

Assessing the Impact of the Hidden Curriculum  
on Interprofessional Development Among  
Medical Clerkship Students: A Mixed-Methods  
Action Research Analysis

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# Importance of and Challenges for Clinical IPE

- IPE Pedagogy – How to “teach” “it”
  - Many use lecture, simulation, workshops (Meszaros et al., 2011)
  - Seen as artificial by students (Rosemfield et al., 2011)
  - Current preference on *authentic* clinical training (Brennan et al., 2013)
  - But.....It’s HARD-ER
  - Few authentic clinical sites with most practicing using old model (Brennan et al., 2013)
  - Begs the question ---What happens to students IPE worldview?

# Hidden Curriculum

Disclaimer - Researcher bias – *learning is social, thus theoretical orientation is social cognition, specifically social constructivism*

Why is the clinical context important?

- Medical education involves multiple curricular levels – formal (classroom), informal (Socratic) and hidden – implicit moral enculturation (Hafferty, 1998)
- Points to importance of social learning (modelling) by significant mentors including preceptors (e.g., Hammick et al., 2007; Larson, 2012)
- But More! Hidden curriculum recognizes impact of total learning milieu (Jackson, 1968)
- Hidden curriculum operationalized as learning via informal interactions among students, faculty, others, and the environment (Gaufberg et al., 2010)
- Messages are insidious and unrecognized by educators

# Problem

- Most IPE at that institution were in the pre-clinical period (not in clinically authentic context, yet)
- IPCP not necessarily or consistently the standard practice in training sites
- So...What happens to students during clinical training, a time when students are developing professional identity?
  - Is previous IPE worldview eroded?

# Research Questions

1. From where does the hidden curriculum related to interprofessional collaboration emanate within the clinical environment?
2. What is the nature of the implicit messages delivered to learners during clinical rotations?
3. How does the congruence of preceptor attitudes about interprofessional collaboration impact the maintenance, attenuation, or amplification of students' attitudes about interprofessional collaboration?

# Methods - Participants

## Participants

- Stratified sample of 21 third year medical UK students who had participated in the pre-clinical core IPE curriculum (iCATS) (N = 95)
- Three groups stratified by existing attitudes toward IPCC based on end of year 2 measurement
  - Low (n = 2; 9.5%), Average (n = 18; 85.7%), and High (n = 1; 4.8%)
  - Represents population: Low ( N = 10; 10.5%), Average (N = 74; 77.9%), and High ( N = 11; 11.6%)

# Methods - Design

## Design

- Mixed methodology concurrent triangulation design (Creswell, 2003)
  - A recent IOM consensus report (IOM, 2015) argues that IPE is best examined with a mixed methodology in order to “show the ‘what’ and ‘how’ of an IPE intervention/activity and its outcomes” (p 5).
- Action Oriented Research – Dual focus
  - Aims to contribute both to the practical concerns of people in an immediate problematic (or unknown)situation and to further the goals of social science simultaneously.
- Qualitative and quantitative performed simultaneously to inform and validate each other

# Methods: Qualitative

- Qualitative design
  - Semi-structured interviews utilizing the narrative approach for gathering and analyzing data
  - Suited to describe the lived experience of a small number of people with significant stories to tell (Creswell, 2013)
  - Interested in the meaning they ascribe to the stories and its impact on worldview of collaboration
- Qualitative analysis
  - Text analyzed thematically (primary focus on thoughts and emotions)
  - Students described their journey from pre-clinical to clinical as impacted by the hidden curriculum (significant mentors, others, context)
- Validation
  - Member checking (concurrent and post-interview)
  - Comparison to qualitative results



# Methods: Quantitative

- Instrumentation

- ATHCTS: Attitudes Toward Health Care Teams Scale (Heinemann, Schmitt, Farrell & Brallier, 1999)
- Two sub-scales
  - Quality of care/process (14 items with Chronbach's alpha typically  $\sim .80$  -  $.85$ )
  - Physician centrality (6 items with Chronbach's alpha typically  $\sim .60$  -  $.68$ )
- Used to assess attitudinal outcomes of interprofessional team interventions
- Identified by National Center for Interprofessional Practice and Education as one that is used often due to robust psychometrics (M. Schmitt, personal communication, August 30, 2015).

- Utilization

- Students – Pre (end of M2) and post design (during M3)
- Faculty – Following students' clinical rotation

# Procedure

- Students
  - Consented
  - Completed ATHCTS (<5 minutes)
  - Semi-structured interview conducted (~25-30 minutes)
  - Transcribed verbatim
- Faculty
  - Consented (after student had transitioned to next rotation)
  - Completed ATHCTS

# Analysis: Qualitative

- Coding strategy
  - Read multiple times to determine overall gestalt
  - Coding was iterative. Began with open-coding to determine the direction of analysis rather than fitting into preconceived structure (Boyatziz, 1998)
  - Initial coding generated 72 discrete codes
  - Scrutinized and collapsed into 10 general topical areas used to generate code book with definitions
  - Each transcript was coded based on definitions
  - Axial coding conducted to determine relationship among data items and to identify major themes and sub-themes
  - Through iterative repetition and refinement, the final model was established that included six major themes and 17 supporting subthemes

# Analysis: Quantitative

- General
  - Data checked for symmetry/skewness\*
  - A probability level of  $p < .05$  was used for all significance testing.
  - Reliability of scales assessed using Chronbach's alpha test of internal consistency
- Students
  - Pre to Post change on ATHCT measured by Wilcoxon Signed Rank test for matched observations of ordinal data
- Faculty
  - Mann-Whitney U test for independent samples (ordinal data) compared the similarity of student results on the ATHCT, at the time of their clinical rotations, with those from faculty of record.
- Justification
  - Non parametric statistics called for if non-scale level data
  - \*Does not assume a theoretical distribution (symmetry) (Glass & Hopkins, 1996)

# Results: Qualitative Summary

- Major themes and sub-themes related to research questions
  1. Locus of messages
    - a) Physician mentors
    - b) Non-physician mentors
    - c) Context or clinical milieu
  2. Nature of messages
    - a) Supportive of IPCC
    - b) Negativity toward IPCC
  3. Physician/nurse relationship
    - a) Respectful
    - b) Hostility (direct or indirect)
    - c) Students understanding and implications for care
  4. Impact on students attitudes and understanding
    - a) Increased appreciation for IPCC
    - b) More realistic perspectives
    - c) Recognition of impact on care
    - d) Increased respect
    - e) Understanding of team leadership

# Results: Qualitative Summary

- Action-oriented themes

- 5. Importance of pre-clinical IPE

- a) Better understand others' worldviews
    - b) IPCC preparation and practice

- 6. Reflections on and recommendation for core IPE curriculum

- a) Barriers to overcome
    - b) Enhanced focus on authenticity / roles and responsibilities

# Quantitative Results: Students Pre to Post

- *Pre to Post scores on ATHCTS (Wilcoxon Signed-Rank test)*

Sub-Scale	N	Mean	SD	Skew
Quality of care (pre) *	21	3.59	.573	-.378
Quality of care (post) *	21	4.14	.451	-.413
Physician Centrality (pre)	21	3.24	.731	-.644
Physician Centrality (post)	21	3.25	.649	.005

\* Z = -3.342, p = .001 (Effect Size: r = -.51 as calculated  $r = z/\text{square root of number of observations}$ )

- *Median Rankings for significant results*

Sub-Scale	z-score	P-value	Median Rankings
Quality of care (post – pre)	-3.412	.001	Neg = 3 Pos = 18 Ties = 0

# Quantitative Results: Student & Faculty Comparison

- ATHCT Results for Faculty (n = 13) and Students (n = 21, post only)
- Mann-Whitney U test for independent samples indicates that students and faculty hold similar attitudes toward the quality of care achieved from IPCC and physician centrality.

Group	Quality of Care				Physician Centrality			
	Mean	SD	Skewness	P-value	Mean	SD	Skewness	P-value
Faculty	4.03	.354	-.157	.484	3.00	.471	-2.00	.276
Students	4.14	.451	-.413		3.25	.649	.005	



# Research Questions Addressed

## 1. *From where does the hidden curriculum (HC) emanate?*

- Literature indicates that the HC results from a complex interaction of implicit values transmitted from multiple sources (Gofton & Regehr, 2006; Haidet & Stein, 2005).
- Confirmed in this study. Messages transmitted by
  - Preceptors, residents, other professionals, the culture of the profession/rotation, the context including the physical space

# Research Questions Addressed

## 2. *What is the nature of these implicit messages?*

- Most relationships described as positive and respectful
  - Especially physician and pharmacist dyad
- Received messages regarding the benefits of collaborative problem solving
  - Recognize difference between collaboration and delegation (Greer & Clay, 2010)
- Still observe and/or uncover some negativity, especially within complex physician/nurse relationship
  - Described as a function of professional socialization (Lindke & Block, 2011)
  - Professional socialization impacted by hidden curriculum (Hafferty, 1998)
- Students are not a *tabula rasa* (Gaufberh et al., 2010)

# Research Questions Addressed

3. *How does congruence of preceptor attitudes influence students' attitudes? --- The answer involves two related sub-questions:*
  1. How have students' attitudes changed during clinical rotations?
    - Results of ATHCTS indicate students attitudes toward quality have increased
    - Qualitative results indicate
      - Increased appreciation and understanding of benefit to patients
      - Realistic and mature understanding of what it is and is not
      - Increased understanding of roles and scope
      - Increased respect for others
      - Leadership is important and not always physician-centric

# Research Questions Addressed

3. *How does congruence of preceptor attitudes influence students' attitudes?*
2. Are student and faculty attitudes in concordance?
  - Results of the ATHCTS indicate no differences between students and faculty

# Implications

- For theory
  - Study confirms that the hidden curriculum is alive and well in clinical training
  - Demonstrated that the hidden curriculum provides a vivid picture of social construction of meaning during the clinical clerkship.
- For practice
  - Elaborates on the complexity of what should be considered in designing and implementing IPE
    - Clinical education is “messy” and messages received through the hidden curriculum emanate from multiple, sometimes competing sources – ALL impact students socialization of an interprofessional identity
    - The value for pre-clinical IPE seen through students lens add fuel to the timing debate in favor of pre-clinical exposure (e.g., Pirrie, 1998) but combined with exposure in the clinical context (e.g., Cox & Naylor, 2013) and beyond (e.g., Barr, et al., 2005; Cox & Naylor, 2013)

Thank you!

Questions?



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