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Complex programme evaluation of a 'New Care Model' Vanguard; a shared commitment to quality improvement in an integrated health and care context

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3 **Title: Complex programme evaluation of a ‘New Care Model’ Vanguard; a shared**
4 **commitment to quality improvement in an integrated health and care context**
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- 12 • **Authors’ Contributions:** SFD drafted the communication with contributions from SH
13 and SA on the content which was based on Vanguard evaluation experience. All
14 authors contributed to the final version and approve the submission.
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 - 18 • **Keywords;** Healthcare, Evaluation, Integrated care.
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23 **Abstract:** NHS Vanguards, under-pressure to perform, required better contracting and data
24 management arrangements with evaluation teams, to ensure that integrated service
25 outcomes could be reported effectively. This communication reflects the experience of
26 evaluating an NHS Vanguard and suggests how academic teams can improve capacity for
27 complex programme evaluation of rapid improvements in integrated services. This should
28 be based on a shared commitment to data collection and management and robust
29 knowledge exchange processes to report systems change and sustainability. The
30 identifying features of the particular site have been withheld.
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40 **Strengths and limitations**

- 41 • The identification methodological challenges in complex programme evaluation
- 42 • Learning presented from a single Vanguard site
- 43 • Recommendations for improved outcomes and capacity for systems-level evaluation
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49 **Background**

50 In 2014/15 NHS England created funding for 50 New Care Model “Vanguard” visions of best
51 practice in the NHS [1] built on the premise that a number of areas in England would
52 spearhead the NHS Five Year Forward View [2] and build local quality improvement
53 leadership capacity. While the funding for the three year projects was from central
54 government, the inspiration for the planning and implementation of each project was based
55 on local priorities with stakeholders from the health economy contributing to the plan, led
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3 by local decision makers and practitioners [3]. An important objective of the programme
4 was to design new care models that could be replicated quickly across the NHS and the aim
5 of evaluation was to generate an iterative programme theory to explain the Vanguard
6 improvement activity; to systematically report system change methods and cost savings.
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8 In most cases the evaluation methods included complex, theory-led process evaluations
9 (4,5,6) based around the commissioning processes and the multidisciplinary teams.
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11 Methods also included some health economic evaluation to assess cost of delivery and the
12 value of the service, measured against previous service provision. Local implementation [7]
13 was based on the idea that health communities would know and understand the
14 opportunities for health improvement and prevention [8] and make a radical step change in
15 systems re-design [9].
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25 **Vanguard Evaluation**

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27 Evaluation processes were variously negotiated by each Vanguard site in line with NHS
28 England guidance on the evaluation design; with the ultimate goal of comparing results and
29 finding across all sites [10]. Programme teams contracted with evaluation teams to enable
30 the generation of quasi-scientific correlations and testing of generative causal assumptions;
31 to establish effectiveness of intervention in a 'real-world' context. Some £60 million was
32 allocated to the evaluations of the 50 Vanguards reporting in March 2018, by which time
33 NHS England expected individual Vanguards to be sustainable without further national
34 funding for transformation [11]. They were asked to resist the pressure to provide positive
35 signs of impact, at the expense of learning [12] but the urgency of the demand for results
36 grew as the programme progressed.
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48 Complex programme evaluation included economic evaluation but also sought to identify a
49 range of active ingredients and disruptive 'innovations'. Local imperatives were identified
50 across the health and care economy and Vanguard teams came under pressure to report
51 measurable improvements through generating organisational case study of the changes in
52 practice [13]. The design of the evaluation was agreed with the Vanguard programme team
53 to access a range of data; planning to achieve an understanding of complex processes and
54 the effects of changes within a primary care system (PACS).
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Relationships between evaluation and delivery teams

The evaluation was registered as a service evaluation with the research office of the Healthcare Trust and approved by the University Ethics Committee.

An utilisation-focused approach [14] to the evaluation aimed to strengthen relationships with regular communication; creating posts across organisations and fostering a culture of openness and transparency. Several qualitative data sets were collected and collated between October 2016 and November 2017 capturing the views and values of those involved in planning and delivery of the integrated community service model. The aim was to develop, test and refine a programme theory that supported implementation [15] allowing managers to identify who the primary end users of the evaluation findings might be; what evidence they require and how this could be formed into a sustained value proposition across the system.

The Programme team planned three separate service initiatives as 'rapid improvement cycles' over 18 months (the evaluation team was not involved in the first stage). The complexity of the change was compounded by separate organisational governance arrangements; a lack of clarity and accountability in decision-making processes; different tiers of management and some detachment at Board levels [16]; gatekeeping of service-delivery teams and short term contracts for practitioners making actual detailed changes to operations. The management team was constantly being reviewed by the Vanguard Board and also experiencing reduced and delayed funding from NHS England; making it difficult to manage local finances. Capacity to use the evaluation was limited and despite the evaluation team possessing a wealth of experience and knowledge regarding integrated intermediate care teams and effective multi-disciplinary and inter-organisational working, (see leadership in integrated teams [17]) the Vanguard programme team preferred to develop plans iteratively through learning-by-doing in service.

The requirement to implement a local evaluation as a condition of funding for service improvement can create a situation in which the intrinsic value of evaluation to the service innovation is not always clear for the delivery team. Recent innovations in evaluation

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3 methodologies and approaches (such as developmental or Principles-focused evaluation
4 [14, 18], which focus on the usefulness of evaluation evidence and the development of
5 effective, trusting relationships are generally not well understood; it can take time for
6 service providers to shift towards collaborative working and finding equilibrium on the
7 trust/control nexus (at individual and organisational levels [19, 20]). Similar findings, have
8 emerged from other NHSE national innovation programmes; demonstrating the time
9 required to develop effective working relationships in complex evaluation situations,(see
10 NHSE Healthcare Technologies Testbed Programme [22]).

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20 As a consequence, the relationship between delivery team and evaluation team did not
21 develop. Whilst every attempt was made to access staff, patients and all available data, as
22 is usually the case with 'real-world' evaluation, the data collection and sharing was always
23 retrospective to the decision-making processes and secondary to programme management
24 priorities. Rapid improvement cycles were planned without use of the interim evaluation
25 report data and without sufficient notice to coordinate evaluation findings with decision-
26 making requirements. The evaluation team employed an 'embedded' evaluator to access
27 and present data but the approach achieved limited success due to the continual request for
28 formal changes to contractual arrangements, a lack of organisational capacity to generate
29 patient outcome data and organise new working processes. Evaluation teams require
30 knowledge- exchange with Programme team to enable the prioritisation of data collection
31 and the continuous improved use of local knowledge and research evidence; to enable the
32 analysis and reporting of service outcomes.

33 34 35 36 37 38 39 40 41 42 43 44 45 **Data management and capacity**

46 Evaluation involves a commitment to the normalisation of data collection, visualisation and
47 analysis, shared between partners. There was a mismatch between the data requirements
48 for the team intervention and the system-level change which was exacerbated when the
49 programme chose to scale back the intervention to one locality in the face of reduced
50 funding. The Programme delivery team prioritised the national programme requirements to
51 demonstrate rapid, large-scale changes in process-performance indicators at a system-level
52 but this was at the expense of operational implementation difficulties and the effectiveness
53 of the integrated team intervention. Key stakeholders were unable to agree on a set of
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3 outcome metrics that best reflected population health and fitted with the programme
4 theories of change. The failure to discriminate between the different level of demands of a
5 service transformation can result in a constant 'flux' or extreme change and even the
6 premature closure of interventions that prove to be difficult to implement.
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12 Qualitative data provided an important early insight into the adoption of new processes and
13 systems at service level for example, one member of the 'Vanguard Delivery Board'
14 contributed through in-depth interviews;
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20 *"We've got a cross-organisational group that comes together. So we do share all of those*
21 *metrics. But a lot of them they're quite complicated. ...So one of the ones that was shared*
22 *with us was around... the percentage of beds where people are in them who could*
23 *potentially be somewhere else. But the definition that's used wouldn't be the definition, for*
24 *me getting that headline data is great, but once you start querying that data you realise that*
25 *your understanding of what that means isn't actually what's being collected. ... So it's that*
26 *understanding of each other's organisation, and what those metrics mean, not actually*
27 *making assumptions based on what you think things mean". (Vanguard Stakeholder).*
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36 Data collection and management needed to be strategically focused on consistent
37 interventions that are able to be evaluated effectively. In this particular case the lack of
38 capacity to identify and consistently collect population outcomes meant that Vanguard
39 metrics did not reflect the additional benefit of the integrated service to patients and that in
40 many cases the metrics that were being collected were not fit for purpose and failed to
41 show how health outcomes were being achieved.
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49 Data and technology were acknowledged as needing to play a central role in realising the
50 integrated care plan; helping clinicians use the full range of skills and target the needs of
51 specific populations as well as reducing bureaucracy and enabling systems transformation.
52 The critical challenge of building capacity to collect and collate data and the analytic
53 capability to use it in commissioning decisions was central to deliver future services. Data
54 needed to be accessible to stakeholders, paper-free at the point of care and connected to
55 other services and systems [23]. However, many Vanguards have been slow to collect and
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3 collate anything other than service level data. Population health outcomes remain elusive,
4 in spite of the original commitment to showing the impact that changes would have on
5 patients, staff and the wider population.
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11 **Economic Evaluation**

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14 A mixed method economic evaluation aligned to the national requirements started with the
15 broad remit of exploring the costs and health related impact of the new model of care,
16 compared to current practice. However, as reflected above, and in common with a number
17 of other Vanguards [24], challenges in accessing meaningful patient outcome data, a time-
18 limited period with repeated rapid redesigns, significantly hampered the analysis.
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25 The economic evaluation considered the cost of the Vanguard programme alongside a time
26 series analysis of secondary care (hospital) activity (e.g. emergency bed days, length of stay
27 and admissions). It demonstrated that there was no observed impact, negative or positive,
28 that could be directly associated with the service re-design over the time period analysed.
29 The insufficient evidence of a return on investment was the only element of the evaluation
30 that the programme team used to inform the on-going planning decisions, unfortunately
31 leading to a dis-continuation of the integrated team. The inability to offset the cost of
32 service provision and no evidence of improvement on patient health meant that the
33 Vanguard was unable to continue beyond the programme period.
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43 The economic evaluation, sought a comparator site using a synthetic comparator [25] a
44 sample area, assessing secondary care costs in an attempt to show short term benefit. The
45 intervention was defined as integrated community services and the causality of the effect of
46 the integrated team needed to be disentangled from other common causes of variation
47 such as winter flu or work-force changes. A good understanding of the systems influences
48 are critical to programme evaluations [26] but this requires considerable embedded
49 knowledge and understanding to be shared across the programme and evaluation teams.
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58 The true cost of the intervention is an important element of the economic analysis [26]. In
59 many of the Vanguard programmes, the funding of the service was made up of a
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3 combination of central funding a locally provided in-kind provision and the implications are
4 important for the evaluation. For example, the redeployment of staff to the new
5 programme is typically very challenging to quantify, even in the short term. Other factors
6 included; the incremental cost of the new service; the additional national funding and
7 critically the ability of the programme management team to understand and confirm the
8 costs. The marginal cost of funding the programme long-term, with many of the in-kind
9 services being provided alongside activities may not be sustainable on a permanent basis.
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18 These short term workforce changes i.e. through secondments and short term
19 appointments go to the heart of the sustainability of what the programme is going to
20 achieve. The National Audit Office have recently recognised that there were 'missed
21 opportunities' [11] for the required depth and scale of transformation across the system,
22 particularly in relation to the delivery that achieved economic sustainability and full value
23 for money of the programme. Service outcomes related to existing staff in short term posts
24 and variation in hospital activity was unlikely to be a good indicator of the benefits achieved
25 through integrated team practice and the long term patient health and wellbeing.
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34 While ideally any evaluation would incorporate a life-time consideration of the health of the
35 patient, and other relevant social outcomes [27] such time-intensive research was clearly
36 not possible in the Vanguard. One insight was fed back to support improvement in the
37 range of quality and cost indicators needed to show the return on investment, including but
38 not limited to patient health outcomes;
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45 *"..... I think it's quite difficult for individual organisations to let go of control. So whilst I think*
46 *at the moment we've got people working in an integrated office, so out of one office, I*
47 *wouldn't yet say we've managed to get an integrated team.we're on that journey, and*
48 *we are working towards becoming one team. But culturally and how everybody works, and*
49 *how all the different organisations work, and what that looks like is quite difficult.*
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54 *(Vanguard Stakeholder)*
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Improving capacity for complex programme evaluation

Taking the knowledge and experience into account there are four initial areas for improvement in the planning for academic evaluation to embed within policy-driven transformation programmes.

Increase access to integrated services: Evaluation teams require specific access to managers and the interdisciplinary workforce [28]. Consensus on General Practitioners' views and perceptions of the systems change are required to identify the variation in choices and priorities for integrated working [19]. Interdisciplinary working remains under-developed in primary care and evaluation both highlights good practice and shares information about the most effective local improvements, based on those designed to provide rapid access [29]. Clinical leadership is often under considerable operational pressure and yet critical to the success of the integration of professional practices [17] and so a commitment to allowing patient-facing teams to share experience and express priorities for integration is a core requirement.

Develop contractual arrangements: Evaluations designed to inform innovations in service delivery, have pre-established stages and reporting requirements. Whilst evaluations can be rapid-cycle and feedback can be informal in nature, there is a requirement to maintain a timetable of activities within a relatively stable service delivery model, to allow for setting up data collection processes and to analyse and interpret these data. The evaluation team is often able to become an additional resource through the sharing of research evidence and comparative experience from other health context. This model of evaluation practice needs to be introduced and agreed with the programme team and contracted carefully; in such a way as to make clear the purpose and value of the partnership and the purpose, particularly associated with site visits and observations [30]. Evaluation planning should include opportunities for shared learning through training and reflection; infrastructure development through engaging community and professional stakeholders and formative and summative evaluation [23].

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3 **Economic evaluation:** Evaluation teams require programme leaders to co-design the model
4 of health economics recognising not only the return on investment but the value of the
5 learning and leadership within the system. The increasing value on social justice in
6 economic terms is a significant test of the local commitment to the cost and return on
7 sustained organisational learning [31]. There is a need for programme managers to
8 understand the metrics by which population health improvements are being assessed and
9 challenge the assumption that secondary care metrics, i.e. emergency admission data, is
10 satisfactory. For example- General Practitioners who reported local benefits to their
11 engagement with particular patients or patient groups can be quantified and used to
12 indicate an outcome against the value proposition. The design of the economic evaluation
13 needs to reflect the original values associated with the shared quality improvement goal
14 which in this case had three facets; improving care, managing demand and reducing hospital
15 admissions. The attempt to identify value and attribute costs at systems level is required
16 before integrated care services can be sustainably commissioned [29].
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31 **Building capacity for evidence-based change:** Complex evaluation seeks to deliver the
32 support for decision-making for services in 'practice-based' commissioning [32] and NHS
33 England supported Vanguards to investigate their concerns about the level of unplanned
34 admissions and the range of interventions that could be effective in reducing these [33],
35 with a view to re-designing care and promoting health improvement. While routinely
36 collected metrics may be used to assess the quality and effectiveness of care provision, the
37 choice of metric needs to be a careful consideration in relation to quality and cost impact.
38 Programme teams should invite evaluation that reviews the research evidence and share
39 the findings with stakeholders, committing time and structural change to achieve the kinds
40 of education/self-management, exercise/rehabilitation and telemedicine interventions with
41 selected patient populations [34].
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52 **Conclusion**

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54 Complex programme evaluation was a requirement of each NHS Vanguard sites, designed
55 relative to the local improvements that were planned with services and across health and
56 care systems. An academic team was recruited to increase capacity, insight and report
57 findings of a local systems transformation. Improved evaluation processes may be needed
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3 to showcase the value of the investment in 'new ways of working' and to sustain system
4 outputs. Better evaluation outcomes would be achieved with a) increased access to the
5 frontline services and the process of integration b) contractual processes that enable
6 evaluation teams to share interim findings and engage with complex dilemmas across the
7 system c) clarification on a range of quality outcome metrics that would inform an economic
8 evaluation thus helping commissioning to resist the considerable pressure to view short
9 term cost savings and d) capacity building associated with the relevant research evidence to
10 support local planning. National evaluation is currently being undertaken to identify the
11 sustained changes that have taken place.
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22 *Words- 2934*

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25 **Abstract:** NHS Vanguards, under-pressure to perform, required better contracting and data
26 management arrangements with evaluation teams, to ensure that integrated service
27 outcomes could be reported effectively. This communication reflects the experience of
28 evaluating an NHS Vanguard and suggests how academic teams can improve capacity for
29 complex programme evaluation of rapid improvements in integrated services. This should
30 be based on a shared commitment to data collection and management and robust
31 knowledge exchange processes to report systems change and sustainability. The
32 identifying features of the particular site have been withheld.
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42 **Strengths and limitations**

- 43 • The identification methodological challenges in complex programme evaluation
- 44 • Learning presented from a single Vanguard site
- 45 • Recommendations for improved outcomes and capacity for systems-level evaluation
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51 **Background**

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53 The closer integration of health care and social care has been a policy goal of successive UK
54 governments for over 40 years who in common with most advanced western countries face
55 the challenge of an ageing population with a range of health and care needs. In 2014/15
56 NHS England created funding for 50 New Care Model “Vanguard” visions of best practice in
57 the NHS [1] built on the premise that a number of areas in England would spearhead the
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4 NHS Five Year Forward View [2] and build local quality improvement leadership capacity.
5 While the funding for the three year projects was from central government, the inspiration
6 for the planning and implementation of each project was based on local priorities.
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8 Stakeholders from the health economy contributed to the plans, with local decision makers
9 and practitioners, aiming to work together to achieve system-level improvements [3]. An
10 important objective of the programme was to design new care models that could be
11 replicated quickly across the NHS. Local implementation [4] was based on the idea that
12 health communities would know and understand the opportunities for health improvement
13 and prevention [5] and make a radical step change in systems re-design [6]. There are a
14 variety of reasons that progress towards integrated care has been slow, including funding
15 and accountability arrangements and separate regulatory regimes that assess the
16 performance of individual organisations but not the system as a whole [7]
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22 The Vanguard planned three separate service initiatives as 'rapid improvement cycles' over
23 18 months (the evaluation team was not involved in the first stage). The complexity of the
24 change was compounded by organisations collaborating without the benefit of shared
25 governance arrangements. There was a lack of clarity and accountability in decision-making
26 processes with different tiers of management and some detachment at Board level [8].
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28 Organisational gatekeeping of service-delivery teams and short term contracts for
29 practitioners made planning for operational delivery very problematic and local clinical
30 leadership was reduced due to a significant reduction and delayed funding from NHS
31 England.
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41 The aim of evaluation was to generate an iterative programme theory to explain the
42 Vanguard improvement activity across a health and care system; to systematically report
43 system change methods and cost savings. In most cases (nationally) the evaluation methods
44 included complex, theory-led process evaluations (, 9 10,11) based around the
45 commissioning processes and the multidisciplinary teams. Methods also included some
46 health economic evaluation to retrospectively assess the cost of delivery and the value of
47 the service, measured against previous service provision. This paper discusses the
48 retrospective learning from one evaluation process in one NHS Vanguard site.
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57 **Vanguard Evaluation**

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3 Evaluation processes were variously negotiated by each Vanguard site in line with NHS
4 England guidance on the evaluation design; with the ultimate goal of comparing results and
5 finding across all sites [12]. Programme teams contracted with evaluation teams to enable
6 the generation of quasi-scientific correlations and testing of generative causal assumptions;
7 to establish effectiveness of intervention in a 'real-world' context. Some £60 million was
8 allocated to the evaluations of the 50 Vanguards reporting in March 2018, by which time
9 NHS England expected individual Vanguards to be sustainable without further national
10 funding for transformation [13]. They were asked to resist the pressure to provide positive
11 signs of impact, at the expense of learning [14] but the urgency of the demand for results
12 grew as the programme progressed.
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23 Complex programme evaluation included economic evaluation but also sought to identify a
24 range of active ingredients and disruptive 'innovations'. Local imperatives were identified
25 across the health and care economy, for example, re-designing community services (nursing
26 and allied health professionals) to work closely with general practice and achieve better
27 patient outcomes. Vanguards came under pressure to report measurable improvements
28 through generating organisational case study of the changes in practice [15]. The co-design
29 of the evaluation was therefore an important element of the Vanguard to enable access to
30 systematically collected and collated data that could describe and explain the the complex
31 processes and the effects of changes within a primary care system (PACS).
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42 **Evaluation Processes**

43 The evaluation was registered as a service evaluation with the research office of the
44 Healthcare Trust and approved by the University Ethics Committee.
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49 Utilisation-focused methods [16] aim to meet the demand for the "social-constructivist"
50 approaches that reflect the needs of implementation processes in healthcare. . To evaluate
51 effectively, there is a need for a full understanding of evaluation's nature, purposes and
52 concepts [17] and to establish a working relationship and understanding of the priorities
53 and needs for data and knowledge within the health care provider group. To this end
54 several qualitative data sets were collected and collated between October 2016 and
55 November 2017 capturing the views and values of those involved in planning and delivery of
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3 the integrated community service model. The aim was to develop, test and refine a
4 programme theory that supported implementation [18] allowing managers to identify who
5 the primary end users of the evaluation findings might be; what evidence they require and
6 how this could be formed into a sustained value proposition across the system.
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14 The requirement to implement a local evaluation was a condition of funding the Vanguard.
15 The evaluation team were brought together because of their experience and willingness to
16 work with a health system and collaborate in the development of evaluation objectives for
17 the Vanguard. . Key principles of the evaluation [16, 19] included a commitment to the
18 usefulness of evaluation evidence and the development of effective, trusting relationships
19 with the key stakeholders. It can take time for service providers to shift towards
20 collaborative working and finding equilibrium on the trust/control nexus (at individual and
21 organisational levels [20, 21]). Similar findings, have emerged from other NHSE national
22 innovation programmes; demonstrating the time required to develop effective working
23 relationships in complex evaluation situations,(see NHSE Healthcare Technologies Testbed
24 Programme [22]).
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36 In this case, the relationship between Vanguard and evaluation team did not develop as
37 hoped. Whilst every attempt was made to access staff, patients and all available data, as is
38 usually the case with implementation evaluation, there was limited capacity to use the
39 findings in planning for Vanguard activity. Rapid improvement cycles were planned without
40 use of the interim evaluation report data and without sufficient notice to coordinate
41 evaluation findings with decision-making requirements. The evaluation team employed an
42 'embedded' evaluator to access and present data but the approach achieved limited success
43 due to the continual request for formal changes to contractual arrangements, a lack of
44 organisational capacity to generate patient outcome data and organise new working
45 processes. Evaluation teams require knowledge- exchange with the Vanguard to enable the
46 prioritisation of data collection and the continuous improved use of local knowledge and
47 research evidence; to enable the analysis and reporting of service outcomes.
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60 **Difficulties with Data**

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3 Evaluation involves a shared commitment to the normalisation of data collection,
4 visualisation and analysis, shared between partners. The Vanguard, working closely to the
5 specification of NHS England sought to meet data required by the national programme that
6 demonstrated rapid, large-scale changes in process-performance indicators at a system-
7 level, i.e reduction in attendances at Emergency Departments. This was at the expense of
8 data collection and analysis that could be used for operational planning. Key stakeholders
9 were unable to agree on a set of outcome metrics that best reflected population health and
10 fitted with the programme theories of change. The failure to discriminate between the
11 different level of data need for a service transformation can result in a constant 'flux' or
12 extreme change and contributed to the premature closure of interventions that prove to be
13 difficult to implement.
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25 Qualitative data provided an important early insight into the adoption of new processes and
26 systems at service level for example, one member of the 'Vanguard Delivery Board'
27 contributed through in-depth interviews;
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32 *"We've got a cross-organisational group that comes together. So we do share all of those*
33 *metrics. But a lot of them they're quite complicated. ...So one of the ones that was shared*
34 *with us was around... the percentage of beds where people are in them who could*
35 *potentially be somewhere else. But the definition that's used wouldn't be the definition, for*
36 *me getting that headline data is great, but once you start querying that data you realise that*
37 *your understanding of what that means isn't actually what's being collected. ... So it's that*
38 *understanding of each other's organisation, and what those metrics mean, not actually*
39 *making assumptions based on what you think things mean". (Vanguard Stakeholder).*
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49 Data collection and management needed to be strategically focused on consistent
50 interventions that are able to be evaluated effectively. In this particular case the lack of
51 capacity to identify and consistently collect population outcomes meant that Vanguard
52 metrics did not reflect the additional benefit of the integrated service to patients and that in
53 many cases the metrics that were being collected were not fit for purpose and failed to
54 show how health outcomes were being achieved.
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3 The critical challenge of building capacity to collect and collate data and use it analytically to
4 inform commissioning decisions was central to deliver future services. Data needed to be
5 accessible to stakeholders, paper-free at the point of care and connected to other services
6 and systems [23]. However, many Vanguard have been slow to collect and collate anything
7 other than service level data. Population health outcomes remain elusive, in spite of the
8 original commitment to showing the impact that changes would have on patients, staff and
9 the wider population.
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18 **Representing the Return on Investment**

19 A mixed method economic evaluation aligned to the national requirements started with the
20 broad remit of exploring the costs and health related impact of the new model of care,
21 compared to current practice. However, as reflected above, and in common with a number
22 of other Vanguards [24], challenges in accessing meaningful patient outcome data, a time-
23 limited period with repeated rapid redesigns, significantly hampered the analysis.
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30 The economic evaluation considered the cost of the Vanguard programme alongside a time
31 series analysis of secondary care (hospital) activity (e.g. emergency bed days, length of stay
32 and admissions). It demonstrated that there was no observed impact, negative or positive,
33 that could be directly associated with the service re-design over the time period analysed.
34 The insufficient evidence of a return on investment was the only element of the evaluation
35 that the programme team used to inform the on-going planning decisions, unfortunately
36 leading to a dis-continuation of the integrated team. The inability to offset the cost of
37 service provision and no evidence of improvement on patient health meant that the
38 Vanguard was unable to continue beyond the programme period.
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49 The economic evaluation, sought a comparator site using a synthetic comparator [25] a
50 sample area, assessing secondary care costs in an attempt to show short term benefit. The
51 intervention was defined as integrated community services and the causality of the effect of
52 the integrated team needed to be disentangled from other common causes of variation
53 such as winter flu or work-force changes. A good understanding of the systems influences
54 are critical to programme evaluations [26] but this requires considerable embedded
55 knowledge and understanding to be shared across the programme and evaluation teams.
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5 The true cost of the intervention is an important element of the economic analysis [26]. In
6 many of the Vanguard programmes, the funding of the service was made up of a
7 combination of central funding a locally provided in-kind provision and the implications are
8 important for the evaluation. For example, the redeployment of staff to the new
9 programme is typically very challenging to quantify, even in the short term. Other factors
10 included; the incremental cost of the new service; the additional national funding and
11 critically the ability of the programme management team to understand and confirm the
12 costs. The marginal cost of funding the programme long-term, with many of the in-kind
13 services being provided alongside activities may not be sustainable on a permanent basis.
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23 Workforce Challenges

24 Short term workforce changes i.e. through secondments and short term appointments go to
25 the heart of the sustainability of what the programme is going to achieve. The National
26 Audit Office have recently recognised that there were 'missed opportunities' [11] for the
27 required depth and scale of transformation across the system, particularly in relation to the
28 delivery that achieved economic sustainability and full value for money of the programme.
29 Service outcomes related to existing staff in short term posts and variation in hospital
30 activity was unlikely to be a good indicator of the benefits achieved through integrated team
31 practice and the long term patient health and wellbeing.
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41 While ideally any evaluation would incorporate a life-time consideration of the health of the
42 patient, and other relevant social outcomes [27] such time-intensive research was clearly
43 not possible in the Vanguard. One insight was fed back to reflect the way that individual
44 practitioners approached team practices;
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51 *"..... I think it's quite difficult for individual organisations to let go of control. So whilst I think*
52 *at the moment we've got people working in an integrated office, so out of one office, I*
53 *wouldn't yet say we've managed to get an integrated team.we're on that journey, and*
54 *we are working towards becoming one team. But culturally and how everybody works, and*
55 *how all the different organisations work, and what that looks like is quite difficult.*
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60 *(Vanguard Stakeholder)*

Improving capacity for complex programme evaluation

Taking the knowledge and experience into account, this reflection identifies four initial areas for improvement in the planning for academic evaluation that seeks to report on policy-driven transformation programmes.

Increase access to integrated services: Evaluation teams require specific access to managers and the interdisciplinary workforce [28]. Consensus on General Practitioners' views and perceptions of the systems change are required to identify the variation in choices and priorities for integrated working [20]. Interdisciplinary working remains under-developed in primary care and evaluation both highlights good practice and shares information about the most effective local improvements, based on those designed to provide rapid access [29]. Clinical leadership is often under considerable operational pressure and yet critical to the success of the integration of professional practices [30] So, a commitment to allowing patient-facing teams to share experience and express priorities for integration is a core requirement; the use of qualitative data to represent 'telling cases' where perhaps systems leadership has led to greater integration.

Develop contractual arrangements: Evaluations designed to inform innovations in service delivery, can have pre-established stages and reporting requirements. Whilst evaluations can be rapid-cycle and feedback can be informal in nature, there is a requirement to maintain a timetable of activities within a relatively stable service delivery model, to allow for setting up data collection processes and to analyse and interpret these data. The evaluation team is often able to become an additional resource through the sharing of research evidence and comparative experience from other health context. This model of evaluation practice needs to be introduced and contracted carefully, in such a way as to make clear the purpose and value of the partnership, of site visits and observations [31]. Evaluation planning should include opportunities for organisational development through engaging community and professional stakeholders and formative and summative evaluation [23].

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5 **Economic evaluation:** Evaluation teams require programme leaders to co-design the model
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7 of health economics recognising not only the return on investment but the value of the
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9 learning and leadership within the system. The increasing value on social justice in
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11 economic terms is a significant test of the local commitment to the cost and return on
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13 sustained organisational learning [32]. Shared understandings of the metrics by which
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15 population health improvements are being assessed are now critical. They serve to
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17 challenge assumptions that secondary care metrics, i.e. emergency admission data, is
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19 satisfactory. The design of the economic evaluation needs to reflect the original values
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21 associated with the shared quality improvement goal which in this case had three facets;
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23 improving care, managing demand and reducing hospital admissions. The attempt to
24
25 identify value and attribute costs at systems level is required before integrated care services
26
27 can be sustainably commissioned [29].
28

29 **Building capacity for evidence-based change:** Complex evaluation seeks to deliver the
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31 support for decision-making for services in 'practice-based' commissioning [33] and NHS
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33 England supported Vanguard sites to investigate their concerns about the level of unplanned
34
35 admissions. A range of interventions could be effective in reducing these [34], with a view
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37 to re-designing care and promoting health improvement. Routinely collected metrics may
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39 be used to assess the quality and effectiveness of care provision and the choice of metric
40
41 needs to be a careful consideration in relation to quality and cost impact. Vanguard
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43 evaluation enables an evidence-based approach to improvement but just as health
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45 professionals need a full understanding of the conditions they have to treat, academics
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47 undertaking evaluation need as full an understanding of the process as possible [35]. The
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49 engagement with the particular health system and a commitment to share the findings with
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51 stakeholders requires time and capacity to achieve the best outcomes for selected patient
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53 populations [36].
54

55 **Conclusion**

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57 Complex programme evaluation was a requirement of each NHS Vanguard sites, designed
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59 relative to the local improvements that were planned with services and across health and
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care systems. An academic team was recruited to increase capacity, insight and report

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3 findings of a local systems transformation. Improved evaluation processes may be needed
4 to showcase the value of the investment in 'new ways of working' and to sustain system
5 outputs. Better evaluation outcomes would be achieved with a) increased access to the
6 frontline services and the process of integration b) contractual processes that enable
7 evaluation teams to share interim findings and engage with complex dilemmas across the
8 system c) clarification on a range of quality outcome metrics that would inform an economic
9 evaluation thus helping commissioning to resist the considerable pressure to view short
10 term cost savings and d) capacity building associated with the relevant research evidence to
11 support local planning. National evaluation is currently being undertaken to identify the
12 sustained changes that have taken place.
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23 *Words- 2934*

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28
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Complex programme evaluation of a 'New Care Model' Vanguard; a shared commitment to quality improvement in an integrated health and care context

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3 **Title: Complex programme evaluation of a ‘New Care Model’ Vanguard; a shared**
4 **commitment to quality improvement in an integrated health and care context**
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- 12 • **Authors’ Contributions:** SFD drafted the communication with contributions from SH
 - 13 and SA on the content which was based on Vanguard evaluation experience. All
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23
24 **Abstract:** NHS Vanguards, under-pressure to perform, required better contracting and data
25 management arrangements with evaluation teams, to ensure that integrated service
26 outcomes could be reported effectively. This communication reflects the experience of
27 evaluating an NHS Vanguard and suggests how academic teams can improve capacity for
28 complex programme evaluation of rapid improvements in integrated services. This should
29 be based on a shared commitment to data collection and management. Also, robust
30 knowledge exchange processes can enable systems change and sustainability. The
31 identifying features of the particular site have been withheld.
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41 **Strengths and limitations**

- 42 • The identification of methodological challenges in complex programme evaluation
- 43 • Learning presented from a single Vanguard site
- 44 • Recommendations for improved outcomes and capacity for systems-level evaluation
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48 **Background**

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50 The closer integration of health care and social care has been a policy goal of successive UK
51 governments for over 40 years, who in common with most advanced western countries face
52 the challenge of an ageing population with a range of health and care needs. In 2014/15
53 NHS England created funding for 50 New Care Model “Vanguard” visions of best practice in
54 the NHS [1]. The sites were selected on the premise that a number of areas in England
55 would spearhead the NHS Five Year Forward View [2] and build local quality improvement
56 leadership capacity. While the funding for the three year projects was from central
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4 government, the inspiration for the planning and implementation of each project was based
5 on local priorities. Stakeholders from the health economy contributed to the plans, with
6 local decision makers and practitioners, aiming to work together to achieve system-level
7 improvements [3]. An important objective of the programme was to design new care
8 models that could be replicated quickly across the NHS. Local implementation [4] was based
9 on the idea that health communities would know and understand the opportunities for
10 health improvement and prevention [5] and make a radical step change in systems re-design
11 [6]. In most cases the funding and accountability arrangements and separate regulatory
12 regimes focussed on the performance of individual organisations but not the system as a
13 whole [7].

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19 The Vanguard planned three separate service initiatives as 'rapid improvement cycles' over
20 18 months (the evaluation team was not involved in the first stage). The complexity of the
21 change was compounded by organisations collaborating without the benefit of shared
22 governance arrangements. There was a lack of clarity and accountability in decision-making
23 processes with different tiers of management and some detachment at Board level [8].
24 Organisational gatekeeping of service-delivery teams and short term contracts for
25 practitioners made planning for operational delivery very problematic and local clinical
26 leadership was reduced due to a significant reduction and delayed funding from NHS
27 England. These factors contributed to slower than planned progress towards integrated
28 services operating in primary care.

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39 The aim of evaluation was to generate an iterative programme theory to explain the
40 Vanguard improvement activity across a health and care system; to systematically report
41 system change methods and cost savings. In most cases (nationally) the evaluation methods
42 included complex, theory-led process evaluations (9, 10, 11,) based around the
43 commissioning processes and the multidisciplinary teams. Methods also included some
44 health economic evaluation to retrospectively assess the cost of delivery and the value of
45 the service, measured against previous service provision. This paper discusses the
46 retrospective learning from one evaluation process in one NHS Vanguard site.

47 48 49 50 51 52 53 54 55 56 **Vanguard Evaluation**

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58 Evaluation processes were variously negotiated by each Vanguard site in line with NHS
59 England guidance on the evaluation design; with the ultimate goal of comparing results and
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3 finding across all sites [12]. Programme teams contracted with evaluation teams to enable
4 the generation of quasi-scientific correlations and testing of generative causal assumptions;
5 to establish effectiveness of intervention in a 'real-world' context. Some £60 million was
6 allocated to the evaluations of the 50 Vanguards reporting in March 2018, by which time
7 NHS England expected individual Vanguards to be sustainable without further national
8 funding for transformation [13]. They were asked to resist the pressure to provide positive
9 signs of impact, at the expense of learning [14] but the urgency of the demand for results
10 grew as the programme progressed.
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20 Complex programme evaluation included economic evaluation but also sought to identify a
21 range of active ingredients and disruptive 'innovations'. Local imperatives were identified
22 across the health and care economy, for example, re-designing community services (nursing
23 and allied health professionals) to work closely with general practice and achieve better
24 patient outcomes. Vanguards came under pressure to report measurable improvements
25 through generating organisational case study of the changes in practice [15]. The co-design
26 of the evaluation was therefore an important element of the Vanguard, to enable access to
27 systematically collected and collated data. This involved describing and explaining the
28 complex processes and the effects of changes within a primary care system (PACS).
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38 **Evaluation Processes**

39 The evaluation was registered as a service evaluation with the research office of the
40 Healthcare Trust and approved by the University Ethics Committee.
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45 Utilisation-focused methods [16] aim to meet the demand for the "social-constructivist"
46 approaches and reflected the needs of implementation processes in healthcare. To
47 evaluate effectively, there is a need for a full understanding of evaluation's nature, purposes
48 and concepts [17] and to establish a working relationship and understanding of the
49 priorities and needs for data and knowledge within the health care provider group. To this
50 end several qualitative data sets were collected and collated between October 2016 and
51 November 2017 capturing the views and values of those involved in planning and delivery of
52 the integrated community service model. The aim was to develop, test and refine a
53 programme theory that supported implementation [18] allowing managers to identify who
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3 the primary end users of the evaluation findings might be; what evidence they require and
4 how this could be formed into a sustained value proposition across the system.
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9 The requirement to implement a local evaluation was a condition of funding the Vanguard.
10 The evaluation team were brought together because of their experience and willingness to
11 work with a health system and collaborate in the development of evaluation objectives for
12 the Vanguard. . Key principles of the evaluation [16, 19] included a commitment to the
13 usefulness of evaluation evidence [16] and the development of effective, trusting
14 relationships with the key stakeholders [19]. It can take time for service providers to shift
15 towards collaborative working and finding equilibrium on the trust/control nexus (at
16 individual and organisational levels [20, 21]). Similar findings have emerged from other
17 NHSE national innovation programmes; demonstrating the time required developing
18 effective working relationships in complex evaluation situations, (seeing NHSE Healthcare
19 Technologies Testbed Programme [22]).
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31 In this case, the relationship between Vanguard and evaluation team did not develop as
32 hoped. Whilst every attempt was made to access staff, patients and all available data, as is
33 usually the case with implementation evaluation, there was limited capacity to use the
34 findings in planning for Vanguard activity. Rapid improvement cycles were planned without
35 use of the interim evaluation report data and without sufficient notice to coordinate
36 evaluation findings with decision-making requirements. The evaluation team employed an
37 'embedded' evaluator to access and present data but the approach achieved limited success
38 partly due to a lack of organisational capacity to generate patient outcome data and
39 organise new working processes. There were continual requests for formal changes to
40 contractual arrangements. Evaluation teams require knowledge- exchange with the
41 Vanguard to enable the prioritisation of data collection. The continuous improved use of
42 local knowledge and research evidence; enabling the analysis and reporting of service
43 outcomes.
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55 56 **Difficulties with Data**

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58 Evaluation involves a shared commitment to the normalisation of data collection,
59 visualisation and analysis, shared between partners. The Vanguard, working closely to the
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3 specification of NHS England sought to meet data required by the national programme that
4 demonstrated rapid, large-scale changes in process-performance indicators at a system-
5 level, i.e. reduction in attendances at Emergency Departments. This was at the expense of
6 data collection and analysis that could be used for operational planning. Key stakeholders
7 were unable to agree on a set of outcome metrics that best reflected population health and
8 fitted with the programme theories of change. The failure to discriminate between the
9 different levels of data need for a service transformation can result in a constant 'flux' or
10 extreme change. In this case it proved to make implementation too difficult and
11 contributed to the premature closure of interventions.
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21 Qualitative data provided an important early insight into the adoption of new processes and
22 systems at service level for example, one member of the 'Vanguard Delivery Board'
23 contributed through in-depth interviews;
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29 *"We've got a cross-organisational group that comes together. So we do share all of those*
30 *metrics. But a lot of them they're quite complicated. ...So one of the ones that were shared*
31 *with us was around... the percentage of beds where people are in them who could*
32 *potentially be somewhere else. But the definition that's used wouldn't be the definition, for*
33 *me getting that headline data is great, but once you start querying that data you realise that*
34 *your understanding of what that means isn't actually what's being collected. ... So it's that*
35 *understanding of each other's organisation, and what those metrics mean, not actually*
36 *making assumptions based on what you think things mean". (Vanguard Stakeholder).*
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45 Data collection and management needed to be strategically focused on consistent
46 interventions that could be evaluated effectively. In this particular case, the lack of capacity
47 in front-line teams, to identify and consistently collect population outcomes data meant
48 that Vanguard metrics did not reflect the additional benefit of the integrated service to
49 patients. In many cases the metrics that were being collected were not fit for purpose and
50 failed to show how health outcomes were being achieved.
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58 The critical challenge of building capacity to collect and collate data and use it analytically to
59 inform commissioning decisions, was central to deliver future services. Data needed to be
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3 accessible to stakeholders, paper-free at the point of care and connected to other services
4 and systems [23]. However, many Vikings have been slow to collect and collate anything
5 other than service level data. Population health outcomes remain elusive, in spite of the
6 original commitment, to showing the impact that changes would have on patients, staff and
7 the wider population.
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13 14 **Representing the Return on Investment**

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16 A mixed method economic evaluation aligned to the national requirements started with the
17 broad remit of exploring the costs and health related impact of the new model of care,
18 compared to current practice. However, in common with a number of other Vikings
19 [24], challenges in accessing meaningful patient outcome data within and a time-limited
20 period with repeated rapid redesigns significantly hampered the analysis.
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27 The economic evaluation considered the cost of the Viking programme alongside a time
28 series analysis of secondary care (hospital) activity (e.g. emergency bed days, length of stay
29 and admissions). It demonstrated that there was no observed impact, negative or positive,
30 that could be directly associated with the service re-design over the time period analysed.
31 The insufficient evidence of a return on investment was the only element of the evaluation
32 that the programme team used to inform the on-going commissioning decisions,
33 unfortunately leading to a dis-continuation of the integrated team. The inability to offset
34 the cost of service provision and no evidence of improvement on patient health meant that
35 the Viking was unable to continue beyond the programme period.
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45 The economic evaluation, sought a comparator site using a synthetic comparator [25] a
46 sample area, assessing secondary care costs in an attempt to show short term benefit. The
47 intervention was defined as integrated community services and the causality of the effect of
48 the integrated team needed to be disentangled from other common causes of variation
49 such as winter flu or work-force changes. A good understanding of the systems influences
50 are critical to programme evaluations [26] but this requires considerable embedded
51 knowledge and understanding to be shared across the programme and evaluation teams.
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3 The true cost of the intervention is an important element of the economic analysis [26]. In
4 many of the Vanguard programmes, the funding of the service was made up of a
5 combination of central funding a locally provided in-kind provision and the implications are
6 important for the evaluation. For example, the redeployment of staff to the new
7 programme is typically very challenging to quantify, even in the short term. Other factors
8 included; the incremental cost of the new service; the additional national funding and
9 critically the ability of the programme management team to understand and confirm the
10 costs. The marginal cost of funding the programme long-term, with many of the in-kind
11 services being provided alongside activities may not be sustainable on a permanent basis.
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22 Workforce Challenges

23 Short term workforce changes i.e. through secondments and short term appointments go to
24 the heart of the sustainability of what the programme is going to achieve. The National
25 Audit Office have recently recognised that there were 'missed opportunities' [13] for the
26 required depth and scale of transformation across the system, particularly in relation to the
27 delivery that achieved economic sustainability and full value for money of the programme.
28 Service outcomes related to existing staff in short term posts and variation in hospital
29 activity was unlikely to be a good indicator of the benefits achieved through integrated team
30 practice and the long term patient health and wellbeing.
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40 While ideally any evaluation would incorporate a life-time consideration of the health of the
41 patient, and other relevant social outcomes [27] such time-intensive research was clearly
42 not possible in the Vanguard. One insight was fed back to reflect the way that individual
43 practitioners approached team practices;
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49 *"..... I think it's quite difficult for individual organisations to let go of control. So whilst I think*
50 *at the moment we've got people working in an integrated office, so out of one office, I*
51 *wouldn't yet say we've managed to get an integrated team.we're on that journey, and*
52 *we are working towards becoming one team. But culturally and how everybody works, and*
53 *how all the different organisations work, and what that looks like is quite difficult.*

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58 *(Vanguard Stakeholder)*
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Improving capacity for complex programme evaluation

Taking the knowledge and experience into account, this reflection identifies four initial areas for improvement in the planning for academic evaluation. The purpose is to improve reporting on policy-driven transformation programmes.

Increase access to integrated services: Evaluation teams require specific access to managers and the interdisciplinary workforce [28]. Consensus on General Practitioners' views and perceptions of the systems change are required to identify the variation in choices and priorities for integrated working [20]. Interdisciplinary working remains underdeveloped in primary care and evaluation could highlight good practice, for example enabling the most effective local improvements, based on those designed to provide rapid access [29]. Clinical leadership is often under considerable operational pressure to demonstrate success of the integration of professional practices [30]. So, a commitment to allowing patient-facing teams to share experience and express priorities for integration is a core evaluation requirement. The use of qualitative data to represent 'telling cases' is critical to show how systems leadership has led to greater integration.

Develop contractual arrangements: Evaluations designed to inform innovations in service delivery, need pre-established stages and clear reporting requirements. Whilst evaluations can be rapid-cycle and feedback can be informal in nature, there is a requirement to maintain a timetable of activities within a relatively stable service delivery model, to allow for setting up data collection processes and to analyse and interpret these data. The evaluation team is often able to become an additional resource through the sharing of research evidence and comparative experience from other health context. This model of evaluation practice needs to be introduced and contracted carefully, in such a way as to make clear the purpose and value of the partnership, of site visits and observations [31]. Evaluation planning should include opportunities for organisational development through engaging community and professional stakeholders and formative and summative evaluation [23].

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3 **Economic evaluation:** Evaluation teams require programme leaders to co-design the model
4 of health economics recognising not only the return on investment but the value of the
5 learning and leadership within the system. The increasing value on social justice in
6 economic terms is a significant test of the local commitment to the cost and return on
7 sustained organisational learning [32]. Shared understandings of the metrics by which
8 population health improvements are being assessed are now critical. They serve to
9 challenge assumptions that secondary care metrics, i.e. emergency admission data, is
10 satisfactory. The design of the economic evaluation needs to reflect the original values
11 associated with the shared quality improvement goal which in this case had three facets;
12 improving care, managing demand and reducing hospital admissions. The attempt to
13 identify value and attribute costs at systems level is required before integrated care services
14 can be sustainably commissioned [29].
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27 **Building capacity for evidence-based change:** Complex evaluation seeks to deliver the
28 support for decision-making for services in 'practice-based' commissioning [33] and NHS
29 England supported Vanguard sites to investigate their concerns about the level of unplanned
30 admissions. A range of interventions could be effective in reducing these [34], with a view
31 to re-designing care and promoting health improvement. Routinely collected metrics may
32 be used to assess the quality and effectiveness of care provision and the choice of metric
33 needs to be a careful consideration in relation to quality and cost impact. Vanguard
34 evaluation enables an evidence-based approach to improvement but just as health
35 professionals need a full understanding of the conditions they have to treat, academics
36 undertaking evaluation need as full an understanding of the process as possible [35]. The
37 engagement with the particular health system and a commitment to share the findings with
38 stakeholders requires time and capacity to achieve the best outcomes for selected patient
39 populations [36].
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52 **Conclusion**

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54 Complex programme evaluation was a requirement of each NHS Vanguard sites, designed
55 relative to the local improvements that were planned with services and across health and
56 care systems. An academic team was recruited to increase capacity, insight and report
57 findings of a local systems transformation. Improved evaluation processes may be needed
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3 to showcase the value of the investment in 'new ways of working' and to sustain system
4 outputs. Better evaluation outcomes would be achieved with a) increased access to the
5 frontline services and the process of integration b) contractual processes that enable
6 evaluation teams to share interim findings and engage with complex dilemmas across the
7 system c) clarification on a range of quality outcome metrics that would inform an economic
8 evaluation thus helping commissioning to resist the considerable pressure to view short
9 term cost savings and d) capacity building associated with the relevant research evidence to
10 support local planning. National evaluation is currently being undertaken to identify the
11 sustained changes that have taken place.
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21 *Words- 2987 excluding abstract*
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3 **Title: Complex programme evaluation of a ‘New Care Model’ Vanguard; a shared**
4 **commitment to quality improvement in an integrated health and care context**
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- 12 • **Authors’ Contributions:** SFD drafted the communication with contributions from SH
13 and SA on the content which was based on Vanguard evaluation experience. All
14 authors contributed to the final version and approve the submission.
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23
24 **Abstract:** NHS Vanguards, under-pressure to perform, required better contracting and data
25 management arrangements with evaluation teams, to ensure that integrated service
26 outcomes could be reported effectively. This communication reflects the experience of
27 evaluating an NHS Vanguard and suggests how academic teams can improve capacity for
28 complex programme evaluation of rapid improvements in integrated services. This should
29 be based on a shared commitment to data collection and management. Also, robust
30 knowledge exchange processes can enable systems change and sustainability. The
31 identifying features of the particular site have been withheld.
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41 **Strengths and limitations**

- 42 • The identification of methodological challenges in complex programme evaluation
- 43 • Learning presented from a single Vanguard site
- 44 • Recommendations for improved outcomes and capacity for systems-level evaluation
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48 **Background**

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50 The closer integration of health care and social care has been a policy goal of successive UK
51 governments for over 40 years, who in common with most advanced western countries face
52 the challenge of an ageing population with a range of health and care needs. In 2014/15
53 NHS England created funding for 50 New Care Model “Vanguard” visions of best practice in
54 the NHS [1]. The sites were selected on the premise that a number of areas in England
55 would spearhead the NHS Five Year Forward View [2] and build local quality improvement
56 leadership capacity. While the funding for the three year projects was from central
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4 government, the inspiration for the planning and implementation of each project was based
5 on local priorities. Stakeholders from the health economy contributed to the plans, with
6 local decision makers and practitioners, aiming to work together to achieve system-level
7 improvements [3]. An important objective of the programme was to design new care
8 models that could be replicated quickly across the NHS. Local implementation [4] was based
9 on the idea that health communities would know and understand the opportunities for
10 health improvement and prevention [5] and make a radical step change in systems re-design
11 [6]. In most cases the funding and accountability arrangements and separate regulatory
12 regimes focussed on the performance of individual organisations but not the system as a
13 whole [7].

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19 The Vanguard planned three separate service initiatives as 'rapid improvement cycles' over
20 18 months (the evaluation team was not involved in the first stage). The complexity of the
21 change was compounded by organisations collaborating without the benefit of shared
22 governance arrangements. There was a lack of clarity and accountability in decision-making
23 processes with different tiers of management and some detachment at Board level [8].
24 Organisational gatekeeping of service-delivery teams and short term contracts for
25 practitioners made planning for operational delivery very problematic and local clinical
26 leadership was reduced due to a significant reduction and delayed funding from NHS
27 England. These factors contributed to slower than planned progress towards integrated
28 services operating in primary care.

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39 The aim of evaluation was to generate an iterative programme theory to explain the
40 Vanguard improvement activity across a health and care system; to systematically report
41 system change methods and cost savings. In most cases (nationally) the evaluation methods
42 included complex, theory-led process evaluations (9, 10, 11,) based around the
43 commissioning processes and the multidisciplinary teams. Methods also included some
44 health economic evaluation to retrospectively assess the cost of delivery and the value of
45 the service, measured against previous service provision. This paper discusses the
46 retrospective learning from one evaluation process in one NHS Vanguard site.

47 48 49 50 51 52 53 54 55 56 **Vanguard Evaluation**

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58 Evaluation processes were variously negotiated by each Vanguard site in line with NHS
59 England guidance on the evaluation design; with the ultimate goal of comparing results and
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3 finding across all sites [12]. Programme teams contracted with evaluation teams to enable
4 the generation of quasi-scientific correlations and testing of generative causal assumptions;
5 to establish effectiveness of intervention in a 'real-world' context. Some £60 million was
6 allocated to the evaluations of the 50 Vanguards reporting in March 2018, by which time
7 NHS England expected individual Vanguards to be sustainable without further national
8 funding for transformation [13]. They were asked to resist the pressure to provide positive
9 signs of impact, at the expense of learning [14] but the urgency of the demand for results
10 grew as the programme progressed.
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20 Complex programme evaluation included economic evaluation but also sought to identify a
21 range of active ingredients and disruptive 'innovations'. Local imperatives were identified
22 across the health and care economy, for example, re-designing community services (nursing
23 and allied health professionals) to work closely with general practice and achieve better
24 patient outcomes. Vanguards came under pressure to report measurable improvements
25 through generating organisational case study of the changes in practice [15]. The co-design
26 of the evaluation was therefore an important element of the Vanguard, to enable access to
27 systematically collected and collated data. This involved describing and explaining the
28 complex processes and the effects of changes within a primary care system (PACS).
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38 **Evaluation Processes**

39 The evaluation was registered as a service evaluation with the research office of the
40 Healthcare Trust and approved by the University Ethics Committee.
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45 Utilisation-focused methods [16] aim to meet the demand for the "social-constructivist"
46 approaches and reflected the needs of implementation processes in healthcare. To
47 evaluate effectively, there is a need for a full understanding of evaluation's nature, purposes
48 and concepts [17] and to establish a working relationship and understanding of the
49 priorities and needs for data and knowledge within the health care provider group. To this
50 end several qualitative data sets were collected and collated between October 2016 and
51 November 2017 capturing the views and values of those involved in planning and delivery of
52 the integrated community service model. The aim was to develop, test and refine a
53 programme theory that supported implementation [18] allowing managers to identify who
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3 the primary end users of the evaluation findings might be; what evidence they require and
4 how this could be formed into a sustained value proposition across the system.
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9 The requirement to implement a local evaluation was a condition of funding the Vanguard.
10 The evaluation team were brought together because of their experience and willingness to
11 work with a health system and collaborate in the development of evaluation objectives for
12 the Vanguard. . Key principles of the evaluation [16, 19] included a commitment to the
13 usefulness of evaluation evidence [16] and the development of effective, trusting
14 relationships with the key stakeholders [19]. It can take time for service providers to shift
15 towards collaborative working and finding equilibrium on the trust/control nexus (at
16 individual and organisational levels [20, 21]). Similar findings have emerged from other
17 NHSE national innovation programmes; demonstrating the time required developing
18 effective working relationships in complex evaluation situations, (seeing NHSE Healthcare
19 Technologies Testbed Programme [22]).
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31 In this case, the relationship between Vanguard and evaluation team did not develop as
32 hoped. Whilst every attempt was made to access staff, patients and all available data, as is
33 usually the case with implementation evaluation, there was limited capacity to use the
34 findings in planning for Vanguard activity. Rapid improvement cycles were planned without
35 use of the interim evaluation report data and without sufficient notice to coordinate
36 evaluation findings with decision-making requirements. The evaluation team employed an
37 'embedded' evaluator to access and present data but the approach achieved limited success
38 partly due to a lack of organisational capacity to generate patient outcome data and
39 organise new working processes. There were continual requests for formal changes to
40 contractual arrangements. Evaluation teams require knowledge- exchange with the
41 Vanguard to enable the prioritisation of data collection. The continuous improved use of
42 local knowledge and research evidence; enabling the analysis and reporting of service
43 outcomes.
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55 56 **Difficulties with Data**

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58 Evaluation involves a shared commitment to the normalisation of data collection,
59 visualisation and analysis, shared between partners. The Vanguard, working closely to the
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3 specification of NHS England sought to meet data required by the national programme that
4 demonstrated rapid, large-scale changes in process-performance indicators at a system-
5 level, i.e. reduction in attendances at Emergency Departments. This was at the expense of
6 data collection and analysis that could be used for operational planning. Key stakeholders
7 were unable to agree on a set of outcome metrics that best reflected population health and
8 fitted with the programme theories of change. The failure to discriminate between the
9 different levels of data need for a service transformation can result in a constant 'flux' or
10 extreme change. In this case it proved to make implementation too difficult and
11 contributed to the premature closure of interventions.
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21 Qualitative data provided an important early insight into the adoption of new processes and
22 systems at service level for example, one member of the 'Vanguard Delivery Board'
23 contributed through in-depth interviews;
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29 *"We've got a cross-organisational group that comes together. So we do share all of those*
30 *metrics. But a lot of them they're quite complicated. ...So one of the ones that were shared*
31 *with us was around... the percentage of beds where people are in them who could*
32 *potentially be somewhere else. But the definition that's used wouldn't be the definition, for*
33 *me getting that headline data is great, but once you start querying that data you realise that*
34 *your understanding of what that means isn't actually what's being collected. ... So it's that*
35 *understanding of each other's organisation, and what those metrics mean, not actually*
36 *making assumptions based on what you think things mean". (Vanguard Stakeholder).*
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45 Data collection and management needed to be strategically focused on consistent
46 interventions that could be evaluated effectively. In this particular case, the lack of capacity
47 in front-line teams, to identify and consistently collect population outcomes data meant
48 that Vanguard metrics did not reflect the additional benefit of the integrated service to
49 patients. In many cases the metrics that were being collected were not fit for purpose and
50 failed to show how health outcomes were being achieved.
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58 The critical challenge of building capacity to collect and collate data and use it analytically to
59 inform commissioning decisions, was central to deliver future services. Data needed to be
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3 accessible to stakeholders, paper-free at the point of care and connected to other services
4 and systems [23]. However, many Vikings have been slow to collect and collate anything
5 other than service level data. Population health outcomes remain elusive, in spite of the
6 original commitment, to showing the impact that changes would have on patients, staff and
7 the wider population.
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13 14 **Representing the Return on Investment**

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16 A mixed method economic evaluation aligned to the national requirements started with the
17 broad remit of exploring the costs and health related impact of the new model of care,
18 compared to current practice. However, in common with a number of other Vikings
19 [24], challenges in accessing meaningful patient outcome data within and a time-limited
20 period with repeated rapid redesigns significantly hampered the analysis.
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27 The economic evaluation considered the cost of the Viking programme alongside a time
28 series analysis of secondary care (hospital) activity (e.g. emergency bed days, length of stay
29 and admissions). It demonstrated that there was no observed impact, negative or positive,
30 that could be directly associated with the service re-design over the time period analysed.
31 The insufficient evidence of a return on investment was the only element of the evaluation
32 that the programme team used to inform the on-going commissioning decisions,
33 unfortunately leading to a dis-continuation of the integrated team. The inability to offset
34 the cost of service provision and no evidence of improvement on patient health meant that
35 the Viking was unable to continue beyond the programme period.
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45 The economic evaluation, sought a comparator site using a synthetic comparator [25] a
46 sample area, assessing secondary care costs in an attempt to show short term benefit. The
47 intervention was defined as integrated community services and the causality of the effect of
48 the integrated team needed to be disentangled from other common causes of variation
49 such as winter flu or work-force changes. A good understanding of the systems influences
50 are critical to programme evaluations [26] but this requires considerable embedded
51 knowledge and understanding to be shared across the programme and evaluation teams.
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3 The true cost of the intervention is an important element of the economic analysis [26]. In
4 many of the Vanguard programmes, the funding of the service was made up of a
5 combination of central funding a locally provided in-kind provision and the implications are
6 important for the evaluation. For example, the redeployment of staff to the new
7 programme is typically very challenging to quantify, even in the short term. Other factors
8 included; the incremental cost of the new service; the additional national funding and
9 critically the ability of the programme management team to understand and confirm the
10 costs. The marginal cost of funding the programme long-term, with many of the in-kind
11 services being provided alongside activities may not be sustainable on a permanent basis.
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22 Workforce Challenges

23 Short term workforce changes i.e. through secondments and short term appointments go to
24 the heart of the sustainability of what the programme is going to achieve. The National
25 Audit Office have recently recognised that there were 'missed opportunities' [13] for the
26 required depth and scale of transformation across the system, particularly in relation to the
27 delivery that achieved economic sustainability and full value for money of the programme.
28 Service outcomes related to existing staff in short term posts and variation in hospital
29 activity was unlikely to be a good indicator of the benefits achieved through integrated team
30 practice and the long term patient health and wellbeing.
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40 While ideally any evaluation would incorporate a life-time consideration of the health of the
41 patient, and other relevant social outcomes [27] such time-intensive research was clearly
42 not possible in the Vanguard. One insight was fed back to reflect the way that individual
43 practitioners approached team practices;
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49 *"..... I think it's quite difficult for individual organisations to let go of control. So whilst I think*
50 *at the moment we've got people working in an integrated office, so out of one office, I*
51 *wouldn't yet say we've managed to get an integrated team.we're on that journey, and*
52 *we are working towards becoming one team. But culturally and how everybody works, and*
53 *how all the different organisations work, and what that looks like is quite difficult.*
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58 *(Vanguard Stakeholder)*
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Improving capacity for complex programme evaluation

Taking the knowledge and experience into account, this reflection identifies four initial areas for improvement in the planning for academic evaluation. The purpose is to improve reporting on policy-driven transformation programmes.

Increase access to integrated services: Evaluation teams require specific access to managers and the interdisciplinary workforce [28]. Consensus on General Practitioners' views and perceptions of the systems change are required to identify the variation in choices and priorities for integrated working [20]. Interdisciplinary working remains under-developed in primary care and evaluation could highlight good practice, for example enabling the most effective local improvements, based on those designed to provide rapid access [29]. Clinical leadership is often under considerable operational pressure to demonstrate success of the integration of professional practices [30]. So, a commitment to allowing patient-facing teams to share experience and express priorities for integration is a core evaluation requirement. The use of qualitative data to represent 'telling cases' is critical to show how systems leadership has led to greater integration.

Develop contractual arrangements: Evaluations designed to inform innovations in service delivery, need pre-established stages and clear reporting requirements. Whilst evaluations can be rapid-cycle and feedback can be informal in nature, there is a requirement to maintain a timetable of activities within a relatively stable service delivery model, to allow for setting up data collection processes and to analyse and interpret these data. The evaluation team is often able to become an additional resource through the sharing of research evidence and comparative experience from other health context. This model of evaluation practice needs to be introduced and contracted carefully, in such a way as to make clear the purpose and value of the partnership, of site visits and observations [31]. Evaluation planning should include opportunities for organisational development through engaging community and professional stakeholders and formative and summative evaluation [23].

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3 **Economic evaluation:** Evaluation teams require programme leaders to co-design the model
4 of health economics recognising not only the return on investment but the value of the
5 learning and leadership within the system. The increasing value on social justice in
6 economic terms is a significant test of the local commitment to the cost and return on
7 sustained organisational learning [32]. Shared understandings of the metrics by which
8 population health improvements are being assessed are now critical. They serve to
9 challenge assumptions that secondary care metrics, i.e. emergency admission data, is
10 satisfactory. The design of the economic evaluation needs to reflect the original values
11 associated with the shared quality improvement goal which in this case had three facets;
12 improving care, managing demand and reducing hospital admissions. The attempt to
13 identify value and attribute costs at systems level is required before integrated care services
14 can be sustainably commissioned [29].
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27 **Building capacity for evidence-based change:** Complex evaluation seeks to deliver the
28 support for decision-making for services in 'practice-based' commissioning [33] and NHS
29 England supported Vanguards to investigate their concerns about the level of unplanned
30 admissions. A range of interventions could be effective in reducing these [34], with a view
31 to re-designing care and promoting health improvement. Routinely collected metrics may
32 be used to assess the quality and effectiveness of care provision and the choice of metric
33 needs to be a careful consideration in relation to quality and cost impact. Vanguard
34 evaluation enables an evidence-based approach to improvement but just as health
35 professionals need a full understanding of the conditions they have to treat, academics
36 undertaking evaluation need as full an understanding of the process as possible [35]. The
37 engagement with the particular health system and a commitment to share the findings with
38 stakeholders requires time and capacity to achieve the best outcomes for selected patient
39 populations [36].
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52 **Conclusion**

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54 Complex programme evaluation was a requirement of each NHS Vanguard sites, designed
55 relative to the local improvements that were planned with services and across health and
56 care systems. An academic team was recruited to increase capacity, insight and report
57 findings of a local systems transformation. Improved evaluation processes may be needed
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3 to showcase the value of the investment in 'new ways of working' and to sustain system
4 outputs. Better evaluation outcomes would be achieved with a) increased access to the
5 frontline services and the process of integration b) contractual processes that enable
6 evaluation teams to share interim findings and engage with complex dilemmas across the
7 system c) clarification on a range of quality outcome metrics that would inform an economic
8 evaluation thus helping commissioning to resist the considerable pressure to view short
9 term cost savings and d) capacity building associated with the relevant research evidence to
10 support local planning. National evaluation is currently being undertaken to identify the
11 sustained changes that have taken place.
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34 communication reflects on some of the findings from this work.
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