# Does a Conference Series Contribute to the Development of a Community of Practice in a Hospitalist Group?

BY

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THESIS

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This thesis is dedicated to my husband, (*Mayank Arora*), my daughter (*Kavya Sood Arora*) and my mother, *(Sudha Sood)* without whom it would never have been accomplished.

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LS

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## LIST OF ABBREVIATIONS

| | |
|---|---|
| AMA PRA | American Medical Physician's recognition Award |
| CME | Continuing Medical Education |
| CoP | Community of Practice |
| CRISIS | Convenience, Relevance, Individualization, Self-assessment, Interest, Speculation, Systematic |
| CS | Longitudinal clinical education conference series |
| JR | Janet Riddle |
| LS | Lonika Sood |

## SUMMARY

Hospitalist physicians struggle with heavy clinical and teaching workloads and keeping up-to-date on current practices. Although continuing medical education (CME) has been the traditional approach to support continuous learning and practice improvement, there are limited data on the impact of a longitudinal CME case conference series on physicians' workplace learning. Locally situated formal CME or more informal 'learning from cases' activities might be able to fulfil this void for hospitalist physicians, particularly those at community hospitals. Wenger's Community of Practice model (CoP) provides a conceptual framework for understanding the processes of workplace learning.

This study explores the contributions of a patient care continuing education conference series to the development of a community of practice in an Internal Medicine hospitalist practice group. The study was conducted in a 167-bed community hospital in the upper Midwest. Study participants were recruited from the hospitalist group who had taken part in at least one case conference session. Individual semi-structured in-depth interviews were conducted with each participant. Wenger's Community of Practice model was used as the sensitizing concept. Participants were later invited to participate in a second shorter interview for member checking and verification. Data were analyzed qualitatively in an iterative and inductive process, and themes were identified using the constant comparative method associated with grounded theory. Four themes were formulated based on the analysis: Learning during and from the conference series; Impact of the conference series on patient care practices; Learning in the context of the hospitalists' work; and Belonging to this hospitalist group.

Three elements are required to develop to cultivate a CoP: the domain, the community and the practice. Our analysis resulted in formulating three intersecting domains: hospital medicine,

discussing challenging cases, and improving patient care practices. With respect to community,

**SUMMARY (continued)**

study participants commented that learning occurred collaboratively, with and from peers; and the more structured nature of the case conference series as a locally situated learning opportunity was considered to be a valuable learning opportunity. They also described feeling mutual trust and respect between members and team building that occurred as a result of the series. Lastly, although individual competence or practice skills were developed, the development of a shared group practice was not identified.

# I. INTRODUCTION

## A. The Study Problem

Internal Medicine hospitalist physicians struggle with heavy clinical and teaching workloads and keeping up-to-date on current practices. Although continuing medical education (CME) has been the traditional approach to support continuous learning and practice improvement, there are limited data focused on the impact of a longitudinal CME case conference series on physicians' workplace learning. Locally situated formal CME or more informal 'learning from cases' activities might be able to fulfil this void for hospitalist physicians, particularly those at community hospitals.

Community of Practice (CoP) provides a conceptual framework for understanding the processes of workplace learning and professional socialization. As a social learning theory, it highlights the importance of social structure for learning, particularly the transmission of normative expectations for practice to its novices (Hafferty and Franks, 1994). CoP have recently gained attention in various aspects of medicine, including professional identity formation amongst clinician teachers (Cantillon et al., 2016), ad hoc supervision amongst general practice registrars (Clement et al., 2016), online continuing education for physiotherapists (Evans et al., 2014), and journal clubs (Price and Felix, 2008). Although such communities can develop in the workplace, they can also develop as a result of formal longitudinal teaching programs (Gruppen et al., 2006; Moses et al., 2009; Steinert and McLeod, 2006).

In this study, I have explored the contributions of a patient care continuing education conference series to the development of a CoP in an Internal Medicine hospitalist practice group.

## B. The Specialty of Hospital medicine

Hospital medicine is a relatively new specialty which began two decades ago and has grown rapidly to include more than 55,000 clinicians (Wachter, 2016). Hospitalists include those physicians and physician extenders whose primary professional focus is the general medical care of hospitalized patients. Hospitalist physicians may have completed residency training in Internal Medicine, Pediatrics or Family Medicine. Compared with their clinic-based counterparts, hospitalists focus their efforts and expertise on acutely ill hospitalized patients, sometimes extending their care to include critically ill patients. Within the hospital, they typically serve as a patient's primary physician of record and may sometimes provide consultative services for other specialties. Other specialties, such as Obstetrics Gynecology, Neurology and General Surgery are beginning to have their own hospitalist counterparts (Wachter and Goldman, 1996; Flanders et al., 2008; Society of Hospital Medicine Media Kit 2013-14).

Hospital medicine is a transitional career for some physicians, with many pursuing subspecialty training after a few years of practicing in the specialty of hospital medicine (Ratelle, 2014). However, as the specialty of hospital medicine has matured, more hospitalists are remaining in this specialty (Hoff et al., 2001; Hinami et al., 2012). Despite the flexible lifestyle that hospital medicine offers, hospitalists have reported a low degree of satisfaction with lack of personal time, lack of autonomy, organizational climate, organizational fairness, and compensation (Hinami et al., 2012).

## C. Workplace Learning for Hospitalists in Community hospitals

Community hospitals are nonfederal, short-term hospitals, located away from metropolitan centers, that provide acute care for patients in the community (Becker, 2015). Hospitalists in these facilities have limited access to locally situated education activities as compared to their counterparts in larger academic or urban institutions.

Many community hospitalists have a week-on, week-off schedule that focuses on high-volume clinical work. This situation, as described by Wachter, suggests that at the end of an intensive clinical week, one is uninvolved in patient care (Wachter and Goldman, 2016). The pace of hospital medicine is demanding and spans across the inpatient environment, from the emergency room to the intensive care unit (Wachter and Goldman, 2002). Patients require active clinical management and many struggle with difficult social issues (Wachter, 2008). In a time-motion study, Tipping et al found that hospitalists spent 59% of their time in communication and medical record use and 17% of their time in direct patient contact, and found that professional development, and personal time accounted for 12% of their time (Tipping et al., 2010). Given this block-work schedule and the limited number of hospitalists working at any given time and the intensity of workload, finding time for professional social activities with peers can be difficult.

Formal workplace-based learning for hospitalists typically occurs through CME activities at local or national conferences and through online programs (Sehgal et al., 2014). Physicians also need to demonstrate continuing learning for their board certification and for state licensure. Community hospitals are rarely able to provide a robust setting for informal, on the job learning (Adler et al., 2013). Given the high acuity and focus on efficiency, there is not much time for structured individual or group reflection on learning from patient care. There is limited literature about formal workplace learning for hospitalists working in community hospital settings. Most of the literature focuses on teaching graduate or undergraduate learners, using morning report, morbidity and mortality conferences and case conferences (Bernstein, 2016).

## D. Needs Assessment of the local Aurora BayCare Medical Center Hospitalist Group

Aurora BayCare Medical Center is a 167-bed community hospital in the upper Midwest. The average age of physicians in the hospitalist group is 36 years and the average time in clinical practice ranges between 1 year and 15 years. There is a higher ratio of men to women within the

group. At the start of the study, the group was comprised of 16 physicians - 11 full-time and 5 per diem. The work schedule is seven days on-seven days off. Compensation is largely salary based, with a small fraction tied to the achievement of hospital quality metrics. Until recently, there was high turnover in the group. For the past two years, the group has stabilized, with retention of older members and addition of new members. The principal investigator of this study (LS), who is also a physician in this group, recognized that there was a lack of a forum to discuss clinical cases, prompting the exploration for a locally situated education activity.

To better understand the learning needs of the group, a targeted needs assessment was conducted. Two observations were made, based on initial informal conversations with the hospitalists. First, most learning was unstructured, occurred informally, and was driven by patient care questions. There were few opportunities to learn collaboratively with peers. Second, hospital committees focused on patient safety and quality metrics which were aligned with payer and regulatory bodies' requirements. Although hospitalists received feedback regarding the quality of their care from external sources, it was rare that they got the opportunity for peer feedback, whether formal or informal. To confirm their learning needs, we conducted a non-anonymous survey which indicated that 73% of the full time hospitalists felt that some form of education activity would be very valuable for their professional development, and with the rest feeling that it would be somewhat valuable. Most of the physicians felt that either an individual case discussion or a morbidity and mortality format would be beneficial to their learning. To explore individual preferences and to maximize participation, informal interviews were conducted with the respondents who had shown explicit interest in an education activity. The major concern that physicians voiced was scheduling conflicts which was resolved with a follow up discussion to set up a mutually agreeable time for the conference. Seventy-three percent (73%) of all hospitalists in the group felt that the frequency should be every two months. The hospitalist leadership supported the development of an education activity.

As a result of the needs assessment process, a longitudinal clinical education conference series (CS) was established. The purpose of each conference is to provide a formal venue where attendees can discuss and learn from a challenging clinical case. The conference series is "locally situated" in that the cases discussed are those that have been managed at the hospital by the hospitalists who participate in the conferences. Each case conference is about one and a half hours long and is conducted every two months. Harden's CRISIS criteria for effective CME were applied to the instructional design of each session (Harden, 2005). Prior to the scheduled case conference, a hospitalist volunteers to present a case that they were involved in, with the requirement that it either has a rare presentation, challenging management or controversial treatment. The presenter, through a PowerPoint discussion, provides the group domain for discussion, given the session's education objectives; followed by a structured presentation of the patient's symptoms, signs and laboratory data; and posing clinical questions to the audience at strategic points. An open format for discussion provides for attendees to express their opinions, ask questions and reflect about each other's experiences. During each session, I serve as the conference facilitator and as a participant and on occasion, a case presenter. The conference is open to all hospitalists at the facility. Attendance is voluntary. This formal and structured activity not only offers participants CME credits, but of equal importance, it also encourages social learning.

The patient care continuing education conference series was developed and implemented in an effort to create a structured opportunity to learn from patient care in a collaborative environment in the Department of Hospital Medicine in a community hospital. I observed that attendance for the initial case conferences was higher than for many departmental committee meetings. This observation suggested that the hospitalists may be deriving benefits from the conferences beyond the original purpose. In this study, we have explored the value of the community developing from a longitudinal case conference series, including opportunities for

collegial interaction as well as for enhancing medical knowledge and patient care.

# I. CONCEPTUAL FRAMEWORK

## A. Rationale

We identified a need to facilitate learning with and from peers. Wenger's Community of Practice framework serves as a lens to explore whether and to what extent the CS achieves these aims. The CoP framework provides a way to think about learning in its social dimensions, and locates learning in the relationship between the persons and the context of the clinical setting (Wenger, 2010).

## B. Description

The concept of CoP has been drawn from the disciplines of anthropology and social learning theory (Lave, 1988; Bourdieu, 1977; Giddens, 1984; Foucault, 1980; Vygostsky, 1978). CoP are domains for social learning providing for individuals to manage and advance knowledge or expertise within a domain or field of interest. Over time, a CoP develops its own history of learning. The processes of learning form an informal and dynamic social structure among the community's participants (Wenger, 2010).

There are three elements, that when developed in parallel, cultivate a CoP (Wenger-Trayner, 2015):

1. The domain: A CoP has an identity defined by its members sharing a domain of interest. 'Membership implies a commitment and therefore a shared competence that distinguishes members from other people.'

2. The community: 'Members engage in joint activities and discussions, help each other, and share knowledge and perspectives. When individuals have the same position, they will belong to a CoP only when they interact and learn together' (Wenger et al., 2002).

3. The practice: A CoP is comprised of practitioners who are not just individuals who share a common interest. Over time, these practitioners develop a shared practice. Practice includes

processes for completing work and guidelines or shared standards for common workplace situations.

CoP is a social learning theory that is at the intersection of four polar theories (Wenger, 1998). Learning as participation lies in the middle of the vertical axis which has polar opposite theories of social structure, with an emphasis on cultural systems, discourses and history, and theories of situated experience, with an emphasis on agency and intentions. The horizontal axis reflects tensions between the theories of social practice, and the theories of identity. Learning, which is again in the middle, serves as the vehicle for the evolution of practices and the inclusion of newcomers, while allowing for the development and transformation of the individuals' identities (Wenger, 1998). The basic components of the theory of learning are (Wenger, 1998):

1. 'Meaning (learning as experience): 'a way of talking about our changing ability to experience life and the world as meaningful'
2. Practice (learning as doing): 'a way of talking about the shared historical and social resources, frameworks and perspectives that can sustain mutual engagement in action'
3. Community (learning as belonging): 'a way of talking about the social configurations in which our enterprises are defined as worth pursuing and our participation is recognizable as competence'
4. Identity (learning as becoming): 'a way of talking about how learning changes who we are and creates personal histories of becoming in the context of our communities''

Not only is learning being "done" by the learner but also by the community, and therefore it is both individual and collective. Thus, this theory of learning reflects to reflects the tensions emerging from duality between the individual and the community.

## C. A Hospitalist Group as a Community of Practice

We conducted a qualitative study using semi-structured in-depth interviews to explore

whether and to what extent a patient care continuing education conference series contributed to the development of a CoP amongst hospitalist physicians in a community setting.

# II. METHODS

## A. Study Setting

This study was conducted at a 167-bed community hospital in the upper Midwest which is a regional site for clinical clerkships and electives for third and fourth year medical students. All of the hospitalist physicians are board certified/eligible in either Internal Medicine or Family Medicine. Despite the relatively small size of the hospital, it houses an intensive care unit which is managed by intensivists, and has multiple physicians and advanced practice providers from both medical and surgical subspecialties.

The specific setting under review is the CS for the hospitalist group, which was started in November 2015, and to date has had eight sessions. A total of five hospitalists have presented cases at the conferences. Topics discussed have ranged from common conditions with challenging management options such as atypical chest pain, to rare diseases such as Lemierre's syndrome. Common conditions may also be presented if the management of those conditions is variable and not clear cut based on the literature. In November 2016, the hospitalist case conference series received CME accreditation with AMA PRA Category 1 Credits and American Board of Internal Medicine’s Maintenance of Certification Program Part II.

## B. Study Design

All physicians in the hospitalist group who have taken part in at least one CS session were invited to participate in the study. I invited 10 hospitalists to participate, who met eligibility criteria. Out of these hospitalists, seven consented to be enrolled in the study. I conducted 45-60-minute long semi-structured in-depth interviews with each participant. I used Wenger's CoP model as the sensitizing concept, specifically the four components of the theory of learning outlined above (also see appendix). Participants were later invited to participate in a second

shorter interview for member checking and verification, out of which six participants agreed to be interviewed. Four out of the seven study participants had previously presented at the CS. Three out of four of these physicians have presented just once. The study participants had attended between one and five sessions (an average of three sessions).

The study was reviewed and approved by the Aurora Research Subject Protection Program and the UIC Institutional Review Board.

## C. Demographic data

Study participants have been practicing as a hospitalist for an average of 3 years (range 0.5 to 6 years).

## D. Data Analysis

Data were analyzed qualitatively in an iterative and inductive process. We identified themes and sub-themes using the constant comparative method associated with grounded theory. To ensure the trustworthiness of the analysis, LS and JR independently identified themes and reached consensus by discussion. This initial scheme was applied to all transcripts. Thematic analysis discrepancies were resolved through discussion. On the second interview, study participants were asked to review the accuracy of identified themes. Given the small sample size, all interviews were anonymous.

## III. RESULTS

All of the study participants commented that the CS was an enjoyable experience. They described the environment as positive, relaxing and social. As a participant commented,

> *I think now it will be a much more relaxing environment because your colleagues are very supportive and this is overall a positive experience regardless of what you take home in terms of teaching points or case. (P7)*

Surprisingly, receiving CME credit was not reported as being important by any study participant. Almost all participants wished that the conferences were held more often.

We identified the following major themes through our analysis:

- Learning during and from the case conference series
- Impact of the case conference series on patient care practices
- Learning and Practicing as a Hospitalist
- Belonging to this hospitalist group

### A. Learning During and From the Case Conference Series

Study participants described learning occurring during the CS that was both individual and collaborative. Hospitalists who had presented at the CS described learning through the process of preparing to present a case. The processes of preparing to present a case and participating in the discussion were perceived as rich learning opportunities. Those who presented a case spent time reviewing the literature as well as occasionally talking to experts about the condition being discussed. One study participant described reviewing the details of the patient's clinical record as "research". This participant commented,

> *I think it's research, and also you're going over the facts once or twice. So you, kind of, it's etched in your memory. More than just listening to something once. (P6)*

Participants also described becoming "somewhat of an expert" on the patient's disease process and the clinical topic. The following is an example of a comment.

> *I think as a presenter, you are not only learning about a disease process or about a lab finding, by your experience with that patient, and by your research of the whole process, but also then you learn from your colleagues, from their feedback. And from their experiences. (P4)*

The case presenters also learned from the discussion of diagnostic and management strategies that occurred during the conference itself. As a participant commented,

> *So it was really interesting to give my recollection and present the case and then get some different input from some of my partners, some different things I would not have thought of for both management and diagnosis of the case. (P1)*

Study participants described how the CS provided opportunities for collaborative learning with and from peers. Participants described surprises and new insights from working through a case "in the dark". As participants commented,

> *When you're not the presenter, you're able to ... you don't put in the work beforehand, but then it's really nice because you can work through, in the dark, these new cases and kind of get some insight into different topics that you didn't know about. (P1)*
>
> *The last conference I went to, we arrived and we started talking about the case. And I think initially, ... well, and first of all, I should say I wasn't involved in the case, so I didn't know this patient. But I thought given the presentation that the presenter was giving you to start with, I thought I knew the diagnosis and knew*

*how it was all going to play out. But in the end, I was completely wrong, and found it to be a very interesting case, and a good teaching point. (P4)*

Interestingly, the individual nature of hospital medicine in community settings was commented about, with opportunities for social learning lauded by some participants. As participants commented,

*I think it did because this is a non-academic hospital, you don't get to do teaching and then your learning is mainly individual now. This is one thing that you meet together and then academically can talk about a case. It reminds me of residency. (P7)*

They also emphasized the value of learning with peers. Examples of comments are:

*If it's a small group discussion CME opportunity, it's not as good as working in my group because, again, I'm working with people that I know and who I know how they think, and we are more relaxed. (P3)*

*Everybody is different as a person, as a physician and I think we can all gain from each other's perspective and that is how you learn and that is how you grow. (P6)*

Participants described the importance of comparing patient care experiences and offering advice to their peers. As a participant commented:

*It's also to help out my colleagues, because they're there presenting the case that maybe they have questions about and they didn't ... they could use us for our feedback or our experiences. I try to offer that. (P4)*

Study participants compared the processes of learning during the CS to other CME

opportunities, such as small group discussions, national level conferences, and didactic sessions. One participant described the importance of the CS as a locally situated learning opportunity in which participants are learning from their own patient care experiences:

> *I think oftentimes, the case conference is more applicable because it is ... are cases that I've either been directly involved in, or maybe peripherally involved in with ... when my other partners are presenting those cases, and knowing that it's a topic that's ... or knowing that it's a patient in my own hospital, it makes me pay more attention and understand that this is very applicable. (P1)*

Participants mentioned the value of discussing challenging cases with peers. One participant described the importance of learning about uncommon, but important diagnoses:

> *...if missed, can be detrimental to the patients. And how something that's not very common, but has a very unique presentation, that we should be aware of and should be able to recognize. (P4)*

Another participant described the value of discussing controversies in the management of common clinical presentations:

> *So that case, I don't recall having a morbidity happening to that case but as I recall this patient was having ... anginal symptoms based on his story…. you may argue that this patient may just go directly to coronary angiography, but in certain cases, ... we admit patients with chest pain that you may describe subjectively as a physician as unstable angina or anginal symptoms ... and following consultation with cardiology,... they would strongly or I should say, not*
>
> *strongly, go towards a more direct diagnosis and treatment unless you see,... more objective findings such as cardiac biomarker elevation or EKG changes.*

*(P5)*

One participant commented that the CS stimulated her/his curiosity.

*I mean, of course when you have a case that you're discussing and it kind of tickles your brain and you want to continue to inform yourself in that regard, so then you're kind of forced to go back and read about it. (P2)*

**B. Impact of the Case Conference Series on Patient Care Practices**

Just as learning processes were described as both individual and collaborative, study participants described the impact of the CS on individual patient care practice as well as group practice. Most of the study participants felt that attending the CS helped improve their individual clinical practice. Some mentioned that they were able to better manage patients who needed controversial treatment, given that this had been discussed with their peers at a CS previously. Some mentioned that they were challenged to keep an open mind when evaluating patients given they had discussed unusual presentations of diseases at the CS.

*It's also challenged the way I look at patients and keeping that open mind that, hey, I might be missing something. (P4)*

*It makes me think things through more completely, rather than looking to get my work done and get out, it makes me evaluate cases more. (P3)*

Some commented that the medical literature did not always help in diagnosing patients with rare conditions, and the process of discussing these patients with peers was helpful.

*Because I think there's rare cases out there that you can't rely on what the books say. (P4)*

Interestingly, comparing oneself to peers with respect to individual practice care was also perceived to be an important facet.

*It's important that we come together more often than we do because then you're like, "You did this?" I'm like, "I do this but why do you do that?" Then you will say, "Because of this, this, this." I say, "Uh-huh." (P6)*

A few participants commented that they had not attended enough CS sessions to notice a meaningful impact on practice. Although they had hoped this would change group practice, they did not feel that this had been achieved.

*I feel even though we are doing this case conferences, I guess the goal should be to learn something new obviously but also implement it. (P6)*

Given the type of cases selected for the CS, participants did not think that their ability to manage "typical" cases improved.

*While you're learning more or you're becoming more aware that an abnormality exists, it doesn't necessarily change my practice because it cannot based the little times, four times that I have attended because you're presenting a case, you're not discussing a topic. (P6)*

Since there was an inconsistency of attendees at each session and a limited number of conferences through the year, developing shared approaches to common conditions or the CoP 'practice' was limited.

*I feel like if we are doing this, the goal should be that we are all on the same page, that our group does not do bridging because this is the evidence and this is the most recent thing in the literature and this is what everybody is doing nationally. (P6)*

### C. Learning and Practicing as a Hospitalist

As described above, hospitalists work in an acute care environment with a high volume

workload, making workplace learning challenging for the individual practitioner. One participant compared the practice of medicine in the hospital in the past to the present, with an emphasis on taking care of patients in crisis in the acute care setting:

> *I think our job is very important first of all, so we take care of people when they are in an acute state, where they're in crisis, they're in the hospital. (P6)*

Some participants discussed the rapid pace of work and doing things by 'reflex'.

> *Sometimes you don't always do it when you're working in the field because you're just doing everything as a reflex and things are just making sense so you go through with the motions. (P2)*

The negative impact on learning by being in a community hospital was highlighted by a few participants who mentioned that being a sole physician on the clinical team made it challenging to discuss cases, as well as specialist over-reach and protocol drive medicine.

> *You being the only doctor in the team taking care of your patients, that makes it more difficult for you to have time to be able to discuss cases. (P2)*

Participants described structured methods for keeping up to date with clinical medicine, which included reviewing medical journals, listening to audio books, reading board review material, referring to resources from training, using internet search engines to quickly answer a clinical question and attending CME conferences.

Most participants also talked about the 'informal' conversations that occurred with colleagues. Although opportunistic, equally important sources for learning were discussing cases with colleagues and experiential learning from cases.

> *I do go from time to time if I have any question, I go to a more experienced colleague and try to deconstruct the case. (P2)*

*Sometimes it's just at the end of the day, once all the patients are seen. And sometimes it will be later on, it will be a week later, a couple weeks later, I'll discuss a patient that maybe one of my colleagues had signed out to me. And then I run into that colleague again, and then we re-discuss that patient. Like, "Oh, how did that patient end up doing?" Or "What did that test show?" (P4)*

Participants described the importance of learning from the experience of caring for patients, with some pointing out that bad outcomes stuck to memory more than good outcomes.

*You became a physician through experience and nothing beats that. (P6)*

*… that if something that were to happen that's unexpected or a morbidity arises based on your decision making, I will never forget. (P5)*

**D. Belonging to this Hospitalist Group**

Participants described the positive effects of knowing each other as a person at work. They discussed feeling like they belong to a group due to the CS, even though they formally belong to this hospitalist group due to their job description. This was evident in participant comments, alluding to the power of the CS in bringing the group together outside of typical work situations. Collegiality was highlighted as one of the reasons to attend, especially for newer members of the hospitalist group who felt that they got to know about their peers through the CS.

*What I really like about this is that it gives us an opportunity to chat privately but comprehensively without much interruption. (P3)*

*It's good for professional growth, good for team building. (P6)*

There were comments shared regarding feeling responsible to the group as a result of attending the CS since they saw the amount of effort their colleagues put in, in the discussion. They mentioned that the CS helped with team building, and building trust between colleagues

given that they were able to gauge each other's critical thinking ability as they worked through a case.

*I feel more responsible to the group, but as a result, more responsible for the patient and to the nursing staff for example. (P3)*

*Oh yes, it has reaffirmed like, hey, I'm in a pretty good group here. Put some pressure on yourself to deliver well in your patient care, but in a good way. (P5)*

*To make sure that we have each other's back and we ... it helps in team building more than anything else. I am not going to work well with you if I don't know you as a person. (P6)*

Some participants remarked about how the CS helped them adjust to a new job, since they were able to see how the group behaved and practiced in an informal setting, something that is not always possible for independent practitioners such as hospitalists.

*It helped me adjust to the new job. (P6)*

*Here, I guess it helped me see how the group practices and how it behaves. (P6)*

They talked about the opportunity to discuss non-medical matters and issues related to hospitalist procedure in a safe environment.

*The opportunity to discuss other issues that are going on that are not necessarily related to that case. (P3)*

*Just getting away from the grind of seven days on, seven days off, and being able to step back and more or less, kind of hang out with them. And not only talk about medicine, but other things before the meeting starts, after the meeting starts. And getting to know them as a person. (P4)*

# IV. DISCUSSION

## A. Community of Practice Framework

'CoP are groups of people who share a concern or a passion for something they do and learn how to do better as they interact regularly' (Wenger, 2011). As indicated by Wenger, not everything called a community is a community of practice. In fact, it is unclear if groups of physicians who work together form a true CoP, just on the basis of their job description (Wenger, 2011). As stated in my study question, this study was designed to find out if the occurrence of a CS helps develop a CoP amongst a group of hospitalists. Three characteristics are required to develop, in parallel, to cultivate a CoP (Wenger, 2011). These are the domain, the community and the practice.

A CoP has an 'identity defined by a shared domain of interest' (Wenger, 2011). There are three intersecting domains that seem apparent when viewing the CS: the domains of hospital medicine, the discussion of challenging cases, and improving patient care practices. First, a CoP must be a domain with clear boundaries (Snyder and Wenger, 2010). Although being a hospitalist does not by itself mean that a CoP exists, the common denominator amongst those who participate in the CS is that they belong to the ABMC hospital medicine group. Membership in the CoP implies that members' shared competence distinguishes them from others (Wenger, 2011). Second, the CS was structured to focus on challenging cases to allow for an in-depth and deliberate discussion amongst participants in a locally situated activity, and not just a show-and-tell presentation. Those actual clinical cases that had either a rare presentation, challenging management or controversial treatment were included. The learning objectives of each session were designed to provide for participants to apply evidence based knowledge into clinical practice; effectively provide feedback to peers; and identify and disseminate information and insights about patient care that are drawn from experience. The structure of the CS was based on

Harden's CRISIS criteria for effective CME (Harden, 2005). Participants talk about the importance of locally situated learning, which is finely balanced against time and work pressures. Finally, a CoP affirms the purpose and value of the community to members and society (Snyder and Wenger, 2010). The domain of interest reflects the content of learning and also the outcome of improved clinical practice; members of this CoP care about maintaining and improving their own knowledge and skills, and also care about the quality of their care, along with transfer of knowledge and skills into their clinical practice.

'In pursuing their interest in their domain, members (of a CoP) engage in joint activities and discussions, help each other, and share information' (Wenger, 2011). 'The presence of a community creates the social fabric within which learning occurs, and membership in the community must be seen as a desirable objective' (Snyder and Wenger, 2010; Wenger-Trayner, 2015). The overall experience of the CS and the environment suggests that members find membership to be a desirable objective. Leadership is required to sustain a CoP (Snyder and Wenger, 2010; Wenger-Trayner, 2015). Although not explicitly stated by participants, the design of the CS includes a facilitator who also organizes each event (LS). Learning within the community is a core concept to my research question for two reasons. First, the intent of this longitudinal conference series is to promote development of knowledge, practice and attitudes for its hospitalist participants. Participants described collaborative learning with and from peers as well as an ability to identify resources because of the CS. The resources identified included people and expert guidelines and protocols. Although opportunistic and individual learning occurred in other contexts, such as hallway conversations with peers and other CME activities, the more structured nature of the CS as a locally situated learning opportunity was considered as a valuable opportunity. Second, the CoP framework provides a way to think about learning in its social dimensions, making this an important feature of this conceptual framework (Wenger, 2010). Pride in the purpose and accomplishments of the community are essential elements as

well (Snyder and Wenger, 2010; Wenger-Trayner, 2015). Mutual trust and respect between members (Snyder and Wenger, 2010; Wenger-Trayner, 2015) is crucial, as is evidenced by remarks from participants about team building and building trust between colleagues.

Participants described the importance of comparing their own clinical experiences and offering advice to their peers. Hospitalist work commonly includes working in silos, with limited time to socialize and get to know one's colleagues, especially when the work becomes hectic. Meeting outside of work is not always possible given the week on-week off schedule, as well as personal commitments that some physicians have with respect to family, etc. This is especially important in the context of the solitary nature of hospital medicine in community settings.

Members of a CoP develop a shared practice or specific knowledge and skills that the community shares and develops, consisting of a set of "frameworks, ideas, tools, information, styles, language, stories, and documents that the community members share" (Wenger, 1998). 'Practice' encompasses a social environment in which both work and learning take place (Cruess et al., 2018). Although the CS provides participants with the opportunity to belong to the group, they are learning together within this smaller group. Stories or cases shared by participants reflect the values and norms of the community. This is especially true of participants who discuss the value of discussing challenging cases with peers. Most of the practice change was felt to be individual. The lack of shared guidelines or standards was commented on by study participants, meaning that this aspect of a CoP did not develop. Study participants mentioned the development of trust that developed due to observing each other's critical thinking ability, which was especially important at the time of patient care hand-offs. Participants describe how they learned as participants within the confines of the CS, along with their peers, to develop a shared understanding of the types of cases they may encounter in their own clinical practice. There is a strong theme of individual learning, especially striking when those who present describe

"becoming somewhat of an expert", while preparing to present a case, which contrasts with participants' description of lack of shared guidelines or ways of doing work. There was discussion about having an "academic mindset". There is also a rich description of working through cases together. They also describe the impact on individual (clinical) practice which arises from the frameworks and stories that come out of the discussions during the CS. Due to the longitudinal nature of the CS, participants have the opportunity to meet regularly.

## B. Limitations

The small sample size is an important limitation of this study. Although most of the hospitalists who were eligible to participate were enrolled in the study, the perspectives of those hospitalists who chose not to participate in this study is unknown. A small proportion of hospitalists were not eligible to participate in the study since they had not attended a single CS, thus making their perceptions unknown as well. Given that a small number of conferences (eight) had occurred at the time that the study interviews were conducted, we are unclear about any relationship that might exist between the number of conferences and the development of a CoP.

The perceptions of key stakeholders, other than the participants, were not solicited, such as the leadership at the hospital who had supported this CME initiative. Also, it is unclear whether learning or change in practice occurred, beyond self-report.

Being the CS organizer, facilitator and study interviewer, the issue of reflexivity is important in the interpretation of the results, particularly given my relationship as a colleague with study participants during our time spent at the CS and during the CS. This might influence the answers that they gave during the interviews. Thus, a second interview was undertaken to give participants ample opportunity to fully express their thoughts and clarify earlier comments.

Finally, this study was limited to a single hospitalist group in a single hospital, making it difficult

to apply these results to other settings.

## C. Conclusion

The impetus for creating this continuing CME activity was the high turnover within the hospitalist group, combined with lack of a locally situated forum to discuss the clinical care encountered by the group members on a daily basis. Using the CoP framework as a lens, our study highlights some planned consequences of the conference series. The development of trust between members and a sense of belonging to the group, along with perceived improvement in individual clinical practice, are aspects that can be mapped to the CoP framework. Through this study, we were able to show that aspects of the CoP developed after only eight conference sessions focused on discussion of challenging clinical cases. Some other aspects of CoP were not apparent, primarily the development of a shared practice. It is not known if having a different case focus or following the activity over a longer time will lead to a more robust development of a CoP. It is also unclear whether this activity led to retention of physicians.

## D. Future directions

A longitudinal study that evaluates the CS after six to eight more case conferences sessions might be useful to see if there are new themes that have developed that might be attributed to the CoP framework. Expanding the study to include CS non participants and hospital leaders to gain their perspectives as additional stakeholders will be helpful. Increasing the frequency of the CS and exploring its impact on the CoP might shed some light on whether shared group practice develops. It will be also helpful to study which features matter for whether a CoP develops and to what extent, when similar interventions are applied in other hospitalist groups, as well as how the intervention evolves over time.

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# APPENDIX: INTERVIEW GUIDE

*Step 1: Purpose*

The purpose of this study is to explore your experiences of the case conference series as a presenter and as a participant. During this interview, I will explore the contributions that these conferences make to your practice as a hospitalist.

*Step 2: Informed Consent*

Our interview will be audio-recorded and transcribed into text scripts devoid of personal identifying data. Your interview will be given a number and a letter code to keep it anonymous when recorded and transcribed. Your identity will remain anonymous throughout the analysis of the transcripts and presentation or publication. Please note that anonymous quotes may be used during presentation or publication.

By participating in the interview, you consent to participate in this study. This study presents no more risk of harm than you would experience in everyday life. You may risk loss of privacy (revealing to others that you are taking part in this study).

I anticipate that this interview will last approximately 60 minutes. I will contact for a follow-up interview to verify your responses and to share our analysis with you.

*Step 3: Answer any questions*

What questions can I answer for you before we begin?

*Step 4: Confidentiality*

The information discussed in this interview is confidential. All identifying information will be removed from the transcript of your interview to maintain confidentiality. I will listen and record your responses and will not interrupt until you have finished. Do you consent (turn on the recording)?

*Step 5: Interview Questions:*

1. Tell me about your experiences with the case conferences.

Probe: Think back to the last conference that you attended. Talk me through your experiences at that conference

2. How does the experience of being a presenter compare with that of being a participant at the conference? (if relevant to the study participant)

3. Has the case conference series contributed to your practice as a hospitalist? If so, can you elaborate?

Probe: Has this experience helped you frame your practice as a hospitalist?

4. Has the case conference series contributed to your learning as a hospitalist? If so, can you elaborate?

- Probe: Compared with other learning opportunities?
- Probe: What resources do you rely on to learn? To improve your practice?

5. Has the case conference series contributed to being a hospitalist at Aurora BayCare? If so, can you elaborate?

Probe: Has this experience helped you frame who you are as a hospitalist?

6. Do you feel after you leave the case conference that you have learnt something from your colleagues?

Probe: Has this experience changed the way you view your community at work?

7. What factors facilitate your attendance at the conferences? What factors are barriers to your attendance?

8. What else would you like me to know about your experiences of the case conference series?

# VITA

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