

# The role of leadership in times of systems disruption: a qualitative study of health and social care integration

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# BMJ Open The role of leadership in times of systems disruption: a qualitative study of health and social care integration

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## ABSTRACT

**Objectives** To understand whether and how effective integration of health and social care might occur in the context of major system disruption (the COVID-19 pandemic), with a focus on how the initiative may overcome past barriers to integration.

**Design** Rapid, descriptive case study approach with deviant case sampling to gather and analyse key informant interviews and relevant archival documents.

**Setting** The innovation ('COVID-19 Protect') took place in Norfolk and Waveney, UK, and aimed to foster integration across highly diverse organisations, capitalising on existing digital technology to proactively identify and support individuals most at risk of severe illness from COVID-19.

**Participants** Twenty-six key informants directly involved with project conceptualisation and early implementation. Participants included clinicians, executives, digital/information technology leads, and others. Final sample size was determined by theoretical saturation.

**Results** Four primary recurrent themes characterised the experiences of diverse team members in the project: (1) ways of working that supported rapid collaboration, (2) leveraging diversity and clinician input for systems change, (3) allowing for both central control and local adaptation and (4) balancing risk taking and accountability.

**Conclusions** This rapid case study underscores the role of leadership in large systems change efforts, particularly in times of major disruption. Project leadership overcame barriers to integration highlighted by prior studies, including engaging with aversion to clinical/safety risk, fostering distributed leadership and developing shared organisational practices for data sharing and service delivery. These insights offer considerations for future efforts to support strategic integration of health and social care.

## INTRODUCTION

Health and social care integration is a national priority in the UK.<sup>1 2</sup> However, initiatives to support integration (eg, sustainability and transformation partnerships,<sup>3</sup> integrated care pioneers<sup>4-6</sup> and accountable care communities)<sup>7</sup> have been highly variable, both in design and degrees of success.<sup>8</sup> In 2021, a legislative proposal mandated integrated care systems (ICSs) to include National Health Service (NHS) organisations, local

## STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ This study provides novel insights into whether and how effective integration of health and social care might occur during a period of major systems disruption, with a focus on how the initiative may overcome known barriers to integration.
- ⇒ This study extends prior empirical work by generating concrete, transferable insights into how leadership supported a major integration effort by fostering engagement across diverse organisations, mediating ambiguity in national guidance and creating space for local adaptation and balancing risk taking and accountability.
- ⇒ This is a single descriptive case study which may limit transferability, however we used extreme case sampling, which is ideal for identifying and characterising leading-edge practices or novel responses to extreme circumstances.
- ⇒ Like many rapidly evolving learning health systems models, further evaluation of impact on clinical outcomes is required.

authorities, voluntary partners and charities.<sup>2</sup> Evaluations of integrated care efforts have reported a wide range of barriers: misaligned governance, finance and commissioning arrangements across NHS and local care authority social services<sup>4 9</sup>; incompatible information technology systems and concerns about data sharing<sup>4 10</sup> and challenges working across professional boundaries.<sup>11 12</sup>

Prior research has not fully examined the role of the broader political, social and historical context in which integration efforts are launched<sup>7</sup>; or relational aspects of partnership development.<sup>11 13</sup> While leadership has been identified as essential to integrated care,<sup>12 14</sup> the literature is primarily theoretical rather than empirical in nature,<sup>15 16</sup> and no single model of leadership has emerged as relevant across diverse contexts. Experts call for more specific descriptions of how multilevel<sup>16</sup> (or distributed) leadership<sup>17</sup> manifests itself in integrated care partnerships.<sup>18</sup> Others suggest further research is needed to understand leadership approaches

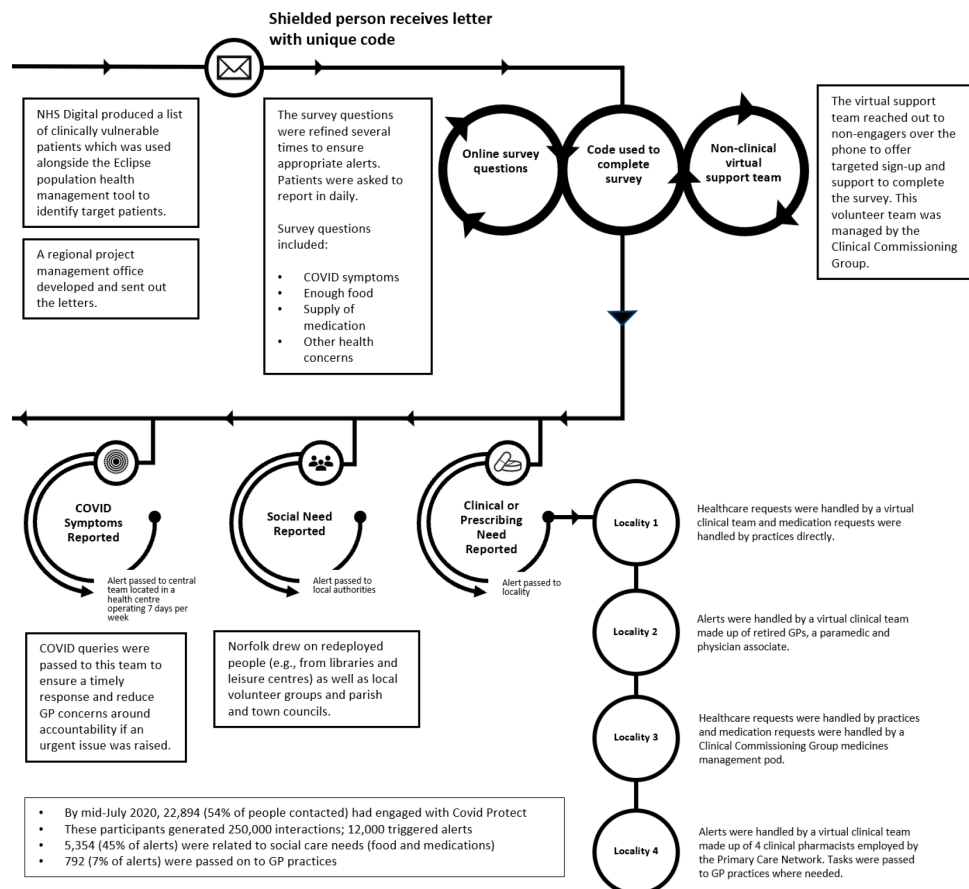
that are successful in diverse policy and organisational environments,<sup>15</sup> and the ways in which context might facilitate collaboration across organisational and professional boundaries remains a ‘black box’.<sup>19</sup>

The COVID-19 global pandemic disrupted multiple systems designed to protect public health and well-being in the UK.<sup>20</sup> The extraordinary response to COVID-19 provided a unique opportunity to observe integration efforts during a period of major disruption, which potentially created an enabling environment for innovation.<sup>21</sup> Therefore, we aimed to characterise a quickly emerging regional effort to operationalise the national vision for integrated support for highly vulnerable people. We carried out a rapid case study in order to understand whether and how effective integration of health and social care might occur in the context of major system disruption, with a focus on how the initiative may overcome past barriers to integration.

### Study context

The COVID-19 global pandemic disrupted multiple systems designed to protect and promote public health and well-being in the UK.<sup>20</sup> As COVID-19 hit the UK in February 2020, the response was urgent and far-reaching. The NHS generated a National Shielded Patient List of extremely clinically vulnerable people that local authorities were tasked with contacting to offer social care and support, working

in coordination with other relevant organisations in the area.<sup>22</sup> The level of patient-focused linkages across health and social care envisioned in the NHS response was particularly ambitious. Four control of patient information (COPI) notices were issued requiring NHS Digital, NHS England and Improvement, healthcare organisations, local authorities and general practitioners (GPs) to share patient information for disease control purposes.<sup>23 24</sup> Recognising the need for the workforce to operate flexibly and move between organisations, NHS England and NHS Improvement produced multiprofessional workforce deployment guidance,<sup>25</sup> and a COVID-19 Digital Staff Passport<sup>26</sup> was developed. In local authorities, staff were also expected to be flexible so that organisations could make the best use of their resources and prioritise critical services. Finally, block payments for NHS providers reduced the need for local negotiation and data reporting for incentive payments. Building on the National Shielded Patient List, the innovation (‘COVID-19 Protect’) aimed to foster integration across highly diverse organisations (eg, Clinical Commissioning Group (CCG), GP practices, local authorities, volunteer service organisations), capitalising on existing digital technology to proactively identify and support individuals most at risk of severe illness from COVID-19 (figure 1).<sup>27 28</sup>



**Figure 1** The schematic diagram of COVID-19 Protect model. GP, general practitioner.

## METHODS

### Study design

We used a rapid, descriptive case study approach<sup>29</sup> with extreme case sampling<sup>30</sup> to gather and analyse key informant interviews<sup>31</sup> and relevant archival documents (eg, policies training curricula, operational communications). We identified the case through an executive management programme (led by LC and EL) designed to support digital transformation in the NHS and social care, in which participants described rapid adoption of novel approaches to delivering care in response to COVID-19. Deviant cases exhibit outcomes which are substantially different to other case study candidates. We considered the case as 'extreme' based on an early review from the CCG Research Team found that being engaged in the project appeared to be associated with more favourable COVID-19 outcomes, namely reduced mortality and hospital admissions. The work met the NHS Health Research Authority definition of service evaluation. The Consolidated criteria for Reporting Qualitative research checklist was used as a guide<sup>32</sup>; the completed checklist is included in online supplemental file 1.

### Data collection

We used a purposeful sampling approach,<sup>33</sup> working with a liaison closely involved in COVID-19 Protect to identify key informants<sup>33</sup> directly involved with project conceptualisation and early implementation, including a range of diverse roles, including clinicians, executives, digital/information technology leads and others. The final sample size was determined by theoretical saturation,<sup>34</sup> which was achieved after completion of 26 interviews (total of 31 contacted, 4 non-responders, 1 refusal). Trained qualitative interviewers (LC, AA, EC, SC-C) conducted semi-structured interviews via video conferencing after obtaining informed consent that included our goals for conducting the study. Interviews were digitally recorded, professionally transcribed and reviewed to ensure accuracy. Interviews averaged 43 min in length (range 22–57 min). The semi-structured interview guide consisted of 'grand tour' questions<sup>35</sup> to elicit study participants' perspectives (online supplemental file 2). We used probes to generate 'thick, rich descriptions' of participants' experiences, as well as to elicit both positive and negative views.<sup>36 37</sup> We also gathered and systematically catalogued extensive archival documents provided by the project liaison and key informants. Documents included tools, protocols and templates (eg, standard operating procedures, clinical model overview, patient questionnaire, policies and regulations). All data were collected between October and December 2020.

### Data analysis

For the interview data, a four-person multidisciplinary team independently coded four transcripts, developing codes to classify data inductively and drafting an integrated code structure.<sup>38</sup> Analysts then broke into teams of two, each team coding half of the remaining transcripts,

resolving differences in coding by negotiated consensus. The final code structure (online supplemental table 1) was reapplied to all transcripts. We identified prominent and unifying themes across interviews using the constant comparative method of data analysis.<sup>39 40</sup> In the final stages of analysis, we focused on the code categories that were most central to our primary research question, were supported by robust data, and offered novel information. We created multiple intersection reports to examine how codes related to one another, generating four overarching themes to capture the most prominent emergent insights from the dataset. We used established techniques (eg, highly experienced multidisciplinary researchers, methods to elicit both positive and negative views, professional transcription and verification, an analytic audit trail and participant confirmation) to ensure that data collection and analysis were systematic and verifiable.<sup>41</sup> Analyses were conducted using ATLAS.ti V.8.

For the archival data, a member of the study team systematically reviewed archival documents related to six domains: (1) clinical model and patient questionnaire; (2) project governance and GP practice engagement; (3) patient information; (4) data access and ethical considerations; (5) tools, protocols and templates and (6) the external environment, such as policies and regulations. Information from each group of documents was summarised to describe key points relevant to operationalising COVID-19 Protect, providing the research team detailed background and context to inform interpretation of the interview data.

### Researcher reflexivity

Our research team was diverse with regard to disciplinary background, training and expertise. Three of us had roles in the digital leadership programme used for case identification that included a delegate who was our primary liaison to the COVID-19 Protect team. In order to mitigate potential for bias, we: (a) explicitly encouraged members to share discrepant views<sup>42</sup>; (b) actively engaged in reflexivity to explore our preconceptions throughout data collection, analysis and synthesis<sup>43</sup> and (c) considered alternative conclusions from the data.<sup>44</sup> Our motivations for conducting the research were described during the informed consent process.

We were guided by an ontology of critical realism (ie, we regard that there is a secular reality that may be largely captured through deep critical examination). Our epistemology is that it is possible to create knowledge through social constructionism (ie, using rigorous qualitative methods, we can elicit meaning from the lived experience of study participants and generate new insights from their shared experience). Our qualitative methodology is aligned with these assumptions. In terms of the brand of qualitative analysis, we used a reflexive thematic analysis approach.<sup>45</sup> That is, we sought to understand the manifestation of leadership during crisis through finding patterns in the experiences of key informants.



**Table 1** Study participant characteristics

Participants (n=26)	
Sex	
Male	10
Female	16
Role	
Clinician	8
Middle management	12
CCG leadership	3
Social care partner	3
CCG, Clinical Commissioning Group.	

We triangulated these analyses with systematic review of project documents.

### Patient and public involvement

No patients or members of the general public were directly involved in the design or implementation of this study. However, patient and community members' experiences with the COVID-19 Protect project were gathered from interviews with a wide range of key informants. Findings were presented to the full COVID-19 Protect team and disseminated through a 'Roadmap for Adoption' document describing key processes, practices and tools related to the project.

### Findings

Characteristics of study participants are reported in [table 1](#). We identified four primary recurrent themes that characterised the experiences of diverse team members in the project: (1) ways of working that supported rapid collaboration; (2) leveraging diversity and clinician input for systems change; (3) allowing for both central control and local adaptation and (4) balancing risk taking and accountability. Each of these themes and associated subthemes are summarised in [table 2](#) and described below, with illustrative quotations. Additional and expanded quotations are reported in online supplemental table 2.

#### Ways of working that supported rapid collaboration

CCG leadership provided highly visible support throughout the project, fostering a common mission "there was a shared imperative and a very clear, shared objective as to what we were doing" (ID21), and reducing barriers to facilitate progress. At multiple junctures, members of the COVID-19 Protect team "heard directly from seniority that we could get on with things...(we) could raise issues immediately and they were unblocked" (ID14). The project team also identified concrete, meaningful ways to engage middle managers and frontline workers across the system. For example, those with patient-facing experience gave substantial input into refining the patient questionnaire, call handlers and supervisors were valued in operational problem solving, and locality teams made up of clinical and operational staff were tasked with developing

**Table 2** Themes and subthemes

Theme	Subthemes
Ways of working that supported rapid collaboration	Senior leadership provided visible endorsement; implementation decisions were shaped by an empowered middle management and frontline; rapid integration of feedback promoted engagement and a culture of appreciation was manifest.
Leveraging diversity and clinician input for systems change	Diversity was leveraged through team composition and encouragement of divergent views; clinician input was meaningfully embedded from conceptualisation through implementation; clinician concerns waned (but did not entirely disappear) with peer-to-peer engagement and advocacy; working across organisations resulted in some duplication.
Allowing for both central control and local adaptation	The central project team interfaced with national guidance; local control and autonomy of GP practices were prioritised; governance challenges were accepted as intrinsic to rapid, localised collaboration.
Balancing risk taking and accountability	A sense of urgency compelled action ahead of national guidance; removal of financial and data sharing risks served as a major facilitator; accountability was cultivated through flexibility and pragmatism.
GP, general practitioner.	

standard operating procedures. In one locality, a change manager took the lead on alerts: "I was empowered to figure out how to manage alerts...and to make sure that people that lived within the boundaries of the area were fully supported" (ID3). Staff were energised by the rapid responsiveness to feedback. For instance, the software programming was viewed as 'a heroic effort' as suggestions were implemented within days:

people could see how fast their vision was being fulfilled...it gave people a belief that they could trek on and actually achieve what they set out to achieve (ID19).

Team members described a culture of appreciation, in which expressions of gratitude took many forms. Members were given role titles (eg, representatives from each locality became known as 'clinical leads'), which made them 'feel really proud' and helped support role clarity. Project leadership routinely celebrated successes: "whenever there was a good feedback...he would always bring it up and celebrate" (ID24). As the project closed, the full team received small gifts and an email from senior leadership: "You should all be very proud of what you have done, and I shall continue to support you" (ID24).

### Leveraging diversity and clinician input for systems change

The pandemic motivated an unusual degree of cooperation across sectors: *“in the past, you would have transformation on one side...and the clinicians on the other side”* (ID29) and *“we just didn’t have any usual siloed thinking”* (ID19). Alignment of roles was expedited: *“normally to get things working across systems, it would take you months or years of negotiation and working out who was going to do what...that just melted away”* (ID27).

Although the pandemic itself helped accelerate novel collaboration, project leadership ensured that this diversity was leveraged by attending to the composition of the project team: *“It’s good to have...different people from each population there representing their area because they know certain foibles”* (ID20) and encouraging expression of divergent views: *“they were able to create that psychological safety that means that everyone can contribute no matter who they are and feel in that safe space to also appropriately challenge people”* (ID22). Clinicians were deeply embedded in software design, and clinically driven decision-making was prioritised throughout the project where appropriate: *“The project...brought clinicians in right at the beginning and every decision was clinically driven and clinically justified...clinical backing was absolutely key”* (ID29).

GPs expressed concerns about data sharing and additional workload *“There was a lot of assurance that needed to be provided that...we weren’t just opening up patient records to everybody”* (ID32), and clinician-led, transparent dialogue was important to build trust:

We were on a call with everybody airing all their concerns, which meant there was lots of learning as we were going along, but in a positive way so that questions were being raised and helpfully answered by practices themselves... (ID17).

The investment in peer-to-peer clinician engagement appeared to begin to shift GP perspectives on both the project and broader population health approaches: *“I think it started to open up awareness that there were some benefits to working in this way”* (ID03). Nevertheless, some GP practices remained cautious.

A consequence of diverse organisations coming together in new ways meant there was some duplication, for instance, in closing feedback loops with local authorities: *“We would definitely want to increase the level of coordination with local authorities...we did obviously link with them [but]... They were making phone calls to the same group of people”* (ID01). Communications lagged at times, such as when some patients phoned in to their GP offices, some practices were unfamiliar with the programme, generating a degree of confusion or frustration. Nevertheless, building strong feedback loops between actors helped evidence the impact of stakeholder contributions, communicate programme achievements and minimise duplication.

### Allowing for both central control and local adaptation

The central project team ensured a coordinated interface with national guidance and made rapid, iterative

adaptations to the programme design and software. Given *“a lack of clarity from [national] government...with almost daily changes of direction...adaptability was the only way”* (ID31). At the same time, the central team recognised the importance of allowing each locality to develop their own approach based on existing clinical capacity and available resources: *“[W]e said, ‘This is how the system works...you need to decide how best that will happen locally for you’”* (ID16). In addition, the central team was mindful to respect the autonomous nature of GP practices: they are *‘masters of their own destiny’*, and *“they are their own businesses...we didn’t want to enforce a standard approach across all GP practices”* (ID07):

We very much decided early that we didn’t want to rely on a kind of centralised process that we potentially didn’t feel would protect our vulnerable patients as well as we thought we could...Everyone was part of designing the system. (ID22)

However, developing models locally and at pace posed challenges which were freely discussed within the project and accepted as intrinsic to rapid, localised collaboration. Governance of a highly flexible model was *“harder to manage...because there wasn’t a single approach...having a consistent clinical pathway would’ve made life easier”* (ID07). Even when standard policies were in place, interpretation was variable across organisations: *“there was no consistency as to which pharmacies would give out which drugs to which volunteers. There were standards, but the interpretation of those were sometimes different”*(ID13).

### Balancing risk taking and accountability

A sense of urgency compelled the team to move quickly and sometimes ahead of national guidance, putting aside risk mitigation practices that typically slow decisions: *“Our patients are at risk. It’s for us to look after our own patients, not wait for others to tell us what to do...The train is about to leave the station. We need to get on the train, and we need to direct it”* (ID14).

The removal of financial risks was regarded as key: *“what really helped is the CCG and NHS were able to protect revenue streams...which allowed people to just focus on doing what was important”* (ID32). Organisational and departmental budgets were less of a sticking point: *“we’ve all been much less precious about who’s paying for what...people have just got on and done it with much less arguing over who’s paying for it”* (ID13).

Normally we spend a long, long time going through formal business cases trying to justify how we’re going to spend something. In this case, we said...we know it needs the support, so we’re going to go at financial risk making sure that it’s appropriately staffed. We actually evaluated that element of it pretty quickly. (ID16)

Additional risks included clinical and privacy risks to patients, of particular concern to GP stakeholders, who reflected: *“We’ll be the ones who are clinically negligent if your*



*system doesn't work*" (ID17). Empowered clinical leads and operations teams brainstormed solutions, and largely (but not entirely) addressed such concerns by creating a COVID-19 surveillance team available online 7 days/week. The COPI notice permitted sharing patient information. Consequently, risk managers felt empowered to approve requests more quickly than usual:

You don't get a pat on the back in the health service for being brave. Everybody wants everything signed off and to reduce the risk of anything to about zero. Because of the COPI notice...the senior information risk officers actually understood what was coming so they signed it off really quickly... (ID19).

While risk-taking was supported, accountability was also cultivated through flexible and pragmatic approaches. Reporting processes were put in place for '*grip and control*', as well as informal feedback paths: "*We were able to gently prompt. 'You're a little bit behind on some of your reviews'. Then suddenly, magically, they would start reviewing*" (ID33). Those responsible for monitoring quality and performance were committed to building in accountability, although they were mindful not to overload staff with reporting requirements (*'we pared it right down'*):

We also had to make sure that we weren't taking any clinical risks...It was the balance of getting the governance in place in something that was so very, very fast-moving...Over a three week period, we tipped the see-saw to a point where, I felt, 'Yes, we've got grip control...and the structures were in place' (ID29).

## DISCUSSION

Integration of health and social care is a national priority in the UK, requiring major changes to current organisational, financial and social structures.<sup>1 2</sup> The COVID-19 pandemic presented a rare opportunity to observe swift organisational change in the context of such a disruption. Using a rapid case study approach, we identified four themes that facilitated unique and substantial collaboration across sectors, with implications for future efforts to support strategic integration of health and social care. These themes were: (1) ways of working that supported rapid collaboration; (2) leveraging diversity and clinician input for systems change; (3) allowing for both central control and local adaptation and (4) balancing risk taking and accountability. The team's 'ways of working' (also known as 'culture') were consistent with a 'cooperative, integrative leadership culture'.<sup>46</sup> Managing the inherent tensions in systems change efforts is a core leadership challenge.<sup>47</sup> Leadership anticipated and engaged with tensions through explicit and deliberate 'boundary spanners' working across levels<sup>17</sup> (eg, to achieve meaningful clinician buy-in) and developing 'third-person strategies' (structures, processes and systems which manifest as leadership).<sup>18</sup>

Prior literature shows that systems leadership is fundamental to building ICSs. However, this capacity is not well understood in a context that has been traditionally focused on leadership within single organisations.<sup>8 48</sup> Our research

complements and extends prior empirical work through generating concrete, transferable insights into how leadership supported a major integration effort by fostering engagement across diverse organisations (inspiring a shared mandate<sup>49</sup> and promoting systems thinking),<sup>50</sup> mediating ambiguity in national guidance and creating space for local adaptation<sup>51</sup> (consistent with open systems theories of leadership)<sup>52 53</sup> and balancing risk taking and accountability (consistent with the adaptive leadership principles).<sup>54</sup> Specifically, this study shows how leadership overcame barriers to integration highlighted by prior studies,<sup>4 5 7 11</sup> including engaging with aversion to clinical/safety risk, fostering distributed leadership and developing shared organisational practices for data sharing and service delivery. Identifying and addressing social care needs requires linkages across different levels of government as well as across government and non-government sectors.<sup>2 4 55 56</sup> While best practices have yet to be established, our findings describe concrete examples of how systems leadership can catalyse and shape future integration efforts.

This case study also contributes to our understanding of learning health systems (LHS),<sup>57</sup> providing an in-depth look at an actor-oriented network characterised by alignment around a common goal<sup>58</sup>; standards, processes and structures to enable multiactor collaboration and mechanisms for creating and sharing resources and know-how. Although clinicians tend to have a limited understanding of LHS frameworks, increasing resistance and limiting adoption,<sup>57</sup> we describe concrete ways in which clinicians' concerns were at least partly addressed through peer-to-peer advocacy and open forums for shared problem-solving. Our study extends recent taxonomies of LHS, which include clinical decision support models,<sup>59</sup> by incorporating linkages to social care, and provides an empirical example of how value can be created by shifting from a value shop or chain towards a value network.<sup>60</sup> Notably, LHS may also need to become forgetting health systems,<sup>61</sup> and our case provides examples of how removal of longstanding policies intended to mitigate financial and privacy risks allowed for patient-focused and community-focused innovation.

Finally, our findings are consistent with and contribute to the literature demonstrating the role of leadership and ways of working ('culture')<sup>62</sup> in health systems resilience (ie, a system's ability to withstand shocks, adapt and transform).<sup>63</sup> Prior studies have not fully examined the role of legitimacy of institutions. We saw clear strategies for fostering legitimacy, such as boundary spanners engaging with sceptical GPs.<sup>64</sup> One model of health system resilience posits that leaders from across a system mobilise to create enabling environments for organisational adaptability and integrated transformation efforts when instability arises.<sup>65</sup> We describe such a coordinated response, offering support for this model.

ICSs are intended to support the broader goals of improving population health and addressing health inequities. *COVID-19 Protect* laid the foundations for a population health management approach that can target hard-to-reach groups and those most in need of support.



The project largely overcame common challenges such as data integration through deep engagement with stakeholders, particularly clinicians, to design user-friendly and relevant interfaces and to mitigate concerns about data privacy.<sup>66</sup> Based on experiences with *COVID-19 Protect*, the team has since expanded the scope of the project into *Protect NoW*—a broader population health management approach targeting, for example, supports for patients with diabetes and cervical cancer screening outreach.

Our findings must be interpreted in light of several limitations. First, this is a single descriptive case study which may limit transferability, however we used extreme case sampling,<sup>30</sup> which is ideal for identifying and characterising leading-edge practices or novel responses to extreme circumstances.<sup>29,67</sup> Second, participants may have been influenced by social desirability response bias.<sup>68</sup> We interviewed a wide range of key informants involved in designing and early implementation of the project, elicited details that would be difficult to misrepresent and instructed participants to share both positive and negative experiences.<sup>36,37</sup> Notably, participants did express critical reflections and frustrations, and we sought critical and disconfirming evidence throughout our analysis process. We also conducted participant confirmation through oral presentations to the project team and review of findings by COVID-19 Protect project leadership.<sup>43</sup> Third, like many rapidly evolving LHS models,<sup>59</sup> further evaluation of impact on clinical outcomes is required.<sup>28</sup> Last, this study was conducted in the context of major disruption and the extent to which findings are transferrable to more routine integration efforts requires further evaluation. Nevertheless, our results are consistent with systems leadership theory and recent evidence from the UK that systems leadership capacity can be developed over a relatively short period of time.<sup>69</sup>

Of note, our intention was not to evaluate 31 contacted, 4 non-responder evaluate COVID-19 Protect, or to examine a programme that had been formally evaluated as successful. Instead, we sought to conduct a rapid case study to understand and describe in depth the practices and systems that need to be in place to allow cross-sectoral collaborations to flourish. Given the extraordinary interest in social and healthcare integration (and the recent national mandates), we expect that policymakers, executive and operational staff in health and social care and digital technology leads may find this deep description of the essential building blocks of cross-sectoral collaboration useful, as they have the potential to transcend the specifics of any one particular intervention or programme.

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**Competing interests** None declared.

**Patient and public involvement** Patients and/or the public were not involved in the design, or conduct, or reporting, or dissemination plans of this research.

**Patient consent for publication** Not applicable.

**Ethics approval** This study was approved by Yale University Institutional Review Board (protocol 2000028439). Participants gave informed consent to participate in the study before taking part.

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**Data availability statement** No data are available. Primary data collected for this study are not available to be publicly shared, as participants were assured confidentiality during the informed consent process. Given the small sample size and specifics of this case study, there is a risk of participant identification within the dataset.

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#### REFERENCES

- 1 NHS. The NHS long term plan, 2019. Available: <https://www.longtermplan.nhs.uk/publication/nhs-long-term-plan/> [Accessed 19 May 2021].
- 2 Secretary of State for Health and Social Care. Integration and innovation: working together to improve health and social care for all. Available: [www.gov.uk/official-documents](http://www.gov.uk/official-documents) [Accessed 7 April 2021].
- 3 NHS. Sustainability and transformation plan footprints, 2016. Available: <https://www.england.nhs.uk/wp-content/uploads/2016/02/stp-footprints-march-2016.pdf> [Accessed 19 May 2021].
- 4 Erens B, Wistow G, Mounier-Jack S. *Early evaluation of the integrated care and support pioneers program. final report 2016-17*. London: Policy Research Innovation Unit: PIRU Publication, 2017. [https://piru.ac.uk/assets/files/Early\\_evaluation\\_of\\_IC\\_Pioneers\\_Final\\_Report.pdf](https://piru.ac.uk/assets/files/Early_evaluation_of_IC_Pioneers_Final_Report.pdf)
- 5 NHS. Integrated care pioneers. Available: <https://www.england.nhs.uk/integrated-care-pioneers/> [Accessed 7 April 2021].
- 6 Smith J, Wistow G, Holder H, *et al*. Evaluating the design and implementation of the whole systems integrated care programme in North West London: why commissioning proved (again) to be the weakest link. *BMC Health Serv Res* 2019;19:228.
- 7 Dixon A. Could local integration of health and social care finally overcome the pull to the centre? *Health Econ Policy Law* 2019;14:15–18.
- 8 Charles A, Wenzel L, Kershaw M, The King's Fund Report. A year of integrated care systems: reviewing the journey so far. Available: <https://www.kingsfund.org.uk/sites/default/files/2018-09/Year-of-integrated-care-systems-reviewing-journey-so-far-full-report.pdf> [Accessed May 19, 2021].
- 9 Glasby J. The Holy Grail of health and social care integration. *BMJ* 2017;356:j801.
- 10 Frontier Economics. *Enablers and barriers to integrated care and implications for Monitor. A report prepared for Monitor*. London: Frontier Economics, 2012.
- 11 Mitchell C, Tazzyman A, Howard SJ, *et al*. More that unites us than divides us? A qualitative study of integration of community health and social care services. *BMC Fam Pract* 2020;21:96.



- 12 Ling T, Brereton L, Conklin A, *et al.* Barriers and facilitators to integrating care: experiences from the English integrated care pilots. *Int J Integr Care* 2012;12:e129.
- 13 Dickinson H. The evaluation of health and social care partnerships: an analysis of approaches and synthesis for the future. *Health Soc Care Community* 2006;14:375–83.
- 14 Suter E, Oelke ND, Adair CE, *et al.* Ten key principles for successful health systems integration. *Healthc Q* 2009;13 Spec No:16–23.
- 15 Baker GR, Shaw J, Gutberg J, *et al.* Effective organizational leadership in the implementation of integrated care; lessons from 9 cases in the iCoach project. *Int J Integr Care* 2017;17:81.
- 16 Evans JM, Grudniewicz A, Baker GR, *et al.* Organizational context and capabilities for integrating care: a framework for improvement. *Int J Integr Care* 2016;16:15.
- 17 Gutberg J, Abdelhalim R, Khan S, *et al.* Distributed versus centralized leadership in the implementation of a Canadian integrated care initiative. *Int J Integr Care* 2017;17:97.
- 18 Armistead C, Pettigrew P, Aves S. Exploring leadership in Multi-sectoral partnerships. *Leadership* 2007;3:211–30.
- 19 Hald AN, Bech M, Burau V. Conditions for successful interprofessional collaboration in integrated care – lessons from a primary care setting in Denmark. *Health Policy* 2021;125:474–81.
- 20 Sturmberg JP, Tsasis P, Hoemeke L. COVID-19 – an opportunity to redesign health policy thinking. *Int J Health Policy Manag* 2020.
- 21 Bradley EH, Curry LA, Taylor LA, *et al.* A model for scale up of family health innovations in low-income and middle-income settings: a mixed methods study. *BMJ Open* 2012;2:e000987.
- 22 Digital NHS. Shielded patient list: guidance for local authorities. Available: <https://digital.nhs.uk/coronavirus/shielded-patient-list/guidance-for-local-authorities> [Accessed 19 May 2021].
- 23 Department of Health and Social Care. Covid-19 – Notice under Regulation 3(4) of the Health Service Control of Patient Information Regulations 2002, 2020. Available: [file:///C:/Users/ejc26/Downloads/copi-notice-to-nhs-digital-covid-19%20\(1\).pdf](file:///C:/Users/ejc26/Downloads/copi-notice-to-nhs-digital-covid-19%20(1).pdf) [Accessed 21 April 2021].
- 24 NHS. COPI notice: frequently asked questions. Available: <https://www.nhsx.nhs.uk/covid-19-response/data-and-covid-19/information-governance/copi-notice-frequently-asked-questions/> [Accessed 21 April 2021].
- 25 NHS. COVID-19: deploying our people safely, 2020. Available: <https://www.england.nhs.uk/coronavirus/wp-content/uploads/sites/52/2020/05/C0449-covid-19-deploying-our-people-safely-v1.2.pdf> [Accessed 21 April 2021].
- 26 NHS. COVID-19 digital staff Passport. Available: <https://www.england.nhs.uk/coronavirus/secondary-care/workforce/digital-staff-passport/> [Accessed 21 April 2021].
- 27 Curry L, Ayedun A, Cherlin E. Roadmap for Adoption. In: *Covid protect: a digitally-enabled service to support vulnerable patients*. Yale School of Public Health: Global Health Leadership Initiative, 2021. [https://www.easternahns.org/wp-content/uploads/2021/03/COVID\\_Protect\\_Road-to-adoption-report.pdf](https://www.easternahns.org/wp-content/uploads/2021/03/COVID_Protect_Road-to-adoption-report.pdf)
- 28 NHS, Norfolk and Waveney Clinical Commissioning Group. *Evaluation of the COVID protect programme: report by Norfolk and Suffolk primary care research unit*, 2020.
- 29 Yin RK. Enhancing the quality of case studies in health services research. *Health Serv Res* 1999;34:1209–24.
- 30 Seawright J, Gerring J. Case selection techniques in case study research-A menu of qualitative and quantitative options. *Political Research Quarterly* 2008;61:294–308.
- 31 Patton MQ. *Qualitative research and evaluation methods: integration theory and practice*. In: . 4th ed. Thousand Oaks, CA: SAGE Publications, 2015.
- 32 Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *Int J Qual Health Care* 2007;19:349–57.
- 33 Patton MQ. *Qualitative research & evaluation methods*. In: . 3 ed. Thousand Oaks, Calif: Sage Publications, 2002.
- 34 Morse J. The significance of saturation. *Qualitative Health Research* 1995;5:147–9.
- 35 McCracken G. *The long interview*. Newbury Parks: Sage Publications, 1988.
- 36 Creswell JW, Miller DL. Determining validity in qualitative inquiry. *Theory into Practice* 2000;39:124–30.
- 37 Denzin NK. *Interpretive interactionism*. Newbury Park, CA: Sage, 1989.
- 38 Bradley EH, Curry LA, Devers KJ. Qualitative data analysis for health services research: developing taxonomy, themes, and theory. *Health Serv Res* 2007;42:1758–72.
- 39 Glaser BG, Strauss AL. *The discovery of grounded theory; strategies for qualitative research*. Chicago: Aldine Pub. Co 1967.
- 40 Miles MB, Huberman AM. *Qualitative data analysis : an expanded sourcebook*. In: . 2nd ed. Thousand Oaks: Sage Publications, 1994.
- 41 Curry LA, Nembhard IM, Bradley EH. Qualitative and mixed methods provide unique contributions to outcomes research. *Circulation* 2009;119:1442–52.
- 42 Barry CA, Britten N, Barber N, *et al.* Using reflexivity to optimize teamwork in qualitative research. *Qual Health Res* 1999;9:26–44.
- 43 Lincoln YS, Guba EG, Pilotta JJ. *Naturalistic inquiry*. Beverly Hills, Calif: Sage Publications, 1985: 9. 438–9.
- 44 Malterud K. The art and science of clinical knowledge: evidence beyond measures and numbers. *Lancet* 2001;358:397–400.
- 45 Braun V, Clark V. *Successful qualitative research: a practical guide for beginners*. Thousand Oaks: Sage Publications, 2013.
- 46 Faculty of Medical Leadership and Management. *The kings fund. Leadership and leadership development in healthcare: the evidence base*, 2015. Available: [https://www.kingsfund.org.uk/sites/default/files/field/field\\_publication\\_file/leadership-leadership-development-health-care-feb-2015.pdf](https://www.kingsfund.org.uk/sites/default/files/field/field_publication_file/leadership-leadership-development-health-care-feb-2015.pdf) [Accessed 14 Dec 2021].
- 47 Mitterlechner M. Leadership in integrated care networks: a literature review and opportunities for future research. *Int J Integr Care* 2020;20:6–14.
- 48 Timmins N. *The practice of system leadership. being comfortable with chaos*. The King's Fund Report, 2015. [https://www.kingsfund.org.uk/sites/default/files/field/field\\_publication\\_file/System-leadership-Kings-Fund-May-2015.pdf](https://www.kingsfund.org.uk/sites/default/files/field/field_publication_file/System-leadership-Kings-Fund-May-2015.pdf)
- 49 Dalton H, Read DMY, Booth A, *et al.* Formative evaluation of the central coast integrated care program (CCICP), NSW Australia. *Int J Integr Care* 2019;19.
- 50 Evans JM, Daub S, Goldhar J, *et al.* Leading integrated health and social care systems: perspectives from research and practice. *Healthc Q* 2016;18:30–5.
- 51 Grudniewicz A, Tenbenschel T, Evans JM, *et al.* 'Complexity-compatible' policy for integrated care? lessons from the implementation of Ontario's health links. *Soc Sci Med* 2018;198:95–102.
- 52 Miller EJ, Rice AK. *Systems of organization: the control of task and sentient boundaries*. London: Tavistock Publications, 1967.
- 53 Rice AK. *The enterprise and its environment: a system theory of management organization*. London: Tavistock Publications, 1963.
- 54 Heifetz RA, Laurie DL. The work of leadership. *Harvard Business Review* 2001;79:131–41.
- 55 Exworthy M, Powell M, Glasby J. The governance of integrated health and social care in England since 2010: great expectations not Met once again? *Health Policy* 2017;121:1124–30.
- 56 Pollock AM, Clements L, Harding-Edgar L. Covid-19: why we need a national health and social care service. *BMJ* 2020;369:m1465.
- 57 McLachlan S, Dube K, Kyrimi E, *et al.* Lagos: learning health systems and how they can integrate with patient care. *BMJ Health Care Inform* 2019;26:e100037.
- 58 Britto MT, Fuller SC, Kaplan HC, *et al.* Using a network organisational architecture to support the development of learning healthcare systems. *BMJ Qual Saf* 2018;27:937–46.
- 59 Foley TJ, Vale L. What role for learning health systems in quality improvement within healthcare providers? *Learn Health Syst* 2017;1:e10025.
- 60 Fjeldstad Øystein D, Johnson JK, Margolis PA, *et al.* Networked health care: rethinking value creation in learning health care systems. *Learn Health Syst* 2020;4:e10212.
- 61 Coiera E. The forgetting health system. *Learn Health Syst* 2017;1:e10023.
- 62 Schein EH. Organizational culture. *Am Psychol* 1990;45:109–19.
- 63 Barasa E, Mbau R, Gilson L. What is resilience and how can it be nurtured? A systematic review of empirical literature on organizational resilience. *Int J Health Policy Manag* 2018;7:491–503.
- 64 Biddle L, Wahedi K, Bozorgmehr K. Health system resilience: a literature review of empirical research. *Health Policy Plan* 2020;35:1084–109.
- 65 Chamberland-Rowe C, Chiochio F, Bourgeault IL. Harnessing instability as an opportunity for health system strengthening: a review of health system resilience. *Healthc Manage Forum* 2019;32:128–35.
- 66 Comas-Herrera A, Fernandez J-L, Hancock R, *et al.* COVID-19: implications for the support of people with social care needs in England. *J Aging Soc Policy* 2020;32:365–72.
- 67 Yin RK. *Case study research and applications: design and methods*. Sixth. Los Angeles: SAGE Publications, 2018.
- 68 Sudman S, Bradburn NM, Schwarz N. *Thinking about answers : the application of cognitive processes to survey methodology*. First edition. Jossey-Bass, 2010.
- 69 Curry LA, Ayedun AA, Cherlin EJ, *et al.* Leadership development in complex health systems: a qualitative study. *BMJ Open* 2020;10:e035797.

Supplemental File #1: COREQ Checklist

**Manuscript: Leadership Capacity Building in Complex Health Systems:  
The Yale and NHS England Experience.**

**Consolidated criteria for reporting qualitative studies (COREQ): 32-item checklist**

Developed from:

Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*. 2007. Volume 19, Number 6: pp. 349 – 357

No. Item	Guide questions/description	Reported on Page #
<b>Domain 1: Research team and reflexivity</b>		
<i>Personal Characteristics</i>		
1. Interviewer/facilitator	Which author/s conducted the interview or focus group?	P. 5
2. Credentials	What were the researcher's credentials? E.g. PhD, MD	P.11
3. Occupation	What was their occupation at the time of the study?	P.11-12
4. Gender	Was the researcher male or female?	All female
5. Experience and training	What experience or training did the researcher have?	P. 5
<i>Relationship with participants</i>		
6. Relationship established	Was a relationship established prior to study commencement?	P.6 (Researcher Reflexivity section)
7. Participant knowledge of the interviewer	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	P. 6 (participants learned about this information during the consent process)
8. Interviewer characteristics	What characteristics were reported about the interviewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	Multidisciplinary team: Page 6. Space constraints limit further detail though we are happy to add if the editor prefers
<b>Domain 2: study design</b>		
<i>Theoretical framework</i>		

## Supplemental File #1: COREQ Checklist

9. Methodological orientation and theory	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	P. 6
<i>Participant selection</i>		
10. Sampling	How were participants selected? e.g. purposive, convenience, consecutive, snowball	Page 5
11. Method of approach	How were participants approached? e.g. face-to-face, telephone, mail, email	P.5 (video conferencing)
12. Sample size	How many participants were in the study?	Pages 5
13. Non-participation	How many people refused to participate or dropped out? Reasons?	Pages 5
<i>Setting</i>		
14. Setting of data collection	Where was the data collected? e.g. home, clinic, workplace	P.5 (video conferencing)
15. Presence of non-participants	Was anyone else present besides the participants and researchers?	No
16. Description of sample	What are the important characteristics of the sample? e.g. demographic data, date	Table 1
<i>Data collection</i>		
17. Interview guide	Were questions, prompts, guides provided by the authors? Was it pilot tested?	Page 6 and Supplemental Table1
18. Repeat interviews	Were repeat inter views carried out? If yes, how many?	No
19. Audio/visual recording	Did the research use audio or visual recording to collect the data?	Page 5
20. Field notes	Were field notes made during and/or after the inter view or focus group?	P. 6
21. Duration	What was the duration of the inter views or focus group?	P. 6
22. Data saturation	Was data saturation discussed?	P. 5



## Supplemental File #1: COREQ Checklist

23. Transcripts returned	Were transcripts returned to participants for comment and/or correction?	Transcripts were reviewed by the research terms for accuracy; we did not engage in participant confirmation and are happy to provide the rationale if requested
<b>Domain 3: analysis and findings</b>		
<i>Data analysis</i>		
24. Number of data coders	How many data coders coded the data?	4 person team: Page 6
25. Description of the coding tree	Did authors provide a description of the coding tree?	Supplemental Table 2
26. Derivation of themes	Were themes identified in advance or derived from the data?	P. 7 and Table 2
27. Software	What software, if applicable, was used to manage the data?	P. 6 (Atlas.ti V.8)
28. Participant checking	Did participants provide feedback on the findings?	No
<i>Reporting</i>		
29. Quotations presented	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	Yes: Pages 7-9 and Supplement Table 3
30. Data and findings consistent	Was there consistency between the data presented and the findings?	Yes, the findings derive directly from the data in a constant comparative method
31. Clarity of major themes	Were major themes clearly presented in the findings?	P. 7-9, Supplemental Table 3, Discussion – P. 10
32. Clarity of minor themes	Is there a description of diverse cases or discussion of minor themes?	P. 5

## Supplemental File 2

### NHS Digital Scale Up Interview Guide

*Thanks for agreeing to talk with me today. We want to learn how some geographies are able to make extraordinary progress in using digital health innovations to improve health of the population. You have been identified as someone involved in the implementation and scale up of COVID Protect. I am hoping to have your permission to record this interview so I can focus on listening to you rather than taking notes. We will not identify you or your organization by name. If at any point you would like me to turn off the recorder, please let me know and I will. I also want to remind you that your participation is completely voluntary. Before we start, do you have any questions? May I have permission to turn on the tape recorders?*

#### Introductory questions

1. Please describe your role in your organization.
2. How did you get involved in COVID Protect?
3. Please briefly outline the COVID Protect project and what it aims to achieve from your perspective.

#### Process of implementation

4. Please describe your role within the COVID Protect project.
5. Please take me through the process, from implementation to scale-up, from your perspective?
6. We are especially interested in the inevitable bumps in the road, and how you overcame them. Please describe any challenges you faced during the project?
7. What helped smooth the path of scaling up this innovation, from your perspective?

#### Reflection and sharing learning

8. Is there anything you would have done differently in the process of scaling-up this intervention?
9. What advice would you give to other regions looking to implement a similar project in their area? *(Note to interviewer: Ask this question if time permits)*

#### Concluding question

10. Is there anything else I should have asked to help us better understand your experience in scaling-up this digital innovation?

## SPECIFIC PROBES FOR ADOPTION AND SCALE-UP BY DOMAIN (NASSS Framework):

Domain	Potential Probes
The Technology	<ul style="list-style-type: none"> <li>• What are the key features of the technology?</li> <li>• What kind of knowledge does the technology bring into play?</li> <li>• What knowledge and/or support is required to use the technology?</li> </ul>
The value proposition	<ul style="list-style-type: none"> <li>• What is the developer's business case for the technology (supply-side value)?</li> <li>• What is its desirability, efficacy, safety, and cost effectiveness (demand-side value)?</li> </ul>
The adopter system	<ul style="list-style-type: none"> <li>• What changes in staff roles, practices, and identities are implied?</li> <li>• What is expected of the patient (and/or immediate caregiver)—and is this achievable by, and acceptable to, them?</li> <li>• What is assumed about the extended network of lay caregivers?</li> </ul>
The organization	<ul style="list-style-type: none"> <li>• What is the organization's capacity to innovate?</li> <li>• How ready is the organization for this technology-supported change?</li> <li>• What changes will be needed in team interactions and routines?</li> <li>• What work is involved in implementation and who will do it?</li> </ul>
The wider context	<ul style="list-style-type: none"> <li>• What is the political, economic, regulatory, professional (eg, medicolegal), and sociocultural context for program rollout?</li> </ul>
Embedding and adaptation over time	<ul style="list-style-type: none"> <li>• How much scope is there for adapting and coevolving the technology and the service over time?</li> </ul>

## GENERAL PROBES:

- Can you give me an example?
- Can you tell me more about that?
- What did you mean when you just said "\_\_\_\_\_ "?
- Or, you just referred to "\_\_\_\_\_." What did you mean by "\_\_\_\_\_ "?





## Supplemental Table 1 Code Structure

<b>Covid Protect Final Code Structure</b>	
<b>10</b>	<b>Features of the innovation</b> ( <i>higher level design principles or properties of the innovation; the innovation is the full bundle including e.g., software, VCTs, local councils, call centers patient survey</i> )
10a.	Adaptation (e.g., make innovation fit, refine based on user need/experience, tailor to each locality)
10b.	Perceived value/need for the innovation (e.g., by GPs, patients, voluntary sector)
10c.	Includes cross sectoral data integration for risk assessment (e.g., council data, NHS data specification)
10d.	Novelty of the idea (e.g., started from scratch, organically grown, never done anything like this)
10e.	Leveraging something that exists for new challenge (e.g., Eclipse +/-, TZ experience, training platform)
10f.	Learn as you go (e.g., piloting, PDSA/iterative cycles, starting small before scaling)
10g.	PSL company (anything related to clinical leadership, organizational culture, software development)
<b>20</b>	<b>Wider context</b> ( <i>the larger local/regional/national ecology surrounding the project, various forces that might influence design and scale up</i> )
20a.	Political/regulatory/structural (e.g., pre-COVID IG rules, risk aversion of NHS, ICS, GP practices' autonomy, CCGs as strong peer network, recent merger of 5 CCGs, many local councils)
20b.	Socio cultural demographic geographic factors (e.g., persistent, pre-COVID, challenges in deprived areas, close sense of community, local pop identity, regional tensions, low literacy)
20c.	Broad forces related to the COVID-19 Pandemic (e.g., catalyst for change, sense of urgency, collectivism, 'get on the train and direct it', uncertainty of pandemic impact, remote working)
20d.	National/regional COVID response efforts (e.g., COPI, Shielding policy and lists, funding rules)
<b>30</b>	<b>Individual/team behaviors in COVID protect project</b> ( <i>behaviors and attributes of individuals, regardless of organizational base, job title, position in the hierarchy</i> )
30a.	Leadership (e.g., visionary, forward thinking, creativity, self-awareness, decisiveness, provide visible executive/senior management support, value all, inspire, turn up the heat/competition, individual behavior of seeking input/connecting to front line)
30b.	Boundary spanner (e.g., work at higher strategic level, speak others' language, bridge silos, align interests across regional/local and NHS and local authorities)
30c.	Champions (e.g., advocate for the project, interface with GPs/skeptics, push through barriers)
30d.	Problem solving (e.g., no script, work it out, push forward pragmatic)
30e.	Commitment to the project (e.g., tenacity, perseverance, teamwork, outside comfort zone, motivation, individual risk tolerance)
30f.	Generosity (e.g., of spirit, volunteering time, resources, software, expertise)
30g.	Burden (e.g., stress, strain, overwhelming responsibility, long hours)
30h.	Flexibility (e.g., team's ability to respond to broader changing org/environment, not adapting the project design per se (that is 10a), giving up control to advance the project)

30i.	Background, training, skills, clinical/operational expertise of ALL roles regular and within COVID Protect (e.g., breadth complementarity)
30j.	Followership (e.g., support leader, endorse/oppose, manage themselves, take responsibility)
<b>40</b>	<b>Coordination/communication</b> ( <i>how communication and coordination of functions was managed, communication for aligning interests, documents that exist and are disseminated to support project implementation and broader visibility</i> )
40a.	Project governance structures to support communication (e.g., meetings, agendas, both senior/central team and the localities)
40b.	General communications (e.g., flow diagrams, emails, patient letters, external facing)
40c.	Gaps/failures in communications (e.g., where communications fell down)
40d.	Translate national guidance (e.g., make sense for team/others, help patients with shielding regs)
<b>50</b>	<b>Receptivity/resistance/tensions</b> ( <i>descriptions of responses to all aspects of the project such as concerns about risks, burden/hassle, personal willingness to participate regardless of whether it is perceived as needed generally</i> )
50a.	Of GP practices, GPs, practice managers, practice staff
50b.	Of implementing partners (e.g., virtual clinical teams, local councils, universities, medical students, retired GPs, volunteers, paramedics, ambulance services)
50c.	Of patients/families (e.g. skepticism re: scams, digital literacy/comfort with tech)
50d.	Strategic NHS (e.g., NHS England, NHS Midlands and East, STPs)
<b>60</b>	<b>COVID Protect goals and outcomes</b> ( <i>references to project aims, views on success</i> )
60a.	Aims (e.g., goals, protect from COVID, precise targeting of patients, setting boundaries)
60b.	Intended outcomes (e.g., metrics, impacts, evaluation plan and measuring value)
60c.	Unintended effects (e.g., uncovering and supporting response to unmet social care needs like food, loneliness, patient gaming system, unable to cope with/address uncovered need)
60d.	Evolution (e.g., sustainability, replicability adaptation into Protect NoW, de-implementation, populational health management initiatives)
<b>70</b>	<b>Project implementation/project delivery</b> ( <i>detailed descriptions of any aspect of running the project, e.g., database merger, survey administration, training call center staff</i> )
70a.	Infrastructure supports (e.g., software and other operational needs, remote working, call centers)
70b.	Data collection with patient surveys
70c.	Referrals (to GPs, local council)
70d.	Use of data (e.g., creating visuals and other reports for decisionmaking, performance management, targeting patients)
70e.	Human resources (e.g., training, volunteer/redeployed staff, tasks/roles, overstaffing, overqualified, wellbeing supports, staff overburdened, inadequate capacity, manage competing demands/priorities)
70f.	Collaboration among complementary/diverse organizations (and note any missing orgs)
70g.	Challenges (e.g. remote working, designing systems and procedures, manual logistics)
70h.	Creation of supporting documents (e.g., SOPs, building Excel tools to manage the systems)
70i.	Project design (e.g., nuts and bolts descriptive details of how program worked, was organized, central and locality teams, variation in organization between localities, project management/reporting generation/tracking, monitoring)



70j.	Pace of implementation (e.g., rapid, faster than usual)
70k.	Costs (e.g., in-kind, redeploying within system, hidden, volunteer time, associated risks)
<b>80</b>	<b>Relational aspects of the project</b> ( <i>ways of working, team members worked together, interpersonal and group dynamics, this is in the doing of COVID Protect itself</i> )
80a.	Stakeholder engagement (e.g., GPs, patients, local councils, strategic NHS; might double code with communication, but more about framing/listening/aligning interests, being responsive)
80b.	Trust/buy-in (e.g., within the project team and across organizations, existing/new trust, relationship, history, rapport, eroded by risk of sharing data, confidentiality one locality refused to join)
80c.	Psychological safety (e.g., feeling free to speak up with a divergent view)
80d.	Perspective taking (e.g., actively seeking to understand another's experience or expertise; distinct from empathy which is affective emotional sympathetic response)
80e.	Empowerment of team members (e.g., explicit authority given to a person to carry out certain decisions/actions about specific aspects of project implementation; explicit designation of roles)
80f.	Accountability (e.g., within the team, up to strategic NHSE, allowing risks on balance)
80g.	Shared goal (e.g., 'single minded focus')
<b>90</b>	<b>Hindsight</b> ( <i>things the person would do differently, looking back; can double code with others like communications, engagement, empowerment</i> )
<b>100</b>	<b>Facilitators/positive aspects or effects</b> ( <i>double code with any other code/s that are described as smoothing the path, facilitating implementation, supporting efforts</i> )
<b>200</b>	<b>Barriers/negative aspects or effects</b> ( <i>double code with any other code/s that are described as getting in the way, constraining progress, putting up barriers</i> )
<b>300</b>	<b>New ideas</b> (any new concepts that emerge that don't fit into other existing codes)
<b>999</b>	<b>Great Quotes</b>

Supplemental Table 2 Additional Quotes

Theme	Supplemental Quotes
<p><i>Ways of working that supported rapid collaboration</i></p>	<p><b>Endorsement and support:</b> <i>Very early on, our Sustainability and Transformation Partnership leader and our chief exec made a firm commitment to the project. That was very powerful. There were quite a few external commitments made, both to NHS England and to our wider partners, so that we were working in collaboration with the County Council and district councils...and that message was very clearly portrayed externally in the communications across the STP partnership. ID17</i></p> <p><b>Endorsement and support:</b> <i>I didn't have the licenses for call handlers and there needed to be a payment made, they just said, "Right, we're gonna pay for that," and so we could get on with it. That's just one small example, but I was hearing directly from seniority that I could get on with things, and it was a serious priority for that to happen, so that cleared the way. I didn't have any issues at all that I might normally have. ID14</i></p> <p><b>Endorsement and support:</b> <i>It had a very clear stamp of approval from the executive management team... it was really useful...having those people on board that said, "Look, we're absolutely behind this." It was a huge bonus for us to have the involvement of the district, and borough councils because we stretch across Norfolk, and Suffolk councils. Having their involvement and having them take a large proportion of the work that was seen to fall out of it, having that structure in place was extremely useful." ID11</i></p> <p><b>Endorsement and support:</b> <i>[Project lead] managed to get all of the staff across the CCG involved in it, so that also sent a very clear signal to the practices and the CCGs. This is something we're taking forward for the whole population. [They] also managed to get a group together of GPs from...all of the areas to support it. ID30</i></p> <p><b>Endorsement and support:</b> <i>Support from the senior CCG executives... was really quite critical here...there was a lot of courage on the part of senior management and clinicians at some points in pressing forth. ID16</i></p> <p><b>Endorsement and support:</b> <i>The senior authority... for this project, and the lead clinicians, they were all absolutely 100 percent behind. If they hadn't been, it just wouldn't have happened. ID14</i></p> <p><b>Empowered middle management:</b> <i>It would be important for me to stress that I do think leadership can happen at all levels, and certainly, many of</i></p>

*the call handlers and the supervisors, they definitely were exercising leadership and were working really, really hard and making things happen. ID14*

**Empowered middle management:** *There was lots of guidance coming out to primary care on shielded patients, but it was also just making sure that the call handlers understood the links with primary care, and that sort of communication routes were clear. I was either writing the standard operation procedure for the call handling team or reviewing text that other people had written, so it was part of the guidance. ID07*

**Empowered middle management:** *There was a clinical group... there were general practitioners from each of our localities on a project board who gave us the permission to proceed with my manager being on the board of that. They were meeting every day, in the early stages, to give us the direction. Meantime, our senior team within the CCG, the Clinical Commission Group, effectively gave us permission to use the staff in the way that I described. We had both the clinical direction and the managerial direction meeting frequently. That gave the authority to get going. It meant I was empowered to get in touch with everybody, corral the team, and make arrangements. ID14*

**Rapid response to feedback:** *He's a GP himself and he's got paramedics in his practice, he's quite intuitive with what somebody wants...we were able to use that level of functionality and also being able to change something quick 'cause he's on call. You say, "This doesn't look right. Can you do this? Then by two days' time, it's done. ID24*

**Rapid response to feedback:** *One of the survey questions was creating a lot of noise. Just subtle changes in the wording of that question dramatically changed the responses coming through. We were able to actually audit live what was the impact of changing the wording slightly on question three or question four or question five. During the first few weeks, being someone that likes to be a data-driven individual, we deliberately changed the wording on all the different questions around subtly to see basically what different responses were from the patients. That enabled us to come up with a set of questions that had that a high level of specificity and sensitivity for patients with real need. ID33*

**Rapid response to feedback:** *It was really good to be able to have really timely feedback from the clinical pharmacists who were involved in managing the alerts in order to keep the PDSA cycle going and feedback to the call handlers about how they might change the questions or the responses they gave people. Similarly, if they had concerns when they*

	<p>were ringing people, they would go straight to us, to the virtual clinical team. It improved organically in that we just kept refining it based on our local weekly meetings and feeding back any issues that we came up against. ID10</p> <p><b>Appreciation:</b> Right at the end of the project, when we wound it down, they did a big celebration event, and they got the GPs involved, which was really important. As I say, we'd had these odd issues where the GPs have gone, "No, it's a scam." To them, we had some GPs attend to give case studies of how it had really made a difference, actually. They were very vulnerable people who had had really good outcomes as a result of the co-handlers work. I think that was really moving, and really special. ID26</p>
<p>Leveraging diversity and clinical input for systems change</p>	<p><b>Encouragement of divergent views:</b> I think the willingness of people to go to the meeting every evening, the fact that your comments were listened to and taken onboard, and the willingness of the team to adapt and try and make changes to improve...No, it's not working, or we can do this better, so we'll change that. It was really interesting to be part of, to just see how things could evolve, how quickly you could get something that worked well up and running. ID20</p> <p><b>Encouragement of divergent views:</b> ...what they managed to do was successfully flatten the hierarchy. There are hierarchical elements in terms of leadership positions and clinical grade. That worked a lot in terms of people being able to speak up and say, "I think this is a great idea. We should do it," or say, "Actually, I don't agree with that. I think we should follow a different path in terms of that." Resilience and flattenin' hierarchy. Developing that psychological safety for a group of people to be able to develop that, I think, it was really important for us and would encourage other systems to do the same. ID22</p> <p><b>Encouragement of divergent views:</b> He and others were very good at making sure that everybody contributed. It wasn't a case that the loudest voices were heard. It was the case that everybody would be heard. Howard would always make sure when chairing these meetings that he would bring in the representatives from each locality to say their piece and check in with them at certain points in each meeting whether they were in agreement with whatever was being discussed. There could be no doubt whatsoever that we were all going in the same direction. It was being checked, validated, and even wrote it down in action logs and things so that it was recorded. We added that, and we had project management support who were helping to get a structure to things so that we had a plan, some timelines. They were quite critical. ID14</p>

**Encouragement of divergent views:** We had to bring in the council 'cause they were giving us the lists. That was an entrance into dialog with them. We'd never really talked with them ever before. I've been a clinical lead for many years as a long-term conditions lead—never really dealt with the council. That was a really exciting potential solution for these people. Then, of course, we brought the ambulance crews in, and suddenly, before we knew it, everyone was suggesting other people. There was cross-pollination 'cause all these different organizations—ambulances were dealing with the council. The council were dealing with social services and mental health issues. They were critical for us getting a dedicated mental health line put in 'cause they'd already got a dialog going. There was a huge amount of cross-pollination going on. ID33

**Encouragement of divergent views:** It was a good example of work and health and social care and the borough councils and the prescribing team working together. ID05

**Clinician input:** The patient questionnaire was formulated by the clinical people that were on a steering group, but then once we were actually asking the questions, and we were able to feedback, there were lots of changes made...we were able to feed into it and help shape how it went...We all felt that we were involved with that. ID12

**Clinician input:** We engaged people. It wasn't something that was just forced upon them...we were very engaging in terms of the people that were gonna be the end users. From a clinician perspective, whether that be access to the record, whether that be workin' in the VCT, or working in the hot hubs...I think a mixture of a really tightknit group of clinicians, non-clinicians, leaders, managers that absolutely bought into the vision and what we were going to achieve through the use of COVID Protect and its different forms, but also, how we engaged clinicians that were using it and the patients that were the recipients of that and used it to develop the system to make it better and more effective. ID22

**Clinician input:** The clinical leads were very useful, and the feedback and the comments that they gave were pertinent and appropriate and just showed a grasp. I think every area is slightly different, and so they were able to bring us something that might be important to their population. I think it's good to have different areas covering a large patch, different people from each population there to representing their area because they know certain foibles. ID20

**Clinician input:** One of the key ones for me was we were really doing this to help practices, to help our doctors. The project was developed with



	<p>doctors involved at the higher-level, strategic level... They're involved all the way through with delivering the project. ID26</p> <p><b>Clinician input:</b> The structure that we put in place for the project to have a clinical operational group, which met weekly, and a project management group... That had a number of GPs on it, and what was able to really be the driving force that then disseminated the messages down into each of the... four localities... Then also, obviously, you could take feedback back into that clinical group, so actually, this is where my GPs are. This is their mindset... to mitigate these concerns. That was a really important group. Then the operational group would, report into that group and that helped drive pace and focus and maintain a clear direction of travel. ID17</p> <p><b>Clinician input:</b> The one big thing that helped this project was establishing the clinical group right at the beginning and having a group of very engaged clinicians all turning up for meetings en masse, regularly and actively enthusing about it. In the past, you would have transformation on one side, and the health service managers would be trying to do something. Then you'd have the clinicians on the other side. Sometimes you were trying to justify what you were trying to do as a manager, and the clinicians would be arguing, and everyone would have their pet view, and it's a barrier to transformation. The one thing that this project did really, really successfully is in bringing the clinicians in right at the beginning and every decision being clinically driven and clinically justified meant that as we rolled it out to the wider health areas and the wider GP practices, it had a clinical backing. That clinical backing was absolutely key to making this happen, absolutely key. ID29</p> <p><b>Clinician input:</b> We set up webinars inviting primary care network clinical directors. [Name] basically talked through what he thought the product was gonna be and made very pointed efforts at that point on those calls to go around to each of those clinicians and ask them what they thought of it and whether they supported it or not just to make sure that all the voices were heard. Pretty much unanimously, actually, most of the clinicians really conceptually understood it and supported it. ID16</p>
<p>Allowing for both central control and local adaptation</p>	<p><b>GP autonomy:</b> There were different types of alerts...the practices are used a bit working autonomously, and so the CCG didn't want to take a prescriptive approach to the model that we used to deliver the project, so it allowed this flexibility, which I think it worked well, and it got buy-in from the practices because of the flexibility. It was sort of harder to manage from a governance perspective because there wasn't a single</p>

approach. There were some localities that didn't have virtual clinical teams. There were some that did, so in some localities, all the alerts went through to the GP practices, but in other localities, there was a virtual clinical team that would see them in the first instance. ID07

**Local adaptation:** I linked in locally with the local operational teams in each of the localities. I engaged with each of those localities and assigned a manager as a lead for the rollout of COVID Protect in their areas. They then communicated locally with staff to say that this was coming. They demoed the system so those staff could see it before it came in. Or, if they'd got any questions, they could do that. Then also linked in with the local administrators so they could help in signing people up rapidly rather than almost developing a single point of failure. We could see that coming, so we put in local facilitators and admin at each site so they could get people signed up quickly. Yeah, then it got rolled out. Then again, we reviewed that on a regular basis, catchin' up with staff, having drop-in sessions for people, virtual drop-in sessions for people, to just highlight any problems directing to us as the team or through the local links. They could do that in terms of the access to information. ID22

**Local adaptation:** We had to keep coming up with how you were gonna do it...but [leadership allowed each group to do their own thing. Each area did their own thing depending on how familiar they were with [the system] and what their setups were like. We were then having to develop our local systems so that we could then take ownership... ID24

**Local adaptation:** It was really useful for us to keep adapting and adapting and adapting as soon as we worked out what the need was. Try not to be too wed to your original idea. The fact that they allowed each area to develop and do their own thing was really useful. ID24

**Local adaptation:** That was one of the key aspects of the delivery of the project really was just trying to work out how we were going to handle those alerts. That was the element that was very successful from the point of view of letting the localities decide how they were going to handle those. ID16

**Local adaptation:** With the list of patients that we're shielding, 'cause they were clinically vulnerable...it was vitally important that there was a way of supporting them in a number of ways. The obvious things like organizing food parcels for them, getting medicines to them, monitoring their health, and checking if their health was deteriorating, we were capturing them and being flagged up... possibly one of the most important things, is it was a point of contact. We could talk to them. It helped reduce the sense of isolation. It was the four things, really,

	<p><i>supporting on food, supporting on medicines, supporting on health, and being a friend. ID29</i></p> <p><b>Local adaptation:</b> <i>Sometimes there'd be a clinical issue that needed to be addressed if the person had symptoms of COVID...There were virtual clinical teams created at each locality as a filter to deal with things rather than everything going to each individual small practice. There were four clinical teams who were receiving the bulk of these referrals. It took them a while to get set up. Also, they had teething problems in gettin' themselves organized, so that pushed back some things back to me if they didn't understand what was being written down or what have you. That was a bit of a challenge. In terms of overcoming that, we had to develop what we call SOPs, standard operating procedures, just to really clarify really clearly roles and responsibilities and who does what, but in the early days, it was all a bit messy. We just have to get on with it and learned as we went along. ID14</i></p>
Balancing risk taking and accountability	<p><b>Taking risks:</b> <i>a lot of the restrictions around funding relaxed...It enabled those sorts of things to happen at risk, which wouldn't happen under normal circumstances. ID16</i></p> <p><b>Taking risks:</b> <i>In my role where I'm accountable, I felt real pressure whether we were doing the right thing...Of course, it was fine, but at the time, there was a lot of nervousness about whether it was fine. ID30</i></p> <p><b>Taking risks:</b> <i>That sense of needing to help people was a real good booster to just think "Ultimately, what's the worst that can happen? We're trying to contact people to help them". ID26</i></p> <p><b>Taking risks:</b> <i>With the COPI order and with a common sense of objective, we were able to all really focus on what we wanted, which was to protect our patients...There was a common goal...On the back of that, there was a real sense of teamwork, I think, in terms of pushing for the same goal, which meant all this happens when normally you'd have people going, "I'm not allowing my data for that" or "I'm not allowing—" It did create a real sense of teamwork for trying to push the thing out. We launched literally in two and three weeks what had normally taken us six to eight months on the back of those different bits and pieces. ID33</i></p> <p><b>Taking risks:</b> <i>I think what was unique, and I think is a consequence of the emergency situation, it felt as though all our partners were actively engaging. It really felt as though nobody was putting up any barriers. We were working with a lot of other agencies, so particularly, say, with people within the County Council. Now, normally to get things working across systems like that, it would take you months or years of</i></p>

*negotiation and working out who was gonna do what and whose responsibility it was gonna be to do whatever. That just melted away, and people just did what needed to be done. I think that's been widely cited in many parts of the world as one of the silver linings from the pandemic. ID27*

**Taking risks:** *We had the luxury at that time of not really thinking or having to produce value for money business cases upfront to say, "Well, this is how... we're going to justify the cost of it." It was more, "No, we're gonna go ahead with the project," and the cost of it is gonna be brought against the centralized COVID fund. I guess what I'm saying is that during the course of the project, we ended up doing something that the NHS doesn't normally do. Normally we spend a long, long time going through formal business cases trying to justify how we're gonna spend something. We never really evaluate it properly or turn it off if it doesn't work. In this case, we said, "Well, we're giving the green light to a project that we think is gonna add significant value to our patients and our practices." We know it needs the support, so we're going to go at financial risk making sure that it's appropriately staffed. ID16*

**Taking risks:** *One of the successes, and the high points was actually getting a very diverse group of people together and agree enough to make something happen extraordinarily quickly. Something that would normally have taken months and months of meetings...Normally, you would spend a lot more time talking about stuff, debating stuff...People would normally expect it to pilot somewhere very small and evaluate it. They would want all the tweaks ironed out before you went for a full-on rollout. Whereas this was just this is it; we think it's the right thing to do. We're not quite sure how it's gonna work out. We're not quite sure what demand it's gonna create, and we're not quite sure how we're gonna deal with that if it does. I think there was such a momentum to get it done that I don't think I've ever seen anything get done so quickly. ID11*

**Taking risks:** *I think we've also been much more willing to say, "You know what? That's 90 percent good enough. Let's go with it," whereas previously, we've let the perfect be the enemy of the good and unless something's perfect, we don't try and implement it. We just haven't had time to do that, so we've gone, "Well, that's 90 percent there. Let's go with it, and we'll tweak it as we go along," which I guess is much more of an agile approach in the true sense of the word. ID13*

**Accountability:** *We also had to make sure that we weren't taking any clinical risks...It was the balance of getting the governance in place in something that was so very, very fast-moving. On day one, I don't think*

*there was a lot of governance, and there was lots going on. Over a three-week period, we tipped the see-saw to a point where, I felt, 'Yes, we've got grip control. We know what we're doing. We know what we still need to do,' and the structures were in place. ID16*

**Accountability:** *"Then when things started to settle down a bit, it was then starting to put that together into a very, very simple implementation plan, managing the risks. Of all the various components within a project delivery, we basically ran a project plan, a risk log, and an action-decision log...we added in an element of high-level reporting so we could monitor what all the call handlers were doing, and we could do some management reporting. Also, we were able to articulate up to the senior management the outcomes of the project. That evolved over a three-week period from literally nothing. If we had sat down for two weeks and done a proper scoping phase, we'd have lost so much time. These people were vulnerable from day one. It was vital that we got the calls started as quickly as possible. Now, we also had to make sure that we weren't taking any clinical risks, that we had clinical signoff, we had all of that support. Things like the action and decision log became vital in logging that so that we weren't exposing anyone to risk and that we could defend any challenge should there be one. It was the balance of getting the governance in place in something that was so very, very fast-moving ID16*