WHAT ARE WE SAYING AND WHAT ARE THEY LEARNING: HOW LANGUAGE IMPLIES “COMPETENCE” AND PROFESSIONAL IDENTITY IN CLINICAL MEDICAL EDUCATION

by

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A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF ARTS

in

THE FACULTY OF GRADUATE AND POSTDOCTORAL STUDIES

(Interdisciplinary Studies)

[Anthropology/Educational Studies]

THE UNIVERSITY OF BRITISH COLUMBIA

(Vancouver)

October 2013

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ABSTRACT

Gee (2005) notes that in enacting a socially recognizable identity, people integrate “language, actions, interactions, ways of thinking, believing, and valuing”. In order to do this, however, medical students must learn how to interpret broad swaths of information and grasp which “language, actions, interactions, ways of thinking, believing, and valuing” are considered relevant to their emerging professional identities. Although ethnographies of medical student learning have been previously undertaken, they have not studied how identity is emergent through everyday recurrent conversational interactions.

An activity theory stance was used to conceptualize medical student learning on a paediatric clinical teaching unit as socially elaborated and continuously produced. Preceptor beliefs concerning desirable student qualities, case presentation content, and teaching practices were developed from thematic analysis of semi-structured interviews. Using these findings as a contextual frame, a microethnography was conducted to observe and record student case presentations and sign-over participation. Through a conversation analysis lens, these events were transcribed and read to understand how students’ language use changed regarding information organization and the degree and detail to which information was included.

During early clinical training, medical students accommodate rapidly to normative speaking practices through repeated interactions with their preceptors. These enable them to “do being” a novice professional in legitimated ways and manifest the beginnings of professional communicative competence. Far from a faithful reproduction of professional competencies, however, performances of competence are critically dependent upon relationships and contexts. How students learn to talk about sick persons as patients in
contextually relevant ways is not superficial mimicry of a certain vocabulary but rather a broader adoption of practices and participation in shared understandings enabling them to talk in certain ways. In so doing, they reproduce cultures of biomedical practice that foreground patients as problems to be solved, struggle to contextualize sickness in the wider lived experience of families, and may unintentionally dilute effects of initiatives such as family-centred rounds. Articulating how students learn to participate in sociocultural norms through language use is a critical first step towards deeper curricular reforms seeking to establish a more harmonious balance between practices of patient care and clinical medical education.
PREFACE

I primarily designed this study in conjunction with the three supervisors and with input from the health centre and program studied. I conducted all interviews and observations, transcribed all recordings, analyzed all data, and am responsible for all content contained in the final version of this thesis.

Excerpts from the initial analysis of this work were presented to medical education colleagues at the 2nd Annual Rogano Research Academy in Lyon, France in August 2012. This work was presented as original research at the University of British Columbia Annual Paediatric Resident Research Day in March 2013 and at the 40th Annual National Paediatric Resident and Fellow Research Competition at the University of Manitoba in Winnipeg, Canada in May 2013.

This study was supported by a competitive Canadian Institutes of Health Research Banting and Best Canada Graduate Scholarships Master’s Award.

This study was approved by the Behavioural Research Ethics Board of the University of British Columbia under the title Conversion through Conversation, certificate number H11-01422.
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## LIST OF ABBREVIATIONS

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<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
<th>Page Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACMC</td>
<td>Association of Canadian Medical Colleges</td>
<td>121</td>
</tr>
<tr>
<td>AFMC</td>
<td>Association of the Faculties of Medicine of Canada</td>
<td>118</td>
</tr>
<tr>
<td>ALTE</td>
<td>Apparent life threatening event</td>
<td></td>
</tr>
<tr>
<td>BREB</td>
<td>Behavioural Research Ethics Board (of the University of British Columbia)</td>
<td>33</td>
</tr>
<tr>
<td>CA</td>
<td>Conversation analysis</td>
<td>24</td>
</tr>
<tr>
<td>CanMEDS</td>
<td>Canadian Medical Education Directives for Specialists</td>
<td>119</td>
</tr>
<tr>
<td>CFPC</td>
<td>College of Family Physicians of Canada</td>
<td></td>
</tr>
<tr>
<td>COW</td>
<td>Computer-on-wheels</td>
<td>43</td>
</tr>
<tr>
<td>CRP</td>
<td>C-reactive protein</td>
<td>60</td>
</tr>
<tr>
<td>CTU</td>
<td>Clinical teaching unit</td>
<td></td>
</tr>
<tr>
<td>DME</td>
<td>Distributed medical education</td>
<td>114,115</td>
</tr>
<tr>
<td>ESR</td>
<td>Erythrocyte sedimentation rate</td>
<td>60,64</td>
</tr>
<tr>
<td>FCR</td>
<td>Family-centred rounds</td>
<td></td>
</tr>
<tr>
<td>HPI</td>
<td>History of presenting illness</td>
<td>59, 63</td>
</tr>
<tr>
<td>HSP</td>
<td>Henoch-Schönlein purpura</td>
<td></td>
</tr>
<tr>
<td>ICU</td>
<td>Intensive care unit</td>
<td>63</td>
</tr>
<tr>
<td>LFT</td>
<td>Liver function test</td>
<td>64</td>
</tr>
<tr>
<td>LRTI</td>
<td>Lower respiratory tract infection</td>
<td></td>
</tr>
<tr>
<td>MCAT</td>
<td>Medical College Admissions Test</td>
<td>12,119</td>
</tr>
<tr>
<td>MD</td>
<td>Medicinae Doctor (Doctor of Medicine)</td>
<td></td>
</tr>
<tr>
<td>MSI</td>
<td>Medical student intern</td>
<td></td>
</tr>
<tr>
<td>NICU</td>
<td>Neonatal intensive care unit</td>
<td></td>
</tr>
<tr>
<td>OSCE</td>
<td>Objective Structured Clinical Examination</td>
<td>20,121</td>
</tr>
<tr>
<td>PBL</td>
<td>Problem based learning</td>
<td>20,120</td>
</tr>
<tr>
<td>RCPSGC</td>
<td>Royal College of Physicians and Surgeons of Canada</td>
<td></td>
</tr>
<tr>
<td>RMC</td>
<td>Regional medical campuses</td>
<td>114,115</td>
</tr>
<tr>
<td>RSV</td>
<td>Respiratory syncytial virus</td>
<td></td>
</tr>
<tr>
<td>UBC</td>
<td>The University of British Columbia</td>
<td>33,119</td>
</tr>
<tr>
<td>UTI</td>
<td>Urinary tract infection</td>
<td>2</td>
</tr>
<tr>
<td>UWC</td>
<td>The University of Western Canada</td>
<td></td>
</tr>
<tr>
<td>VSD</td>
<td>Ventricular septal defect</td>
<td></td>
</tr>
</tbody>
</table>
ACKNOWLEDGEMENTS

I would like to gratefully acknowledge the following:

The Centre for Health Education Scholarship and its members for their unyielding support of this research through all of its phases.

William McKellin and Daniel Pratt for the support, care, effort, and time to enable me to grow as a researcher and a scholar, but more importantly, as a person.

The attending paediatricians, paediatric residents, medical students, nurses, pharmacists, families, and children who each in their own way made this study possible.

My family, friends, and colleagues for holding the space.
DEDICATIONS

For Mark Chmiel, who taught me how to question with a pen,

For Saleem Razack, who helped me see a vocational door hidden out in the open,

For Richard Gosselin, who unyieldingly helped me stay the course when I wanted to run,

And, as always, AMDG.
CHAPTER ONE: INTRODUCTION

Medical professionals’ use of diagnostic naming to refer to a sick person, such as “the bronchiolitic”, “a sickler”, “the diabetic”, and “an asthmatic”, is a regular occurrence in health care (Anspach 1988). While ongoing scholarship has noted that this is an enduring tendency within medical practice, both patients and caregivers harbour considerable resentment when health care practitioners refer to them as a “body part” or a “case” (Engel 1977, Cassell 1999, Charon 2004, Boudreau et al 2007/2008). This resentment offers significant threats to patient-physician relationships, in turn menacing compliance with suggested therapeutic regimens. Medical learners continue to learn to employ these forms of language, as noted here in a recent discussion between paediatric residents:

<table>
<thead>
<tr>
<th>1st-Year Resident</th>
<th>I’ll take the ALTE (apparent life threatening event)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2nd-Year Resident</td>
<td>okay</td>
</tr>
<tr>
<td>1st-Year Resident</td>
<td>the bupropion (anti-depressant drug) overdose –</td>
</tr>
<tr>
<td>2nd-Year Resident</td>
<td>okay</td>
</tr>
<tr>
<td>1st-Year Resident</td>
<td>and then the one that’s going home –</td>
</tr>
<tr>
<td>2nd-Year Resident</td>
<td>okay</td>
</tr>
</tbody>
</table>

It also involves medical students in work-based talk with residents:

<table>
<thead>
<tr>
<th>3rd-Year Medical Student (A)</th>
<th>I’ll take, the ALTE?</th>
</tr>
</thead>
<tbody>
<tr>
<td>2nd-Year Resident</td>
<td>Yeah, the ALTE one?</td>
</tr>
<tr>
<td>3rd-Year Medical Student (A)</td>
<td>Yeah.</td>
</tr>
<tr>
<td>2nd-Year Resident</td>
<td>Is that okay for you, Hannah?</td>
</tr>
<tr>
<td>3rd-Year Medical Student (B)</td>
<td>Yeah, sure.</td>
</tr>
<tr>
<td>2nd-Year Resident</td>
<td>Okay. And then Hannah, I think usually HSP (Henoch-Schönlein Purpura) is a good –</td>
</tr>
<tr>
<td></td>
<td>Yeah. That’s interesting. – one.</td>
</tr>
<tr>
<td>3rd-Year Medical Student (B)</td>
<td>Yeah HSP is definitely –</td>
</tr>
<tr>
<td>2nd-Year Resident</td>
<td>Yeah</td>
</tr>
<tr>
<td>1st-Year Resident</td>
<td>– an interesting one. We don’t really admit many HSPs.</td>
</tr>
</tbody>
</table>
And attending physicians:

**PedG**: “A simple asthmatic, rule-out UTI, rule-out sepsis – any of these kinds of patients could easily be followed by a medical student under a senior’s supervision, and then they should learn to understand what we’re trying to create – doctors who are responsible for all elements of their patients’ care.”

On the one hand, it is easy to simply dismiss medical personnel as uncaring individuals more interested in the diseases of patients’ bodies than the lives in which those patients are experiencing pain, discomfort, and significant changes to their normal. However, this is incongruous with the expressed stated beliefs of current practicing clinicians in what they attempt to model for learners:

**PedF**: “How you interact with patients and how you convey information – it’s an art that you develop over the years. After more than ten years of working in the unit, you learn to realize what are the appropriate sorts of interaction and behaviour. You hope that students and residents can look at that and say this is how the attending deals with this very difficult situation and I think that’s the best way for students, (for us) to model this kind of so-called behaviour. I think part of medicine is not just the medicine of listening to the chest or listening to the heart sounds or giving antibiotics because the child had a pneumonia, it’s also this whole concept of interacting with the parent understanding, and conveying information.

and practices they look for in learners:

**PedH**: “I’d like to see they have that communication or rapport with a patient...that they listen well, and they give the patient time to, talk, and not to interrupt frequently.”

The disconnect highlighted in the recent conversations and quotations above reveals a persistent tension between a construct of patient-as-disease category where physical bodies are spoken of and for, and a practice of interacting and meaning-making with sick children and worried parents around illness that to various degrees and in various ways upends families’ lives. Notably, in PedG’s comments they exist together; “a simple asthmatic, rule-out UTI, rule-out sepsis – any of these kinds of patients” is almost immediately followed by “we’re trying to create doctors who are responsible for all elements of their patients’ care”. 
Despite recurrent formal curricular revisions emphasizing the importance of professionalism and communication, this tension remains a potential lightning rod; continued foregrounding of patient-as-disease category with concomitant lesser or even inattention to the need for meaning families confront may serve to erode significantly public trust in the profession.

Discourses of social accountability and responsibility in medicine have become powerfully ascendant in recent years, influencing publications from international organizations such as the World Health Organization (Boelen and Woollard 2009/2010) to national bodies on medical education (AFMC 2010).\(^1\) It was largely a crisis over social accountability and potential loss of physician societal standing that led to the Educating the Future Physicians of Ontario (EFPO) roles project in the late 1980s (Whitehead et al 2011). While the EFPO project is not well-known outside of Canada, it directly led to the emergence of the enshrined professional competencies known as CanMEDS\(^2\) which have rapidly circulated worldwide.

Professionalism, with ideological underpinnings drawing heavily from the social contract (Cruess and Cruess 2008), has also spread rapidly in the discursive space created by social accountability. It has gained and granted legitimacy across a broad constellation of major medical regulatory bodies (Bryden et al 2010) and resulted in the establishment of explicit, updated codes of medical practice\(^3\). In conjunction with this has been a rapidly proliferating literature measuring and defining specific physician beliefs, behaviours, and actions and how, in turn, these harmonize with a normative concept of physician-as-professional (Cruess et al 2000). CanMEDS’ non-medical expert roles, now officially rebaptized as “Intrinsic Roles” (Sherbino et al 2011), include among others, Professional and Communicator. They are styled as broad directives, concerning themselves first and
foremost with what all medical professionals should do and how they should act. For example, the Communicator role, couched in recurrent articulations of relevance and accuracy, provides a normative ideal as to how physicians should communicate with respect to health care and patient interactions.4

This focus upon desired common characteristics of all physician professionals has been complemented by nascent explorations of how individuals actively joining this group come to embody these characteristics. While role-based competencies have emphasized largely doings and actions, how one is, and by extension becomes, a medical professional is an emergent complementary line of enquiry (Jarvis-Selinger et al 2012). Professional identity formation has arisen as an important area of scholarship for the medical education field (Bleakley et al 2011). Certain medical education leaders have gone so far as to explicitly articulate that the making of an appropriate professional identity be a key curricular goal (Irby et al 2010), portending its emergence as an important unit of analysis with respect to the design of educational systems and the assessment of their effects. Looking at issues of communicative competence through this lens may offer an idea as to why, despite the good intentions of many physicians and educators, broad efforts towards standardization have not made much difference in the types of language medical trainees actually learn to use. For example, in returning to the CanMEDS Communicator role, relevance here is taken as assumed and self-evident. There is no explication as to how readers should interpret and embody its directives as they establish their footing as physicians.

The roles of discourse and rhetoric have begun to figure prominently in medical education scholarship (Hodges 2006 and Lingard 2007), suggesting that which language is
used and *how* it is used is as critical for the construction of competencies as it is for patient care and everyday medical education. However, there continue to be a dearth of studies investigating how, through seemingly mundane daily interactions, early medical trainees learn to grasp certain schematic organizations of information, the types of information they should include, the degree of detail necessary, how relevance shifts depending upon differing contextual frames and factors, and, ultimately, how legitimate communicative competence is produced in each.

Identity is importantly linked to the use of language. Eckert (2008) asserts that “different ways of saying things are intended to signal different ways of being”, while Gee (2005) suggests that in enacting a socially recognizable identity, people integrate, among other things, “language, actions, interactions, ways of thinking, believing, and valuing”. In order to achieve recognizability and legitimacy, however, medical learners must learn *how* to interpret broad swaths of information and grasp *which* “language, actions, interactions, ways of thinking, believing, and valuing” are considered relevant to their emerging professional identity. Although ethnographies and observations of medical student learning have been previously undertaken (Good and DelVecchio Good 1993, Haber and Lingard 2001, for example), they have not focused upon how identity is emergent through everyday recurrent conversational interactions in this group.

Several researchers have noted the powerful role that daily interactions can play in shaping identity. Bucholtz and Hall (2005) state that “identity is discursively produced in even the most mundane and unremarkable situations,” while Eckert (2008) suggests that “speaking in the social world involves a continual analysis and interpretation of categories, groups, types, and personae”. Gradually, logical schemas develop from these interactions as
speakers learn “to notice differences, to make distinctions, and to attribute meaning to them” (Eckert 2008). Others have noted the important roles played by context and professional mentors. Lave and Wenger (1991) note that “newcomers” are not only “learning from talk, but learning to talk” and to thus selectively include and present information in ways they understand to be relevant to their professional colleagues. As Nguyen (2006) states, it is in part through recurrent participation in conversational interactions that novices progressively learn how to enact legitimated professional activities in a relevant manner, incorporating them into their performance of growing expertise. DelVecchio Good (1995) adds that medical students’ “highly attuned sensitivity” to both informal and formal evaluation is inculcated early in their career through “apparently simply daily interactions in the clinical clerkships”.

DelVecchio Good (1995) further notes that “early clinical interactions quickly teach students the nuances and variability of what is regarded as medically relevant”. In the contexts of early clinical training, medical student participation in daily recurrent interactional communicative activities such as case presentations and sign-over rounds with more senior colleagues on clinical teaching units (CTUs) is critical. These communicative events are major axes of acute care hospital clinical teaching and learning in medical education, and mastering what is relevant is cardinal to legitimate participation in ward work. How medical students progressively frame, organize, and use case presentations and sign-over through repeated interactions offers a point of study that enables a deeper understanding as to how they interpret and structure the events of a patient’s experience in ways that are contextually relevant.
Gee (2005) notes that there are reflexive relationships between the language (including the sociolect medical students learn to use) and the contexts in which they are embedded, while Silverstein (2003) suggests that all language use is indexical. In other words, how people use language in even supposedly mundane and everyday encounters is inextricably bound up with certain deeper presuppositions and entails certain outcomes rather than others. It follows, then, that the language medical students learn to use in repeated everyday interactions such as case presentations and sign-over rounds is reflexively connected to and framed by broader sociocultural understandings that they must adopt. These understandings provide students with ideologies as to how the medical profession they are joining works, how it is organized, and how they can progressively understand their relationships to both it and others in it. While indeed the broad directives found in legitimated texts such as that of the CanMEDS Communicator role provide some direction as to what physicians should *do*, how interactional communicative competence emerges in medical professionals goes far beyond this pale.

Therefore, how medical students learn to talk about sick persons as patients in a contextually relevant manner is neither a sudden flip of a switch nor merely superficial mimicry of a certain set of vocabulary. Rather, it is a continuing, progressive, broader, deeper, pervasive, and comprehensive performative adoption of beliefs, attitudes, and shared understandings – ways of being – that lead one to talk, listen, relate, and act in certain ways for certain purposes rather than others. What is said, not said, the degree to which it is said, how it is organized, and how audiences respond to it all reflect and incorporate these underlying assumptions about the professional world they are joining, realizing, embodying, reproducing, and transforming. How students perform their identities through performances
of genred narratives such as case presentations and sign-over, while always a work in progress, is thus a more complex phenomenon than on first glance. What relationships exist between these actors, their professional identities, the language practices they come to use, and the sociocultural worlds in which they are learning to participate thus invites exploration.

Ochs (2012), drawing upon others, suggests that production of language is a work-in-progress, “full of uncertainties and transformations that can be tracked moment by moment.”, while Nguyen (2006) demonstrated how the gradual emergence of expertise can be followed through attention to recurrent moment-by-moment conversational interactions between pharmacy students and their clients. Therefore, rigorous study of how medical students’ speech practices concerning case presentations and sign-over change through recurrent daily interactions may hold valuable lessons about how they come to embody interactional communicative competence, may provide insight into how relationships between physicians and patients are configured, may promote improved understanding as to how the foundations of a legitimate (and legitimated) professional medical identity are laid down in the earliest and most malleable phases of training, and may offer a way by which to resolve the tension between the patient-as-disease-category aspect and broader meaning-making and care aspects of medical practice that continues to persist despite repeated efforts to address it.
CHAPTER TWO: THEORETICAL BACKGROUND

2.1 On Interaction and Identity

Bucholtz and Hall’s (2005) work views identity through a multifaceted lens, conceptualizing it “as a relational and sociocultural phenomenon that emerges and circulates in local discourse contexts of interaction rather than as a stable structure located primarily in the individual or in fixed social categories.” They build their stance around five principles. First, with the emergence principle, they challenge the long-held notion that identity is localized to an individual’s mind and that use of language chiefly reflects that state. In its place, they suggest that identity is emergent from linguistic interaction, constituted through social action, and inextricably linked to cultural practices. They further go on to destabilize the idea that identity is “simply a collection of broad social categories”. While these “broad social categories” have some use for capturing larger-scale trends, they grasp neither the important roles played by local identity categories nor everyday interactions in the production and shaping of identities and subjectivities.

In noting, like Silverstein (2003), that “associations between language and identity are rooted in cultural beliefs and values”, Bucholtz and Hall (2005) then illustrate their third principle, indexicality, as the mechanism by which identities are constituted through talk-based interaction. This allows “identity relations to emerge through overt mention of identity categories and labels; implicatures and presuppositions regarding one’s own or others’ identity position; displayed evaluative and epistemic orientations to ongoing talk as well as interactional footings and participant roles; and the use of linguistic structures and systems that are ideologically associated with specific personas and groups.” They note that even in the most fleeting and mundane interactions, speakers use language and interaction to position
themselves and others. In so doing, they illustrate that speakers use the enormous wealth of linguistic variables available to them to index themselves in very specific ways that harmonize with certain normative stances they are taking on interactional, local, and global levels. This allows subjectivity to be understood not simply as a one-perspective portrait but as multi-faceted and sedimentary.

Bucholtz and Hall (2005) then go on to note that identities as subjectivities arise through intersubjective relations; identity acquires meaning in interactive relationships to both other possible identities and other actors with respect to categories such as difference, authenticity, and authority. Finally, they propose that identities are partial and contingent. Fractured and discontinuous, they go beyond the individual self due to the multitudes of possibilities arising from the numerous contexts in which they are instantiated. Thus, identities and the language practices through which they are elaborated cannot be characterized in the absence of an understanding of the multiple shifting contexts and relationships in which actors find themselves.

Viewing medical student learning through this prism carries several ramifications. It concurs with some seminal medical education literature, such as Monrouxe’s (2009) ontological position that identities are “not something that one can have or not; (they are) something that one does.” Like Tsouroufli et al (2011), it challenges the idea that traditional broad sociological categories are the sine qua non of how people live their identities. This opens up space for meaningful contributions from locally relevant categories such as “students just beginning clerkship, in their first week of paediatrics ” or “team players” and evanescent, often rapidly shifting interactive positions such as active presenter, participating listener, and passive observer in case presentation and sign-over. It lays theoretical
groundwork for how local practices of medical work by these students at this time in these spaces are bound up in broader, perduring sociocultural values and frames that envelop considerations of medical training and philosophy across Canada and the Western tradition.

In resonating with the phenomenological tradition (Duranti 2010), medical identities here must be intersubjectively produced, not just, as Monrouxe (2009) states, in difference, but also in the contexts of power and authenticity. Medical students must contend continuously and in relationship with other students, residents, and physicians who have differing knowledges and expertises. Most importantly, this stance of identity challenges the standardizing, essentializing rail that competency-based medical education tends towards (Schrewe and Frost 2012). Medical identities are not uniform and conserved across actors nor are they completely accomplished when medical students become physicians. They are not mapped perfectly onto bodies nor do they disclose all that is about a person. Rather, they are better viewed as positionalities\(^5\) in co-construction with the contexts and other subjectivities with which they are in dialogue.

2.2 The Origin of Medical Students

Medical student identity formation proceeds in stages. In his landmark conceptualization of health, illness, and healing as a cultural system, Kleinman (1978) notes that the majority of societies are in this regard comprised of three spheres: the popular, the professional, and the folk. Medical students occupy a liminal space between these spheres; they are transforming their identities from that of lay members of the popular realm towards that of physicians with specific expertise at home in the professional realm. Through their training, then, medical students are actively engaged in re-conceptualizing their fundamental
understandings of health and illness, the relationships between them, the language used to talk about them, and what they believe to be or not to be relevant in the world of health care.

With the exception of certain programs with dedicated pre-medical tracks, the vast majority of medical students prior to medical school have completed at least one bachelor’s degree, written the Medical College Admissions Test (MCAT), and passed prerequisite courses including: biology, general chemistry, organic chemistry, and physics. While there is an increasing number of medical students whose academic background is from the liberal arts and humanities, most continue to come from science fields such as biology, physiology, and kinesiology. Others have come from prior careers in other health professions, such as nursing, occupational therapy, and physiotherapy.

In step with the competency standards applied to their full-qualified counterparts, most medical trainees in North America proceed through educational environments structured by formal curricula also heavily influenced by these. Medical undergraduate programs currently in place in most faculties are based upon variations of the “Flexnerian” model (Segal 2008), in which full-time workplace-based clinical training is preceded by two years largely populated with basic medical science content, courses in professionalism, clinical skills, and additional content such as a longitudinal “multidisciplinary course examining critical issues in health care”.

While the pre-clinical years carry their own importance, Watling et al (2012) suggest that there are significant learning cues intimately bound up in clinical work. Teunissen et al (2007) add that “work-related activities are the foundation of resident learning”. While the former is derived from recollections by practicing clinicians and the latter from resident focus group discussions, these insights also extend to medical student intern (MSI) learning.
as well. The backdrop against which these transformations most markedly occur is the early
days of clinical training, most frequently within the wards of acute care academic hospitals.
When undertaking their core rotations in an acute care academic hospital, medical students
are in their third year of a four-year undergraduate medical program. Good (1994) states
that the hospital is where the “formative practices of writing charts, presenting cases and
speaking with patients” occur, noting that the early clinical years are the period when
“students enter the world of the hospital…(and) learn to construct sick persons as patients,
perceived, analyzed, and presented as appropriate for medical treatment.”

Learner similarities of background and medical school experience do not end at the
admissions and pre-clinical level; the clinical years are also a time of unfamiliarity and rapid
change for most students. As DelVecchio Good (1995) notes, “stepping onto the wards leads
to astonishingly steep learning curves”. Unsurprisingly, third-year medical students often
find clinical training to be a bewildering field filled with unfamiliar language (Sobel 2005)
where struggles to understand what information is relevant (Lingard and Haber 1999, Haber
and Lingard 2001) are recurrent and frustrating. This is an intensive time for trainees; this is
the first time that they are fully immersed in the world of the hospital, participating in on-call
duties, long hours on service, and as members of clinical teaching units (CTUs). Perception
of these new responsibilities related to patient care can provoke learner worry and anxiety
(DelVecchio Good 1995). For the majority in traditional training programs, the frenetic pace
of early clerkship is full of repeated changes of team members, hospitals, and medical
disciplines on a four-to-eight week basis. Myriad new tasks await them, including making
case presentations and participating in sign-over.
As Jarvis-Selinger et al (2012) point out, medical students are not just becoming physicians. Rather, at this early clinical stage, they are learning first to effect an identity as competent medical student interns (MSIs), which in turn permits legitimate peripheral participation (Lave and Wenger 1991). Schütz (1946) states that knowledge about any phenomenon is necessarily socially distributed between experts and lay members of a society. In the case of experts, “knowledge is restricted to a limited field but therein it is clear and distinct.” Nguyen (2006) takes Schütz’s idea further, suggesting that his work places lay and expert perspectives on a continuum. She then makes her own distinction within the expert realm: there are novice experts, and there are experienced experts. This suggests a foundation upon which clinical medical students can build as they move towards experienced expert competence as physicians. Thus, they fall into an ambiguous category of developing towards novice expertise, as Nguyen (2008) frames it, or as Dreyfus and Dreyfus (1988, Flyvbjerg 2001) describe it, as an advanced beginner who has now moved from the theory of the classroom to performing in real-life workplace situations influenced by curricula.

Understandably, medical learners’ interaction with curricula during their undergraduate training constitutes a major way through which they lay down the foundations of an appropriate professional medical identity. Recognizing the important role of context in education, Hafferty (1998) has illustrated that informal and hidden curricular components significantly influence how formal medical curricula are delivered. Informal curricula comprise the actors and practices of medical workplace learning environments such as academic teaching hospitals, while hidden curricula refer to institutional values, beliefs, and practices that exert subtle but powerful shaping forces upon educational processes. Thus, the
content of formal curricula may be differentially delivered and its intended lessons unintentionally moulded by informal and hidden considerations. Despite faculties’ investment of significant time, resources, and energy to optimize their formal curricula, there may be significant differences between what is officially prescribed and what is actually taught and learned in the crucibles of medical training. Aside from the occasional broad template handed out at orientation, there is often little explicit preparation as to how to participate meaningfully; rather, much of what medical students learn from these pedagogical activities is gleaned from participation in the environments in which they are socialized.

2.3 From Life Stories to Medicalized Narratives

**PedI:** “Another aspect, which is difficult for students as well: not having too too much information, and yet having the critical parts of that particular problem in there. So, being able to act as a bit of a filterer as to what information may be important, and relevant, versus just putting and saying every single aspect and detail of everything that the parents told you, or even questions that you asked...being able to sort of distinguish when to filter out information, and yet at the same time not being sort of too minimalist as to miss things.”

Grasping to incorporate “what medicine cares about” (DelVecchio Good 1995) into their use of language is often a struggle for newly-minted clinical medical students. In addition, contextual frames shift with the aforementioned repeated changes of team members, hospitals, and medical disciplines, adding another layer of complexity for learners and, perhaps, belying that “what medicine cares about” is neither completely conserved across disciplines nor uniform across differing training environments. That being said, common to all of these rotations is medical students’ participating in recurrent interactions with persons and their families. In constructing an illness narrative from their interactions with sick persons, students also learn progressively through their interactions with colleagues how to re-organize, categorize, and include and exclude types of information in order to
present (and re-present) this same person as a patient in the rituals of formalized rounds (DelVecchio Good 1995).

Good (1994) explains that “narrative is a form in which experience is represented and recounted, in which activities and events are presented as having a meaningful and coherent order, in which activities and events are described along with the experiences associated with them and the significance that lends them their sense for the persons involved.” In the clinical environment, narratives from sick persons are often the beginning source of raw material from which persons are subsequently formulated as patients. How physicians interpret and weave together a formulation from this initial narrative involves selective choosing, disregarding, and organizing of the information given based on what they understand to be relevant.

From cognitive anthropology D’Andrade (1995) brings forth the concept of schema, an organized framework of objects and relations, to illustrate an approach towards how people interact with information. Having internalized templates, actors can more easily establish logical relationships between novel pieces of information and generate meaning from them. Two major applications of schema theory in the scholarship around contemporary Western medical education are the concepts of illness scripts and instance scripts (Schuwirth and van der Vleuten 2011). The former is the development of pattern recognition of a specific medical diagnosis that allows an experienced expert to recognize it quickly, while the latter approximates Bourdieu’s (1990) concept of virtuoso, in that certain experienced experts are able, from built-up deeply-held schemas, to perceive additional contextual factors that allow diagnosis almost instantaneously.
Surprisingly, this focus upon knowledge relationships in medical education has not made a lateral move to understandings regarding how medicalized narratives are produced in early development of expertise. How medical students organize collected information into a specific narrative is based upon their emergent sharing of their *experienced* expert preceptors’ schematic understandings concerning how health care events should be sequenced. Stories only “work”, so to speak, when speakers and audiences share understandings of what schemas are being invoked to organize and recount events. Schemas themselves can be broken down into sub-schemas, illustrating that concept of “sharing” at the heart of shared understandings is far more complex and precarious than the surface self-evident character of free-flowing conversation would lead one to believe on first glance. D’Andrade (1995) takes special care to point out that schemas are not just descriptive representations but creative devices used for processing information that are also flexible and plastic, capable of recurrent refining through repeated interactions nested within varying circumstances.

Good (1994) adds that theories of reading response, which pay specific attention to the “phenomenology of the act of following the story”, do not understand narrative as simply what is present in a completed story. In contrast, stories must be appropriated by an audience; they are not passively received but actively composed in the reception. Nguyen (2008) notes that novices learn sequential organization through participation in a speech exchange system. True to form, story-telling events are not static recounting but rather dynamic co-constructions by multiple actors who are, by turn, presenter and audience and who cleave to normative plot lines reflexively embedded within broader and normative cultural schemas. While it is tempting to think that these genred narratives resonate within
specific audiences and accomplish certain tasks per se, their performative power – and the power they confer upon their interlocutors – is also nested within normative conditions of reception.

Storytelling events such as case presentations and sign-over merit special consideration. Case presentations – the summarized version of a patient’s illness experience as articulated by medical professionals – are ritualized acts of performative communication that occupy the centre of medical training at multiple levels (Donnelly 1997, Lingard et al 2003). Lingard et al (2003) describe them as “both a school and workplace genre”, school-like in the sense that medical students are guided through the task by preceptors¹², but also they are medical work as they accomplish patient care, often being the route by which multiple team members are hearing about an admitted patient for the first time. Leder (1990) conceptualizes case presentations as primarily hermeneutical, or interpretive, in creation. They are loci of integrative interpretation of the information medical personnel learn from the original patient encounter and subsequently are frequently re-interpreted in order to incorporate ongoing changes throughout the trajectory of an admission.

Unlike case presentations, which are at the centre of morning rounds, sign-over bookends the daily activities of the medical workday. It is here that day and night care teams interface with each other to communicate about patients. For each patient, team members discuss relevant medical events of their respective shifts and identify medical issues that the accepting team should follow.¹³ While traditionally sign-over has been constructed as a more informal event than morning rounds case presentation, with increasing attention to the effects of medical error upon patient safety (NAO 2005), it too has become more ritualized
with the incorporation of formal checklists (Wayne et al 2008) to aid in information transfer and clinical reasoning (Weiss et al 2013).

Medical students, in their gradual learning of case presentation and sign-over as clinical narratives of rhetorical persuasion bound up in certain details and silences rather than others, use these to structure their care relationships to patients, understand relevance, and progressively participate as legitimate peripheral members of the medical profession. DelVecchio Good (1995) notes that this occurs as medical student concerns gradually shift from presentations of patients for residents and attending physicians to the creation of competent clinical narratives that influence the care of patients and the outcome of treatment. In the processes of their legitimation by the senior members of their team as novice experts, medical students are increasingly seen as competent. However, “competent” is a term fraught with multiple meanings in the worlds of medicine, medical education, and communication, and requires some exploration.

2.4 Considerations of Competence

As noted in the introduction, the concept of competence has gained major currency in the medical profession, and by extension, in all realms of medical education (DelVecchio Good 1995, Hodges and Lingard 2012). Hodges and Lingard (2012) go so far as to baptize it as “the governing notion underpinning our sense of what medical education should be striving for in the twenty-first century.” Hodges (Hodges and Lingard 2012) notes that competence is discursively constructed and points out that what the term indeed signifies is historically contingent and dynamic. Lingard (Hodges and Lingard 2012) concurs, further recognizing a discourse of individualism present within multiple layers of current constructions of competence in medical education. She echoes DelVecchio Good’s (1995)
commentary that competence is less about one’s “fund of knowledge” than it is dependent on the contexts of team-based interactions and offers a complementary view in which competence is seen through a lens of collectivism, is critically contingent upon context, and results from continuous negotiation. Lingard (Hodges and Lingard 2012) further alludes to how competence (and identity) might emerge through group interaction and conceptualizes learning as a collective activity steeped in distributed cognition. However, obscuring this conceptualization of competence and learning as primarily social activities are current assessment and evaluation practices that consider medical student clinical performance as primarily individual and are themselves emblematic of medical education’s continued emphasis of learning as an individualized pursuit.

2.5 Social Learning, Individual Assessment

Medical student assessment and promotion in the pre-clinical years is largely based upon written examinations and performance in small group and/or problem-based learning (PBL) settings. While written examinations remain in the clinical years, assessment shifts to also include rotation evaluations and performance upon objective structured clinical examinations (OSCE). DelVecchio Good (1995) adds that in addition to these formal channels, medical students are highly attuned to the “daily backstage actions of unofficial and informal judgments”, possessing a “sensitivity and hyperattention to the largely informal evaluative discourse”. Irrespective of whether evaluative modalities are formal or informal, however, the current assessment frameworks that continue to populate undergraduate medical education continue to place substantial weight upon individual learning and performance. For example, preceptors usually provide formal feedback to solitary learners behind closed doors, and evaluations, while careful to note how students perform as team
members, foreground the individual as the unit of assessment. CanMEDS itself, despite a focus on behaviours and practices all physicians should master, is based upon the attainment, mastery, and demonstration of individual competencies.\(^{16}\)

However, as Teunissen et al (2007) note, there is “significance of learning from and with other people.” DelVecchio Good (1995) recognizes that residents and clinical faculty are “primary players” who define and produce what medical students believe to be “professional competence in medical work”, illustrating the critical role of relationship in learning. Duranti’s (2010) revisiting of Edmund Husserl’s original scholarship on phenomenology notes that the constitution of a self critically depends on the presence of others. He suggests that intersubjectivity offers a frame through which to view how humans interpret, organize and reproduce particular forms of social life and social cognition.

2.6 Individual Communicative Competence from Intersubjective Relationships

The production of identity from intersubjective relationships is indeed at the heart of medical training. DelVecchio Good (1995) suggests that competence is a “socially produced” sensibility, one that for medical students is highly contingent upon and “is shaped through interactions with attendings, residents, and interns throughout the course of clinical clerkships.” Competence, in turn, is inextricably intertwined with relevance. D’Andrade (1995) positions the work of Bourdieu (1990) alongside that of Quinn and Strauss (1998), indicating both theorists offer flexibility with regards to how actors note what is relevant. The former posits habitus, or deeply embodied cultural schemas that are unconscious, to explain how sociocultural dispositions and subsequent practices develop in individuals from repeated exposures to the fields, or spaces of social interaction and struggle, that they inhabit. These become so ingrained as to almost be kinesthetic; these dispositions and practices are
experienced not just as rational constructs but are, rather, felt by one’s body. The latter propose cultural schema or models as a way of understanding how learners come to gradually internalize their recurrent experiences. While they agree in some ways with Bourdieu, they also suggest that “schema-based learning can be conscious” as well as influenced by emotion and motivation.

Both of these theoretical stances are useful frames through which to view the emergence of performative professional identity through the progressive mastering of communicative competence in the stressful, unfamiliar, hierarchically-constructed environments such as those new clinical medical students experience in acute care settings. Medical students do not arrive to medical school as unmarked tabulae rasae; rather, in keeping with Bucholtz and Hall (2005), they inhabit identities determined in part from the intersections and interplays of their sociocultural backgrounds, reflections, and lived experiences. Habitus pays respect to these traditions; learners are pre-tuned in their interactions by how they are reflexively situated within traditions, so to speak. At the same time, cultural schema theory speaks to the active and conscious participation of these adult learners in workplace-based contexts. Learners both unconsciously and consciously tune themselves continuously to the practices of those contexts. They come to know when to talk, how to talk, when to listen, and even how they should enter rooms and position themselves on rounds.

Medical students therefore gradually appropriate, reproduce, contest, and, perhaps, transform how clinical communicative competence is understood and practiced. This in turn intersects with broader considerations; Quinn (2011) has operationalized culture as shared cognitive schemas emerging from regularities in experiences actors have in the “humanly
The production, reproduction, and evolution of social order and practices are linked to shared understandings of event sequences (Quinn 2011), themselves composed of shared understandings of causality. Through repeated interactions within the medical field, medical students gradually come to embody and participate in certain wider cultural schemas in which their use of language is enveloped. These wider cultural schemas are simultaneously revealed, reproduced, and transformed by the reflexive nature of students’ changing language use and emerging legitimated communicative competence.

2.7 Conversationally Speaking

Hymes’ (1992) concept of communicative competence opens up practical explorations of the grey areas of relationships between the knowledge and speech acts of individuals on one hand, and how, on the other, these relate to the broader sociocultural communities in which individuals are participating. At its heart are the following two linked questions: given the extreme, perhaps infinite, wealth of linguistic variation available to speakers in realms such as the phonological, semiotic, syntactical, semantic, prosodic, and stylistic, how do speakers use these resources in order to generate meaning for themselves, others, and their greater communities? Further, what possible realities are they closing down as they open up simultaneously others?

Nguyen (2008) proposes that interactional competence arises in novices through repeated communicative acts. Referencing Hall (1999), she notes that “to become competent interactionally thus does not involve simply fitting better into some rigid, preconfigured structures or schemata, but rather the ability to a) use our knowledge to better interpret and respond to the ensuing talk; b) become creative in the ways we choose to participate; and c)
become adept at realizing our individual goals within the larger practice-related goals”. For the pharmacy interns she studied using a conversational analysis approach, she noted interactional competence and sequential organization emerged “as a part of workplace socialization”. Specifically, interactional competence crystallized around three poles: action structuring, ordering, and transitioning.

Conversation analysis (CA), a tradition arising from ethnomethodology, in its classic form treats conversation as the major collection of processes through and by which the intelligibility of social order is recognized and produced (Hammersley 2003). However, although it has been considered as an approach to studying medical talk and professional identity formation (Monrouxe 2009), no studies have yet employed it in the medical education literature. While historically CA has focused much more upon the ways in which information is schematically organized and far less upon the actual content of that information, it has become increasingly acceptable (Hammersley 2003) to combine its focus on pattern and sequence with analysis of lexical content as well. In so doing, a potentially rich source of information – what people actually say – is not treated as secondary. For example, medical students learn not only to categorize and organize flows of information in normative ways but also to present it in varying degrees of detail. It is not simply the structures of and the interactional ways in which language is employed that make it a rich meaning-creating tool capable of effecting socialization; it is equally from the content within those utterances that medical students take their cues in their progressive learning of how the world of medicine – and their place in it – is organized.

Simply put, students cue to both legitimate organization and content, which is available to them most readily within pedagogical relationships in clinical spaces of training.
The unremitting presence of these relationships in undergraduate medical training and an emphasis upon the progressive mastery of implicit contextual relevance leading to communicative competence suggest that medical student learning in the clinical workplace is very much a sociocultural phenomenon that can be conceptualized through the lens of third-generation cultural-historical activity theory (Engeström 2001).

2.8 Activity Theory and the Clinical Teaching Unit

Cultural-historical activity theory emerged in the 1920s and 1930s from an initial understanding that cognition is socially shared through action that is culturally mediated (Vygotsky 1978). Medical student learning as a member of a clinical teaching unit (CTU) occurs in relationships with preceptors and is centred upon recurrent conversational interactions such as case presentations and sign-over. Through ongoing participation in CTU activities, medical students must adopt the tacit rules of practice and establish progressively their role in the team and the profession. Rather than being a fixed and finite universal activity related just to an individual, learning is contextual, continuous, ongoing, and distributed through team members. Therefore, the practices, actors, and multiple contexts in which clerkship learning occur can be conceptualized as an activity system (Engeström 1993).

Activity systems are social, historical, and cultural formations understood as dynamic, continuously constructed, and interlocking networks of interaction that involve communities of subjects acting upon objects in order to produce certain outcomes. These interactions are mediated by certain tools, responsible to certain rules, and governed by labour divisions specific to the system. Through their actions upon objects, subjects continuously use, re-produce, and re-shape these tools, rules, and labour divisions. Cultural-
historical activity theory is based upon the following five central principles, which have emerged through three generations of theoretical conceptualization (Engeström 2001). Activity systems thus are:

1) *the baseline unit of analysis*. While goal-directed individual and group actions within these systems are relatively independent, they are nonetheless responsible to the activity system and optimally understood when placed against the backdrop of the system as a whole. They are schematically conceptualized as follows:

*Figure 2.1 – Schematic of Activity System* (Engeström 1987)

2) *communities comprised of multiple points-of-view*. Participants have unique positions within these systems based upon their roles and responsibilities, and the interactions between these differing stances can lead to tension and disagreement but also innovation and transformation.

3) *products of history*. Activities and learning occur within unique local contexts that themselves are embedded within broader, global histories; activities are situated within social, cultural, and historical contexts. Activities occur in a creatively tense and present space, or *mode*, which is in reflexive relationship with a broader frame, or *historical type*,


itself comprised of recurrent practices built up through time and history. In its emphasis upon the reflexive linkages between modes and historical types, activity theory navigates away both from assuming actions are a-contextual and without precedent, while rejecting that current practices as they happen are completely dictated by the precedents of the past.

4) *developed and changed by emergent contradictions within themselves.* The open and constantly-changing nature of an activity system allows new innovation to circulate throughout its relational components, transforming the actors, practices, rules, and tools of the network.

5) *characterized by an inherent potential for expansive transformation.* As contradictions accumulate and tensions mount, the possibility for a radical reframing of the activity emerges with a corresponding change of outcomes.

In its most contemporary, 3\textsuperscript{rd} generation iteration, activity theory focuses upon how two activity systems interact to form “new meanings that go beyond the evident limits of both” (Engeström 2001). Thus outcomes (here, object\textsubscript{2}) produced from two systems of activity interact with each other to produce another outcome (here, object\textsubscript{3}):
While current practices of assessment conceptualize medical student learning and identity formation as things achieved individually, activity theory suggests that these emerge continuously through the interactions of these interlocking network of relationships. It is frequently in the context of a CTU that medical students participate within these relationships directly.

CTUs are a regular feature of contemporary Canadian in-patient medical training. They emerged in Canada in the early 1960s as a creative response to the onset of two concerns. First, the health care system rapidly became publicly funded and universally provided, transforming the idea of health care from a “privilege” to a “right” (McCreary 1968a). This dramatically decreased the number of “medically indigent” patients that had to that point been the main source of patient-based medical education (Evans et al 1966). Second, as Maudsley (1993) notes, CTUs were a way to organize scarce pedagogical resources in order to meet the educational needs of a substantial increase of medical students and postgraduate trainees. In so doing, CTUs have laid out the contemporary scaffolding of medical education in Canada; in order to have medical learners, hospitals must be university-affiliated and, as codified by the RCPSC, both undergraduate and postgraduate training is under direct control of university faculties of medicine (Maudsley 1993). CTUs thus serve as the major site for undergraduate clinical paediatric education.

At their inception, CTUs were constructed around three pillars: the provision of patient medical care, medical education, and research (Evans et al 1966). As they have evolved in many centres over time, the creative tension between the first two enterprises has taken precedence. On the other hand, the language of the research pillar in the original document foregrounds the relationship of teaching hospitals to universities, which is now a
taken-for-granted assumption. Clinical patient care and medical education activities are linked through the learning-by-participation focus that CTUs embody. In addition, CTUs are in a sense immortal; while their participants change every four weeks and a smaller night team complements the larger daytime team, there is a persistent continuity to their practices, operations, and activities.

Practically speaking, in the case of medical student learning in an educational system such as a CTU, an activity theory frame specifies that the pedagogical operations and relationships build up over time, and while open to change at any point, are relatively stable. There is a reflexive creative tension between this historical stability and each and every iteration of a CTU; every CTU resembles the configurations of activity persistent and preceding it over time but also is not fully determined by them. Thus, while what happens during each CTU’s duration is always novel, its actions and outcomes are guided in part by the patterns of its predecessors. Locating medical student participation in the interlocking activity systems of medical education and clinical patient care allows an understanding of how their burgeoning professional identities are emergent and are in part shaped through their participation in these training contexts. Specifically, how they learn in these contexts to speak in a relevant manner, achieve a modicum of communicative competence, and in so doing portray themselves as legitimate participants is mediated through the activities of the CTU’s two major functions. The following model, while acknowledging that there are other important aspects of CTU practices and responsibilities (for example, practical knowledge of the organization of the ward and formalized didactic teaching sessions with preceptors), focuses its attention upon acts of performative speaking:
Figure 2.3 – A 3rd Generation Activity System Model of Medical Identity Formation

Because the two activities of patient care and medical education are highly linked, it is important to first note that there is significant overlap between the components producing their respective activities. For the activity system on the left, the CTU activity of patient care is primary. Medical students, interacting directly with patients, help to provide them with medical care. The manner by which they do so is governed by several factors. Their level of involvement is coloured by which tasks are given to them by the senior members of the CTU team and the ways in which they learn to provide care in concert with a supervising resident. This in turn occurs within a local and specific community of health care team members. They are governed by practices of patient engagement – among others, history-taking, physical examination, and investigation interpretation – originally learned in pre-clerkship coursework and refined through recurrent practice in the CTU. Finally, care is mediated through the actual conversational interactions medical students have with health care professionals, family members, and of course, patients themselves.

For the activity system on the right, the CTU activity of medical education is primary. While many of the components are similar to that of the system on the left, different aspects
are foregrounded in subtle but important ways. Again, medical students are the subjects; here, however, they are interacting with medical knowledges to produce case presentations. Medical knowledges here is understood as a comprehensive term. It encompasses not just simply basic medical science underpinnings and clinical medical concepts but also how to use these scientific knowledges. Included here thus are schematic understandings of how information is organized, the detail of that information, what to not include, and how this information interdigitates with contextual frames to produce relevance. These practices are shaped through recurrent teaching interactions with preceptors in the context of family-centred ward rounds. The specific outcomes here are medical students participating in case presentations and sign-over rounds, allowing them to progressively master communicative competence in this context. Explicit professional competencies themselves are used as governing rules and parameters for curricular content. The dual outcomes of meaningful participation in direct patient care activities and case presentations themselves then interact together. Through the interactions of these two anchoring and overlapping activities, medical students learn to effect communicative competence allowing them to legitimately participate in the professionalized world.

Much insight can be gained by grounding individual learning within broader matrices of systems of activity and the social, cultural, and historical relationships bound up with and emergent through them. While it is tempting to think of identity as static by nature and produced by individual pursuits divorced from context, it is more reasonable to consider it as a dynamic construction inseparable from individuals’ ongoing negotiation with the multiple relationships and environments in which they participate.
CHAPTER 3: METHODOLOGY

3.1 Methodological Considerations of Activity Theory

Third generation cultural historical activity theory provides a useful frame through which to conceptualize the overlapping and linked activities of CTU patient care and undergraduate medical education. In addition, in keeping with two of its five tenets in particular, its critical and expansive natures were foregrounded in this study. Specifically, activity systems are developed and changed by emergent contradictions within themselves (Engeström 2001). The contradiction highlighted in the introduction between the co-existent construct of patient-as-disease category and practices of interacting, informing, and meaning-making with sick children and worried parents highlights a tension recurrent and reverberating tension at play between the medical education activities and the patient care activities in the CTU. Medical student professional identity is emergent in part through the competing natures of these two activity systems. The inherent potential for expansive transformation (Engeström 2001) that also characterizes activity systems is a way by which an emergent contradiction may be resolved. As contradictions accumulate and tensions mount, the activities and outcomes of systems are stressed by these incompatibilities. At the same time, the possibility for a radical reframing of the activity is emergent, allowing for fundamental changes in the ways in which activity systems are organized, their underlying principles are composed, their components interact, and their outcomes, such as professional identity formation, materialize. This study is thus critical and transformative in its stance. While it thus shares some similarities to Trede et al’s (2009) conceptualization of critical transformative dialogues, its ontological and epistemological foundations are, in fact, quite different.
3.2 Literature Search/Archive Creation

Following a literature search (PubMed, AnthroSource, Webs of Science and Knowledge, University of British Columbia Libraries), texts from the fields of medical anthropology and medical education were identified that provided a background understanding of how, historically, scholars have theorized medical student learning during clerkship. Specific focus was placed upon the processes by and through which medical students learned to create their identities through their learning to interpret people as patients. Further literature was collected from discourse studies, linguistic anthropology, and educational theory to better understand how language use is linked to broader understandings and assumptions about the world.

3.3 Study Design

3.3.1 Ethics

Following ethics approval by the Behavioural Research Ethics Board (BREB) of the University of British Columbia (UBC), site permission and participation was obtained in an ongoing collaborative and iterative process with multiple stakeholders, including: the research team, the University of Western Canada (UWC)\(^{19}\) (name changed for confidentiality purposes) Children’s Hospital Ethics Board, the head of the Department of Paediatrics of UWC, the head of the division of general paediatrics of UWC and director of the UWC CTU, the paediatric residency program director, the chief paediatric residents, the Year 3 Paediatric Clerkship director, and the paediatric clerkship site director.

3.3.2 Interviews

In activity theory, there are creative tensions between the *historical type* and the *mode* that drive the generation of outcomes. For the former, what has happened historically builds
up over time into stable constellations of actors and practices, providing a frame and a basic structure to the system. The latter, what is occurring in each iteration of an activity system, is partially structured by this historical framing yet what actually happens is neither determined in advance nor inflexible. To this end, the study itself was devised into two arms. First, in order to sketch out the historical practices, beliefs, and attitudes of this CTU with regards to medical student learning, hour-long semi-structured interviews were conducted with senior residents and attending physicians who have participated recurrently as CTU team members. Attending paediatricians were used as informants given that they have participated in patient care and medical education for some years and have developed a modicum of stability to their practices. Senior residents were selected in that they had accumulated significant experience working on the CTU and with medical students. Further, given that they undertook paediatric training exclusively in the residency program based in this hospital, their practices were heavily influenced by the system under study.

These interviews were conducted with members of the UWC paediatrics program over the autumn and winter of 2012 (Appendix A). Participation for the interview arm of the study was solicited through a letter of initial contact distributed through the UWC paediatric education office. Interested participants received subsequently an electronic copy of the consent form; consent was obtained the day of the interview and prior to audio-recording. All transcripts made from these recordings were saved to an encrypted, password-protected external hard drive and anonymized. Identification keys were kept on a different encrypted, password-protected external hard drive in the same locked office. Through these multiple invitations, nine interviews were conducted (Appendix B). These were audio-
recorded and transcribed in conventional Western layout, with only lexical content represented (Ochs 1979).

3.3.3 Microethnography

Following the interviews, what actually happened in practice was captured in March 2012 through a two-week microethnography of one of the two CTUs of the UWC Children’s Hospital, a tertiary paediatric urban academic health sciences centre in western Canada. Direct observation of UWC medical students’ language use in case presentations on family-centred rounds (FCR), in sign-over rounds, and in repeated interactions with preceptors in the context of a CTU was recorded. Morning sign-over rounds, evening sign-over rounds, and medical student case presentations on FCR were all audio-recorded and transcribed. Approximately forty hours of data were transcribed and transcribed into standard conversational analysis format (Appendix C). Compared to simply transcribing what was said, conversational analysis offers major advantages in this setting. It notes not just what people say, but how they use it to participate and position themselves in individual interactions that in turn nest within broader frames of shared social and cultural understandings. By attending to prosodics of speech and interruptions, one obtains a better idea of how words are used rhetorically to demonstrate increasing accommodation to the norms of a group and to position one’s self within that group in a meaningful way.

3.3.4 Researcher Positionality

Activity theory draws attention to the social, cultural, and historical aspects of systems; in order to make sense of phenomena perceived through its lens, researchers must locate how they are positioned with respect to data captured. I am in a boundary position as both a paediatrics resident and a qualitative researcher. Both professional roles confer
certain advantages that can magnify the explanatory resolution on data gathered yet retain the potential for distorted vision. Due to the four years I spent as a Canadian medical student and the four years I have spent as a Canadian paediatric resident, I possess a wealth of tacit knowledge of beliefs and practices related to clinical medical/paediatric training. Having directly done hundreds of patient case presentations, reviewed and participated in hundreds of others, participated in and led numerous sign-over rounds (where care responsibilities of patients are transferred), and spent nearly a year cumulatively directly either as a junior or senior paediatric resident member of a CTU, I have developed a fluency with the actions and operations of CTUs.

However, I am limited in the sense that my understanding of CTUs is largely developed from the accumulation and synthesis of my personal experiences as a CTU member of a program in eastern Canada. Uncritical acceptance of superficial similarities between my centre of training and the site of study may mask significant differences in actions. This in part was mitigated by the months-long process of transferring to the UWC paediatrics residency program. Having already been granted full access to the UWC Children’s Hospital, my joining the program further legitimated the research in the eyes of the students, residents, physicians, and paediatrics program leaders. To contextualize this process of joining and observing a program with important similarities and critical differences, I maintained an electronic journal with reflections taken from the processes of joining the program and gaining full access and approval to conduct the study. Extensive daily field notes of observational experiences during each day of the study informed interpretation, transcript preparation, reading, and data analysis. That being said, as Gadamer (1996) has noted, I am limited by the conditions of my own traditions, interactions,
and history. While this is by nature limiting, as Gadamer (1996) goes on to note, it is in recognizing our limits and situatedness that we are able to see beyond our own borders.
CHAPTER FOUR: RESULTS

4.1 This CTU – Actors and Relationships

The outcomes of activity systems are driven through the creatively tense relationships between their subjects, objects, mediating artefacts, communities, rules, and divisions of labour. In a CTU, these lead to optimal understanding as to how professional identity is emergent in medical students through the recurrent performances of case presentations and sign-over they make in order to participate in patient care and expand their learning. The data from the semi-structured interviews and microethnographic observations that follow are intended to provide a structural frame of relationships and practices built up over time so as to provide better context for the case presentation and sign-over conversational interactions recorded.

As noted above, CTUs traditionally exist in academic hospitals, on general medical in-patient wards where high-acuity care is the focus, and are comprised exclusively of members of the medical profession. They are hierarchically organized such that while there is titular emphasis on the importance of shared labour – represented by the aphorism “we work in teams” – final responsibility for clinical decisions and their ramifications ultimately resides in the physician “on service”\(^20\). However, these hierarchies are not static; transgressions, albeit subtle ones, can occur when medical students are given the opportunity to take more responsibility, which opens the door to more hands-on learning-by-doing.

Medical student presence is not indispensable to the patient care activities of the CTU; rather, their perceived role is first and foremost educational through an apprenticeship model balanced between observation of their senior colleagues and each other as well as learning-by-doing through close work with their peers and residents. The third year of
medical school training is the first year of fully workplace-based learning; to that end, students learn to participate legitimately as peripheral members in several tasks. A good portion of this year is devoted to multiple-week rotations as members of in-patient services for a number of medical specialties. During their four-week rotation in paediatrics, the three third-year medical students spent three weeks with the daytime team and one week with the overnight team. They had the least responsibility of the team and “followed” patients together with a junior resident.

I observed them as they conveyed patient information to their preceptors and fellow CTU team members when daily personnel and patient responsibility changes occurred (“sign-over rounds”), and as they presented to their team members a daily synthesis (“case presentations”) of interval histories, physical examinations, and laboratory and radiological investigations concerning patients currently admitted to the ward. As Nguyen (2008) notes, sequences of events such as these are collaboratively accomplished through social interaction; further, they are not just one-off events but parts of longitudinal and ongoing achievements.

The three junior residents observed on the CTU were either first or second-year paediatric residents. They received their medical degree following four years of medical school and were in the early stages of a four-year postgraduate program in which the focus is exclusively on learning the practice of paediatrics. Formally, their participation on CTU is a regular and recurrent rotation where their roles balance several tasks. Among these are direct patient care, supervision of medical students’ work, medical student teaching, expansion of their informal practical knowledge of patient care provision, broadening their formal
biomedical knowledge, and globally, continuing to develop their competence as paediatricians-in-training.

The senior resident was a third-year paediatric resident whose role was divided between: supervision and teaching of all of the residents and medical students, negotiating patient admissions to the ward with the emergency department, arranging transfer and discharges from the general paediatric in-patient ward, and learning how to take full responsibility for the CTU. The senior lead sign-over rounds both in the morning and evening, co-lead morning rounds in conjunction with the attending paediatrician, and was largely allowed by the attending paediatrician to nuance and authorize patient assessments, investigations, and treatment plans made by the team’s medical students and residents. The role of senior resident teaching is similar to that of the junior resident but wider in scope and depth.

While both students and residents spend four weeks on the CTU, the same medical students and residents did not share identical four-week blocs. Rather, they overlapped by two weeks, such that each group of medical students interacted with two groups of residents, and each group of residents interacted with two groups of students. The “night float” team, which is led by a senior third-year paediatric resident, was also comprised of a first-year junior paediatric resident and a third-year medical student and was tasked with doing admissions, providing acute care as needed during the night time hours, and following up on any issues or requests identified by the daytime CTU members. They were responsible for the bulk of information during the morning sign-over rounds, which substantially structured the daily activities.
Finally, the attending paediatrician, or “physician-on-service”, was a medical professional certified by the Royal College of Physicians and Surgeons of Canada (RCPSC) to practice general paediatrics without supervision and upon whose shoulders patient care responsibility and educational activities ultimately resided. Attending paediatricians have completed at least four years of paediatric residency and have passed national qualifying exams. In contrast to the medical students and residents, who spend traditionally four weeks at a time as members of a CTU, attending paediatricians often spend as little as one week in their supervisory role, as they often maintain other clinical responsibilities such as subspecialty services or community paediatric clinics. Cumulatively, however, most spend between two to twelve weeks a year attending on the CTU and have several years’ experience in this role supervising and teaching medical students and residents. While they have responsibility for all actions carried out, in practice much of this responsibility is delegated to their more junior colleagues.

As a comprehensive unit, the CTU interacted with other health care professionals, such as nurses, social workers, and pharmacists, during its daily activities. However, the contributions of these other professionals were primarily used as sources of information and rarely influenced the team dynamics, thought processes, or decision-making of the CTU. Parent and family (hereafter, caregivers) contributions during rounds were taken up in similar fashion. It was the senior resident and attending paediatrician who established the onset and termination of sign-over and morning rounds, who authorized junior team members to speak during rounds, who decided whether or not to enter a patient’s room for rounds and which actions should be taken, and what information was explicitly taught.
CTU ward work was organized as a set of routines or sequences of events that structured the action of the day, offering a way to simplify work greatly and “free up cognitive attention for other, less predictable aspects of experience” (Quinn 2011). The activities of the CTU during weekdays followed a similar pattern from day-to-day. The workday began with sign-over around 7h30, lasting approximately thirty to forty-five minutes. Medical students did receive a guidance sheet concerning how to perform sign-over rounds (Appendix D) but little explicit explanation as to how and when to use it. Following sign-over, medical students and residents were given approximately thirty minutes to obtain interval histories from patients, examine them physically, and collect numerical data such as vital signs and laboratory results, as well as the results of radiological investigations. This was done with the expectation that they would be able to “present” most of “their” patients during morning rounds.

Morning rounds, or family-centred rounds (FCR) as they are known in this academic health sciences centre, were in large part structured around case presentations. Each medical student also received a sheet of information about how to do case presentations on FCR (Appendix E). However, in a conversation with one of the third-year medical students, the student explained she had rarely looked at the case presentation sheet or the sign-over template during her rotation, as no one had made it explicitly important to her, echoing this preceptor:

**PedE:** “*Students for the most part, they only perceive theyre being taught when you tell them theyre being taught, so if you asked my team now if I’ve done any bedside teaching, I bet you the students would all say no, because I never said to them – Let’s do some bedside teaching. But I’ve examined patients in front of them, I have talked to them about specific findings, but unless you label it, they don’t realize it’s happened...Unless it’s labelled, they do not recognize it.*”
Morning rounds usually began by 9h00, preceded by junior residents and medical students performing a flurried collation onto a rolling cart of both patient charts and paper-based request forms for items such as subspecialty consultations. Concomitantly, another team member collected the mobile computer-on-wheels (COW) from its storage location on the ward to facilitate looking up results. Morning rounds themselves only began once the senior resident arrived; often, the attending paediatrician joined the team during rounds later on. Rounds proceeded from patient room to patient room on two different physical wards, and occurred partially outside the patient’s door and partially within the rooms themselves. Each patient encounter varied in length from a few minutes to sometimes as much as twenty; rounds themselves cumulatively usually lasted between two to three hours.

Following morning rounds, medical students and residents called paediatric subspecialty consultants, officially ordered laboratory and radiological investigations discussed on rounds, and followed up new or ongoing patient care issues identified during the rounds themselves. The rest of the afternoon usually involved a mixture of these activities along with formal teaching sessions for both residents and students led by the senior resident or attending paediatrician. Progress note writing in patients’ charts occurred during the mid-to-late afternoon once patients’ clinical trajectories were revisited in the context of changing vital signs, clinical findings, consultant evaluations, and laboratory and radiographic results. Sign-over again occurred at 18h00, signalling the end of the workday and the transfer of immediate responsibility to the “night float” team.

4.2 The Educational Environment

A consideration of the of the tone of the educational environment shines light upon the nature of the educational relationships between medical students and the mediating
artefacts of preceptor teaching interactions that shape these students’ schematic understandings and related conversational practices regarding case presentations and sign-over. For newly-minted clinical medical students, preceptors tried to foster an educational environment that was learner-dependent, supportive, and tolerant of the variability of students’ perceived ability:

**PedE:** “It really depends on where theyre at, I mean, I think your goal is to get them one step further than where they are when they arrive, and that step depends on where they are in their training process, and so...I think we, um, allow a lot more variability in a Year 3 student in terms of their skills. Year 3 is a year of a lot of learning and students learn those skills at variable rates...year 3, I’m more comfortable giving them time to figure out their role and how to be good at it.”

**PedH:** “It depends on the MSI, often youll get an MSI who’s not interested in paeds, they know theyre going to be a neurosurgeon and you could see it by their body language and their engagement that theyre not very engaged in paediatrics, and that’s okay. Then you’ve got others who’re really trying to do well, cuz theyre maybe interested in paeds, so, it depends on the trainee it depends on the stage, like if you start them out in the beginning of their third year, they know nothing. They don’t know how to present patients, so it depends where they are and what the objectives are. In terms of the teaching around that. I personally think my main objective, when I have medical students is that by the end of their month in the CTU they need to know how to do a history, they need to know how to do a physical exam, they need to know when a patient is sick or not sick. You cant expect much more from someone who has not done any paediatrics before.”

### 4.3 Preceptor Roles

Preceptors described in further detail how they specifically considered their educational roles towards medical students. They recognized that, at least officially, they have a responsibility to ensure that the medical students have an idea as to how to participate in the tasks that organize the everyday functioning of the CTU:

**ResD:** “to take on the role of orienting (the medical students)…to the wards and to their expectations of the role…to sit down on the first day and...to outline expectations, show them the logistical stuff, radiology forms, how they flag an order...those sorts of things.”
Others demonstrated that they remained aware of broader learning objectives:

**PedH:** “When I meet with the learners on a Monday, I say to them before rounds I want you to think about one objective. I want each of you to think of an objective you would like to achieve by the end of this week so that all learners, or trainees, who are at different stages...so often the medical student will say, I wanna know how to present a patient to an R1 (first year resident)...so, I think it’s important that you first lay down what are their objectives, try and achieve those, then do them – for MSIs (medical student interns), specifically it depends on the stage of their training.”

Interviewees noted that significant roles for preceptors included using “cases” to teach medical students:

**ResC:** “Most of the medical school teaching...would take place primarily on the CTU, that’s where we get the most contact with medical students, and (it’s the) most structured and consistent...so most (of the teaching) is really informal...teaching around cases.”

**PedI:** “After the case presentation and during the discussion of the differential diagnosis is often the times you’re providing the most, sort of, direct teaching, those are sort of the teachable moments, right?”

**4.3.1 Preceptor Role Modeling**

Further, many preceptors noted role modelling plays an important role in how medical students learn. Three preceptors described their explicit demonstration of relevant behaviours and actions for medical students to observe:

**PedE:** “I model for them what I want so when I go back into the room with the student and the family I ask all the per-, the questions that’re relevant, that I think are relevant and I’m quite intrigued by the fact that many of them don’t write down in their history the questions that I have asked which says to me that they have actually not identified that these are important things that they have missed, so I prompt them saying, the questions that I’m asking now are important and I need you to add them to the history.”

**PedF:** “I think that’s (communication skills) all very much a part of medicine we should, we really cannot be taught but certainly, you can learn by, by seeing what, your seniors do, hopefully you know this is something that you cannot just judge by having a fifty percent or ninety percent mark, you know? (I model this sort of behaviour) as an attending myself...by set(ting) a good role model...and how you interact with patients and how you convey information across, is an art that you develop over the years of dealing with patients.”
PedG: “...they have to see the model, if they’ve, not start it off right, they don’t know how to do it.”

PedH: “In terms of presentation, our residents actually hand off to the medical students how they like patients to be presented so they’ve got a format. So, if it’s a new patient, we want the history-physical in a focused way, and then, what the assessment is, what tests have been done, and what’s happened over night. And that’s basically even for those that have been admitted, for those that have been admitted, they’ll give a one sentence summary. What’s happened over night, and what the plan is for the day. And then always disposition. In some way like when do you think this family’ll be going home?”

One preceptor noted that learners do identify cues from a multitude of non-verbal behaviours:

PedI: “I think that probably the cues that they would pick up that they would be on the right track would be sort of head nodding, from the attending and the senior residents in approval, the lack of interrupting so the least amount of interruptions that you can get probably means that you’re saying things that they want to hear and I think the less amount of people fidgeting around means that you’re probably within a time frame that’s still sort of acceptable (smiles), in terms of your presentation, I suppose when things are, going really off track, there tends to be eye contact between the attending and the senior resident, sort of probably non-verbal cues as to like, let’s cut this off, or you know, let’s let’s re-direct.”

In addition, explicit guidance through language is employed, especially early in the rotation:

ResB: “I normally sort of give them a paper about like this is what a presentation is supposed to look like and if they can try to sort of, emulate that, they should be, okay as far as, like my evaluation of them...I normally hand out a paper when I’m the one doing the orientation (Appendix E). I went through with them verbally sort of what the presentation on rounds was supposed to sound like, and I asked them today to just pay attention to what the juniors are doing and observe the chronology which, with which they present things.”

ResD: “I sometimes, usually before, when I know it’s their first or second admission, I always review the categories of an admission, that are important in paediatrics or ask them to let me know the categories that are important and then sometimes what I’ll do is say this is a six week old with respiratory distress and before they’ve gone in the room ask them what questions might be important to ask, or what differentials might you think about even before going into the room so that I’ve sort of pre-empted them on thinking a little bit and not giving away what I think the diagnosis is or anything, because I like them to go in not knowing, to
Some preceptors tended towards providing increased patient care responsibility for learners. In so doing, the behaviours the preceptor modelled would be grounded in a patient care practice approaching that of what students would later encounter during their residencies:

**PedG:** “I think the other thing that’s a very valuable skill for a medical student and again it goes back to why I sometimes like to try to get them to have their own patients or a very small number, is the more that they see themselves as ultimately responsible for the patient the better job they do of knowing the plan, trying to figure out what the plan is, saying Well, I talked to radiology and now I understand what we’re really going to do, or I talked to radiology and I still don’t understand so I better go back and talk to the radiologist again. And they act like I am the doctor here even though theyre a medical student and then that’s how theyre gonna learn to be doctors...Listen. Being an MSI, there’s no bigger safety net, there’s juniors, seniors, attendings everywhere around them, so they can play doctor quote-unquote very safely. And they take responsibility for their patient and they, they take it to heart. If they can do that emotional thing of I’m really this patient’s doctor then the intellectual thing will follow.”

### 4.4 Preceptor Definitions of Students

Preceptors’ perceptions of the qualities good students possess coloured both their educational interactions as well as laid bare the type of behaviours and practices they desired to inculcate in their learners. Understanding what they state explicitly provides a picture of what they are attempting to do with their conversational interactions in order to shape the speaking practices of their students in certain ways rather than others. Although what they say in theory may diverge significantly from what they actually do in practice, revealing what preceptors believe and intend provides an initial analytic structure to the conversational interactions directly observed.
4.4.1 Definitions of Good Students

Preceptors discussed at length their definitions of good medical students. Desired learner qualities such as the following emerged:

• an ability to plan

ResA: “I’m very very impressed with medical students when they plan ahead for their patient, they’ll do something for their patient before I even ask them. Like they foresee the kind of care the patient will need. So that that for me is what impresses me the most, cuz I think that’s a resident level kind of thinking.”

PedG: “the ones who make that outstanding next step are so organized that they can get through that work relatively efficiently”

• a high interest level in paediatrics

ResA: “somebody that’s keen to learn, and that’s interested...I want them to be interested in, in the teaching I’m doing, that they ask appropriate questions.”

PedE: “being interested and willing to work hard.”

PedG: “and then say, oh and by the way I read about, you know, Henoch-Schönlein purpura. And you know (laughs) so I know something about my actual patient who has a paediatric disease.”

• an openness to learn and make mistakes

ResC: “But I expect them to be very open to learning, to being open to accepting the fact they don’t know everything and being open to read around their cases, being open to be taught around their cases.”

PedE: “a really good student would be someone who’s willing to go the extra mile in terms of spending time with patients, either taking history, or counselling them, or making a plan, and one who reads around their patients, and maybe even offers some new thoughts on their diagnosis or management that the team may not have thought of, and they’ve come up with on their own through their own reading.”

PedF: “secondly, is the willing-., willingness to learn. Yeah. Be open-minded and willingness to learn.”

PedH: “learning to do good histories and physicals, and wanting to do that and seeking and being enthusiastic.”
• a sense of responsibility and professionalism as a team member both to the CTU and to their patients

ResA: “they feel a sense of responsibility for their patient.”

ResC: “to contribute really what they learnt as well, to the team. I expect them to really be good team players, I really hope that they jump right in and are able to communicate well with the residents and with their own peers as well and to really become one of the team and be willing to, and have a desire and passion to commit to the team, to contribute to it? I think that’s what makes the best med student.”

ResD: “the majority of my expectations come around work ethic and professionalism...that they, show up on time, they’re keen to learn.”

PedE: “I think they keys to being a good student are to be reliable, which is actually not so much to do with your knowledge as to being reliable, being punctual, being interested and willing to work hard. Those are the main things, the knowledge you will learn, but if you don’t have those other things, it’s much harder to engage them and to help them along their learning process.”

PedF: “first and foremost, is respect – yeah. Being respectful, to the people you’re working, well to the parents first and foremost, being respectful to the people that you work with, and I think first and foremost physicians have to, or students, or student-physicians have to learn to respect each other, and respect parents and realize that you know whatever decision they make, medically, that is a decision based on skills, knowledge, and also guidance from your senior, whoever it is, the senior resident or attending. First it’s respect.”

PedH: “related to work ethic, wanting to be involved, learning to communicate with families”

PedI: “a good student is someone who would have a mature and professional approach to their demeanour and a respectful presentation of patients is really important”

• Honesty

ResC: “just honesty as well, to admit they don’t know something, or just admit what their limitations are, I think that so much of this process in learning from med student to residency is to accept what you know, and to recognize what you know but to really understand what you don’t know as well – it’s such a key component to medical care, to only practice within your own limitations, you know, to understand what you don’t, what’s outside of your values or what’s outside of your absolute knowledge, so I think learning that process is key and if a med student could own that, that would make them a good med student.”

ResD: “they’re honest about what they report and about how they present”
Additionally, preceptors suggested learner improvement over the course of the training period was critical:

ResC: “I think after a month, on a service and I think I said on CTU’s where I have the most contact with them, I think after being on a month, I would hope to see quite an improvement from how they started out and I would hope they could do a good presentation, after a month and that would make a good student, but if they couldn’t do it the first week or two I don’t think that necessarily makes a bad student, I think that a good one would be working on it, and with each feedback they got, would work on the feedback they got at that time and make the necessary changes...so I don’t think hugely important but I would just hope that it would, that there would be improvement throughout the month, that would be a good student, and who had obviously listened to the feedback they received and improved upon those specific points (so it’s much more about the change than the absolute.)”

ResD: “I think the ability to, improve, or learn over the course of your month with us particularly, is very important, not necessarily where you are on that scale but that you’ve improved from the start to the finish.”

PedE: “It really depends on where they’re at. I think your goal is to get them one step further than where they are when they arrive, and that step depends on where they are in their training process. That may mean honing their physical exam and history taking skills if they’re very early on, and if it’s later in the year we’ll be working a lot more on their management plans and getting to the next stage of independence in terms of taking care of patients.”

PedG: “Yeah, in fact I use that as an evaluation on some students. I’ve written letters of recommendation that, this student was able to actually demonstrate significant behavioural progress through this rotation and that tells me that he-she’s gonna be a good resident because they can take a criticism or feedback and modify their behaviour.

PedI: “A good student? So...a good student...it’s more that I see that they have a coherent sort of logical approach to clinical reasoning, that sort of skill is being developed. You know, at the beginning of the month they could have a case presentation that’s all over the place and just kind of, an impression that’s just kind of in left field, that’s you know, totally acceptable. But they have the ability to improve and respond to feedback over the course of a cycle and that they have clearly shown a degree of improvement by the end.”

In their explicit comments, preceptors considered pure biomedical knowledge to be relatively less important:

ResA: “I don’t care so much about their knowledge base, like they need to have a minimum, but I don’t care that, like they’re the smartest or like the keenest...”
ResC: “a good med student doesn’t have to be the smartest – I certainly was never the smartest! And I don’t expect anyone to be.”

ResD: “depends on what time of the year you get the medical students, but especially I’ve been on in September a couple of times, and my expectations there are – not that their knowledge is going to be, proficient or superior in paediatrics.”

PedE: “the knowledge you will learn”

PedI: “It’s not about, sort of medical knowledge but more about their clinical approach, and that would involve sort of their professional demeanour as well as their sort of intellectual approach… and something that I very much value in terms of students, that that I work with in terms of their medical knowledge – it’s not that I would expect them to know all the details of paediatrics or be able to list off rimes and rimes of sort of miscellaneous paediatric information.”

However, preceptors stressed that they did expect a broad base of medical knowledge to emerge over the period of the rotation:

ResD: “my expectations are that that (biomedical knowledge) will improve along their presentation skills…in some senses I don’t mind what they are, what their level is, when they start, but if they can improve over the time that we’ve been together, with both the juniors, the help of their other medical students, and myself, then I think, that that puts them definitely in their good category no matter where they were when they started.”

PedG: “The other thing I look for in medical students is – and this might differ across all of the different attendings – I am not a stickler for them knowing a lot of paediatrics, what I want them to know in the third year is a lot of basic medicine, so I want them to think about fluid, I want them to know that sodium goes in and what it does, I want them to know that, the Starling curve is not just something they saw in a lecture but actually has meaning to the heart and, how their patient’s presenting. I don’t know how many of them are going to become paediatricians, so what I wanna know is: Is this person, when they leave paediatrics, they’re going to go into medicine and so-and-so says, yeah, that’s a well-trained medical student, and you know, they didn’t you know, we didn’t create a deficit in their skill set, on paeds.”

Preceptors further suggested that who a “good” student is is strongly linked to doing a “good” case presentation, and this contextualized their definition of good medical students:
ResD: “I think (case presentation is) very important I think particularly the case presentations for most people in medicine uhm, communication is going to be a part of everyone’s lives and being able to relay a patient accurately over the phone whether you’re trying to transfer a child, uhm becomes very important so I think the case presentation particularly’s very important skill to be able to, to really grasp this patient within a short period of time.”

PedE: “(It’s) very important, you know, you can be as nice and as helpful and as keen as you want, which are all very positive things, but to be a truly good student, a good presentation tells you a lot. Because it tells you how much they know about their patient, it tells you how much they understand the issues, so I think it’s a very important way to assess a student in terms of how good they are. I don’t know if it’s the most important, but it’s definitely a key component of it.”

For others, it was also key way by which they could evaluate a medical student’s progress and capabilities. However, many qualified this in suggesting that while medical students’ case presentations did not have to be perfect, they did desire to see an improvement from incorporating their feedback:

PedI: “(Case presentations are) pretty central because on a CTU, the case presentation, as the attending, where you’re not around all day or when all the admissions are coming in, you really rely on that case presentation and how the medical student is presenting it and synthesizing it, to give you a sense as to where that student is at. And how they’re able to interpret that all that information and present it, so I think it’s fairly key to your job as an attending in terms of evaluating students.”

PedI: “It’s more that I see that they have a coherent sort of logical approach to clinical reasoning, that that skill is being developed, uhm, so that you know, at the beginning of the month, yes, could they have a case presentation that’s all over the place and an impression that’s in left field, that’s you know, totally acceptable but they have the ability to sort of improve and respond to feedback over the course of a cycle and that they have clearly shown a degree of improvement by the end and yeah, I guess so, it’s not about medical knowledge but more about their clinical approach, and that would involve their professional demeanour as well as their intellectual approach.”

In contrast to their beliefs about good students, they thought medical students themselves were more interested in having the most medical knowledge, doing well on exams, being right, and being visible to the team:
ResC: “a lot of students’ impression of what makes a good student would be, they want to be the best at tests, they want to have the perfect presentation they want to have the perfect differential diagnosis, they want to know the management for patients, I think med students focus a lot more on knowledge, on pure knowledge, and test-taking scores, and I think they undervalue the importance of team contribution and on communication, like non-verbal and verbal communication and really the, the process of listening to feedback and trying to improve.”

PedG: “one guess is they would say oh so and so’s really smart, they’ve done a lot of book reading. They seem to know their facts.”

PedH: “some of them feel they have to read and pass their exam. That’s, we’ve had someone in the last month – not on my team – who sat and studied instead of seeing their patients.”

One preceptor used this discussion around student-held beliefs as an opportunity to re-iterate the close educational bonds she perceived between the residents and the students:

PedI: “I think that, students tend to get messaging from residents in terms of what makes a good and what makes a not-so-good student and then that tends to become very clear very early on to them what that means and I don’t know if all of it is completely the way an attending would see it in the sense that, I think sometimes students feel that they are the loudest person on the team or if they are the ones that are constantly shouting out the answer and the most visible then that will put them in the category of someone who’s a good student and who’s clearly strong, whereas, someone who’s a seasoned attending can see through some of that, and some of that actually may represent a good amount of knowledge and enthusiasm, and those are all good things but to not miss the more quiet student that may not be the one shouting out the answers but yet may have a very sound clinical approach...I don’t know if students do see it exactly the same way as attendings.”

4.4.2 Definitions of Adequate Students and Poor Students

Preceptors described their definitions of adequate and poor students as a way to further delineate their definitions of good students and to explore what practices and behaviours they attempted to discourage in student professional identity development. They noted that adequate students demonstrated overall less interest than their good counterparts and were willing to do only the minimum amount of work expected:
ResA: “if they have a good knowledge base, and they’ll present during rounds but they...don’t show that they’re interested. They just do the minimum, and then they get out of there, yeah, these are students that are fine which may probably it’s like half of them, because they’re totally not interested in paediatrics and they just wanna get out of there.”

ResC: “someone who’s not really willing to participate and contribute and support one another...would try to get all of their notes done and then try to find out as soon as they could leave for the day.”

ResD: “if they’re really, not picking things up, but they’re still safe and they’re still, getting their work done, and they’re showing up on time, they’re probably adequate.”

PedG: “they come in, they know their patients, they can get through it, and they need to be pushed on (with questions such as): okay, what do you now need to know, what’s the next step of knowing about your patient, or what’s the next step of care.”

PedH: “one’s that’s just okay, just gets the work done. So adequate is someone who comes in, does what they have to, and leaves.”

Preceptors identified qualities common to poor students in a language of deficiencies, such as:

- a lack of honesty

ResA: “probably the ones that I can’t trust. The ones that say they examined their patients but they didn’t. The ones that they just don’t care at all, and they don’t wanna try, they don’t want to learn anything those are really hard to work with. I’d rather have a student, students that is not as smart and willing to learn than a patient that thinks, than a medical student that thinks like he knows everything and doesn’t need extra knowledge, you know?”

- a lack of interest

PedE: “who clearly aren’t interested, I think those are the biggest challenges with students now, and you see a lot more of that than you see people with learning difficulties or who need special adaptations because of very specific skills – I’d say it’s primarily professionalism issues.”

PedH: “Someone who’s inadequate doesn’t even do that...they don’t read around their patients, they don’t ask questions, they don’t show enthusiasm, they look bored.”

- a lack of involvement in learning

PedF: “students who feel that they know it all and...doesn’t really have this willingness to learn to interact with people, I think that that would make a really poor student.”
• a lack of being a team player

**PedE**: “students who are not reliable, who don’t turn up, who don’t do the work they’re expected to do, or who are late”

**ResC**: “I think an inadequate team member would not really contribute to learning if we’re doing group discussion or learning would just sit and listen and not particularly be an active member...and it comes across as very obvious, it’s amazing how obvious it is when someone is so disconnected from rounds that you can just see that they have no desire to really be involved in patient care, to be involved in the team.”

• a lack of organization

**PedG**: “they’re disorganized. In fact, what I see most, more than almost any other element on the ward service is not, lack of knowledge, you know, I think this is a third-year medical student and they’ve been on paediatrics now for let’s say, two weeks when I come on, I don’t expect them to have Nelson’s memorized, you know but what they impress me with is a complete sense of being overwhelmed and disorganized that we go to bedside rounds and they start at the middle of the patient’s story, include a few elements at the end and cant get back to the beginning and whether that’s presenting an overnight admission or presenting today’s workplan, so they don’t have a way of structuring and organizing their thinking about their patient which is more than just wardsmanship, it tells me they don’t fully understand all the disease processes that are happening.”

This last preceptor explicitly linked the performance of a poor case presentation to disorganization and a lack of understanding what was important:

**PedG**: “When I see somebody who cant organize their thoughts, into a decent presentation, it tells me they’re probably disorganized about what’s important about the case. They may not understand that the kidneys in this case are more important than the heart. They’re therefore telling me they don’t really understand the disease process going on here.”

### 4.5 Preceptor Beliefs Concerning Case Presentation Content

Understanding which behaviours and practices preceptors desire in medical students sets the stage to better understand what they believe should be included in case presentations. The case presentation has utility as a visible marker of performance and offers a way to provide in-time feedback:
ResC: “(they) do a lot of case presentations, so once they give a case presentation on the patient they’d seen, going through one again how they present a case and how they organize their thoughts, how they’re delivering the message, within the history of presenting illness, am I understanding what they’re thinking when they’re going through it, so lots in sort of the format of how they’re delivering um the case presentation and obviously how they asked the questions as well...the last part would be medical teaching, so what their differential diagnosis is in certain patients, what they’re thinking what this patient likely has, the management that they think shall be for the patient and then I’ll provide my feedback on what I think of it all.”

Others’ comments suggested that case presentation played a role in a dialogic-based construction of schemas based upon biomedical information:

ResD: “On rounds we try and do case-based teaching within the family-centred rounds so, I will...potentially ask, a resident or a medical student to perform the physical exam on a patient...then usually teaching around that patient, so potentially asking questions of the medical students, for example, if it’s Kawasaki disease going on and what are the criteria for Kawasaki disease, usually starting with the medical students, if the medical students can’t answer, going to the juniors, and then if the juniors can’t answer, then I’ll (talk).”

4.5.1 What Should Be Included in Case Presentations

It is reasonable to suggest, then, that what preceptors believe should be in case presentations, how they are organized, and how this affects their interactions with medical students plays a larger role in what these students learn to incorporate rather than merely what is on the provided sheet of information:

PedG: “What we need to hear is since we rounded yesterday, Johnny has: no fever overnight, his saturations are improving, we weaned him off oxygen and today the plan will be to start weaning the Ventolin. I mean, that’s and I examined him before we got in the room.”

PedH: “Thorough but that they know what they’re doing in terms of history and why, if they’re being observed I’d like to see they have that communication or rapport with a patient and do exactly what you say you’re going to be observing with – that they listen well, and they give the patient time to, talk, and not to interrupt frequently. In terms of the physical exam, again, they have to...know how to do a good physical examination cuz I think that’s been skimmed over in real practice. So, that’s the expectation in terms of history-physical.”
PedI: “I want there to be an attempt made to tell me what your impression is and what are some of the diagnostic possibilities might be. Again, it’s okay to be wrong, it’s okay to not get the diagnosis, it’s completely fine, but to make an attempt and so I, usually use repetition (laughs) in terms of emphasizing that I’m really looking for that impression section and that that should be there.”

4.5.2 What Should Not Be Included in Case Presentations

In addition to what should be included, interviewees also responded to what information should not be in a case presentation. Interviewees suggested medical students were prone to giving too much information and not knowing what was pertinent or relevant. This was viewed as a starting point from which they expected the students to advance through recurrent practice:

ResA: “too many details, especially in the physical exams...you know too many details that are not pertinent for me – to make the diagnosis or see how the patient is doing. But it’s really hard...when you’re a medical student and you don’t know what’s important or not important to select the important things to say and I think it comes with experience too, so I’m more tolerant with them than I am with my juniors in terms of how long their presentations should be...so it depends on the level of training I think, what I tolerate and not tolerate in terms of uh what a good presentation is or not.”

ResC: “One of the tougher skills with med students is figuring out what’s pertinent, that the pertinent positive and pertinent negative. So I think in the beginning, it’s a tendency and I think that they should include everything that they thought of, because it’s tough for them to figure out what’s pertinent and not, I think. So as they’re advancing, I think they should start to not include things that are really completely irrelevant to why they’re (patients) are here for.”

PedE: “I think the issues are more with understanding what the issues are and organizing your presentation.”

PedF: “I’ll use as an example bronchiolitis because it’s one of the most simple garden variety condition. if a child comes in with a bronchiolitis I don’t think we need to keep rattling on about this strong family history of this lengthy family history of where they live or whether they need to take the bus to work or, whatever, you know those things are relevant but not really pertinent to the present acute condition. However, let’s just say that if Dad is a smoker then that would be relevant. So, I would look at it in this way, but again, from case to case is different.”
PedI: “There’s things that you don’t want to see a whole lot of, irrelevant information, again, many times at the beginning of our training we don’t know how to filter out important versus unimportant information, so early medical students or early clerks tend to have very very long case presentations, full of a lot of information, so I guess, but (it’s not that) I don’t want to hear it, in the sense that that’s just a whole learning maturation process.”

4.5.3 On Relevance

Lingard and Haber (1999) note that relevance “is the focus of much teaching frustration and learning fear and a problematic and time-consuming aspect of clinical education.” The concept of “relevance” emerged in several interviews, although what was relevant was not described in any detail by preceptors. Discerning what is relevant to include and not include in a case presentation is a major learning struggle for medical students. Following D’Andrade (1995), sometimes medical students, in misrecognizing an observed phenomenon’s importance, ascribe governing rules of relevance to it when rather they are observing a practice with little actual relevance to others. Understanding of tacit rules notwithstanding, as mentioned, there is also little explicit information provided. While there is a handout given by the senior members of the CTU that provides a basic schema of how to sequence events (Appendix E), neither preceptors nor students referenced it in the observation period. Preceptors intervened either during or immediately following student case presentations in order to illustrate what information was relevant, how it should be organized, and how to think about this information:

PedE: “I think partly (the students) know their patients better (which is why their case presentations ‘improve’). So, if they’ve had a patient for three or four days, by the time they get to the fourth day they actually understand the issues a bit better and are able to present in a more orderly fashion, so it’s experience and practice, and it’s also familiarity with the patient they gain over time. So they recognize the issues more clearly and are able to give you more relevant information on, in their presentation.”

PedE: “I ask all the questions that I think are relevant and I’m quite intrigued by the fact that many of them don’t write down in their history the questions that I have asked which
says to me that they have actually not identified that these are important things that they have missed, so I prompt them to say, The questions that I’m asking now are important and I need you to add them to the history.”

**PedI:** “You’re looking for organization, in terms of organizing the parts of a history and then the appropriate fashion, not jumping from mixing information sometimes I find students at the beginning, and this is definitely sort of you can tell there’s something that develops over time, they often, get aspects of the HPI all mixed up with past medical history and all the pregnancy history ends up somehow getting into the HPI section and they’re not that sure on delineations of an organized history, so that’s what we try and work on, that’s an emphasis for me of a good case presentation is one that’s sort of is clearly organized in sort of the traditional history organization schema.”

**PedI:** “The end of a good case presentation doesn’t just end at the history and physical examination, that there isn’t a synthesis of the information at the end, even if they’re wrong, even if it’s completely out in left field, that there’s been an attempt to be made, to come up with some kind of synthesis of the information because we’re not just information gatherers you have to, apply synthesizing ability to the information and that’s kind of what distinguishes us from just being sort of transcription services to gather information.”

**PedI:** “I think that being at a more junior level of training, again, I think you have a very different sense as to the comfort with that particular specialty or these particular medical problems, and so, you don’t have a great sense as to what to include or what not to include. So, you tend to just put everything out there and just hope that there’s pieces there that are relevant to some, the person who’s listening, so I think that there’s less of an ability to sort of decipher relevant from irrelevant information.”

As Quinn (2011) notes, “cultural schemas are full of causal assumptions, although these are usually left implicit in everyday talk.” Thus, it is predominantly from recurrent subtle conversational cues and tacit information that medical students must glean both the acceptable organizational schema of case presentation as well as the content and degree of information that each part of that schema contains. Grasping what these assumptions – or shared cognitive understandings – are is a major task for learners and is bound up with their progressive demonstration of competence.
4.5.4 Convergences and Divergences of Case Presentation Style

The variation noted above regarding interruption suggests that there are some commonly held tenets regarding how preceptors practice pedagogy in conversational interactions:

**PedI:** “I think though, that we all generally have a fairly uniform approach to the organization of a case presentation in terms of the history contains these elements and this is usually what’s included in a history and then a physical examination is sort of a head to toe examination, I mean I think there’s a basic sort of template that we all follow, that’s fairly uniform but I think, yeah, the details definitely get more honed and refined as you progress through your training period.”

However, preceptors – in particular the senior residents interviewed – noted that there is significant variation between what preceptors consider important to teach:

**ResA:** “Um, no. It, just that um it seems from all the seniors and al the staff I’ve worked everybody has a different teaching style and it’s interesting cuz uh I don’t think there’s one that’s good, or one that’s bad, it’s just that there’s different ways to learn, and uh, it doesn’t work with everybody too. There’s different yeah, ways of teaching, different uh ways to acquire the knowledge”

**ResB:** “I try not to fuss too much about if they’ve actually had four days of coryzal symptoms and they’ve had two, like, okay. At the end of the day they’re like here with a riproaring pneumonia, so, it’s probably not that critical, you know? Was their ESR, was their CRP like a hundred twenty or a hundred and eighty, like it doesn’t really matter, you know? But I think if you were to follow different seniors, you’d have different styles. I like physiology and I like understanding, uhm, where the changes in a patient’s status come from and, like the disease pathophysiology, so, for me that’s the important part of the presentation. I really don’t care too much about small day-to-day changes, it’s the big picture and I-I want to spend more time talking about the rationale for the impression and plan and for the management. But I do know that some of my colleagues care a lot about does he weigh six point eight five kilos today or does he weigh six point eight six cuz this is really important (to them), you know?

**ResC:** “How do I do that (teach around case presentations)? It’s a great question cuz everyone I think has a different approach to that and I think it’s a very situation dependent, I don’t have a hard and fast rule with that and it really also is dependent on the, the student’s ability?”
4.6 Preceptor Interventions Around Case Presentations

Preceptor beliefs concerning good students and good case presentations plays a major role in guiding how they use conversational practices to shape their students’ utterances. These practices in turn carry major ramifications for how students learn relevant patient care and relevant ways to organize and present information. Preceptors intervened either during or immediately following case presentations in order to illustrate what information was relevant, how it should be organized, and how to think about this information critically. They also recognized that case presentations could be stressful for medical students and tailored their interventions accordingly. Senior residents and attending usually took the lion’s share of the duties, discursively constructed as leadership here:

ResC: “I think normally it’s left to the senior resident who is supposed to be the leader of rounds, but that being said, normally we have an attending that’s on rounds with us, I guess three days a week now, and depending on their personalities they’re all a bit different but some often step in a lot more than others, and so, they often try to guide the med student as well. But ideally I think it’s the senior resident that should help guide them, so I think that’s primarily their role in-— in trying to be the leader of the team.”

Many were mindful of the level of anxiety in learners. One preceptor explicitly argued against making learners feel badly:

PedG: I think that there’s no point in using a shame-based learning approach to medical students. Which was the educational philosophy I was brought up in — but there isn’t, there’s also at the same time, there’s also a place where people can be pretty straightforward and say you’re not gonna fall apart if I criticize you in front of other people.

Some delayed their interventions based upon the perception they might provoke anxiety and fear of “not doing a good job”:

ResA: “I don’t like interrupting them too much, just because I don’t like making them feel like they’re not doing a good job, so sometimes I’ll let them talk, and if they’re a bit stressed, I’ll just say – Oh, and on physical exam – kind of cue them.”
On the other hand, others intervened early to provide scaffolding upon which students could rely as a way to minimize worry and have support in achieving the task:

**ResC:** “Some medical students, especially first beginning their training, when they’re presenting on rounds are so terribly nervous and have such an incredible amount of anxiety that I think some prompting within it is good, even if it’s good feedback, so I think it’s very situation-dependent.”

**ResD:** “I think if they’re heading off track rather than sort of have them keep going I usually, I try to jump in but not sort of aggressively, if you know what I mean, because I don’t want them to feel badly either, but try to sort of steer them in the right direction, if it was something we talked about I could say do you remember what, what did we talk about yesterday if it’s something sort of, asking question, either an open-ended question or a question that may sort of shift their gears, I think a little bit to the right way.”

One important theme that emerged was a goal of avoiding interruption as much as possible:

**PedE:** “So, the goal is to not interrupt until the end, and that depends on the quality of the presentation I would say. (I like to avoid interruption because it) interrupts their train of thought and so then they’re not able to get back on track and I don’t think they give as complete a presentation as they would have if I didn’t interrupt them.”

**PedH:** “I won’t interrupt the flow because I don’t think that’s, I think (medical students) get, they don’t like it when you’re interrupting frequently. I will then at the end go back and say, Well why did you say this, or what does that mean? So, we try not to interrupt and I know the residents are very aware, even the R1s (first-year residents) not to interrupt frequently.”

One preceptor in turn described the lack of interruption as an explicit pedagogical practice:

**ResC:** “As much as I can, I think I would let the student present without interruptions, apart from positive feedback, or if there’s something completely unclear to me and they’re not sure then I’ll ask just for clarification, otherwise, I would prefer to leave them to present and work through it themselves, cuz I just think that making your own mistakes and then hearing about them at the end for me is how I learn better without constant prompting because then I won’t know how to do it next time. So I’d say for the most part I’ll try to let them go ahead with the presentation and then jump in when they’re struggling, which normally tends to be around the management and the differential diagnoses.”
However, if the preceptors’ schema of presentation were somehow violated, they did not hesitate to interrupt frequently to fill in the perceived “gaps”:

**PedE:** “I try to keep everything to the end if I can, if there’s lots of issues, I will continue to interrupt them. (I also interrupt if) I’m missing a critical detail that, you know, a quick interruption to get one more detail might be okay but yeah, if I’m completely miss- , if the story’s not making sense to me, then I will interrupt and try to re-shape the story with the help of the student and the information that they have gathered...”

**PedI:** “If there are points that as we’re going through the HPI that I’m not hearing, so say it’s a respiratory admission, and there’s sort of key pieces of the history, has this child had any previous admissions for pneumonia, or previous ICU admissions, or you know if there’s key pieces in that history that are missing I tend to be someone that doesn’t wait till the end, to gather all the missing points, I tend to want to get those as we go from section to section. So, I tend to not interrupt the person, but I tend to at the end of sort of the HPI wanna ask all the questions. And then at the end of past medical history if there’s still outstanding things then I tend to interject at that point, so the points at which I interject are generally if I just haven’t heard the key pieces of information that I need to.”

Others had no qualms about taking over and inviting a more senior member of the team to present instead, in order to provide the student with a model:

**PedG:** “Generally I find if they’re just completely off the wall and disorganized I find a natural pausing space and I just say stop, let’s start from the beginning...and we’re just gonna stop now and start again. Most of the time I find they cant change the behaviour so I would have a junior or senior resident model it or I might stop them and say you know what? This is not going the right way. And I’m gonna say, I’m gonna ask so-and-so to, let’s do this now. Cuz they have to see the model – if they’ve, not started it off right, they don’t know how to do it.”

In addition, one preceptor used interruption to encourage students to use the first parts of their presentations to create the important “impression” section:

**PedI:** “So, initially, it tends to be that at the end of the physical exam there’s like a small sentence that comes and then it usually doesn’t come naturally, so I tend to sort of say very clearly, well, I’m really big on the impression section, I really want you to make an attempt, even if you have absolutely no idea what’s going on, and you’re completely confused, I want there to be an attempt made to tell me what your impression is and what are some of the diagnostic possibilities might be.”
Other preceptors alluded to interruption as a way to ensure that all of the audience, including parents, understood what was happening, actively building shared definitions throughout the presentation. In a hospital built around family-centred rounds (FCR) this adds an additional layer of complexity:

**ResB:** “I mean it all depends. Some of it is because of inexperience of going on with terms that are incomprehensible, to the families in that case I would try to interrupt the student, and say perhaps you could explain this to Mum and Dad what we’re talking about, it can be very rude actually, when you’re going on and on and presenting and talking about their child and totally ignore the family, you know, even though you are by sort of being in a room going on about somebody’s child, and the parents are sitting there thinking what in the world are these people talking about? You know you’re talking about hydration and electrolytes and you know LFTs and the ESR’s really high today and well, what is the ESR, you know? It can be very, very intimidating for the families.”

**PedH:** “If however, they are presenting and I see a parent get, I look at their face and I see they’re getting distraught, I may sort of interrupt and say: The parent doesn’t know what it means, that the creatinine is high, or, I may at that point – can you explain it to her?”

**PedH:** “I would teach them, and I’ve learned to listen as well because I would not do it in front of the parent, if the parent really looks worried about something I’ll say what are you thinking? You know, can you explain to us and then maybe let the medical student or resident deal with it but once they’ve, I had a medical student, uh resident, junior resident, talk in front of a very young First Nations mother with all of them, maybe about alcoholism and sexual activity and that, and I didn’t say anything in front of them but when we walked out and in a nice way I tried to say, Those kinds of things we got to, that’s why we have family-centred rounds, you watch the parents’ interaction, you watch their faces, and that’s the importance of picking up on their cues, and I wanted it as a learning for everyone and I said this is just a learning for, all of you, that we have to be very careful when we talk like that.”

### 4.7 Activities Bound Up Within Case Presentations

Now that a frame of beliefs and practices historically built up over time in this teaching hospital and its preceptors has been presented, analysis of what happened in this iteration of the CTU can be more adequately grounded and thus more optimally analyzed. Of course, the activities foregrounded for this study of professional identity formation, those of direct patient care and medical education, are central. However, other activities that
contextualize these also concurrently exist in a CTU and need, at least, to be made visible. Cardinal among these are: medical education to several different training levels around both broad medical knowledge and local practices of care, assessment of medical knowledge, and participation in the broader workings of the hospital and the health care community.

An example of a case presentation performed by an experienced second-year junior resident to the team is included thus to make visible these multiple concurrent activities of a CTU and to provide an understanding of which contexts and speech practices carry currency in it (Appendix F). The passage begins with the junior resident directly discussing the specific patient, laying out her biomedical issues and the reasons why she has been admitted to an acute care hospital (lines 2-5). Apprenticeship issues and power differentials between the senior resident and junior resident quickly arise, as the former directs the latter to switch from a discussion of this specific patient to presenting to the whole team the sequelae of one of the patient’s major health concerns, neonatal lupus (line 8). This is an opportunity for the junior resident to simultaneously demonstrate her knowledge, work on her teaching skills as she prepares to take on the roles and responsibilities of a senior resident several months later, and reinforce her own schema as to what neonatal lupus signifies to her. That the senior resident and attending paediatrician remain involved in the teaching (lines 10-16) models to the junior resident how to discuss the information, supports her in completing the schematic task of “teaching about neonatal lupus”, reinforces hierarchy, but also paves the way for the junior resident to establish ways in which she can move up that hierarchy.

In a nod to the ongoing need to navigate intra-hospital relationships, the more senior team members also make a quick reference to the sometimes difficult relationship between the neonatal intensive care unit (NICU) and the CTU (lines 5-7). The first year junior
resident also provides information to the team as to how to accomplish a traditionally
community-based health care practice, that of vaccination (lines 96-111), within the confines
of an acute care ward. This demonstrates that distributed cognition is alive and well here and
that knowledge of new practices can enter an activity system from sources other than the
senior resident and attending paediatrician. Once the discussion about neonatal lupus has run
its course, the second-year resident returns to this specific patient’s management trajectory,
centred around biomedical issues (lines 18-79). Finally, it is worth noting that the senior
resident – not the junior resident – is the one to close the conversation (line 112). This is the
action that allows the entire team to continue to the next patient.

4.8 On the Schema of Case Presentation

As noted, being able to recount a medical narrative such as a case presentation
necessarily requires students to have a shared understanding of event sequences with the
audiences to whom they are presenting (Quinn 2011). How medical students learn this
schema in the contexts of the clinical education environment is in large part related to
interactions with their preceptors, which are in turn governed by the previously described
preceptors’ beliefs and teaching styles. Through conversation analysis of approximately ten
resident case presentations, the following informational and interactional schema of case
presentation was identified23:

- Authorization by senior resident
- Acknowledgement by junior resident
- Patient – Identification of patient with a “one-liner” (name, age, biological sex,
  previously known biomedical conditions)
- Description of Condition
  - Reason for admission to hospital (or “coming in”)
    - Reasons for continued admission by system
    - Includes interventions and responses to those/evolution
- Physical exam findings with rhetorical shaping (i.e., incorporating commentary on better or worse)
  - Impression
  - Therapeutic strategy
    - Plan by issues noted in the first part (continued admission reasons by system)
    - Plan modification in negotiation with senior resident and re-formulation
  - Closure by senior resident

Approximately thirty medical student case presentations were recorded over the observational period. Below is the schema that emerged from case presentations observed from the end of the rotation, which, while less fluid, begins to parallel that of the resident schema above:

- Authorization of medical student to speak by senior resident
- Acknowledgment by medical student
- Identification of patient with a “one-liner” (name, age, sex, previously known biomedical conditions)
- Reason for admission into hospital (“coming in”)  
- Summary of course in hospital (other diagnoses, interventions, other problems)
- Global “one-liner” about direction patient is going (getting better, doing worse, stable)
- Issue-based (biomedical problem) telling of what has happened
- Numerical physiological information (for example, fluid intakes and outputs), vitals
- Physical exam findings (linked to diagnosis, treatment and issue-based history)
- Laboratory values and results
- Impression with re-naming of patient and diagnosis and how things are going (readiness for discharge)
- Plan based around issues
- Asking about whether there are questions from caregivers
- Presentation closed by senior resident and exiting
- Possible hallway discussion about diagnosis (characteristics of diagnosis) or treatment (characteristics of treatment modalities, side effects)
- Moving onto next patient as decided by senior resident

As Bucholtz and Hall (2005) note: “any given construction of identity may be in part deliberate and intentional, in part habitual and hence often less than fully conscious, in part
an outcome of interactional negotiation and contestation, in part an outcome of others’ perceptions and representations, and in part an effect of larger ideological processes and material structures that may become relevant to interaction. It is therefore constantly shifting both as interaction unfolds and across discourse contexts.” Through this lens, the performance of case presentations takes on multifaceted meanings for identity. As “deliberate and intentional”, clearly medical students have some modicum of agency to pay attention differentially and incorporate certain practices rather than others. As an “outcome of interactional negotiation and contestation”, the role of preceptors in shaping medical student presentations is undisputed. Finally, as “an outcome of others’ perceptions and representations”, this suggests medical student agency is at least partially given and controlled by preceptors. By being authorized to speak, preceptors “hail” medical students into being medical students, so to speak. In summation, what emerges from these shaping forces is a strong bent by medical students towards gradual adoption and reproduction of their preceptors’ stances due to the power differentials present within the system and learners’ desires to achieve high marks, letters of recommendation, and legitimately participate in the profession of medicine.

4.9 The Changing Case Presentation Over Time

Comparison of medical student case presentations from the beginning to the end of the observational period demonstrated marked accommodation towards the schema employed by residents. Two case presentations – one from the beginning of the observation period and the other from the end – are included from one of the medical students (Appendices G and H) as an example of how both organization of case presentations and the type of information included in each section changed over time.
There are several key features noted in the first case presentation (Appendix G). The medical student mixes together schematic categories (line 11) and places them in a different order as compared to the resident presentations. The degree of information that she provides for certain categories is too detailed (line 11), while it is not detailed enough for other sections (line 33). She directly includes testimony from the caregivers to support some of her assertions (line 11). She presents her examination findings in a subjective fashion, although there are the beginnings of inclusion of language of patient-as-physical body (“she satted between ninety-two and ninety-eight”). Throughout the presentation, there is significant use of rising intonation following provision of chunks of information, which is indicative of uncertainty, and repeated use of “uhm”, in attempts to hold the conversational floor. Finally, while she initially participates in formulating an impression and plan (line 22), her categorization is out of order. As a result, the second-year junior resident quickly takes over the conversational floor and proceeds to explicate her clinical thinking around this case (lines 23 and 29). The medical student is reduced to anticipating and parroting the second-year resident’s management strategy (lines 32-33 and 35-36). The third-year senior resident does not further offer the conversational floor to the student; rather, after proceeding to ask questions from the caregivers, closes the presentation and moves to the next patient.

The second presentation (Appendix H) is taken from the end of the observation period, and notably, the medical student has gained some certitude. The organization of her presentation is increasingly similar to that of the residents. Her prosodics following each chunk of information she provides are increasingly falling, indicating a movement from uncertainty to confidence in the information she is providing. Instead of referencing the caregiver as a source as she did in the prior example, she instead references the nursing
notes, full of numerical measurements and objective observations (lines 6 and 26). In the series of interruptions from the senior resident (beginning at line 12), she is able to participate more fully as a conversational partner; further, when the junior resident tries to take over when she begins to falter (line 20), the medical student reasserts herself to continue the presentation and unlike the prior presentation, she does not surrender the conversational floor (lines 23 and 26). While her impression and plan remain lacking in depth of detail provided by the residents (lines 30-39), the medical student does later return to the conversation by asking a question about passive immunization (line 47). In so doing, she portrays herself as interested about her patient, involved with their care, and doing work (reading) outside of normal working hours. All of these actions tie into the idea of a “good” student.

It is worth noting, however, that there is no information given about the patient from a non-biological standpoint other than his name at the outset. The language the medical student employs (line 26) continues to shift towards patient-as-physical body. Parental input into the collection of information does not figure in here as it did in her first presentation. The question that the medical student asks has to do with health care economics and therapeutics and is less related to this patient who has RSV than it is to treatment and management of RSV in general. Discussion of how the family is coping with the illness, how they are living this experience, and how their identities as parents and their son’s identity as someone with major health issues are evolving have become understood as not relevant in this context. Thus, the medical student’s changing presentation schema that aligns more closely to the resident’s version, the increased de-personalized content of each of its steps, and the information she wishes to know more about all suggest a shift towards biomedical
constructions of patients and away from broader understandings of how illness is experienced by a person and family at a given point in time. What she has learned as relevant suggests that she sees is beginning to understand her role – and by extension, her identity as a physician – as one who constructs patient identity first-and-foremost by biomedical interpretation.

4.10 Family Centred Rounds

While some case presentations happen in the hallway outside the patient’s room, the majority of case presentations on family-centred rounds (FCR) occur within. Schematic drawings of spatial relationships were made for every presentation recorded and analyzed for positioning of the patient and caregivers in relation to the presenters and the other CTU actors. What follows is an emblematic arrangement of the actors during a medical student presentation. The mother is holding the baby and is sitting down, while the CTU team members are standing (Appendix I).

The following scenario (Appendix J) pulls together the preceding sections and provides an integrated perspective of the two CTU activity systems – medical education and patient care – under mutual tension and in the context of FCR. First, it is worth noting that the physical layout of the room is not conducive to FCR. While the single patient room is useful for confidentiality of health care information and privacy of families, the size of the room itself and the number of actors crammed into it make for awkward conversational exchanges. It is noteworthy that the empty hospital bed is more at the centre of the interaction than the caregiver and patient.

The scenario opens with the senior resident asking “who’s next? Three?” which identifies patient-as-room-number (line 1). Once inside, the resident proceeds to ask the
mother how “he” is doing, which the mother quickly corrects (lines 3-6). The mother voices the issue around oxygen, which the senior resident acknowledges but does not elaborate upon (lines 7-8). The senior resident then gives the conversational floor to the medial student to begin the case presentation, which proceeds largely according to the schema identified in previous sections. In an attempt to stay organized, the medical student directs her attention first and foremost to the sheet of information she has brought with her. When she makes eye contact, she speaks primarily to the CTU team with occasional glances to the mother/baby dyad.

Once she has broached the subject of the positive fluid balance (line 12), she attempts to present her rigour and involvement (lines 13-14). Her eye contact at this point is markedly towards the second-year junior and third-year senior residents, who interrupt the flow of the presentation to figure out whether the information is correct. The medical student attempts to continue (line 20), but her increasing uncertainty is palpable, and the second-year and third-year residents both take over. The medical student continues to be involved through her conversational alignments (lines 24-31), but her role is steadily re-cast from principal speaker to secondary provider of information (lines 34-37). She attempts to gather more information; her demands do not go to the mother but rather to the nurse (lines 48-57).

The following conversational piece (lines 54-74) involves a focus upon ascertaining whether fluid balance measurement has been correct. This has biomedical relevance for a patient who lives with an underlying heart condition and currently has a viral infection. The second-year junior resident has now taken over the conversational floor and proceeds to lay out a plan over the next twenty lines. Of note is that while she talks about the mother and the
baby, she does not talk to the mother and the baby, using third-person pronouns despite their presence three metres away (line 81 and 91).

The mother interrupts to raise concerns (line 94), which goes against the usual pattern of being invited to speak by the team. While the second year junior resident and the CTU address the mother’s logistical concerns (the need to speak with the nursing station regarding oxygen saturations), there is an interesting dynamic at play. The resident interrupts the mother (lines 99 and 101) in order to explain that she will write a letter and in the process re-takes the conversational floor. The mother’s concerns about being medevac’ed (line 106) are not well-addressed and do not provide complete reassurance. It is perhaps ironic that a few lines later (110-114) the senior resident describes how reassured she is by the results of the physical examination. That the mother’s concern about the medevac’ing and contact have not been sufficiently addressed arise again in the last exchange, where she interrupts unprompted again to provide the name of the head nurse in the nursing station in her hometown (lines 117-121). To re-iterate, story-telling speakers must possess shared understandings of event sequences with their audiences (Quinn 2011) in order to generate meaning and communicate effectively. While this increasingly seems to be the case for medical students speaking to audiences comprised of medical personnel, this is not the case with caregivers. What is relevant to the CTU members and what is relevant to the caregiver, while overlapping, are evidently different here.

4.11 On the Schema of Sign-over

Although originally observed and recorded for understanding of context and to familiarize the CTU to the presence of the researcher, it quickly became evident that sign-over rounds themselves were a potentially rich source of data. Sign-over proceeded for thirty
to forty-five minutes and is led by the night float junior paediatric resident. A presentation of the spatial relationships in the enclosed conference room setting in which sign-over rounds occur reveals that the medical students were in close and attentive proximity to their more senior team members. (Appendix K) What is said, not said, the degree to which it is said, how it is organized, and how audiences receive and respond to the speech acts are all visible to those learning clinical paediatrics for the first time.

While the information sheet for sign-over (Appendix D) is used as a structure, the information of sign-over rounds is moreso populated by information contained on the in-patient ward list. Patients are thus presented in a particular schematic structure that reflects contextual relevance here.

Below is an example of the schema as drawn from a prototypical junior resident presentation:

- Identification of patient with a “one-liner” (name, age, biological sex, previously known biomedical conditions)
- Description of Condition
  - Reason for admission to hospital (or “coming in”)
  - Biomedical issues outlined for this admission
  - Well or unwell
  - Trajectory – improving versus not improving
  - Management plan and response to management
  - New issues arising
  - Revision of plan if necessary
- Readiness for discharge from hospital
  - Readiness of necessary documentation (discharge summary, prescriptions)
While some sign-in presentations proceed largely uninterrupted, multiple team members co-create, contest, and discuss others. An example of this follows (Appendix L), shining light on power relationships, relevance, and shared assumptions within this group. The procession through the schematic categories of the sign-in presentation does not move forward until meaning is made for certain decisions and justifications related to the previous section. Schemas cannot advance if those with higher levels of responsibility cannot make clear sense of the information contained in each step and how it “hangs together” both within the schematic step and with the preceding and proceeding steps. The first-year night float junior resident’s attempts to move forward are interrupted for clarification by the second-year resident, who takes the conversational floor in order to try to understand and explain the rationale behind the consultant’s suggestions. The presentation switches from an uninterrupted recounting to a contested and more precarious attempt to make meaning. Once this has happened, the night float junior resident is allowed to retake the conversational floor and proceed to the next part of the schematic sequence.

Additionally, several normative concepts are revealed within the exploration of this part of the schematic sequence. The language used by both the second-year junior and third-year senior resident constructs the patient-as-her-body’s physical disease. This is notable specifically in lines 15, 18, 21, 23, 29, and 33 (23, for example: “but she was shunting mostly left to right”). The degree of descriptive detail of physiology and oxygen parameters lays bare a focus primarily on physical bodies, and far less on how those bodies are experiencing and are experienced by those who are-in-the-world through them. Acronyms employed refer only to pathophysiology in 21 and 30 (VSD, LRTI). Non-CTU team members are constructed as uniform others by metonymic collapses in 50 (“cardiology’s happy”) and
pronouns of difference in 21, 30, 31, 33, and 37 (“that’s why, they didn’t want us to be like, too generous with the oxygen unnecessarily”).

While all medical students take up from this observation acceptable ways of presenting patients and the way in which this information is organized, medical students working with the night float team directly participate in this activity. Included in Appendices M and N are examples of their understanding of what the normative schema of presentation in the context of sign-in rounds and what information the steps of that schema should contain. A few items are notable here. First, the third-year senior resident specifically draws attention to the schematic steps that the night float medical student has left out, which he is able to repair following the first year junior resident’s interjection into the conversation (line 7). That the first year junior resident feels authorized to begin talking is related to her direct participation in the events being recounted as well as her relationship; this is “her” patient. The night float junior resident will do the same at line 23; this is “his” student and because it is “his” student for whom he has some responsibility, it is by extension “his” patient during the night time hours. Both thus advance the schematic sequence (lines 23 and 29), which the medical student will later finish (lines 39 and 40).

Language acts of this nature, where a more experienced participant controls an activity in the presence of a novice, are reminiscent of Vygotskian principles through which novices learn to incorporate language that will enable them to meaningfully control and engage within a task (Frawley and Lantolf 1985).

Later on, having participated in this initial exchange, the medical student’s control of the task of sign-in case presentation is more thorough. He has incorporated the legitimate steps of the normative schematic sequence. His control of the task has improved, as he has
now adjusted his presentations in the context of sign-in to reflect the schema that the night float junior resident has been modelling. Although the effects of therapy step is out of schematic order, that part of it made it through prior (“the chest tube has drained eighty-five cc’s”) seems to be sufficient to silence correction. Instead of interrupting and demonstrating to the student what is important, the third-year senior resident now affirms his presentation. He has also adopted the out-grouping of non-CTU members (line 2) and also kept less relevant information (the side-effects of medication, which are not interfering with the patient’s current treatment for pneumonia) to the end. There is an absence of non-biomedical information. Finally, he has gained legitimacy in the eyes of the group in that he is allowed to move onto the next patient without someone telling him either than he is allowed or that he should do so (line 11):

1 Sr (3rd-Year) Resident
2 3rd-Year Medical Student (A)
3 Jr (1st-Year) Resident (A)
4 3rd-Year Medical Student (A)
5 Jr (1st-Year) Resident (A)
6 Jr (1st-Year Night Float) Resident
7 Jr (1st-Year) Resident (A)
8 Jr (1st-Year Night Float) Resident
9 3rd-Year Medical Student (A)
10 Jr (1st-Year Night Float) Resident
11 3rd-Year Medical Student (A)

Awesome
Dentistry also came by, and they said –
Oh, they did? Good.
yeah, they did, and they said that the stains just due from the iron supplements and it should go away once he stops the supplementation.
Uh, good! Good.
(laughs)
I think
Not antibiotics?
No, it’s from the iron!
No, I’m just
yeah, uhm, who’s next?

Sign-in also includes the presenting of new admissions by the “night float” senior resident, who takes control of the conversational floor, even if the one he is interrupting actually did the admission. His arrival signals that “running the list” is to be put on hold, as exemplified by the following scenario:
Once new admissions have been discussed and all patients on the roster have been discussed, the end of sign-in rounds involves the division of labour. This is the point in time in which responsibility for patients is meted out, often by the second-year junior resident. The role is given to her by the senior resident in that she is learning the skill set necessary to perform as a third-year senior resident, as she will be in a few months’ time. Appendix O includes an exemplar of this process, in which the residents first decide which patients they will assume responsibility for, followed by the medical students.

The end of sign-in rounds foregrounds the educational aspect of participating on a CTU, which itself is in tension with the service work required to perform patient care. Line 1 suggests that patients are a resource to be parcelled out to the learners, and that the residents need to be given patients first. The residents seek equitable distribution in number (lines 13-15) and organize their relationship to the patient as learning commodities and as biomedical diagnosis (lines 21, 29, 31, 36, 44, 49, 51 – “I’ll take the ALTE”, for example). Once this division is concluded, the second year junior resident moves her attention to the medical students (line 53). While the students call their patients by first name to start (lines 57 and 61), they quickly adopt the practices of the residents and call their new patients by biomedical diagnosis (line 63 – “I’ll take the ALTE”). The second year junior resident’s early comments about drawn-out patients line 53 is paralleled by the medical student’s comment in line 69 about the patient with HSP (“Yeah. That’s interesting.”) The teaching
that follows from the second year resident regarding HSP is strictly pathophysiological in nature, adhering again to the discourse of patients-as-disease-category and specifically here as educational commodities. All patients with HSP are reified into a they (lines 87 and 92) during her discussion of the disease. Finally, at the end of the interaction, the second year resident creates a category for “the new ones” (line 100), which silences the potential learning interaction for the medical students and decreases their opportunities to become legitimate participants.
CHAPTER 5: DISCUSSION

5.1 Doing-Being

In their discussion of competency, Jarvis-Selinger et al (2012) bring in the concept of identity, arguing that in so doing one need focus not just upon doing but also being (their italicization). As useful as this may be as a conceptual model, however, this arbitrary segregation of arguably the two most salient verbs in English may unintentionally create an artificial dichotomy. Being (be-ing) in English points multidirectionally. As a gerund (being), it is a noun and signifies stability, location, and identity-as-some Thing. In this form, it foregrounds an ontological position, laying out an entity's position in the worlds in which that entity is. As a progressive tense verb (being), though, it also signifies action and resonates with verbs of action such as “to do”. It foregrounds movement (over time) and identity-in-action (or, perhaps, en-acting). It is an actual “doing”, so to speak, of the ontological position circumscribed by the first definition of being. Recognizing that the term holds both positions simultaneously is a first step grappling with the difficulties of integrating the concepts of identity-through-practice and identity-as-practice.

In keeping with this, medical students, through their performances of case presentations and sign-over, participate actively in family-centred and sign-over rounds. Through these recurrent educational interactions with preceptors and patients in the contexts of the CTU, medical students’ professional identities coalesce in part through the changing organization and content of their speaking practices. Simultaneously, echoing Gee (2005), the accrual of identity from these recurrent interactions establishes something recognizable to one’s self, others, and society at-large.
The concept of “I”, referencing an individual physical body, is easily conflated into an assumption of socially performed identities as autonomous, finished, total, and enduring. As Bucholtz and Hall (2005) note, however, identity is always partial and contingent. It neither localizes within individuals, nests neatly within broad sociological categories, nor is independent of context and interaction. Nguyen (2006) refers to the concept of “do being” as another way of understanding how identities continuously enable practice and are themselves continually practiced. The “doing of being” foregrounds the performative aspects of identity, which in turn are bound up with the relationships between individuals, social groups, and cultural frames. Identity work is never finished, even as how people are perceived by other individuals and societies changes with individuals’ gradual accruements of the residues of cultural symbols, capital, and power.

Following Jarvis-Selinger et al (2012), then, who suggest that individuals at a certain point “no longer ‘act’ like physicians, they have become physicians”, performative understandings of identity suggest that actors are always “doing being” themselves. Admittedly, it may be that over time the work of performing the self is less visible, as there seems to be persistence in how experienced experts and virtuoso practitioners go about their professional tasks. Yet performance never ceases; one is always in a state of becoming, due in large part to the relationships and activity systems in which one is enmeshed, for, as Butler (2004) notes, “we are undone by each other”. In addition, we are undone by our relationships and by the constant re-makings of the self worked by and upon us through experiential interactions with other beings and the world. While positions and perspectives may stabilize and remain recognizable, people are always changing across their life-course.
It follows that the same adage holds for professional life-courses, from pre-clinical student to

\textit{novice} expert to \textit{experienced} expert.

In these early days of unapologetic clinical immersion, then, what is emergent from one’s constant interaction with the training environment is palpable and evident. As noted, there are striking differences in both medical students’ case presentations (Appendices G and H) and sign-over (Appendices M and N) on the order of a few weeks. In relatively short order, they have learned to place caregiver participation towards the end of case presentation after most of the daily actions have been decided upon (Appendix J). They have also learned how to participate in the language of \textit{patients-as-disease-category} (Appendix O). While this developing positionality entails certain future practices rather than others for these learners, it also allows a vantage point onto the existent tensions within the CTU activity systems between \textit{patient-as-disease category} and the practices of care based around meaning-making within the contexts of patients’ and caregivers’ lives.

How \textit{being} is progressively \textit{done} by medical students in particular as they struggle to participate meaningfully on the CTU puts these tensions into play. Further, how their professional identities are emergent has much to do with a movement from lay understandings of health and illness towards professionalized understandings, which are mediated by interactions with preceptors around activities of patient care. This dynamic positionality is built up by repeated practice, re-inforced by ongoing interaction, and must necessarily entail certain future interactions towards patients rather than others.
5.2 Person → Physician, Person → Patient: From Self-Same to Other

Noticing, prioritizing, and engaging certain aspects of interactions rather than others are all at the heart of how one does being. Current students live in a time in which there is an increasing thrust for diversity in North American medical school cohorts, increasingly championed by medical education policy leaders (Nivet 2011) and medical school admissions/equity leaders (Young et al 2012). As noted, there is some variation in points of origin from which people enter into the field of medicine to become medical students. At the same time, the level of diversity as currently championed might be less than popularly believed (Razack et al 2013). For example, matriculating students have very similar socioeconomic heritages, and their teleological goals of “becoming physicians”, as suggested by their decision to enter medical school, are also similar. Further, attempts for increased diversity may be unintentionally undermined by unappreciated power asymmetries (Razack et al 2013), leading to the majority of those currently selected for admission continuing to come from similar socioeconomic and racial backgrounds.

Bucholtz and Hall (2005) note that broad sociological categories are not the final word on identity, but certainly it is possible tendencies towards certain values and practices may cluster in these categories and suggest that the medical students under study – all from undergraduate science backgrounds – may share some similarities the moment they set foot through the doors on their first day. In addition, as contemporary understandings of competence are increasingly enrooted in ideas of homogenous standardization, medical school curricula may further efface attempts at diversity through normative practices of training and produce learners remarkably similar to each other in professional worldview (Schrewe and Frost 2012). These similarities – in addition to the short amount of time
preceptors get to spend with them – may be a reason why preceptor teaching practices towards most students can be based on observed behaviours and end up somewhat uniform.

Despite coming largely from certain societal groups, medical students have nonetheless largely grown into early adulthood in the *popular* realm (Kleinman 1978). Their beliefs and schematic understandings of health and illness have been similarly shaped. What they initially notice in clinical encounters at the outset of their training – underpinned by their understandings of health, illness, and health care – proceeds accordingly. While some are relatives of physicians, their formative experiences with health care are more likely to be as patients or as relatives of patients. Bleakley and Bligh (2008) recognize that medical students initially identify with sick persons as “selfsame”. However, as students gain clinical experience and gradually join the professionalized medical world through their progressive adoption of its classificatory schemas of health and illness, there is a gradual reframing of their relationships with patients from “selfsame” to “other.” It is this shift that makes it possible to participate in sign-over discussions using the language of *patient-as-disease-category* (*Appendix O*).

As previously noted in students’ changing organizational schemas and content of case presentations, this shift is largely influenced by the beliefs, practices, and stances of their preceptors. It is in observing the early conversation that the medical student then says in line 63 “I’ll take the ALTE?”, which is immediately met with the junior resident’s declarative reformulation of that very line. This time, however, it is encompassed with falling prosodics at the end of the sentence indicative that the student’s “taking the ALTE” is both a right course of action and a legitimated way of speaking. Through seemingly mundane
interactions such as these, medical students gradually come to “do being” a *novice* expert and lay foundations for further practice.

Echoing Hall’s (1990) notion that “the Self constructs as the Other is invented”, Good (1994) notes that in part it is through “speech acts” that “authorize the medical student as (they) construct the patient.” Indeed, Ochs (2012) notes that language and experience are inextricably bound up in each other. By recurrently navigating the tensions bound up between the direct patient care aspects and medical educative aspects of case presentation, medical students begin to adopt a distinct professional identity that progressively locates themselves as members of the *professional* realm.

### 5.3 Event Sequence and Cultural Sequence

Activity systems are products of history; histories themselves are stories that have emerged in part from social and cultural practices that have accrued over time. The outcomes that result from activity systems thus are historically contingent and result from the adoption of certain practices rather than others. Quinn (2011) notes that narrative “is all about sequences of events” and suggests that this stance carries importance on two levels. Firstly, narratives in their local telling carry internal structure and coherence by the sequences of events they relate. At the same time, narrative recounting is also framed by larger cultural understandings about the theme of the narrative in general. In the above examples, then, case presentations and sign-over have normative internal sequential organizations but are also structured by broader cultural understandings about what their sequences should presuppose, include, exclude, and entail. In these situations, the schemas elicited from the data suggest that identifying medical problems that can be solved by medical interventions are the coordinating factors. This may be why caregiver voice is
sidelined until the end on FCR; it is not considered to be relevant in the formulation of medical issues in the case presentation but rather seems to serve as a superficial vetting function of approval from families. That the conversation the mother repeatedly tries to have at the end of FCR is quickly closed down by the resident is telling. This practice has also been witnessed in totality by two pairs of third-year clinical eyes trying to rapidly assess what is relevant.

Quinn’s work dovetails nicely with Silverstein’s work with indexical order (2003). He tethers together this baseline internal structure that occurs in everyday practice with that of wider frames sociocultural frames of relevance. He postulates that the local presuppositions and entailments that construct an everyday interaction (nth level) are indexed to broader cultural frameworks (n + 1 level). This strengthens the explanatory reflexive links between everyday interactions and the sociocultural contexts with which they are in dynamic co-construction. Eckert (2008) builds upon this with her postulation of the indexical field as a “constellation of meanings that are ideologically linked” and are “the embodiment of ideology in linguistic form”. Far from static, the use of language at every point is equally representative, constitutive, and potentially transformative of an ideology. This theoretical stance then offers a compelling argument as to why everyday, seemingly mundane interactions such as case presentations have much to teach us about which practices, beliefs, and assumptions medical practitioners hold themselves, inculcate in the medical generations that follow them, and allow for identities to emerge and change over time. It also sets the stage to understand why the tensions of patient-as-disease category and more comprehensive care are preponderant.
Good (1994) notes that medical professionals themselves are not merely empty vessels through which clinical medicine flows but rather conscious actors situated within a place and time. Despite the worldview of clinical medicine emphasizing a rational empiricism in pursuit of revealing an underlying fixed reality, the practice of clinical medicine – in that it is practiced by physicians – is an activity of interpretation. Representation of sick persons as patients is a rhetorical act, filled with decisions to include certain types of information and certain degrees of detail rather than others. Quinn (2011) goes on to refer to Labov’s (1972) concept of evaluation, an element in the narrative that provides its point. On the everyday front, this can be thought of as the rhetorical force of the impression and plan of a case presentation that will provide coherence to the phenomena interpreted in a patient’s admission trajectory. As the attending paediatrician present during the observation period noted during her interview, medical students’ attempts at impression and plans are what she considers most important in their presentations. The medical student is given space to do so in line 21 in Appendix G and lines 28-29 in Appendix H. Her rising prosodics of uncertainty and the junior resident take-over in great detail in the former contrast with the falling prosodics of increasing confidence and the relatively lower amount of information the junior resident contributes in the latter. She is learning to emphasize and tailor this normative rhetorical act in particular.

At the same time, on the broader plane, medical students recount case presentations in order to participate legitimately and perform an identity that indexes competence and novice expertise. Therefore, how medical students progressively learn to organize information in certain ways and include certain degrees of detail when making producing narratives of case presentation and sign-over is indicative of their interpretations and gradual
embodiment of the assumptions, beliefs, values, and goals of the larger professional medical world in which they are learning to participate. As much as what they learn is possible to say, they also develop knowledge of the necessary absences – what should not and cannot be said (Kulick 2005).

5.4 From Natural to Normative

In the early phases of clinical training, medical students are actively transforming their fundamental understandings of health and illness. In that process, they are actively becoming physicians by incorporating their understandings of the practices of what physicians do, gleaned from repeated interactions with their senior colleagues. The progressive mastery of the organizational schema and informational content of case presentations is a critical part of that process of becoming, and one that is evidenced in students’ increasing ability to hold the conversational floor, provide more information before the conversation is taken over by the resident, and index confidence by falling prosodics.

Medical students’ performance of utterances gleaned from what is said, how it is structured, and what silences underpin them is linked to their understandings of the context that envelops them. In other words, everyday case presentation and sign-over participation resonates within the broader assumptions and contexts about health and illness in which medicine is situated. That these activities are interpretive and responsive to certain contexts and assumptions rather than others suggests that they are normative and situated, not natural and fixed.

While what is currently in place enables the CTU to complete its linked activities of patient care and medical education, it also silences alternative possibilities of patient care and medical education. The positionalities that medical students learn to embody in order to “do
being” a legitimate participant are themselves legitimated. While they are legitimated constantly through their instantiations, this legitimacy is contingent upon the contexts of in which these identities are performed.

Bourdieu (1991) has noted that what a social group – such as experienced expert medical professionals – deem relevant and pertinent is not simply self-disclosing, natural, and taken-for-granted. Rather, the group’s legitimate language – representative and constitutive of its shared beliefs, practices, and relationships to others and to the world – is normative, resulting from the interplay of certain social, cultural, political, and historical factors. These are often “hidden out in the open”, so to speak, between interlocutors whose positionalities are similar, as in order to communicate efficiently, shared assumptions must exist. They are often never explicitly voiced, leading to confusion in learners regarding relevance and orchestrating potential Babelian interactions between different medical disciplines, and between medical professionals and patients and families. The use of language in groups such as medical professionals is necessarily a restricted and normative code. In medical practice, it is one written heavily in biomedicine, which in many ways serves sets off professional identity legitimation and the professional realm from the popular realm. It is the ontological and epistemological underpinnings of medical training, and in order to make the most sense out of what was observed, with regards to medical student positionality emergence, it first needs to be pulled up by the roots and its foundations made explicit.
5.5 The World of Western Biomedicine

Good (1994) suggests “medicine formulates the human body and disease in a culturally distinctive fashion” and acts as a symbolic form “through which reality is formulated and organized in a distinctive manner.” In the context of North American healthcare, Kleinman (1995) interprets this “culturally distinctive fashion” as biomedicine, in which disordered biological processes of the body take precedence. The importance placed upon finely-grained qualitative detail regarding signs and symptoms, and the quantification of physiological processes overshadows and even obscures how people experience, live, and suffer those signs and symptoms in the contexts of their everyday lives. Foucault (1963) states that modern Western clinical biomedicine distinguishes itself from its predecessors and ancestors by the importance it places on formulating individuals (themselves subjects) as objects of scientific study, or patients.

This manner of looking, or gaze (regard), views a living and experiencing embodied person (Leib) through a lens of organ-based pathological anatomy, a system of beliefs about the world that foregrounds the physical body as material object (Körper) (Duranti 2010). Medical professionals progressively learn to formulate a person as a patient by integrating a patient identity from empirical data drawn from interviewing the person (Leib), direct interrogation of his body (Körper) by visual, auditory and tactile explorations, and ancillary laboratory and radiographic investigations (Leder 1990). Foucault (2002) further notes that physicians trained and socialized in clinical medicine learn to conceive of themselves as completely objective and rational. Taylor (2003) echoes this, describing it as medicine’s “culture of no culture”.

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It is a truism to say that no fish can define water, but in their medical training and on this ward, the medical students observed received no information or discussion about how they too might be becoming situated in certain traditions, beliefs, and actions as opposed to others. Further, as a largely post-positivistic pursuit, biomedicine as a tradition has had difficulty both being self-critical and admitting other beliefs about how the body is represented, how illness is experienced, and how there are other belief systems concerning the relationships between health, illness, and disease. These students, then, are accommodating to a system where critical signifies critical appraisal in terms of using epidemiology to explore clinical interventions. There are good reasons why, despite repeated efforts, there is very little content of caregivers’ speech during family-centred rounds and that the medical student interactions with caregivers is far less in the late presentations; these contributions are relatively speaking less relevant than fine-grained physiological detail, and their space in the schema, relatively narrow.

An inability to recognize that biomedicine is itself a cultural system situated in history with certain assumptions and practices may lead its practitioners and members into unintended misunderstandings with patients. Because of this situatedness, communicative competence in the context of the professional realm cannot translate seamlessly into interactions with patients whose health care beliefs are in the popular realm. Of course, neither of these realms is unitary in that their respective members participate to varying degrees in the dominant beliefs and practices of each realm. That being said, the effects of professional competencies that now structure much professional medical learning do exert powerful effects on the activities of a CTU.
Formal competencies are descriptive, in that they are themselves normative statements that are produced from what their authors understand professionals have done. They are simultaneously prescriptive in that their implementation into activity systems of patient care and medical education constrains the outcomes from these systems and, by extension, professional identity formation. This leads to a professional realm with further cohesion and accommodation to certain defined health care beliefs and practices than the wider variation experienced in the popular realm, itself not constrained by competencies. Given that biomedicine is a prestigious world, some of its beliefs, practices, and language have circulated into the popular realm and influenced beliefs and expectations there. However, there nonetheless must exist at least subtle but real differences between the worlds of medical professional and patient, based upon roles of interaction, experience with the physiological aspects of medical diagnosis and treatment, and the differing expertises possessed and assigned value by physician and patient.

These differences may often fly under the radar; however, they may result in paradoxical wounding and mistrust between medical professionals and patients. As one preceptor articulated, cross-cultural differences can lead to major misunderstandings with real consequences:

**PedF**: “You know, they take all the clothes off and then basically the baby has no clothes on, just a diaper. And you know this allows the nurse to come in and listen to the chest and you know medically, clinically, you know as physicians we can see the way the chest is moving, uhm, you know and also the nurse comes in and measures the temperature, is a lot easier.

But, to an Asian family, to a Chinese family, this is almost unacceptable. Because they’re always afraid that their child will catch a cold. The child comes in, with bronchiolitis, the child’s having obviously, to the parents the child has caught a cold, therefore the child is sick, and now you’ve taken all his clothes off because that’s the right way to do in the Western country but to them it’s like, Oh no! What are you doing!? You know, you’re making my child worse!
You know there’s a lot of misunderstanding, there’s a lot of misunderstanding. It’s not to say that either side are wrong or right but different ways of doing things.”

The diagnostic act, in-and-of-itself, however, is not necessarily denigratory, and in the cases illustrated, caregivers do seem to grasp its benefits and appreciate professionals’ input. Indeed, learning this normative formulation of health and illness is in many ways of great utility. Foucault (1989) has suggested that the practice of clinical medicine focuses upon certain details rather than others, allowing physicians to recognize and name disease. Diagnosing, literally the act of “coming to know something as apart or distinct” seals a biomedical identity onto a person, transforming her/him into a patient in the contexts of the health care centre and simultaneously organizing therapeutic activities (Rosenberg 2002). Good (1994) remarks that these “diagnostic and therapeutic activities…can be understood as efforts to counter the unmaking of (a person’s) life-world. Diagnosis is an effort to depict the source of disease, to localize and objectify cause. One of the central efforts in healing is to symbolize the source of suffering, to find an image around which a narrative can take shape. To name the origin…is to seize power to alleviate it…and is also a critical step in the remaking of the world, in the authoring of an integrated self.”

However, the professional realm, infused by the beliefs and practices of biomedicine, is still a position of prestige in Western societies and cultures. Despite good intentions, such as the same preceptor noted:

**PedF:** “you know, and we, we, we’re here to sort of convey information in such a way that, you want to involve the parents, and and to ensure that they understand you, based on their cultural needs, rather than just coming across as you know well – I’m the Western doctor, I know better than, than you guys. This is how we do things here.”

certain denigratory outcomes may be realized. Despite the obvious role of individual agency in speaking practices, activity theory reminds us that outcomes are not products of
individuals but rather mediated by multi-faceted relationships that structure systems. While one may attempt to “work the system” on the individual patient level or “change the system” on a population level (Dobson et al 2012), individual agency alone may not be enough to overcome longstanding and well-ingrained practices based upon deeply-held ontological and epistemological footings. While it may be overstating the case to simply state that systems will do what they are designed to do, the ways in which power operates is subtle yet preponderant; echoing a trace of Fanon (2008), even medical students theoretically resistant to these practices are still colonized through an intensive indoctrination to the ideologies of biomedicine and the ways in which it is instantiated in clinical practices. Reducing this power asymmetry, finding concordance between physician and patient expertise, and inculcating a professional identity positionality that is cognizant of these differences requires first an appreciation of factors so normalized as to be taken as natural, self-evident, and without cause.

5.6 Becoming Biomedical

As one of the health care professions, medicine attracts many who are driven to help others and advocate for them in issues surrounding illness and health. The ability to function as a physician in contemporary society affords abilities to provide a name to the sufferings of another person. This act of diagnosis not only structures therapeutic management but can also help someone make sense of suffering. As a result, physicians are invested with significant social capital and enjoy a high standard of living.

The learning and incorporation of the biomedical formulation occurs at a vulnerable time in the trajectory of medical students, who have recently arrived to the unfamiliar professional sphere of the academic health sciences centre. Not unlike patients, medical
students at the outset are in unfamiliar territory. At this introductory stage in their clinical training, they are learning the patterns of social grammar through which they must act and the schemas by whose rules they must speak in order to participate legitimately and meaningfully in the context of a CTU, and by extension, be in the world of medicine and do being a medical professional. They are literally at the margins; rotating through the paediatric in-patient service for only a four-week period is indicative of transience and impermanence. Their prior life experience, valued so highly by admission committees (Schrewe and Frost 2012), carries less weight in a learning environment where their own multi-faceted identities are decontextualized to principally that of a medical student. They are in totalizing environments filled with long hours and a lot of work. What is striking from the microethnography, despite the medical students’ impermanence, is how quickly they come to form bonds of work with the residents, particularly in sign-over. Jokes are exchanged, discussions around patient care emerge, and re-tellings of one’s on-call or patient encounter experience are commonplace. These are in themselves meaning-making activities that serve as glue for pedagogical relationships and lubrication for the adoption of what is observed and taught.

In addition, given that access to desired residency (postgraduate) positions are in large part decided by the summative evaluation of clerkships which also offer the possibility of influential letters of recommendation at each rotation’s end, there is constant pressure for medical students to participate in such a way as to be conceived and legitimated as “good” students by their preceptors. For all of these reasons, then, the needs and desires for anchors, direction, and guidance towards normative practices are high. As a result, the majority are forced towards accommodation towards the positionalities of their preceptors. As Bernstein
(Daniels 2004) notes, preceptor speech is both instructive and regulative, which in turn is taken up by learners who accommodate to and largely reproduce the norms of the system.

Concerning their definitions of good students, many preceptors did indicate explicitly that biomedical knowledge was less important to them than qualities such as an openness to learn, a willingness to make mistakes, project honesty, demonstrate interest in the subject matter, and act with responsibility towards patients and fellow team members. However, it may be that the uptake and retention of biomedical knowledge is expected in varying degrees by all students and not used as a meaningful marker of distinction. In her work on technological innovation in medicine, Koenig (1988) refers to the construct of routinization, by which novel innovation – so lionized at its début – gradually fades to the background as it becomes progressively normalized. That is to say, it becomes so routine as to be taken for granted. Thus, it is possible that biomedical knowledge is not considered a hallmark of a good student to preceptors because, despite ongoing evolution, it has been a major foundational cornerstone in Western clinical biomedicine for more than one hundred years (Schrewe 2013). In keeping with the ideas of novelty Koenig (1988) discusses, the themes that emerged from preceptor definitions of good students fit into much of relatively recent novel discourses in medicine and medical education around physician professionalism, interprofessionalism, and team-based approaches.

Further, learner enthusiasm can make one’s teaching practice more rewarding, as an engaged learner can stimulate novel thinking in preceptors. Studies such as those of Hall (1998) have pointed out that in educational environments, students can have very different opportunities for learning based upon differential teacher attention to what learners say and do. Interestingly, these recurrent interactions are an underappreciated, yet critical source of
feedback that differs from how it has been traditionally constructed in medical education. Literature has conceptualized feedback as formal and explicit, which admittedly echoes these preceptors:

**ResC:** “(While) I don’t think it’s key to be honest, I think after a month, on a service and I think I said on CTU’s where I have the most contact with them, I think after being on a month, I would hope to see quite an improvement from how they started out and I would hope they could do a good presentation, after a month and that would make a good student, but if they couldn’t do it the first week or two I don’t think that necessarily makes a bad student, I think that a good one would be working on it, and with each feedback they got, would work on the feedback they got at that time and make the necessary changes...so I don’t think hugely important but I would just hope that it would, that there would be improvement throughout the month, that would be a good student, and who had obviously listened to the feedback they received and improved upon those specific points (so it’s much more about the change than the absolute.)”

**PedE:** “Students for the most part, they only perceive theyre being taught when you tell them theyre being taught...Unless it’s labelled, they do not recognize it.”

However, as noted, medical students accommodate towards the legitimated schemas of case presentation and sign-over they both passively observe and actively participate in, using constant interaction with their audience to shape how they use language. What preceptors crystallize into formal feedback at dedicated times is built in part from the raw material of how preceptors assess student performance in daily interactions such as case presentations in which the essence of social being is communicated. As a result, this also feeds into the performative aspect of case presentations. They are medical students’ opportunity to talk and make visible the effort they have put towards engaging with medical knowledge, critical thinking, patients, and families. Continued presentations and the interactions arriving from them allow a novice to practice and progressively master the legitimate schema of a presentation, what types of information chunks fit within that structure, how they are sequentially organized, and what types of information are not to be
included. They are opportunities for novices to construct themselves as “good” students and thus increase the likelihood of a positive rotation evaluation and letter of recommendation. Both of these are necessary tokens towards obtaining a residency spot in the trainee’s preferred field and may distinguish them from other applicants. Finally and importantly, the incorporation of a schema that results in “good” presentations allows students to continue to evolve a legitimate professional identity.

5.7 Multiple Sites of Biomedical Action

Sign-over presentations and case presentations on FCR are linked entities in that medical students’ participation within each allows them opportunities to perform their burgeoning professional identity and gradually inhabit the positionality of a medical professional. These critical acts differ in two important ways: their timing and their audiences. Sign-in rounds are the first event of the day for the CTU and are comprised solely of an audience of medical professionals and professionals-in-training. To that end, persons can be constructed – and as we have seen, often are – almost purely as biomedical entities. A conference room behind closed doors serves as a place where a child can be talked about as “the ALTE”, persons with illnesses such as Henoch-Schönlein Purpura (HSP) can be reified into a faceless “they”, sick children can be divided up among trainees as learning opportunities, and patients can be conceptualized as commodities to be discharged. The CTU’s dual roles in these ways reveal the power asymmetries inherent in the physician-patient and teacher-learner relationships. Despite professions of co-construction, patient-centred care, and team work, the former do exert control over the latter not in blatantly repressive top-down ways but within the subtleties of conversational interaction. In many ways, how patients are constructed at sign-in structures how they are represented during
FCR. In tandem, how medical students learn to talk about “their” patients during sign-in sets the official parameters for how they interact with them during FCR.

This idea of responsibility cuts two ways. While it indicates responsibility and actions of care, it also implies ownership and a taking over of a patient’s agency. Medical students learn to be delegates for the patients for whom they are charged with responsibility, and to that end are authorized to speak “for” them at these closed-door sessions where patients, their families, and caregivers are neither present nor invited. This parallels the schematic sequences of FCR; caregivers and patients are allowed to be present but the point at which they are invited to participate during rounds as anything more than passive listeners occurs only after the impressions have been stated and plans have been made. They are paradoxically supporting characters on a stage in which their physical bodies are the main attraction and the central axis around which meaning-making unfolds for the medical team.

Two critical contexts in which medical students learn to construct patient identity are thus spaces into which patients and caregivers are neither present nor invited (sign-over rounds) and peripheral players (FCR). This is indicative of a larger structural point – the hospital is the turf of medical professionals. They spend tremendously large amounts of time in these spaces and have grown accustomed to its rhythms, routines, and practices. Contrast this with the experience of each child and family, many of whom are admitted into hospital for the first time amidst a period of uncertainty and unknowing. Even those who have been admitted to hospital multiple times suffer through the uncertainty and experience that comes with acute exacerbations of chronic illnesses, being sick in a place that is not their home, and responding to schedules not their own.

In the telling of a clinical narrative in a biomedical context, there are multiple points
for marginalization of the other spheres in which a patient inhabits. Firstly, the grounds upon which clinical encounters occur are physically removed from the spaces in which direct lived experience occurs. Secondly, the primacy of diagnostic and therapeutic formulation by a physician organizes the reception of the narrative at the expense of functional concerns, suffering, and triumphs. Finally, how the physician is perceived by the patient and the caregiver modulates the relationship of recounted narrative to the direct lived experience from which it is drawn, perhaps prioritizing information considered more relevant to disease than illness experience.

5.8 Same Physical Spaces, Different Positional Places

Some of this difference in stance may be revealed by exploring the places of early clinical training. Clinical training still occurs largely in professionalized spheres such as a CTU, which itself is ensconced in an academic health sciences centre. While to the medical profession it may seem like the forest, it is in fact one tree in a much larger landscape of health and illness. The situation changes complexion when placed against the backdrop of society as a whole, casting light upon a longstanding phenomenon. McCreary (1968b) suggests that strikingly, medical doctors supply health care to only a minority of a population. Even more intriguing, medical learners in teaching hospitals were exposed to only one person out of 750 who had sought health care over the course of a month (White et al 1961). The repeat of this study, undertaken 40 years later (Green et al 2001), demonstrated remarkably similar involvement of medical doctors in public health care. This relationship notably holds for paediatrics in the United States (Dovey et al 2003), where the majority of health care interactions with the professional realm (still the minority of all health care interactions) happen in the office-based setting. While loci of undergraduate
training are beginning to shift from exclusively acute-care based to distributed contexts in medical training spheres in several countries (Woollard 2010, Bates et al. 2011), the majority of undergraduate learners in Canada spend the lion’s share of their clinical training time within the academic health sciences centre.

Kleinman (1978) concurs, noting that while the vast majority of interactions with health care professionals occur in the professional realm, it is actually within the popular that sickness is managed 70 – 90% of the time. Additionally, it is in this sphere that decisions about whether to seek help or comply with advice and therapeutic regimens from the other two domains are taken. The professional domain, in which the “clinical reality” of biomedicine as a socially legitimated context of sickness and care is located is, in contrast, a far smaller space. However, it is within its boundaries that biomedical training exclusively occurs; traditionally, interactions of its members with sick people rarely venture beyond its borders. (Good 1994) As a result, relationships and understanding of the lives in which illness is experienced is truncated by interactions limited to the relatively short time periods of high-acuity care. Thus, although originally immigrants to the world of medicine from the land of the population for whom they are now helping to care, medical students learn to focus preferentially upon biomedical interpretations through their alignments to their preceptors and to the training environment of acute care.

As previously noted earlier (Appendix H), the medical student began to shift from this patient who has RSV to treatment and management of RSV in general. She is learning a schema of case presentation that aligns to a deeper and, for her, novel schematic understanding of health and illness. That she has learned to incorporate her comprehension of this individual’s illness into a wider understanding of broad based diagnostic and
therapeutic categories, is potentially of great use. As she progressively migrates into the _professional_ realm and away from the _popular_, however, difficulties in patient-physician interaction may arise in her inability to close the loop – that is to say, to contextualize her schematic biomedical understandings of health and illness back into the unique life of this patient. The importance placed upon finely-grained qualitative detail regarding signs and symptoms and the quantification of physiological processes overshadows and even obscures how people experience, live, and suffer those signs and symptoms in the contexts of their everyday lives.

As evidenced by Dovey et al (2003), the vast majority of medical professionals and trainees who work on a CTU encounter the vast minority of sick children who are brought to professional medical attention. That they are actually providing care to a relatively narrow slice of the paediatric population is not often appreciated by many medical professionals and their trainees. Also lost on them is the curious cultural practice of caregivers bringing their child – who arguably they know better than anyone in the world – to the attention of, often, a total stranger wearing a stethoscope in an often-unfamiliar space filled with other sick people. Pointing this out illustrates the degree to which people will go not just for medical help but also meaning-making; the evolution of disease leading to an experience of illness is beyond the sense-making abilities of caregivers, or _the_ experts in this life of this child. As Svenaeus (2000) has suggested, a stance focused narrowly upon medical problems to be solved may come at the opportunity cost of more comprehensive conceptualizations that understand the embodiment of illness as a broader network of relations in which biomedical considerations are an important thread, albeit one woven into a greater tapestry.
This leads us to the persistent disconnect that makes terms such as “bronchiolitic” possible, enduring, and remarkably tenacious. Despite occupying the same physical space, such as a patient’s room, the caregiver and patients are members of the *popular* sphere on the terrain of those whose positionalities inhabit that of the *professional* sphere. Although their worlds intersect in interactions around patients, they are very different. The following table illustrates an approach these differences as applies to an acute care paediatric ward:

**Table 5.1 – On Different Perspectives of Health Care**

<table>
<thead>
<tr>
<th><strong>Medical Professionals</strong></th>
<th><strong>Caregivers</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Expertise in child health</td>
<td>Experts in this child</td>
</tr>
<tr>
<td>Acute Care Centre as Routine and Everyday</td>
<td>Acute Care Centre as Foreign and Unfamiliar</td>
</tr>
<tr>
<td>Language of health and illness is highly technical/biomedical</td>
<td>Language of health and illness is popular and public</td>
</tr>
<tr>
<td>Emphasis on patient-as-physical body</td>
<td>Emphasis on patient-as-sick child</td>
</tr>
<tr>
<td>Health Care Experience in Professional Realm</td>
<td>Health Care Experience in Popular Realm</td>
</tr>
<tr>
<td>Diagnosis structures therapeutic management</td>
<td>Diagnosis provides meaning to uncertainty</td>
</tr>
<tr>
<td>Locus of control over initiation of health care interactions</td>
<td>Responsive/reactive to health care interactions</td>
</tr>
<tr>
<td>Caring for multiple children and families</td>
<td>Caring for one family</td>
</tr>
<tr>
<td>Care is foregrounded as alleviating disease</td>
<td>Care is foregrounded as alleviating sickness</td>
</tr>
</tbody>
</table>

The following preceptor’s commentary serves to further contextualize these differing relationships to health care:

**PedF**: “And human beings have anxiety, and just to, just to give you one simple example, is is uh, you know, any parent will have a lot of anxiety, uh you know regarding the, the medical state of the child, whether its, whether you're dealing with a brain tumour, or whether you're dealing with leukemia or you're dealing with, something as simple as a bronchiolitis.”
He notes explicitly parental anxiety regarding their children becoming sick. However, his following line of “you're dealing with something as simple as bronchiolitis” is telling, in that “bronchiolitis” is experienced in very different ways. Stories such as those of children as presented by their caregivers “work”, so to speak, when conversational partners share understandings of what schemas are being invoked to organize and recount events. When physicians and patients narrativize events in different ways due to differing understandings of what is relevant, meaning may be lost. They may always talk at each other, but not always with each other.

To the medical profession, the rhetorical force of a diagnosis that emerges from a case presentation structures its therapeutic decisions and managerial actions. Knowledge gained from this encounter serves to reinforce and expand medical students’ understanding of a pathophysiological condition, building up their schemas of information organization and the content of those organizational categories. Indeed, terms such as “bronchiolitic” signifies a therapeutic framework of respiratory secretion suctioning, supplemental oxygen provision, oxygen and carbon dioxide level monitoring, possible use of medications, a need to maintain close observation for the possibility of initiating advanced respiratory support, and, for the vast majority of children, a short admission and unlikely further sequelae.

To caregivers, however, it carries the potential of being a name of unfamiliarity, confusion, and essentialization. Even lay language explanations of it demand a certain level of understanding of human anatomy and physiology that caregivers may not have. The appearance of their infant in severe respiratory distress is traumatic and extremely difficult, and is anything but normal. Thus, in the early malleable days in which medical students are developing their schematic foundations of health and illness through the recurrent
performances of case presentation, actively learning an inattention to this potential point of conflagration may result in embodying schemas that have insufficient flexibility to accommodate a critical part of health care and the therapeutic alliance. Similar to the eventual loss of plasticity in language development in children, prioritizing this construction of illness may lead to professional citizens who are fluent in biomedicine, but who speak the language of authentic patient-centred care with a nearly-unintelligible accent. While it flies in the face of conventional diagnosis, replacing the unitary “bronchiolitis” with the more flexible “bronchiolitides” is a staunch reminder that while many children may in fact have this biomedical disease, it is lived and experienced uniquely by each.

5.9 Patients at the Centre

The differing perspectives that acute care medical professionals and caregivers and patients have on health care locate themselves into a contested discursive space: that of patient-centred care. This phenomenon has arisen in recent years (Bleakley and Bligh 2008) as a way to improve patients’ experience of being ill in a highly-technologized acute care centre and inoculate the medical professional field from the slippery slope of unintentional reduction and denigration of patients to their biological disease. As evidenced in the table above, however, medical professional and personal perspectives hold overlapping yet discrete priorities and positions in relationship to health, illness, and patient experience. While initiatives such as family-centred rounds in this hospital are admirable and carry the potential for minimizing power differentials and their potential harms, they may be unintentionally obstructed by these competing and unarticulated perspectives. The professional sphere and the popular sphere carry very different ontological and epistemological foundations in their approach to how health and illness are formulated.
Legitimated positionalities within the sphere of professional medicine are situated in many ways to control the field of conversational interaction and constrain patients’ telling of their narratives of illness.

A prestige register such as professional talk can be taken up by those in the lay sphere through various channels of media – such as television, film, and world wide web – and recurrent interaction with health care professionals. However, by nature of the differing positionalities already mentioned, how the language is used and what it signified may be impressively different. Due, then, in part to their proximites and shared vocabulary around health and illness, they may paradoxically misunderstand each other with real consequences. Therefore, their competing conceptions of what the term *patient* describes and the structure of interactions this identity prescribes merit further exploration and rigorous, constant attention to keep these similar but important different definitions within each other’s view. It is critical to rigorously approach what forces shape and define the identity of *patient* and to better understand at the centre of which forces and factors this identity indeed is situated.
6.1 Limitations

As with all studies, this one was limited by certain factors. First, it would have been of use to have more preceptor participation, in order to further bolster empirical support for the themes developed and to discover others not captured within this data set. In similar fashion, the microethnography was limited by what the tertiary care paediatric centre and educational program under observation was able to offer to the research team. This study occurred around the halfway point of the medical students’ third year and was unable to capture both their entire month of acute care paediatrics as well as their interactions with the other group of residents and attending with whom they interacted. Those effects are unknown, as are the effects of their going through several other core clinical rotations prior to this one.

Further, there is a balance that exists between on one hand the localizing and unique, and on the other, the globalizing and uniform. The former recognizes that each learning community is uniquely situated in specific local traditions and histories. The latter notes that all learning communities within certain traditions and professions do share, to a certain degree, common practices derived from similar social and cultural understandings. This work’s wider applicability hinges upon an assumption of these similarities between the acute care paediatric centre under study and all medical educational paths for learners throughout Canada. In addition, this work relies upon an assumption that there are enough sufficient similarities between Canadian and American medical education to justify the use of some theory and commentary derived from exclusively American contexts (Good 1994,
DelVecchio Good 1995, for example) and the vagaries of how that country’s medical education systems have responded to their role within a non-public health care system.

Finally, while this study has alluded upon several occasions to the relationships between actors’ “doing being” a professional and “doing being” the other identities they embody, it explored these links neither explicitly in interviews with, nor in observations of, medical students. How these multiple and simultaneous positionalities of identity are brought to bear upon learners’ developing professional identities acknowledges the unique experiences from other spheres of their life course that influence who they are in their professional lives. In so doing, it offers the potential to re-configure how medical students are perceived by faculties. A recognition that learners inhabit similar professional identities that are emergent from original life contexts also menaces the reificative tendencies that faculties of medicine, as noted in their often “one size fits all” approach to formal curricular design and “the students”, possess towards their unique learners.

6.2 Untethering Competencies from Competence

This “one size fits all” tendency resonates within the discourse of social accountability with which professional medicine and medical education have continued to engage with in recent years. The CanMEDS professional competencies have germinated and disseminated widely in this discursive space, extending beyond national borders, and in their description of physician roles, have laid out a matrix of prescriptive right actions for all physicians. Medical education has not been immune to these effects; to paraphrase Max Weber, issues of competence may be “the fate of our times” for medical educators. Indeed, as Anderson (Hodges and Lingard 2012) states, a paradigm of competence now occupies the
centre of a contemporary medical education that is in the process of changing from a content-based system to a competency-based system.

Yet it is precisely in comments such as these that a troubling conflation between 
competencies and competence is readily apparent. As stated previously, the CanMEDS competencies framework lays out a “Communicator” role that enumerates how all competent physicians should communicate. However, while the text is populated by terms such as “effective” and “relevant”, the ontological and epistemological positionings of physicians are taken to be self-evident, variations between physicians non-existent, and the exercise of competence as a-historical and context-free. In contrast to this and in line with both Hodges and Lingard (Hodges and Lingard 2012), the empirical data captured and analyzed in this work forcefully suggests that the production of competence is historically situated, socially produced, culturally contingent, contextually-dependent, differentially distributed, and inseparable from relationships.

It is more than reasonable to suggest that no one would desire an incompetent physician; however, what competence is cannot be completely signified by the reductionist tendencies of a list of roles that are often assessed as a series of atomized examination check-boxes. Further, learners’ manifestation of communicative competence depends critically upon their progressive grasping of relevance, itself inexorably intertwined within multiple contexts. As students’ performative speech acts of case presentations and sign-over increasingly align with the normative understandings of their preceptors, relevance itself emerges. In so doing, students come to convey novice expertise through their enactment of a legitimate professional identity, socially recognizable to their preceptors and thus legitimated in and through the eyes of these full members of the profession students are actively joining.
6.3 Towards a Legitimate(d) Professional Identity

Much has been made in this work of how medical students’ professional identities are emergent through practices of language, with emphases upon shifting schematic organizations of information. As important as those syntactic and semantic relationships are, this is not to argue that becoming a novice expert and laying the groundwork for the progressive development of a professional identity is confined to the conscious aspects of conversational participation and simply a using of an organizational template. Professional identity is also very much embodied; DelVecchio Good (1995) notes that “clinical skills and knowledge increase ‘a hundred fold’ progressively becoming embodied and ‘second nature’.” Understandings and relationships of information come to be inscribed and ingrained in trainees so much so that conversational situations begin to be “felt”. Response cues are internalized, body positionings become taken-for-granted, reactions to information are ingrained, and what was once all new rapidly comes to be “hidden out in the open” and natural. It is in turn through this accretion and tuning of embodiment than one is able to “do being” a physician. It is important to note that this identity work is never fully finished. Although it may stabilize over time, it is always open for potential transformation.

These are the greyer areas of identity formation, where the residues of recurrent experiences and increasing participation in shared understandings of health and illness accumulate into a quintessential positionality heavily influenced by biomedicine, moving trainees progressively into the professional realm, and foundationally shifting how they medically view the world. For all of its emphasis on the probabilistic nature of differential diagnosis, biomedicine is a privileged yet situated knowledge that is understood as self-evident to those who embody it. The lens through which one looks can be misrecognized by
medical professionals as their “natural” diopter rather than as an agent of refraction, and therefore, revealing only one interpretive aspect of the multi-faceted illness reality that their patients are experiencing. This difficulty in seeing other facets may emerge from the relative inflexibility that biomedicine’s post-positivistic orientation has towards other ways of knowing, such as caregiver expertise, or other understandings of health and illness relationships, such as those that circulate in the popular realm.

That being said, this positionality does allow medical students to flourish in the professional realm and progressively participate in legitimate ways within it. While this positionality of professional identity has the veneer of individuality, the systems that created it are in large part responsible for its creation. Coming back to how it is manifested in conversational interactions, it constrains future speech patterns, such that medical students are tuned towards reproducing the norms of the activity systems in which they were socialized.

Indeed, the outcomes of professional identities legitimated by and harmonized with the norms of the system that produced them very much feed back into those activity systems. In this way they differ from Engeström’s (2001) model of third-generation activity theory, which interestingly only has unidirectional arrows between activity systems and outcomes. Many medical students will occupy a different point-of-view in future CTUs, that of resident, and later on, that of attending physician. As noted before, they are often already coming from similar backgrounds and are subjected to intensive training environments with significant pressures towards accommodating towards certain norms of practice, themselves nested in broader sociocultural understandings. Ways in which they were taught in these early days to organize their thinking concerning case presentation and sign-over, while not
immutable, will serve as a major axis of how they engage with future learners, reproducing the outcomes of the system that produced them. Transformative change, emerging from a resolution of the tension between a medical education system that inculcates biomedicine on one hand and provides patient care activities on the other, may indeed be possible but far more difficult to effect given the tendency of professional medical identity formation towards faithful reproduction.

6.4 Ways Forward

I recognize that this text is by its nature critical and transformative, written from a compulsion to un-do and to re-form. In this vein it joins itself to longstanding tradition: as Anderson notes in Hodges and Lingard (2012), medical education in North America is enveloped in a constant discourse of reform. While he ascribes this to the need for incorporation of the rapid explosion of new biomedical information, I would also propose that the field is bound to the conditions of its production as revealed through a recent exploration of one of its creation stories, that of the Flexnerian myth (Schrewe 2013). The emphasis upon reform embedded within that mythology cuts two ways; while it suggests a field ever-open to changing with the times, it may also perpetuate interventions that simply create the appearance of reform that result from reactionary and uncritical attempts to solve problems. Re-conceptualizing educational practices as inseparable from sociocultural and historical contexts and bound up in relationships allows us to recognize easily unappreciated factors – such as deeply ingrained ontological and epistemological understandings and value systems – that are major contributors to the activities of systems and their outcomes and whose effects may render practices remarkably impervious to curricular re-design. Should they not be taken into consideration, well-intentioned reforms may simply effect only an
aesthetic of change rather than resolving tensions and provoking deeper, transformative systemic changes. Therefore, in demonstrating that what is considered the natural and self-evident process of professional identity development is actually a normative process filled with assumptions and practices, we are better positioned as a scholarly field to recognize there are other possibilities of training. This opens up discussion as to how learners, preceptors, faculties, societies, and cultures may be open to discursive changes bringing about a more egalitarian relationship with patients.

This work has suggested that the reinforcement of systemic contradictions occurs in part in a seemingly mundane way – that of everyday conversation. The tensions between patient-as-disease-category and a broader engagement with meaning-making and care, themselves made visible in the crucible of medical student training on the wards, are currently co-existent activities within CTUs. As with all tensions, they offer tremendous potential for creativity, growth, and a radical transformation of medical training, and by extension, the medical profession. At the same time, remaining inattentive to these competing activities threatens the medical profession, their learners, caregivers, and most importantly, people that find themselves in the position of patient. Systems can only accommodate so much contradiction until they are forced to fundamentally change themselves, including self-destruction. Perhaps a biomedical metaphor here is apt: is it the type of change in line with improved cardiovascular activity from proper self-care and exercise that leads to improved systemic well-being? Or is it the type of cardiac wall remodeling that comes with hypertension – an initial ability for one systemic part to adapt to buffer stress before no-longer-controllable tensions provoke a very real possibility of acute systemic decompensation in the form of cardiac failure or terminal myocardial infarction?
All of these considerations set up several potential lines of future enquiry that may move medical education towards benefiting from the creative aspects of tension resolution rather than being brought down by an inability to reconcile them. First, while there have been critical studies of the emergence of biomedicine in medical education during the Flexnerian period (Schrewe 2013) and the origins of the CanMEDS competencies (Whitehead et al 2011), there are not yet critical studies as to why the clinical teaching unit has continued to be the preferential modality of patient care and workplace-based undergraduate medical education in acute care centres. Exploration as to which forces have enabled CTUs to remain and thrive as inviolable parts of the pedagogical landscape may offer better perspectives on both their benefits and limitations. This line of scholarship upon the role and place of CTUs and traditional undergraduate training in medical education may be coming at a germane time, as there is a contemporary tendency in several Canadian medical faculties towards increasing the presence of regional medical campuses (RMC) and distributed medical education (DME) in general (Bates et al 2011).

This shift is fundamentally reconfiguring the institutional identities of medical faculties such as the University of British Columbia, which now conceive of themselves as distributed educational networks constellated across several physical sites rather than as unitary centres of learning situated in the largest provincial urban area. Educational trajectories for learners in distributed sites are different than those of their colleagues in traditional academic health sciences centres, in that much of their clerkship learning occurs in smaller settings with lower acuity, less immediate recourse to all subspecialties, and less frequent changes of preceptors and training environments. How professional medical identity forms in these distributed contexts where students’ pedagogical and patient care
relationships are often of longer duration and transcend health care sites offers a novel opportunity in two major ways. It directly allows an understanding of how professional identity might form differently in differing training contexts. The pendulum swing between medical educational activities and patient care activities in academic health sciences centres does seem to tend towards the former in many ways, given the ubiquitous presence and sheer number of learners and how the systems have been devised. In addition, it is an opportunity to revise and build upon theories of medical student and clerkship learning that have heretofore been inspired and formulated through studies exclusively within academic tertiary care contexts.

Second, the tendency in much scholarship – including this work – continues to consider medical students as a unified entity. This is a major limitation of this study, but the broadening contexts of legitimated medical student learning brought on by the arrival of RMC and DME in turn opens up space to consider the taken-for-granted assumption that medical student itself is a unitary category. Paraphrasing Butler (1988), it is the presupposition of the category of medical student itself “that requires a critical genealogy of the complex institutional and discursive means by which it is constituted”. In so doing, there may be as-of-yet unappreciated normative assumptions embedded within the category of medical student that may offer an understanding both as to how this professional identity intersects with the other identities learners live, and how medical student is in turn a performative positionality made possible by the intersection of these multiple identities with the professional.

Finally, much has been made in this work about the biomedicine’s understandings of health and illness relationships and the important role it plays in medical students’ grasp of
relevance and performance of identity through interactional communicative competence. Biomedicine’s relatively inflexible epistemological understandings – that is to say, its difficulties in tolerating ambiguity and others ways of knowing – may play an important role in propagating tension between medical education and patient care activities. There is a need thus to continue to consider critically not just formal curricular content but the informal ways by which it is delivered and the “hidden” components that reinforce certain institutional values and practices rather than others. Educational practices of situating biomedical knowledge throughout medical curricula as one specific book among the many valued shelves in the library of health and illness relationships may help to attenuate somewhat the rapid switch from “selfsame” to “other” that medical students experience in regard to patients. Incorporation of curricular content that facilitates student critical self-reflexivity with regard to knowledge that they are learning as well as content that explores biomedicine’s role in Western medical practice may be of significant benefit. While these revisions might not move patients to the centre of care – wherever that may be – the possibility for a professional positionality more attuned to comfort with ambiguity and open to more egalitarian patient encounters might go a long way towards diminishing the denigration that patients feel and that medical professionals, as we have seen in the introduction, may unintentionally propagate in their quest to not just “do being”, but “do being good”.

There are therefore several potential areas for rigorous scholarship leading from this work that open up space for the critical questions they pose to be comprehensively addressed. In so doing, they may lead towards deeper and more transformative curricular reform as opposed to repetitive superficial arrangements that produce similar outcomes yet
come at great expense, energy, and investment by faculties. The activities of medical education and patient care, so critical in shaping the emergence of professional identity are bound up in each other in one other key way often alluded to throughout this work: they are ways through which the curative and meaning-making aspects of health care are addressed. It is in the harmonization and equilibrating balances of these aspects – the rich and creatively tense interactions of their similarities and complementarities – that the rich textures of alleviation of disease and understanding of illness are together able to ward off the denigration and the meaninglessness that suffering menaces.
From the AFMC website and publication of The Future of Medical Education in Canada (FMEC): A Collective Vision for MD Education:

**Recommendation 1: Address Individual and Community Needs**

Social responsibility and accountability are core values underpinning the roles of Canadian physicians and Faculties of Medicine. This commitment means that, both individually and collectively, physicians and faculties must respond to the diverse needs of individuals and communities throughout Canada, as well as meet international responsibilities to the global community.


Canadian Medical Education Directive for Specialists (CanMEDS) is an internationally-used framework published by the Royal College of Physicians and Surgeons of Canada and lays out sets of competencies related to the defined roles of Medical Expert, Health Advocate, Scholar, Collaborator, Communicator, Manager, and Professional.


http://www.abimfoundation.org/Professionalism/Physician-Charter.aspx

http://www.royalcollege.ca/portal/page/portal/rc/common/documents/canmeds/framework/the_7_canmeds_roles_e.pdf (pages 3-5)

From St. Louis and Barton (2002): Positionality, however, bounds subjectivity because, as defined by Maher and Tetreault (1994), positionality is a term used to describe how people are defined, that is "not in terms of fixed identities, but by their location within shifting networks of relationships, which can be analyzed and changed". They also define positionality as the "knower's specific position in any context as defined by race, gender, class, and other socially significant dimensions".

The four Québec faculties of medicine (McGill University, Université de Montréal, Université Laval, and Université de Sherbrooke), in agreement with the Gouvernement du Québec, also have reserved dedicated numbers of admissions spaces to students having completed four semesters of CEGEP (Collège d’enseignement general et professional), which traditionally precedes university studies in the educational sequence: https://www.afmc.ca/pdf/2013_ad_bk.pdf
7) The MCAT is not considered by the following faculties: Université de Montréal, Université Laval, Université de Sherbrooke, University of Ottawa, and the Northern Ontario School of Medicine. It is selectively applied in admissions at McGill University and the University of Saskatchewan. 
https://www.afmc.ca/pdf/2013_ad_bk.pdf

8) Note that both of these are taken from Anglophone majority North American countries: 
Canada – http://www.royalcollege.ca/portal/page/portal/rc/canmeds/framework

The United States –
https://www.acgme.org/acgmeweb/Portals/0/PDFs/commonguide/IVA1234_EducationalProgram_CurriculumComponents_Explanation.pdf

In the words of one leading Canadian medical faculty: 
“The University of Toronto, Faculty of Medicine has adopted the following goals for the undergraduate curriculum: Graduates of the Undergraduate Medical Program will demonstrate the foundation of knowledge, skills and attitudes necessary to achieve the CanMEDS competencies and the four principles of Family Medicine.”
http://www.md.utoronto.ca/program/goals.htm

Additionally, CanMEDS-Family Medicine, created by the College of Family Physicians of Canada (CFPC), has emerged to complement the original Four Principles of Family Medicine: 

9) “The UBC MD undergraduate program prepares students for practice in the 21st century. With a strong foundation in both the science of medicine, and the compassion of humanity, the UBC MD program is educating some of the best health practitioners anywhere.”
http://mdprogram.med.ubc.ca/

a. Doctor, Patient, and Society (DPAS 410)
   http://mdprogram.med.ubc.ca/curriculum-educational-programs/schedule-courses/year-1/


10) Two MD degree granting programs in Canada are three years in duration: McMaster University in Hamilton, Ontario and the University of Calgary in Calgary, Alberta: 
https://www.afmc.ca/pdf/2013_ad_bk.pdf

“Learners inevitably participate in communities of practitioners and… the mastery of knowledge and skill requires newcomers to move toward full participation in the socio-cultural practices of a community. ‘Legitimate peripheral participation’ provides a way to speak about the relations between newcomers and old-timers, and about activities, identities, artefacts, and communities of knowledge and practice. A person’s intentions to learn are engaged and the meaning of learning is configured through the process of becoming a full participant in a socio-cultural practice. This social process, includes, indeed it subsumes, the learning of knowledgeable skills. (Lave and Wenger 1991). As (learners) become more competent they become more involved in the main processes of the particular community. They move from legitimate peripheral participation to into ‘full participation’ (Lave and Wenger 1991). Learning is, thus, not seen as the acquisition of knowledge by individuals so much as a process of social participation. The nature of the situation impacts significantly on the process.”

12) Preceptor will be used throughout this work to designate anyone (attending physician, senior resident, junior resident) who occupies a position of teaching/supervision/guidance in interactions. It should be noted that this term, while often used as an essential (static) descriptor of a person, here is better understood, given the tone of this work, as a positionality (dynamic, continually created) in interaction.

13) Sign-over is also known as “handoffs” in the literature. From Wayne et al (2008): The Joint Commission (Joint Commission on Accreditation of Healthcare Organizations, JCAHO) notes that the primary objective of a handoff is to “provide accurate information about a patient’s care, treatment, and services, current condition and any recent or anticipated changes...the information communicated during a handoff must be accurate in order to meet patient safety goals.”

14) From Neville and Norman (2007): Problem-based learning (PBL) is a pedagogical approach to medical education that McMaster University employed upon the founding of its medical school in 1969. Originally based upon the Harvard Business School model of case study, PBL emphasizes small-group tutorials, self-directed learning, minimal numbers of didactic lectures, and evaluation based primarily on individual performance within the tutorial groups. At its inception, it was considered a radically different approach to traditional curricula, in which didactic lectures were emphasized. Most Canadian medical schools employ PBL to some degree in their undergraduate curriculum.
From Harden and Gleeson (1979): The Objective Structured Clinical Examination (OSCE) was created at the University of Dundee in 1979 by Dr Ronald Harden and colleagues “designed to assess clinical competence at the bedside” in response to perceived deficiencies in assessment. It constructs itself as “objective rather than subjective”. Learners proceed between several stations, where upon standardized patients they are to demonstrate clinical skills ranging from history taking to physical examination to interpretation of laboratory and radiological data to patient counselling. The OSCE is woven into evaluation at all levels of training and is a major component of the qualifying examinations of the RCPSC. It has undergone criticism in recent years, notably for its lack of attention to its prescriptive effects on examinees, as stated by Hodges (2003): “examinations drive curricula and spawn reproduction of particular behaviours and relationships in training programmes and in day-to-day life.”


As defined in Evans et al (1966) by the Association of Canadian Medical Colleges (ACMC, the forerunner of the current Association of the Faculties of Medicine of Canada), a “Clinical Teaching Unit, Division, or Service, which may be an entire hospital or a designated hospital area, is one providing undergraduate and graduate medical education, not limited to the intern year, under the auspices of a Faculty of Medicine of a Canadian university. The medical staff of a Teaching Unit, Service, or Division, is the function of the team of staff physician, resident, intern, and clinical clerk, based on the principle of graded responsibility commensurate with competence and level of training.” This definition was later adopted by the RCPSC, the Canadian Medical Association, and the Association of Canadian Teaching Hospitals (Waugh 1993).

From Evans et al 1966: “An active program of scientific research in the clinical teaching unit should be strongly encouraged for its own sake and for the undisputed benefits to the educational and service functions of the unit. To secure the services of good scientists, the clinical teaching unit must offer close university affiliation, a favourable academic atmosphere for scientific endeavour, reasonable physical facilities and adequate and continuing financial support.”

The name of the institution is changed here and throughout for confidentiality purposes.
20) “On service” is a jargon term medical professionals in Canada use to describe the highest level of professional responsibility for patient care and medical education on a CTU.

21) “Follow” is also a jargon term used on CTUs; while it does relate to patient care, it foregrounds moreso a formal clinical educational relationship.

22) Only during weekdays were the full complement of CTU team members present. Weekend schedules had sign-over rounds starting an hour and fifteen minutes later with only one medical student and one junior resident for each of the two CTU teams. One senior resident was present to supervise both teams, instead of two during the week. Both attending paediatricians from the week did perform rounds, but they were much more focused upon direct patient care and less explicit regarding medical education. Given reduced weekend services in the hospital, only urgent radiological tests were performed on the weekends.

23) Nguyen (2008) notes in her discussion of pharmacy interns that the “templates” her data yielded “represent the most comprehensive pattern that can cover the set of data, but each data token may not fit the template exactly”. I have held to the same convention in the analysis and presentation of the schema identified in this passage and in those that follow.
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APPENDIX A: Semi-Structured Interview Framework

1) Experience
   a. What is the nature of your practice?
   b. How long have you served as a preceptor?
   c. What is your role as a preceptor?
   d. How do you see your place in their education?

2) Can you describe for me what you consider to be a “good” student? An “adequate” student? A “challenging” student? Can you describe for me what you consider to be a “good” presentation?
   a. What do you think a case presentation should do?
   b. What sort of information should it include?
   c. What information should it not include?

3) What teaching techniques do you use during student presentations to guide their learning?

4) Are there ways of speaking or interrupting that you find work well?
   a. Why do you choose to use these practices specifically?
   b. Are there others you have tried that haven’t worked in the past?
   c. What do you do if you find students’ presentations aren’t responding through the channels you typically use?
   d. How do a student’s verbal and non-verbal behaviours contribute to a good presentation?

5) Which sorts of behaviours indicate these to you? Can you give me an example of each?

6) Which sorts of student actions/behaviours make you think that they would be a good future resident?

7) How central is a “good” presentation to your perceptions of someone being a “good” student?
APPENDIX B: Interviewed Preceptors’ Professional Positions

ResA – third-year senior paediatric resident

ResB – third-year senior paediatric resident
   (is also “3rd-year Senior Resident” in microethnography transcriptions)

ResC – fourth-year senior paediatric and chief resident

ResD – fourth-year senior paediatric and chief resident

PedE – community paediatrician

PedF – community paediatrician

PedG – community paediatrician and paediatric palliative care specialist

PedH – community paediatrician and general paediatrics department director

PedI – paediatric subspecialist and paediatric residency program director
   (is also “Attending Paediatrician” in microethnography transcriptions)
APPENDIX C: Conversation Analysis Notation

(adopted from Sidnell 2010)

Overlapping or simultaneous talk is indicated by the following:

[ Separate left square brackets, one above the other on two successive lines with utterances by different speakers indicate a point of overlap onset, whether at the start of an utterance or later.

] Separate right square brackets, one above the other on two successive lines with utterances by different speakers, indicate a point at which two overlapping utterances both end or where one ends while the other continues, or simultaneous moments in overlaps which continue.

= Equal signs ordinarily come in pairs, one at the end of a line, and another at the start of the next line or one shortly thereafter. They are used to indicate two things:

(1) If the two lines connected by the equal signs are by the same speaker, then there was a single, continuous utterance with no break or pause, which was broken up in order to accommodate the placement of overlapping talk.

(2) If the lines connected by two equal signs are by different speakers, then the second followed the first with no discernible silence between them, or was “latched” to it.

(0.5) Numbers in parentheses indicate silence, represented in tenths of a second. Silences may be marked either within an utterance or between utterances.

(.) A dot in parentheses indicates a “micropause”, hearable, but not readily measureable without instrumentation; ordinarily less than 0.2 of a second.

(...) A triple dot indicates an inability to distinguish clearly what was heard on the audiorecording.

:: Colons are used to indicate the prolongation or stretching of the sound just preceding them. The more colons, the longer the stretching.

- A hyphen after a word or part of a word indicates a cut-off or self-interruption, often done with a glottal or dental stop.

_word_ Underlining is used to indicate some form of stress or emphasis, by either increased loudness or higher pitch. The more underlining, the greater the emphasis.

_word_ Therefore, underlining is sometimes placed under the first letter or two of a word, rather than under the letters which are actually raised in pitch or volume.
WOrd Especially loud talk may be indicated by upper case; again, the louder, the more letters in upper case. And in extreme cases, upper case may be underlined.

↑ The up and down arrows mark sharper rises and falls than would be indicated by combinations of colons and underlining, or they may mark a whole shift, or resetting, of the pitch register at which talk is being produced.

↓ The combination of “more than” and “less than” symbols indicates that the talk between them is compressed or rushed. Used in the reverse order, they can indicate that a stretch of talk is markedly slowed or drawn out.

>< Double parentheses are used to mark descriptions of events, rather than speech: ((cough)), ((sigh)).

$$ Dollar signs are used to indicate the presence of smile during speaking.
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<thead>
<tr>
<th>Any questions?</th>
<th>?</th>
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<td>To Do...</td>
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<td>Upcoming possibilities and plan</td>
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<td>Anticipated issues or expected course and plan for response</td>
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<td>New Events</td>
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<td>New Pts: Course in ER and current management</td>
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<td>General Hospital Course</td>
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<td>Old Pts: J to date and response</td>
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<td>Identifying data into Patient Lab Findings</td>
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<td>New Pts: Other HPI, Relevant PMHx, pertinent P/E and Old Pts: &quot;one liner&quot;</td>
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<td>Sick or DNR?</td>
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<td>General patient stability ie. Sick or not sick? Known</td>
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**APPENDIX D: Sign-over Template**
APPENDIX E: Family-Centred Rounds Information Sheet for Medical Students

Family Centered Rounds MSI Presentation Format

(Name) is a (Age)-old (Gender) who presented with (List 2 or 3 signs/symptoms). He/She was admitted for (State the admitting Diagnosis).

Overnight... (speak to the parents and/or nurse before rounds to see how the night was).

On exam, the vitals were... (if you state they were normal, be prepared for me to ask you what the numbers were). State your examination using a systems-based approach (i.e. CNS, HEENT, CVS, RESP, GI, GU, MSK/Skin). State the PERTINENT positives only. If something was abnormal on admission, and is now improved, state that the finding is now normal, don’t repeat it every day if it continues to be normal.

*NOTE: Weight is VERY important in Pediatrics. We need to know the weight, and how much the weight changed from the day before OR weekly trends for long term patients). Please state this after the vitals.

Labs, Ins and Outs
- Total intake, route, IV fluids, formula etc
- Urine output (cc/kg/hour for the 24 hours)
- New labs only

Medications
- Know doses, but don’t say them on rounds.

Impression
(Name) was admitted with (State the admitting Diagnosis). (He/She) is doing (Better/Worse/Same). My impression is... State what you think is going on (THINK BIG PICTURE). If this is a new patient, or a patient who does not yet have a firm diagnosis, discuss the differential BRIEFLY at this time.

Plan
His/Her issues are:
1. The reason why they were admitted – what are we doing for them? There may be more than one issue related to their admitting diagnosis (ex: pain control, etc). You can make this your second issue.
2. Fluids and Nutrition
3. Disposition – what needs to happen before they can go home?

LAST BUT NOT LEAST
Before we leave the room, whoever was writing orders during rounds will read them out loud for a safety check. We will do this for every patient. If they have no orders, say “no new orders”.

General Tips:
Every child who is admitted has at least 3 issues: why they are here, fluids and nutrition, and disposition. If you get stuck formulating an issues list on the spot, always remember these issues.

Summary of things to write down before rounds:
Vitals → Pulse, BP, Respiratory Rate, SpO2
Weight, and the weight change from the day before
APPENDIX F: Junior Resident Case Presentation Highlighting CTU Activities

1 Sr (3rd-Year) Resident (looks expectantly)
2 Jr (2nd Year) Resident Uhm, uh
3 Jr (2nd Year) Resident So this is Jasmine,† she’s our four month old, girl, corrected to about nine or ten weeks↓, ex thirty one week prem†, uhm, with complications of neonatal >lupus< including congenital heart block,↓ she’s got a pacemaker for that↓ and dilated cardiomyopathy↑, uhm
4 Sr (3rd-Year) Resident Does she, she didn’t have any other symptoms of neonatal lupus?↑=
5 Jr (2nd Year) Resident =Not as far as I know. But I, she was in the >NICU< and=
6 Sr (3rd-Year) Resident =our NICU=
7 Jr (2nd Year) Resident =and so it’s a little (1.0) $nebulous$↑ ((laughs))
8 Sr (3rd-Year) Resident Do you do you wanna tell them about what the other complications are?↓=
9 Jr (2nd Year) Resident =So, uhm:: >often you can just have like< skin findings ↑, I think there’s some typical neonatal (1.0) rash that you <get> that’s not exactly the same as like the adults, uhm, rash↑=
10 Sr (3rd-Year) Resident =It’s more of a uhm is, I think it is probably the neonatal cutaneous, (...) and it’s just like a, scaly, rash that they get=
11 Jr (2nd Year) Resident =uhm, and then I know you can have some, there’s some, degree of hepatotoxicity that you can get with it↓, uhm, I don’t $really know$
12 Sr (3rd-Year) Resident And then, marrow=
13 Jr (2nd Year) Resident =Oh marrow, right=
14 Attending Paediatrician =So they can have suppression=
15 Jr (2nd Year) Resident =thank you good point. Uhm:: (0.5) so to my, >I don’t know, but< there’s nothing that sort of=
16 Sr (3rd-Year) Resident =certainly right now=
17 Jr (2nd Year) Resident =yeah, right now obviously, the most feared complication of maternal lupus in pregnancy is uhm, heart block↑, and you can have, varying degrees of it↑, of course she’s got complete heart block↑, so, uhm, requiring a pacemaker,↓ and then, sounds like there’s sort of more, uhm, awareness now↓, of some of the other (. ) cardiac complications in addition to heart block↑
18 Jr (2nd Year) Resident and so she also has the dilated cardiomyopathy↓ which uhm, is >quite serious< and there’s actually discussions about her going to cardiac transplantation↓, uhm, so Jasmine is here ↑, she’s got a significantly dilated
cardiomyopathy and poor reserve and presumably it was triggered by some viral illness, she had this decompensation was in the ICU, intubated, briefly, uh, extubated and, then required sort of ramping up of her anti-failure meds briefly on milrinone and was brought to the ward,

19 Jr (2nd Year) Resident uh, on, captopril metoprolol, uh, lasix and spironolactone, uh, she has been overall, fairly well, up on the ward,

20 Jr (2nd Year) Resident uh yesterday, we went up on her metoprolol from three milligrams bid to four milligrams bid with that she’s remained stable with uh, you know adequate blood pressures,

21 Jr (2nd Year) Resident uh, she’s orally feeding quite well, actually, uh, yesterday no NG top ups and she took a hundred and twenty six mils per kilo per day, uh, I’m actually comfortable to take out the NG she’s, uh, for the last three days, been doing well orally, uh, and then I actually, uh, there’s an aunt in there who spoke some English yesterday and so they are actually supplementing her EBM at home, I’m not exactly clear with what, uh, at least the dietician from the cardiac team, is is going to become involved and take a closer look and recommend uh, uh, whatever she feels is appropriate she’ll be sort of following them long-term, the aunt was saying that for sixty mils of EBM they add, half a teaspoon of something, >I don’t know what that is< but to me that sounded like quite a small amount, like half a teaspoon for every sixty mils, so=

22 Sr (3rd-Year) Resident =Depends on how potent it is=
23 Jr (2nd Year) Resident =Yeah, whatever that something is=
24 Sr (3rd-Year) Resident =I’m just trying to get a sense=
25 Jr (2nd Year) Resident =So I don’t know what that is but anyways=
26 Attending Paediatrician =And we don’t have it here, or=
27 Jr (2nd Year) Resident =Well, I don’t, maybe cuz she was, yeah, they don’t have it here, and I think=
28 Attending Paediatrician =okay=
29 Jr (2nd Year) Resident =in the ICU that wasn’t really the, focus=
30 Attending Paediatrician =Yeah=
31 Jr (2nd Year) Resident =So:: >anyways< we’re sort of adjusting the nutritional, uh, piece, she didn’t have another weight when I saw her today, but I have ordered daily weights, I’ll have uh, look at that and just follow, that along, the day before (.) she had gained thirty-five grams but I think that, I don’t know how many days
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<td>Jr (2nd Year) Resident</td>
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that had been over†, cuz she hadn’t been weighed for awhile↓, but, anyways, so, uhm::=

=Do you think it’s human milk fortifier†? That’s=

=I’m sorry†?

=HMF=?

=Mmm=

=yeah, there’s just so many things!=

(...)  

=In the NICU they use that a lot, if they’ve been using that since they left the NICU, then that’s, one thing, but I think we need to investigate, what, it is=

=yeah (0.5) Uhm, so just in terms of her, uh, overall issues from a respiratory point of view↓ she’s totally stable she’s saturating well on room air↓,

from a cardiac point of view↑, uhm, today is actually one of the first times that I’ve seen her heart rate like consistently above her pacemaker lower limit↑, her pacemaker lower limit is set at one-twenty, ↑ uhm, most of the time she’s been riding one-twenty which, I thought was a little bit odd, cuz she’s supposed to sense her, atrial rate↑, and then pace her ventricles↑, so, I don’t know, maybe her atrial rate is persistently lower than one twenty↓, but it seemed a little bit odd but anyways this morning she was like ticking along at about one forty, her blood pressures are stable with MAPs sort of in the mid-forties ↑and she does have a gallop rhythm↓ so if anybody wants to, sort of have a listen, she-, it’s fairly noticeable,↑ so it’s=

=yeah I would just make sure that there’s nothing else, so it’s interesting that, the, like, we’re going up on the metoprolol↑=

=Yeah=

=Which presumably is blocking her background rate↓, and this is the highest that she’s been since we’ve had her so, she doesn’t look in anyway unwell↓=

=no, she looks=

=There’s no=

=no=

=okay=

=no, uhm, that’s a good point, though↑. But no↓, she looks, very well, she’s well-perfused↑, she’s like comfortable↓, like, happy-looking↓=

=Mm-hmm=

=uhm, so:: >that’s that< and then feeds, we are, we basically already talked about↑,
uhm, I had a discussion with cardio yesterday, they’re a little bit nebulous in terms of coming up with a plan, when I spoke to the fellow, he wasn’t sure what value a repeat echo would have, cuz it sounds like all of her echoes looked pretty terrible, regardless of what changes they’ve made, uh, so he wasn’t really convinced, I still think doing another BNP at some point would be sort of helpful, to follow that trend.

I guess the like, clinically if she’s doing (.) I think if she were to, yeah. I think clinically, if she’s doing better there probably isn’t, assuming that it’s coming down.

The only way that I can see would be useful is if we were to look at her well, get a BNP that’s normalizing, and then if there was any change in her status, we could use that as a sense of is it, like is it, becuze of a cardiac etiology?

Yeah! Cuz=

So, I don’t think it’s=

like if it’s a virus or anything like that=

Yeah, like I think like it’s not, I mean, just cuz she is so, touch and go, like I think=

=it’s, uh, it might be helpful to see that she normalizes in this admission and in this context is reassuring-ish clinical exam=

Yeah=

We=

=and when she comes back, again and is well=

Yeah=

=we could actually use it as uh=

Yeah=

=as a sort of bombed out peak=

Yeah=

=or whatever=

Yeah=

=or it stayed the same or what, cuz=

They did one before she was discharged last time and that was just in early March, it was like four hundred and she came in and now it’s twelve hundred, so I think I would like to document another one before
she goes home†, just to show that this is, kind of where she’s at now†. 

=Do we have any bloodwork planned for her†?= 

=not really, yeah. Not really, uhm (0.5) I don’t know if you can, it would be nice if we could just take it from a little poke but= 

=yah= 

=I’ll, I’ll look into that, I’d like to do one before she goes†= 

=I think that’s fair= 

=And then, I just need to touch base with cardio if they have <further> plans to titrate her meds †cuz she probably needs to be stayed here and monitored closely while they’re doing this titration †so I need to sort of establish what their overall plan is= 

=Where’re they from again†? = 

=They’re (0.5) local= 

=Yeah= 

=They’re from, >like Arash Kaur is their paediatrician<= 

=Okay= 

=Yeah= 

=And then, >uhm, the plans and possibilities for transplantation have been brought up with parents †and so, yesterday through this aunt who speaks a little bit of English but not very much was asking questions †and so= 

=I asked the cardiology, like the transplant nurse educator whoever that person is, to, come up and talk to them cuz they have lots and lots of questions about transplant= 

=Yeah yeah= 

=And I was not about to get into that= 

=They need to get figured out= 

=Yeah. Uhm, So, we’re adjusting her nutrition, uh, the transplant nurse is gonna come talk to them↓ and then, she got Synagis yesterday †and she’s due for her four month immunizations, so I’ve ordered those here, except for her rotavirus†, which I was just thinking I don’t know if we can like give it to her right before she goes†, or how we do that, with the live, vaccine, in hospital↓(2.0) 

=Uh, with the rotavirus, what they typically do is after you discharge them†=
97 Jr (2nd Year) Resident =yeah↑=
98 Jr (1st-Year) Resident (A) =Then↓ they get it.=
99 Jr (2nd Year) Resident =But still in hospital before they go↑?=  
100 Jr (1st-Year) Resident (A) =yeah. It’s kind of like, as they’re walking out the door=

101 Jr (2nd Year) Resident =Mmm=
102 Jr (1st-Year) Resident (A) =They get their rotavirus=
103 Jr (2nd Year) Resident =okay=
104 Jr (1st-Year) Resident (A) =That’s what we did with uhm, Ehsan=
105 Sr (3rd-Year) Resident =okay=
106 Jr (2nd Year) Resident =okay=
107 Jr (1st-Year) Resident (A) =So yeah they discharge order comes first and then they get rotavirus=

108 Sr (3rd-Year) Resident =Okay=
110 Jr (1st-Year) Resident (A) =vaccine=
111 Jr (2nd Year) Resident =okay=
112 Sr (3rd-Year) Resident =So (. ) perfect=
APPENDIX G: Early Medical Student Case Presentation

1 Sr (3rd-Year) Resident             Shall we? ↑
2 Attending Paediatrician            Mm-hmm
3                                        (entering patient’s room – Hello! Good morning!)
4 Jr (2nd-Year) Resident              I’m just going to take, sorry.
5 Sr (3rd-Year) Resident              Do-do you have a list?↑ (1.0)
6 Attending Paediatrician             yep↓ (4.0)
7                                        (expectant looking at medical student)
8 3rd-Year Medical Student (C)        okay (0.5)
9 3rd-Year Medical Student (C)        So, this is Karen.↑ She’s a twelve-month old
girl (. uhm, positive human
metapneumovirus↑, lower respiratory tract
infection↑, trisomy twenty-one↓, and uhm, had
a previous >AVSD repair< ↓ in August twenty-
eleven↑(0.5)

10 3rd-Year Medical Student (C)       so:: overnight↓, her vital signs have been
sta::ble↓.
11 3rd-Year Medical Student (C)       she’s remained on, a, a litre and a half of
oxygen↑, and satted between ninety-two and
ninety-eight percent↑, her T max was thirty-
seven five,↑ she has gained some weight, <and
is> uhm, taking Similac by bottle ↑I was
talking to Mom< earlier and overnight, she had
a really bad coughing fit between three and five
AM ↑ and didn’t feed as well↑, and there was
some mild increased work of breathing↓, and
she actually needed uhm, two:: normal saline
nebulizers during that time↑ (0.5) uhm, her
urine output >I don’t think< is accurate ↑but it
was point seven five overnight↑, but I think
there were a couple of diapers that were missed
↓ =

12 Sr (3rd-Year) Resident             (to Mom) (…) that she has sometimes?=  
13 Mom                                =I don’t know, I (…) but she’s had ((baby
crying)), I don’t know – shhh! Shhh! I know,
baby, honey, honey, I’m here. ((Baby
soothing)) (8.0)

14 Sr (3rd-Year) Resident             okay=
15 3rd-Year Medical Student (C)       =Okay  Uhm:: so:: this morning when I came
into see her↑ she was still having a little bit of,
this, this sort of wet congested cough↑, and a
little bit of an increased work of brea::thing, uh,
a subcostal mainly, respiratory rate was thirty-
four↑ (0.5) uhm, I heard some decreased air
entry to the (0.5) anterior right lobe, but nei-, I think I heard crackles to the, bases, posteriorly
(. ) uhm::=
(to baby) shhh

16 Mom

17 3\textsuperscript{rd}-Year Medical Student (C) =she still has the IV in her right foot (1.0)
and:: yeah, and we’re still waiting for urine cultures for her ((baby crying)) those havent come back yet I just checked (1.0)

18 Sr (3\textsuperscript{rd}-Year) Resident

19 3\textsuperscript{rd}-Year Medical Student (C) =her blood cul-, culture showed no growth after three days but >urine cultures are still pending<=

20 Mom

21 3\textsuperscript{rd}-Year Medical Student (C) =uhm::: so::: impression ↑, Karen↑, twelve months old, with, >human metapneumovirus positive< LRTI, she::: is still requiring oxygen and now she has sort of developed this productive cough↑, that kept her awake at night (. ) uhm::: (1.0) so, sh-, yeah, she’s not really uh, ready for discharge yet ↑ and, maybe because of the trisomy twenty-one, it’s, takes her a little bit longer to recover from a lower respiratory tract infection I’m not sure ↑ (0.5)

22 3\textsuperscript{rd}-Year Medical Student (C) uhm, so::: I guess the plan is just to (1.0) maybe try and weaning her oxygen↑ see if it (0.5) see if she tolerates, it ↑ (1.0) Uhm (1.0)

23 Jr (2\textsuperscript{nd}-Year) Resident

So, I mean >usually I mean< we can see ba:::ically >usually when we look at their sats↑< we can tell whether or not, they’re ready to wean↑, so >right now her sats< are <ninety-three> this morning they were ninety-five=

24 3\textsuperscript{rd}-Year Medical Student (C) =Mmm, yeah=

25 Jr (2\textsuperscript{nd}-Year) Resident

=but they’re kind of <sitting> in that sort of just acceptable range↑ on the support that she’s on↑ so=

26 3\textsuperscript{rd}-Year Medical Student (C) =probably=

27 Jr (2\textsuperscript{nd}-Year) Resident

=that suggests to me that probably isn’t quite yet=

28 3\textsuperscript{rd}-Year Medical Student (C) =Okay=

29 Jr (2\textsuperscript{nd}-Year) Resident

=ready, to wean↑, I agree ↓, she’s had a, bit of a pro::longed (. ) uhm, course, ↑ sometimes I feel like the numbers that we provide are a little bit arbitrary >by that< in the sense that, like, by this stage they should be getting better↑, uhm (. ) those are kind of averages↑ and every patient is a little bit different, she does >as you
mentioned she has, uhm, underlying heart surgery, uhm, and so she’s got a couple of reasons why it might take her a little bit longer to get over something, and then, I also have, the you know hidden in the back of my mind, but you know, did she potentially pick up something else with this sort of new fever, uhm, it’s a little bit hard to say but uh, to me, I agree with your uh assessment I mean this morning when I saw her, she looked, basically, unchanged, from the day before same amount of oxygen, still mild work of breathing,

30 3rd-Year Medical Student (C)
31 Jr (2nd-Year) Resident

so I think we just need to continue with supportive care, the normal saline nebulizers do seem to help, couple of days ago I had just tried a Ventolin neb, it didn’t really make a lot of difference so we haven’t been continuing with that uhm, so I’m not sure that there’s really much, I would change today other than just continuing to support her. As she needs it, uhm, she had been maintaining pretty good oral intake throughout the day yesterday, so far this morning it hasn’t really picked up yet, but I think we can just watch and see how she does throughout the day. (1.0)

32 3rd-Year Medical Student (C)
33 Jr (2nd-Year) Resident

Uh, the IV’s running at what right now?

34 Sr (3rd-Year) Resident
35 Jr (2nd-Year) Resident
36 3rd-Year Medical Student (C)
37 Sr (3rd-Year) Resident
38 Jr (2nd-Year) Resident
39 Sr (3rd-Year) Resident

=It’s a line locked
[saline lock] ed=
=Mm-hmm. So, if it falls out, it falls out.

40 Mom
41 Sr (3rd-Year) Resident
42 Jr (2nd-Year) Resident

=Yeah, and I think, uh, uh, I-I like norm-normal saline nebs a lot.
=Yeah, yeah=
43 Sr (3rd-Year) Resident =Uhm, so I think, that’ll be the one thing that we sort of, actively do, is just, make sure that she gets, uhm=

44 Mom =What will she get?=

45 Sr (3rd-Year) Resident =Normal saline nebs, and so (…) and we’ll let the nurses do that, becuz otherwise, these kids hate us!

46 Sr (3rd-Year) Resident

47 Jr (2nd-Year) Resident ((Laughs))

48 Mom ((laughs)) That’s more my concern now becuz from three o’clock $she’s not okay$↓

49 Sr (3rd-Year) Resident =Mm-hmm. Is she, she uh=

50 Mom =Yeah, ah, she’s been=

51 Sr (3rd-Year) Resident =S-so I think you know, she’s been, she’s congested up here, like, the oxygen that she’s getting through the nasal prongs↓, I don’t even know how much she’s actually getting, so=

52 Mom =Okay=

53 Sr (3rd-Year) Resident =I, I think that it’ll, give us actually a fairer estimate of what she, really needs↓, and we can clean her up a little bit from her nose↓=

54 Mom =Mm-hmm=

55 Sr (3rd-Year) Resident =And kids also tend to breathe through their nose, so, if it’s all plugged up, it’s a bit hard for them to, to do that=

56 Mom =I mean how does she breathe, it’s like, she, she had the asthma↓=

57 Sr (3rd-Year) Resident =Yeah, sh-she, she is, she, I mean, that’s=

58 Mom =uh-huh=

59 Sr (3rd-Year) Resident =part of the reason why I exposed her so they could see how she’s breathing, but, I-I think that, uh (1.0) like one or two good suctions for her, sort of nasal area will (0.5) hopefully=

60 Mom =Mm-hmm=

61 Sr (3rd-Year) Resident =make a big difference. Yeah, I agree with your point=

62 Mom =Good (1.0)

63 Sr (3rd-Year) Resident okay. So, we’ll see you later↓

64 Mom Okay! ↑

65 (walking out of room)
APPENDIX H: Later Medical Student Case Presentation

1 Sr (3rd-Year) Resident       Uhm this one
2 Jr (1st-Year) Resident (A)   Chaz?↓
3 3rd-Year Medical Student (C) Yeah! ↓
4 3rd-Year Medical Student (C) So Chaz↓, three and a half months old↓, with uhm new onset tetralogy of fallot↓, and uhm:: sorry, and uh, RSV* (*respiratory syncitial virus) bronchiolitis,↓
5 3rd-Year Medical Student (C) uh, which uh, >from which he’s getting better< ↓
6 3rd-Year Medical Student (C) uhm:: overnight, so we’re monitoring his oxygen saturation he had one dip down to the (0.5) fifties↑, at six thirty↓ so right after we finished↑, he was put on uhm, half a litre↑ and then switched back to a quarter litre at one AM and he’s been on a quarter litre since↑, there was also another quick uh dip to the, uh, >I got it from the nursing notes< to the thirties↓ when he was upset↓ but he recovered with two to three minutes↓, and he didn’t need oxygen at that point↑,
7 3rd-Year Medical Student (C) otherwise, his uh blood pressure’s been, stable at ninety one over sixty four↓, heart rate has not gone up past one twenty six↓
8 3rd-Year Medical Student (C) uhm, respiratory rate between twenty six and forty-eight↓, and T max thirty six eight↓,
9 3rd-Year Medical Student (C) his intake is good↑, output two point nine cc’s per kilogram per hour↓, he’s positive two oh five over the last twenty four hours↑, uhm,
10 Sr (3rd-Year) Resident       =Okay, good↓
11 3rd-Year Medical Student (C) (3.0) And he’s uh, gained (3.0) eighty five grams↑, or thirty, eighty five grams↓, so=
12 Sr (3rd-Year) Resident       =So he’s positive two hundred fifty mils↑?
13 3rd-Year Medical Student (C) =He’s positive two oh five.↓=
14 Sr (3rd-Year) Resident       =Two oh five mils↓=
15 3rd-Year Medical Student (C) =Mm-hmm=
16 Sr (3rd-Year) Resident       =And he’s gained↑?
17 3rd-Year Medical Student (C) =Eighty-five grams=
18 Sr (3rd-Year) Resident       =Eighty five grams↓ (..) In the last twenty four hours↑?
19 3rd-Year Medical Student (C) (1.0) No I think the previous [weight] [Should] make
20 Sr (3rd-Year) Resident       sure that’s okay ↓ =
21 3rd-Year Medical Student (C) =his, his chest sounds fine to me↓, yeah. And=
22 Jr (1st-Year) Resident (A)   It’s a good day, I mean=
23 3rd-Year Medical Student (C)  
24 Jr (1st-Year) Resident (A)  
25 Sr (3rd-Year) Resident  
26 3rd-Year Medical Student (C)  
27 3rd-Year Medical Student (C)  
28 3rd-Year Medical Student (C)  
29 3rd-Year Medical Student (C)  
30 Jr (1st-Year) Resident (A)  
31 Sr (3rd-Year) Resident  
32 Jr (1st-Year) Resident (A)  
33 Sr (3rd-Year) Resident  
34 Jr (1st-Year) Resident (A)  
35 Sr (3rd-Year) Resident  
36 Jr (1st-Year) Resident (A)  
37 Sr (3rd-Year) Resident  
38 Jr (1st-Year) Resident (A)  
39 Sr (3rd-Year) Resident  
40 Pharmacy Intern  
41 3rd-Year Medical Student (C)  
42 Sr (3rd-Year) Resident  
43 3rd-Year Medical Student (C)  
44 Sr (3rd-Year) Resident  
45 Pharmacy Intern  
46 Sr (3rd-Year) Resident  
47 3rd-Year Medical Student (C)  

((sigh))

=Yeah, his chest sounds good↓=

=okay=

=He doesn’t look overloaded,↓ the, the nursing notes thought that they might have seen some indrawing↑ but I didn’t appreciate that on exam↓, and I still can hear the, the murmur↓, although not as loud today↓, <and> uhm:: yeah and he was sleeping↓ he was sitting ↑uh seventy-two when I was in the room↓, normal heart rate, and uh:: so, we’re just waiting so the plan for him, is at, uhm::

=Okay=

and the plan is, that he’s waiting for this catheter-, cath, on Friday↓ (1.0) And so we don’t, we’re not gonna try and titrate or, wean him off the oxygen, any more cuz he’s going for his catheter.↓ = (1.0)

=And I’ve ordered a calcium, and a twenty two q eleven with the IV starting=

=Hmm=

=for the (.) cath=

=perfect (2.0) I’m surprised they didn’t do that when he came in↓

(2.0) Yeah, I’m pretty sure they didn’t, so=

=I remember, I remember thinking about it, on his admission↓, but then I thought I saw it so I didn’t bother↓, but I should’ve just ordered it↓=

=I’ll, I’ll double check=

=I very likely didn’t, I don’t know, I don’t remember any, it was a hard night there was a lot of kids↓=

=That was, uh, uh busy night↓=

=Yeah, uhm, okay good↓

Would he be a candidate for Synagis?↑=

=Hmm=

=yes=

=Not, well, I guess not right now=

=Not now=

=Yeah, and then coming here to see us$=

>I have a question about that<, cuz I was reading up-to-date and it showed that Synagis doesn’t (.) have, any effect on like the clinical
outcome down and what, what did show an effect was like, ribavirin, uhm=

=So, once you're infected or prior to getting infected?=

Yeah. So, we're not talking about that for now. This is sort of preventative, for=

So he'll get every month he'll get a dose between, I dunno is it November and March=

So should most kids get that then as a preventative thing?=

Well, so, it's not that cheap=

Okay=

So you sort of need to what, what you need to argue for (. ) if you want your patient to get uh (. ) Synagis is the vulnerability and how will they cope with RSV if they get it=

Okay=

So, the kinds of things that set you up for very poor coping with RSV are what like sort of big picture things can you think of?=

Like, immunocompromised=

Mm-hmm=

And sort of, uhm: congenital, uhm (0.5) young! Premature=

yeah=

Uhm=

So significantly premature=

significantly premature, yeah, so=

Less than twenty-nine weeks (0.5) here=

So=

Yeah=

Premature=

Staying (1.0) like ( … ) like neonatology=

So it will depend why you stayed but=

Okay=

but big picture, if there's things wrong with your heart=

Mm-hmm=
It’ll set you up poorly to cope with it, things wrong with your lungs, and if you’re, immunosuppressed or relatively premature, becuZ you were born less than twenty-nine weeks, although I argue that I mean, thirty-one weekers are=  

It’s like it’s a very fluid line you know, between how immunocompetent you are. So, those three things are uh, you could make a strong case for, uh, getting uh, (2.5) prophylaxis, with Synagis. But it’s it’s very hard to come by so it has to be like, he definitely merits=  

Sure but of course yeah=  

But if you’re just talking about like the health care cost is still probably cheaper to give these children=  

Preaching to the choir, sister! That’s not the point though. It comes from separate pools, so=  

It’s extraordinarily expensive though, they need it, it’s so it’s an antibody=  

So, it’s not like a vaccine, although it’s commonly thought of as a vaccine because it’s preventative but it’s an antibody so they need it once a month during the winter, winter months when RSV is, uhm=  

Okay=  

Of that winter period, so the, different governments, it’s a provincial thing and they have very strict criteria to sort of=  

It’s, it’s harder I think in BC=  

152
101 Sr (3rd-Year) Resident =Yeah=
102 Jr (1st-Year) Resident (A) =than just about anywhere else=
103 Jr (2nd-Year) Resident =BC is hard, cuz sometimes even I think I don’t know all the details, but sometimes even they can be a little bit premature unless they have smokers in the household, other children in the household, and all these other things they still sometimes wont fund it=
104 3rd-Year Medical Student (C) =Mmm=
105 Jr (2nd-Year) Resident =So, it’s a complicated issue=
106 Sr (3rd-Year) Resident =yeah=
107 Jr (1st-Year) Resident (A) =Twelve E?= 
108 Sr (3rd-Year) Resident =Yeah=
109 Attending Paediatrician =anything for him?= 
110 Sr (3rd-Year) Resident =no=
111 Attending Paediatrician =okay=
112 Sr (3rd-Year) Resident =just waiting for the cath=
113 Attending Paediatrician =That’s tomorrow right? =
114 Sr (3rd-Year) Resident =Yes=
115 Attending Paediatrician =okay=
APPENDIX I: Spatial Organization of Family-Centred Rounds

A – 1st-Year junior paediatric resident (A)
B – 1st-Year junior paediatric resident (B)
C – 3rd-Year senior paediatric resident
D – 2nd-Year junior paediatric resident
E – third-Year medical student (B)
F – third-year medical student (C)
G – Pharmacy Intern
H – Nurse
I – Mother holding baby (patient)
J – Observer-Researcher
APPENDIX J: Medical Student Presentation on Family-Centred Rounds (FCR)

1 Sr (3rd-Year) Resident okay, uhm:: who’s next↓? (1.0) Three?
2 Jr (2nd-Year) Resident Mm-hm
3
4 Sr (3rd-Year) Resident ((entering room)) (10.0)
5 Parent she=
6 Sr (3rd-Year) Resident =Uh, she. She? (3.0) She’s good↑?= 
7 Parent =Just her oxygen↓=
8 Sr (3rd-Year) Resident =Mm-hmm (4.0) (looks expectantly at MS2))
9 3rd-Year Medical Student (B) okay,
10 3rd-Year Medical Student (B) this is Sarah↑ (1.0) Uhm:: three and a half year, uhm:: month old, uhm, with the, uh, >VSD< and secondary pulmonary congestion↓ and uh, superimposed pneumonia ↓ uhm, >lower respiratory tract infection↑<,
11 3rd-Year Medical Student (B) so, uhm, overnight (0.5) there has (0.5) uhm, she’s had a bit of↓ uh, >occasional< desat to about seventies↓, uhm, on room air↑ so she was put back on to, uh, blow-by, a couple of times↑ she’s been on room air, since uh, four AM today↑ and the sats been, above eighty percent↑, so () >she’s been doing well since<, four↑>
12 3rd-Year Medical Student (B) uhm, otherwise her vitals’ been sta::ble ↑, and uhm, the other concern we had was the urine output yesterday↑ was only six point, or zero point six <seven>↑ cc per kilogram↑ (0.5) uhm, although her po intake was about five hundred forty and uh her fluid balance is positive two eighty↑ uhm,
13 3rd-Year Medical Student (B) the (0.5) lab yesterday morning↑ the urea was, slightly increased to five point six ↑and the creatinine normal twenty↑ (1.0) uhm, and the sodium one forty and potassium five point six ↓, I wonder if that’s a bit of a (1.0) dehydration↑,
14 3rd-Year Medical Student (B) but, upon examination today↑, she, uh, her vitals are fine↑, she was ab-, she was <on uh>, about ninety-six percent on room air, this morning↑ and uh, >otherwise< her examination, there’s still a bit of a murmur↓ but respiratory wise, scattered crackles, but nothing too, worse than previously↑. And in terms of her, uhm, hydration status↓, I couldnt really see any dehydration evidence, from the mucosal membranes ↓or, and her cap refill’s fine↑, within two seconds, I would say, and the anterior fontanelle isn’t, uhm (0.5) sunken↑ (1.0) uhm=
15 Sr (3rd-Year) Resident =Hmm=
16 3rd-Year Medical Student (B) =So=
What does that make?

That comes to about, five forty

((scratching pen & mumbling, “divided by’’)) (8.0)

Yeah ↓ (0.5) So (0.5) In terms of her uhm:: >so< uh, >issue number one would be< the respiratory status ↑ and weaning her off, from oxygen↑, so, <she’s> on room air, right now↓ so, continue to monitor↓, and see how she does↑, uhm, ((clears throat)), in terms of her, uhm, the u- >the water balance the urine output< uhm, not sure whether she’s dehydrated,↑ she’s already on lasix↑, uhm (1.0) >but she< her oral intake is fine↓, so (1.0) uhm, whether we should just keep an eye on her ↑over-, or uh, one more day↑

I’m not sure ] if this is all the, uhm=

Yeah like it’s=

=>All from yesterday yeah< cuz by yesterday afternoon when we left, >I dunno< it doesn’t totally make sense ↑and that’s why I was curious to see what her weight was going to do today↑, becuze, it seemed like it had been pretty accurate↓=

=Yeah like it’s=

>so it’s not consistent with like< retaining fluid↑=

=Mm-hmm=

=And I thought, but her weight is [<down>]

[down ]

>so it’s not consistent with like< retaining fluid↑=

=Mm-hmm=

=Uhm=

=Nor does she look super=

=[No]=

=[No]= she didn’t look puffy she didn’t look dry [either] ↓

[Uhm ] so, like every diaper that she’s putting out, uh the nurses are weighing?↑=

=Mm-hmm. Yeah=

=Yeah (3.0)

Cuz I, I mean if she’s on, she’s on bid lasix, right?↑=

=Mm-hmm=

=Yeah=

=So (2.0) and I unless this is=

=Unless here these are just smear of stool and like mostly all urine↑, I don’t know=

=Well, that’s it. Like I, I cant believe that she would’ve gotten two doses of lasix and not had=

=Yeah=

=at least voids with those↓=
44 Jr (2nd-Year) Resident =yeah (1.0)
45 Sr (3rd-Year) Resident =there’s one that’s full right now↓=
46 Nurse =okay=
47 Jr (2nd-Year) Resident =Is this stool like when she (0.5) poo↑, was that mostly
48 3rd-Year Medical Student (B) poo↑ or, urine↓=
=yeah (1.0)
49 Nurse =poo=
50 3rd-Year Medical Student (B) =Poo mostly↑
51 Nurse yeah this morning it was mostly urine=
52 3rd-Year Medical Student (B) =This morning
53 Nurse =around eight o’clock (2.0) that there was some
stool↑=
54 Jr (2nd-Year) Resident ((looking at flow sheet)) =It’s still not like huge
amounts↓=
55 3rd-Year Medical Student (B) =Mm-hmm=
56 Sr (3rd-Year) Resident =And when does she get, what times does she get lasix
at?↑=
57 Nurse =Uh, she got it at eight↓
58 Jr (2nd-Year) Resident At eight↓, so, that’s she should=
59 Sr (3rd-Year) Resident =So=
60 Jr (2nd-Year) Resident =This is, or really=
61 Nurse =Really=
62 Sr (3rd-Year) Resident =this one is the post-lasix?↓=
63 Nurse [yeah ]
64 Nurse 65 Sr (3rd-Year) Resident [Okay]
66 Jr (2nd-Year) Resident Good=
67 Sr (3rd-Year) Resident =Can, can we actually just weigh that?==
68 Nurse =Well, I mean if she was changed before nine, not
likely, she probably didn’t==
69 Sr (3rd-Year) Resident =Right=
70 Nurse =have more in an hour cuz it’s mostly=
71 Jr (2nd-Year) Resident =>That’s a really good point<↓=
72 Nurse =but, I would expect the next one to be↑=
73 Jr (2nd-Year) Resident =K=
74 Sr (3rd-Year) Resident =okay=
75 Jr (2nd-Year) Resident =So I think we >keep an eye on that<=
76 3rd-Year Medical Student (B) =Okay=
77 Jr (2nd-Year) Resident =throughout the day↓. I think, we’re we’re considering
sending her home today, with the desat to the
seventies↓ and Mom (0.5) uhm, >or $sorry< Ruth, the
foster, uhm, mom$ would feel more comfortable
waiting til tomorrow↓ and >I think that I probably will
too< given that we’re (,) planning on, >putting her on a
plane< uhm, up to Port Henry,↑ so=
78 Sr (3rd-Year) Resident =yeah=
I would actually like to keep her for today. I would actually like to keep her for today. I would actually like to keep her for today.

They already have follow-up with a paediatrician in, uh, Port Henry for next week and then three weeks with cardiology back down here (0.5) uhm (2.0)

yeah, and I-I think just today we need to make sure that (. . we’re happy with ins and outs .

becuz yes I agree that if she’s going home (.) uhm, you know I don’t exactly want it to be, diligently measuring=

And uh and we’re happy=

so, that’s something to

Uh

= keep in mind.↓

I believe the <nursing station> did tell me that, uhm (2.0) any per-, if her oxygen goes like, under ninety↑=

they have tuh medevac her↓ So I don’t know if you could write it out or [just ↓]=

Yeah I can=

Sure, sure, sure. I can write a >letter to them and I can also just< phone them and have a conversation explaining that (. . we, given this hole in her heart ↑we don’t necessarily expect her to have saturations above ninety all the time↑=

mm-hmm=

=So, I can write a letter and I can=

Mm-hmm=

just phone them as well and talk to them about that↓=

I don’t wanna be medevac’ed every=((laughs))
107 Jr (2nd-Year) Resident: $no no! Exactly!$ Okay okay. Uh, so we’ve got a few, uh, things just to monitor and tie up today↑ and then we’ll look at, sending you guys tomorrow↓ =

108 Sr (3rd-Year) Resident: =Mm-hmm (3.0)
109 Jr (2nd-Year) Resident: Uhm (2.0) yeah.
110 Sr (3rd-Year) Resident: Yeah, it was, I mean, at the end of the day, like, if you didn’t have the paperwork, it’s reassuring that her exam is so=

111 Jr (2nd-Year) Resident: =yeah, she=
112 Sr (3rd-Year) Resident: =Normal for hydration↓=
113 Jr (2nd-Year) Resident: =Yeah=
114 Sr (3rd-Year) Resident: =But I think, uhm, becuz we have the paperwork↓, it just makes me happier when (1.5) the numbers, uhm, and the patient (2.0) are↓ =

115 Jr (2nd-Year) Resident: =Sort of fit together=
116 Sr (3rd-Year) Resident: =Yeah=
117 Parent: <And Shayna is the head nurse there↓>
118 Jr (2nd-Year) Resident: Shayda↑
119 Parent: Shayna↓
120 Jr (2nd-Year) Resident: ShayNA. Okay (1.0)
121 Sr (3rd-Year) Resident: Alright. Good.
122 ((walking out of room)) (17.0)
APPENDIX K: Spatial Organization of Sign-over Rounds

A – third-year senior paediatric resident (CTU Daytime)
B – second year junior paediatric resident (CTU Daytime)
C – third-year senior paediatric resident (Night Float Team)
D – first-year paediatric junior resident (Night Float Team)
E – first year junior paediatric resident (A) (CTU Daytime)
F – first year junior paediatric resident (B) (CTU Daytime)
G – third-year medical student (A) (Night Float Team)
H – third-year medical student (B) (CTU Daytime)
I – third-year medical student (C) (CTU Daytime)
J – Observer-Researcher
APPENDIX L: 1st-Year Night Float Junior Resident Sign-over Presentation

1 Jr (1st-Year Night Float) Resident Sandra,
2 Jr (1st-Year Night Float) Resident three and a half month old, uh, not our sickest patient, uh, I’m just going by the format, and uh, she’s in hospital, uh, essentially with a pneumonia, and uh, then uh diagnosis of VSD* (*ventricular septal defect) uh, she is finish, she finished her course of antibiotics for pneumonia
3 Jr (1st-Year Night Float) Resident and uh, now she’s in hospital, uh, essentially because of oxygen requirements
4 Jr (1st-Year Night Float) Resident and uh, overnight, she was on, one fourth litre of oxygen, and uh, sats were sort of fluctuating quite a bit, uh, and sometimes she required blow-by and for now, four hours she’s on room air, and uh cardiology has set up like eighty percent is acceptable range for her.
5 Jr (2nd-Year) Resident Eighty? Above eighty?
6 Jr (1st-Year Night Float) Resident Yeah
7 Sr (3rd-Year) Resident Yeah
8 Jr (2nd-Year) Resident Oh. Wow. Ok.
9 Jr (1st-Year Night Float) Resident Otherwise she had a good feeds and –
10 Sr (3rd-Year) Resident Do you remember on the echo, which way the shunt is?
11 Jr (2nd-Year) Resident Uh, she had
12 Sr (3rd-Year) Resident She’s three months now, it’s probably right to left –
13 Jr (2nd-Year) Resident I’m sorry?
14 Sr (3rd-Year) Resident Cuz she, she’s young, so it’s probably still right to left –
15 Jr (2nd-Year) Resident Uhm, well, three and a half months, I remember they said that she had higher than normal right-sided pressures –
16 Sr (3rd-Year) Resident Yeah
17 Jr (2nd-Year) Resident But I think for the most part it shunts left to right, it was just that it, it could easily go the other way.
18 Sr (3rd-Year) Resident If she was in, if she had an increase in her pulmonary pressures?
19 Jr (2nd-Year) Resident Mm-hmm
20 Sr (3rd-Year) Resident okay
21 Jr (2nd-Year) Resident And they weren’t sure if her, high right sided pressures were, secondary to just, equilibration of, of pressures, across this huge VSD. Or, if it
was just secondary to her like intercurrent, or like concurrent, respiratory illness.

Yeah, so I think,
But she was shunting mostly left to right.
Okay

Uh
So, is she
Sorry, she’s

Is she hooked up, uh?
Yeah, so, I wonder, I mean I-I’m presuming that’s the reason why they’re okay with sats* (*oxygen saturation) of eighty because she has significant enough right to left shunt, but uhm, or at least maybe in the context of a bit of an LRTI* (*lower respiratory tract infection) or something, she has a right to left shunt, then, that’s, we don’t need to target sats of ninety-three and higher.

Mm-hmm, uhm, and then I think also there was some discussion, yesterday, about could oxygen be harmful in this setting? And uhm, th-this was actually, they were talking to, Hannah – Mmm

but I think, they just asked her like what’s the harm of oxygen but I think what they were trying to get at was, if you give too much oxygen, and just relax the pulmonary vasculature you could actually like, increase, the left-to-right

shunt. Or a similar process.

I mean, that’s why, they didn’t want us to be like, too generous with the oxygen unnecessarily. So, then, sorry, if her sats are acceptable, above eighty then, is she, she probably shouldn’t need any oxygen?

At least, sometimes goes down further than that.

Really?

Yeah

Wow.

And it’s been quite a big change in the last twelve to sixteen hours, like sometimes she goes on oxygen and then, blow-by, then room air, so
Mm-hmm
– there’s quite a bit of –
And like how low would her sats go?
They were like seventy-something, yeah.
While she was on some oxygen?
And that was just once.
okay
That low, yeah. Otherwise, cardiology’s happy with those uh, doses she’s on, uh for last six seven –
okay
and uh, I mean resp wise, she’s uh tolerating oxygen pretty well.
And uh feeding well, was having good urine output, uh one cc’s per kg per hour
okay, that’s right. She’s, currently, on room air? Is that right?
Yeah
okay. Thank you.
(pause)
And she has a discharge summary, uhm, over, yeah. If she goes home.
APPENDIX M: Early Medical Student Presentation on Sign-over Rounds

1 3rd-Year Medical Student (A)  Uhm, okay. Alison.
2 3rd-Year Medical Student (A)  Our f-five year old girl with right lobe pneumonia,
3 3rd-Year Medical Student (A)  yesterday her chest tube was removed
4 3rd-Year Medical Student (A)  uhm, she had, an uneventful night, was playing in the play room, very happy
5 Sr (3rd-Year) Resident  No pneumothorax, right?
6 3rd-Year Medical Student (A)  X-ray –
7 Jr (1st-Year) Resident (B)  No I didn’t see a pneumothorax.
8 3rd-Year Medical Student (A)  No, there’s no
9 Sr (3rd-Year) Resident  There isn’t, okay.
10 3rd-Year Medical Student (A)  Right
11 Sr (3rd-Year) Resident  But this, that’s important to know.
12 3rd-Year Medical Student (A)  we had palpitations, for the full sixty minutes after taking out that chest tube, or at least I did!
13 Sr (3rd-Year) Resident  Was there a problem, with the chest tube removal?
14 3rd-Year Medical Student (A)  Oh.
15 Sr (3rd-Year) Resident  It was, trickier than we thought it was going to be.
16 3rd-Year Medical Student (A)  Oh.
17 Sr (3rd-Year) Resident  There may have been some string left behind.
18 3rd-Year Medical Student (A)  But we got it, in the end.
19 Jr (1st-Year) Resident (A)  Oh-kay!
20 Sr (3rd-Year) Resident  (laughter all around)
21 Jr (1st-Year) Resident (A)  There was some strings attached
22 3rd-Year Medical Student (A)  Now we have our (laughter)
23 Jr (1st-Year Night Float) Resident  There was some strings attached!
24 Sr (3rd-Year) Resident  Okay, okay.
25 Jr (1st-Year Night Float) Resident  Actually she can take long walks now off of the tube
26 3rd-Year Medical Student (A)  Good
27 Sr (3rd-Year) Resident  You guys cured her!
28 3rd-Year Medical Student (A)  Yeah
29 Jr (1st-Year) Resident (B)  Yeah
30 Sr (3rd-Year) Resident  She was running up and down the hallway!
31 Jr (1st-Year) Resident (B)  The nurses take out PICC* (*peripherally-inserted central catheter) lines, right?
32 Sr (3rd-Year) Resident  They take –
33 Jr (1st-Year) Resident (B)  Or do we do it?
34 3rd-Year Medical Student (A)  The nurses can –
35 3rd-Year Medical Student (A)  Okay
36 3rd-Year Medical Student (A)  yeah (smiles)
35 Sr (3rd-Year) Resident: I’d be happy for you to take it out, just, let’s just be clear there’s no stitches.

36 Jr (1st-Year) Resident (B): (laughs)

37 Sr (3rd-Year) Resident: before we,

38 3rd-Year Medical Student (A): Right

39 3rd-Year Medical Student (A): okay, but, yeah, okay, otherwise, uneventful overnight, stable afebrile

40 3rd-Year Medical Student (A): uh, discharge summary’s done,

41 3rd-Year Medical Student (A): and the scrip’s been written, uhm, so, to-to, this morning maybe, Lacey, you can just sign the, insurance form.

42 Jr (1st-Year) Resident (B): I, I think maybe the staff probably have to sign –

43 3rd-Year Medical Student (A): Oh, staff will sign it? Okay, I’ll get someone to do that.

44 Jr (1st-Year) Resident (B): - I’ll, I’ll I’ll take, I’ll get it.

45 3rd-Year Medical Student (A): Yeah. Alright. Next, we have Desiree.
APPENDIX N: Later Medical Student Presentation on Sign-over Rounds

1 3rd-Year Medical Student (A)  Okay. Uhm, next we have Joseph Baker, three years old, with, uh right empyema and pneumonia,
2 3rd-Year Medical Student (A)  so, ye-, let’s see, so yesterday he got TPA, in the afternoon,
3 3rd-Year Medical Student (A)  and since then the chest tube has drained eighty five cc’s, uhm, when I last checked, we gave him a flush at three in the morning, uhm, the nurse notes that, around, midnight he woke up with a temperature but when you look at the flow sheet, he was afebrile, like, like so I’m not sure what she meant by temperature, cuz there was actually no, nothing, no high temperatures recorded, but he got Tylenol.
4 3rd-Year Medical Student (A)  Uhm, but otherwise, no other issues, currently stable
5 3rd-Year Medical Student (A)  afebrile, on room air urine output’s one point nine,
6 3rd-Year Medical Student (A)  and uh, over the last twenty-four hours chest tube drained one sixty five.
7 3rd-Year Medical Student (A)  I guess today we’re at, possible pull of the chest tube? As plan, and discharge summary’s been started.
APPENDIX O: Division of Labour at Sign-over Rounds

1 Jr (2nd-Year) Resident
Alright how do you wanna divvy these patients up?

2 Jr (1st-Year) Resident (A) okay, who needs, who needs,

3 Jr (2nd-Year) Resident I need, I need

4 Jr (1st-Year) Resident (B) I need patients too (awkward laugh)

5 Jr (2nd-Year) Resident Let’s, why don’t we sort out

6 Jr (1st-Year) Resident (B) (laughs)

7 Jr (2nd-Year) Resident who the residents are gonna take –

8 3rd-Year Medical Student (B) Yeah

9 Jr (2nd-Year) Resident and then

10 Jr (1st-Year) Resident (A) okay

11 Jr (2nd-Year) Resident we’ll sort out you guys

12 3rd-Year Medical Student (C) Yeah

13 Jr (1st-Year) Resident (A) So, I have four.

14 Jr (2nd-Year) Resident okay, so I need to take two more then.

15 Jr (1st-Year) Resident (B) I have two as well. So, I, I can take –

16 Jr (2nd-Year) Resident How many new ones do we have?

17 Jr (1st-Year) Resident (B) one, two

18 Jr (2nd-Year) Resident There’s Norman

19 Jr (1st-Year) Resident (B) three four?

20 Jr (2nd-Year) Resident okay, so let’s take two each then?

21 Jr (1st-Year) Resident (B) Can I take the, HSP, is that okay?

22 Jr (2nd-Year) Resident Sure.

23 Jr (1st-Year) Resident (B) Uh, that’s Junior Chang.

24 Jr (2nd-Year) Resident okay

25 Jr (1st-Year) Resident (B) And then do you wanna choose the next –

26 Jr (2nd-Year) Resident Uhm, who are our four? Oh yeah okay.

27 Jr (1st-Year) Resident (B) So it was uh, (pause)

28 Jr (1st-Year) Resident (A) Norman

29 Jr (1st-Year) Resident (B) I’ll take the ALTE

30 Jr (2nd-Year) Resident okay

31 Jr (1st-Year) Resident (B) the bupropion overdose –

32 Jr (2nd-Year) Resident okay

33 Jr (1st-Year) Resident (B) and then the one that’s going home –

34 Jr (2nd-Year) Resident okay

35 Jr (1st-Year) Resident (B) I’ll

36 Jr (2nd-Year) Resident I’ll take the ALTE –

37 Jr (1st-Year) Resident (A) I think, you should s-, oh. Actually, never mind. You-you two figure it out, I, I don’t, I’m –

38 Jr (1st-Year) Resident (B) (smiles)

39 Jr (1st-Year) Resident (A) don’t have any say in this anyways.

40 Jr (2nd-Year) Resident Yep. Go ahead. Who do you want?
Jr (1st-Year) Resident (B)  
Uhm, (pause) do you have a preference in terms, like, I could do, I don’t know, I could uh, I’m happy to do either.

Jr (2nd-Year) Resident  
Uhm, I don’t I don’t I don’t really mind either.

Jr (1st-Year) Resident (A)  
But I feel like, you should try to separate the ALTE and the, overdose becuz sometimes CAPE just takes so long to get done that you may get stuck with two patients that are just like –

Jr (2nd-Year) Resident  
Hmmm

Jr (1st-Year) Resident (A)  
there for a long time

Jr (2nd-Year) Resident  
Yeah, I wouldn’t mind some turn over, do you mind –

Jr (1st-Year) Resident (A)  
okay

Jr (2nd-Year) Resident  
if I take the –

Jr (1st-Year) Resident (A)  
yeah, that’s fine

Jr (2nd-Year) Resident  
cervical adenitis, I just, Ive had –

Jr (1st-Year) Resident (A)  
That was gonna be my, my only suggestion.

drawn out patients. Okay. You guys. Uhm, how many patients do you guys each have right now?

3rd-Year Medical Student (C)  
We just have two.

3rd-Year Medical Student (B)  
I have two, yeah.

Jr (2nd-Year) Resident  
Youre following, Kath?

3rd-Year Medical Student (C)  
Uhm, Jasmine, and Chaz.

Jr (2nd-Year) Resident  
And, uhm sorry. Who?

Jr (1st-Year) Resident (A)  
Jasmine and Chaz.

Jr (2nd-Year) Resident  
Oh, Chaz. Okay sorry, you should, we should just add your name onto that. And Hannah, you have?

3rd-Year Medical Student (B)  
Uhm, Gavin and Nancy.

Jr (2nd-Year) Resident  
Gavin and Nancy, okay. So why don’t you guys each pick one of the, new ones too, uhm, pick up today?

3rd-Year Medical Student (C)  
I’ll take, the ALTE?

3rd-Year Medical Student (C)  
Yeah, the ALTE one?

Jr (2nd-Year) Resident  
Yeah.

Jr (2nd-Year) Resident  
Is that okay for you, Hannah?

Jr (1st-Year) Resident (A)  
Yeah, sure.

3rd-Year Medical Student (B)  
okay. And then Hannah, I think usually HSP is a good –

3rd-Year Medical Student (B)  
Yeah. That’s interesting.

3rd-Year Medical Student (B)  
one.

3rd-Year Medical Student (B)  
Yeah HSP is definitely –

3rd-Year Medical Student (B)  
Yeah
Jr (1st-Year) Resident (A) an interesting one. We don’t really admit many HSPs.

Jr (2nd-Year) Resident No we don’t.

Jr (1st-Year) Resident (A) In fact

3rd-Year Medical Student (C) Alright. What’s HSP stand for? I don’t (laughs)

Jr (2nd-Year) Resident So it’s Henoch-Schönlein purpura, and it will –

3rd-Year Medical Student (C) be on your exam, so it’s a good one.

Jr (2nd-Year) Resident Oh! Okay. From the pictures

3rd-Year Medical Student (C) So, it’s an, acqui-, it’s sort of, it’s usually a tetrad of things. So, you have uh this like characteristic rash, you have GI manifestations that can be really widely variable –

3rd-Year Medical Student (C) Mm-hmm

Jr (2nd-Year) Resident uh, you get renal manifestations that can also be widely variable, and sometimes, progressive in the long term, so –

3rd-Year Medical Student (C) Oh

Jr (2nd-Year) Resident they often need long-term follow-up, and, the last thing is arthritis and arthalgias –

3rd-Year Medical Student (C) Oh

Jr (2nd-Year) Resident – so that’s the tetrad. The, way that this child presented was classic in the sense that, often, it’s really hard to make the diagnosis, until they get the rash –

3rd-Year Medical Student (C) Hmm

Jr (2nd-Year) Resident – so it’s not uncommon for these kids to come into emerg, be diagnosed with gastroenteritis or other causes for their abdominal pain, or whatever they have and then it’s not until they have the rash that the diagnosis is made. It’s an IgA-mediated –

3rd-Year Medical Student (B) Yeah


Jr (1st-Year) Resident (A) They often have, they can have all four, or they can have all four at separate times too.

3rd-Year Medical Student (B) So it doesn’t have to all come at –

3rd-Year Medical Student (A) They don’t –

3rd-Year Medical Student (B) – the same time to –

3rd-Year Medical Student (A) – necessarily coincide

3rd-Year Medical Student (B) So you would diagnose it at the end, like when you see, like

3rd-Year Medical Student (A) Sometimes, you cant diagnose it, til it’s base of the arms or

3rd-Year Medical Student (B) – Hmm
And so we’ll present the new ones
Oh-kay