

Evaluability assessment of community hub pilots in NHS Fife and NHS Forth Valley

A report for the Scottish Government's
Sustainability and Seven Day Services Taskforce

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Introduction

This paper presents an evaluability assessment of the Community Hub Pilots and GP Community Hub Fellowships (GP Fellowships) in Scotland for two pilot areas, NHS Fife and NHS Forth valley.

Evaluability assessments are intended to inform decisions about whether and how to evaluate new policies and programmes by weighing the value of the evidence an evaluation would provide, in terms of informing future decisions, against the likely cost and practicality of gathering that evidence.

This report outlines:

- the context for the development of Community Hub Pilot sites in Scotland.
- a theory of change for the Community Hub Pilot models and the key outcomes expected.
- an assessment of the data quality and availability for those outcomes.
- options for monitoring and evaluating the Community Hub Pilots.
- an outline of recommendations for evaluation.

Background and Policy Context for Community Hub Pilots in Scotland

There are a number of strategic drivers for the development of the Community Hub Pilots and GP Community Hub fellowship Scheme. In 2014 the Scottish Government's Sustainability and Seven Day Services Taskforce was convened to help deliver on the 2020 vision that 'by 2020 everyone is able to live longer, healthier lives at home or in a homely setting',¹ and the quality ambitions set out in the Healthcare Quality Strategy for NHS Scotland.² In addition to this a workforce review carried out to support the 2020 vision states the need to 'respond to the needs of the people we care for, adapt to new, improved ways of working, and work seamlessly with colleagues and partner organisations.'³

The National Clinical Strategy⁴ sets out the ongoing challenges of sustainability of the GP workforce and the need for this to be addressed in part by 'a refocussing of GP activity towards more complex care needs' and would also provide opportunities for other health professions in the practice and the wider community team to adopt new and expanded ways of working. The Shape of Medical Training Review⁵ had also highlighted that a new kind of doctor was needed to deliver more care in

the community to an ageing population. These doctors would require more generic skills enabling them to work across the interface between primary and secondary care.

The Community Hub model has emerged in response to these drivers. A new GP Community Hub Fellowship has been developed under the auspices of NHS Education for Scotland to develop a new role that bridges the gap between primary and secondary care and offered ‘a unique and exciting opportunity to develop intermediate care between home and the complex care provided in acute hospitals’. The fellowship programme includes a one-year GP post-CCT Fellowship followed by a two-year Health Board funded position as a “community physician” in newly developed community hubs.’⁶

Scotland has also seen a renewed emphasis on the role of primary and community care as being at the heart of the healthcare system, with highly skilled multidisciplinary teams (MDTs) delivering 24 hour care. More recently a new SNP manifesto commitment⁷ sets out a vision to ‘transform primary care, delivering a new Community Health Service with a new GP contract, increased GP numbers and new multi-disciplinary community hubs’. It is clear that the community hub pilots have an important role to play in national developments within the broader context of transformational change being planned for the delivery of primary and community care in Scotland and therefore it is crucial to capture learning from the design, implementation and delivery of the pilot models through appropriate, well-designed monitoring and evaluation.

Evaluating Primary Care

NHS Health Scotland and the Scottish School of Primary Care are working in partnership with the Scottish Government to support the Primary Care Division to develop an overarching framework for primary care to evaluate what works and to guide future opportunities for collaborative policy development. NHS Health Scotland is leading on the development of the overarching framework which aims to identify common threads from different policy areas and their relative contributions to the primary care agenda. The Scottish School of Primary Care is leading on the evaluation of the Primary Care Transformation Fund.

Health Inequalities Impact Assessment

While reducing health inequalities is not a specific focus of this work, health inequalities remain a key target for Scottish Government and the NHS. All new service developments should therefore consider health inequalities as part of their design and implementation, and be able to demonstrate such consideration to partners and the public. One way to do this would be to embed an impact assessment process such as HIIA within the planning phase of such new services.

HIIA (Health Inequalities Impact Assessment) is a process which can help organisations to understand the potential impact of their service decisions on health inequalities. HIIA can strengthen the contribution of policies and plans to reducing health inequalities by promoting consideration of equity of access to the intervention, ensuring non-discriminatory practice and stimulating action on the social determinants of health. Simply put, HIIA can help to ensure that your new services are available, accessible and acceptable to everyone.

Because HIIA includes equality impact assessment (EqIA), it meets the legal requirement to conduct an impact assessment of Section 149 of the Equality Act 2013⁸ (the public sector equality duty), and the Equality Act 2010⁹ (Specific Duties) (Scotland) Regulations 2012.

Following the HIIA process also promotes a human rights based approach to decision-making which further strengthens the contribution of any new service development to maximising population health and wellbeing.¹⁰

HIIA is ideally conducted when plans are sufficiently well developed to allow an understanding of the likely impact of proposals, but early enough to allow changes to be made to reduce adverse impacts or increase the potential to reduce health inequalities.

Health Scotland can provide an introduction of the HIIA process, advice on how to effectively undertake it and a suite of guidance and support materials for use by planners and stakeholders.

The developing Community Hub pilot models

The Interim Report of the Sustainability and Seven Day Services Taskforce¹¹ set out proposals to “explore new models of care such a community hubs and the greater use of community hospitals with a view to developing pilots.” It was recognised that for many patients admitted to hospital a community package of assessment, treatment and support would have better met their needs. Building on the work that Boards are already taking forward it was agreed that the pilots would explore a model for community based care, using existing community hospital facilities. As part of this the potential for the model to result in the transfer of activity between acute hospitals and the community could be explored. The pilot proposal also aimed to develop the skills of GPs, nurses and Allied Health Professionals (AHPs) to work to the top of their licence at the interface of primary and secondary care and support the shift in the balance of care to the community. This would enable the pilots to act as a test ground for the contribution that this type of workforce development makes towards the sustainability of services.

Two pilot sites were selected for testing the Community Hub model, NHS Fife and NHS Forth Valley. Scottish Government outlined some requirements for the pilot sites (e.g. geographical location, services available in the area) but the nature of the services provided by a Community Hub was to be developed according to the needs of the local pilot sites.

Although significant progress has been made in developing the models of service delivery in NHS Fife and Forth Valley, both sites acknowledge that the models are still developing and may require changes as the pilots move beyond year 1 (training for GP Fellows and service design) into years 2 and 3 when the Community Hubs will be running. The pilots provide an important opportunity to test out the theory and process underpinning the Community Hub pilots and enable a period where evidence can be gathered to test out the models of care to see if they are feasible alternatives or additions to current practice. It will be important to capture learning for the future through evaluation in the variations and experiences of service design and implementation across the two pilot sites. Any evaluation should also include analysis of contextual factors within each pilot area that could influence the implementation of the pilot and its potential success.

Although the pilot areas continue to develop their models of delivery, brief outlines of the main elements are provided in Box 1 and 2.

Box 1: NHS Fife

The pilot will run in the Dunfermline and West Fife area for frail elderly patients and those with complex multi-morbidities who will benefit from the GP Fellows and their close relationship with multi-disciplinary teams working both at Queen Margaret Hospital (QMH) and in primary care.

The main features of the hub include:

- GP Fellows will be based at a GP Practice which will be part of a local cluster of practices.
- GP Community Hub Fellows using QMH, Dunfermline as the base for the hub. It will be modelled initially as a rapid assessment, investigation and diagnostic service to provide Comprehensive Geriatric Assessment.
- It will be entirely integrated within ICASS (Integrated Community Assessment and Support Service) which includes Whitefield Day Hospital and Hospital@Home.
- GP Fellows will have diagnostic request rights as per the Fife Consultants.
- GP Fellows will develop a close relationship with other services at QMH including elderly medicine, palliative care, psychogeriatrics, Hospital@Home and the Day Hospital.
- The community hub model in NHS Fife does not currently plan to include any inpatient beds.

Adapted from: NHS Fife GP Community Hub Fellowship Steering Group (February 2016)¹²

Box 2: NHS Forth Valley

NHS Forth Valley

The pilot will run in a defined locality in the Falkirk area for frail elderly patients and those with complex multi-morbidities. That locality will be selected to align with the GP Fellows capacity, optimise GP hosting arrangements and be integrated with the ECT and front door service. GP Fellows will:

- Manage community hub hospital beds.
- Work in sessions hosted by GP Practices.

- Work as part of the existing ‘Closer to Home’ model of care, providing the teams with medical support that does not currently exist in the model.
- Be integrated with the Enhanced Community Team and aligned with the Rapid Access Frailty Clinic.

The ‘Closer to Home’ model of care provides a portfolio of co-ordinated community health and social care services that aim to improve people’s resilience at home through linkage with the appropriate care and support. Key elements of this model are:

- ALFY – a 24/7 nurse led telephone support line for public.
- Pro-active approach to anticipatory care planning.
- Multidisciplinary Enhanced Community Team (ANP, DNs, night nursing, AHPs, MH nurse) providing 7 day urgent, co-ordinated and enhanced response at time of crisis.
- Access to Rapid Access Frailty Service.
- Access to the ReACH, community rehabilitation.
- Intermediate care step up/step down beds as part of a broader rehabilitation model.

Adapted from: Finch B (April 2016)¹³

A theory of change for the Community Hub Pilot models

In order to assess the evaluability of Community Hubs, a critical question is:

What difference is the policy likely to make, for whom, and what are the key variations we might expect to observe?

This might refer to a variation in current service delivery models or may also refer to variations in outcomes for a service (e.g. more patients remain at home, fewer days spent in hospital). To address this question a theory of change has been developed to inform this evaluability assessment. A theory of change explains how and why an intervention works and shows the plausible links between aspects of an intervention, such as its activities and outcomes. Theories of

change also take into account the context in which initiatives work. The theory of change presented below was informed by:

1. a series of discussions and workshops with partners involved in the design and delivery of the pilots. This included Scottish Government, NHS Fife, NHS Forth Valley, GP Community Hub Fellows and NHS Education Scotland.
2. two rapid reviews of existing published evidence and local evaluations of programmes in Scotland. A summary of the key messages is presented below and further detail can be found in Appendices 1 - 3.

What does the evidence say?

As part of its approach to this evaluability assessment, Health Scotland undertook a rapid review of the evidence relating to Intermediate Care models, with additional focus on their potential to reduce unplanned hospital admissions in the elderly. Such reviews help to guide implementation and evaluation approaches by highlighting the outcomes that may realistically be expected from such initiatives, factors associated with success, and in some cases overall system costs relative to existing models of care.

In general, evidence reviews tend to balance optimism relating to the potential of such new initiatives to deliver improvement, with the reality of implementing change in complex systems. As such, they rarely provide unequivocal evidence of effectiveness, and in some cases may indicate that certain outcomes, initially anticipated by stakeholders, will not necessarily be achieved.

Intermediate care models

Improving service quality and clinical outcomes, and improving staff and patient experience are an important aspect of the 2020 vision. There is evidence that intermediate care can contribute to such outcomes by reducing length of hospital stay and numbers of delayed discharges, improving patient satisfaction and delivering more care closer to home.

Evaluation of intermediate care models to date suggests that while lengths of stay can be reduced by certain types of intermediate care intervention, rates of unplanned admission and overall costs of service provision are unlikely to fall.

However, evidence for the effectiveness of intermediate care services appears largely dependent on the nature of the services provided, the context within which they are delivered, and the particular outcomes which are sought. Different models of intermediate care may therefore achieve different results.

That said, factors such as continually rising unplanned admission rates and the initially small scale of these pilots mean that it is unlikely that numbers of patients treated will be sufficient to show an effect on unplanned admission numbers in the short term.

While intermediate care includes a diverse range of services addressing many different health and social care needs, there are certain core features that are associated with better outcomes for service users. These features require collaborative decision-making with patients and their carers, and can be either enabled or constrained by organisations and practitioners.

Appendix 1 summarises factors associated with the success of intermediate care models. An informal summary of the evidence surrounding intermediate care is presented in Appendix 2. Further detail can be obtained from Dr John Anderson, Primary Care Lead, NHS Health Scotland (j.anderson@nhs.net or 0141 414 2713).

Reducing unplanned admissions

In terms of interventions that have been shown to reduce unplanned admissions there is evidence for the effectiveness of patient education and self-management; end of life care; exercise and rehabilitation; specialist clinics for certain patient populations, mainly respiratory and cardiovascular; and nutritional supplementation in elderly patients post discharge. Discharge planning and step down transitional care models have been shown to reduce rates of readmission post hospitalisation.

However, case management; hospital at home; integrated teams; medication review; vaccine programmes and virtual wards do not appear to reduce avoidable admissions.

There is mixed or insufficient evidence on the effectiveness of clinical pathways and guidelines; community interventions; continuity of care; emergency department interventions; telemedicine and therapy based rehabilitation.

There is still uncertainty around which admissions can be accurately identified as 'avoidable' and tools to identify patients at risk of avoidable admission and readmission (e.g. SPARRA) may have limited effectiveness.

Some of the findings may be disappointing but it is important to remember that several of the interventions may have demonstrable impact in other areas; for example case management may reduce length of hospital stay, and lead to higher levels of patient and professional satisfaction. In addition, few research studies include evaluation of system wide approaches, or combinations of approaches, hence the impact of multiple interventions is rarely reported in the research literature. This highlights the importance of robust evaluation of interventions as they are introduced into health and social care systems.

A summary of the evidence surrounding mechanisms to reduce unplanned admissions, particularly in the elderly, is presented in Appendix 3.

The Community Hub Theory of Change

An initial theory of change was further developed and amended following further discussions with partners. The amended theory of change is shown in two logic models:

- Model 1: High level model setting out the medium and long-term outcomes for the pilots
- Model 2: local level model setting out the intended short-term outcomes for the pilots and, the actions being delivered in each of the pilot areas.

Figure 1: Theory of Change for Community Hub Pilots in Scotland – High level model

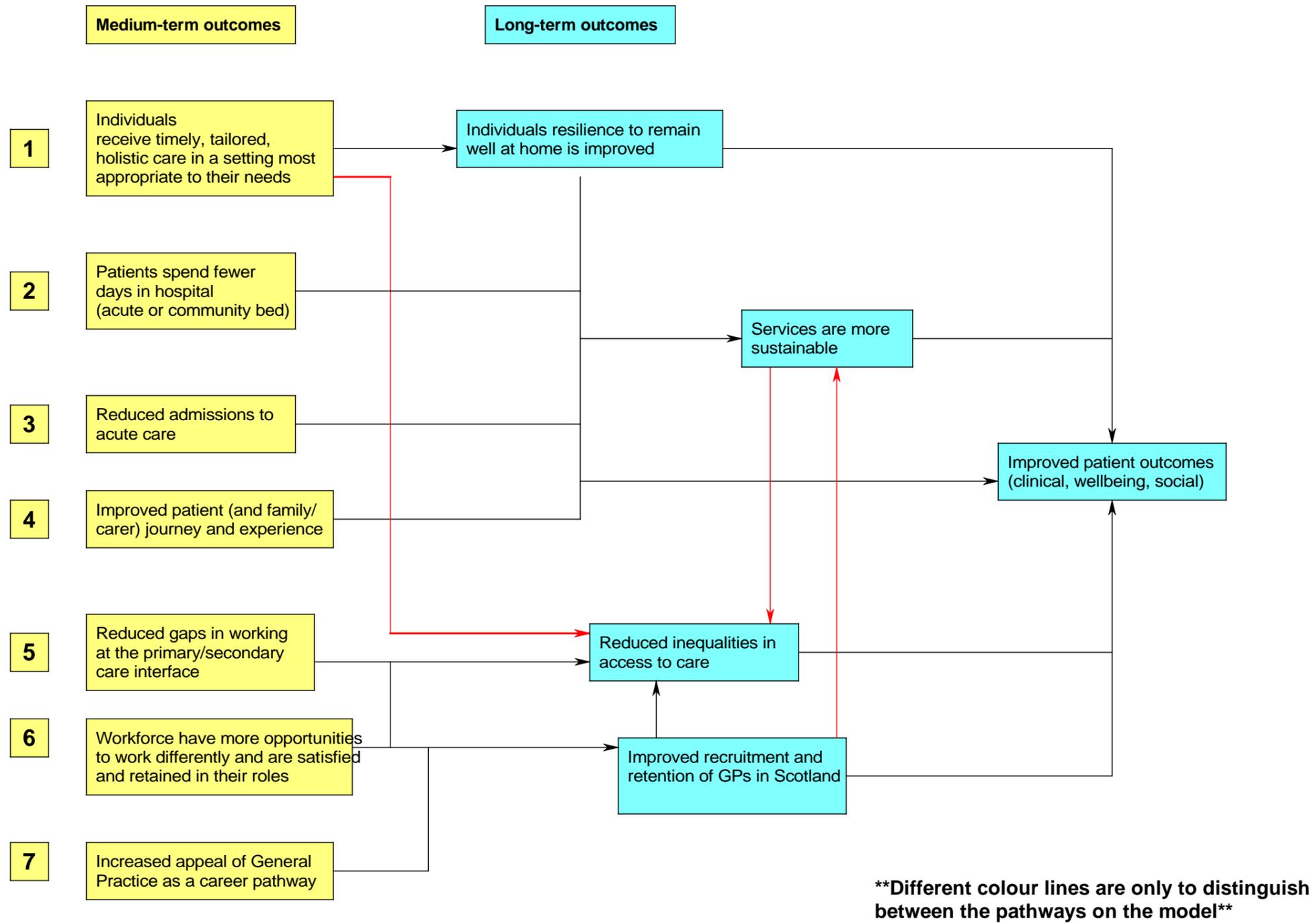
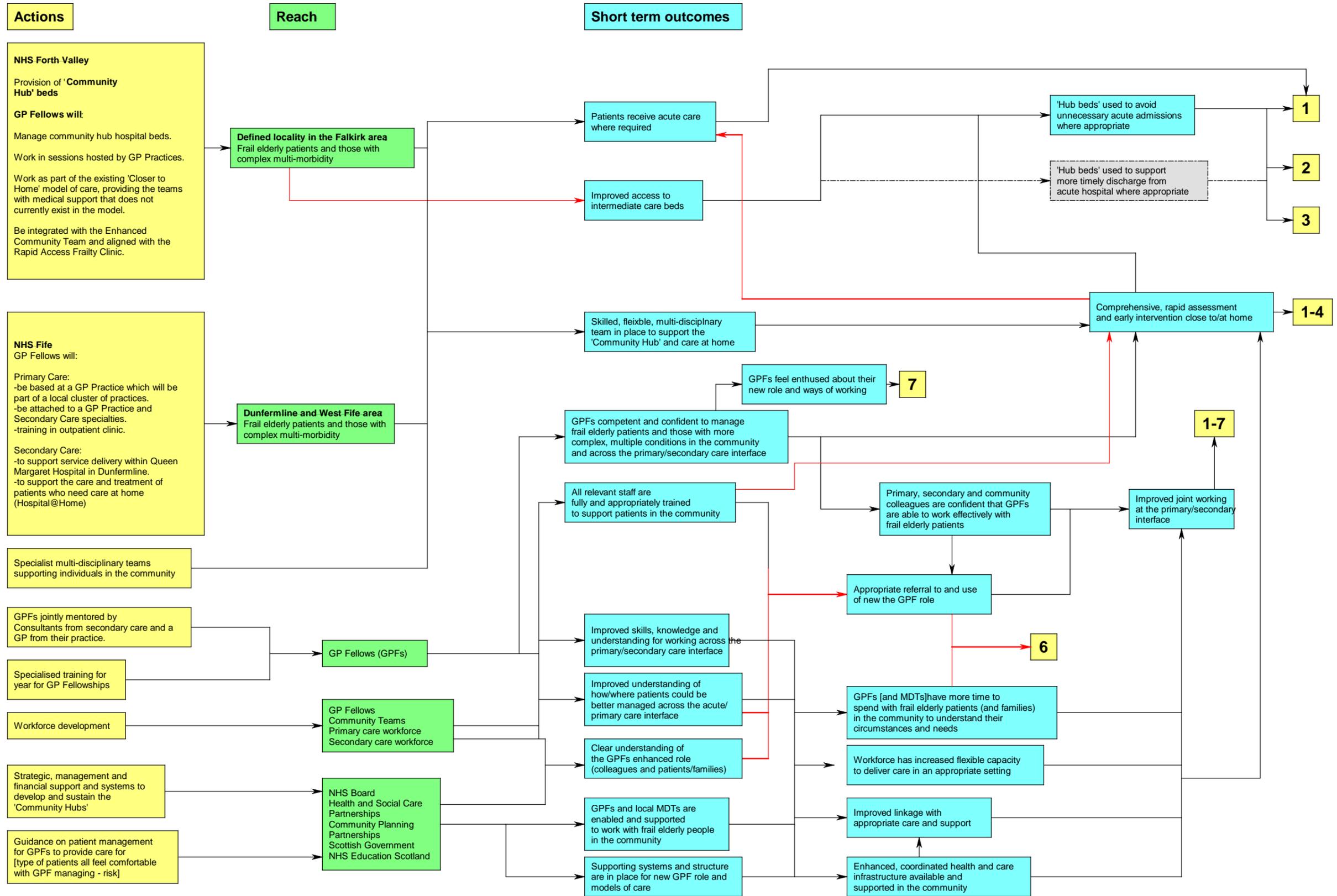


Figure 2: Local level model – Theory of Change for community Hub Pilots



****Different colour lines are used only to distinguish between the pathways on the model****

Supporting National Outcomes

Although not shown directly on the high level model, the work from the Community Hub pilots and the long-term outcomes they intend to impact will ultimately make a contribution to a number of the National Outcomes set out in Scotland's National Performance Framework:

- We have tackled the significant inequalities in Scottish society
- We live longer, healthier lives
- Our people are able to maintain their independence as they get older
- Our public services are high quality, continually improving, efficient and responsive

External factors

It will be important that any planned evaluation considers the wider context within which the Community Hub Pilots are operating and to consider any factors external that may impact on the success of the pilots.

Scotland has an ageing population and while this is a positive fact it has also led to an increase in older people living with complex and multiple health needs. These individuals require sufficient support and care to manage additional needs these conditions placing additional pressures on secondary care services and on GP Practices that are already under significant pressure due to the falling numbers of GPs in Scotland. These factors have led to an increased focus on looking for new models of care to manage these individuals. Admission rates of older patients to secondary care in Scotland have also risen over the past decade. This is vital to consider in any evaluation. For instance, if reducing unplanned admissions is a key outcomes of interest there must be realistic expectations of the degree to which this may be detected in a small pilot project and within this wider context of increased unplanned admissions of older patients.

The Community Hub pilots have been developed to explore different models of delivery to help ease the burden of care in different parts of the health system by

shifting care in to the community in a way that is more sustainable and in a setting most appropriate to the needs of individuals. However, it will be challenging to attribute any potential success to these pilots alone due to the extent and nature of other developments currently ongoing within health and social care in Scotland. There is a wide reaching public service reform agenda and significant focus on transformations in primary care. There will also be a need for flexibility across system in how services are developed to respond to local need. These pilots present an opportunity to capture learning across two areas and enable some insight in to how services are required to develop differently within varying local contexts.

It is important that findings from any evaluation of the Community Hub pilots is interpreted within this context of changes in the wider system of care.

Underlying assumptions in the theory of change

It is important to note that there are a number of assumptions in the theory of change that would be required for it to be feasible and should be tested during any evaluation that is conducted. A series of assumptions are set out in Appendix 4a.

Unintended consequences

In addition to the above outcomes which the Pilot sites hope to see by implementing the new models of care, there may also be some unintended consequences that arise due to implementation challenges and existing pressures within the system. Potential unintended consequences of the pilot are included in appendix 4b.

Evaluating the Community Hub Pilots

The Community Hub pilots present an important opportunity to evaluate the design and implementation of the new models of care as well as the potential impacts on service and patient level outcomes (see models 1 and 2). A key challenge in any evaluation will be to disentangle the impact of each part of this complex system of care, existing and new services and, in particular, the role of the GP Fellows within

that. The proposed evaluation options will enable this to happen by assessing the impact of different staff groups, different service aspects and by following patient journeys. However it is important that the limitations of these proposed methods are acknowledged and that important caveats around attributing impact of any one element of the pilots are noted when interpreting evaluation findings.

The process of developing the theory of change for the Community Hub pilots has identified a set of key themes and questions for evaluation.

Process evaluation

A process evaluation would include primarily qualitative research (e.g. stakeholder views on implementation of the scheme) with some elements of quantitative data collection (e.g. tracking of referral data).

The GP Fellow role and multi-disciplinary teams

- Does the GP Fellow role add value to the existing system of care? If so, what specific aspects of the role do this (e.g. additional training, time available to spend with patients)?
- Does the GP Fellow role result in a shift in practice from existing General Practice?
- Is there evidence for a shift in referral behaviours during the pilot period (e.g. advice from specialists rather than referral to them; reduction in patients being referred to multiple sites; how patients are identified in primary care for referral to GP Fellows)?
- Does the GP Fellow role result in a shift in care away from the acute sector?
- Has the opportunity do the GP Fellowship resulted in greater job satisfaction and retention?
- How does the new GP Fellow role work within the context of existing multi-disciplinary teams, impact on team dynamics and shaping the team, and have any impact on existing roles within teams?

The Patient Journey

- Do the community hub pilot models have any influence on patient journeys?
 - Minimal disruption for patients
 - Continuity of care
 - Experiences of care for patients and families/carers
 - Resilience to remain at home
 - Potential influence on continuity of care across primary/secondary interface
 - Health, wellbeing and social outcomes

The wider workforce

- Is there a clear understanding of the new GP Fellow role (among GP Fellows, Colleagues, patients and families)?
- What is the influence of new roles and models of care on staff satisfaction?
Do staff find new opportunities engaging and offering flexibility in their roles?
- Are there changes in models of care within existing services/teams?
- Does the Community Hub model and GP Fellow role have any impact on skills and knowledge, relationships, and understanding and ways of working across the interface between primary and secondary care?
- Does the addition of a GP Fellow have any impact on the care provided by existing community multi-disciplinary teams? If so, what is it about the GP Fellow role that adds value?

Supporting structures and Systems

- Are the appropriate supporting resources, systems and structures in place or able to be adapted for the new GP Fellow role and Community hub models of care?

Impact evaluation

- Does the role of the GP Fellow impact on the patient journey?
 - unplanned admissions to acute care
 - unplanned admissions to community beds
 - length of stay in acute and community beds
 - maintaining packages of social care
- Has the pilot resulted in any shifts in use or development of intermediate care beds?

A variety of data could provide evidence on the priority outcomes identified in the theory of change. These possible sources are outlined in Appendix 5.

Options for Monitoring and Evaluation

A series of potential options for evaluation are provided below along with the benefits (+) and challenges (-) of each option. The main challenge of any evaluation will be to understand the contribution that the Community Hubs and GP Fellow role are making any changes that are found within an existing complex system of care.

Option 1: process evaluation of the implementation and delivery of the pilots

+ This would provide a rich set of learning about the requirements for and challenges of designing and implementing a Community Hub and developing the role of GP Fellows within an existing complex system of care. In addition to capturing some quantitative data relating to the implementation of the study it would capture the views of all key stakeholders involved in the design and delivery of the pilots and enable interpretation of perceptions in how the new models of care and GP Fellow role are impacting on the delivery of care at or close to home.

+ Quantitative data could be collected to provide a valuable insight in to referral patterns, length of time spent with patients and immediate outcomes of

consultations with GP Fellows in order to gain a deeper understanding of how consultations and referral patterns might shift during the pilot period. The GP fellows would need data recording devices to capture the additional key information needed for analysis (such as who transferred the patient to them, whether referral was appropriate, and immediate outcomes, their input to the closer to home team and outcome).

+ Quantitative data would also be needed on Hub bed use. This would come from a mixture of national data collection (ISD) and GP Fellows recording systems.

- In order to collect all the necessary data it would be important to have a staff resource available locally to negotiate access to data and collect this for further analysis. This would have a resource implication. However, this resource could also provide further input to other aspects of evaluation (see other options and recommendations).

- Qualitative data from semi-structured interviews with key stakeholders would need to be collected and analysed. This is likely to require external commissioning which would have research cost implications.

Option 2: case control study to explore the impact of the GP Fellow role in different geographical areas, with additional capacity provided to pilots from appropriate sources

+ By comparing the pilot area with a matched comparator area from within the same geographical location, with access to the same models of care (acute and community) but with no GP Fellow, this option would enable further analysis of the impact of the GP Fellow role on patient journeys in relation to preventing unplanned admissions, intermediate care and ability to remain at home. The control areas would need to agree to some extra data collection (to identify patients who they would have referred to the Fellow if one had been available – possibly on the GP referral letter), and then pathways and outcomes for those individuals can be compared to those in the areas served by the Fellows, using routine data.

- This has the potential to capture valuable learning and after initial setting up of recording systems monitoring could be maintained at a relatively low cost. However, this option could be limited dependent on the number of patients in the pilot area being seen by a GP Fellow. Assessment of whether to conduct the impact evaluation would have to take place once the pilot was underway and numbers of patients being appropriately seen by Fellows understood further from the emerging findings of the process evaluation. If numbers allow, this element of the evaluation could take place in year 2 of the pilot.
- It may be difficult to convince similar areas to be controls (GPs and closer to home teams) as it would involve some input from them with no obvious perceived benefit. This could be mitigated if there were an incentive, for example, an agreement that if the pilot is rolled out further they would be next to get access to Fellows (a similar incentive was used for Links Worker study^a).

Option 3: qualitative evaluation of patient experiences within the pilot

- + This could provide some learning about the individual experiences of people being cared for within the new Community Hub models and by the GP Fellows. It has the potential to provide rich case studies to sit alongside routine data analysis and the perceptions of stakeholders.
- This would involve additional costs of collecting qualitative data through interviews with patients, carers and families to capture experiences of the patient journey within the new models of care and perceptions of the new models.
- Ethical approval would be required, although this is likely to be a slightly later stage of any evaluation so should not be problematic.
- This would be likely to involve very low numbers of patients and would not be used to draw firm conclusions about models of care due to the individual nature of care.

^a For further information about the Links Worker study in Glasgow's Deep-End GP Practices visit <http://www.gla.ac.uk/researchinstitutes/healthwellbeing/research/socialscientistsinhealth/research/changingpublicpolicyandpublicpolicyforchange/lwpevaluation/>

There could also be challenges in including patients that are frail and elderly due to their potential vulnerability and issues with recall for patients involved.

Option 4: economic evaluation

Although the cost-effectiveness and cost-benefits of an intervention are important areas to consider this was not raised as a priority area for evaluation as cost was not a primary driver of the Community Hub pilots. In the initial stages of the pilot the numbers of patients being followed through the system is likely to be relatively small and too few for the purposes of economic evaluation. This would carry risks of how much weight could be placed on any results of an economic evaluation beyond initial indicative findings about of costs of care.

Recommendations

In order to understand the implementation and potential impact of the Community Hub pilots and GP Fellows role a range of evaluation options were explored. After consideration of all relevant factors the recommendations is for Option 1 (process evaluation and tracking of routine data) as a minimum. The qualitative aspects of the process evaluation to capture the views of a range of key stakeholders that have been involved in the planning and implementation of the two pilot areas should be designed to complement the existing evaluation of the GP Community Hub Fellowships training programme that has been conducted by NES.

Further analysis of the data collected for Option 1 would be dependent on the numbers of patients being seen in the Community Hub pilots and by GP Fellows themselves. If numbers are too low due to the small size of the pilot studies and low numbers of GP Fellow employed it would not be recommended to do any further analysis of e.g. unplanned admissions rates as it is unlikely to detect any significant shift and has a risk of unfairly judging the impact of these pilots.

If numbers of patients being seen during the first few months of the pilots are sufficient then Option 2 (case control study) would also be recommended in order to assess any impacts on patients moving through the system to help understand how their care is different when they are seen by a GP Fellow and whether it is possible to understand what aspects of the Community Hubs and GP Fellow role is adding value and making positive changes for patients. If local resource was in place to set up systems for the collection of data for the process evaluation they would also be able to set up systems for the additional data collection as long as control practices could be recruited.

Having local analysts in place to support evaluation and work closely with local NHS Boards and GP Practices to facilitate the process would enable the collection of a range of relevant data. This could include working with GP Practices to facilitate access to relevant practice data, extracting data locally from GP systems or the Scottish Primary Care Information Resource (SPIRE)^b, linking this to secondary care data, ensuring necessary data items are collected by local multi-disciplinary teams (e.g. Closer to teams) and supporting extraction of that data, and working with the GP Fellows to make sure they are collecting the right information for evaluation purposes.

NHS Health Scotland (HS) could have a role in overseeing any evaluation and coordinating the integration of learning from the different aspects of evaluation. HS would work with local analysts to support them with the design and interpretation of findings and could also provide some additional support for analysis if required. If a case control evaluation was taken forward HS would also work with local analysts to get this study up and running, recruiting practices and extracting necessary data from local systems or SPIRE.

If this evaluation is completed it is important to reiterate that the findings will be limited due to the small scale of the pilots and low numbers of GP Fellows employed.

^b The SPIRE project is a collaboration between the Scottish Government and NHS National Services Scotland. Find out more at <http://www.spire.scot.nhs.uk/>

However this will still provide valuable learning about the Community hubs and GP Fellow role as a model of care for frail elderly patients. It will also be important to ensure that any findings are interpreted within the context of the range of external factors set out earlier in the paper (see page 12). It is only by understanding these pilots within the complex system it exists that we will gain a true understanding of any value they have added to current models of care and whether these are appropriate models of care to roll out further. It is recommended that to support this process of interpretation and learning from the pilot studies that a small project group is set up with input from a wider advisory group where necessary. This would support ongoing learning from the pilot areas in relation to the work as it develop and to inform the wider context of ongoing transformations in primary care.

Costs for evaluation

The evaluation will need to be mixed methods including both qualitative interviews and quantitative data collection and analysis. Given the complexity of working in primary care, the sensitivities around sharing and linking data, and likely time lag and uncertainty of accessing data through the new national primary care data collection scheme (SPIRE), we recommend that the best course of action would be to provide each pilot site with resources to support the evaluation work locally, working closely with a central evaluation team. The local support for would include:

- Gaining access to practices for qualitative interviews
- Recruiting control practices (if sufficient numbers to undertake qualitative outcomes work)
- Setting up data collection systems for fellows and hospital at home team
- Working with pilot practices on data requirements and extraction
- Analysis of the local data for monitoring and evaluation
- Analysis of local secondary care data relating to the fellows and their patients
- Working with the central team to produce the analysis needed for monitoring and evaluating the pilot

This would have the added benefit of capacity building in analysis of primary care data. There is also likely to be a small resource implication for additional analysis to be requested from ISD to support the evaluation.

It is recommended that the qualitative elements of the process evaluation be conducted by academic researchers or a commercial research organisation experienced in qualitative interviewing in the primary care setting, and independent to the design and implementation of the pilots. The study design and questions for use in semi-structured interviews with key stakeholders would be compiled jointly by the central evaluation team and the researchers.

There may also be a consideration for resources dependent on who the central evaluation team is.

Appendix 1: Factors associated with the success of intermediate care models¹⁴

Health and social care *organisations* –

- facilitate professionals to implement collaborative decision-making with service users
- are able to co-ordinate the delivery of agreed care in a timely fashion

Health and social care *professionals* –

- have detailed knowledge of the characteristics of local intermediate care provision and are able to combine this knowledge with the needs and preferences of service users
- establish the meaning which different care environments have for service users and explore the implications these may have for decisions about the place of care that best allows functional, psychological, and social continuity to be attained
- engage with service users in planning longer-term goals that extend beyond the timeframe of intermediate care
- acknowledge and engage with service users' primary social and care networks
- develop a trusting relationship with service users in order to support continuity in their lives

Service users –

- have confidence in the standard of intermediate care services they will receive
- believe that their input will be listened to and acted upon
- are recovering from a discrete acute medical event such as stroke, rather than the complex acute-on-chronic co-morbidities of old age.

Adapted from Pearson et al ¹⁴

Appendix 2: The effectiveness of intermediate care models

Intermediate care is difficult to define, and models overlap to varying degree. To avoid duplication of evidence, this section does not replicate the findings of: '*Preventing Avoidable Hospital Admissions*'*, which should be read in conjunction with this paper (available from Dr John Anderson, Primary Care Lead, NHS Health Scotland, j.anderson@nhs.net)

*Relevant sections include:

- 16.11 Discharge planning and transitional care, p19
- 16.23 Integrated care, p27
- 16.26 Virtual wards, p30
- 16.32 Community interventions, p33

A 2010 UK literature review concluded that no intermediate care scheme had yet been shown to be effective at reducing acute hospital use, or costs of care. Although some designs may have a small advantage in functional outcomes and patient satisfaction, they may be more expensive than traditional inpatient care. However the evaluation of cost-effectiveness may ultimately depend on whether it is assessed from the perspective of primary care, acute hospitals, or society as a whole.¹⁵

A Cochrane review in 2011 examined the effect of *hospital at home*^c following early discharge.¹⁶ Readmission rates were significantly increased for elderly patients with a mix of conditions allocated to hospital at home in RCTs, although significantly fewer people allocated to hospital at home were in residential care at follow-up. There was insufficient evidence of a difference for readmission between groups in trials recruiting patients recovering from surgery. There was little objective evidence of economic benefit or improved health outcomes, although patient satisfaction was with such services was generally higher. The review did not find evidence to support the widespread development of early discharge hospital at home services as a cheaper substitute for inpatient care within health care systems that have well developed primary care services. That said, the review did not find that such services were hazardous or that they should be discontinued. They authors suggested that hospital at home may provide a cost effective alternative to acute care if the running costs of the local hospital are relatively high (e.g. a city teaching hospital vs. a district general hospital) as hospital at home would have lower fixed costs. Differences in the way the service is delivered may also influence cost (e.g. not providing 24 hour care would make the service cheaper.) However the low volume of patients admitted to *hospital at home* limits the degree to which these types of service reduce reliance on secondary care. The closure of a ward in favour of hospital at home (with subsequent release of resources from secondary care) becomes even less realistic if, as is usual, patients are admitted to hospital at home from a variety of different wards and across a number of clinical areas.¹⁶

^c It is important to note that 'hospital at home' will be defined differently in some areas. In the pilot sites the Hospital at Home and Closer to Home services have a primary focus on preventing admissions.

A 2012 evaluations of *community-based post-acute services* from Australia demonstrated that they reduce length of stay, prevent some re-hospitalisations and defer nursing home placement. There was also evidence that they convey some additional health benefits to older people. However as such services were unlikely to be cost saving, for them to be justified additional health benefits such as quality of life improvements would need to be taken into account.¹⁷

One 2013 study from the UK reported that patients at high risk of emergency hospitalisation are particularly likely to experience fragmentation in care. This includes those patients receiving intermediate care interventions such as '*virtual wards*.' The authors recommended that to integrate successfully, virtual ward projects should safeguard the multidisciplinary nature of the intervention, ensure the active involvement of general practitioners, and establish feedback processes to monitor performance such as the number of professions represented at each team meeting.¹⁸

A 2013 Norwegian study explored an intermediate care unit's role in a *clinical pathway* for older patients with physical diseases. It found that healthcare providers in the hospital, the intermediate unit, and the community can have different opinions about who is a 'suitable' patient for the unit and what is the proper time for hospital discharge. This can result in time-consuming negotiations between the hospital and the unit. Incompatible computer systems also increase the healthcare provider's workload. However, while some staff may question the value of the unit to patients, patients are mostly pleased with the service.¹⁹

A 2014 study in Norway examined the safety and efficacy of a *step-down model* transferring patients to intermediate care shortly after hospital admission. It found that this model of rapid transfer to intermediate care did not significantly influence number of days living at home during one year follow-up, but did reduce demand for nursing home care and the need for home health. However, later analysis identified increased mortality for orthopaedic patients specifically.²⁰

A 2015 retrospective comparative cohort study from Norway compared health care utilization by elderly patients in a municipality with an *intermediate care hospital* (ICH) to that of elderly patients in a municipality without an ICH. The authors examined 9000 records of patients aged 60+ years across a 7 year period. Length of hospital stay decreased from the time the ICH was introduced and remained between 10% and 22% lower than the length of hospital stay in the comparative municipality for the next five years. However, no differences in the number of admissions or readmissions during one year follow-up after the index stay at the local general hospital or changes in primary health care utilization were observed. The authors concluded that the introduction of an ICH rapidly reduces the length of hospital stay without exposing patients to an increased health risk; but as the ICH appears to operate as an extension of the general hospital, it has only a minor impact on the pattern of primary health care utilization.²¹

Appendix 3: Summary of evidence for interventions to reduce unplanned hospital admission

A. Interventions that have been shown to reduce unplanned admissions:

Discharge Planning / Transitional Care

Overall, while the evidence appears mixed and complex, under certain circumstances discharge planning and transitional care arrangements appear capable of reducing both lengths of stay and hospital readmission rates in elderly patients with complex conditions. There is also evidence that effective discharge planning and transitional care can lead to increased satisfaction with healthcare for patients and professionals. However there is little evidence that they reduce overall costs to the health service.

Education & Self-management:

Education with self-management can reduce rates of unplanned admission in adults with asthma, and in COPD patients. There is weak evidence for the role of education in reducing unplanned admissions in heart failure patients.

End of Life Care

Dedicated nursing support to patients in the last weeks of life can reduce hospital admissions. Marie Curie patients are significantly more likely to die at home and have significantly less emergency hospital use than controls. Early introduction of such support may further reduce admissions.

Exercise & rehabilitation:

Pulmonary rehabilitation is a highly effective and safe intervention to reduce unplanned admissions in patients who have recently suffered an exacerbation of COPD. Exercise-based cardiac rehabilitation for coronary heart disease is effective in reducing unplanned admissions in shorter term studies.

Specialist clinics:

Specialist clinics which include clinic appointments and monitoring over a 12 month period may reduce unplanned admissions for heart failure patients. However there is no evidence to suggest that specialist clinics reduced unplanned admissions in asthma patients or older people more generally.

Nutritional supplementation

A 2013 systematic review and meta-analysis of the impact of oral nutritional supplements on hospital readmissions found that supplementation significantly reduced hospital readmissions, particularly in older patient groups.

B. Interventions that have not been shown to reduce unplanned admissions:

Case management:

Studies have examined the effectiveness of case management in older people, and in heart failure and COPD patients. Although there are a small number of studies showing interventions for heart failure patients involving specialist care from a cardiologist can reduce unplanned admissions, overall case management has not been shown to have any significant effect on unplanned admission rates. Case management may however improve the experience of patients and carers, promote higher levels of professional satisfaction and may result in better care outcomes, specifically those relating to quality of life, patient satisfaction and strain on carers.

Hospital at home:

This was a topic covered by a Cochrane review of hospital at home following early discharge. The review found that readmission rates were significantly *increased* for elderly patients with a mixture of conditions allocated to hospital at home services.

Integrated Teams

There is evidence that integrated disease management for COPD—including patient education, self-management, structured follow-up, and exercise—can reduce the number of patients with one or more respiratory admissions over 12 months. However excluding COPD patients, there is no evidence that integrated care reduces unplanned hospital admission rates in the frail elderly.

Medication review:

Studies covered older people, heart failure and asthma. There was no evidence of an effect on unplanned admissions in older people and on those with heart failure or asthma carried out by clinical, community or research pharmacists.

Vaccine programs:

A series of Cochrane reviews looking at the effect of influenza vaccinations on a variety of vulnerable patients were identified. Reviews of asthma patients, COPD patients, healthy older people and health workers who work with the older people, all showed no effect on unplanned admissions.

Virtual wards

Patients report that they value the improved coordination of their care offered by a virtual ward, while staff report increased work satisfaction. However both UK and USA evaluations of this model have found that it does not achieve the anticipated reductions in emergency admissions, even for Ambulatory Care Sensitive conditions.

C. Interventions for which there is mixed or insufficient evidence:

Clinical Pathways and guidelines:

Clinical (or Care) pathway and guideline systematic reviews have been conducted for many conditions. There is no convincing evidence to make any firm conclusions regarding the effect of these approaches on unplanned hospital admissions, although it is important to point out that data are limited for most conditions.

Community Interventions

A small number of studies based on home visits covered older people, mother and child health and heart disease. Overall, the evidence was too limited to make definitive conclusions. However, there was a suggestion that visiting acutely at risk populations may result in fewer unplanned admissions e.g. in heart failure patients.

Continuity of care

There is insufficient evidence (due to a lack of studies) to comment definitively on the effect of continuity of care in the role of prevention of unplanned hospital admissions.

Emergency Department Interventions

The evidence of the effect of interventions within the emergency department beyond the observational and short stay units is limited. There is some evidence of a reduction in admissions from provision of GPs within the emergency department, but no effect from the presence of specialist nurses in the older population or of specialist physicians

Telemedicine:

Telemedicine has been extensively researched in primary studies as well as extensively assessed in systematic reviews and meta-analysis. Despite this, the evidence for an effect on unplanned admissions is mixed. Some studies have shown that telemedicine may reduce unplanned admissions for heart disease, diabetes, hypertension and older people. However more recent evidence from the UK and elsewhere have shown limited impact on service utilisation and unplanned admissions in particular.

Therapy based rehabilitation

Therapy based rehabilitation targeted towards stroke patients living at home does not appear to improve unplanned admissions and the limited data on the effect of fall prevention interventions for older people at risk suggest they do not influence unplanned admissions.

Appendix 3 is taken from the informal evidence review: '*Preventing Avoidable Hospital Admissions*', by Dr John Anderson, Primary Care Lead, NHS Health Scotland, j.anderson@nhs.net or 0141 414 2713.

Appendix 4: Assumptions and unintended consequences of the Community Hub Pilot Theory of Change

a. Assumptions

The assumptions for the theory of change for the Community Hub pilots include:

- There are enough GP Fellows recruited locally to influence the outcomes for the pilot sites.
- The GP Fellow role and Community Hub model will provide added value to existing models care.
- Hub beds are available to GP Fellows (NHS Forth Valley only).
- Patients are referred to GP Fellows as appropriate.
- The GP Fellow role is clearly defined and accepted, and boundaries are placed on time for different aspects of the developing role.
- The GP Fellow role is clearly distinct from that of the Geriatrician and existing GPs in Practices.
- The GP Fellow role is clearly defined and patients and colleagues understand the specific nature of the role.
- NHS Boards provide a complete, trained and skilful multi-disciplinary team (MDT) (to be defined locally) that the GP Fellows will be able to work with.
- All processes are in place to fully support patient management (e.g. clearly defined pathways and protocols for admission to Community Hub beds, admission to acute care, facilities in place to administer IV antibiotics in community).
- The length of stay in any Community Hub bed would be less than that in an acute bed.
- GP Fellows will be supported to gain sufficient experience and competence in their GP Fellow role.
- Mentors have sufficient time to support the GP Fellows.

b. Unintended Consequences

Potential unintended consequences of the pilot might include:

- The additional capacity provided by the GP Fellowship role is diverted to support pressures on GP practices rather than work as intended in enhanced role. This risks losing the enhanced GPF role unless protected time is agreed and supported by participating Boards and Practices.
- The additional capacity provided by the GP Fellowship role is diverted to provide additional capacity for the Geriatrician role rather than providing added value through a bridging role across the primary and secondary care interface.
- There may be some increase in referrals during the training period for GP Fellowship and earlier year 2 of the pilot until GP Fellows gain more experience and have increased confidence to manage patients in the community.
- The name given to the role influences whether GP Fellows are viewed by patients as 'specialists'. For instance, patients might not feel they have not been provided with the best available care if not seen not seen by a 'specialist' (e.g. geriatrician).
- Other GPs may feel undermined by the new role if GP Fellows are viewed as providing more specialist care.
- Pressure on secondary care beds means people are moved more quickly but less pressure on community beds may lead to increases in length of stay for some patients.
- GP Fellows are diverted to support pressures to ease Delayed Discharges rather than work to prevent unnecessary admissions.

Appendix 5: Possible data sources

A variety of data could provide evidence on the priority outcomes identified in the theory of change. However, none of the data sources available are likely to provide a definitive answer to the identified research questions by themselves. The costs of gathering some of the most robust forms of data would be more expensive, and need to be weighed against the likely benefits from an evaluation.

Administrative data

Where there is reference to hub beds below this will relate only to the NHS Forth Valley pilot area where hub beds will be available (see Boxes 1 and 2 for descriptions of the pilot community hub models).

- Routine data on acute hospital admissions, A&E and outpatient attendances^d
- Routine data on admission to hub beds (and existing intermediate care beds)⁴
- Routine data on pathways within acute care⁴
- Routine data on length of stay (acute and hub beds) ⁴
- Routine data on delayed discharges⁴
- Routine data on procedures carried out in acute care and hub beds⁴
- Primary care data from SPIRE (if available in time) or if not, then from GP systems directly via the NHS Board
- Routine data on packages of social care retained/lost as result of hospital stay

Routinely available survey data (caveat: interpretation of this data is likely to be very weak due to the small size of pilots and low numbers of patients)

- Patient satisfaction survey data
- Workforce survey data

^d ISD data and also held within the two NHS Boards – agreement has been received that GP Fellows can be added to the ISD consultant list so that they can be selected as “responsible consultant” within the SMR data collection schemes. If defined beds are used the hub in Forth Valley it will also be desirable to be able to identify these beds in the routine data collection schemes so that all patients using these beds can be tracked (to ensure beds being used for defined purpose). We do not know yet if the latter will be possible.

Primary data collection

- Qualitative data to be collected during interviews with key stakeholders involved in the design and delivery of the pilots.
- Qualitative data to be collected during interviews with patients, carers and families to explore patient journeys
- Referral decisions from the closer to home teams, GPs and geriatricians
- Detailed information from GP Fellows about their patients – addition of questions to existing standard recording sheets

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