We need to work differently in a crisis: peer-professional leadership to redesign physicians' work

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ABSTRACT

Background Understanding physician leadership is critical during pandemics and other health crises when formal organisational leaders may be unable to respond expeditiously. This study examined how physician leaders managed to quickly design a new model for acute-care physicians' work, adopted across four large hospitals in a public health authority in Canada during the COVID-19 pandemic.

Methods The research employed a qualitative case study methodology, with inductive analysis of interview transcripts and documents. Shortly after a physician work model redesign, we interviewed key informants: the physician leaders and others who participated in or supported the model's development. Participants were chosen based on their leadership role and through snowballing. All those who were approached agreed to participate.

Results A process model describes leadership actions during four phases of work model development (priming, early planning, readying for operations and transition). These actions were: (1) recognising the threat, (2) committing to action, (3) forming and organising, (4) building and relying on relationships, (5) developing supporting processes and (6) designing functions and structure. We offer three additional contributions to knowledge about leadership in a time of crisis: (1) leveraging peer-professional leadership to initiate, formalise and organise change processes, (2) designing a new work model on existing and emerging evidence and (3) building and relying on relationships to unify various actors.

Conclusions The model of peer-professional leadership can deepen understanding of how to lead professionals. Our findings could assist peer-professional and organisational leaders to encourage quick redesign of professionals' work in response to new phases of the COVID-19 pandemic or other crises.

INTRODUCTION

Since its emergence in Wuhan, China in 2019, a novel coronavirus (SARS-CoV-2, causing COVID-19) spread across many countries with substantial impact on health and healthcare systems. Initially, COVID-19 cases overwhelmed hospitals and healthcare professionals who struggled to provide patient care while managing their own fears of illness and death. The pandemic then developed into a global crisis.

The importance of leadership during times of crisis is well recognised. Organisation and management research describes the actions leaders use to reduce the likelihood of a crisis, minimise harm from a crisis and re-establish order after a crisis has passed.[1–3] However, we lack empirical evidence of leadership actions needed to achieve quick change to the organisation of work and, in particular, professionals' work, during a crisis.[1 4] Leaders' impact on this kind of change has not been systematically studied.[5]

Practitioner literature describes 'what good (organisational) leadership looks like' during the crisis of COVID-19 pandemic[6] and documents reflections from organisational leaders who are responding to it and strategising around a 'next normal'.[7] However, we are missing knowledge about a critical group that provides leadership in healthcare: physicians.

Understanding physician leadership in response to the COVID-19 pandemic is important because physicians' work has long been organised around practice norms of independence and autonomy, especially across specialisations of similar hierarchical status.[8 9] Even when physicians are employees of organisations, their work is only loosely controlled by organisational leaders and managers.[10–13] Thus, it is critical to understand how physicians act as leaders and how that can connect to organisational leadership in times of crisis to ensure a coordinated organisational and physician response.

We provide empirical evidence of physician leadership in a healthcare setting during the COVID-19 pandemic's first wave. In this setting, physicians and organisational leaders came together to develop and implement a new coordinated physician work model, to ensure COVID-19 care delivery in acute-care hospitals' inpatient units. An earlier paper reports the work model in more detail.[14] Our case study uncovered the actions and process that emerged as physicians and organisational leaders practised distributed[5] and peer-professional leadership to develop a new work model in response to a crisis.

Following this research, the new physician work model was successfully reimplemented during the second wave of COVID-19,[14] which further validates the peer-professional leadership model we report here.

METHODS

Study setting

The study was conducted in Calgary (population 1.5 million), Alberta, Canada. The city forms one of Alberta's large public health authority's (PHA) five geographical zones. The Calgary Zone is comprised of multiple tertiary care hospitals (2791 total beds),

including the four major ones this study focused on and a large Department of Medicine (DOM; 431 active members) within the University of Calgary's medical school. The PHA coordinates healthcare delivery across the province.[14]

The PHA had an existing emergency response plan; however, pandemic preparedness across its five zones varied. In the Calgary Zone, four physician colleagues recognised the existing approach to organising physicians' work risked being overwhelmed by the anticipated surge of COVID-19-related hospitalisations. Although the PHA and the DOM collaborated closely to provide medical services at the Calgary Zone's sites, the physicians and organisational leaders recognised that there was no coordinated pandemic response plan to avoid overwhelming hospitals if COVID-19 cases increased as projected.[14]

The four physician colleagues thought about solutions and discussed among themselves. Two volunteered the group's insights into their DOM division heads and were subsequently asked to develop a plan for their divisions. These four colleagues started to collaborate on a new model for physicians' work and invited their peers to join in. Early and important observations included that the usual approaches to physician workforce scheduling, interdepartmental relations, physician training and education, communication, safety and wellness would likely be ineffective during the pandemic. As these were based on professional/medical independence and autonomy (ie, hospital-based physician groups scheduling their own shifts, being responsible for their own training, working only within medical specialisations), they were not amenable to rapid coordination across a large urban setting in a crisis.

The question facing the physicians was: *how could they design and implement a new, scalable physician work model quickly in this professionalised environment?*

A rapid redesign took place early during the COVID-19 pandemic (March to May 2020). The physician-led initiative was called the Calgary Zone Medical Emergency Operations Command (MEOC), including the four physician coleads (the *core group*) and approximately 30 peers who they had invited to join in (the *extended group*). Ultimately, MEOC designed, implemented and handed over (to the Calgary Zone and the PHA) a new, scalable acute-care pandemic workforce model to organise, staff, train and deploy physicians across four tertiary/quaternary care hospitals in the Calgary Zone.[14]

Research design and data collection

As business school researchers interested in leadership and healthcare, and with expertise in qualitative methods, some of the authors were invited by the core group of physicians to study how this new model was designed. We employed a qualitative case study methodology[15] to examine this case of rapid development of a new model of professional work during a crisis. The case helps understand, almost in real time, how this development was accomplished.

Shortly after the new work model's development, we collected data through interviews (May to September 2020) with individuals who led and designed the new model and from relevant documents. In total, we interviewed 10 people for an hour each, including the core group of 4 and 6 additional individuals (organisational leaders and administrators who were also part of the *extended group*). See table 1 for participant information. Interviews were conducted and recorded through Zoom and transcribed verbatim. Documents (eg, MEOC team meeting minutes, the prepandemic and the emerging physician work models, presentation slides from physician information webinars etc) were used to understand the differences between the prepandemic and new models.

Table 1 Participant characteristics

Characteristics	Values		
	Core group physicians	Organisational leaders	Administrative support
Participant count (n)	4	3	3
Academic degree			
MD	4	3	0
MSc	2	1	0
MBA	1	0	2
MPP	1	0	0
PHA role			
Zone	0	1	1
DoM	4	2	2

DOM, Department of Medicine; PHA, public health authority.

Data analysis

Transcripts and documents were analysed inductively by the first three authors who coded independently and then compared and discussed the codes to ensure their validity. The first round of coding identified activities, tactics and strategies used to design the new work model. NVivo12 was used to organise interview transcripts, documents and the emergent codes. We reviewed first-order codes with the core group in a 2-hour focus group discussion for their feedback on whether our interpretation aligned with their actions and experiences. During the review, the physicians provided context and nuance. We then returned to our data and first-order codes and developed second-order themes (eg, leadership actions during the model development) and third-order categories (eg, the leadership actions employed to help develop the new work model: leveraging peer-professional leadership, using emerging and existing evidence and relying on and building relationships) through an iterative, robust process of discussing and raising the level of abstraction from the first-order codes to third-order categories.[16] The core group's subsequent feedback on this paper further validated the study's findings. These steps to continually check the emerging findings against the data strengthened our thematic analysis.

FINDINGS

Our findings report the actions and process that resulted in the rapid design of a new physician work model in response to a crisis:

> *…[with] this infrastructure … you could disseminate … the leadership and the responsibility and autonomy, and let people work within their expertise.* [A MEOC co-lead on the new model for physicians' work]

The process included four phases: priming, early planning, readying for operation and transition (into the regular organisational and leadership structures). Within these phases, we describe six categories of iterative actions (and activities within each): (1) recognising the threat, (2) committing to action, (3) forming and organising, (4) building and relying on relationships, (5) developing supporting processes and (6) designing functions and structure. Figure 1 depicts actions as distinct and occurring within specific phases; in real time, they were emergent and intertwined.

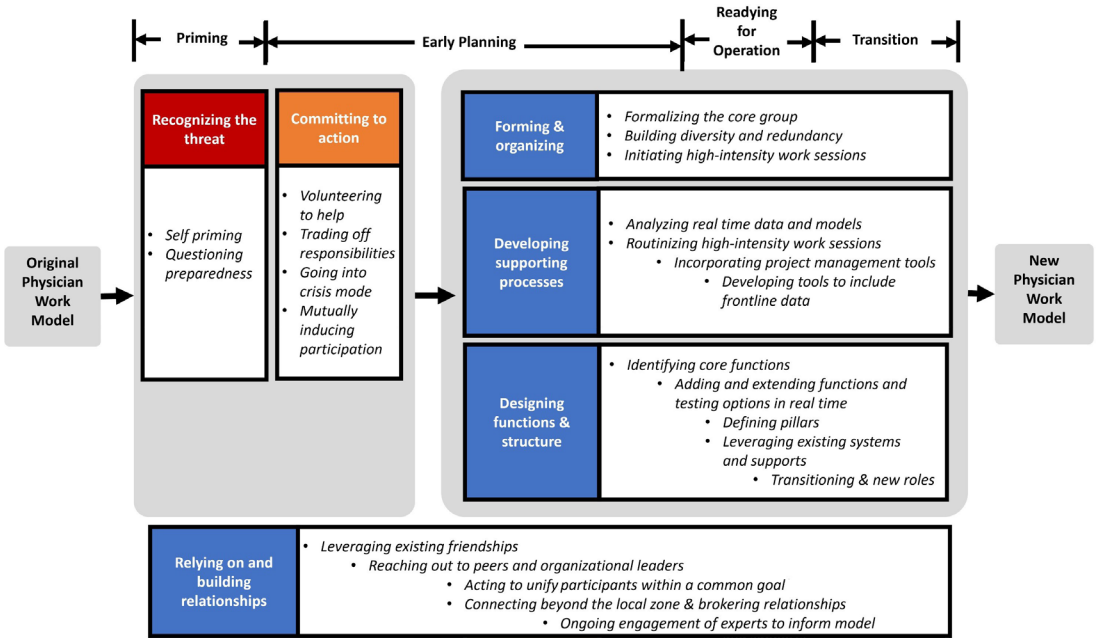

Figure 1 Developing a new model of professional work in response to crisis.

Priming phase: recognising the threat

In this phase, the core group recognised the pandemic's emerging threat. Each member 'self-primed' by reading medical literature on previous pandemics and epidemics, communicating with international colleagues, developing their own early model projections and consuming news (eg, about overwhelmed hospitals in Italy and New York). Discussing with colleagues and among themselves, they recognised the threat—a possible health system collapse and a critical load failure in acute care. The core group started to ask questions about pandemic preparedness within their work zone. They recognised that load failure might be influenced by availability of the physician workforce, a factor that was not being addressed by the PHA or the local Zone. As they discovered this gap, they acknowledged not only their own fears and anxieties but also their capacities and related responsibility, which motivated them to act. (The quotations are from the core group physicians. The other interviewees independently confirmed information and provided additional context).

> …We're reading the reports over Christmas … reading about this, about what's happening in China … I think we were so scared based on some of these reports that we were… having nightmares before even having to experience a clinical scenario. … There was an article I read that was called pre-traumatic stress disorder. [Co-lead-1]
>
> We [were] at the time looking at … [a level of projected] admissions per day in the Calgary Zone, which would be a critical load failure, like the system would collapse completely. [Co-lead-2]

Early planning: committing to action

Early planning started when two of the core group volunteered to help with the pandemic response to their Division Heads (General Internal Medicine (GIM) and Pulmonary Medicine), and the other two had discussed the need to act: 'we must do something'; 'I have a responsibility to help'. The past relationships among the core group were central to their involvement. They had complementary expertise and were close colleagues. The core group described how they 'mutually induced' each other to get involved in pandemic planning, building on their areas of expertise, pre-existing friendship and shared perception of the potential crisis.

> I essentially called my friends in a crisis. [Co-lead-2]
>
> We stepped in because we felt like there was a desperate need. … [We] felt we there was no plan, and at our site we had no plan. [Co-lead-1]
>
> We basically at that point just agreed that we had to really, really engage, at the very least at a site level, to start to pull together a plan that we thought was appropriate. [Co-lead-3]
>
> We all sort of know each other. … we all came at that leadership with slightly different experiences and expertise. [Co-lead-4]

The core group made time to develop the new model by trading off other responsibilities (clinical time, research, families, own wellness), 'tripling their obligations'. Recognising urgency, they went into 'crisis mode' and worked rapidly and efficiently for long hours. The core group decided to be coleads (for redundancy, to address illness, isolation requirements or on-call clinical service demands among them) but appointed one titular leader for external representation, anticipating a need for rapid decision-making at times.

> That kind of devolved into … a co-lead relationship, and then … it was restored back to kind of a lead relationship … to make sure that there was a chain of command that was clear. [Co-lead-3]
>
> But the co-lead structure was equally effective and agile. [Co-lead-2]

Early planning: forming and organising

Before formally organising, three of the eventual core group invited all their GIM division colleagues for a weekend "sprint" to draft a pandemic physician workforce response plan'. This invitation aimed to increase the size of the planning group and introduce diversity of thought. Approximately a third of the division (those who were available) joined this high-intensity work weekend, with many people later assuming ongoing responsibility for aspects of the emerging physician work model, effectively forming the extended group.

> We put together like 30 or 35 internists over the weekend, we worked … 48-72 hours straight, and we just put together a relatively comprehensive plan. [Co-lead-2]
> We just crushed through it until we had a plan. And I set ridiculous timelines like … we're moving to implementation in five days. [Co-lead-1]
> We were trying to build in redundancy. And with that redundancy, built in diversity of thought, as well as different demographic diversity in order to bring in the best from everything that everyone in the department had to offer while still executing on the work. [Co-lead-1]

The core group presented the draft plan to and received critique from formal leaders within the DOM and the PHA after that weekend. It was then asked to lead pandemic planning for physician work, first for the GIM division, then for the entire DOM and Calgary Zone.

Developing supporting processes

During the early phase, the extended group (with both public health and epidemiology training) reviewed emerging evidence about the pandemic, to develop their own statistical models of COVID-19 spread and projected hospital admissions and deaths, as zone-specific models were not available. They also paid attention to emerging scientific literature, reports from international colleagues and traditional news media and social media reporting.

In the readying-for-operation phase, the core group organised more 'sprint' sessions to revise and tweak the emerging physician work model. The core group asked for administrative support and the DOM provided them an experienced project manager (PM), validating the group's efforts. The PM took charge of the existing project tools and file system.

> [MEOC project manager and another administrator] were able to help us document this, keep us on track with our project management tools and things like that, so that we were not letting things fall through the cracks … if issues came up, we had a way to document them, map the process, all that sort of stuff. [Co-lead-4]

In this middle phase, the exended group collected experiential data from colleagues working in COVID-19 wards. They used this real-time data to inform the emerging model and developed tools to ensure that frontline physicians' experiences would continue to shape the model. For example, using virtual digital tools, the extended group developed an issue-tracking tool that frontline physicians used to record problems, concerns and how these were resolved.

> Feedback forms were being submitted from basically every doc that rotated through COVID-19 wards, around things that were working, things that weren't working. Those were getting processed through a thematic analysis, and then, oftentimes logged into an issue tracker. Those issues got assigned, we actually made progress against (issues) that were raised. [Co-lead-3]

Designing functions and structure

Early on, during the first weekend 'sprint', the extended group identified the necessary functions, or 'pillars', of the new physician work model (leveraging existing systems and structures where possible): (1) physician staffing, (2) interdepartmental relations, (3) informatics and analytics, (4) physician training and education, (5) clinical practice guidance, (6) communications and (7) physician safety and wellness (cf. 14). As concerns were identified in the readying-for-operations phase, each pillar's scope was adjusted to address the concerns appropriately.

> Staffing … was the core of the entire [model] … To me it was like staffing and then seven satellites that you need, to be able to support it. Because the whole point was a physician staffing model that could scale. [Co-lead-2]
> So it's not that the structures weren't there, but we needed to build them in because what we were asking of people was beyond what would normally happen. [Co-lead-4]
> The [health authority] command structure works in dyads … medical leads and … operational leads … [the latter] make a lot of the decisions. But the clinicians, the medical lead sets clinical parameters. And so we tried to follow that structure as we went. [Co-lead-2]

During this middle phase, the extended group also tested a cross-specialisation 'pod structure' for the management of patients with COVID-19, in which physicians with expertise in the management of acutely ill patients (in GIM, Pulmonary Medicine and Nephrology) were paired with other physicians in different medical specialties.

> We came up with this pod structure that allowed us to pair one … experienced acute care physician with other physicians that have lots of skills but may not be experienced in this particular area. [Co-lead-4]

Ultimately, the new model for physicians' work was informed by input from participants (eg, during sprints and planning activities), real-time evidence of what had worked on COVID-19 wards and other departments within the Zone and by an understanding of how existing systems and structure could enable the operationalisation of the new model. In addition to communicating via the issue-tracking tool, meetings and informal networks, the extended group used emails, a purpose-built website and webinars to share information (and receive feedback) about the emerging model of work.

As the rate of new COVID-19 infections slowed in the spring of 2020, the need to implement and scale the new physician work model decreased. To ensure the new model was not lost as the PHA and the DOM returned to usual operations, the core group prepared a transition plan to integrate the model into the DOM's regular structure. Also, during this transition phase, the MEOC coleads were appointed advisors for the DOM COVID-19 pandemic response.

> Towards the end, we realized that [the model] needed to go to the Department of Medicine structure that existed within the clinical operations world. [Co-lead-4]
> We transitioned … both with documentation of supporting and then both with consensus from all our leaders. [Co-lead-2]

Relying on and building relationships

Across all phases of model development, the extended group leveraged and strengthened existing relationships and built new ones to initiate, design, refine, and transition the new model. They acted to unify participants for a common goal: providing scalable, sustainable and safe COVID-19 clinical care.

The core group involved DOM heads to attend daily meetings and consulted the PHA's Zone leaders frequently. Some core group members attended the Zone Emergency Operations Committee (ZEOC). The core group continued to consult experts and leaders across the medical school and the PHA for input on the new model.

When it came to system-wide planning and execution, however, brokering some relationships became more challenging

as different clinical departments and hospitals wanted to start making their own plans (to manage non-COVID caseloads and non-acute COVID-care) when the coronavirus case counts remained below projections. A coordinated physician work model seemed less necessary than when the pandemic threat was higher. The core group recognised the need to increase communications across the PHA to build and enable relationships and support for the new model

> … interdepartmental affairs … [was] brokering all these relationships between all the other clinical departments we had to work with, which is very difficult. [Co-lead-2]
> I think we were successful with … communicating a need in the very short term to come together with a unified plan. [Co-lead-3]

> If you don't have a strong communication structure, and you don't have strong frontline feedback, and you're not communicating to everyone in a pandemic … your workforce planning means nothing, because no one knows what the hell's going on. And people will just start doing their own thing. [Co-lead-1]

DISCUSSION

In times of crisis, new work models are often required. Changing the organisation of professionals' work can be very challenging, and often is, in healthcare.[17] The first step is to develop a new model. Our findings show how a new model for physicians' work was rapidly developed and implemented in one Zone of a large PHA. Indicators of its acceptance by physicians who worked in this Zone include the high number of physicians volunteering to work at COVID-19 units and taking up the personal protective equipment training, as well as the model's re-escalation by the DOM October 2020.[14] This work was spearheaded by physician peer leaders and supported by formal organisational leaders and a PM.[14] We uncovered the many leadership actions taken to design the new model. A process model of these actions is our first contribution.

We offer three additional contributions to knowledge about leadership needed to change an established professional work model in a time of crisis: (1) leveraging peer-professional leadership, (2) designing the new work model on existing and emerging evidence and (3) building and relying on relationships to unify actors.

Leveraging peer-professional leadership

A central contribution of this research is identifying the potential of leveraging peer-professional leadership when a professional work model must change quickly. As our study's participants and the literature on professions[9 12] have noted, physicians value professional autonomy, prefer to operate by consensus and resist being led by non-peer professionals (eg, managers or administrators).

Our findings suggest that some peer-professionals might be well-positioned to lead change. While we did not describe the core-group physician characteristics due to space limits, each had chaired or cochaired research groups and participated in starting or managing medical clinics and other clinical initiatives. Additionally, each had led initiatives that garnered respect from their peers and formal leaders (many of whom were the coleads' mentors). These characteristics are important and may have helped the core group spear-head the change initiative. We speculate that their experience leading research and clinical initiatives had primed these physicians to take a big-picture perspective on health system performance that prompted them to volunteer to their formal leaders when they observed gaps in pandemic planning. Their previous achievements and the quality of their work positioned them as legitimate authorities in leading change that would impact their peers.

We also suggest that the peer-professional leadership structure—one where leadership was distributed[5] among the core and extended groups—allowed work model changes to be identified and agreed on more quickly than would have happened through consensus or hierarchical leadership structures or approaches.

Designing the new work model using existing and emerging evidence

Our second additional contribution speaks to the importance of real-time evidence and communication to inform new models of professional work that are needed to respond to crisis. Different from leadership literature that suggests new models are developed, communicated and then imposed,[5] our findings clearly show how the extended leadership group acquired and analysed real-time evidence from the front line (of COVID-19 care) and quickly incorporated it into the design of the new model of physician work.[14]

We suggest that rapid model adjustments to emerging evidence from the front line and other sources and frequent communication of this evidence to the larger peer group facilitated—and accelerated—the acceptance of the new work model. This two-way communication (hearing evidence from the front line, incorporating it in the model and broadcasting the changes)[14] speaks to the relational nature of peer-professional leadership, which seems essential, not only to the acceptance of the change leaders promote but also for the change (the new model) being fit-for-purpose.[18 19]

Our findings suggest that employing two-way communication to rapidly incorporate emerging frontline evidence into a new work model enables peer-professional leadership to potentially be as effective as 'command-and-control' leadership in responding to crisis.[14] Specifically, in professionalised environments, this approach allows peer-professional leaders to affect rapid change, even without formal authority.

Building and leveraging relationships to unify actors

Our final contribution highlights the importance of building and leveraging existing peer and informal relationships in designing a new model for professionals' work. Attention to peer—and other—relationships sits in contrast to leadership literature that focuses on formal leadership positions.[5] In this research, peer-professional leaders' reliance on relationships was critical.

Our findings show how the core group leveraged their existing relationships and built new ones. Given that each core group member had different areas of expertise, they had diverse networks to tap into to get advice (eg, on emergency response, leadership, health analytics etc) from trusted experts and peers.

Actions that built and leveraged relationships helped unify actors not previously connected but whose engagement and support were necessary for the acceptance and functioning of the new model. This also speaks to the importance of a relational approach to leadership in the absence of formal authority to achieve a rapid change in professional (physicians') work.

There are some limitations to our findings and model, as they emerged from a single case study conducted in a specific context: public health system in a Canadian province. This may limit the findings' generalisability. Also, we interviewed people who were directly involved in changing the physician work model or supported it and did not explicitly seek out potential critics who could have added valuable perspectives. However, as we discuss above, the indirect evidence suggests the model's high level of

acceptance among physicians. Finally, this study was completed before the model was implemented: the model was implemented during the second wave of the Alberta's COVID-19 pandemic.[14] Thus, we do not comment on the impact of the model on patient care or outcomes.

CONCLUSIONS

In this study, we identify a model for peer-professional medical leadership in a time of crisis. These findings are likely relevant to other organisational settings: other professionalised work forces, multiple organisational involvement, time pressures due to crises. We believe that our findings and the model could be useful to peer-professional and organisational leaders who want to encourage quick redesign of professionals' work in response to new phases of the COVID-19 pandemic or to other crises.

Encouraged by this study's findings, we suggest that it is important to facilitate collaborative, peer-driven physician leadership when there is a desire and a need to change existing ways of work within and across professional specialisations. Training in this type of leadership could be incorporated in medical education and supported through organisational and other policy changes. We hope the model proposed here might serve as a basis for developing a new, non-clinical work model that could help medical leaders address not only rapid changes during crises but also more persistent wicked problems in healthcare.[20]

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Contributors JW: study design; data collection, coding and analysis; discussing the theoretical framing; writing up the findings; drafting the paper and the response to reviewers based on discussion with co-authors, incorporating their feedback and coordinating their revisions and editing. J-LH: study design; data collection, coding and analysis; writing theoretical framing and the literature review; discussion of the various drafts; critical revision and editing of drafts of the paper and the response to the reviewers. SK: study design; data collection, coding and analysis; discussing the theoretical framing; critical commenting on drafts. GF: providing data; validating findings; critical revision and editing of drafts of the paper and the response to reviewers. EM: providing data; validating findings; critical revision and editing of drafts of the paper and the response to reviewers. SP: providing data; validating findings; critical revision and editing of drafts of the paper and the response to reviewers. AB: conceiving the idea for the study; recruiting co-authors; providing data; validating findings; critical revision and editing of drafts of the paper and the response to reviewers.

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