Building Resilience: Lessons Learned from a Multi-state Learning Collaborative

ABSTRACT:

Objective: Physician burnout is a major threat to the American healthcare system. We examined the impact of participating in a multi-state, academic pediatric learning collaborative on participant burnout and sought to identify resilience-promoting factors. We hypothesized that participation would protect against burnout by cultivating an inter-institutional community of pediatricians.

Methods: We used qualitative semi-structured interviews to assess burnout, resilience, and the strength of the collaborative. Descriptive statistics and content analysis were used to examine the relationship of resilience and community involvement with burnout.

Results: Participation in the collaborative produced multiple factors that may promote resilience and mitigate burnout. Social connectedness, resource sharing, community at work, and meaning at work were positively impacted. Collaborative relationships formed across institutions decreasing isolation while strengthening members’ sense of purpose.

Conclusion: Improving physician resilience through participation in a multi-institutional collaborative may be possible and has broad implications for institutional planning to prevent physician burnout.
BACKGROUND:

Physician burnout is widespread, reaching levels of over 50% in the United States (West et al., 2018). Due to detrimental impacts on the practice of medicine (Shanafelt et al., 2009; Shanafelt et al., 2012; Picard et al., 2015; Montero-Marin et al., 2015; Profit et al., 2014; Eckleberry-Hunt et al., 2018; Shah et al., 2018; Abaza & Nelson, 2018) and the increasing number of physicians reporting burnout nationally (West et al., 2018; Abaza & Nelson, 2018), addressing burnout has become a top priority among healthcare systems (Abaza & Nelson, 2018; Atkinson et al., 2006).

Physician burnout is associated with decreased satisfaction and significant workforce turnover (Atkinson et al., 2006). Factors that contribute to physician burnout include erosion of meaning from work, loss of control and flexibility, diminished social support and community, inadequate resources, inappropriate workloads, and poor work-life integration (Shanafelt & Noseworthy, 2017). While mitigating these factors may decrease burnout, complete elimination of these problems is unlikely due to the intrinsically complex and demanding nature of most healthcare careers. Resilience is the capacity to respond to stress in healthy ways so that goals are achieved at minimal psychological and physical cost. Cultivating physician resilience is critical and may be an effective, practical, and sustainable strategy for combatting burnout (Abaza & Nelson, 2018; Olson et al., 2015; Ziegelstein, 2018; Zwack & Schweitzer, 2013).

Resilience factors mitigate against job stress and burnout (Montero-Marin et al., 2015; Olson et al., 2015). Most research to date focuses on individual strategies to protect against burnout including self-care and mindfulness (Abaza & Nelson, 2018; Ziegelstein, 2018; Zwack & Schweitzer, 2013). Although these approaches may benefit individuals, fostering resilience
among teams may require additional strategies that approach this problem from a broader systems perspective. Recent research among physicians and firefighters has begun to explore the promotion of resilience through intentional community building (Nguyen et al., 2018; Huynh et al., 2013).

The role of inter-personal connection as a key factor in building resilience is described in the literature (Nguyen et al., 2018; Huynh et al., 2013; Benson et al., 2018; Rao et al., 2020; Slavin, 2019). One study of first year residents in Psychiatry and Medicine found that activities involving social connection helped to mitigate burnout by promoting relaxation (Benson et al., 2018). The social connection activities were varied, and included spending time with colleagues, family, and loved ones. Rao et al. (2020) studied the connection between physician burnout and provider engagement at a large academic practice. Their findings, along with those suggested by Slavin (2019), support the idea that healthcare systems should provide opportunities for employees to increase their sense of meaning, purpose, and connectivity and cultivate a sense of being a part of a larger whole. Rao identified connectedness as a key driver in improving physician engagement and preventing burnout (Rao et al., 2020; Slavin, 2019).

Improving meaningful connections between professionals may increase resilience in the workplace. Multi-institutional professional collaboratives may be one means of building community to prevent physician burnout by connecting similarly focused professionals to allow for inspiration, collaboration, and social support within institutions. A multi-institutional medical education collaborative focused on advocacy training in California pediatric residency training programs found enhanced professional development, decreased isolation, and improved
networking among faculty participants, resulting in a rich communal experience within their collaborative structure. Potential benefits of professional collaborations such as social support and deriving a collective sense of meaning from shared work suggest that collaboratives could promote resilience and protect against burnout (Nguyen et al., 2018; Huynh et al., 2013).

Previous publications about professional collaboratives have not reported on physician burnout or resilience as outcomes (Nguyen et al., 2018; Huynh et al., 2013; Benson et al., 2018; Rao et al., 2020; Slavin, 2019). Therefore, we examined both the impact of participation in a regional academic pediatric collaborative on burnout and resilience and factors that promoted successful collaboration. We hypothesized that engagement in a professional collaborative would promote resilience and mitigate burnout among participants by increasing meaning at work, strengthening social support, and deepening their sense of professional community.

**METHODS:**

**Setting**

The Carolinas Collaborative (the Collaborative) was established in 2016 as a novel two-state academic pediatric learning collaborative, bringing together pediatricians from eight academic institutions and healthcare systems. The American Academy of Pediatrics (AAP) Community Pediatrics Training Initiative (CPTI) created the Collaborative with funding from The Duke Endowment. The focus of the Collaborative was the prevention of toxic stress in children and families through academic-community partnerships and resident education.
Each institution identified 1-3 faculty who had relevant professional activities and content expertise to participate in the Collaborative. Additional participants joined the Collaborative as its function and scope evolved. Members include general academic primary care pediatricians, urban and community hospitalists, and adolescent medicine, sports medicine and child abuse sub-specialists. Some participants are full-time clinicians, while others serve as training program directors, researchers, or healthcare administrative leaders (see Table 1). Other participants include community partners from the public health sector and other local agencies. Collaborative members participated for two years in quarterly day-long meetings during which they set common goals, reported on progress, and engaged in faculty development around their shared professional interest in the prevention of toxic stress in children and families through academic-community partnerships and resident education. In addition, committees overseeing resident education curriculum development, community project design and implementation, and evaluation of the collaborative met at least monthly.

Each institution received a discretionary funding allotment ($75,000 per institution) that allowed for flexibility in resourcing the evolving Collaborative. The majority of institutions used the funds to provide participants with dedicated time to engage in community-based activities related to the Collaborative. Some also used funds for administrative support, travel expenses, and community project implementation expenses.

**Evaluation**

The strength of the Collaborative and its impact on burnout and resilience among participants was evaluated using semi-structured interviews and thematic analysis qualitative data. Ethical
approval for this study was granted through the American Academy of Pediatrics Institutional Review Board on April 17th, 2018. IRB # 18 HO 01. Participants gave written informed consent to participate.

**Qualitative Data Collection and Analysis**

Each faculty member participated in a 45-minute semi-structured audio-recorded interview. The recordings were transcribed so that a de-identified, written record of the interview was analyzed. Questions were created using four topical domains from a published framework on physician burnout (Shanafelt & Noseworthy, 2017) and a published inventory of collaborative strength factors (Townsend & Shelley, 2008). The questions focused on the Collaborative’s: (1) impact on professional development, (2) impact on participant’s involvement in community activities, (3) self-perceived burnout, and (4) factors that promoted collaboration. A single investigator, who was not a member of the Collaborative, conducted recorded phone interviews and transcribed them using an audio, on-line transcription service (Rev.com). An independent evaluation team generated a codebook using directed content analysis based on existing theories of burnout (Shanafelt & Noseworthy, 2017) and conventional content analysis to generate additional themes. Each of the 4 evaluation team members reviewed 5 randomly selected interviews, revising and reconciling differences in the preliminary coding scheme until they reached consensus on a codebook. Team members further coded all transcripts verbatim to identify codes using Dedoose Version 8.1.18 software program (2018). The evaluation team then identified themes with relevant quotes and verified with the rest of the author team during member checking. One member of the evaluation team performed quality assurance on 3 interviews to ensure consistent coding. The coding team discussed inconsistencies to arrive at a consensus.
RESULTS:

Study Population

All faculty members of the Collaborative were invited to participate in the study. Twenty members completed a survey and 19 completed an interview. Members of the Collaborative were predominantly female (85%) and general pediatricians (85%) at academic institutions (Table 1). Most had some form of support for Collaborative-related work (70%) either as additional funding or protected time equal to approximately 0.05 to 0.15 FTE.

**Table 1. Characteristics of the Collaborative Members.**

<table>
<thead>
<tr>
<th>Collaborative Participants (n=20)</th>
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<tbody>
<tr>
<td><strong>Gender</strong></td>
</tr>
<tr>
<td>Male</td>
</tr>
<tr>
<td>Female</td>
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<tr>
<td><strong>Type of Doctor</strong></td>
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<tr>
<td>General Pediatrician</td>
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<tr>
<td>Pediatric Sub-specialist</td>
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<tr>
<td><strong>Received advocacy training during residency</strong></td>
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<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
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</tbody>
</table>
Doesn’t recall 1 (5.0%)

**Years since completed residency**

(Mean = 13.03 years)

<table>
<thead>
<tr>
<th>Range</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5</td>
<td>4</td>
<td>20.0%</td>
</tr>
<tr>
<td>6-10</td>
<td>5</td>
<td>25.0%</td>
</tr>
<tr>
<td>11-15</td>
<td>4</td>
<td>20.0%</td>
</tr>
<tr>
<td>16-20</td>
<td>2</td>
<td>10.0%</td>
</tr>
<tr>
<td>20+</td>
<td>5</td>
<td>25.0%</td>
</tr>
</tbody>
</table>

**Protected time allocated to the Collaborative**

<table>
<thead>
<tr>
<th>Option</th>
<th>Count</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>Yes</td>
<td>14</td>
<td>70.0%</td>
</tr>
<tr>
<td>No</td>
<td>5</td>
<td>25.0%</td>
</tr>
<tr>
<td>Unknown</td>
<td>1</td>
<td>5.0%</td>
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Data are presented as numbers (%) of respondents.

**Qualitative Findings**

**Collaborative Participation and Burnout**

Four major themes related to burnout and resilience emerged from the qualitative analysis of participant interviews: (1) increased sense of connection with individuals, the community, and a larger movement, (2) resource sharing, (3) increased meaning at work, and (4) broader impact of the Collaborative beyond the participant.
Participation in the Collaborative enhanced participants’ sense of professional belonging and support (e.g. “There was definitely a wonderful sense of belonging to the group, these were topics that were ... everybody was passionate about. It was wonderful to have that newfound family of sorts to be able to talk about the things that we were finding professionally rewarding and the challenges that we were having within our own”) and expanded their professional networks (e.g. “It's pretty cool to hear where people are now and then how many other relationships are started because of this. Like so we kind of say, 'Because of the collaborative I was introduced to so-and-so, and then that helped me do this;' or, 'I got this idea at a meeting and I came back and tried to do that at my home institution.' It's kind of exceeded my expectations, honestly.”). The multi-institutional and regional nature of the Collaborative was important to this sense of community and support and provided external professional validation while elevating participants’ profiles at their home institutions (e.g. “I think having a collaborative and sort of alongside each other partnering with other institutions has really helped our own relationships here, so it wasn’t even just creating new relationships with other people at other institutions, but more deepening our own relationship here by virtue of the collaborative.”). The connection to a group of “like-minded” colleagues not only provided a professional community but also served to motivate Collaborative participants and strengthened their sense of purpose (e.g. “Really, I think that what the collaborative did was sort of help realign and remind me what I truly cared about, and had an energetic group that was like ‘okay, let's figure out how to do this for the most part.’ It separated me from the negative stuff that is easy to get trapped in.”). As one participant described, “The relationships between folks at different institutions has been just phenomenal. As we were talking, I've been getting emails from (other collaborative members) about different things that they want me to be involved with
because they know me because of this collaborative. They're just popping up on my screen as we're talking. Those informal relationships, getting to know the people that care about similar things at different institutions has been huge.”

Collaborative members expressed a deep sense of trust and respect for each other which fostered a protected environment where ideas and resources could be exchanged, free of the typical constraints of inter-institutional competition (e.g. “Institutions by historical perspective tend to have been very isolated and also very much in competition with one another, so to be able to reach out and be like, ‘Oh yeah. I've got friends at X and down at Y, and we're all thinking about working on certain things.’ It's starting to carry over into the rest of our professional lives in terms of touching base with other hospitalists and different groups and starting to bring together cross institutional collaborative work, whether it be quality improvement or research of other kinds of stuff too.”). Participants could be vulnerable with each other, sharing challenging experiences and helpful strategies that supported efficient dissemination of innovation to home institutions (e.g. “Just the sharing of ideas, the sharing of tools. Just coming back from our meetings and using what we've learned, I think it has given us a lot of resources, but it made us much more efficient as we've been developing new curriculum and that type of thing.”). The diversity of skills, professional foci, and career stages represented in the Collaborative strengthened opportunities for peer mentorship and professional development. One participant reflected, “And now, I see people from different institutions that are three years out from where I am, or five years, or 10 years. And it's easier to imagine what that person, what I might want to be, and then be able to talk to them directly and say, ‘How did you get to where you’re going, and how do you market yourself in a world that cares more about clinical and research?’ All of
the questions. It's been phenomenal to have those, not just mentors, but role models that are doing the things I want to be doing.”

With expanded networks, a trusted council of colleagues, and renewed sense of purpose, Collaborative participants described a breadth of impact that went beyond the Collaborative, reaching learners, patient care, the local community, and home institutions. Participants “activated” the Collaborative network for rapid access to expertise in a more intimate way than they could have prior to the Collaborative which connected learners to new mentors, strengthened trainee projects, and connected patients to clinical services. One participant shared, “That we, as a result of the collaborative, we now know each other's expertise and know how to get in touch with each other quickly, and I think we've seen strengthening of projects even that our residents are working on, because we know each other and can refer our learners to each other as well.” Another stated, “And you know, even think about residents who maybe have a strong interest in one area. We just don't have capacity to teach them before. Like being able to say “Hey, you know across the state, or across the border, there's this great institution and they're doing great work on, child abuse, or immigrant health’ and being able to really send our residents to have meaningful experiences, rather than just, you know, throw them an article or a PowerPoint to look at, and not really have that depth of education and learning.” In addition, participants articulated a ripple effect beyond the intent and scope of the Collaborative, instilling in them an increased capacity for deeper relationships with community partners and sparking new collaborations on a variety of topical areas at home institutions and cross-institutions (e.g. “So I think that, as I’ve been working on the community project, I've started to become seen as a kind of topic expert in the area, and so that's now led to multiple joint grant opportunities with
other community partners. It's just increasing exponentially as I've been able to nurture those relationships.”).

Factors of Collaboration

Collaborative success factors emerged in the qualitative analysis of participant interviews, including the importance of having sufficient resources, the collaboration serving participants’ self-interest, and promoting informal networks. One participant stated, “I think that by having the protected time…, I was able to really strengthen community partnerships and develop a career path that without it, I don’t believe that I would have been able to do.” Participant reflections provide insight into the importance of protecting time for participation in the Collaborative and of integrating informal time to connect on a personal level. “I think that it’s been a great way to foster those relationships, which, I think, are very…They’re hard to find and create. But this process made it really easy because everybody was automatically brought together. Then it turns out that we all like each other, and there’s lots of great stuff going on at different places. We don’t have to be in competition, but we can learn and grow from each other.” Another said, “That’s where the relationships have been formed over dinner and sitting together and looking at each other’s pictures of kids.”

DISCUSSION:

Finding ways to prevent burnout and support resilience and engagement among individuals as well as healthcare teams is essential to ensure high quality care and long-term professional well-being in our healthcare workforce (West et al., 2018; Shanafelt et al., 2009; Shanafelt et al., 2012; Profit et al., 2014). Our qualitative exploration of the experiences of Collaborative
participants revealed important effects of participation on known drivers of burnout and engagement. Participants’ insights shed light on possible mechanisms through which participation may have yielded these effects, highlighting potential avenues of further investigation to fully characterize the potential of multi-institutional collaboratives in combatting burnout. Further, our analyses highlighted aspects of the Collaborative which were most important to its functioning and the associated resourcing of needs that are essential considerations for sustaining this approach.

Shanafelt and Noseworthy (2017) highlight seven key drivers of burnout and engagement among physicians: efficiency and resources, workload and job demands, control and flexibility, meaning in work, organizational culture and values, social supports and community at work, and work-life integration. The more optimal these factors, the more engaged physicians are likely to be. In contrast, deficiencies in these domains are likely to drive exhaustion, cynicism, inefficacy, and ultimately, burnout.

Our qualitative exploration of the Collaborative suggests that many of these key drivers may be modifiable through professional collaborative experiences.

Participants described in detail how the Collaborative increased their sense of social support and community within the broader context of their work. They received validation and affirmation through relationships with peers at other institutions, supplementing their experiences at their home institutions. Participants described a positive and invigorating effect of these collaborative relationships and a renewed sense of community. Their relationships decreased isolation and provided a community which transcended typical siloes of activity. Sharing challenges across
institutions may decrease a sense of isolation and may mobilize individuals to proactively seek out solutions in partnership with colleagues with similar experiences.

These effects directly impacted participants’ sense of meaning in work. Deep relationships strengthened purpose. Being a part of a broader advocacy effort widened the lens through which participants could envision the impact of their individual contributions. Further, the collaborative environment offered a space and supports to explore meaning and purpose with colleagues engaged in a shared work.

The theme of resource sharing and collaboration is also relevant in that many collaborative members felt reinvigorated in their institutional work with the added resourcing they received from other institutions. Deficient local resources, decreased efficiency, and a sense of lack of control over one’s work outcomes as a result can contribute to burnout (Shanafelt & Noseworthy, 2017). Being able to draw from not only local resources but also resources from across a network of partner institutions may mitigate such negative experiences. Further, participants described receiving not only personal but also practical support such as individualized mentoring on educational program development and community project development.

Many burnout prevention or mitigation strategies focus on individual skills and behaviors rather than collective experiences and activities (Montero-Marin et al., 2015). However, burnout itself is now thought to be a systems problem rather than an individual problem, so a key remedy to burnout may be collective rather than individual (Shanafelt & Noseworthy, 2017). Inter-
professional collaboration and team-based care have long been heralded as keys to improving quality and safety in healthcare (Panagioti et al., 2018; Zwarenstein et al., 2009).

Further, given the commonalities across different healthcare settings and disciplines, the potential effects of collaborative experiences may be transferrable to domains beyond pediatrics. Formation of communities and collaboratives could be a broadly applicable strategy for healthcare systems to enhance resilience and decrease burnout throughout their clinical enterprises.

In exploring factors that fostered an effective collaborative, drawing together professionals with similar perspectives and priorities into an environment that offered shared benefits was important. However, undergirding this was the necessity of supporting the cultivation of deep relationships and connection among participants. In addition to sharing common interests and desires at baseline, participants reported that collaborative success depends on adequate resourcing of time, in person meetings, and administrative personnel to foster the development of trusting relationships, maximize participants’ capacity to contribute to the collaborative and consistently engage. Face-to-face interaction and trust building early in the course of the collaboration informed strategies to not only accomplish tasks but to continually strengthen the team over time (Whitehorne, 2013). Collaborative structures should include financial and logistical supports to ensure opportunities for participants to develop trusting relationships (Cooke, 2015). Indeed, resourcing was both a key to collaborative success as well as a central concern regarding the sustainability of this approach.
Consistent and supported personal interaction with similarly focused colleagues may be a key component to building individual and collective resilience. Typical healthcare system resources and structures however are not well-aligned to support this type of engagement at scale. This poses the most significant risk to further exploration and scaling of this potentially valuable domain of workforce development and support. However, given the deleterious effects and substantial costs of burnout, such investments may ultimately be cost-effective.

The generalizability of this study is limited by the small number of participants. Future studies may examine trends in burnout over time among collaborative participants. Further, members of the Collaborative were exceptionally engaged in their local communities and well-skilled in advocacy and community engagement activities coming into Collaborative participation, which may have affected resilience and burnout dynamics. Finally, participants were self-selected and predominantly female, posing risk of biases. Despite these limitations, the participants articulated important insights that provide substantial grounding for further study.

CONCLUSION:

Physician burnout is a growing crisis in healthcare. Building resilience to prevent burnout may be possible at a systems level via supporting participation in professional collaboratives. Affording opportunities for physicians to collaborate around a shared interest, particularly with time and resources to meet face to face, may build their resilience by directly affecting key drivers of resilience and engagement. Investment in professional community building and
collaboration could be a valuable opportunity for healthcare institutions seeking to address burnout.
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