yet we struggle with our understanding of the process of innovation. Sometimes it is messy; sometimes it is elegant; usually it is both and more.”

William Coyne, 3M corporation

Conclusions (1)

- Current Virtual Ward (VW) /Hospital at Home (HaH) services are consistent with NHSE policy guidance* and are contributing to acute care capacity across integrated care systems (ICS) in the Midlands region.
- These service models, represent complex service innovations, where the available evidence base remains very limited. VW/HaH operationalization is currently associated with a wide variety of service configurations, with clinicians and managers trying to establish best fit for their locality.
- This is consistent with recognized early-stage innovation processes. As the innovation journey continues and services mature, the evidence base will develop and support more standardized practice across service models over time. However, further experimentation and exploration is needed for this.

*This guidance was superseded by the 2024 operational framework and services may not meet these later guidelines

Conclusions (2)

- During innovation, clinicians and managers need to maintain compliance with professional standards whilst reconfiguring care processes and MDT arrangements to deliver acute care in a geographically dispersed way, often via support from various electronic communication-based technologies.
- Clinicians and managers need to institute a bundle of practice adaptions to achieve this and utilize a range of change management and leadership skills. This complexity needs to be acknowledged, with resourcing tailored to supporting skills development across managerial and clinical change agents
- Resourcing needs to be organized across system and service levels to foster stronger innovation environments which support:
    i. collaborative, interdisciplinary learning both within and between systems and service providers;
    ii. professional leadership development focused on change management and innovation upskilling;
    iii. clinical skills development across the full MDT during the innovation journey.
- Further research is required to:
    - establish which service configurations work best, in which contexts;
    - understand how to adapt practices and develop clinical skills to deliver virtual ward/ HaH services.

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Useful resources

- NHS England Virtual wards operational framework. 2024. https://www.england.nhs.uk/long-read/virtual-wards-operational-framework/
- Health Improvement Scotland Hospital at Home toolkit. 2023. https://ihub.scot/project-toolkits/hospital-at-home-toolkit/hospital-at-home-toolkit/
- UK Hospital at Home Society resources. https://www.hospitalathome.org.uk/research
- World Hospital At Home Community Educational resources. https://whahc-community.kenes.com/course/index.php?categoryid=79

Acknowledgments

- We would like to offer our sincerest thanks to the many clinicians and managers that contributed to this evaluation as research participants, and without whom, this work would not be possible. Our research participants gave graciously of their time, despite their many demanding managerial/clinical commitments, and participated with an irrepressible passion for improvement and learning. Special thanks to Black Country ICB, Coventry and Warwickshire ICB and Nottingham and Nottinghamshire ICB.

- South Warwickshire Foundation Trust, who hosted the research team, provided generous operational support throughout implementation. In particular, the research team are extremely grateful to Glen Burley, Kim Li, Rachel Ward, Jo Williams, Dr David Aldulaimi and Dr Charles Ashton, for their ongoing support of our work.

- Special thanks are also due to NHS England-Midlands and the Virtual Ward programme team, (in particular, Helen Bayley, Dr Martin Sandler, Lina Ramsden and Lorna Catlin), who facilitated the successful completion of this work. Throughout our research, they secured access and accommodated our many and varied requests for data and documents. They committed to the rigours of an academic research process with courage and curiosity, and a steadfast determination to support clinicians and managers with better tools for innovating Virtual Ward/Hospital at Home services.

Author Biographies

Professor Graeme Currie

Graeme is Professor of Public Management at Warwick Business School. His research interests include leadership, strategic change, management learning, knowledge mobilization and innovation within public services (health and social care, education, police, local government). Graeme has always been concerned to generate a virtuous relationship between research income, building capacity amongst those that work with him to progress their academic careers, publication outputs, and most importantly impacting health and social care challenges. His work is thus necessarily interdisciplinary, particularly reaching across to clinical academics with whom he loves working, and collaborative with NHS and social care organisations. This has allowed him to draw down significant funding to support large scale research, including that associated with successive rounds of translational health research centres called CLAHRCs/ARCs funded by the National Institute of Health Research and leading a succession of studies funded by the National Institute of Health Research, and most recently the ESRC EXIT Study, focused upon delivery of care at different ends of the age spectrum, children and frail older patients. Increasingly, associated with this, he has engaged in large scale funded international studies, for example in India and Australia. While policy and practice impact represents his main priority, he continues to publish in leading journals, in business and management, such as Academy of Management Journal, Journal of Management Studies, Human Resource Management, Organization Studies, in public administration, such as Public Administration Review, Journal of Public Administration Research and Theory, and in health services, such as Social Science and Medicine, Implementation Science. Nevertheless, informed by work experience in his pre-academic life, Graeme remains essentially a practical person.

Professor Dan Lasserson

Dan Lasserson is Professor of Acute Ambulatory Care at the University of Warwick, working clinically in acute ambulatory care and the Hospital at Home service for Oxford University Hospitals NHS Foundation Trust and Sandwell and West Birmingham NHS Trust. He is a founding member of the UK Hospital at Home Society. He has previously worked in primary care as well as hospital medicine and is the Theme Lead for Acute Care Interfaces in the NIHR Applied Research Collaboration (ARC) West Midlands. He is also Theme lead for Acute Ambulatory Care in the NIHR Community Healthcare MedTech and In-Vitro Diagnostic Cooperative (MIC) and has an interest in how point-of-care diagnostics can support acute care decision making. He is the chief investigator of an NIHR Policy Research Programme study examining the optimal acute medical care delivery model during winter and waves of COVID-19. He leads an NIHR PRP funded study on how Acute Hospital at Home models can expand their scope of clinical work and sits on the Clinical Reference Group for NHS England's Virtual Ward/Hospital at Home Programme. He has led the Society for Acute Medicine national hospital benchmarking audit (SAMBA) and now sits on the Society for Acute Medicine's Research Committee as well as the Editorial Board of the Acute Medicine Journal.

Sophie McGlen

Sophie is a clinical pharmacist and has led the development of the pharmacy service in the hospital at home service at Oxford University Hospitals, to support safe delivey of an increasing number of medicines in the patient's usual place of residence, to facilitate the increasing acuity of patients treated. Sophie is a trainee advanced clinical practitioner and is an early career researcher seeking to develop the evidence base for hospital at home models of care.

Dr Sarah Woolley

Sarah is an Assistant Professor at Warwick Business School and holds a PhD in Business and Management. Her work focuses on understanding how organizations and teams collectively orchestrate strategy, innovation and change in complex and dynamic environments, primarily within healthcare and not for profit contexts. Prior to joining academia, Sarah worked as a Board Director in the NHS leading the quality improvement agenda and has had a varied career working in consultancy, managerial and scientific roles, across healthcare and not for profit sectors. Earlier in her career, Sarah worked as a clinical biochemist within the NHS and as an academic research scientist.

Sarah completed her undergraduate scientific training at Manchester University (BSc. Cell Biology) and holds a PhD (Immunology & Biochemistry) from Birmingham University.