

BMJ Open Quality Evaluation of a learning collaborative on team-based care: qualitative analysis of coaching calls using normalisation process theory

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ABSTRACT

Evaluation of learning collaboratives (LC) needs to account for not just outcomes and context, but also the mechanisms participating teams use to implement and normalise new practices. Normalisation process theory (NPT) mechanisms—*coherence*, *cognitive participation*, *collective action* and *reflexive monitoring*—were used to do a constant comparison coding of transcripts of weekly calls between team coaches and mentors during a 9-month LC to implement team-based primary care in 13 health centres. Both the positive and negative (eg, lack of *coherence*) use of normalising mechanisms, as well as when they occurred over time, were noted. Findings suggest that normalising mechanisms are not linear, but work concurrently in real time, in a recursive fashion and in negative and positive ways. Clarity of purpose (*coherence*) became clearer as teams met regularly, and optimised team relational work and commitment to using a shared quality improvement process (*cognitive participation*). Similarly, the concurrence of *cognitive participation* and *collective action* likely refined each other. It took 3–4 months for most teams to establish sufficient *coherence* and *cognitive participation*, and to access actionable data. Nine months was not enough time for some teams to both implement and *reflexively monitor* change using data. A separate analysis indicated that prominent topics of discussion were interactions within the team, its relationship with the larger organisation, and difficulties accessing data and determining its reliability. Teams which experience sufficient positive aspects of normalising mechanisms are able to tolerate the unevenness and negative aspects of normalising change to succeed.

INTRODUCTION

Primary care that is delivered by interdisciplinary teams has long been endorsed as a foundation of high quality healthcare systems,^{1–4} especially for patients with multiple chronic conditions.^{3 5 6} Team-based care as a model of interdisciplinary practice results in better health outcomes, higher patient satisfaction, decreased provider burnout and improved patient access.^{1 4 7–15} (In the USA, a provider can be a physician, a nurse practitioner or

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ Researchers have used normalisation process theory to analyse postintervention interviews, focus groups and meeting minutes in teams implementing change, whereas we used verbatim transcripts of how teams normalised change in real time from a 9-month learning collaborative designed to implement team-based primary care.

WHAT THIS STUDY ADDS

⇒ Normalising mechanisms are not linear, but work concurrently, in a recursive fashion; their deficiency impedes normalisation (negative) while their presence enhances it (positive). Successful teams experience sufficient positive aspects of normalising mechanisms to tolerate the recursive and negative aspects of normalising change.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ *Coherence* of purpose and value, a normalising mechanism, is likely a cornerstone of success, but teams need 3–4 months to establish a working team and to secure sufficient time and reliable data to do the work of change. More than 9 months are needed for most teams to both implement and monitor change using data.

a physician assistant, all of whom provide primary care, prescribe medications and order diagnostic tests.) It clarifies the roles and responsibilities of clinicians and staff, reduces poor communication and duplication of tasks, and standardises day-to-day processes for greater efficiency and effectiveness, potentially leading to greater resilience in response to challenges.¹⁶ Implementing team-based care is best accomplished by working with interdisciplinary teams over a period of time to adapt the model to their practice.^{17 18} These teams are complex, made up of independent agents, both individuals and groups, whose interactions create a



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dynamic that is unique to their setting, and to the ability of those agents to implement change.^{17 19}

Problem

Learning collaboratives can provide health centres with a roadmap to progress from planning to implementation of sustainable models of team-based care. Participants learn to use quality improvement (QI) tools to develop and trial more effective practices based on evidence from their own practice and from the literature, a process that requires them to act individually and together.²⁰ However, evaluation of learning collaboratives has proved challenging. Outcome measures are necessary but insufficient, as they vary greatly and are highly contextual.^{20–24} So what do teams *do* during a learning collaborative to implement new practices? What do they fail to do? Zamboni *et al*²³ suggested looking at not just outcomes and context, but also the mechanisms by which teams meet their outcomes (or not), noting that theories from the social sciences might prove useful to that end.

Available knowledge

Normalisation process theory (NPT) is a middle-range sociological theory that explains what people do, individually and as a group, to implement a complex intervention and integrate it into the structure of their healthcare system so that it becomes routine. NPT focuses on *how* the work gets done, that is, what groups *do*, what mechanisms they use to take action. NPT describes four major mechanisms that explain how implementation occurs, with four subcomponents in each mechanism.^{25–28}

Coherence refers to *sense-making*. Group members understand how the intervention is different from other efforts (differentiation). Together they develop a shared understanding of the goals and benefits of the intervention (communal specification), and value its potential and importance (internalisation). Individually, members clarify expectations regarding their own roles and responsibilities in the intervention and its implementation (individual specification).

Cognitive participation is *relational work* among team members that engages them in the process of implementation. Key group members drive the work forward (initiation), while others organise or reorganise themselves and relationships with one another in order to contribute to the work (enrolment). Individual members believe that they have a voice in the work (legitimation). Together, the group defines how the work will get done, that is, the actions and procedures they will undertake to move forward (activation).

Collective action is the *operational work* of implementation. In their interactions with each other, group members focus on the specific artefacts (eg, electronic health record) and practices (eg, workflows) they want to put into operation (interactional workability). Members develop trust in one another, hold one another accountable (relational integration), and allocate the work based on current skills and/or on the development of new

skills required of the intervention (skill set workability). The group manages its work in the context of the larger organisation (contextual integration).

Reflexive monitoring refers to the *appraisal work* of evaluating individual and group efforts towards a goal of spread and sustainability. This involves gathering evidence about the effectiveness of the new set of practices that have been implemented (systematisation), and evaluating their value in the context of the organisation (communal appraisal). Evaluation may lead to refining or revising the practices for greater effectiveness (reconfiguration). Individuals appraise how the new practices have affected them and their relationships with other members and/or with the intervention itself (individual appraisal).

Reviews of almost 200 publications have found NPT to be a useful and flexible theoretical framework, and the constructs to be sound.^{27–29} However, it is unclear whether the mechanisms occur in sequence, and which, if any, are most critical to successful implementation efforts.^{27 30–33} NPT has been used prospectively in the design of interventions and retrospectively for process evaluation after interventions were completed. Methods have included interviews, focus groups, observations and surveys,²⁷ and analysis of meeting minutes.³⁴

Rationale

As best as we can determine, NPT has not been used to examine what health centre teams actually said and did in real-time to implement a new practice, such as team-based care. To do so would be an opportunity to capture normalisation as it occurs,¹⁹ providing insight into why some teams in a learning collaborative to implement team-based care engage in the work of the collaborative and implement new practices, and why others do not. Capturing the real-time process may further clarify the temporal relationships among the four mechanisms of NPT, relationships that may be difficult to differentiate by relying on interviewee recall in postintervention interviews.

Aim

The primary aim of this paper is to examine the normalisation mechanisms used by health centre teams participating in a learning collaborative designed to help them transition to a model of team-based care. Secondly, as these data are collected in real time over several months, we hope to clarify the temporal relationships among the mechanisms of NPT over time.

METHODS

Context: setting and participants

The learning collaborative on team-based care was supported by a National Cooperative Agreement (NCA) grant to Community Health Center (CHCI) from the US Health Resources and Services Administration (HRSA). (NCA is now the National Training and Technical Assistance Partners.) CHCI is a health centre with primary care centre hubs in 15 cities across Connecticut, a network of

Table 1 The 13 health centres that participated in the learning collaborative

Participating organisation	State	Number of practice sites	Number of patients	Coach role in organisation*
Site 1	Virginia	19	43 303	Registered Nurse
Site 2	Texas	4	15 445	Family Nurse Practitioner
Site 3	Massachusetts	8	26 635	Registered Nurse
Site 4	California	15	2300	Physician Assistant
Site 5	Pennsylvania	5	21 833	Manager; Medical Assistant
Site 6	Maryland	2	6582	Registered Nurse; patient access supervisor
Site 7	Virginia	3	9360	Pediatric Nurse Practitioner; Licensed Practical Nurse
Site 8	Michigan	5	6519	Senior leader support
Site 9	New Jersey	9	28 735	Licensed Practical Nurse; QI specialist (Population Health)
Site 10	Connecticut	23	49 527	MPH (Population Health)
Site 11	Michigan	22	15 017	Chief Operating Officer
Site 12	Washington, DC	3	29 568	QI specialist
Site 13	California	20	57 930	Clinic manager

*Some sites had two coaches.
COO, chief operating officer; FNP, family nurse practitioner; LPN, licensed practice nurse ; MA, medical assistant; MPH, Master's Degree Public Health; PA, physician assistant; PNP, pediatric nurse practitioner; QI, quality improvement; RN, registered nurse.

over 200 school-based health centres, healthcare for the homeless clinics, and mobile dental services providing comprehensive care to 102 275 underserved patients annually. CHCI's primary care sites are recognised as a Patient-Centered Medical Home and have extensive experience using QI skills to implement and sustain team-based care.³⁵ The application for the collaborative was publicised nationally by HRSA. 13 of 20 applicant health centres were chosen to participate. Each health centre assigned a core primary care practice team of 4–8 individuals to participate in the collaborative: a provider, and the staff he or she works with on a daily basis, such as a medical assistant, registered nurse and front desk staff. Each organisation also identified a staff member who was willing to learn how to coach teams through the implementation process (see table 1). Leadership from each organisation agreed in writing that their teams would have the time and resources to participate fully.

Patient and public involvement

No patients or members of the public were involved in this study.

Description of the intervention

A full description of the 9-month learning collaborative, May 2018 through January 2019, is in a previous paper, in which we also report team outcomes and insights from site visits to selected participating health centres.³⁶ In summary, the learning collaborative was designed for teams to use a combination of QI skills and didactic content on team-based care to facilitate their transition to

team-based care by making changes to at least one area of practice as a group.

Team coaches attended a 2-day QI Boot Camp, which included how to follow a systematic improvement process, beginning with assessing their practice.^{37–41} QI tools included process maps and fishbone diagrams, global and specific aim statements, PDSA cycles (plan-do-study-act), and playbooks. A syllabus for eight 90-minute learning sessions laid out the team assignments with links to resources. Learning session content addressed how to optimise the roles of team members, team dynamics and examples of best practices. Teams were expected to have structured weekly meetings using timed agendas and assigned meeting roles. Coaches from each organisation met weekly for a 1-hour coach-mentor videoconference call with one of two experienced CHCI QI coaches who served as mentors (KH, DW).

Study of the intervention: design, measures and analysis

Using Creswell's mixed-methods approach, we used a *sequential transformative design* in which the data were analysed sequentially, first qualitatively and then quantitatively (*implementation*), with equal *priority*.^{42 43} Convergent triangulation of the data occurred at the *interpretation phase*,⁴² in which the data were expected to support and add to the theoretical foundations of NPT (*theoretical phase*).^{44 45}

The weekly coach-mentor videoconference calls were the source of our data. That is, our data are based on reports by the individual coaches about their teams

during the coach-mentor calls. These semi-structured calls served three purposes. One, coaches compared practices at their health centres, for example, how they used registered nurses and standing orders. Two, the mentors offered assistance on the use of specific QI tools, such as aim statements and data. Third, the mentors asked the coaches about the performance of their teams. For example, how often were they meeting? Was everyone participating equally? Was the team using the QI model? What barriers were they facing? What was working?

We were unable to record the meetings, and instead, one author (NK) took extensive notes, recording verbatim quotes about team performance in particular. Coaches knew that notes would be taken when they agreed to participate. In fact, note takers would ask for clarity about a comment in order to capture it accurately, especially regarding team performance. There were 50 1-hour coach-mentor calls, divided between the two mentors, yielding 2–4 pages of notes per call, depending on attendance and topics discussed.

In the analysis of the data, we asked three questions. First, *what* did the coaches discuss? We did affinity groupings of topics discussed in the coach-mentor calls, using as a guide the US Agency for Healthcare Research and Quality (AHRQ)²⁰ taxonomy of factors to consider when developing learning collaboratives. Second, we examined *how* coaches normalised new practices. Since descriptions of the NPT mechanisms already existed, we used a deductive approach for a content analysis of the notes from a post-positivism perspective,^{46–49} as well

as a constant comparison approach to the coding,⁵⁰ comparing our own data with how NPT coding categories have been defined by other researchers^{25 29 33 51} and in the NPT coding manual,⁵² thus increasing the trustworthiness of the findings.^{46 48–50} We noted whether the comments indicated the presence (positive) or the deficiency or lack (negative) of a normalising mechanism, for example, indicating a lack of *coherence*. Third, because the notes were arranged sequentially by date, we asked *when* normalising mechanisms occurred?

Two of the authors worked on affinity groupings using the AHRQ taxonomy²⁰ (KT, NK), and two authors experienced in qualitative methods did the analysis of normalisation processes (KT, MA), individually and then together over the course of several months, comparing notes and reconciling differences in interpretation, referring to the NPT literature, and adapting the definitions of the four NPT mechanisms to reflect the experience of the teams in the learning collaborative. One author (MA) did a quantitative analysis of the NPT coding.

RESULTS

The affinity grouping of the coaches' comments aligned with two of the AHRQ taxonomy categories²⁰ (table 2): *Social systems* and *Innovation/supporting technology*. Coaches spoke at great length about the social interactions within the team and its relationship to the structure of the organisation, for example, shared vision, ability to make decisions as a team, and support from administration. They

Table 2 Affinity grouping categories

AHRQ taxonomy	Topics discussed by health centre teams
<p><i>Social systems</i></p> <ul style="list-style-type: none"> ▶ Credibility of leadership ▶ Governance ▶ Purpose and shared vision ▶ Culture ▶ Members' activity level (engagement) ▶ Roles, process and structure of a learning collaborative 	<p><i>Team function/performance</i></p> <ul style="list-style-type: none"> ▶ Clarity about core versus extended team ▶ Clarity of purpose of the collaborative, expectations for participation ▶ Challenges with scheduling meetings ▶ How well team members worked together—or did not—completing the assigned work to implement team-based care <p><i>Organisational structure</i></p> <ul style="list-style-type: none"> ▶ Ability of team to make decisions ▶ Support from administration re: access to resources (time, data, personnel) and need to advocate on teams' behalf ▶ Staffing issues that affected scheduling meetings or making changes in workflows, for example, ability to have a provider and a medical assistant (MA)* work together every day ▶ Policies that affected the ability of the team to change role responsibilities, for example, nurses using standing orders
<p><i>Innovation: Supporting tools</i></p> <p>Resources, products or technology serve to improve the understanding of the innovation, increase efficiency in its adoption and spread, and provide other support</p>	<p><i>Information technology</i></p> <ul style="list-style-type: none"> ▶ Who has access to data, for example, only administrators ▶ How data are generated, for example, reports from internal business intelligence or from external vendor; team pulls the data manually ▶ Accuracy and reliability of data—or lack thereof—for use in the project ▶ Management of the data, that is, how data are used by whom, inside or outside of team

*A medical assistant (MA) supports providers by taking vital signs, preparing patients for examinations, managing patient records and performing some administrative duties.
AHRQ, US Agency for Healthcare Research and Quality.

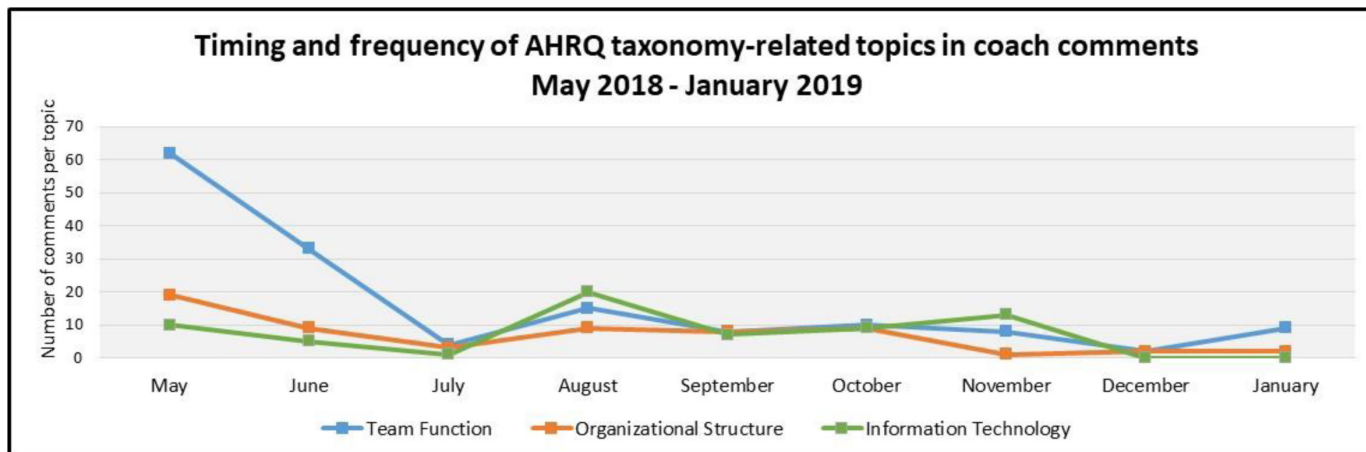


Figure 1 Timing and frequency of AHRQ taxonomy-related topics in coach comments. AHRQ, US Agency for Healthcare Research and Quality.

also made extensive comments about teams' difficulties accessing data from the electronic health record and determining its reliability. Figure 1 demonstrates when these topics were discussed and how often. Not surprisingly, the major topics during the first 2 months of the collaborative were related to *Social systems*, as the teams were forming and clarifying their purpose and seeking support from their organisation. *Supporting technology* dominated the discussions in August, almost 4 months into the collaborative, as teams struggled to get and make sense of data to use in their improvement work, and again later as they used data to create aim statements and trial new workflows using QI tools.

For coding NPT in the coaches' comments, we engaged in an iterative process of modifying the broad definitions of the four normalising mechanisms to reflect the teams' experiences of the learning collaborative. Final descriptions of the four normalising mechanisms follow. Table 3 provides examples of the mechanisms, both present/positive and deficient/negative.

Coherence was about *clarity of purpose and value for the work*. Coaches reported that teams understood that the learning collaborative was not another time-limited project, but rather a means of providing them with the knowledge, skills and tools to transition to team-based care, a transition that would continue when the collaborative ended, followed by the spread to other clinical teams in the organisation. Team members expressed value for the collaborative's purpose and for team-based care. They understood expectations for participation in the collaborative, such as the role of the coach and attendance at weekly team meetings and learning sessions. Lack of coherence was illustrated by scepticism or confusion about the expectations, purpose, and value of participation in the collaborative in general and team-based care in particular.

Cognitive participation was *relationship building among team members*. The QI process, skills and tools provided a shared mental model for how the teams approached the work of changing their practice, thereby 'getting

everyone on the same page' and encouraging open discussion. Coaches noted that team when members adjusted schedules to meet regularly, and that team membership changed as they better understood the principles of team-based care, for example, a medical assistant might provide better insight regarding the day-to-day workings of the team than would the chief medical officer. Lack of cognitive participation was evident when team members did not use the QI process as a shared mental model, for example, when they jumped to solutions before assessing their practice. The coach struggled to keep the team on track. Members knew the expectations for meetings (*coherence*), but did not adjust their schedules. Some team members monopolised the conversation or did not value others' input.

Collective action was *operational work*. Coaches reported that teams got into the details of their day-to-day work, using the QI tools to assess their practice, identify areas for improvement, examine their own data, set aims and trial new workflows (PDSAs). They developed trust and confidence in each other, held one another accountable and divided labour based on expertise and willingness to learn. Leadership honoured their commitment to provide the team with needed resources, especially time and data. Lack of collective action was evidenced by a lack of such support and resources. Coaches needed guidance on how to 'manage up' with administration to advocate for resources and to manage expectations about what their team was working on.

Reflexive monitoring is the *appraisal work* that teams did to evaluate and understand how their work affected them and their organisations. Coaches shared that their teams were measuring results and talking about spread to other parts of the organisation, recognising the need to adapt practice changes to specific settings. Individuals and the team as a whole expressed pride in their accomplishments and in their ability to work as a team, or not. A few teams were able to progress sufficiently in their improvement work in the 9 months to begin to measure, evaluate and adapt their work. Most teams did not.

**Table 3** Normalisation process theory mechanism examples

Positive	Negative/deficient
Coherence: clarifying purpose, expectations for participation, role of coach	
<ul style="list-style-type: none"> ▶ [I was] explaining [coach] role and why the team was there, which was helpful, became much better, discombobulated at first but got better ▶ When laying down the [meeting] ground rules, it was very helpful to emphasize the contribution of every role. It set up the meeting/group for success with individuals that may not be able to leave their hat at the door ▶ At last meeting—created an agenda, assigned [meeting] roles, to-do list of deadlines 	<ul style="list-style-type: none"> ▶ Some people are lost, confused, not sure why collaborative was formed ▶ Only two people showed up at last meeting despite sending agenda and reminders, supposed to be eight people ▶ Leadership signed off on this but ... does not understand what [learning collaborative] entails—expectations/time commitment
Cognitive participation: relational work of getting everyone on the same page, coordinating schedules, following the quality improvement process	
<ul style="list-style-type: none"> ▶ First meeting tomorrow, consistently Thursday mornings ▶ Feel like the team is all on the same level. We have the Chief Medical Officer (CMO) and a Nurse Practitioner (NP) in the meeting. The provider is very respectful towards the agenda and the project. He works hard to be a great team member ▶ Trying to let the team lead it and not tell them what to do ▶ We did the role activity assessment together ... [described helpful discussion] 	<ul style="list-style-type: none"> ▶ Difficult to coordinate meeting times Our struggle is that clinicians start at different times ▶ They were not able to stay on track. Team was jumping to solutions before going through the assignments. Need advice on how to rein them in ▶ Uncertain how to steer the group to acknowledge everyone's voice ▶ Discussing the [negative] dynamic between the providers and the medical assistant (MA). The MA feels uncertain to speak up
Collective action: diving into the work, managing relationship with organisation re: resources	
<ul style="list-style-type: none"> ▶ They spent a lot of time in the meeting digging down on their [missed appointments data] report and discovered the report also includes reschedules ▶ Entire team is engaged [cognitive participation] and next meeting they are going to start on a PDSA ▶ We asked QI manager for data and numbers to corroborate what we're seeing ▶ Was a good way to manage expectations with leadership—this update [on their improvement work] was given to the QI committee which comprises of the Chief Executive Officer, Chief Medical Officer and Chief Operating Officer—opened a discussion of what to do next with the clinical and nursing manager—they [clinical staff] hadn't given appropriate feedback to leadership so they [team] were able to bridge that gap 	<ul style="list-style-type: none"> ▶ So I end up doing a lot of the legwork and 'spoon feeding' the group ▶ A lot of changes occurring within the organisation [why they are not getting resources they need] ▶ Hard part is having the time to pull the data and to have reliable data ▶ It is not that we don't have ideas. It is more about impressing on people that we need data to back up these ideas
Reflexive monitoring: evaluating effectiveness, planning for spread, impact on organisation and team members	
<ul style="list-style-type: none"> ▶ In 2 weeks they are going to re-run the report to see if the call back time has changed—to see if it's more efficient ▶ This morning we had a [organisation] meeting about strategic planning, etc. Others talking about importance of communication, etc. at their sites, whereas we are implementing some of what they were talking about, things here are already working more smoothly, so we could talk about it. Physician on core team explained to other providers how this [pre-visit planning] would work as part of standing orders, training for MAs 	Note: No one discussed NOT doing the work related to reflexive monitoring. Rather, it only occurred in a small number of teams, and so was discussed in only positive ways

PDSA, plan-do-study-act; QI, quality improvement.

Figure 2 illustrates when the four NPT mechanisms appeared in the comments throughout the 9-month learning collaborative (both positive and negative) and how often (attendance on calls was low in July 2018). (In a separate analysis, we compared the occurrence of negative and positive comments over time, regardless of

which NPT mechanism the comment represented, and found that they occurred in almost equal measure.) The early appearance of *coherence* represents not just the establishment of coherence (positive) but also the struggle to establish it (negative) at the beginning of the collaborative. Only one coach (site 3) struggled with coherence

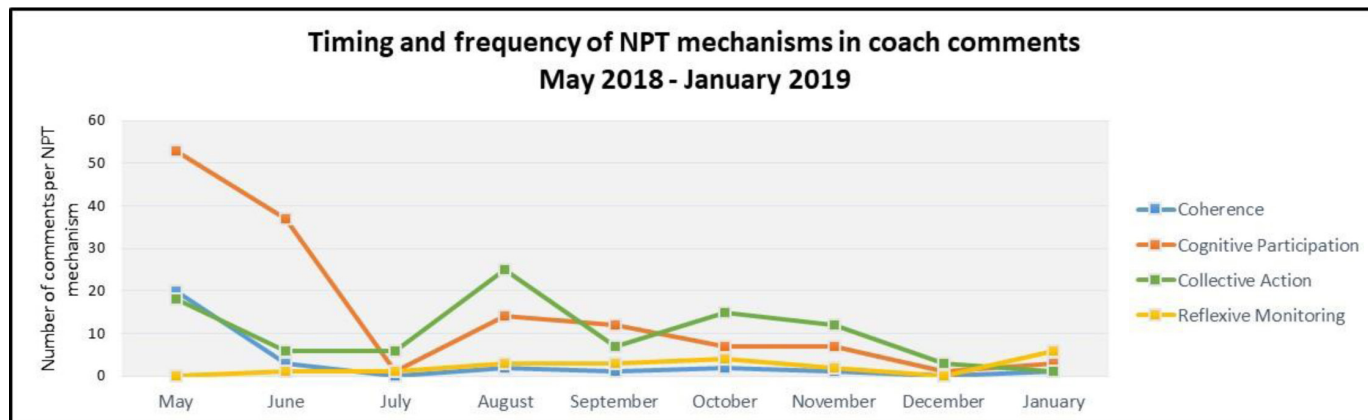


Figure 2 Timing and frequency of NPT mechanisms in coach comments. NPT, normalisation process theory.

throughout the learning collaborative. The early spike in *cognitive participation* represents a 2 to 3-month phase during which teams worked to coordinate meeting schedules, coaches tried to get teams to use the QI process (shared mental model), team membership was fluid, and meetings lacked structure. *Collective action* peaked at 4 months into a 9-month collaborative, when most teams finally had actionable data, allowing them to set aims and trial practice changes while continuing to develop effective team relationships (*cognitive participation*). In fact, *cognitive participation* and *collective action* accounted for most of the comments, both positive and negative, throughout the collaborative, and usually concurrently.

DISCUSSION

These results have implications for the theoretical application of NPT, and for the development and evaluation of learning collaboratives. The concurrence of *cognitive participation* and *collective action* throughout most of the collaborative is particularly noteworthy. We suggest that concurrence indicates that normalising mechanisms work together in real time, in a recursive fashion, and in negative and positive ways. For example, clarity of purpose (*coherence*) became clearer as teams met regularly, optimised team membership and used the QI process as a shared mental model for how to proceed (*cognitive participation*). Similarly, the concurrence of *cognitive participation* and *collective action* likely refined each other. For example, some teams jumped to solutions (unproductive *collective action*) before assessing their practice, which is the first step in the QI process. As they floundered, they realised the value of using the QI process together (*cognitive participation*). Once engaged in *collective action* midway through the collaborative, teams revisited the QI process seeking clarity about the tools, such as fishbone diagrams, or changed team members to optimise expertise (*cognitive participation*).

This recursive process, as well as the positive and negative aspects of normalising change, may be why some researchers find it difficult to differentiate among NPT mechanisms.²⁷ For example, we found *coherence* and

cognitive participation overlapped in the first 2–3 months as teams were making sense of why they were meeting and what to do. Similarly, differentiating *cognitive participation* from *collective action* was at times challenging: having a shared mental model for doing the work and doing the work itself occurred together, each reinforcing the other.

A comparison of our highest (site 5) and lowest performing teams (site 3), as determined by quantitative implementation, service, and patient outcomes,³⁶ may add to the value of capturing both the presence and deficiencies of normalising processes to explain team performance and differentiate among normalising mechanisms.

The notes indicated that the coach from site 3 reported a *lack of coherence* among team members and leadership throughout the collaborative, likely contributing to the team's failure to meet regularly, attend learning sessions or follow the QI process for completing assignments (lack of *cognitive participation*). Participation and relationship-building were undermined by demeaning comments made about absent team members. Also, efforts to complete any work were stymied by the lack of actionable data and time (lack of *collective action*).

In contrast, the coach at site 5 voiced her team's understanding of the purpose of the collaborative and its value for the organisation during pre-collaborative interviews. Once team members were 'on the same page'—a shared mental model for improvement, regular meetings and having the right people on the team (*cognitive participation*)—the team dove into the work of *collective action* and *reflexive monitoring* in positive ways. The team used data effectively, completed assignments and demonstrated improvement in care by monitoring results.

Our observations during visits with both sites 3 and 5 after the collaborative supported our interpretation of these results.³⁶ The coach at Site 3 left the practice in frustration, whereas the team at site 5 continues to meet at the time of this publication, and their coach now coaches multiple teams.

These findings beg the theoretical question of which normalising mechanism comes first, and which, if any, is most important. Alharbi *et al*³⁰ argued that normalisation

is a linear process, and perhaps from the proverbial 30 000 foot view it is, reminiscent of Tuckman's forming, storming, norming, performing model.^{53 54} Given our own experience with this and subsequent learning collaboratives, we agree with Finch,³¹ Reeve *et al*³⁴ and Lloyd *et al*⁵⁵ that *coherence* is the foundational starting point: without establishing sufficient clarity of purpose and a shared value for the effort ahead, teams will likely fail.

We further suggest that the mechanisms of NPT are consistent with small group dynamics^{56–59} occurring in the context of organisational dynamics, especially support for—or lack thereof—the teams' efforts. At this micro group level, normalising a new practice is an inherently uneven process, reflecting the highly variable social dynamics of complex adaptive systems.⁶⁰ Teams implementing team-based care must work on the functional details of practice change, such as the reallocation of routine tasks, while at the same time managing the culture of team dynamics.⁶¹ Successful teams establish clarity of purpose; share value for their work; develop positive working relationships built on mutual trust, effective communication and a shared mental model of how to do the work; and have sufficient time, staffing and other resources, such as data and the skills to use data, to fully engage in the work of a learning collaborative.^{32 35 62–64} Therefore, we propose that *teams who experience sufficient positive aspects of normalising mechanisms are able to tolerate the unevenness and even negative aspects of normalising change in order to succeed.*

These results can be applied to the development and evaluation of future learning collaboratives, so that they are designed to successfully support participating organisations from planning through implementation of new initiatives. First, *what* our teams discussed reflects the AHRQ taxonomy²⁰ for learning collaboratives regarding the importance of social systems, accessible and reliable data, and QI skills. Second, the overlay of *what* our teams discussed and *when* (figure 1) with the timing of NPT mechanisms over 9 months (figure 2) indicates that it took 3–4 months for teams to get data from their organisations, as well as to establish sufficient *coherence* and *cognitive participation* before diving into the work of *collective action*. That is, teams do not dive into the work of a collaborative on day one: they must first become a team.⁵⁸ Third, although our collaborative was designed to get teams started on the work of implementing team-based care, and not to complete it, 9 months was not enough time for many teams to engage in *reflexive monitoring*. Change takes time,¹⁸ and team-based care is an ongoing process.

Finally, our results have implications for coaching teams during learning collaboratives. Indeed, our teams' coaches all endorsed the weekly coach-mentor calls as critical to their efforts.³⁶ In subsequent collaboratives for implementing team-based care, we have included a presentation on positive and negative aspects of normalising mechanisms, assuring coaches that the unevenness of implementation is normal. Our mentors listen

for normalising mechanisms during coach-mentor calls, and ask questions accordingly to guide coaches toward productive normalising efforts.

The major limitation of this study is that we used notes from the weekly coach-mentor calls as the data source, and that these notes represented the health centre team coaches' own versions of events at the time. Nevertheless, the convergent triangulation of the qualitative and quantitative data suggests our study holds some promise for future studies to better understand what teams do or fail to do to normalise new practices. Another limitation was the timing of the collaborative, resulting in lower attendance on coach calls during summer vacations and winter holidays. Our learning collaboratives are now scheduled from fall through late spring.

CONCLUSION

This evaluation of a learning collaborative captured what team coaches discussed in real time during mentor-coach calls, how their teams normalised change and when the mechanisms of normalisation occurred. Implementation of team-based care is not a linear time-limited process, but a continuous one that the collaborative was designed to initiate. Successful teams experience sufficient positive aspects of normalising mechanisms to allow them to tolerate the unevenness and even negative aspects of normalising change in order to persevere.

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Contributors KT is the guarantor of this manuscript. KT and NK (who worked at the Weitzman Institute when the data were collected) designed the study. NK collected the data and with KT did an initial affinity grouping of the data. KT and MA wrote the methods, did the qualitative analysis, wrote the results and discussion. MA developed the graphs. (KT has a PhD in psychology and has published qualitative papers; MA used qualitative methods for her undergraduate thesis.) AS wrote about the structure of the learning collaborative as an intervention, and also implications of the results for learning collaboratives in the discussion. DW and KH did not participate in the analysis because of their relationship as mentors to the team coaches. AS, DW and KH reviewed the paper.

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