Developing Interprofessional Communication Practices for the Opioid Naïve Population
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1School of Nursing, University of Michigan; 2University of Michigan Medical School; 3College of Health Sciences, University of Michigan - Flint

Background
• Chronic opioid use and misuse has become a significant health care issue in recent years.1
• Studies suggest that surgery is a risk factor for initiation of chronic opioid use. This may be greater in opioid naïve patients.2
• Effective interdisciplinary team communication practices that are patient-centered could mitigate the risk of chronic opioid use and misuse.3
• These practices are related to higher levels of patient self-efficacy which is further related to lower patient report of pain intensity and pain interference.3,4

Purpose
The purpose of this study is to develop quality communication among interdisciplinary teams working with opioid naïve patients within a postsurgical context through interprofessional education.

Methods
• A pilot project was developed with the pilot group to consist of nursing, physical therapy and psychology students. The students will be placed into interdisciplinary teams.
• A case study based course was designed and administered through a learning management system (Canvas).
• The case centered around a woman with an acute ankle fracture who is opioid naïve, but the communication about her opioid prescription is subpar.
• Asynchronous pre-activity work was assigned to the students:
  • Communication strategies for both the opioid naïve patient and the interprofessional team.
• During the synchronous portion of the course, the case study was introduced and students reviewed it individually.
• A facilitator (KK) engaged the students with focused questioning on team communication and patient outcomes as it relates to opioid naïve patients.
• Videos were created to offer additional insight into the complexities of this case.
• Student learning was assessed using the Interprofessional Collaborative Competencies Attainment Survey

Future Application and Next Steps:
• Authors are implementing the project in June 2020

References

The authors wish to acknowledge the Interprofessional Education Center, the Center for Research on Learning and Teaching, and the students who plan to participate in the pilot
Abstract Title: Developing interprofessional communication practices for the opioid naive population

Background: Chronic opioid use and misuse has become a significant health care issue in recent years. Some studies suggest that surgery is a risk factor for initiation of chronic opioid use and a small subset of opioid naive patients are at risk for potential opioid misuse post-surgically. One avenue to mitigate this risk and enhance patient outcomes is effective interdisciplinary team communication. Patient-centered care includes consistent communication messages. Effective communication practices among the interprofessional team is related to higher levels of patient self-efficacy which is further related to lower patient report of pain intensity and pain interference. The purpose of this study is to develop quality communication among interdisciplinary teams working with opioid naive patients within a post-surgical context through interprofessional education.

Methods: A pilot project with a sample of students from nursing, physical therapy and psychology were placed in interdisciplinary teams. A case study based course was designed and administered through a learning management system (Canvas). Asynchronous pre-activity work was assigned to the students which included communication strategies for both the opioid naive patient and the interprofessional team members. During the synchronous portion of the course, the case study was introduced and students reviewed it individually. A facilitator then engaged the students with focused questioning on team communication and patient outcomes as it relates to opioid naive patients. Student learning was assessed using the Interprofessional Collaborative Competencies Attainment Survey.

Results: This project will be implemented in late February/early March with completion of data analysis in early April.

Lessons Learned: Patient-centered communication strategies are key in transition of care for opioid naive patients.

Future Application and Next Steps: Authors are looking to expand this IPE offering and are exploring various avenues to achieve this. Potential avenues would be to develop a new IPE course or embed this offering in existing courses.
A Case-Based Virtual Simulation to Improve Inter-Professional Communication Regarding Patient Safety

Denise Campbell, DNP, RN, ACNS-BC, CEN, CHSE, Diane Hoelscher, DDS, MS, Erika Manu, MD, Anao Zhang, PhD, LCSW, ACSW, ACT, Ji Hyun Yu, PhD (Instruction Designer)

Background

Healthcare today relies on effective teamwork and communication to ensure patient safety.\(^1\,\,^2\)

Traditionally, healthcare students are educated in professional silos that have different foci of communication.\(^3\)

Graduates of healthcare programs are expected to work in an inter-professional team and communicate effectively upon entering the workforce.

Purpose of the Project

The purpose of this pilot project is to determine if an online, case-based simulation module introducing the communication tool CUS, improves healthcare professional students’, communication efficacy and confidence and decreases fear related to communication.

Methods

Proposed a pilot pre/post single-group quasi-experimental design including (N = 20)

Phase 1 ➔ Educational Module Development & Virtual Simulated Case Development

Phase 2 ➔ Baseline Survey Administration & Synchronous Online Simulation Session

Phase 3 ➔ Student Post-Session Assessment & Post-Session Reflection

Pre-session Educational Content

Course Canvas Page

Progress to Date

In addition to a fully developed Canvas site, we have also developed discipline specific case scenarios for dyads of health profession students to use in their virtual live simulation. Before the project was interrupted due to COVID-19, we were able to deliver this educational session to one dyad of dental and medical students. Preliminary Results revealed students reporting improvement in their self-confidence and comfort with inter-professional communication as well as in their knowledge about inter-professional communication.

Next Steps

We plan to complete the pilot in the upcoming weeks/months and publish the results.

Results of this project will help emphasize the importance of incorporating inter-professional communication education into healthcare professional curricula.

We aim to sustain the use of this curricula by recommending its use in other inter-professional courses at our institution and outside.

Title: A case-based virtual simulation to improve inter-professional communication regarding patient safety

Background: Healthcare today is provided by multidisciplinary interprofessional teams who rely on effective teamwork and communication to ensure safe high-quality patient care. In its 2004 sentinel event data report, the Joint Commission listed leadership, communication, coordination and human factors as among the leading root causes of sentinel events. In addition, team communication failures have significant economic burden that can impact patient quality and safety, and access to care.

Traditionally, healthcare students are educated in professional silos that have different foci in communication, yet graduates of healthcare programs are expected to work as an interprofessional team and communicate effectively upon entering the workforce. The positive relationship between team communication and patient safety has increased the emphasis on training future health professionals to work within interprofessional teams and to communicate effectively. Effective communication and confidence develop when students have the opportunity to practice these skills. Additionally, inter-professional communication and team training in academia has been shown to be effective in building the foundations for later practice within healthcare teams.

Increasingly, educators have sought to create inter-professional trainings that teach the key elements of effective teamwork in simulated settings which allow for the practice of skills in a controlled environment. Simulation provides a realistic, risk free environment promoting patient safety and increasing students’ competence and confidence with communication strategies.

Purpose: The purpose of this pilot project is to determine if an online, case-based simulation module introducing the communication tool, CUS words, improves healthcare professional students’ communication efficacy and confidence and decreases fear related to communication.

Methods: This pilot project is a pre/post single-group quasi-experimental design including 20 healthcare professional students from nursing, medicine, and dentistry. This project is completed in four phases.

The initial phase of this project includes development of an educational module, simulated case study scenarios and evaluation tools. Phase II involves the administration of pre-surveys and an on-line educational module to participating students. During Phase III students actively participate in simulated case study role
play scenarios followed by a debriefing session facilitated by the researchers. In the last phase participating students’ complete post-surveys.

Data analysis: Statistical analysis of data will be conducted under direct consultation with a statistician from the University of Michigan. In addition to descriptive statistics, we will conduct dependent samples t-test to determine if students report significant improvement across outcome domains.

Results- Data collection is currently underway. Outcome measures will include differences in pre/post survey on student confidence and knowledge of communication tools, pre/post survey on student attitudes of the simulation experience, and results of the observation tool during the simulated case study interaction.

Lessons Learned: We intend to test the hypothesis that the simulated inter-professional communication scenarios help to improve student efficacy, confidence, and comfort in communicating with other healthcare professionals.

Future application and next steps- Results of this project will help to emphasize the importance of incorporating inter-professional education relating to communication into healthcare professional curricula. Given this module is delivered online; we aim to sustain its use by recommending it to other IPE courses at the University of Michigan campuses. Furthermore, information obtained from this project can assist with identifying areas for improving inter-professional communication between all healthcare professionals thereby improving patient safety.
The Adolescent Health Initiative (AHI) first organized a Connection Session mini-conference in 2016 to convene health care professionals from multiple disciplines with a shared goal of improving adolescent health. Since then, AHI has hosted annual Connection Sessions on specific adolescent-related topics to further interdisciplinary learning using innovative, multi-pronged approaches.

The Connection Session framework is a thoughtful, engaging mix of the latest research, cross-discipline problem-solving, application of best practices, and activities to incorporate authentic youth voice. AHI has partnered with subject matter experts to plan and execute Connection Sessions each year from 2016-2019.

The first Connection Session’s structure was so effective that each subsequent program has included the same primary components, each time adapted to best suit the topic.

**Key Components**
- Activities to center the voices and experiences of youth
- Keynote and discussion addressing emerging research
- Networking opportunities
- Small group, adolescent-centered case-based discussions
- Interdisciplinary practice-based strategizing

**Interdisciplinary Emphasis**
An audience size of 70-90 people allows for meaningful small group discussion, dynamic Q & A as with youth and other subject matter experts, and community sharing. Roles represented include:
- Administrators
- Health Educators
- Medical Assistants
- Nurse Practitioners
- Physicians
- Physician’s Assistants
- Registered Nurses
- Social Workers
- Community Health Professionals

**Challenges and Opportunities**
A challenge with the multidisciplinary aspect of the event is to create cases and activities that feel relevant to all of the roles in the room. AHI thoughtfully develops exercises that illustrate role-specific best practices, fill common ground, and reinforce the interconnectedness of an adolescent-serving team. Continuing education credits are offered for medical and mental health providers, as well as health educators, to encourage a wide range of professions to participate.

Unique considerations are associated with amplifying youth perspectives on sensitive topics. Sometimes, anonymity is essential to respect privacy, or to avoid re-traumatization. At the human trafficking event, to ensure AHI was centering survivor voices in an ethical way, they worked with AHI’s youth council to record audio clips of survivor quotes from qualitative research. For the event on marijuana, AHI recorded small discussion groups with youth ahead of time, and shared audio clips and quotes at the event. These activities supplement the face-to-face discussions with youth.

**CONVENING HEALTH CARE PROFESSIONALS TO CENTER YOUTH, RESEARCH, BEST PRACTICES, AND COMMUNITY**

**THE CONNECTION SESSION MINI-CONFERENCE AS AN INNOVATIVE STRUCTURE FOR CONTINUING EDUCATION**

**Jenni Lane, MA; Ellen Wagner, MS, MPH; Ariel Ragin, BA**

**BACKGROUND**

**CONNECTION SESSIONS IMPACT**

**2016: AFFIRMING CARE FOR TRANSGENDER YOUTH**

**Goal:** To foster clinical competence in health services for transgender youth through increased support, quality care, and equitable access to resources.

- Attendees learned from youth presenters and participated in ten round-table discussions on topics such as medical management, advocacy, building staff buy-in, taking a sexual history, working with families, and partnering with schools.
- Representatives from 12 community organizations shared information about their services.
- Participants received access to free, replicable training for delivery at their home sites.

**Participants said...**
- "There was not enough community in the area than I had anticipated--thrilled to be a part of it."
- "I am excited to take what I learned today and share it with other staff I work with."
- "It was great. I wanted more!"

**3 hours**

**80 registrants**

**IMPAKT**

**2016 Evaluation**
Each year, AHI planners examine evaluation results and plan for the next year with the data. Based on the respondents’ higher programming, the event grew from a three-hour event in 2016 to seven hours in 2017. AHI planners make an effort to maintain the effectiveness of the structure while developing engaging and innovative activities that align with the objectives and topic.

**100% of respondents stated that quality of the event was “Good” (11.90%) or “Excellent” (88.10%).**

**I can identify at least 3 barriers transgender youth face when accessing health care services.**

**I can identify at least 2 ways to create an affirming environment for transgender youth.**

**I can identify strategies related to the care and well being of transgender adolescents that can enhance my work.**

**I can identify referral services that I can use for my patients/clients.**

**2017 Evaluation**

**Overall quality of event**
- 3.5/4
- Format of event
- 3.6/7/4
- 100% of participants said:
- The event was relevant to my practice
- I would recommend it to a colleague

**Participants said...**
- "I have attended many conferences that address substance abuse. The information shared by the presenters gave me more information about this topic than all of the combined information from those conferences."

**3 hours**

**64 registrants**

**2018 Evaluation**

**92% of participants stated that they intended to change practice as a result of the event, in the following ways:**
- "Ask more screening questions of young adults with risk factors"
- "Find resources in my area"
- "Create a prototype for our center"
- "Cluster loads will present Spark at all cluster meetings: “Providing training to staff and thinking about what training looks like from the AA level to the Medical Directive level”"
- "Improve resources and signage at our site!"
- "Attend each patient with a trafficking possibility lens"

**2019 Evaluation**

**The Changing Landscape of Legalized Marijuana**

**Goal:** To address the uncertainties, best practices, and legal ramifications for minors and young adults around marijuana use.

- Dr. Leslie Walker-Harding’s keynote, Weed through the Woods: Marijuana, Legalization, and the Adolescent Impact brought the latest research to practice.
- Youth presenters shared information on current forms of marijuana use, social pressures, and effects on health messaging.
- Participants received actionable steps to effectively address marijuana use and received access to supplemental training.

**Participants said...**
- "I enjoyed having non-health care providers on the panel to understand the bigger picture."

**7 hours**

**91 registrants**

**2020: Shifting to a Virtual Environment**
As large gatherings are not feasible this year, AHI is restructuring the Connection Session framework for effective delivery in a virtual setting. The 2020 event on trauma-informed practices for adolescents will be entirely online, and every effort is being made to retain effectiveness, center youth voice, and engage participants in new and creative ways. The 2018-2020 Connection Sessions were supported by an Innovation Grant from the Michigan Medicine Office of Continuing Learning. AHI is excited to continue innovating, increasing access, and nurturing interdisciplinary growth through its new platforms.

**www.adolescenthealthinitiative.org**
Title: Convening Health Care Professionals To Center Youth, Research, Best Practices, And Community: The Connection Session Mini-Conference As An Innovative Structure For Continuing Education

Authors: Jenni Lane, MA; Ellen Wagner, MS, MPH; Ariel Ragin, BA

Background: The Adolescent Health Initiative (AHI) first organized a Connection Session mini-conference in 2016 as a means to convene health care professionals from multiple disciplines, with a shared goal of improving adolescent health. Since then, AHI has hosted an annual Connection Sessions on specific adolescent-related topics to further interdisciplinary learning using innovative, multi-pronged approaches. The Connection Session framework is a thoughtful, engaging mix of the latest research, cross-discipline problem-solving, application of best practices, and activities to incorporate authentic youth voice.

AHI has partnered with subject matter experts to plan and execute Connection Sessions each year from 2016-2019, with the following topics: Affirming Care for Transgender Youth; Adolescents and Substance Use Disorder; Identifying and Supporting Trafficked Youth; and Navigating the Changing Landscape of Legalized Marijuana. Each of the mini-conferences has offered continuing education credits for physicians, nurses, health educators, and social workers.

The first Connection Session’s structure was so successful that each subsequent program has included the same primary components, each time adapted to best suit the topic. Key components include an opening activity to center the voices of youth; activity or keynote discussion addressing emerging research; practice-based strategies; small group case-based discussions; and collaborative action planning.

The audience size is 70-90 people, which allows for shared programming and meaningful small group discussion and community sharing. Program evaluation responses have been resoundingly positive. In 2019, the response rate was 70%, and the average score for sessions was 3.46/4. The scores for each previous year are very similar. In addition, AHI follows up with participants 3 months after the program, to assess for completion of SMART goals and share additional resources.

Many attendees return each year and say that it is one of their most valuable continuing education opportunities of the year. One common comment stated, “This was a really nice mix of interactive and more traditional lecture type presentations. I really enjoyed hearing the youth perspective on this topic. I learned a great deal
that will help me to help my adolescent patients.”

The diversity of the audience has prompted rich discussion and learning among adolescent-serving professionals. Connection Sessions have included representatives from community-based organizations, as a means to educate participants on the resources in their community, engage in nuanced problem-solving together, strengthen linkages, and coordinate community responses to problems.

Each year, AHI planners examine evaluation results and plan for the next year with the data. Based on the request for more programming, the event has gotten longer, from its first year of four hours to 2019’s seven hour event. The expense has grown with expanded meal options and more renowned national speakers presenting. AHI planners make an effort with each program to maintain the effectiveness of the structure while adapting with the topic and keeping the activities engaging and innovative.

One unique challenge has been navigating the sensitive nature of young people sharing their perspectives on stigmatized topics, such as marijuana use and human trafficking. In the case of trafficking, subject matter experts advised strongly against having a survivor panel due to the likelihood of re-traumatization, so AHI worked with its youth council to record audio clips of survivor quotes from qualitative research, keeping survivor “voices” at the center in an ethical way.

Another challenge with the multidisciplinary aspect of the event is to create cases and activities that feel relatable and applicable to all of the roles in the room. AHI has developed creative solutions to keep the experience practical and meaningful to all participants.

AHI plans to continue offering Connection Sessions in Michigan in the future, and is gathering information about the feasibility of bringing the model to other parts of the country. The framework is successful, effective, participatory, and easy to replicate, the cost is low, and the outcomes offer an excellent return on investment.
From Inception to Year 5: The Evolution of Interprofessional Education at the University of Michigan

Vani Patterson, Mary Beth Lewis, Lindsay Telega, Ghaidaa Najjar, Frank Ascione

Background

In 2015, the provost and the health science deans committed $6 million over five years to develop an interprofessional health education initiative, including the founding of the Michigan Center for Interprofessional Education (Center for IPE). By carefully aligning and integrating the needs and interests of health professions education with collaborative practice, the health science schools are working to transform the way they prepare U-M students to become effective members of the collaborative health care teams of the future.

Center for IPE Organizational Structure

- Provost
- Director
- Executive Committee
- Health Science Deans
- Student Advisory Committee
- Curriculum Committee
- Faculty Development Committee

Successes

- Substantial increase in students engaged in IPE curriculum:
  - 850 in 2015-16
  - 1,708 in 2017-18
  - 2,676 in 2019-20
  - 3,008 in 2023-24

- Growth in IPE curricular opportunities:
  - 5 in 2015-16
  - 13 in 2017-18
  - 27 in 2019-20
  - 33 in 2021-22
  - 35° in 2023-24

- Faculties engaged in IPE efforts in 2019-20:
  - 316

- Students engaged in co-curricular IPE:
  - 500+

- Grants awarded:
  - 4 Grants Worth $20K
  - 17 Grants Worth $85K
  - 10 Grants Worth $570K

Lessons Learned

- Identify and leverage champions within each school.
- Identify and collaborate with the existing resources at U-M to develop mutually beneficial partnerships and efforts.
- Put diverse people together with a general goal and give them space to be innovative.

Strategy

The Center for IPE is the coordinating body for IPE across the health sciences schools tasked to drive forth 5 overarching goals for IPE at U-M:

GOAL 1 - Create a collaborative culture
GOAL 2 - Cultivate a core interprofessional curriculum
GOAL 3 - Develop faculty to teach in innovative learning environments
GOAL 4 - Create a unique body of knowledge
GOAL 5 - Become a national/international leader in IPE

Next Steps

The next phase will focus on full integration of IPE into each health science school, their culture, and their curricula, with an emphasis on IPE in experiential settings including both clinical and community spaces. This will allow students and faculty to apply the didactic IPE that has flourished in the first 5 years to the actual practice settings and drive forth collaborative practice models. Additionally, the IPE effort will expand beyond the health science schools to be inclusive of other professional schools at U-M.
Title: From Inception to Year 5: The Evolution of Interprofessional Education at the University of Michigan

Authors: Vani Patterson, Mary Beth Lewis, Lindsay Telega, Ghaidaa Najjar, Frank Ascione

Background: Efforts to create a collaborative culture across the health science schools is rooted in a strong commitment from University of Michigan leadership. In 2015, the provost and the health science deans committed $6 million over five years to develop an interprofessional health education initiative, including the founding of the Michigan Center for Interprofessional Education (Center for IPE). By carefully aligning and integrating the needs and interests of health professions education with collaborative practice, the health science schools are working to transform the way they prepare U-M students to become effective members of the collaborative health care teams of the future.

Actions, Methods, or Intervention: The Center for IPE is the coordinating body for IPE across the health sciences schools tasked to drive forth 5 overarching goals for IPE at U-M:

GOAL 1 - Create a collaborative culture
GOAL 2 - Cultivate a core interprofessional curriculum
GOAL 3 - Develop faculty to teach in innovative learning environments
GOAL 4 - Create a unique body of knowledge
GOAL 5 - Become a national/international leader in IPE

The Center for IPE creates venues and capacity-building opportunities to achieve the goals and potential of IPE through curriculum development, clinical innovation and evaluative research. We’ve developed a structure to oversee, develop, and implement IPE activities, which includes: [for poster, just include org chart]

- Executive Committee
- Ad Hoc Administrative Advisory Committee
- Curriculum Committee
- Faculty Development Committee
- Student Advisory Committee
The Center for IPE in partnership with the health science schools also coordinates a myriad of other opportunities to engage students and faculty. For students, this includes funding for IPE student organizations, connections to a network of collaborators and faculty speakers, IPE courses, and opportunities to inform the IPE movement. Faculty have opportunities spanning funding, professional development, and scholarship.

These include an Interprofessional Leadership Fellows program facilitated by CRLT, IP-X funding in partnership with the Health Science Council of Deans, Community Engaged IPE Funding in partnership with the Ginsberg Center, IPE Travel Grants to support the dissemination of scholarly work, Health Professions Education Day in partnership with the Department of Learning Health Sciences to provide a venue for idea exchange and collaboration, and numerous professional development and skills-building activities to improve faculty capacity for IPE teaching and practice.

Results: IPE has experienced significant momentum over these first 5 years. IPE offerings for students have increased from 5 in year 1 to 33 in year 4. Over 130 manuscripts have been published on IPE by U-M faculty over the past 5 years. Eight of the 10 health science schools have IPE as a mandate in their curricula for 100% of targeted learners. This means that in 2018-19, 2874 of the 5,000 health science students had at least 1 IPE experience during that academic year. Over $675,000 of IPE research has been funded internally. The number of IPE student orgs has doubled to 6. Robust social media channels position U-M in the center of IPE conversations and shared communications worldwide, most notably on Twitter—where U-M Center for IPE’s followers now number over 875. A true testament to U-M progress came in late 2019 when faculty and staff nominated Center for IPE Director Frank Ascione for a first-ever national award: the Interprofessional Educator and Mentor Award from the American Interprofessional Health Collaborative (AIHC). U-M faculty have received numerous other IPE awards including the internal Awards for Innovation and Excellence in IPE as well as the regional MIPERC Awards.

Lessons Learned:
- Identify and leverage champions within each school.
- Identify and collaborate with the existing resources at U-M to develop mutually beneficial partnerships and efforts.
- Put diverse people together with a general goal and give them space to be innovative.

Future Application and Next Steps: The next phase focused on full integration of IPE into each health science school, their culture, and their curricula. Additionally, emphasis will be placed on IPE in experiential settings including both clinical and community spaces. This will allow students and faculty to apply the didactic IPE that has flourished in the first 5 years to the actual practice settings and drive forth collaborative practice models. Additionally, the IPE effort will expand beyond the health science schools to be inclusive of other professional schools at U-M.
An Introduction to IPE for First Semester Occupational Therapy and Physical Therapy Students
Suzanne Trojanowski1 PT, DPT, NCS; Jillian Woodworth1 DrOT, OTR/L; Anna Wienczek2; Amy Yorke1 PT, PhD, NCS
1Department of Physical Therapy, University of Michigan - Flint; 2Department of Occupational Therapy, University of Michigan - Flint; 3OTD Student

Background

- Collaboration amongst a variety of healthcare workers is essential in today’s healthcare systems.
- Physical rehabilitation is completed by several health care professionals including occupational therapists (OT) and physical therapists (PT).1
- The professions overlap in some responsibilities, but have areas of expertise.2 Through collaboration between OT and PT, proper role delineation can be executed.3
- It is important for OTD and DPT students to gain understanding of being part of an interprofessional team.3 Learning these clinical skills are important to create practice-ready graduate students, in order to improve client outcomes and collaboration in their setting once they are in the field.

Purpose

The purpose of this study is to describe the process and outcomes of implementing an IPE experience with first year OT and PT students completed within the first six weeks of the first semester of their respective programs.

Methods

- Students were in their first semester of their respective professional programs, enrolled in introductory courses. The IPE offering was designed to focus on two of the IPEC competencies (Teams and Teamwork and Roles/Responsibilities) and to be at the exposure level.
- A dedicated course for this offering was created in the Blackboard Learning Management System (LMS).
- The Readiness for Interprofessional Learning Scale (RIPLS) was completed pre- and post-learning activities, in order to assess students’ attitudes toward interprofessional learning.
- Occupational Therapy (OT) and Physical Therapy (PT) students were placed into small groups consisting of one to two OT students and 2 PT students. The objective was for students to get to know each other socially through an icebreaker activity, answer structured interview questions that focused on Roles and Responsibilities and Teams and Teamwork.
- The students were instructed to watch an introductory video of the authors (ST and JW) answering the interview questions prior to meeting.
- Students completed a written reflection to further assess their attitudes and learning about this offering. Reflection questions included: (1) Summarize the icebreaker and interview; (2) How has your knowledge increased about the OT and PT profession?; (3) How has your knowledge increased regarding interprofessional collaboration?

Results

<table>
<thead>
<tr>
<th>Entire Sample (n=58)</th>
<th>OTD (n=13)</th>
<th>DPT (n=45)</th>
</tr>
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<tbody>
<tr>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
</tr>
<tr>
<td>RIPLS Total</td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
</tr>
<tr>
<td>68.9 (5.1)</td>
<td>69.5 (4.4)</td>
<td>71.8 (4.1)</td>
</tr>
<tr>
<td>Teamwork</td>
<td>41.0 (3.9)</td>
<td>42.0 (3.7)</td>
</tr>
<tr>
<td>Negative professional identity</td>
<td>4.6 (1.6)</td>
<td>4.5 (1.8)</td>
</tr>
<tr>
<td>Positive professional identity</td>
<td>17.2 (2.6)</td>
<td>17.6 (2.3)</td>
</tr>
<tr>
<td>Roles and responsibilities</td>
<td>6.2 (1.7)</td>
<td>5.5 (1.6)</td>
</tr>
</tbody>
</table>

- Ninety-One students completed the Pre-RIPLS survey, while only 66 Post-RIPLS were completed (OT = 13, PT = 45). The response rate was 63.7% overall with 41.9% OT response and 75% PT response rate.
- Utilizing the Wilcoxon Signed Rank Test, no difference was found between pre- to post-test RIPLS score: entire group (p=0.250), or OT (p=0.874), or PT (p=0.146).
- Reflection themes included:
  - Personal experiences led me to become an OT or PT
  - Observation experiences have shaped my knowledge of OT and/or PT and interprofessional collaboration
  - OT and PT have similarities and differences
  - Future Opportunities

Lessons Learned

- Students completing the activity on their own time without the presence of faculty members was feasible.
- Students gained awareness of components of each other’s profession that are not commonly known (i.e. OT’s role in mental health)
- Students anecdotaly reported feeling better prepared to participate in IPE in Action Day.
- Response rate for the post-RIPLS was poor compared to the pre-RIPLS. Use of class time to facilitate completion of surveys can be beneficial.

Future Application and Next Steps:

- The Occupational Therapy program began its inaugural cohort in Fall 2019. As this new program grows and develops, integrating OT into existing IPE offerings, as well as developing new offerings, is an ongoing process.
- Next steps include following the development of IPE skills of OT and PT students and how OT and PT students continue to learn about, from, and with each other.

Timeline of IPE Event

<table>
<thead>
<tr>
<th>Week 3 of semester</th>
<th>Introduction to Event</th>
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<tbody>
<tr>
<td></td>
<td>Students completed Pre-RIPLS</td>
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<table>
<thead>
<tr>
<th>Weeks 4 &amp; 5 of semester</th>
<th>Small group meetings and completion of group activities</th>
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<table>
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<tr>
<th>Week 6 of semester</th>
<th>Post-meeting reflections completed</th>
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<tbody>
<tr>
<td></td>
<td>Post-RIPLS completed</td>
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References

Title: An Introduction to IPE for First Semester Occupational Therapy and Physical Therapy Students

Background: Communication is a fundamental aspect of the healthcare field. Strong communication has been shown to increase quality of care and experience for a client as well as collaboration between healthcare professionals. Interprofessional Education (IPE) is an educational program that helps healthcare professionals gain the skills necessary to improve communication between each other. Within the healthcare field, IPE is used to help different professions work together and educate one another on each profession. IPE has been integrated within the curriculum in universities with health science programs. These universities have exposed IPE to students through coursework, student run clinics, seminars, and educational programs. Students that were exposed to IPE early show higher rates of interprofessional skills when entering clinicals.

Methods: Occupational Therapy (OT) and Physical Therapy (PT) students were placed into small groups consisting of one to two OT students and 2 PT students. The students were instructed to complete the RIPLS pre-activity; to watch an introductory video of the authors answering the interview questions; connect with their group members and follow the structured outline provided by the instructors. The students were charged with contacting each other and arranging a meeting time that was convenient for all members of the small group. After the meeting, students completed a reflection of the encounter and the post-activity RIPLS. The reflection questions were:

1. Summarize the icebreaker and interview
2. How has your knowledge increased about the OT and PT profession?
3. How has your knowledge increased regarding interprofessional collaboration?

The pre-post-test RIPLS was analyzed using SPSS. The de-identified reflections were analyzed to identify common themes.

The timing of all activities were intentionally planned to be completed prior to IPE in Action Day.

Results: A total number of 91 students participated in the IPE event (31 OT students, 60 PT students). Students were asked to complete the RIPLS survey prior to and after the IPE in action event. 91 surveys were completed pre while 66 surveys were completed post; however, complete data (pre and post test) was available on 13 OT students and 45 PT students resulting in a 63.7% response rate. The average age of the OT and PT students was 23.5 years and 23.6 years respectively. The entire sample had 13 males (OT=2, PT=11) and 45 females (OT=11, PT=34).
The average RIPLS scores for the OT students was 71.8 for both the pre and post test. The PT students average RIPLS score was 68.1 pre and 68.8 post. No difference was found between pre to post test RIPLS score among the entire group (p=0.250), or OT (p=0.874), or PT (p=0.146).

Qualitative analysis of post-event reflections demonstrated several themes. One of the themes being a large number of students were inspired to pursue a career in PT and OT because of a personal or family member’s injury or condition that necessitated seeking PT and/or OT services. Many students during their prerequisite observation experiences had observed PT and OT collaboration in the clinic environment. This ranged from intermittent communication to extensive collaboration and co-treatment. Most students had a basic understanding of the other’s profession, but furthered their knowledge of the full breadth of the other’s profession. In particular, most PT students were unaware of the role of OT in mental health care.

Students acknowledge how important collaboration is in healthcare and overall described this IPE offering as a positive experience.

Lessons Learned: This format was feasible of students completing the activity on their own time without the presence of faculty members. Students anecdotally reported feeling better prepared to participate in IPE in Action Day. Students gained awareness of components of each other’s profession that are not commonly known (i.e. OT’s role in mental health). Currently OT and PT students share a lecture class. Students reported enjoying meeting each other in a formalized way that traditional lecture classes do not facilitate.

Response rate for the post-RIPLS was poor compared to the pre-RIPLS. Use of class time to facilitate completion of surveys can be beneficial.

Future Application & Next Steps: The Occupational Therapy program began its inaugural cohort in Fall 2019. As this new program grows and develops, integrating OT into existing IPE offerings, as well as developing new offerings, is an ongoing process. Next steps include following the development of IPE skills of OT and PT students and how OT and PT students continue to learn about, from and with each other.
Effect of Team-Based Learning in Community Health in Uganda on Attitudes and Skills in Interprofessional Health Care among Students from the United States and Uganda

Brent C. Williams1, Gad Ruzazza2, Christine Karungi3, Cranmer Anyine3, Viola Nyakato2, Grace Nambozi4, Megan Eagle5, Judi Policicchio5, Joshua Brewster6

1. UM Medical School 2. Mbarrara University of Science and Technology (MUST) Dept of Community Health 3. MUST Faculty of Interdisciplinary Sciences 4. MUST Department (School) of Nursing 5. UM School of Nursing 6. UM School of Social Work

Introduction
- Interprofessional education (IPE) in the United States (U.S.) is largely delivered in classrooms and health care settings.
- The Mbarrara University of Science and Technology (MUST) Community Based Education Research and Service (COBERS) program in Uganda has provided interprofessional, community based education for over thirty years.
- We hypothesized that COBERS would promote interprofessional attitudes and skills among American and Ugandan health professions students and provide a model for community based IPE in the U.S.

Methods
In May 2019, six nursing and one social work student from the University of Michigan (UM)
- Spent 2 weeks in rural communities in Uganda engaged in community education and health care
- Experience a one-day cultural orientation immersion taught by MUST students and faculty
- Joined interprofessional teams of 8-10 MUST students in a week of leadership team training

After an unplanned early departure by UM students, MUST students spent 4 weeks at community health centers and in villages designing and implementing community health projects with local leaders.

Assessment: UM and MUST students completed:
1. Retrospective pre- and post-experience Interprofessional Collaborative Competency Attainment Scale (ICCAS) (1)
2. One-time administration of the Cultural Intelligence Survey (CQI) (2)
3. Brief Reflective Questionnaires (RQ) on interprofessional education (IPE) and care (IPC)

Results
Mean (SD) Paired Interprofessional Collaborative Competency Attainment Scale (ICCAS) Scores*
(n=32; 26 MUST and 6 UM students)

<table>
<thead>
<tr>
<th>Pre-COBERS</th>
<th>Post-COBERS</th>
<th>Difference</th>
<th>P value (Paired T-test)</th>
</tr>
</thead>
<tbody>
<tr>
<td>62 (14)</td>
<td>80 (10)</td>
<td>18 (18)</td>
<td>&lt;.0001</td>
</tr>
</tbody>
</table>

* Scale range: 20-100

Mean (SD) Cultural Intelligence Survey (CQI) scores*

<table>
<thead>
<tr>
<th>MUST Students – Post COBERS (n=26)</th>
<th>UM student scores - Pre COBERS (n=6)</th>
<th>UM student – Post COBERS (n=6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motivation</td>
<td>Knowledge</td>
<td>Metacognition</td>
</tr>
<tr>
<td>3.9 (0.6)</td>
<td>2.7 (0.6)</td>
<td>4.1 (0.6)</td>
</tr>
</tbody>
</table>

* Scale range: 1-5

Reflective Questionnaires (RQ)
- MUST students identified hierarchy among professions and language barriers among professions and with patients as barriers to interprofessional care.

“(There is a problem with) underlooking of other professions within the same facility as some professions assume they are more superior and more important. Low self esteem by the individuals with lower qualifications. Language barrier as certain professionals can’t change from their native language so as to communicate with a fellow professional of a different native language.”

- UM students perceived a similar hierarchy among health professions in the U.S. and Uganda. Observed difference in IPC varied, and included differences in communication and problem-solving among professions and the availability of medical record-based communication.

“(One similarity between regions is the hierarchy amongst health care professions. In the US, I have seen nurses take a back seat in decision making or metaphorically “spoken over” by a physician because of the increase level of education/training they hold. In Uganda...students are placed into a university program (medicine, nursing, laboratory sciences, etc.) based directly upon academic performance. This leads to doctors being respected most because they were deemed the smartest of their peers.”

Discussion
An intercultural, community-based learning experience improved self-rated interprofessional competence among UM and Ugandan students.

- IPE may be uniquely effective in the context of community engagement.
  - Exposes learners to the full range of factors that influence human health
  - Makes evident the roles and relevance of multiple health professions.
- Team-based learning may be a particularly strong catalyst to IPE in community-based settings.
  - Working together on immediate, practical challenges may drive acquisition of attitudes and skills for interprofessional care.
- Challenges
  - Sustainable funding may be a challenge
  - Host country factors difficult to anticipate
  - School schedules difficult to coordinate

Next Steps
Building sustained community-engaged interprofessional learning experiences at UM will likely require:
- Building strong, trusted community relationships around a clinical ‘backbone’ for ongoing community-based care
- Supporting faculty time to develop and implement
- Coordinating schools’ schedules around community-based IPE experiences at the outset rather than as an ‘add-on’ experience.

References

Funding
1. UM Interprofessional Education (IPE) Center
2. UM Schools of Medicine, Nursing, and Social Work
Effect of Team-Based Learning in Community Health in Uganda on Attitudes and Skills in Interprofessional Health Care among Students from the United States and Uganda

Background
Interprofessional education (IPE) in the United States (U.S.) is largely delivered in classrooms and health care settings. The Mbarara University of Science and Technology (MUST) Community Based Education Research and Service (COBERS) program in Uganda has provided interprofessional, community based education for nearly thirty years. We hypothesized that COBERS would promote interprofessional attitudes and skills among American and Ugandan health professions students and provide a model for community based IPE in the U.S.

Methods
In May 2019, six nursing and one social work student from the University of Michigan (UM) joined interprofessional teams of 8-10 health professions students at MUST in a week of learning in cross cultural awareness, leadership, and community collaboration to address health needs. Students separately spent 2 (UM students) or 4 (MUST students) weeks at community health centers and in villages learning from (UM) and collaborating with (MUST) community members to address public health needs.

Students wrote brief reflective essays on interprofessional care at the beginning and end of the experience, and rated their skills using the Interprofessional Collaborative Competency Attainment Scale (ICCAS) in a retrospective pre- and post-experience format at the end of the experience.

Results
In the essays, UM nursing students noted the value and paucity in the U.S. of community-based interprofessional care models. MUST students valued the unique and interrelated contributions of different health profession in community settings, and cited lack of respect and perceived equality across the professions as an important barrier to effective team care.

Among all students, pre- and post-experience mean (SD) ICCAS scores increased substantially, from 63 (15) to 80 (10) (paired t-test p<.0001); with similar findings among MUST (n=27) and UM (n=6) students separately.

Lessons learned
The COBERS program at MUST represents a unique opportunity to expose U.S. students to community-based interprofessional care. Our pilot experience suggests the effects on students’ appreciation and skills in interprofessional care are positive and powerful. As U.S. health systems increasingly engage with communities to address the social determinants of health, the COBERS model may provide a feasible and effective IPE curricular model.

Future steps
The UM-MUST collaboration will continue in 2020 with learners from medicine, nursing, and social work. Effects on interdisciplinary skills will be measured as well as indices of cross-cultural maturity. Methods to apply the COBERS model at UM will be explored with the Schools of Medicine, Nursing, and Social Work, and the UM IPE Center.
Development of Engaging Evidence-Based Practice Educational Videos for Use Across Diverse Professional and Educational Backgrounds

Christine Benson1, Kyle Wallace2, Charles Ratt1, Dylan Johnstone2, Amy N. Thompson2, Peter F. Bodary1
(1) School of Kinesiology, (2) College of Pharmacy

Background

- The World Health Organization recognized interprofessional education (IPE) as an important component of primary health care in 1973.
- IPE has been defined by the UK Centre for Advancement of Interprofessional Education as “‘a process through which two or more professions learn from and about each other to improve collaboration and the quality of care.’”
- The integration of diverse learners into the same educational module can increase the learners’ exposure to differing viewpoints and professional roles.
- The development of IPE asynchronous learning modules that can be used across diverse professions and educational backgrounds is necessary.

Objective

- To develop an IPE asynchronous learning module that can be used across diverse professions and educational backgrounds.
- To understand the viewpoints of students from various backgrounds on the unique roles of healthcare professionals.
- To evaluate the effectiveness of our multidisciplinary educational module at improving university students’ understanding of physical activity in relation to the prevention and treatment of prediabetes and type 2 diabetes mellitus.
- Receive student feedback on the use of animations created by the online animation software boonie in healthcare education videos

Methods

- Created a multidisciplinary educational module to highlight the evidence linking physical activity and exercise to the prevention and treatment of type 2 diabetes mellitus.
- Subsequently developed engaging animations to help depict and explain the scientific evidence.
- Presented module to students in undergraduate and graduate level courses.
- Used the Canvas Learning Management System to provide pre-, post-, and in-video quizzes to examine student learning.
- Finally, a case study was provided to allow learners to provide their perspective on a complex case requiring an interprofessional care team.

Results

- Undergraduate learners had a significant improvement in their understanding of diabetes and the unique mechanistic underpinnings of type 1 and type 2 diabetes.
  - A 15% improvement in overall test scores was observed (See Figure 1 for question breakdown).
- Students of different educational backgrounds were observed to have varied expectations of the roles of interprofessional team members in the care of complex patients.
- Graduate and undergraduate students, with some exceptions
  - Agreed on the roles of physicians and pharmacists in prescribing exercise to patients
  - Disagreed on the level of communication between physicians and other health professionals (see Figure 2).
- Students thoughtfully responded to prompts regarding interprofessional healthcare and their own role within that team.

The diabetes video resulted in modest improvements across all of the questions featured in the multiple choice quiz provided in canvas to undergraduate students.

Future Application and Next Steps

We hope to further improve the components of the module and expand the reach of the designed asynchronous module to include students in a range of professional programs, including:

- Pharmacy
- Physical Therapy
- Medicine

Although we have not yet had an adequate audience to allow proper interaction among learners, we hope to promote interaction between learners in the future. This includes utilizing Q&A sessions ‘Discussions’ in order to allow students from various programs and disciplines to see each other’s responses and, in turn, enhance their understanding of other professionals in the health care team.

Acknowledgments

We acknowledge and deeply appreciate the seed funding provided by the Center for Interprofessional Education in support of this project (C3 IPEF Seed Fund).

The authors want to acknowledge the groundwork that preceded this educational module provided by the following Center for Interprofessional Education Fellows:
- Dr. Thomas Braun (SPH / Biostatistics)
- Dr. Jayne Handelsman (Michigan Medicine / Pediatric Audiology)

Funded: C3 IPEF Seed Fund

For more information, please contact Christine Benson at cwbenson@umich.edu

References

Figure 1. Quiz score averages between the pre-video quiz and the post-video quiz for the Movement Science 110 and 241 courses.

Table 1 shows the course that the subjects were enrolled in at the time of their participation. An X indicates a course from a student participated in the indicated portion of the module. Movement Science 110 is an introduction to movement science course for undergraduates. Movement Science 241 is an exercise and nutrition course usually taken by students outside of the School of Kinesiology. Kines 513/Nutrition 651 is a graduate Physical Activity and Nutrition (PAN) course.

Components of the IPE Module

- Introduction to diabetes video + pre- and post-video quizzes
- Diabetes and exercise video with in-video quizzes
- Patient case study

Examples of questions posed to students:

Diabetes quizzes:
- What can one do to help prevent or delay the onset of type 2 diabetes?
- Which of the following are physical activity lifestyle modifications recommended by the ADA for adults with prediabetes?
- In your potential future career (or any career you might be interested in pursuing), how could you, as a professional in this field, be impactful on the prevention and/or treatment of diabetes? For example, a scientist researching, a politician championing policies, etc. Consider why individuals of different professions working together would be so important, specifically for diabetes in the United States.

Case Study:
- To prescribe exercise, where do you expect the physician would go for the latest information regarding physical activity for the treatment of diabetes?
- What additional health care team members do you expect would be beneficial to help in enhancing the physical activity of this patient? (List all that you think would apply — and briefly describe what role they might play in enhancing the physical activity of the patient).

Figures

Figure 1 shows the course that the subjects were enrolled in at the time of their participation. An X indicates a course from a student participated in the indicated portion of the module. Movement Science 110 is an introduction to movement science course for undergraduates. Movement Science 241 is an exercise and nutrition course usually taken by students outside of the School of Kinesiology. Kines 513/Nutrition 651 is a graduate Physical Activity and Nutrition (PAN) course.

Table 1 shows the course that the subjects were enrolled in at the time of their participation. An X indicates a course from a student participated in the indicated portion of the module. Movement Science 110 is an introduction to movement science course for undergraduates. Movement Science 241 is an exercise and nutrition course usually taken by students outside of the School of Kinesiology. Kines 513/Nutrition 651 is a graduate Physical Activity and Nutrition (PAN) course.
Title: Development of engaging evidence-based practice educational videos for use across diverse professions and educational backgrounds

Background: The development of interprofessional education (IPE) asynchronous learning modules that can be used across diverse professions and educational backgrounds can be challenging. However, the integration of diverse learners into the same educational module can increase the learners’ exposure to differing viewpoints and professional roles.

Actions, Methods or Intervention: We created a multidisciplinary educational module that highlighted the evidence linking physical activity and exercise to the prevention and treatment of type 2 diabetes mellitus. Subsequently, we developed engaging animations to help depict and explain the scientific evidence to enhance the learning and enjoyment of the videos. In addition, we used the Canvas Learning Management System to provide pre- and post-video quizzing to examine student learning. Finally, a complex case-study was provided to allow learners to provide their interprofessional perspective on a complex case requiring an interprofessional care team.

Results: Early stage undergraduate learners had a significant improvement in their understanding of diabetes and the unique mechanistic underpinnings of type 1 and type 2 diabetes. On average, 74% of students who got questions wrong in the pre-video test, showed improvement after watching the video. An 11% improvement in overall test scores was observed. In addition, the complex case study revealed noticeable variability in the expected role of the health care professionals in the prescribing of exercise for patients with diabetes. Finally, students of different educational backgrounds were observed to have a limited understanding of the role of interprofessional teams in the care of complex patients.

Lessons Learned: Considerable confusion exists about the prescription of exercise for patients with diabetes and the impact of physical activity on diabetes prevention and treatment. There is an opportunity for this IPE module to enhance the understanding of the unique and sometimes overlapping roles of the team of professionals that provide the care and treatment for patients with diabetes.

Future Application and Next Steps: We hope to expand the reach of the designed asynchronous module to include students in diverse professional programs including Pharmacy, Physical Therapy, and Medicine.
Improving Safety through Team Training on Effective Leadership and Followship within the Interprofessional Team

Dana Tschannen (School of Nursing), Paul C. Walker (College of Pharmacy), Dan Fischer (School of Social Work), Erin Khang (Michigan Medicine Department of Social Work)

Background

- Failure to communicate effectively among the interprofessional team remains a primary reason for sentinel events and unsafe practice in health care settings.
- Crew Resource Management (CRM) is a team training program that has proven successful in improving team behaviors and patient outcomes.
- Integrating CRM principles into the curriculum of the interdisciplinary team may be what is needed to improve collaboration and team communication, which subsequently may improve patient safety.

Purpose

- This project assessed the impact of team training on participant knowledge, skills, attitudes about teamwork, and use of team behaviors contributing to safe patient care.

Methods

Using a quasi-experimental design, a convenient sample of students enrolled in one of the following healthcare disciplines—nursing, social work, and pharmacy were randomized to one of three groups:

Group 1 Intervention—CRM module only
- Self-paced, virtual training focused on how to lead, how to follow, and how to better communicate during escalating patient situations.

Group 2 Intervention—CRM module + Simulation training;
- Self-paced, virtual training PLUS
- Opportunities to practice these new skills and tools in a simulated environment.

Group 3 Control—no CRM training.
- No formal training received

Project Evaluation

- The project was evaluated using mixed methodology, including observations and surveys.
- Teams during an evaluation simulation were observed to determine the utility of effective team behaviors conducive to patient safety.
- Knowledge, skills, and attitudes towards CRM principles was evaluated through a series of pre- and post-surveys.

Results

Project Sample

<table>
<thead>
<tr>
<th>Item</th>
<th>Pre-Implementation</th>
<th>Post-Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRM Module Only</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>CRM Module + Skills</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Total Control</td>
<td>12</td>
<td>10</td>
</tr>
</tbody>
</table>

IPE Knowledge Scores by Group

<table>
<thead>
<tr>
<th>Item</th>
<th>Pre-Implementation</th>
<th>Post-Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRM Module Only</td>
<td>7.55* (1.49)</td>
<td>8.70 (0.51)</td>
</tr>
<tr>
<td>CRM Module + Skills</td>
<td>7.26 (1.32)</td>
<td>8.55 (0.33)</td>
</tr>
<tr>
<td>Total Knowledge Score</td>
<td>14.81* (2.81)</td>
<td>17.25 (0.84)</td>
</tr>
</tbody>
</table>

- Significant improvements in knowledge occurred with all three groups, with greatest knowledge scores in Group 1.

IPE Team Attitude by Group

- Attitudes related to teamwork improved in many areas for groups 1 and 2; with some decline from group 3.
- Significant improvement noted in the importance of understanding team roles post-training (Groups 1, 2, & 3)
- Significant improvement in understanding need of leader to explicitly communicate interest in team members to ‘speak up’ (Groups 1 & 2).

IPE CRM Training Evaluation

<table>
<thead>
<tr>
<th>Item (1-5 scale)</th>
<th>Pre-Implementation</th>
<th>Post-Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case Study Apply</td>
<td>4.63 (0.79)</td>
<td>5.00 (0.00)</td>
</tr>
<tr>
<td>Case Study Analyze</td>
<td>4.50 (0.71)</td>
<td>4.65 (0.14)</td>
</tr>
<tr>
<td>Use New Skills</td>
<td>4.56 (0.82)</td>
<td>4.51 (0.14)</td>
</tr>
<tr>
<td>Use New Skills</td>
<td>4.75 (0.45)</td>
<td>4.64 (0.61)</td>
</tr>
<tr>
<td>Use New Skills</td>
<td>4.67 (0.41)</td>
<td>4.64 (0.61)</td>
</tr>
</tbody>
</table>

- Strong agreement of participants that the training was applicable to practice and resulted in the development of new skills.
- Strong recommendation for widespread dissemination of the training and for future opportunities for similar training.

Feedback Themes

- Themes from participants included (1) appreciation for ‘real life’ exposure to patient care (2) opportunity to learn with other disciplines; and (3) interactive nature of the training.
- Barriers to implementing learnings in the clinical setting included (1) limited training, (2) feeling uncomfortable with other disciplines; and (3) power hierarchy within the clinical setting.

Lessons Learned

- The self-paced, virtual learning module provided the flexibility needed for participants to engage in the training.
- Debriefing was an important aspect of the experience as it provided a mechanism for learning, especially among group 3 who had no formal training other than what was provided in the evaluation simulation.
- The simulation was more effective when all disciplines were represented in the simulation group.
- Students consistently reported appreciation for the content and the opportunity to practice the specific skills and strategies around teamwork, communication, and leadership and followship skills.
- A strong desire for future training in relation to the CRM principles was reported.

Future Application and Next Steps

- Extending the invitation to other disciplines, such as medicine and dentistry, would be an important consideration.
- Further discussion is needed to determine opportunities for sustaining this activity, including consideration for its inclusion in an existing interprofessional course or experiential activity.
- Consideration should also be given with regard to how to build CRM training into curriculum content for the participating health science schools. In doing so, this would address all 3 levels of the IPE learning progression of introduction, reinforce, and practice of the skills targeted in the CRM training program for all simulating learners.
- Future considerations should include how to engage learners remotely for ‘practice’ of these concepts (e.g., virtual simulation opportunities).

Acknowledgments

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A special thank you to the UM School of Nursing Simulation Center Staff for their support for the simulation training.

Funded: IPX Diamond Cube

djvs@med.umich.edu
Title: Improving Safety through Team Training on Effective Leadership and Followership within the Interprofessional Team

Primary Author: Dana Tschannen

Additional Authors: Dan Fischer, Paul Walker, Erin Khang

Category for Abstract Submission: IPE education experience

Did the activity you are submitting target learners from two or more health professions: Yes

Insert Abstract Title: Improving Safety through Team Training on Effective Leadership and Followership within the Interprofessional Team

Background: Failure to communicate effectively among the interprofessional team remains a primary reason for sentinel events and unsafe practice in health care settings. Crew Resource Management (CRM) is a team training program that has proven successful in improving team behaviors and patient outcomes. Integrating CRM principles into curriculum of the interdisciplinary team may be what is needed to improve collaboration and team communication, which subsequently may improve patient safety.

Actions, Methods or Intervention: Using a quasi-experimental design, a convenient sample of students enrolled in one of the following healthcare disciplines—nursing, social work, and pharmacy were randomized to one of three groups: (1) Group 1 Intervention—CRM module only (self-paced, virtual training focused on how to lead, how to follow, and how to better communicate during escalating patient situations); (2) Group 2 Intervention—CRM module + Simulation training (self-paced, virtual training PLUS opportunities to practice these new skills and tools in a simulated environment; and (3) Group 3 Control—no CRM training (No formal training received).

The project was evaluated using mixed methodology, including observations and surveys. Teams during an evaluation simulation were observed to determine the utilization of effective team behaviors conducive to patient safety. Knowledge, skills, and attitudes towards CRM principles was evaluated through a series of pre- and post-surveys. Findings from this study provide the foundational work needed to refine the currently designed CRM training to maximize learning and impact on team behaviors conducive to error avoidance and safe patient care.
Results: A total of 33 interprofessional students completed both the pre- and post-implementation survey, representing nurses (n=10), pharmacy (n=9) and social work (n=13). Students were equally distributed between groups: Group 1 (n=12), Group 2 (n=10), and Group 3 (n=11). Knowledge scores in all three groups improved significantly from pre- to post-training, with the highest knowledge score being from the two intervention groups. Attitudes also improved in many areas for groups 1 and 2, but declined in some areas for group 3. Significant improvements were noted in all groups in relation to the importance of understanding team roles post-training. When asked overall satisfaction, all three groups strongly agreed, reporting the development of new skills, applicability to practice, and desire for further trainings. Students appreciated the ‘real life’ exposure to patient care and opportunity to learn with other disciplines. Barriers to implementing the communication tools in practice perceived by the participants included (1) limited training, (2) feeling uncomfortable with other disciplines; and (3) power hierarchy within the clinical setting.

Lessons Learned: The self-paced, virtual learning module provided the flexibility needed for participants to engage in the training. The simulation provided participants with an opportunity to practice their newly developed skills in a safe space. The simulation experience was more effective when all disciplines were represented. One the most important aspects of the experience was the debriefing as it provided a mechanism for learning, especially among group 3 who had no formal training other than what was provided in the evaluation simulation.

Future Applications and Next Steps: Based on our preliminary results, we anticipate CRM to be a valuable and vital communication and teamwork training for all health science schools. In the future, extending the invitation to other disciplines, such as medicine and dentistry, would be an important consideration. Further consideration for the sustainability of this activity is needed, including integration of this training into an existing interprofessional course or experiential activity. Consideration should also be given with regard to how to build CRM training into curriculum content for the participating health science schools. In doing so, this would address all 3 levels of IPE learning progression of introduce, reinforce, practice of the skills targeted in the CRM training program for all participating learners.
**INTRODUCTION**

Surgery for airway obstruction from subglottic stenosis:
- Unique anesthesia management
- Jet ventilation
- Shared airway between surgeon and anesthesiologist
- Complications rare but life-threatening
- All team members of the interprofessional team must communicate effectively and efficiently

**Interprofessional Team:**
- Otolaryngology – Head and Neck Surgery
- Anesthesiology
- OR Nursing
- Surgical Technician

**Objectives:**
- Develop in situ interprofessional education (IPE) simulation for airway surgery
- Teach non-technical skills related to airway surgery

**METHODS**

**Interprofessional Simulation Development:**
- Educational task force with members from Anesthesiology, OR Nursing and Surgical Technicians, and Otolaryngology

**Simulation Scenario (Figure):**
- Planned endoscopic laser and dilation for subglottic stenosis using jet ventilation
- High fidelity manikin in situ simulation in the OR
- 3-D printed subglottic stenosis simulator

**Learners:**
- Anesthesia residents and fellows
- Otolaryngology residents
- OR nurses
- Surgical technicians
- Perioperative technicians

**Program Evaluation and Assessment:**
- Pre, post, and retrospective pre-post survey for learners to self-rate technical and non-technical skills

---

**Table 1: Evaluation of simulation program by learners**

<table>
<thead>
<tr>
<th>Program Evaluation (n=19)</th>
<th>Agree/Strongly Agree</th>
<th>Disagree/Neutral</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program should be continued</td>
<td>100%</td>
<td>--</td>
</tr>
<tr>
<td>Simulation was important and useful</td>
<td>100%</td>
<td>--</td>
</tr>
<tr>
<td>Simulation was realistic</td>
<td>94%</td>
<td>6%</td>
</tr>
<tr>
<td>Simulation was an effective training tool</td>
<td>100%</td>
<td>--</td>
</tr>
</tbody>
</table>

**Table 2: Self-assessment of technical skills**

<table>
<thead>
<tr>
<th>Learner Self-Assessment: Technical Skills (n=19)</th>
<th>Agree/Strongly Agree</th>
<th>Disagree/Neutral</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-simulation: Able to effectively perform technical skills for airway surgery</td>
<td>85%</td>
<td>15%</td>
</tr>
<tr>
<td>Retrospective pre-post-simulation: Able to effectively perform technical skills</td>
<td>38%</td>
<td>62%</td>
</tr>
</tbody>
</table>

**Table 3: Self-assessment of non-technical skills**

<table>
<thead>
<tr>
<th>Learner Self-Assessment: Non-Technical Skills (n=19)</th>
<th>Pre-sim</th>
<th>Post-sim</th>
<th>Retrospective pre-post-sim</th>
</tr>
</thead>
<tbody>
<tr>
<td>Situational awareness</td>
<td>63%</td>
<td>73%</td>
<td>68%</td>
</tr>
<tr>
<td>Decision Making</td>
<td>42%</td>
<td>58%</td>
<td>37%</td>
</tr>
<tr>
<td>Communication and teamwork</td>
<td>74%</td>
<td>79%</td>
<td>47%</td>
</tr>
<tr>
<td>Leadership</td>
<td>42%</td>
<td>79%</td>
<td>42%</td>
</tr>
</tbody>
</table>

**RESULTS**

**Learners:**
- 19 learners over three simulation events

**Program Evaluation (Table 1):**
- 100% of learners strongly agreed that program should be continued
- 100% of learners agreed or strongly agreed that simulation was important and an effective training tool

**Self Assessment: Technical Skills (Table 2):**
- 85% of learners agreed that they were able to technically perform technical skills required for airway surgery after simulation
- Only 38% agreed on retrospective pre-post simulation assessment

**Self Assessment: Non-Technical Skills (Table 3):**
- On average, learners felt that all aspects of non-technical skills improved post-simulation
- Most dramatic improvement in Leadership domain
- Learners were more likely to rate themselves lower in Communication and Teamwork domain on retrospective pre-post-simulation

**DISCUSSION**

**Lessons Learned:**
- Interprofessional in situ simulation for airway surgery is feasible and valued by learners
- Educators from all involved disciplines should be involved in simulation development

**Next Steps:**
- Additional simulations to train OR staff and continually educate resident learners
- Teams of learners will be assessed on NOTECHS scale of non-technical skills via recorded simulation videos

**Contact**

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**References**

Title: Interprofessional simulation in airway surgery

Authors: Robbi Kupfer, MD; Samuel Schechtman, MD, Helen Chang, RN MSN, Jonnie Weaver, CST

Background: Safe and successful airway surgery requires an interprofessional (IPE) team of anesthesiology and otolaryngology providers working closely together with operating room (OR) nurses and surgical technicians. Complications of airway surgery occur with low frequency but may have devastating outcomes, demanding efficient communication and technical proficiency to allow the team to quickly progress through an airway management algorithm together. IPE simulation is proposed to provide exposure to these infrequently encountered clinical scenarios while assessing and teaching non-technical skills necessary for effective teamwork.

Actions, Methods, or Intervention: An IPE simulation program for airway surgery was developed by an educational task force including anesthesiologists, otolaryngologists, OR nurses, and surgical technicians. Planned endoscopic dilation for subglottic stenosis with jet ventilation was simulated in the OR using a high-fidelity simulation mannequin and standard surgical equipment used for airway surgery. Learners included residents and fellows from anesthesiology and otolaryngology, OR nurses, surgical technicians, and perioperative technicians. Learners completed questionnaires assessing their non-technical skills and comfort with technical aspects of the procedure pre-simulation, post-simulation, and retrospective pre-post simulation. Simulations were video recorded for review and assessment of learners’ nontechnical skills using the NOTECHS scale.

Results: Presently, 19 learners have participated in the program over three simulation events. 100% of participants strongly agreed that the program should be continued, while 100% of participants agreed or strongly agreed that the simulation was important and useful and was an effective training tool. 94% of participants agreed or strongly agreed that the simulator was realistic. Following the simulation, 85% of learners agreed they could perform their role for the technical procedures covered in the scenario, while only 38% of learners agreed to the same on retrospective pre-post self-assessment. Future simulations are planned and assessment of non-technical skills will be presented upon completion.

Lessons Learned: IPE simulation of airway surgery in the OR is feasible and valued by participants. Educators from all participating disciplines should be involved in developing the program to optimize educational value.
Effectiveness of Dental Hygiene Student Led Instruction on Oral Cancer Screenings for Nursing Students

Lacy N. Jones, CDA, Stefanie VanDuine, RDH, BSDH, MSDH

BACKGROUND

Oral cancer has a poor prognosis with 50% of individuals dying within five years from diagnosis. One of the major reasons for this is due to a delayed diagnosis. This indicates early detection and prevention can play a key role in controlling mortality rates. The most valid form of screening for oral cancer is done by visual inspection.

Nurses and nurse practitioners have roles within the public health sector, and can impact oral cancer prevention in various settings. Interprofessional education and coordination may help improve survival rates for oral cancer. The purpose of this study was to measure the effectiveness of dental hygiene student led instruction on oral cancer screenings for nursing students.

OBJECTIVES

Objective 1: To measure the confidence level of junior nursing students’ ability to conduct an oral cancer screening.

Objective 2: To measure the value of integrating an oral cancer screening into nursing education.

METHODS

- IRB-HSBS deemed study to be not regulated: HUM00170705
- 74 junior level U-M School of Nursing students (course NURS 356)
- PowerPoint lecture on most commonly seen oral lesions
- DH student led oral cancer screening demonstration
- Nursing students separated into groups of three: Pen light holder, clinician, and patient
- 7 question survey via Canvas post DH student screening
- Questions evaluated confidence level before and after DH student led demonstration, amount of training in their curriculum, and the value in being taught how to perform an oral cancer screening in nursing curriculum

RESULTS

The survey had a 91% response rate (N=67 out of 74 nursing students completed the survey).

Confidence Level of Nursing Students Pre and Post Oral Exam Training

- Prior to the lesson, only 31% of nursing students were somewhat or very confident about performing an oral cancer screening. After the lesson, 84% of nursing students were somewhat or very confident about performing an oral cancer screening.

Discussion

Based on respondents, 34% went from not being confident in providing an oral screening prior to training and gained in confidence by the end of training. With over 50% of the respondents not receiving any training in providing oral exam training reveals the need for oral cancer screenings to be taught in nursing curriculum. Since 58% felt there was a great value in being taught how to perform an oral cancer screening dental hygienists and dental hygiene students have an opportunity for interprofessional education and collaboration. Previous research has indicated nurses regard oral health as important, but awareness and clinical signs of oral cancer has been poor. DH led instruction can improve education for nurses.

Limitations include time constraint in providing lecture and demonstration.

Recommendations for future studies:
- More medical supplies for students to use: gloves, masks, sanitizer, gauze, tongue depressors.
- More dental personnel to assist with nursing group practice demonstrations.
- Experimental study that evaluates nursing students oral cancer screenings post DH led instruction.
- Follow up study on same sample in five years to evaluate how many conduct oral cancer screenings

Conclusion

Academic institutions that have both nursing programs and dental hygiene programs have an opportunity for collaboration. Dental hygiene students have the ability to provide information to nursing students on common oral lesions seen in practice and how to conduct an oral cancer screening. With nursing students being able to take this knowledge into their future career more health care providers can help fight the battle in oral cancer prevention and detection.
Title: Effectiveness of Dental Hygiene Student Led Instruction on Oral Cancer Screenings for Nursing Students Abstract

Background: Oral cancer has a poor prognosis with 50% of individuals dying within five years from diagnosis. Early detection and prevention can play a key role in controlling mortality rates. Nurses can impact oral cancer prevention in various settings. Interprofessional education and coordination may help improve survival rates for oral cancer. The purpose of this study was to measure the effectiveness of dental hygiene student led instruction on oral cancer screenings for nursing students.

Objectives: To measure the confidence level of junior nursing students ability to conduct an oral cancer screening. To measure the value of integrating an oral cancer screening into nursing education.

Methods: Nursing students in course NURS 356 at the University of Michigan School of Nursing, voluntarily completed a 7 question survey via Canvas post DH student led oral cancer screening, which evaluated confidence level before and after DH student led demonstration, the amount of training in their curriculum, and the value in being taught how to perform an oral cancer screening in nursing curriculum. U-M IRB deemed study to be not regulated.

Results: Response rate=91%. Prior to lesson, 31% of students were somewhat or very confident about performing an oral cancer screening. After lesson, this increased to 84%. 51% of the students had no prior oral cancer screening training before educational session.58% placed great value on learning how to perform an oral cancer screening as a part of the nursing program.

Conclusion: Academic institutions that have nursing and DH programs have an opportunity to collaborate. DH students have the ability to educate nursing students on common oral lesions and how to conduct a screening. Nursing students can take this knowledge and aid in oral cancer prevention and detection. U-M School of Nursing has requested another oral lesion lecture and oral cancer led demonstration to be provided to students in future curriculum.
Background
Medical errors are the third most common cause of death, totaling more than 400,000 deaths per year. Medical errors result from human factors, such as errors in communication between healthcare providers. Existing gaps in interprofessional training have resulted in students being unable to engage in effective communication while working in multidisciplinary teams, thereby contributing to suboptimal quality of care and patient safety. Structured trainings in successful collaboration can not only decrease the burden on care providers but also increase patient satisfaction but have also been shown to increase patient safety and quality of care. Improving inter-professional communication would assist in preparing healthcare professionals for effective future collaborations with patients, families, communities, and other healthcare professionals.

Methods
Theoretical framework: According to social constructivism, learning process is mediated and moderated by the social factors affecting the meanings and concepts. In fact, research has shown that learner-learner and learner-instructor/facilitator collaboration can create an engaging learning environment. The collaboration between learners creates a zone of proximal development in which some learners with more knowledge and experience can help others assimilate the new knowledge.

Teaching Method: In order to cover all learning styles, we used different teaching methods: slides (including text, graphics, pictures), lectures, case scenarios, and videos.

Assessments: Each submodule has different assessment tools, which examine the mastery level of students regarding the learning objectives. The UWE Interprofessional Questionnaire, which examines the communication competency in four domains: Communication and Teamwork, Interprofessional Learning, Interprofessional Interaction, and Interprofessional Relationship.

Sub-competency
Express one’s knowledge and opinions to team members involved in patient care and population health improvement with confidence, clarity, and respect, working to ensure common understanding of information, treatment, care decisions, and population health programs and policies.

Conclusion
Many healthcare professionals have some levels of communication and teamwork experience also one of the main aims of trainings is preparing individuals for teamwork. Despite significant changes in communication were not expected, the scores of this domain are more likely to be shifted toward positive. Interprofessional Interaction was shifted from negative toward neutral, which is a considerable change. Also, Inter-professional Relationship showed more positive and less neutral after taking the module.

References
2. Reinhardt ME, Hester JD, and Western collaborative. Assessing the process of collaboration in an MUH. Heart Health, 1977(207我喜欢).
Title: Communication Competency: Inter-Professional Education

Authors: Laura Power, School of Public Health; Diane Asher, School of Nursing; Carrie Bell, Michigan Medicine; Sabah Ganai, College of Health Sciences (UM-Flint)

Background: Medical errors are the third most common cause of death, totaling more than motor vehicle accidents, firearms, suicide, and COPD combined, 70% of these errors are attributable to a failure in communication between healthcare professionals in different disciplines. Existing gaps in inter-professional training have resulted in students being unable to engage in effective communication while working in multidisciplinary teams, thereby contributing to the sub-optimal quality of care and patient safety. Structured training in successful collaboration can not only decrease the burden on care providers and increase patient satisfaction but have also been shown to increase patient safety and quality of care. Improving inter-professional communication would assist in preparing healthcare professionals for effective future collaborations with patients, families, communities, and other healthcare professionals, in the field. Three of the sub-competencies of communication defined by the Interprofessional Education Collaboration were explored: Express one’s knowledge and opinions to team members, listen actively and encourage ideas and opinions of other team members, recognize how one’s uniqueness contributes to effective communication, conflict resolution, and positive inter-professional working relationships.

Purpose: This new online asynchronous module was created for all health professional students in the University of Michigan undergraduate and graduate communities. Theoretical framework: According to social constructivism, the learning process is mediated and moderated by the social factors affecting the meanings and concepts. Research as shown that learner-learner and learner-instructor/facilitator collaboration can create an engaging learning environment. The collaboration between learners creates a Zone of Proximal Development in which some learners with more knowledge and experience can help others assimilate the new knowledge.

Teaching Method: To cover all learning styles, we used different teaching methods: slides (included text, graphs, pictures), lecture, case scenarios, and videos.
Assessments: Each sub-module has different assessment tools, which examine the mastery level of students regarding the learning objectives. “The UWE Inter-professional Questionnaire”, which examines the communication competency in four domains: Communication and Teamwork, Inter-professional Learning, Inter-professional Interaction, and Inter-professional Relationship. In each domain, the score can be categorized as “positive”, “neutral”, and “negative”.

Statistical Analysis: We compared the results of before and after taking the module using Chi-square for categories and Wilcoxon Signed Rank Test for scores.

Results: The Chi-square was not statistically significant. It can be due to the number of students. In such cases, we use non-parametric tests. Wilcoxon Signed Rank Test shows the difference between Interprofessional Interaction (IPI) and Inter-professional Relationship (IPR) were significantly changed. Many healthcare professionals have some levels of communication and teamwork experience. Also, one of the main aims of the training is preparing individuals for teamwork. Hence, the scores of this domain are more likely to be shifted toward positive. Inter-professional Interaction was shifted from negative toward neutral, which is a considerable change. Also, Inter-professional Relationship showed more positive and less neutral after taking the module.

Conclusion: We will collect more data and adjust the module further based on the results and students’ feedback. This is a continuous process as we analyze the responses and scores and revise the content.
Common Themes in Medical Students’ Individualized Learning Goals Prior to Starting Residency
Amanda E. Huey, Jocelyn Schiller, Lauren A. Heidemann, Anita Malone, Brittany Allen, Helen Kang Morgan

Background

- To improve communication at the medical school to residency transition, the University of Michigan Medical School transmits “educational handover” letters to program directors (PDs) in the spring of the final year of medical school for students entering pediatrics and obstetrics and gynecology (OBGYN) residencies.
- Letters contain information about students’ entry level Accreditation Council for Graduate Medical Education (ACGME) Milestones and student’s individual learning goals (ILGs) for beginning residency.
- Prior research on ILGs in residency and during medical student sub-internships shows that learners focus predominantly on the ACGME competencies of medical knowledge (MK) and patient care (PC).
- No studies have examined ILGs of graduating medical students; therefore, the goal of this study was to examine the content of students’ ILGs in educational handover communications.

Methods

- Educational handover letters were written at the conclusion of four-week residency preparation courses (RPCs) at the end of M4 year.
- Students met individually with RPC faculty to create their ILGs based on assessment data from lectures, OSCE, and their medical school performance.
- ILGs were included in the OBGYN educational handover letters in 2018 and 2019 and for pediatrics in 2017 and 2018.
- ILGs were categorized into one of the six ACGME competencies or “other.”
- Fisher’s exact test was used to compare differences in ILG categories between groups.

Results

- n = 46 handover letters (24 OBGYN, 22 pediatric) (average 2.8 ILGs per student)

Fig. 1: Distribution of ACGME ILGs (n=72)

- Medical knowledge, interpersonal/communication skills, and patient care were the most common categories for ACGME ILGs.

Fig. 2: Distribution of Non-ACGME ILGs (n=44)

- Of non-ACGME ILGs, common themes included wellness (20 goals, 46%), career planning (12 goals, 10%) and teaching (12 goals, 10%).

- Students were more likely to report MK ILGs (30 vs. 2 goals, p<0.0001).
- OBGYN students were more likely to report “other” ILGs (33 vs 11 goals, p<0.0001), particularly ILGs related to career planning (11 vs 1 goals, p=0.01).

Future Applications

The ILG curriculum will be expanded in spring 2020 to include students going into all specialties. The relationship between ILG and burnout will also be further explored.

Lessons Learned

- To our knowledge, this is the first study that has examined senior medical students’ ILGs contained in an educational handover communication between medical school and residency.
- Many ILGs centered around the MK and PC competencies, consistent with previous studies of sub-internship rotation students and residents.
- No students chose professionalism ILGs, which is notable given that program directors have cited professionalism as an area of development for their first-year residents.
- One-fifth of ILGs contained wellness goals, which is remarkable given that the transition to residency is a vulnerable time for the development of burnout and suicide risk.
- Recognizing trends in current ILGs is an important first step for the creation of additional support and infrastructure to help students take an active approach in their own development during this important educational transition.

References


Funded: No funding was received for this project.

Contact information: Amanda Huey (huey@email.umich.edu)
Title: Common Themes in Medical Students’ Individualized Learning Goals Prior to Starting Residency

Authors: Amanda E. Huey, Jocelyn Schiller, Lauren A. Heidemann, Anita Malone, Brittany Allen, Helen Kang Morgan

Background: In order to improve communication at the medical school to residency transition, the University of Michigan Medical School has transmitted “educational handover” letters to program directors (PDs) in the spring of the final year of medical school for students entering pediatrics and obstetrics and gynecology (OBGYN) residencies.1 These letters contain information about students’ entry level Accreditation Council for Graduate Medical Education (ACGME) Milestones and student’s individual learning goals (ILGs) for beginning residency. Prior research on ILGs in residency and during medical student sub-internships has demonstrated that learners focus predominantly on the ACGME competencies of medical knowledge (MK) and patient care (PC).2,3 However, no studies have examined ILGs of graduating medical students; therefore, the goal of this study was to examine the content of students’ ILGs in educational handover communications.

Action, methods or intervention: Educational handover letters were written at the conclusion of four-week residency preparation courses (RPCs) held at the end of students’ fourth year. Students met individually with faculty from these courses to create and iterate their ILGs based on assessment data from the RPCs and from their medical school performance. ILGs were included in the OBGYN educational handover letters in 2018 and 2019 and for pediatrics in 2017 and 2018. These ILGs were categorized into one of the six ACGME competencies or “other.” Fisher’s exact test was used to compare differences in ILG categories between groups.

Results: The forty-six letters reviewed (24 OBGYN, 22 pediatric) encompassed a total of 116 ILGs with an average of 2.8 ILGs per student. Seventy-two ILGs (62%) fit into one of the six ACGME competencies while 44 ILGs (38%) were classified as “other.” The most common ILG competency was MK (32 goals, 27%), followed by interpersonal and communication skills (22 goals, 19%), and PC (20 goals, 17%). The least common ILG competencies were professionalism (0 goals, 0%), system-based practice (1 goal, 0.9%), and practice-based learning (6 goals, 5%). Of the 44 “other” goals, common themes included wellness (20 goals, 17%), career planning (12 goals, 10%) and teaching (12 goals, 10%). Pediatrics students were more likely to report MK ILGs (30 vs. 2 goals, p<0.0001), whereas OBGYN students were more likely to report “other” ILGs (33 vs 11 goals, p<0.0001), particularly ILGs related to career planning (11 vs 1 goals, p=0.01).
Lessons learned: To our knowledge, this is the first study that has examined senior medical students’ ILGs contained in an educational handover communication between medical school and residency. Many ILGs centered around the MK and PC competencies, consistent with previous studies of sub-internship rotation students and residents. However, it is remarkable that almost one-fifth of ILGs contained wellness goals, given that the transition to residency is a vulnerable time for the development of burnout and suicide risk. It is also notable that no students chose professionalism ILGs given that PDs have cited professionalism as an area of development for their first-year residents. Strengths of this study include the diversity of students going into two different specialties over multiple years. Limitations include a single center study and small number of students.

In order to create a true continuum of learning at the medical school to residency transition, students should feel empowered to take an active approach to their own development. Recognizing trends in current ILGs is an important first step for the creation of additional support and infrastructure to help students to create meaningful ILGs for this important educational transition.

Future application and next steps: The ILG curriculum will be expanded in spring 2020 to include students going into all specialties. The relationship between ILG and burnout will also be further explored.

References:

Word count: 564 (max 600; not including title, authors, institutional affiliations and references)
Character count: 3738 (max 6900 with spaces; not including title, authors, institutional affiliations and references)
High vs. Low Entrustment Behaviors in the Operating Room
Christine Nguyen¹, Julie Thompson-Burdine², Gurjit Sandhu²
¹University of Michigan Medical School, ²Michigan Medicine Department of Surgery

BACKGROUND

Entrustment is key to resident progression to supervised autonomy during training.

- How can faculty foster higher entrustment?
- How can residents demonstrate higher entrustability?

RESULTS

Codes clustered into 10 major themes:

- Communication
- Procedural actions
- Faculty guidance
- Educational actions
- Faculty education
- Operative plan
- Resident procedural lead
- Problem solving
- Faculty procedural lead
- Resident leadership

These themes manifested differently in high and low entrustment cases:

**High Entrustment**

- **Resident problem solving**
  - Case 172: Resident identifies bleeding and corrects it.

- **Resident operative planning**
  - Case 180: Resident proposes starting with non-cancerous breast. Faculty tells resident to make the mark and decide.

- **Resident leadership**
  - Case 166: Resident guides junior resident on tying and suturing. Faculty leaves. Resident closes the case with junior resident.

**Low Entrustment**

- **Foundational teaching**
  - Case 124: Faculty uses the camera to show anatomy to resident.

- **Conversations to build familiarity and establish resident knowledge**
  - Case 80: Faculty and resident side chat about resident’s background.

- **Extensive faculty feedback and guidance**
  - Case 98: Faculty guides resident step by step and corrects technique, guiding resident in creating a plane.

DISCUSSION

- There are key differences in behaviors exhibited by residents and faculty in high and low entrustment interactions in the operating room.

- Faculty and residents can be more deliberate with their interactions.

- Faculty and resident development can be augmented to include explicit intraoperative behaviors to enhance entrustment.
Title: High vs. Low Entrustment Behaviors in the Operating Room

Authors: Christine Nguyen, Julie Thompson-Burdine, Gurjit Sandhu

Background: Surgical residents must have adequate operative experience with supervised autonomy to be able to safely and confidently practice independently at the end of training. Even though this progression towards autonomy is key, it is not clear how faculty can foster higher entrustment and how residents can demonstrate higher entrustability. This study attempts to identify consistently observed behaviors in the operating room that are linked with higher entrustment.

Methods: This qualitative study analyzed intraoperative notes taken by trained OpTrust raters from 206 surgical cases observed at an academic hospital from 2015-2017. These notes described faculty and resident behaviors, verbal/nonverbal communication, and educational interaction processes and are a component of the OpTrust tool, a validated entrustment instrument. Cases were divided into low and high entrustment groups. Cases with OpTrust scores of 1-2 were included in the low entrustment group, while scores of 3-4 were included in the high entrustment group. Then, the notes were structured using inductive open coding in NVivo12. Thematic analysis was used to identify themes and patterns within the data.

Results: The analysis generated 144 initial codes. A consensus building session was held to review codes and search for prominent themes and identified behaviors associated with high and low entrustment cases. Codes were clustered into 10 themes, including: communication, faculty guidance, faculty education, procedural lead, procedural actions, educational actions, operative plan, and resident leadership. While elements of these themes were present in both high and low entrustment interactions, they manifested differently. In particular, the behaviors most strongly associated with high entrustment, included: resident problem solving, resident operative planning, and resident leadership. Behaviors linked with low entrustment, included: foundational teaching, conversations to build familiarity and establish resident knowledge, and extensive faculty feedback and guidance.

Conclusion: This study demonstrated key differences in behaviors exhibited by residents and faculty in high and low entrustment interactions in the operating room. These behaviors can be identified from objective notes by third-party OpTrust raters. Awareness of specific behaviors that cue higher entrustment can help faculty to guide intraoperative interactions and conversations to enhance resident learning and enable greater resident progression towards autonomy.
Acute Care Surgery Demonstrates Higher Faculty-Resident Entrustment Than Elective General Surgery

Kristen Kolberg, BS1; Aaron M. Williams, MD2; David Lenzi, BA, MS3; Julie Thompson-Burdine, BA4; Niki Matusko, BS5; Rebecca M. Minter, MD3; Gurjit Sandhu, PhD2
1University of Michigan Medical School, 2Department of Surgery, Michigan Medicine, 3University of Michigan, 4Department of Surgery, University of Wisconsin

BACKGROUND

Changes in surgical education have raised concerns that surgical residents may not be prepared to practice independently after graduation.

- Supervision requirements
- Patient acuity and comorbidities
- Work hour restrictions

Faculty must entrust residents with appropriate tasks and decisions to allow them to develop autonomy. While entrustment in the operating room has been assessed for elective general surgery (GS) cases, studies evaluating these interactions during acute care surgery (ACS) rotations remain lacking.

The ACS environment poses unique differences from the elective GS environment including limited preoperative assessment, unpredictable case timing, 24-hour in-house team coverage, and increased risk of perioperative complications due to tenuous patient health status or lack of reliable patient history. We hypothesize that these differences may lead to increased entrustment on ACS.

RESULTS

Table 1: ACS and Elective General Surgery Entrustment and Entrustability Characteristics.

<table>
<thead>
<tr>
<th>Category</th>
<th>ACS Cases (n=80)</th>
<th>Elective GS Cases (n=20)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resident Entrustability Score</td>
<td>3.02</td>
<td>2.25</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Faculty Entrustment Score</td>
<td>3.00</td>
<td>2.52</td>
<td>0.001</td>
</tr>
<tr>
<td>Case Difficulty</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Easy/ Straightforward</td>
<td>17 (36%)</td>
<td>38 (43%)</td>
<td>0.404</td>
</tr>
<tr>
<td>Moderately Difficult</td>
<td>21 (45%)</td>
<td>29 (33%)</td>
<td></td>
</tr>
<tr>
<td>Very Difficult</td>
<td>9 (19%)</td>
<td>21 (24%)</td>
<td></td>
</tr>
<tr>
<td>Faculty Years of Experience</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Junior (&lt;10 y)</td>
<td>8 (16%)</td>
<td>10 (35%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Mid-level (10-19 y)</td>
<td>25 (51%)</td>
<td>31 (34%)</td>
<td></td>
</tr>
<tr>
<td>Senior (&gt;20 y)</td>
<td>11 (22%)</td>
<td>12 (13%)</td>
<td></td>
</tr>
<tr>
<td>Family Acquaintance with Resident</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not at all</td>
<td>3 (2%)</td>
<td>7 (8%)</td>
<td>0.23</td>
</tr>
<tr>
<td>Slightly</td>
<td>8 (17%)</td>
<td>26 (30%)</td>
<td>0.11</td>
</tr>
<tr>
<td>Familiar*</td>
<td>68 (86%)</td>
<td>54 (67%)</td>
<td>0.02</td>
</tr>
</tbody>
</table>

Number of times faculty has done this type of case/resident

| Not at all                    | 0 (0%)           | 6 (6%)                   | 0.11    |
| Slightly                      | 3 (6%)           | 28 (33%)                 | 0.003   |
| Familiar*                     | 46 (58%)         | 31 (36%)                 | <0.001  |

Number of times resident has done this type of case

| 1 to 5                        | 5 (11%)          | 20 (17%)                 | 0.001   |
| 6 to 10                       | 7 (17%)          | 25 (21%)                 |         |
| >10                           | 4 (9%)           | 13 (15%)                 |         |

Number of times resident has done this type of case w/faculty

| 1 to 5                        | 15 (33%)         | 43 (34%)                 | 0.058   |
| 6 to 10                       | 22 (47%)         | 25 (31%)                 |         |
| >10                           | 4 (9%)           | 8 (10%)                  |         |

Resident PGY Level

| PGY 1                        | 1 (2%)           | 17 (17%)                 | 0.005   |
| PGY 2                        | 2 (4%)           | 9 (10%)                  |         |
| PGY 3                        | 4 (14%)          | 19 (21%)                 |         |
| PGY 4                        | 13 (32%)         | 18 (17%)                 |         |
| PGY 5                        | 14 (29%)         | 26 (30%)                 |         |
| PGY 6                        | 0 (0%)           | 3 (3%)                   |         |

*Familiar: designates situations where resident and faculty familiar

Table 2: Operative Environment Comparison of Supervised Autonomy, Attending Observers, and Additional Learners in ACS Cases and Elective GS Cases.

<table>
<thead>
<tr>
<th>Observation Characteristic</th>
<th>ACS Cases (n=80)</th>
<th>Elective GS Cases (n=20)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>According Not Supervised</td>
<td>18 (37%)</td>
<td>0 (0%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>None</td>
<td>7 (14%)</td>
<td>33 (36%)</td>
<td>0.002</td>
</tr>
<tr>
<td>Medical Student</td>
<td>41 (84%)</td>
<td>57 (62%)</td>
<td>0.007</td>
</tr>
<tr>
<td>Junior Resident (PGY 2)</td>
<td>6 (12%)</td>
<td>8 (9%)</td>
<td>0.50</td>
</tr>
<tr>
<td>Senior Resident (PGY 3+)</td>
<td>20 (41%)</td>
<td>0 (0%)</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

For 24 (30%) ACS and 3 (50%) Elective GS cases there were 2 additional learners present.

CONCLUSIONS

- Higher faculty entrustment/resident entrustability present in ACS operations compared to elective GS
- Faculty and resident familiarity and resident cases volume were associated with increased faculty entrustment and resident entrustability in the ACS operations
- ACS group had higher proportions of residents operating together compared to elective GS

FUTURE DIRECTIONS

- Complementary qualitative research is needed to better understand faculty-resident entrustment behaviors and the learning environment within the ACS service.
- Further research on outcomes of multiple-resident cases could better inform faculty entrustment decisions.
Title: Acute Care Surgery Demonstrates Higher Faculty-Resident Entrustment Compared to Elective Surgery

Authors: Kristen Kolberg, BS; Aaron M. Williams, MD; David Lenzi, BA, MS; Julie Thompson-Burdine, BA; Niki Matusko, BS; Rebecca M. Minter, MD; Gurjit Sandhu, PhD

Background: Attaining appropriate faculty entrustment and resident entrustability is crucial for intraoperative learning during surgical residency. While intraoperative faculty entrustment and resident entrustability have been heavily evaluated for core elective surgical services, studies evaluating these interactions during acute care surgery (ACS) rotations remain lacking. The aim of this study was to compare intraoperative faculty-resident entrustment interactions during an ACS rotation with core elective general surgery services.

Methods: From May-September 2019, ACS operations were directly observed and evaluated for faculty entrustment and resident entrustability using OpTrust. This sample was compared to OpTrust data from elective cases in general surgery (November 2016 - June 2017). Linear mixed modeling was used to evaluate the relationship between service type and entrustment/entrustability scores, while accounting for faculty/resident correlation.

Results: Faculty entrustment (3.00 vs 2.52; p=0.001) and resident entrustability scores (3.02 vs 2.25; p<0.001) were significantly higher for the ACS cohort compared to the elective group. Faculty familiarity with the resident, resident familiarity with the faculty, and the number of times the resident had performed the operation correlated with higher entrustment scores in the ACS group compared to elective general surgery. There were no differences in case difficulty and prior operative experience with the resident between groups.

Conclusion: Both faculty entrustment and resident entrustability were significantly higher in ACS cases compared to elective general surgery operations. Faculty and resident familiarity with each other and resident case volume may be associated with higher faculty entrustment and resident entrustability.
Residents should observe faculty operative behaviors to adjust for similarities and differences in motivational styles.

**Promotion**
- Works Quickly
- High Energy
- Mostly Provides Broad Oversight

**Prevention**
- Works Slowly and Deliberately
- Quiet and Calm
- Preference for Vigilant Strategies
Title: Identification of Observable Promotion and Prevention Associated Surgeon Behaviors in the Operating Room to Improve Resident Entrustability

Authors: Akira Nishiia, Julie Burdineb, Niki Matuskob, Ton Wangb, Ana De Roob, Alisha Lussiezbb, Janice Vallieb, Gurjit Sandhub

Background: Motivational style congruency between faculty and residents based on the regulatory focus theory may enhance resident autonomy in the OR. This study establishes a set of faculty behaviors residents can identify in the OR to adapt to motivational style congruencies and incongruencies.

Methods: 10 behaviors associated with promotion and prevention motivational styles were identified. General surgery residents were asked to rate faculty members on how strongly they exhibit these behaviors. Similarly, faculty members conducted a self-assessment of how strongly they exhibit these behaviors.

Results: There is a positive correlation between resident and faculty ratings for the promotion associated behaviors of “works quickly,” “high energy,” and “mostly provides broad oversight” and for the prevention-associated behaviors of “works slowly and deliberately”, “quiet and calm”, and “preference for vigilant strategies.”

Conclusion: Residents can observe faculty operative behaviors to infer faculty motivational styles. Residents can use this knowledge to adapt to motivational style congruencies and incongruencies.
A Comparison of Unguided Versus Guided Instruction in a Formative OSCE Experience in Clinical Physician Assistant Learners

Presenters: Ahmad Hakemi, M.D. and Teresa Armstead, B.S. Authors Xiaomei Song, PhD, Judy Blebea, MD, Matthew Kanitz, PA-C, John Lowry, Ph.D., Scott Massey, Ph.D., Rachel Older, BS, Jocelyn Steffke, BS

This novel mixed study demonstrates that the introduction of a guided instruction containing the domains in the OSCE formative assessment is beneficial to the learning outcomes and process.

Background

OSCE (Objective Structured Clinical Examination) has superior psychometric properties and is the Gold Standard for assessment for clinical skills in a controlled and reproducible clinimimetic environment. Physician Assistant (PA) students at Central Michigan University undergo yearly low stake formative OSCE (fOSCE) assessments in preparation for their final summative multiple station examination. In general, the purpose of the fOSCE assessment has been used to identify performance gaps and provide specific suggestions for domains that need improvement. Formative experiences have been known to drive learning and increase student performance in final summative assessments. At Central Michigan University Learners are not provided with any guided instruction prior to the administration of the fOSCE station. Literature search was done to assess the value of providing the learners with guided instruction prior to administration of the fOSCE and no research studies were found. In this study, a novel intervention was devised by providing some learners with guided instruction of a specific case and chief complaint (Chest Pain) to see whether this intervention will augment learning.

Action/Method/Intervention

The learners were divided randomly into two groups (a.m. and p.m.). The a.m. group underwent a routine fOSCE session (pre brief, experience, and debrief). The p.m. group had the identical session except they received a copy of the guided instruction, which included the domains necessary for the experience (General Medicine, Etiquette, Chief Complaint and Agenda, History of Present Illness, Physical Examination, Communication Skills, *SOFTEN/**PEARL: Skills and Consolidation of the Experience). Two groups were also surveyed in the end about their learning experiences.

Results and Implications

Results indicated that 20 students in the experimental group performed higher than those in the control group (n=20) by 12 points. The t-test analysis with total scores showed significant differences ($t = 2.662, P = .002$), although their perceptions with 10 Likert-scale questions did not show significant differences. The open-ended responses indicated that students generally believed debrief was the most helpful to learn contents and clinical practices; however, what students were assessed and discussed in debrief did not seem to be consistent what was taught in the clinical skills course series. In addition, the learners had some challenges in the usage of the door note narratives. The researchers will continue to collect data in the future. The door note will be enhanced, strengthened, more robust and learner friendly. The results have been discussed with the curriculum committee of the PA Program and a new instructor has been assigned for the Clinical Skills course.

To view the full abstract, scan this QR code with your phone camera.
Title: A Comparison of Unguided Versus Guided Instruction in A Formative OSCE Experience in Clinical Physician Assistant Learners

Authors: Ahmad Hakemi, MD, Teresa Armstead, BS, Xiaomei Song, Ph.D., Judy Blebea, MD, Matthew Kanitz, PA-C, John Lowry, Ph.D., Scott Massey, Ph.D., Rachel Older, BS, Jocelyn Steffke, BS

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Results: Results indicated that 20 students in the experimental group performed higher than those in the control group (n =20) by 12 points. The t-test analysis with total scores showed significant differences (t = 2.662, P = .002), although their perceptions with 10 Likert-scale questions did not show significant differences. The open-ended responses indicated that students generally believed debrief was the most helpful to learn contents and clinical practices; however, what students were assessed and discussed in debrief did not seem to be consistent what was taught in the clinical skills course series. In addition, the learners had some challenges in the usage of the door note narratives.
Lesson Learned: The formative assessment is an important process in any educational institution. This novel study demonstrates that the introduction of a guided instruction containing the domains in the OSCE study in a formative assessment is helpful in the learning process. The fOSCE experiences for both groups had a high reliability, and analysis of the survey questions demonstrated a high level of satisfaction and a closing of the learning gap by conducting a robust debrief.

Future Application and Next Steps:
Discussion - The learners will have the same case during the final summative OSCE (sOSCE), which contains six stations. The results will be compared to the fOSCE to see if scores improve over time. The researchers will continue to collect data using the guided and unguided instructions during the fOSCE over the next three years. The door note will be enhanced, strengthened, more robust and learner friendly. The results have been discussed with the curriculum committee of the PA Program and a new instructor has been assigned for the Clinical Skills course.
AN OPEN EDUCATION RESOURCE AS THE IPE SOLUTION FOR PRE-LICENSED STUDENTS AND HEALTHCARE PROVIDERS IN PRACTICE

G. TERRY MD MSN BSN

Background

- Interprofessional Education (IPE) in the United States originated in the patient safety movement, quality improvement, and cost savings as described by the Institute of Medicine (IOM) report To Err is Human, World Health Organization (WHO) guidelines, Quality and Safety Education for Nurses (QSEN), and the Center for Medicare and Medicaid Services (CMS) policies (IOM, 2000; WHO, 2010; Dolansky & Moore, 2013; MedPAC, 2007).
- IPE competencies were developed and revised by the Interprofessional Education Collaborative (IPEC, 2011; IPEC, 2016). The IPE sub-competencies areas are Values/Ethics, Roles/Responsibilities, Interprofessional Communication, and Teams/Teamwork.
- The Health Professions Accreditors Collaborative (HPAC) scaffold on the IPEC work and recommended that quality IPE included Rationale, Outcome-based Goals, Deliberate Design, and Assessment and Evaluation (HPAC, 2019). This audience-specific guidance targeted institutional leaders, program-specific leaders and faculty, and accrediting boards/commissions/evaluators. The recommended IPE learning modalities in-person learning and collaborative online learning.

Actions, Methods or Interventions

IPE 407/507-Integrated Team Health Care: Course Design.

- Since Fall 2012, students from Grand Valley State University and Ferris State University in athletic training, nursing, occupational therapy, pharmacy, social work, and speech language pathology have learned about, from, and with each other in the foundational IPE course. The concepts, objective, assessments, and simulations were developed as 10 units by interdisciplinary faculty teams. The first offerings of the course were delivered as lecture/discussion and included in-person collaborative learning. Intentional faculty development included the pedagogy of Kolb’s Experiential Learning Theory, Debriefing strategies applying O’Donnell’s GAS Model, and foundations of hybrid/online teaching competency.

Lessons Learned

1. Students engage in content that is perceived as relevant to their reality. Therefore, students have commented that peers from other health professions were not engaged in the coursework or that they should not be on the course at all because they do not see this role in practice settings.
2. There have been many faculty champions for IPE across various disciplines. However, their IPE commitments has not been encouraged or supported as resources by the administrative teams of their healthcare programs.
3. Simulation alone has not fostered the competency for team communication and collaboration. Rather, foundational knowledge and faculty proficient in debriefing were valued.
4. In West Michigan, routine practice opportunities on interprofessional healthcare teams has been limited. Rather, these types of practice environments need to be expanded to involve in-person learning for all healthcare students.
5. There is a lack of opportunities for foundational IPE for healthcare providers already in practice.

Results

1. Since the foundational IPE course was implemented, the concepts and objectives have remained constant. In contrast the resources, in-person learning, collaborative learning, assessments have been revised in response to course evaluations by students and faculty teaching team feedback.
2. The present course is five units offered in seven or 14 weeks (See Table 1. Integrated Team Care and Student Learning Outcomes).
3. Meanwhile as new resources have become available, these were integrated into the course: such as modules from IPE Lab at CUNY and videos from UCSF, and IH.
4. Lastly, the online/hybrid pedagogy has evolved. Open Education Resources (OER) leverage these teaching and learning technologies. An OER can be defined as, "...teaching, learning, and research materials in any medium/digital or otherwise that reside in the public domain or have been released under an open license that permits no cost access, use, adaptation, and redistribution by others with no restrictions (Hewlett Foundation, 2019, p.2).

Future Applications and Next Steps

1. NEXT STEP. For the foundational IPE course, Integrated Team Health Care, is to make the material available as an Open Education Resource (OER) and to make it available through ScholarWorks@GV.
2. Disseminate the OER product worldwide to healthcare programs for students as well as to organizations for the purpose of providing IPE to healthcare providers regardless of discipline or level of education.
3. OER format has been chosen as the most effective strategy for no-cost sharing that would leverage available technology.

Acknowledgments
- Cynthia McCurrie for her sustained support of IPE foundations course.
- The faculty champions of IPE and IPCP that have contributed to or taught in the IPE foundations course.
- The Teaching Assistants for their participation in the assessment of student learning and courseware delivery.
- The IPE Students for their undying energy and ongoing challenge for relevancy for their learning.
MARRYING INTERPROFESSIONAL EDUCATION AND OPEN EDUCATION RESOURCES

G. TERRY MD MSN BSN

Background

- Interprofessional Education (IPE) in the United States originated in the patient safety movement, quality improvement, and cost savings as described by the Institute of Medicine (IOM) report To Err is Human, World Health Organization (WHO) guidelines, Quality and Safety Education for Nurses (QSEN), and the Center for Medicare and Medicaid Services (CMS) policies (IOM, 2000; WHO, 2010; Dolansky & Moore, 2013; MedPAC, 2007).
- Since Fall 2012, students from Grand Valley State University (GVSU) and Ferris State University (FSU) in nursing, occupational therapy, speech language pathology, social work, and pharmacy have been learning about, from, and with each other in the IPE foundations course, IPE 407/507: Integrated Team Care. (See Table 1 for Student Learning Outcomes for the course).
- Since its' inception, the IPE course content remains and has been revised by interprofessional faculty.
- Meanwhile, resources for the course have been integrated from other IPE programs such as, IPELab at City University of New York, University of California at San Francisco, and the Institute for Healthcare Improvement.

Purpose

The purpose of this project is to provide an evidence-based data that will impact the hybrid delivery of IPE that includes asynchronous team collaboration and simulation that demonstrates interprofessional competencies in pre-licensed students of the healthcare professions.

Frameworks

- Competencies have been developed and revised for healthcare professional students by the Interprofessional Education Collaborative (IPEC), IPEC, (2011: IPEC, 2016). The competencies include Values/Ethics, Roles/Responsibilities, Interprofessional Communications, and Teams/Teamwork.
- The Health Professions Accreditors Collaborative (HPAC) scaffold on IPEC’s work and developed guidelines that identify of quality IPE plans: Rationale, Outcome-based Goals, Deliberate Design, and Assessment and Evaluation (HPAC, 2019). These guidelines target institutional leaders, program-specific leaders and faculty, and accrediting boards/commissions/evaluators.
- Open Education Resources can be defined as, “teaching, learning, and research materials in any medium – digital or otherwise – that reside in the public domain or have been released under an open license that permits no-cost access, use, adaptation, and redistribution by others with no limited restrictions” (Hewlett Foundation, 2019, p.2).

Methods & Design

The research team will use a modified Giorgi method of phenomenological data analysis, which examines the data for meaning and themes (DeCastro, 2003). A convenient sample of 4 team blogs associated with 4 teams of students (for a total of 16 blogs) from a past offering from the foundational IPE course will be examined after the blogs are de-identified. The blogs ask for team reflection on the 4 IPEC Core Competencies. (See Table 2 for a sample of the Blog questions). The questions reflect the pedagogy of Kolb’s theory or experiential learning (Kolb, 1984). The data will be collected by a faculty member not associated with assigning grades to the teams. IRB is pending. The researcher will analyze the data according to the steps in the Giorgi method:

1. Read the blogs in their entirety, eliminating extraneous words to reveal the essential words of the content.
2. Segregate the content into meaningful segments, meaning units, by marking the text of the blog when topics change.
3. Categorize the meaning units into more scientific or formal terms, which are deduced into a concrete Situated Structure Statement (SSS).
4. The General Structure Statements (GSS) are generated from the SSSs that illustrate the general and essential meaning of the phenomenon.

Table 1. Integrated Team Care and Student Learning Outcomes

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<thead>
<tr>
<th>COMPETENCY EVALUATION</th>
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<tr>
<td>Outcome and Team</td>
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Table 2. Sample Questions for Team Blogs

1. What was a Ah-Ha idea from your team about what your team has learned about Roles and Responsibilities for Interprofessional Teams?
2. Set SMART goals for your team about Roles and Responsibilities.

Conclusions

- Due to logistic barriers, not all potential healthcare student groups participate in IPE.
- Open Education Resources (OER) offer a wide appeal due to no-cost, flexibiltiy, and asynchronous opportunities for IPE directed to students of any level of education or practice.
- The results will inform institutional leaders and faculty about student learning deficits and adequate concerning interprofessional competencies.
- The results will demonstrate relevancy of team collaboration to students.

Acknowledgments

Cynthia McCourey for her sustained support of IPE foundations course. The faculty champions of IPE and IPECP that have contributed to or taught in the IPE foundations courses.
Title: An Open Education Resource as the IPE solution for pre-licensure students and healthcare providers in practice

Background: Interprofessional Education (IPE) in the USA originated in the patient safety movement, quality improvement, and cost savings as described in the Institute of Medicine (IOM) report to Err is Human, World Health Organization (WHO) guidelines, Quality and Safety Education for Nurses (QSEN), and the Center for Medicare and Medicaid Services (CMS) policies (IOM, 2000; WHO 2010; Dolansky & Moore, 2013; MedPAC, 2007).

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The Health Professions Accreditors Collaborative (HPAC) scaffold on IPEC’s work and recommended guidelines that for quality IPE to include Rationale, Outcome-based Goals, Deliberate Design, and Assessment and Evaluation. This audience-specific guidance targeted institutional leaders, program-specific leaders and faculty, and accrediting boards/commissions/evaluators. Recommended IPE learning modalities include In-Person Learning and Collaborative Online Learning.

Methods: IPE 407/507-Integrated Team Care: Course Design.
Since Fall 2012, students from Grand Valley State University (GVSU) and Ferris State University (FSU) in nursing, occupational therapy, speech language pathology, social work, and pharmacy have learned about, from, and with each other in this foundational IPE course. Concepts/Objectives/Assessments/Simulations were developed as ten units by interprofessional faculty teams. The original content was delivered by lecture/discussion or hybrid/online. Intentional faculty development included training the pedagogy of Kolb’s Experiential Learning Theory, debriefing using O’Donnell’s GAS Model, and foundations of hybrid/online teaching.

Results: Since its inception, the concepts and objectives of the foundation IPE course have remained constant. In contrast, the resources and assessments have been revised in response to student course evaluations and faculty teaching team feedback. Meanwhile as they became available, new resources for this course were integrated form other IPE programs such as, IPE Lab at City University of New York, University of California at San Francisco, and the Institute for Health Improvement.

Lessons Learned:
- Students hunger for relevancy in their education; therefore, students noted that many of their peer students in other healthcare professions were not engaged in this IPE learning opportunity.
- There have been many faculty champions for IPE across many disciplines; however, their commitment to IPE was not encouraged or supported by the administrative teams in of their healthcare programs.
- Simulation alone has not fostered team communication and collaboration; rather foundational knowledge of IPE, the pedagogy of Kolb’s Experiential Learning Theory, and faculty proficient in debriefing were valued.
- In West Michigan, routine clinical opportunities, that include inclusion on Interprofessional practice teams have been limited and need to be expanded to involve In-person learning opportunities for all healthcare professional students.
Future Application and Next Steps:
NEXT STEP for this foundational course’s is making the materials available as an Open Education Resource (OER) available at ScholarWork@GVSU with the goal to disseminate this IPE product to worldwide to healthcare student programs as well as to organizations for the purpose of providing IPE to healthcare providers regardless of discipline or level of education. OER has been chosen as the most effective strategy for no-cost sharing and dissemination. OER has been defined as, “teaching, learning, and research materials in any medium-digital or otherwise-that reside in the public domain or have been released under an open license that permits no-cost access, use, adaptation, and redistribution by others with not limited restrictions (Hewlett Foundation, 2019, p.2).
Helping Teach QI in Healthcare: 
An A3 “Problem-Solving” Assessment Tool and Self-Instruction Package

Jennifer S. Myers, MD, Jeanne M. Kin, MHA, JD**, John E. Billi, MD**, Kathleen Burke, RN, PhD*, R. Van Harrison, PhD**
* Penn Medicine. ** Michigan Medicine

PROBLEM / GOAL

Problem
Quality improvement (QI) is a required competency for medical students and residents and an expectation of practicing physicians. Based on the Lean management approach, A3 Problem Solving is increasingly used in healthcare settings, but no validated assessment tool exists for proposal A3s.

Goal
Develop and validate an assessment tool for QI project proposals and a self-instruction package to guide QI teachers and learners:
- Assess interrater agreement using self-instruction package.
- Learn raters’ experiences and feedback.

METHODS

Develop A3 Assessment Tool & Self-Instruction Package
Three previous development and improvement cycles:
- Literature review (summer 2017)
- Study 1: 4 raters x 4 A3s (spring 2018) 
- Expert review of materials (summer 2018)
- Study 2: 4 raters x 4 A3s (fall 2018) 
- Study 3: 12 raters x 6 A3s (spring 2019)

Materials developed and refined over the cycles:
- A3 Template (see below)
- A3 Assessment Tool – 23 items (see below)
- Instructions for Assessing Problem-Solving A3s (using the package)
- A3 Content Guide
- Description of Ratings
- Learning Examples: 3 Proposal A3s, A3 Assessment Tools to Complete, A3 Ratings and Their Explanations for each A3

Study 4 (fall 2019): Design
12 raters x 6 A3s x 23 items/A3 = 1,656 ratings
- Raters: Experience teaching QI, 6 Penn Medicine and 6 Michigan Medicine, 4 clinicians and 2 non-clinicians at each institution.
- A3s – based on actual student A3s, modified to vary quality.

RESULTS

Measures and Analyses
From ratings of A3s:
- Intraclass correlation coefficients (ICCs) for each of the 23 items across the 6 A3s and mean ratings for the 6 A3s to assess agreement in rating items across a range of scores.
- Rating differences between institutions.
- Rating differences by profession.

From feedback form (19 items) completed by raters and from debriefing calls:
- Adequacy of each of the materials.
- Time to complete self-instruction training package.
- Time to access the 6 study A3s.
- Overall experience learning about and using the assessment tool.
- Applicability to their QI teaching.

From Ratings of A3s
Rater agreement:
- Overall A3 assessments (mean of ratings on an A3), ICC = 0.89 (95% confidence interval 0.75–0.95), excellent reliability over a range of scores.
- For 17 individual items, ICs ranged from 0.57 to 0.97, indicating fair to excellent reliability.
- For 6 individual items (1, 2, 11, 14, 16, 17) raters generally agreed on the item’s scores, but lack of variation in the range of scores across A3s methodologically limited their ICs.

Clinicians’ ratings were slightly higher than non-clinicians’ (means of 2.17 and 2.00, p = .003), but the small difference is not practically meaningful.

From Rater’s Feedback
Completing the self-instruction package averaged 1.5 hours (range 1 to 3 hours) and assessing the 6 A3s averaged 2.0 hours (range 1 to 3.5 hours). The self-instruction package and assessment tool were easy to learn and worthwhile to use.

Raters want to use the materials in teaching QI.

DISCUSSION

Relation to Previous Literature
Three other studies have reported developing assessment tools for QI projects, but each developed its own conceptual framework.

This set of materials is unique in:
- Building on the widely recognized A3 problem-solving approach.
- Providing a self-study package for learning to assess A3s.
- Demonstrating consistency across raters, including raters from different institutions and different professional backgrounds.

Operational Insights
- Separate items that are based on assessing the A3 document alone from items whose assessment also requires knowledge of the local situation.
- Frequently overlooked is monitoring implementation (intervention fidelity).
- Precise wording and examples help assessors and learners.

Limitations
- The tool assesses proposal A3s, but not reports of tests of change.
- Performed at two institutions by individuals with QI teaching experience.
- Lack of variation on 6 items limited checking agreement over score range.

Future Research and Use
- Expand studies of interrater reliability: other settings and backgrounds.
- Use online video format for training package.
- Use assessments for prospective feedback to improve A3s and QI efforts.
- Provide assessment training to learners to improve their own A3s.

CONCLUSIONS

The assessment tool and self-study package produce reliable assessments of the quality of A3 proposals for QI projects in healthcare. The self-instruction package provides this training efficiently and inexpensively.

The self-instruction training package is available at: https://umich.box.com/s/8l4pyhv4gqpx/1nefjrawgjpp154hp
Helping Teachers Teach Quality Improvement in Healthcare: An A3 “Problem-Solving” Assessment Tool and Self-Instruction Package

Jennifer S. Myers, MD, Perelman School of Medicine, University of Pennsylvania; Jeanne M. Kin, MHA, JD, Michigan Medicine, University of Michigan; John E. Billi, MD, University of Michigan Medical School, University of Michigan; Kathleen Burke, RN, PhD, School of Nursing, University of Pennsylvania; R. Van Harrison, PhD, University of Michigan Medical School, University of Michigan

Problem/Goal. Quality improvement (QI) is a required competency for medical students and residents and an expectation of practicing physicians. The A3 Problem Solving approach is commonly utilized in healthcare settings, but no validated assessment tool for A3 problem solving exist. We sought to develop and validate an assessment tool for QI project proposals and a self-instruction package to guide QI teachers and learners.

Methods. A 23-item assessment tool was developed in consultation with experts in A3 problem solving. The self-instructional teaching package included: A3 template, content guide, assessment tool, description of rating options, and A3 assessment examples. We conducted four refinement cycles. The final cycle involved 12 raters (6 individuals who teach QI to healthcare learners at 2 institutions). Raters assessed 6 A3s and provided feedback on their experience.

Results. For overall A3 assessment (mean of ratings on the 23 items) across the 6 A3s, the Intraclass Correlation Coefficient (ICC) was 0.89 (95% CI 0.75 – 0.98), indicating good to excellent reliability. For 17 individual items, the ICCs ranged from 0.57 to 0.97, indicating moderate to excellent reliability. For the remaining 6 items, ratings were generally consistent, but the restricted range across A3s limited checking agreement across values. Raters from the two institutions used the rating scales similarly (mean ratings of 2.10 and 2.13, p = .57). Reviewing the self-instruction package took 1.5 hours and rating each A3 took 20 minutes. Raters wanted to use the materials to teach and provide feedback to their learners.

Conclusion. Our work represents the first validated assessment tool and self-instructional package using the A3 problem solving approach to develop proposals for QI projects in healthcare. Assessments and feedback will be reasonably consistent across teachers and educational programs for QI. A next step is to use assessments to provide formative feedback to improve A3s.
Keeping it Square: Surgical Knot Tying Errors by Post-graduate Year

Viktor Tollemar, MD; Jaron Scott, MS; Geoffrey Siegel, MD
University of Michigan Health System, Department of Orthopaedic Surgery

Introduction

- Residency Training Learning Objectives:
  - Medical knowledge
  - Patient Care
  - Interpersonal and Communication Skills
  - Professionalism
  - Practice Based Learning and Improvement
  - Systems Based Practice
  - Surgical Knot Tying?

- Does practice make better?
- Do more senior residents have superior surgical knot-tying skills compared to their junior counterparts?

Objectives

- Measure surgical knot tying errors by post-graduate year
- Determine whether correlation exists between years of training and error rate

Materials & Methods

- University of Michigan Orthopaedic Surgery Residency Program
- 34 residents participated
  - PGY1 8
  - PGY2 8
  - PGY3 7
  - PGY4 4
  - PGY5 7
- 50 single-handed ties
- 50 two-handed ties

Results

![Bar chart showing errors by PGY group](chart1.png)

Single-Handed Ties. Number of errors for each PGY group was graphed on the box and whisker plot. ANOVA demonstrates no statistical difference (P = 0.43)

![Bar chart showing errors by PGY group](chart2.png)

Two-Handed Ties. Number of errors for each PGY group was graphed on the box and whisker plot. ANOVA demonstrates statistical difference (P = 0.012)

<table>
<thead>
<tr>
<th>Group1</th>
<th>Group2</th>
<th>Mean Difference</th>
<th>P-value</th>
<th>Reject HO</th>
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<tbody>
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<tr>
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<td>PGY5</td>
<td>0.57</td>
<td>0.9</td>
<td>FALSE</td>
</tr>
</tbody>
</table>

Statistics

- We used ANOVA with a significance cutoff of 0.05 in order to detect differences in error rate between groups
- When a difference was detected, Tukey’s Range test was used to identify groups that were different

Conclusions

- PGY-1 group had significantly lower error rate than PGY-4 group for two-handed ties
- No other significant difference detected in error rate between any groups for single-handed or two-handed ties

Limitations

- Small sample size
- Fewer participants in PGY4 class
- Yarn is not analogous to suture
- Did not take into account speed or efficiency of hand movements
- Unclear if measured “errors” are clinically relevant
Title: Keeping it Square: Surgical Knot Tying Errors by Post-graduate Year

Authors: Viktor Tollemar, Geoff Siegel, Jaron Scott

Background: The University of Michigan Orthopaedic Surgery Residency Program outlines a number of learning objectives for each post-graduate year in a number of areas including professionalism, communication skills, medical knowledge, and patient care. Surgical knot tying skills is not included in these educational objectives. We asked the question whether more senior residents have superior surgical knot-tying skills compared to their junior counterparts. In order to answer this, we measured knot tying error rate by post-graduate year.

Actions, Methods, or Intervention: Each participating resident performed 50 one-handed ties and 50 two-handed. Each series of knots was inspected by the same volunteer faculty member. The total number of non-square knots were counted and recorded as errors. The error rate was then compared between classes using analysis of variance with a significance cutoff of 0.05. When a difference was detected, Tukey’s Range test was used to identify groups that were different.

Results: 34 residents in the University of Michigan Orthopaedic Surgery Residency Program participated. Of these, 8 were PGY-1s, 8 were PGY-2s, 7 were PGY-3s, 4 were PGY-4s, and 7 were PGY-5s. ANOVA demonstrated no statistical difference (P = 0.43) in one-handed knot error rate between groups. ANOVA did demonstrate a statistical difference (P = 0.012) in two-handed knot error rate. The only significantly different comparison was found between PGY-1s and PGY-4s where (P = 0.0042).

Lessons Learned: PGY-1s had a significantly lower error rate than PGY-4s for two-handed ties. No other significant difference detected in error rate between any groups for single-handed or two-handed ties. Future Applications and Next Steps: This experiment should be repeated with a larger sample size and conducted in a more controlled setting. Time to complete the assignment and efficiency or hand movements could also be used as metric of proficiency. If done at other institutions, it would be valuable to compare data in order to determine if specific educational objectives correlate with improved knot-tying skills.
Acute Stroke Education for Medical Students (ASEMS)
Sadhana Murali, MD, Department of Neurology, University of Michigan Stroke Program

Why is stroke education important?
Stroke is a neurologic emergency and the 5th leading cause of death in the United States. Over the last several decades, several acute treatments have emerged. These treatments are limited by narrow time windows, requiring quick provider recognition of stroke symptoms and initiation of acute management. Given this, evolving stroke education to all providers is critical and can improve on in medical school.

Current gaps in education
U of M medical students rotate on an inpatient neurology service for two weeks. While medical students can observe stroke codes during their rotations, currently students are not able to actively participate and some may not even observe any stroke codes due to the sporadic nature of codes. This leads to passive observation and unstructured learning.

Goals of the project
The main goal of this study is to determine whether a stroke clinical passport (Figure 1) can turn the passive nature of stroke code observation into a beneficial, active learning activity. In addition, a stroke pager schedule has been created to maximize the number of stroke codes observed per student. Finally, the study will evaluate student feedback to improve stroke education during the neurology rotation.

Interventions
1. Stroke clinical passport - Main intervention
2. Pre/post rotation surveys with detailed end-of-survey answers provided
3. Stroke pager schedule - Rotation schedule to hold stroke pager

Methods
This study has two phases. At the start and end of each neuro rotation, students take the pre and post-rotation surveys via Qualtrics. Two cycles have been completed so far. 23 of 30 students have responded to the pre-survey and 20 out of 30 students have responded to the post-survey. All students are provided with a stroke pager rotation schedule and hold the stroke pager on their assigned days. Surveys were also sent to 180 previous neurology students between 2018-2019 of whom 42 responded.

Students rotating during the phase 1 period do not receive the clinical passport intervention and serve as a control. Phase 2 students will receive a pack of passports to fill out with each observed stroke code.

Pre and post-survey results will be compared within each phase. Post-survey results will be compared between phase 1 and 2. Surveys include confidence, knowledge, and feedback-based questions. Confidence questions are compared using a 2-sample t test and all other results are compared using a comparison of proportions test

Preliminary Phase 1 Results

Phase 1 results show an overall significant increase in the average number of stroke codes observed per student compared to students who rotated through the neurology rotation prior to the implementation of the stroke pager schedule (Figure 2) [3.35 vs 2.97 \( P = 0.05 \)]. Of note every student saw at least one stroke code, whereas prior to the schedule implementation, 7 out of 42 students did not get to see a stroke code at all. In addition, on average, students with the stroke pager schedule were satisfied with their stroke education on the rotation (Figure 3) [1.6 vs 2.81, \( P = 0.00002 \)].

Results cont’d
Questions related to confidence are shown in figures 4-7. A statistically significant improvement in student’s perceived confidence was found between pre and post rotation surveys (\( P < 0.00001 \)).

Feedback regarding improving stroke education was requested from students who had completed the neurology rotation. The top four suggestions included adding a formal stroke lecture to the rotation, allowing students to spend more time with the stroke pager, providing stroke handouts, and providing a debrief session after a stroke code.

Discussion
The preliminary data from phase 1 has shown that, between the start and end of the neuro rotation, there is a significant increase in student’s perceived confidence and knowledge base regarding acute stroke management. This improvement is in the absence of the clinical passport intervention. Several factors could have lead to this improvement: increased # of observed stroke codes with the new schedule or repetitive testing bias. Phase 1 will continue for one more rotation cycle and phase 2 will start after. Results of the two phases will then be compared. If this intervention shows significant benefit, this tool may be utilized at other schools as well.

Acknowledgements
I would like to thank the medical education scholars program (MESP) for providing a valuable course that allows teachers to become better educators.
Title: Acute Stroke Education for Medical Students (ASEMS) Abstract

Author: Sadhana Murali, MD, Department of Neurology, University of Michigan Stroke Program

Background: Stroke is a neurologic emergency and the 5th leading cause of death in the United States. Over the last several decades, several acute treatment options have emerged that are limited by narrow time window. This requires providers to be able to quickly recognize stroke symptoms and initiate the appropriate initial acute management. As strokes can occur anywhere, at any time, it is vital that providers of all specialties are appropriately educated in acute stroke recognition and management. This education should be provided at all levels of training. Currently, stroke education is not consistently provided to medical students nation-wide. Medical students are most likely to observe acute stroke codes on their neurology or emergency medicine rotations. However, neurology rotations are not required in all medical schools and even when medical students rotate through a neurology rotation, they may not get the chance to observe a stroke code or receive structured stroke education. It is clear that a nation-wide shift in stroke education is needed. The goal of the Acute Stroke Education for Medical Students (ASEMS) project is to increase medical student exposure to the acute stroke code process and to maximize learning while observing acute stroke codes.

This study will be evaluating several interventions. First, the study will be looking at the utility of a structured stroke pager rotation schedule to maximize the number of stroke codes students observe during their neurology rotation. Second, a stroke code clinical passport will be utilized which students will fill out during each acute stroke code. The goal of this intervention is to change the passive observation of a stroke code into a more active learning activity. Benefit of these interventions will be evaluated with a pre and post-rotation survey to assess improved student confidence, knowledge, and satisfaction. The first half of the study, phase 1, will not use the stroke clinical passport intervention and will serve as a control. The second half of the study, phase 2, will utilize the stroke clinical passport intervention and results will be compared to phase 1. Phase 1 data collection is currently in process and will be completed after one more neurology rotation cycle after which the phase 2 period will begin. Preliminary phase 1 results show a statistically significant improvement in confidence and knowledge of medical students between pre and post-rotation survey results. Several factors may be resulting in this improvement, including an increased number of stroke codes observed or repetitive testing bias from pre and post-rotation surveys. Phase 2 data, when available, will be compared to phase 1 data to determine if there is any additional benefit to using a stroke clinical passport as a learning tool. If such a benefit exists, this could potentially be used at other medical schools as well.
Fellows from Diverse Programs Benefit from a Combined Curriculum for Learning Skills in Delivering Serious News and Conducting Goals of Care Conversations

Veterans Affairs Health Systems and Division of Pulmonary and Critical Care Medicine, Department of Internal Medicine, University of Michigan Medical School, Ann Arbor, MI

OBJECTIVE
- To provide pulmonary/critical care fellows and allied providers with an evidence-based intervention to improve skills in delivering serious news (DSN) and conducting goals of care conversations (GOCC)

BACKGROUND
- New technologies and interventions make navigating decisions at the end of life increasingly difficult
- Training programs have the challenging task of teaching how to communicate effectively in these situations
- Trainees often feel ill-prepared, which can result in poorer patient outcomes, provider burnout, and a traumatic experience for patient’s loved ones

METHODS
- Participants: 6 pulmonary/critical care fellows, 5 palliative fellows, 5 geriatric fellows, 1 palliative NP. 13 completed the pre-intervention survey, all 17 completed the post-intervention survey
- Intervention: 2 half-day workshops teaching roadmaps, skills in DSN, and conducting GOCC
- Measurement: After the workshops, a retrospective pre-post course survey was used to assess participants’ assessment of their skills before and after exposure to the curriculum

Impact of Intervention

Pre and Post Intervention Perceptions of Ability to Reframe Prior to Intervention

METHODS – CONT.
- Additionally, perceptions of skills were assessed prior to the workshops
- Variables: Demographics, pre-post self-efficacy, pre-post interventions of self-efficacy prior to intervention

LESSONS LEARNED
- Training in DSN and GOCC is needed and well-received
- The retrospective pre-post survey of all participants showed a statistically significant increase in their self-assessed skill across all domains assessed
- When comparing retrospective perception of skill in reframing to pre-workshop perception, it appears that participants may have been overconfident in this domain. The trend was similar in all domains, but only reached significance with regards to reframing

FUTURE DIRECTIONS
- Increase exposure of fellows to more simulation practice in fellowship
- Incorporate more topics such as practicing goals of care conversation
- Bridge intentional practice techniques from the workshop setting to the bedside through faculty dissemination
Title: Fellows from Diverse Programs Benefit from a Combined Curriculum for Learning Skills in Delivering Serious News and Conducting Goals of Care Conversations

Authors: D. Antokub, N. Houchensab, J. Osterholzerab, P. Choib, L. Taylorab, P. Mullanb, M.P. Mendezab-Veterans Affairs Health Systema and Division of Pulmonary and Critical Care Medicine, Department of Internal Medicine, University of Michigan Medical Schoolb, Ann Arbor, MI

Background: As the medical complexity of patients increases, so does the need for effective communication. New technologies and interventions make navigating decisions at the end of life increasingly difficult. Training programs have the challenging task of teaching critical care fellows and trainees in allied specialties how to communicate effectively in these situations. Trainees often feel ill-prepared, which can result in poorer patient outcomes, provider burnout, and a traumatic experience for patient’s loved ones.

To address this historically neglected but critical part of training, we initiated a communication skills workshop for Pulmonary/Critical Care, Palliative, and Geriatric Medicine fellows in the Academic Year 2019-2020. Case scenarios of critically ill patients in which a goals of care meeting was conducted were simulated using professional actors. The focus of the program was two-fold: to teach skills in delivering serious news (DSN) and conducting goals of care conversations (GOCC).

Methods: A total of 16 fellows and one nurse practitioner participated in the intervention. Participants were exposed to two half-day workshops teaching roadmaps and skills in DSN and conducting GOCC. Teaching was provided using a mix of drills, interactive demonstrations, and a simulated family meeting with highly trained actors using the VitalTalk method. After the workshops, a retrospective pre-post course survey was used to assess participants’ assessment of their skills before and after exposure to the curriculum. Additionally, perceptions of skills were assessed prior to the workshops to assess whether participants pre-session attitudes suggested over/under confidence in their skills.

Results: Of the 17 trainees, 13 completed the pre-intervention survey (6 Pulm/CC, 5 palliative, and 2 geriatric fellows). All 17 participants completed the post-intervention survey (6 Pulm/CC, 5 palliative, 5 geriatric fellows, and 1 nurse practitioner from palliative care). The retrospective prepost survey of all participants showed a statistically significant increase in their self-assessed skill across all domains assessed. Notably, when comparing their retrospective perception of skill in reframing to their pre-workshop perception, it appears that participants may have been overconfident in this domain. Though the trend was similar in all domains, it only reached significance with regards to reframing.

Conclusion: Implementation of a combined training program designed to enhance communication skills for fellows from diverse programs in a critical care setting is feasible, effective, and well-received. In response to this assessment, this model will continue to be refined and used in future academic years to combine fellows from different programs in this unique curriculum.
“I’m Ready to be a Teaching Senior”
An Educational Intervention for Rising Seniors Residents to Improve Readiness to Teach
Amanda Huey, *1 Kate Levy, *1 Jacob Mack, 1 Sarah Hartley 1 *co-first authors, 1Michigan Medicine

Background
- The Liaison Committee on Medical Education (LCME), Accreditation Council on Graduate Medical Education (ACGME) and Michigan Medicine Graduate Medical Education (GME) committee all recognize the important role of residents as teachers in the clinical environment.
- In internal medicine, the transition from intern to senior resident includes advancement in both clinical and educational responsibilities.
- While clinical training has been a focus of the intern year, residents often have no formal training as an educator at the time of this transition.
- As part of our participation in the CoMET (Community of Medical Educators in Training) program, we created a curriculum to fill this educational gap for Michigan Medicine internal medicine.

Objective
Create a ‘just in time’ curriculum for rising senior internal medicine resident to increase feelings of confidence and readiness to teach.

Methods
- 110 internal medicine residents participated in a needs assessment survey in order to understand resident confidence in providing clinical care and education of medical students.
- Using input from the needs assessment, we created four 45-minute interactive workshops for interns which covered educational theory and practical, interactive ways to incorporate teaching into a busy clinical service. Content areas included: creating a positive learning environment, setting expectations, giving feedback, Bloom’s Taxonomy, Kirkpatrick pyramid, effective questioning, One Minute Preceptor, chalk talks, and teaching scripts.
- Workshops were delivered to interns prior to their transition to a senior resident role.
- Pre- and post-surveys similar to the needs assessment survey were distributed to interns before and after the entire workshop series to evaluate for change. In addition, feedback on each session was obtained.
- The curriculum was launched in spring 2018.

Needs Assessment:
- Forty-nine senior residents (45%) responded to the needs assessment.
- Using a 5-point Likert scale, residents reported greater confidence providing patient care (mean=3.7) than teaching medical students (mean=3.0).
- The majority of respondents (n=45, 92%) wanted to improve their skills as educators.

Curriculum evaluation:
- Eighty-nine interns (82%) participated in at least one workshop.
- Using a 5-point Likert scale, overall intern feedback on individual sessions was positive with participants agreeing that they felt satisfied with the sessions (mean=4.7) and planned to incorporate new tools into their teaching practice on the wards (mean=4.8).

Lessons Learned
- This “just in time” curriculum was designed to improve teaching skills of interns preparing to transition into the senior resident role. It was well received by interns and increased participants’ confidence in teaching.
- Variable and busy clinical schedules limited interns from attending all workshops. To ameliorate this problem, the content from previous workshops was summarized during each subsequent workshop.
- The interactive workshops enhanced engagement through multiple teaching techniques including skill simulation through role play.
- Materials were available on request, though could not replicate the experiential learning of being present at the workshops.
- An additional facilitator for the second year of the curriculum increased feasibility in continued delivery of workshops.

Future Application & Next Steps
- Given the planned implementation of a Michigan Medicine GME sponsored resident as teacher curriculum for all residents, we plan to re-evaluate our curriculum to determine out how it can best be used to expand and reinforce the new GME curriculum while maintaining “just in time” training in the the key transition from intern to senior resident.

Acknowledgments
The authors would like to thank the CoMET program for providing foundational teaching skills and research guidance, as well as the internal medicine residency for support to complete this program. The authors would also like to thank Dr. Jennifer Lukela and Dr. Amit Gupta for providing inspiration for some of the workshops.

Funded: No funding was received for this project.
Contact information: Amanda Huey (hueay@umich.edu), Kate Levy (klevy@umich.edu)
Title: “I’m Ready to be a Teaching Senior”: An Educational Intervention for Rising Seniors Residents to Improve Readiness to Teach

Background: The Liaison Committee on Medical Education (LCME), Accreditation Council on Graduate Medical Education (ACGME) and Michigan Medicine Graduate Medical Education (GME) committee all recognize the important role of residents as teachers in the clinical environment. In internal medicine, residents make the biggest transition as educators when they move from being an intern to a senior resident where they are looked to as the leader of the team and one of the primary educators of medical students. However, prior to this transition many residents have had no formal training on the role as an educator. As part of our participation in the CoMET (Community of Medical Educators in Training) program, we created a curriculum for Michigan Medicine Internal Medicine Residents to fill this educational gap.

Methods: A needs assessment survey was distributed to 110 internal medicine residents using a 5-point Likert scale (1=not at all confident; 5=extremely confident) in order to understand resident confidence with providing clinical care and education of medical students. Using input from the needs assessment, we created four 45-minute interactive workshops for interns aimed at covering educational theory and practical interactive ways to incorporate teaching into a busy clinical service. Content areas included the following: creating a positive learning environment, setting expectations, giving feedback, Bloom’s Taxonomy, Kirkpatrick pyramid, effective questioning, One Minute Preceptor model, chalk talks, and teaching scripts. Workshops were delivered to interns at the end of the year, prior to starting their new role as senior residents. Pre- and post-surveys similar to the needs assessment survey were distributed to interns before and after the entire workshop series to evaluate for change. In addition, written feedback using a 5-point Likert scale (1=strongly disagree; 5=strongly agree) and free text were obtained from participants at the end of each individual workshop; optional verbal feedback was also solicited. The curriculum was launched in spring 2018.

Results: Forty-nine senior residents (45%) responded to the needs assessment. Overall, residents had greater confidence providing patient care (mean=3.7) than teaching medical students (mean=3.0). The majority of respondents (n=45, 92%) wanted to improve their skills as educators. Forty-nine interns (82%) participated in at least one workshop. Overall intern feedback on individual sessions was positive with participants agreeing that they felt satisfied with the sessions (mean=4.7) and planned to incorporate new tools into their teaching practice on the wards (mean=4.8). Comparing intern pre-workshop survey responses (n=45) to the post-survey responses of interns who attended at least one workshop (n=17) demonstrated an overall increase in confidence in teaching medical students (2.5 before vs 3.0 after), as well as an increase in confidence across domains covered in the workshops including: setting expectations (3.0 before vs 3.5 after), giving feedback (2.7 before vs 3.1 after), eliciting feedback (2.5 before vs 2.9 after), making spontaneous teaching points (2.7 before vs 3.5 after), delivering chalk talks (2.4 before vs 3.3 after) and using teaching scripts (3.1 before vs 3.5 after). Feedback on the sessions was incorporated into enhancements and the program was delivered again in spring 2019.
Lessons Learned: This “just in time” curriculum was designed to improve teaching skills of interns preparing to transition into the senior resident role. It was well received by interns and increased participants’ confidence in teaching. The interactive workshops enhanced engagement through multiple teaching techniques including skill simulation through role play. However, variable and busy clinical schedules limited interns from attending all workshops. Our approach to ameliorate this problem was summarizing the content from previous workshops during each subsequent workshop. Materials were also available on request but could not replicate the experiential learning of being present at the workshops. An additional facilitator for the second year of the curriculum increased feasibility in continued delivery of workshops.

Future Application and Next Steps: Given the planned implementation of a Michigan Medicine GME sponsored resident as teacher curriculum for all residents, we plan to re-evaluate our curriculum to determine out how it can best be used to build off of the new GME curriculum and still provide “just in time” reinforcement of concepts during the key transition from intern to senior resident.
A virtual, interprofessional approach to develop expertise in the public health perspectives of lactation

Olivia S. Anderson, PhD, RD1 Carolyn F. McCabe, MS1 Samantha Chuisano, MPH2 Emily Wicoff1 Aria Grabowski1 Anna Sadovnikova, IBCLC, MPH, MA2
1. University of Michigan School of Public Health, Department of Nutritional Sciences 2. LiquidGoldConcept, Inc.

Background

Virtual internships may provide students learning experiences that are equitable, flexible, accessible, interprofessional, and even cross-cultural. Many virtual experiences lack the engagement and interaction required for student satisfaction and sufficient attainment of skills. As technology for remote collaboration advances, it is critical to understand how public health practice sites can leverage such technology for experiential learning in pre-professionals.

Objectives

Determine if an interprofessional, virtual internship offered through a breastfeeding education company:
1) engages learners,
2) if learner engagement leads to the development of public health skills, and
3) if public health skills are translated to create artifacts that are mutually beneficial for the practice site and learners.

Methods

3 dual-degree students in public health, dietetics, nursing, and social work participated in the internship.
A learner-centered syllabus was developed to guide interns through approximately 20 hours self-directed learning with readings, videos, podcasts, and various assignments each week. Interns completed knowledge assessments and surveys weekly and pre- and post-internship.

Overall, interns were satisfied with the virtual internship experience

Table 1. Intern satisfaction (aggregate average, weeks 1-16)

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<th>Survey/item</th>
<th>Avg. agreement</th>
</tr>
</thead>
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<tr>
<td>The expectations of the internship are appropriate</td>
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</tr>
<tr>
<td>I am overwhelmed by the workload for this internship</td>
<td>2.8</td>
</tr>
<tr>
<td>My opinion is valued by my fellow interns</td>
<td>6.0</td>
</tr>
<tr>
<td>I value the opinion of my fellow interns</td>
<td>6.0</td>
</tr>
<tr>
<td>My opinion is valued by the instructors/supervisors</td>
<td>6.0</td>
</tr>
<tr>
<td>I value the opinion of the instructors/supervisors</td>
<td>6.0</td>
</tr>
<tr>
<td>I did the majority of the work on this week’s group project</td>
<td>2.3</td>
</tr>
<tr>
<td>All interns contributed equally to this week’s group project</td>
<td>5.2</td>
</tr>
<tr>
<td>I am satisfied with this week’s internship experience</td>
<td>5.2</td>
</tr>
</tbody>
</table>

Agreement rated from 1 (strongly disagree) - 6 (strongly agree)

Learners practiced over 70 public health skills

Interns reported practicing skills within the three CEPH competency domains a total of 70 times (Figure 2). Interns agreed (average 5.3/6.0 across all weeks) they practiced translational skills that aligned to weekly assignments.

Engagement with internship content increased over 16 weeks

Interns spent an average of 24.3 hours per week on internship meetings and activities. The average weekly hours spent on the internship increased from 20.6 to 34.5 (p<0.0001) between weeks 13 and 16.

Knowledge gains were demonstrated through weekly 2-minute oral assessments

The interns’ average concept inventory scores increased by 3.3 points (p<0.001) from 7.0/14 to 10.3/14. Interns scored an average of 77.3% on weekly quizzes. Interns agreed (5.1/6.0) they were confident they met weekly learning objectives.

Interns answered the weekly oral assessment prompt at a higher knowledge-level (p<0.04/0.007) after completing each week’s assignments. Monday’s responses did not correlate (r=0.04) while Friday’s were highly correlated (r=0.8) to the question’s knowledge-level.

Time spent in higher-order cognitive discussion increased as interns gained knowledge

Figure 1. Time interns spent engaging in higher-order cognitive discussion

Most discussion guiding questions were at an applied or synthesis knowledge-level (n=7 at synthesis; n=10 at application; n=5 at recall). As the internship progressed, time spent on application and synthesis knowledge-level questions increased.

Relevant artifacts benefitted interns and the internship practice site

Interns submitted a total of 8 artifacts developed during the internship to fulfill their applied practice experience.
The artifacts aligned to the following CEPH competency domains:
- analytical and assessment skills (n=3/8)
- communication (n=3/8)
- and community dimensions of practice, interprofessional practice, leadership, or program planning (n=5/8)

The internship practice site used artifacts to:
- receive over $10,000 in grant funding and employ two MPH candidate research assistants, one of whom was a summer intern
- publish abstracts research manuscripts relevant to the breastfeeding field
- engage their target audience through marketing campaigns and social media (5,700+ video views on YouTube in 5 months)

Virtual internship toolkit

We have developed a menu of options for public health practice sites to assist preceptors in designing an internship experience that includes tools for evaluation and assessment, opportunities for defining learning objectives, tips to engage interns and team members in productive meetings, and ideas for remaining flexible within a framework provided.

Table 2. Recommended weekly organization for an engaging virtual internship

<table>
<thead>
<tr>
<th>Meetings</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Readings</td>
<td>Individual assignment</td>
<td>Individual assignment</td>
<td>Group assignment</td>
<td>Group assignment</td>
<td>Assignment submission</td>
</tr>
</tbody>
</table>

For questions, contact: Olivia Anderson, Ph.D, R.D. - University of Michigan School of Public Health Department of Nutritional Sciences – olivias@umich.edu
Title: A virtual, interprofessional approach to develop expertise in the public health perspectives of lactation

Submission category: Teaching techniques

Authors: Olivia S. Anderson, PhD, RD Carolyn F. McCabe, MS Samantha Chuisano, MPH Emily Wicoff, Aria Grabowski, Anna Sadovnikova, IBCLC, MPH, MA, University of Michigan School of Public Health, Department of Nutritional Sciences LiquidGoldConcept, Inc.

Background: Curricula in health professional degree programs are increasingly prescribed to meet competency requirements within accreditation standards, resulting in rigid curricular design. Pre-licensure health professionals do not have space in their course schedule to specialize in areas outside standard offerings, such as clinical lactation. However, online education is erupting providing health professional learners flexible, affordable, and accessible means to gain expertise. There are advantages to learning online, yet student engagement is difficult to achieve within an online education model. Innovations in online learning tools include capabilities to foster active learning such as group discussion boards or Google Jamboard to record real-time notes in a slide format. Another important and valuable means for a health professional student to gain specialized knowledge outside of typical course offerings could be through an internship. However, internships rarely occur in online learning environments since they require high-level engagement to gain specific expertise. Internships allow for unique partnerships with companies, health systems, etc. in varying regions of the world, but for many, an ideal internship may be out of reach due to logistics (e.g., cost, family). Leveraging online technologies that support virtual engagement for experiential learning is rare, yet it is an innovative means to provide equitable learning opportunities for health professionals to expand their expertise.

Methods: In collaboration with LiquidGoldConcept (LGC), a breastfeeding education company, we developed, implemented, and evaluated a novel online summer internship for Master of Public Health (MPH) students on the topic of translational research and practice in public health lactation. The lead LGC preceptor was located in California while interns in Michigan. The interns consisted of three females seeking the following degrees: 1) dual degree in nutrition (MPH) and dietetics (Registered Dietitian certification), 2) dual degree in nursing (Master of Science in Nursing) and health behavior/health education (MPH), and 3) dual degree in health behavior/health education (MPH) and social work (Master of Social Work). Through various online technologies including Google Hangouts, Google Jamboard, Slack, Pinterest and Twitter, interns engaged in two weekly discussions, asynchronous group work, social media campaign development, and written and oral assessments. Intern satisfaction and perceived gain in learning objectives were evaluated through weekly surveys using Likert scale items as well as open-ended responses. Intern knowledge was assessed through concept inventory and oral and written assessments. Thematic analyses were conducted on the discussions and oral assessments to determine if what we intended to teach each week occurred and to determine topics that the interns took interest in.

Results: Overall the interns were satisfied with the internship curriculum, workload, and instruction (survey satisfaction items rated 5.1 or higher on 6-pt Likert scale). The interns perceived that they met weekly learning objectives by the end of each week (survey perception items rated 4.8 or higher on 6-pt Likert scale). Interns enjoyed the mix of learning materials incorporated into each week as represented by one student, “The mix of materials this week was very informative (readings, podcasts, marketing materials, former reports, social media, etc.).” The translational
skills indicated as most frequently being developed throughout the internship (asked on a weekly basis) included peer feedback mechanisms (mentioned n=13 times), research (n=7), presenting skills (n=6), and time management (n=6). Areas needing improvement that were commonly reported included the incorporation of too much work each week and need for clearer instructions for weekly assignments. There was a significant increase in the average score of the pre- versus post-concept inventory (+3.33%; p=0.005). Thematic analyses on discussions and oral assessments are ongoing.

Lessons Learned: There were some road blocks with some of the technology that was utilized. For example, the ability to record a Google Hangout discussion was discontinued mid-way through the internship so we had to be efficient in finding another means to record. Further, the knowledge attained may not have been accurately depicted in the assessments for the specific public health lactation material because the curriculum was fluid from week to week due to the nature of real-world setting and working to meet the demands of LGC.

Future Application and Next Steps: The online curriculum from this internship is in the process of being converted into a Massive Open Online Course (MOOCs) in collaboration with the University of Michigan’s Office of Academic Innovation. This iterative process of developing curriculum and implementing and evaluating through an internship will be utilized to create three more MOOCs on lactation.
International vs. U.S. Residents’ Stress, Discrimination, Subjective Well-being and Depression
M.K. Almadani, R.A. Bagramian, J.B. Dennisson, T.L. de Peralta & M. Inglehart
University of Michigan - School of Dentistry, Ann Arbor, MI

ABSTRACT

Objectives: Graduate dentistry programs in the U.S. enroll large numbers of international residents. The objectives are to compare (a) stress and discrimination of international vs. in-state/out-of-state U.S. dental graduate students, (b) their well-being and depression scores, and (c) the relationships between stress/discrimination and well-being/depression in these two groups of dental residents.

Methods: Data were collected from 94 international students from 25 countries and 142 in-state/out-of-state U.S. dental graduate students. Stress, subjective well-being and depression were included with standardized scales.

RESULTS

The objectives were to compare stress and discrimination of international vs. in-state/out-of-state U.S. dental graduate students, (b) their well-being and depression scores, and (c) the relationships between stress/discrimination and well-being/depression in these two groups of dental residents.

METHODS

This study was determined to be exempt from Institutional Review Board (IRB) oversight by the Health Sciences and Behavioral Sciences IRB at the University of Michigan, Ann Arbor, MI.

Study design: This research is a cross-sectional study of international vs. in-state and out-of-state U.S. graduate students.

Respondents: Data were collected from 94 international and 142 in/out-of-state residents (See Table 1).

Procedure: A recruitment email was sent graduate dental program directors, asking them to forward a recruitment email to their residents. This email explained the purpose of the research and provided a link to an anonymous web-based survey.

The second objective was to compare the in/out-of-state vs. international residents’ well-being and depression. Table 3 shows that international students had lower subjective well-being and higher depression scores than their U.S. peers.

INTRODUCTION

In 2018-19, 627 graduates of international dental schools were admitted to U.S. dental schools. In 2018-19, non-resident aliens made up 4.4% of first-year students and 5.9% of graduates.

- Originally, stress was defined as a general response of the body to any noxious stimulus.
- Small amounts of stress may be desirable, beneficial, and even healthy.
- But in the context of this thesis, stress is defined as being negative or distress.
- Excessive chronic stress can adversely affect a person’s physical and mental health.
- Occupational stress can negatively affect the quality of life and health, resulting in social, health and economic costs.
- It can lead to impaired well-being and depression.

DISCUSSION

Given the negative relationships between stress, discrimination, depression and poorer academic achievement, it is crucial for U.S. dental graduate program administrators to consider how to better support international residents’ adjustment to their new environment.

CONCLUSIONS

- International students in U.S. dental graduate programs experience
- higher stress,
- more discrimination,
- lower subjective well-being and
- more depression than their U.S. peers.

ACKNOWLEDGEMENTS

We want to thank
- the program directors for forwarding our resident email to their students
- the residents for taking time out of their busy schedules to respond to our survey.

REFERENCES

Title: International vs. U.S. Residents’ Stress, Discrimination, Subjective Well-being and Depression

Authors: M.K. Almadani, R.A. Bagramian, J.B. Dennison, T.L. de Peralta & M.R. Inglehart

Background: Graduate dentistry programs in the United States (U.S.) enroll large numbers of international residents. The objectives are to compare (a) stress and discrimination of international vs. in-state/out-of-state U.S. dental graduate students, (b) their well-being and depression scores, and (c) the relationships between stress/discrimination and well-being/depression in these two groups of dental residents.

Methods: Data were collected from 94 international students from 26 countries and 142 in-state/out-of-state U.S. dental graduate students. The Graduate Environmental Stress Scale (DESS-30) was used to assess stress; Bradburn’s Subjective Well-being scale and the Center for Epidemiological Studies Depression scale were included to assess well-being and depression.

Results: Compared to in-state/out-of-state residents, international residents reported more stress related to faculty and administrator interactions (4-point scale with 1=not at all stressful: 2.01 vs. 2.25; p=0.015), about work-related self-confidence (2.08 vs. 2.29; p=0.027), work-life balance stress (2.19 vs. 2.51; p=0.005), and more stress related to social interactions (1.76 vs. 1.97; p=0.014).

Lessons Learned: International residents experienced more frequently negative treatment from (a) peers, faculty and staff because of their ethnic/cultural background (5-point scale with 5 = very often: 1.64 vs. 1.18; p<0.001), (b) patients and persons outside the academic setting (1.79 vs. 1.36; p<0.001), and peers, faculty, staff, patients and others because of language fluency (1.87 vs. 1.17; p<0.001) than U.S. graduate students. International students had significantly lower subjective well-being and higher mean depression scores than their U.S. peers. Stress scores were significantly correlated with well-being and depression for both groups. However, discrimination scores were only correlated with international residents’ well-being and depression scores.

Conclusion: International students in U.S. dental graduate programs experience higher stress, more discrimination, lower subjective well-being and more depression than their U.S. peers. Given the negative relationships between stress, discrimination, depression and poorer academic achievement, it is crucial for U.S. dental graduate program administrators to consider how to better support international residents’ adjustment to their new environment.
“Students are my Treatment for Burnout”: Low Burnout Rates in Pediatric Clerkship Directors and Coordinators

Jessica Fealy, MD1; Ada M Fenick, MD2; Heather L Burrows, MD, PhD3; Angela Punnett, MD4
1 University of Michigan Medical School, 2 Yale School of Medicine, 3 University of Toronto Faculty of Medicine

Background
- Physician burnout studies suggest that involvement in meaningful activities can be protective.
- Minimal data exists regarding the impact of burnout on those responsible for medical student education.
- More than 50% of IM clerkship directors (CDs) experienced burnout, which appeared to impact their attitudes towards students.
- However, IM program directors and psychiatry CDs showed lower rates of burnout when compared to national studies.1-4
- There are no related studies describing burnout among pediatric CDs and clerkship coordinators, nor the potential impact on pediatric student education.

Objective
- Determine the prevalence of burnout symptoms across the COMSEP membership.
- Explore the relationship between burnout and attitudes toward medical students, CD demographics, dedicated educational FTE, and clerkship grading practices.

Methods
- The annual COMSEP survey in Spring 2019 included:
  - Maslach's single-item measures for emotional exhaustion (EE) and depersonalization (DP)
  - Thematic analysis of narrative comments
  - An open-ended question regarding interactions between education roles and wellness
  - Demographic data regarding academic rank, gender, dedicated educational FTE and clerkship grading practices.

Results
- The measures for EE and DP in the 124 completed surveys were in the average range (mean scores 3.5 +/- 1.4 and 2.6 +/- 1.5 respectively).
- High EE and DP were reported by 28.3% and 57.5% of the cohort.
- Low EE and DP were reported by 21.7% and 10.8% of the cohort.
- Females comprised 71% of respondents and were significantly more likely (p=0.028) to acknowledge feeling too much stress when working with students, and more likely to feel guilty about their attitudes towards students (p=0.034).
- There was no statistical significance between the genders in EE or DP rates.
- Age, ethnicity, academic rank, and clerkship length were not statistically significant predictors of burnout symptoms.
- Neither subjectivity/objectivity of grades, nor grading schema significantly impacted burnout.
- As dedicated educational effort decreased, rates of callousness increased, and the respondents were less likely to feel rewarded from working with students.
- Thematic analysis of narrative comments revealed 3 themes: the importance of the joy of teaching and mentoring versus the administrative burden.

Discussion
- COMSEP members experience substantially less burnout than other physicians and medical educators.
- More than 50% of IM clerkship directors (CDs) experienced burnout, which appeared to impact their attitudes towards students.
- However, IM program directors and psychiatry CDs showed lower rates of burnout when compared to national studies.1-4
- There are no related studies describing burnout among pediatric CDs and clerkship coordinators, nor the potential impact on pediatric student education.

References
“Students are my Treatment for Burnout”: Low Burnout Rates in Pediatric Clerkship Directors and Coordinators.

Fealy, Jessica Li, Fenick, Ada Mz, Burrows, Heather L MD, PhD 1, Punnett, Angela MD 3, for the COMSEP wellness collaborative.

1University of Michigan Medical School, 2Yale School of Medicine, 3University of Toronto Faculty of Medicine

**Background:** Studies of physician burnout suggest that involvement in meaningful activities can be protective. Medical educators note the value educational roles contribute to their career satisfaction; minimal data exists regarding the impact of burnout on those responsible for medical students. More than 50% of IM clerkship directors (CDs) experienced burnout that appeared to impact their attitudes towards students, however, IM program directors and psychiatry CDs showed lower rates of burnout when compared to national studies [1,2,3]. There are no related studies describing burnout among pediatric CDs and clerkship coordinators, nor the potential impact on pediatric student education.

**Objectives:** To determine the prevalence of burnout symptoms across the COMSEP membership and explore the relationship between burnout and attitudes toward medical students, CD demographics, dedicated educational FTE, and clerkship grading practices.

**Methods:** The annual COMSEP survey in Spring 2019 included Maslach’s single-item measures for emotional exhaustion (EE) and depersonalization (DP), questions around attitudes towards student education, and an open-ended question regarding interactions between education roles and wellness. This survey also contained demographic data regarding academic rank, gender, dedicated educational FTE, and several questions on grading practices.

**Results:** The measures for EE and DP in the 124 completed surveys were in the average range (mean scores 3.5 +/- 1.4 and 2.6 +/- 1.5 respectively). Rates of high EE and DP were reported by 21.7% and 10.8% of the cohort, while low EE and DP were reported by 28.3% and 57.5% of the cohort. Only 9.7% of the cohort were at high-risk for burnout whereas 27.4% were at low-risk. 90% of respondents found working with students rewarding. Females comprised 71% of respondents and were significantly more likely than males (p=0.028) to acknowledge feeling too much stress when working with students, and more likely to feel guilty about their attitudes towards students (p=0.034). There was no statistical significance between the genders with regards to EE or DP rates. Age, ethnicity, academic rank, and clerkship length were not statistically significant predictors of burnout symptoms. Neither subjectivity/objectivity of grades, nor grading schema (e.g., H/HP/P/F vs. pass/fail) significantly impacted burnout. As dedicated educational effort decreased, rates of callousness increased, and the respondents were less likely to feel rewarded from working with students.

Narrative responses were positive (50%) or neutral (28%) with respect to medical education roles and impact on wellness.

**Discussion:** COMSEP members experience substantially less burnout than other physicians and medical educators. The overwhelming majority of respondents find their work with students rewarding, including those at highest risk for burnout. Taken as a whole, educational roles may
contribute to resilience. However, consistent with prior studies on burnout female respondents were more likely to experience stress and feelings of guilt related to their educational roles. Respondents with the lowest quartile of dedicated educational FTE 0.0-0.2 were also more callous towards students and found their educational roles less rewarding. Results suggest little interaction between burnout and grading process. Future studies should explore ways to decrease feelings of stress and guilt, especially among female medical educators, and explore if dedicated educational FTE provides additional protection against burnout.

References (not included in word count):

Acknowledgement:
We are grateful to Yunjie Wang, MS, for her statistical support through the Charles Woodson Fund for Clinical Research, and to COMSEP members who shared their data via the Annual Survey of Members.
Promoting wellness in the clerkships: providing time for student wellness preferences

Samantha Kempner, MD; Jessica Fealy, MD; Sharon Kileny, MD; Jocelyn Schiller, MD; Heather Burrows, MD, PhD; Maya Hammoud MD, MBA
University of Michigan Medical School

PURPOSE
- Medical students report high rates of stress, anxiety, and depression with peak time for burnout during medical training.
- Despite the widespread implementation of medical school wellness programs, currently there is a gap in our knowledge of the student perspective on the efficacy of these initiatives and they may not be targeting the most at-risk students in the clinical years.
- In order to address wellness in our clinical clerkship students, we designed a built-in “wellness days” intervention during our Obstetrics/Gynecology (OB/GYN) and Pediatrics clerkships wherein students were given time to choose their own wellness activities.
- Student choice of activities and choice of companions for the activity were explored.

METHODS
During the 2018-2019 academic year, students on OB/GYN and Pediatrics rotations were given protected time for personal wellness.
- OB/GYN: 3 days off
- Pediatrics: 1 weekday off (in addition to most weekends)

5-item electronic survey distributed at the conclusion of the clerkship.

IRB exempt

Wellness Activity

Impact of Protected Wellness Days

RESULTS

185/193 (96%) of students on OB/GYN clerkship and 119/190 (63%) of students on Pediatrics clerkship completed the wellness survey.

Graph 1: Activities students elected to participate in (Pediatric data)

Graph 2: Who students elected to spend wellness time with (Pediatric data)

RESULTS

Would you have had time to do this activity if the clerkship had not provided it?

Graph 3: Frequency of students who would have participated in activity if declared time had not been provided

CONCLUSIONS
Students had a wide range of self-chosen wellness activities and wellness companions, many of which would not have taken place within traditionally defined wellness programming.
As medical educators are exploring strategies to incorporate practical wellness into their clerkship curricula, providing flexible built-in wellness time may be a unique approach to target students who wouldn’t otherwise be inclined to participate in self-care.
Unique student preferences should guide wellness initiatives.

Contact: skempner@med.umich.edu
Title: Promoting wellness in the clerkships: providing time for student wellness preferences

Authors: Samantha Kempner, Jessica Fealy, Jocelyn Schiller, Sharon Kileny, Heather Burrows, Maya Hammoud

Background: Medical students report high rates of stress, anxiety, and depression.1 Peak time for burnout appears to be during medical training; thus, there has been a significant call for action to address wellbeing among medical trainees.2,3 Medical schools have largely responded with pre-clerkship curricular changes and with optional extracurricular wellness programming.4,5 Despite the widespread implementation of wellness programs, there is a gap in our knowledge of the student perspective on the efficacy of these initiatives.6 Additionally, optional wellness programming may not be targeting the most at-risk students, particularly in the stressful clinical medical school years. It is known that self-care and wellness activities are important for preventing burnout; however, conflicts in managing work-life balance are often highest in the first clinical year.7 In order to address wellness in our clinical clerkship students, we designed a built-in “wellness days” intervention during our Obstetrics/Gynecology (OB/GYN) and Pediatrics clerkships wherein students were given time to choose their own wellness activities.

Methods: At the start of the 2018-2019 clinical year, we initiated protected wellness days, completely free from clinical duties, for students on both the OB/GYN and Pediatrics rotations. In advance of the six-week OB/GYN clerkship, students were able to submit requests of the three days they would like to use for wellness in order to plan for personal travel or other wellness-related self-care. Similarly, in the six-week Pediatric rotation, students could submit requests for protected time for health-related appointments. Pediatric students were given weekends as well as one additional weekday off during the outpatient portion of their rotation. At the conclusion of each clerkship, a 7-item survey was administered to all students. Survey was IRB exempt.

Results: 185/193 (96%) second year medical students on the OB/GYN clerkship and 119/190 (63%) of students on pediatrics completed the wellness survey. Students participated in a variety of activities ranging from self-care activities (cooking, grocery shopping, doctor/dentist appointments) to physical activity, to travel to see family/significant others. Wellness time was spent with a significant other or family member (50% OB/GYN; 34% pediatrics), a friend (24%; 19%), solo (21%; 39%), or a pet (1%;1%). A significant portion of students (63% OB/GYN; 47% pediatrics) stated that they would not have made time for their specific wellness activity without our “wellness days” initiative. Only 25 students on OB/GYN (13%) and 18 students on pediatrics (15%) would have done this wellness activity if we had not encouraged them to dedicate time for it.

Lessons Learned: Students largely appreciated the protected time for wellness with the majority of students using the optional “comment” space on the survey to thank us for the wellness opportunity. Due to the demands of the clinical clerkship year, few students would have taken such purposeful time for self-care activities without explicit permission/instruction from the clerkship leadership. Students had a wide range of self-chosen wellness activities and wellness companions, many of which would not have taken place within traditionally-defined wellness programming.
Conclusion: In an era when medical educators are exploring strategies to incorporate practical wellness into their clerkship curricula, we found protected wellness days were well-received by our students. As medical educators continue to take steps to combat depression and burnout in our medical trainees, providing flexible built-in wellness time may be a unique approach to target students who wouldn’t otherwise be inclined to participate in self-care. Unique student preferences should guide wellness initiatives. We also know that having social support structures improves medical student well-being and resilience; the fact that this activity permitted students to spend quality time with significant others, family members and friends likely also strengthened their social support system in ways that are difficult to measure.

List Of 3 Key Words: wellness, burnout, prevention

References:


ABSTRACT

Background: Since the US Surgeon General Report on Oral Health in 2000, it is well-known that increased access to dental care for pediatric patients and especially for children with special health care needs is urgently needed. The objectives were to assess (a) dental students’ experiences with pediatric dentistry prior to dental school and (b) their educational experiences during dental school, and (c) to determine how these experiences are associated with their interest in treating pediatric patients in the future as a general dentist or a pediatric dentist.

Methods: Anonymous survey data were collected from 368 pre-doctoral dental students.

Results: On average, the dental students were motivated to learn more about pediatric dentistry, had positive educational experiences with pediatric dentistry, and had a positive attitude towards peer education by pediatric dentistry residents. The more positive experiences with pediatric dentistry the students had prior to dental school, the more they were interested in becoming a pediatric dentist. The more exposure the dental students had to pediatric dentistry and the more positive their educational experience were, the more interested they were in treating pediatric patients as a general dentist in the future.

Conclusions: To increase the number of dental students with interest in becoming pediatric dentists, exposure to the field prior to coming to dental school is critical and the better the students’ educational experiences are, the more interest they have in treating pediatric patients as general dentists.

OBJECTIVES

The objectives are to explore dental students’

a. experiences with pediatric dentistry prior to dental school,

b. educational experiences during dental school, and

c. to determine how these experiences are associated with their interest in treating pediatric patients in the future as a general dentist or a pediatric dentist.

METHODS

This research was determined to be exempt from Institutional Review Board (IRB) approved by the Health Sciences and Behavioral Sciences IRB at the University of Michigan.

Respondents:

• Data were collected from 368 dental students students from the University of Michigan. See Table 1

Procedure:

• Data were collected with anonymous web-based and paper-pencil data

• Over a two-month period in September/October 2019.

RESULTS

Table 1: Overview of the background characteristics

<table>
<thead>
<tr>
<th>Background characteristic</th>
<th>Frequencies</th>
<th>Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>171</td>
<td>46.5%</td>
</tr>
<tr>
<td>Female</td>
<td>204</td>
<td>53.5%</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>22.0</td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td>0.73</td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>18-25</td>
<td></td>
</tr>
<tr>
<td>Year of dental school</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st Year</td>
<td>81</td>
<td>24.7%</td>
</tr>
<tr>
<td>2nd Year</td>
<td>115</td>
<td>31.5%</td>
</tr>
<tr>
<td>3rd Year</td>
<td>71</td>
<td>19.7%</td>
</tr>
<tr>
<td>4th Year</td>
<td>91</td>
<td>25.2%</td>
</tr>
<tr>
<td>Any training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>306</td>
<td>80.9%</td>
</tr>
<tr>
<td>No</td>
<td>72</td>
<td>19.1%</td>
</tr>
</tbody>
</table>

Objective a was to explore dental students’ experiences with pediatric dentistry prior to dental school. Table 2 shows that 76.3% had been a patient of a pediatric dentist. 26.4% had shadowed a pediatric dentist in an office setting and 8.9% in an operating room prior to dental school. In addition, 8.6% had worked in a pediatric dentistry practice.

Table 2: Experiences prior to dental school

<table>
<thead>
<tr>
<th>Experiences prior to dental school</th>
<th>Frequency</th>
<th>Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did you see a pediatric dentist?</td>
<td>171</td>
<td>46.5%</td>
</tr>
<tr>
<td>Did you shadow a pediatric dentist?</td>
<td>115</td>
<td>31.5%</td>
</tr>
<tr>
<td>Did you attend an operating room?</td>
<td>32</td>
<td>8.9%</td>
</tr>
<tr>
<td>Number of hours you shadowed</td>
<td>28.6</td>
<td>8.0%</td>
</tr>
<tr>
<td>Did you work in a pediatric office?</td>
<td>31</td>
<td>8.6%</td>
</tr>
</tbody>
</table>

Objective b was to explore dental students educational experiences during dental school. Table 1 shows that on average, the dental students were motivated to learn more about pediatric dentistry and had had positive educational experiences with pediatric dentistry.

Table 3: Educational experiences with pediatric dentistry in dental school

<table>
<thead>
<tr>
<th>Educational experiences</th>
<th>Frequency</th>
<th>Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did you work with a pediatric dentist?</td>
<td>82</td>
<td>22.7%</td>
</tr>
<tr>
<td>Will you have a rotation in a pediatric dentistry practice?</td>
<td>31</td>
<td>8.6%</td>
</tr>
<tr>
<td>Did you have an opportunity to shadow a pediatric dentist?</td>
<td>32</td>
<td>8.9%</td>
</tr>
</tbody>
</table>

Objective c was to determine how experiences prior and during college were associated with an interest in treating pediatric patients in the future as a general dentist or a pediatric dentist. Table 4 shows that the more experiences with pediatric dentistry the students had prior to dental school, the more they were interested in becoming a pediatric dentist. The more exposure they had to pediatric dentistry and the more positive their educational experiences were, the more interested they were in treating pediatric patients as a general dentist in the future.

Table 4: Correlations between personal and education experiences and career realization to work with children

<table>
<thead>
<tr>
<th>Personal experiences</th>
<th>Education experiences</th>
<th>Career realization</th>
<th>N</th>
<th>r</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shadow pediatric dentist</td>
<td>0.18</td>
<td>0.19</td>
<td>0.04</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work in pediatric dentistry practice</td>
<td>0.23</td>
<td>0.26</td>
<td>0.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive educational experience</td>
<td>0.19</td>
<td>0.19</td>
<td>0.05</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

DISCUSSION

A clear pattern arose: Having experiences with pediatric dentistry prior to entering dental school resulted in a higher likelihood of being interested in becoming a pediatric dentist.

However, the better the educational experiences with pediatric dentistry were during the students time in dental school, the more likely they also were to be committed to treating pediatric dental patients as general dentists.

Given that some dental specialty such as prosthodontics and endodontics focus mostly on providing adult care, it is not surprising that prior experiences with pediatric patients and experiences during dental school did not correlate with wanting to provide more care for children.

One limitation of this study is that data were only collected from one dental school.

CONCLUSIONS

In order to increase the number of dental students with an interest in becoming pediatric dentists, exposure to the field prior to coming to dental school would be important.

In addition, the better the students’ educational experiences with pediatric dentistry were during dental school, the more interest they had in treating pediatric patients as general dentists.

Given that general dentists are still providing dental care for pediatric dental patients, it is crucial to ensure that they have excellent educational experiences during their time in dental school.

REFERENCES


ACKNOWLEDGMENTS

We thank the dental students who took the time to respond to this survey.
Title: Dental Students’ Interest in Treating Pediatric Dental Patients: The Role of Personal and Educational Experiences

Authors: Evan Templeman, Larry Salzman & Marita Inglehart

Background: Since the US Surgeon General Report on Oral Health in 2000, it is well-known that increased access to dental care for pediatric patients and especially for children with special health care needs is urgently needed. The objectives of this study were to assess (a) dental students’ experiences with pediatric dentistry prior to dental school and (b) their educational experiences during dental school, and (c) to determine how these experiences are associated with their interest in treating pediatric patients in the future as a general dentist or a pediatric dentist.

Methods: Anonymous survey data were collected from 368 pre-doctoral dental students.

Results: 26.3% had been a patient of a pediatric dentist, 26.4% had shadowed a pediatric dentist in an office setting and 8.9% in an operating room prior to dental school. In addition, 8.6% had worked in a pediatric dentistry practice. On average, the dental students were motivated to learn more about pediatric dentistry (5-point scale with 1=no motivation: Mean=3.69), had positive educational experiences with pediatric dentistry (Mean=3.49), and had a positive attitude towards peer education by pediatric dentistry residents (Mean=3.28). The more experiences with pediatric dentistry the students had prior to dental school, the more they were interested in becoming a pediatric dentist (r=0.18; p<0.01). The more exposure the dental students had to pediatric dentistry and the more positive their educational experiences were, the more interested they were in treating pediatric patients as a general dentist in the future (r=0.14; p<0.05 / r = 0.27; p<0.001).

Lessons Learned: In order to increase the number of dental students with an interest in becoming pediatric dentists, exposure to the field prior of coming to dental school would be important. However, the better the students’ educational experiences during dental school are, the more interest they have in treating pediatric patients as general dentists.

Future Application and Next Steps: Increasing dental students’ educational experiences concerning treating pediatric patients could positively affect their willingness to provide care for these patients in the future.
Background

Providers have long been concerned about the widespread use of “Dr. Google”. Research has shown that:
- The majority of patients use Google to find information about their health.
- Much of the information is not accurate.
- Most patients do not check the accuracy or the date of the information they find.

If patients rely on inaccurate, outdated or erroneous information to manage their health, it can lead to unnecessary anxiety and stress, medical mistakes and bad outcomes.

Objective

Our objective is to create an easy way for providers to direct patients to quality online health information resources.

Methods

Our solution relies on the Patient Education Clearinghouse, a web-based database that includes over 5,000 materials that have been created or approved by Michigan Medicine experts.

The patient interface of the Clearinghouse is called Care Guides from Your Clinician.

Build Collection

PEHL collaborates with providers to create clinic-specific subpages on the Care Guides. The subpages have a unique URL which can be given to patients so they can access it on their own devices. We call this process Education Rx.

http://careguides.med.umich.edu/mis

Create Print Education Rx

Create Electronic Education Rx

PEHL uploads the flyer to MiChart patient instructions so providers can send it to print with the After Visit Summary or send it as a message via the patient portal.

Prescribe the Education Rx

Patients visit the prescribed webpage.

Results

The Education Rx has been implemented in more than 40 areas across the institution.

Usability data from the Minimally Invasive Surgery in Chelsea demonstrate that the patients received the Education Rx multiple times over several visits. The number of unique visitors to the page was very close to the number of unique patients seen at the clinic.

Lessons Learned

- Staff training is key for successful implementation.
- Data shows that web traffic increased after PEHL provided face-to-face demonstrations to clinicians.

Future Application & Next Steps

This is a work in progress. PEHL continues to collaborate with various clinics and units to implement the Education Rx in more areas and clinics. PEHL plans to develop staff training materials, increase communication and provide more face-to-face demonstrations to faculty and staff to expand the use of this program.

Acknowledgments

Nabeel Obeid MD
Title: What can we do about Dr. Google? utilizing the EMR to prescribe reliable online patient education

Authors: Ruti Volk, MSI, AHIP, Karelyn Munro, BA, Amy Hyde, MILS Patient Education and Health Literacy Program (PEHL)

Background: Physicians have long been concerned about the widespread use of “Dr. Google” and the difficulties of responding to patients demanding unproven or unnecessary tests and therapies they found online. Free access to vast amounts of medical information has many benefits, but if patients rely on inaccurate, outdated or erroneous information to manage their health it can lead to unnecessary anxiety and stress, medical mistakes and bad outcomes. Several published studies recommend that physicians assume the responsibility of directing patients to quality online health information resources. Attribute #7 of the National Academy of Medicine discussion paper “Ten Attributes of Health Literate Health Care Organizations” states that it is the responsibility of health care organizations to steer individuals to accurate, easy-to-understand, and actionable information.

Methods: Providers at Michigan Medicine use MiChart to prescribe reliable online health information resources to patients. This solution relies on a web-based database, the Michigan Medicine Patient Education Clearinghouse, https://careguides.med.umich.edu, which includes patient-education materials that have been created or approved by Michigan Medicine’s experts. PEHL collaborates with clinicians to create sub-pages within this Clearinghouse that link to reviewed and approved patient education materials. The Patient Instructions activity in MiChart is then utilized to direct patients to webpages and access the materials on their own devices. The process is called “Education Rx”.

Results: Education Rx has been implemented in more than 20 areas across the institution. Usability data from MiChart demonstrate providers utilize the Education Rx and send it to print with the After Visit Summary. Some patients receive the Education Rx multiple times over several visits at various locations. Analytics data demonstrate that the traffic volume matches the number of patients seen.

Lessons Learned: Utilizing the EMR to direct patients to accurate, easy-to-understand, and actionable online information is effective, but staff training is key for successful implementation. Data shows that web traffic increased after PEHL provided face-to-face demonstrations to clinicians.

Future Application and Next Steps: This is a work in progress. PEHL continues to collaborate with various clinics and units to implement the Education Rx in more areas and clinics. PEHL plans to develop staff training materials, increase communication and provide more face-to-face demonstrations to faculty and staff to expand the use of this program.
A Question of Justice: Expanding minority physician representation in the workforce

Kelly-Blake, Karen1, Bogdan-Lovis, Elizabeth1, Garrison, Nanibaa2, Fletcher, Faith1, Ajegba, Britanny4, Smith, Nichole5, Brayford, Morgan4

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2 Institute for Society and Genetics, Department of Internal Medicine, University of California Los Angeles, Los Angeles, California.
3 Department of Health Behavior, University of Alabama at Birmingham School of Public Health, Birmingham, Alabama.
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5 Pritzker School of Medicine, The University of Chicago, Chicago, Illinois.
6 Department of Forensic Psychology, Walden University, Minneapolis, Minnesota.

INTRODUCTION

• The 2004 Sullivan Commission Report stated that increasing diversity in the health care professions will improve healthcare access and quality for minority patients and assure a sound health care system for all of our nation’s citizens.
• The literature consistently reports that non-white physicians are more likely to care for minority, medically indigent, and sicker patients and that URM medical students expressed a greater commitment to serve the underserved and were more likely than others to fulfill that commitment.
• Research Question: What are the stated rationales and strategies provided in the 2000-2015 literature for increasing minority representation in the medical workforce?

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• Our scoping review of the 2000-2015 literature on strategies for and approaches to expanding URM representation in medicine reveals a repetitive, amplifying message of URM physician service commitment to medically underserved and vulnerable populations.
• Repetition breeds intention. Does such repetition reveal the the intentions of the medical community at large or does it seek to reinforce limitations on the scope of URM practice?
• Cross-nationally, service commitment and physician-patient concordance benefits admittedly respond to societal need, but there is an associated risk of singling out URM and only URM to fulfill this need. What is the role of non-URM allies?
• The proceedings of a 2001 US Institute of Medicine symposium warned against creating a deterministic expectation that URM physicians provide care to minority populations.

DISCUSSION

METHODS

• Identified research question
• Found relevant studies
• Selected articles
• Charted keywords & themes
• Collated, summarized & reported results
• Developed codebook
• Reviewed and coded full-text articles using NVivo Pro™, 11 qualitative software to identify themes, patterns, and trends in the selected literature.

• The channeling of URM into service for the underserved inadvertently/simultaneously might limit other specialty training, research, and professional leadership opportunities for those physicians.
• Similar professional limitations not imposed on White medical students/physicians. What is the role on non-URM allies? Caring for the underserved should be equitably shared amongst all providers.
• Instrument argument - taking care of “one’s own” is responsibility of URM physicians.
• Our results suggest that the vigilance called for in 2001 at best, has languished.

CONCLUSION
Abstract Title: A Question of Justice: Expanding minority physician representation in the workforce

Abstract Authors: Karen Kelly-Blake, Elizabeth Bogdan-Lovis, Nanibaa’ Garrison, Faith Fletcher, Brittany Ajegba, Nichole Smith, Morgann Brafford

Background: In the US, persons of color suffer disproportionately from a host of health care disparities related to racism, discrimination, lack of access, and undertreatment. When considering this disproportionate suffering, it is relevant to note the impact of the current physician shortage. That shortage is especially acute for underrepresented in medicine (URiM) physicians. Moreover, it is equally salient to recognize that URiM physicians provide care for underserved populations at levels disproportionate to their professional representation. There is a powerful narrative that a diverse and representative medical workforce, one reflecting general population characteristics, can effectively address access issues, increase satisfaction, and ultimately improve health outcomes. However, a 2001 Institute of Medicine (now the National Academy of Medicine) report warned that “we must be vigilant against the potentially pernicious effects of creating the expectation that minority physicians are being trained solely to provide health care services to minority patients or to research minority health issues.” Racial congruity alone is insufficient to address the disparities gap in U.S. health care, and like-to-like patient-physician matching may dangerously and perversely heighten discrimination against URiM physicians.

Actions, Methods, or Intervention: We conducted a scoping review of the literature to categorically map a 15-year trajectory of US undergraduate medical education rationales for and approaches to expanding URiM representation in the medical workforce. From 1 June to 31 July 2015, we searched the Cochrane Library, ERIC, PsycINFO, PubMed, Scopus, Web of Science and Google Scholar for articles published between 2000 and 2015 reporting rationales for and approaches to increasing the numbers of underrepresented minorities in undergraduate medical school. The review focused on three historically underrepresented groups, i.e., African American/Black, Latinx/Hispanic, and Native American/Alaskan Native.

Results: A total of 137 articles were included in the scoping review. Of these, 114 (83%) mentioned workforce diversity and 73 (53%) mentioned concordance. The patient-physician relationship (n = 52, 38%) and service commitment (n = 52, 38%) were the most cited rationales. The most frequently mentioned approaches to increasing minority representation were pipeline programs (n = 59, 43%), changes in affirmative action laws (n = 32, 23%) and changes in admission policies (n = 29, 21%).

Lessons Learned: It seems reasonable to surmise that shared concordant characteristics (e.g. race/ethnicity, language, gender, geographic location, etc.) between patients and physicians might lead to improved communication and satisfaction in the clinical setting. This scoping review of the 2000-2015 literature on strategies for and approaches to expanding URM representation in medicine reveals a repetitive, amplifying message of URM physician service commitment to vulnerable populations in medically underserved communities. Such message repetition reinforces policies and practices that might limit the full scope of URiM practice, research and leadership opportunities in medicine. URiM should not be selectively steered, based solely on assumptions of their background, to pursue a particular medical career pathway. The health care workforce should reflect the nation’s population and equally, it is still fair and just to question why we are channeling URiMs to do work not expected of the entire medical workforce. Professional fairness and responsibility within medicine mandate that the medical workforce equitably and fairly assume shared...
responsibility for meeting the health care needs of the underserved. Continuing an expectation of burdening the already overburdened is not just health care.

Future Applications and Next Steps: Future research will be a pilot study to: 1) Examine what URiM Michigan primary care physicians report about their practice experience in serving the underserved, 2) Identify potential and actual diversity barriers to URiM primary care practice and examine what they report about their respective practice options regarding patient demographics. We will administer a survey to practicing physicians in the Upper Midwest. The long-term goal of the pilot project is to inform, rethink, and reframe system-and policy-level efforts needed to ensure a medical workforce that is representative of the general population without disproportionately burdening a subset of that population. The results of the study will inform the design and justify an R21 proposal for distributing the survey to a national sample of URiM physicians.
Stroke Ready: Development and Implementation of a Community-Wide, Health Behavior Theory-Based Stroke Preparedness Intervention

Casey L. Corches, MPH, MSOTR/L1, A. Camille McBride, MPH1,2, Maria Cielito Robles, BS1, Narmeen Rehman, BS1,2, Lesli Skolarus, MD, MS1,2
1University of Michigan-Medical School, 2University of Michigan-School of Public Health

Background

• Stroke is the leading cause of disability in the United States.
• Post-stroke disability is highly preventable with timely acute stroke treatment.
• Acute stroke treatments are underutilized, particularly in Flint, MI, where treatment rates are approx. half the national average.
• Stroke Ready is a community-wide, health behavior theory-based stroke preparedness education program to increase acute stroke treatment rates.

Actions, Methods, or Interventions

• We aim to describe how the Stroke Ready program was developed, with the goal of addressing the underlying barriers to seeking stroke treatment through use of culturally-tailored, theory-based messaging and materials.
• During the Stroke Ready pilot study, psychological factors inhibiting the behavior to call 911 were identified.
• Theory of Planned Behavior (TPB), Social Cognitive Theory (SCT), and elements of behavioral economics provided theoretical guidance for intervention development to address barriers. (Figure 1)
• Community-based participatory research (CBPR) provided a framework to ensure the community was engaged throughout the development and implementation process.

Results

• All intervention messaging and selected materials were pilot-tested through semi-structured interviews and focus groups at multiple phases of development.
• The refined messaging focused on promoting positive messages which are integrated into each component of the intervention (print material, digital and broadcast media and peer-led workshops):
  o there is something that can be done for stroke (e.g. stroke is treatable)
  o each person has the power to help someone they care about by calling 911
  o Increase the perception of having the ability to perform the behavior
  o stroke is not a secret worth keeping
• To date, over 5,500 Flint community members have received the Stroke Ready intervention.

Lessons Learned and Future Applications

• Community involvement is critical in developing acceptable and culturally relevant materials.
• The Stroke Ready program is one of the first to combine a CBPR approach with a theoretical framework in attempt to increase acute stroke treatments.
• We believe the Stroke Ready program reinforces the necessity of community engagement and application of health behavior theory, from intervention conception to dissemination and evaluation, to achieve behavior change and improve community health outcomes.
• Our hope is that Stroke Ready serves as a model for other community and academic partnerships interested in stroke, particularly among minority populations and under-resourced communities.
Abstract Title: Stroke Ready: Development and Implementation of a Community-Wide, Health Behavior Theory-Based Stroke Preparedness Intervention

Authors: Casey L. Corches, A. Camille McBride, Maria Cielito Robles, Narmeen Rehman, Lesli E. Skolarus

Background: Stroke is the leading cause of disability in the United States, but it is treatable. Despite this, acute stroke treatments are underutilized. Stroke Ready is a community-wide, health behavior theory-based stroke preparedness education program to increase acute stroke treatment rates in Flint, Michigan. Stroke Ready occurred in partnership with the city of Flint, Michigan, which has one of the lowest acute stroke treatment rates of any city of its size.

Actions, Methods, or Intervention: Stroke Ready was created in response to the need for practical, culturally appropriate, theory-based interventions to increase acute stroke treatment rates in communities with low utilization rates. We aim to describe how the Stroke Ready program was developed, with the goal of addressing the underlying barriers to seeking stroke treatment through use of culturally-tailored, theory-based messaging and materials.

Results: The Stroke Ready program is one of the first to combine a Community Based Participatory Research (CBPR) approach with a theoretical framework in attempt to increase acute stroke treatments. Using this schema helped us to develop and deliver messages that empower community members to act quickly once stroke symptoms are recognized. To date, over 5,500 Flint community members have received the Stroke Ready intervention.

Lessons Learned: The importance of community engagement in effective implementation cannot be overstated. Community involvement is critical in developing acceptable and culturally relevant materials.

Future Application: We believe the Stroke Ready program provides further evidence of the necessity of community engagement and application of health behavior theory, from intervention conception to dissemination and evaluation, to achieve optimal effectiveness in behavior change and improved community health outcomes. Our hope is that Stroke Ready serves as a model for other community and academic partnerships interested in stroke, particularly among minority populations and under-resourced communities.
Best Practices for Research Abstract Submissions to Multiple Medical Education Conferences

Paula T. Ross¹, PhD; Nicole Borges², PhD; Nikki L.B. Zaidi¹, PhD

¹Research, Innovation, Scholarship, Education (RISE) and ²Dartmouth Geisel School of Medicine

BACKGROUND

- The presentation of research at professional conferences is one of the most common means to disseminate scholarship.
- Medical education researchers are often uncertain about proper etiquette for abstract submissions to medical education conferences and regularly ask the question, “Can I submit this?” in reference to their ongoing scholarship activities.

METHODS

- Representatives from non-specialty-medical education conferences across four conference types (institutional, regional, national, and international) were invited to complete a modified Delphi process¹-² to identify best practices using a 50-item online survey.
- Questions focused on:
  1. abstract submissions using same or similar data previously submitted, accepted, or presented at another conference type,
  2. abstract submissions using same or similar data previously submitted or accepted for publication, and
  3. required IRB and authorship attestation.
- Responses for each item were summarized (percent agreement and rationale) and shared in an effort to reach consensus.
- (>80% agreement) across survey items.
- Items reaching consensus in any round were eliminated from subsequent round(s).
- In each round, panelists were asked to reconsider their responses based on majority responses or provide additional rationale if remaining outside the majority.

RESULTS

- Eleven expert panelists, representing all four conference types, participated and research consensus on 45/50 survey items: Round 1 = 30 items; Round 2 = 12 items; Round 3 = 3 items.

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*submitted = not yet accepted

After three rounds, panelists did not reach consensus regarding the submission of research abstracts to conferences using data and results currently accepted for publication.

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- Panelists also reached consensus that conferences should require an attestation that all authors meet the International Committee of Medical Journal Editors (ICMJE) authorship criteria and include Institutional Review Board (IRB) approval for projects that involve human subjects.

LESSONS LEARNED

- It is appropriate to resubmit abstracts to conferences with a larger or different audience, but not to smaller or more homogeneous audiences.
- Among the four conference types, abstract resubmissions from institutional conferences was the most widely accepted.
- Institutional conferences were primarily viewed as a valuable opportunity to receive peer feedback prior to wider dissemination.

REFERENCES

Abstract Title: Best Practices for Research Abstract Submissions to Multiple Medical Education Conferences

Authors: Paula T. Ross, PhD; Nicole Borges, PhD; Nikki L.B. Zaidi, PhD Research. Innovation. Scholarship. Education. (RISE) and 2Dartmouth Geisel School of Medicine

Background: While it is important to adhere to ethical practices and professional etiquette, medical education researchers remain uncertain whether research abstracts should be submitted to multiple conferences. To establish clear guidelines, this study explored conference organizers’ perspectives on best practices for abstract submissions to multiple medical education conferences. Methods Representatives from non-specialty-medical education conferences across four conference types (institutional, regional, national, and international) completed a modified Delphi process to identify best practices for abstract submissions using a 50-question online survey. Questions for: 1) abstract submissions using same or similar data previously submitted, accepted, or presented at another conference type, 2) abstract submissions using same or similar data previously submitted or accepted for publication, and 3) required IRB and authorship attestation. Each question asked for a rationale to support the perspective. Responses for each item were summarized (percent agreement and rationale) and shared in an effort to reach consensus (>80% agreement) across survey items. Items reaching consensus in any round were eliminated from subsequent round(s). In each round, panelists were asked to reconsider their responses based on majority responses or provide additional rationale if remaining outside the majority.

Results: Eleven expert panelists, representing all four conference types, participated. Consensus was reached on 45/50 survey items—30 items in Round 1, 12 items in Round 2, and three items in Round 3. In Round 1, consensus was reached that conferences should require an attestation that all authors meet the ICMJE authorship criteria and projects that involve human subjects must include IRB approval. Regarding etiquette for abstract submission, acceptance, and presentation, panelists unanimously agreed in Round 1 that abstracts submitted to institutional conferences could be submitted to any other conference type. In Round 2, panelists reached consensus that accepted abstracts could be submitted to any other conference type, and abstracts presented at institutional, national, and international conferences could be submitted to any of these three conference types. After three rounds consensus was not reached regarding the submission of abstracts previously presented at national or international conferences to regional conferences. When asked about submitting abstracts using data and results currently under review or accepted for publication, panelists reached consensus in Round 1 that abstracts using data and results currently under review or accepted for publication could only be submitted to an institutional conference. Panelists reached consensus in Round 3 that abstracts using data and results currently under review for publication could be submitted to any conference type; however, if accepted for publication, an abstract could not be submitted to a regional, national, or international conference.

Lessons Learned: Panelists’ consensus and rationale indicated that it is appropriate to resubmit abstracts to conferences with a larger or different audience, but not to smaller or more homogeneous audiences. Among the four conference types, abstract resubmissions from institutional conferences was the most widely accepted. Institutional conferences were primarily viewed as a valuable opportunity to receive peer feedback prior to wider dissemination.
ABSTRACT

Objectives: Research showed that adolescents who are deaf or hard of hearing were less likely to brush and floss their teeth, had lower oral health-related knowledge and poorer oral health than their hearing peers. The objectives were to assess (a) the frequencies of brushing and flossing, and (b) diet-related knowledge before and after an educational intervention; and (c) the students’ evaluation of the intervention.

Methods: Survey data were collected from 64 students who were deaf (63%) or hard of hearing (35%) before and after an educational intervention with a 30-minute long video (https://youtu.be/gxCffyq4INr) followed by a discussion.

Results: The average frequency of intended brushing increased slightly and the frequency of flossing increased significantly. The students improved their responses concerning how healthy / unhealthy certain foods were. Their diet-related knowledge improved from 6.96 correct answers out of 10 possible answers before the intervention to 8.51 at the end. The students evaluated the intervention as interesting, easy to understand, and offering new information.

Conclusions: Providing oral health-related information to high school students in schools for deaf and hard of hearing students was well received and increased the students’ behavioral intentions to floss and their diet-related knowledge.

INTRODUCTION

➢ Over 5% of the world’s population or 468 million people have hearing loss.
➢ Research showed that adolescents who are deaf or hard of hearing were less likely to brush and floss their teeth. They had lower oral health-related knowledge and poorer oral health than their hearing peers.
➢ Specifically, they had poorer gingival health and more decayed, missing and filled teeth due to caries than their hearing counterparts.
➢ Educational intervention tailored to the needs of students who are hearing impaired or deaf in American Sign Language can improve these students’ oral health-related behavior and their diet-related knowledge.

METHODS

This study was determined to be exempt from Institutional Review Board (IRB) oversight by the Health Sciences and Behavioral Sciences IRB at the University of Michigan, Ann Arbor, MI.

Respondents: Data were collected from 64 students in two high schools for students who are deaf or hard of hearing (see Table 1).

Procedure: Survey data were collected before and after a one hour long educational intervention that consisted of showing a 30 minute long video and discussing it.

Materials: A 30-minute long video (https://youtu.be/gxCffyq4INr) was introduced and presented, followed by a discussion.

RESULTS

The first objective was to compare the frequencies of tooth brushing and flossing before and after the educational intervention. Table 2 shows that the average frequency of intended brushing increased slightly and the frequency of flossing increased significantly.

The second objective was to compare the students’ diet-related knowledge before and after the educational intervention. Table 3 shows that the students improved their responses concerning how healthy / unhealthy certain foods were. Their diet-related knowledge improved from 6.96 correct answers out of 10 possible answers before the intervention to 8.51 at the end.

The third objective was to evaluate the students’ evaluation of the intervention. Table 4 shows that the students reported that the video was new, interesting and easy to understand.

CONCLUSIONS

➢ Providing oral health-related information to high school students in schools for deaf and hard of hearing students was well received and increased the students’ behavioral intentions to floss and their diet-related knowledge.

➢ Spreading the word about this video among middle and high school students and adults who are deaf and hard of hearing is important.

REFERENCES


ACKNOWLEDGEMENTS

➢ We want to thank the Pathways Program at University of Michigan School of Dentistry for their financial support.
➢ We want to thank the staff at University of Michigan School of Dentistry for assistance for the development of the educational video.
➢ We want to thank the high school students at Michigan School for the Deaf and Detroit School of Arts High School for participating in this study.
Abstract Title: Oral Health Education for Deaf/Hard of Hearing High School Students

Authors: J.D. Samona, S. Stefanac, MR Inglehart; University of Michigan, Ann Arbor, Michigan

Objectives: Research showed that children and adolescents who are deaf or hard of hearing were less likely to brush and floss their teeth and had lower oral health-related knowledge and thus poorer oral health than their hearing peers. The objectives were to assess (a) the frequencies of brushing and flossing, and (b) diet-related knowledge before and after an educational intervention; (c) the students’ evaluation of the intervention was also assessed.

Methods: Survey data were collected from 64 students in two high schools who were deaf (65%) or hard of hearing (35%) before and after a one-hour long educational intervention. A 30-minute long You Tube video (https://youtu.be/gxCfgyg4lNI ) educated the students about brushing, flossing and diet-related considerations concerning good oral health. A discussion followed.

Results: The average frequency of brushing increased slightly and the frequency of flossing increased significantly (6-point answer scale with 1=never: 2.51 vs. 3.86;p=0.01). The overall diet-related knowledge before and after an educational intervention improved from 6.93 correct answers out of 10 possible answers before the intervention to 8.51 (p=0.016) at the end. The students also improved their responses concerning how healthy/unhealthy certain foods were such as cheese, chips and ice cream. The students evaluated the intervention as interesting (5-point scale with 1 not at all: Mean=4.05), easy to understand (Mean=3.98) and offering new information (Mean=3.92).

Conclusions: Providing oral health-related information to high school students in schools for deaf and hard of hearing students was well received and increased the students’ behavioral intentions to floss and their diet-related knowledge. Spreading the word about this video among middle and high school students and adults who are deaf and hard of hearing is important.
DO STUDENTS’ PERSONAL AND EDUCATIONAL EXPERIENCES RESULT IN DIVERSITY-RELATED ADVOCACY?
Sarah M. Radden, Todd V. Ester & Marita R. Inglehart
University of Michigan - School of Dentistry, Ann Arbor, MI

ABSTRACT

Objectives: Research predicts that by 2045, the U.S. will be "minority white." Educating future dentists to provide culturally sensitive care requires an understanding of the factors that affect their diversity-related attitudes and behavior. The objectives are to: (a) current dental students’ personal and professional diversity-related experiences; (b) their attitudes and behavior related to diversity in educational and workplace settings; and (c) their willingness to engage in promoting diversity. (d) The relationships between these constructs will also be explored.

Methods: Anonymous survey data were collected from 165 dental students.

Results: Only 16% described their neighborhoods as much or very much racially diverse. 22% attended racially diverse elementary schools, 27% racially diverse middle schools, and 51% racially diverse high school, 43% described their friends as much or very much racially diverse. However, 79% agreed that their classroom-based dental education and 89% that their clinical education stressed the importance of being able to treat patients from diverse backgrounds. The majority agreed that they are educated with students from diverse backgrounds (57%), but they work with team members from diverse backgrounds (55%) and that patients from diverse backgrounds have access to dental care (89%). The majority was willing to increase diversity by speaking at high schools, talking to young patients about dental careers and inviting students to shadow. The more diverse friends they had, the more important they thought diversity was; the more important they considered diversity to be, the more willing they were to engage in positive outreach efforts.

Conclusions: A segregated childhood upbringing is likely to result in decreased numbers of friends from diverse backgrounds, having fewer diverse social contacts is predictor of negative diversity-related attitudes and consequently will negatively affect willingness to engage in outreach efforts.

METHODS

This study was determined to be exempt from Institutional Review Board (IRB) oversight by the Health Sciences and Behavioral Sciences IRB at the University of Michigan, Ann Arbor, MI. (HUM01168274).

Respondents: Anonymous survey data were collected from 165 pre-doctoral dental students at one dental school.

Procedure: Paper-pencil surveys were handed out at the end of regularly scheduled classes. The students returned the surveys anonymously.

INTRODUCTION

United States (US) census data project that the U.S. is becoming minority white by 2045 (1).

This prediction implies that future dentists need to be culturally competent to treat patients from diverse backgrounds.

Research showed that personal experiences and educational experiences concerning providing care for patients covered by Medicaid increase the likelihood of these students to actually plan to provide care for this underserved patient population (2).

So far, no research analyzed if dental students’ personal and educational diversity-related experiences affects their attitudes concerning providing care for patients from different racial backgrounds.

AIMS

The objectives are to assess:

(a) current dental students’ personal and professional diversity-related experiences,

(b) their attitudes and behavior related to diversity in educational and workplace settings, and

(c) their willingness to engage in promoting diversity.

The relationships between these constructs will also be explored.

RESULTS

The first objective was to assess current dental students’ personal and professional diversity-related experiences. Table 2 shows that only 18% described their childhood neighborhoods as much or very much racially diverse, 22% attended racially diverse elementary schools, 27% racially diverse middle schools, and 51% racially diverse high schools, 43% described their friends as much or very much racially diverse. However, 79% agreed that their classroom-based dental education and 89% that their clinical education stressed the importance of being able to treat patients from diverse backgrounds. The majority agreed that they are educated with students from diverse backgrounds (57%), but they work with team members from diverse backgrounds (55%) and that patients from diverse backgrounds have access to dental care (89%). The majority was willing to increase diversity by speaking at high schools, talking to young patients about dental careers and inviting students to shadow. The more diverse friends they had, the more important they thought diversity was; the more important they considered diversity to be, the more willing they were to engage in positive outreach efforts.

The second objective was to assess students’ attitudes and behavior related to diversity in educational and workplace settings. Table 3 shows that the majority agreed that it is important that they are educated with students from diverse backgrounds (87%), that they work with team members from diverse backgrounds (82%) and that patients from diverse backgrounds have access to dental care (80%).

The third objective was to assess students’ willingness to engage in promoting diversity. Table 4 shows that the majority was willing to increase diversity by speaking at high schools, talking to young patients about dental careers and inviting students to shadow. They are optimistic that the diversity among students in dentistry-related programs will increase.

The fourth objective was to explore the relationships between experiences, attitudes and behavioral intentions. Table 5 shows that the more diverse friends they had, the more important they thought diversity was, the more important they considered diversity to be, the more willing they were to engage in positive outreach efforts.

CONCLUSIONS

The more diverse the respondents’ childhood neighborhoods had been, the more likely they were to attend racially diverse colleges;

to have racially diverse friends, and

to appreciate diversity-related educational efforts in dental schools.

The more positive their diversity-related attitudes were,

the more positive they were about their diversity-related dental education and

The more willing they were to be supportive to introduce students from diverse backgrounds to dentistry-related careers.

REFERENCES


ACKNOWLEDGEMENT

We want to thank the respondents for taking the time to respond to this survey.
Abstract Title: Do students’ personal and educational experiences result in diversity-related advocacy?

Authors: Sarah M. Radden, Todd V. Ester & Marita R. Inglehart

Objectives: Research predicts that by 2045, the U.S. will be “minority white”. Educating future dentists to provide culturally sensitive care to their patients in the future requires an understanding of the factors that affect their diversity-related attitudes and behavior. The objectives are to assess (a) current dental students’ personal and professional diversity related experiences, (b) their attitudes and behavior related to diversity in educational and workplace settings, and (c) their willingness to engage in promoting diversity. The relationships between these constructs will also be explored.

Methods: Anonymous survey data were collected from 165 dental students.

Results: Only 18% described their neighborhoods as much/very much racially diverse; 22% attended racially diverse elementary schools, 27% racially diverse middle schools and 30% racially diverse high schools; 42% described their friends as much or very much racially diverse. However, 75% agreed that their classroom-based dental education and 69% that their clinical education stressed the importance of being able to treat patients from diverse backgrounds. The majority agreed that it is important that they are educated with students from diverse backgrounds (87%), that they work with team members from diverse backgrounds (82%) and that patients from diverse backgrounds have access to dental care (90%). The majority was willing to increase diversity by speaking at high schools, talking to young patients about dental careers and inviting students to shadow. The more diverse friends they had, the more important they thought diversity was ($r=0.22; p< 0.01$); the more important they considered diversity to be, the more willing they were to engage in positive outreach efforts ($r=0.64; p< 0.001$).

Conclusions: A segregated childhood upbringing is likely to result in decreased numbers of friends from diverse backgrounds; having fewer diverse social contacts is predictor of negative diversity-related attitudes and consequently will negatively affect willingness to engage in outreach efforts.
Dental Hygiene Program Directors’ and Faculty Members’ Considerations of Gender Inequality in Dental Hygiene Programs: A National Survey
Said Al-Jazaeri, Fatima Noor, Muhammad Salman; Mentor: MR Inglehart
University of Michigan - School of Dentistry, Ann Arbor, MI

ABSTRACT

Background: In 2016, the United States Department of Labor reported that only 2.9% of dental hygienists were men. The number of male dental hygiene graduates have been cited as an issue. This study aimed to explore gender inequality and the (a) perceptions of being a male vs. female dental hygiene student and (b) perceptions of the consequences of being a male vs. female dental hygiene student. The objectives were to explore how dental hygiene program directors vs. faculty members (a) evaluate this gender imbalance and (b) perceive the consequences of being a male or female dental hygiene student.

Methods: This is a cross-sectional study, data were collected with an anonymous web-based survey from 133 dental hygiene program directors and faculty members in the U.S. 3,

Results: Program directors agreed on average more strongly that they would like to see more male dental hygienists in the U.S., more male students in dental hygiene programs in general, and in their own program than faculty members. In comparison to faculty members, they also agreed more strongly that it would be better for the profession if there were more male dental hygienists. Program directors agreed that they would like to see more male dental hygiene students entering the field, but they were less sure that they would like to see more male dental hygiene students entering their own programs. Faculty members agreed on average more strongly that male dental hygiene students would be more likely to be accepted when they apply, to have a higher degree and to enroll in dental school after graduation compared to program directors.

Discussion: The number of respondents in especially the group of male dental hygiene faculty members was rather low and generalizations of the findings should therefore be done with caution. However, it seems justified to say that program directors held more favorable attitudes concerning reducing gender inequalities among dental hygiene students and dental hygienists and saw greater benefit in reducing gender imbalances than dental hygiene faculty members. When program directors and faculty members were asked to compare female vs. male dental hygiene students, they did not differ in most responses. Limitations: The response rate was low and the results should therefore be interpreted with care.

CONCLUSIONS

- Based on these data it can be concluded that educational interventions are needed to create experiences that increase dental hygiene program directors’ and faculty members’ awareness related to the gender imbalance in the dental hygiene profession. And its consequences,

- It is important to support male dental hygiene students in their role to allow them to have positive expectations for their future professional role.

- Providing a basic understanding of program directors’ and faculty members’ attitudes towards male dental hygiene students and male dental hygienists can support efforts to decrease the gender imbalance in this profession.

- Understanding perceptions of male dental hygiene students and their experiences could help to develop interventions to change this situation.

REFERENCES

ACKNOWLEDGMENT

We want to thank the respondents for taking the time to respond to this survey.
Title: Dental Hygiene Faculty’ Considerations of Gender Inequity in Dental Hygiene Programs: A National Survey

Authors: Al-Jazaeri, S, Noor, F, Salman, M, Inglehart MR

Purpose: In 2016, the United States Department of Labor reported that only 2.9% of dental hygienists and less than 3% of dental hygiene students in the U.S. were male. The objectives were to explore how dental hygiene program directors vs. faculty members evaluate this gender imbalance and (b) predict the attitudes of male and of female dental hygiene students, instructors, patients, dentists and dental hygienists towards male vs. female dental hygiene students.

Methods: In this cross-sectional study, data were collected with an anonymous web-based survey from 133 dental hygiene program directors and faculty members in the U.S.

Results: Program directors agreed on average more strongly that they would like to see more male dental hygienists in the U.S. (5-point scale with 5 = agree strongly: 4.34 vs. 3.93; p=0.004), more male students in dental hygiene programs in general (4.34 vs. 3.96; p=0.006) and in their own program (4.37 vs. 3.93; p=0.002) than faculty members. In comparison to faculty members, they also agreed more strongly that it would be better for the profession if there were more male dental hygienists (3.35 vs. 3.95; p<0.001). However, the two groups of respondents did not differ in their average evaluations of male and of female dental hygiene students’, instructors’, patients’, dentists’ and dental hygienists’ attitudes towards male vs. female dental hygiene students.

Conclusion: Dental hygiene program directors are more favorable concerning decreasing the gender imbalance in dental hygiene programs than faculty members. Future research should focus on ways to increase gender diversity in these programs.
Medical Students Demonstrate Low Levels of Financial Literacy and High Interest In Finance Literacy Education

Anderson Lee IV, Jamaal Tarpeh, Kristian Black, Jesse Wilson, Niki Matsuko, Michael Englesbe M.D., Gurjit Sandhu P.h.D.
University of Michigan, Ann Arbor, MI, USA

**INTRODUCTION**

- **$196,520**
  - Average debt of medical students graduating in 2018
- **3%**
  - Rise in medical student debt compared to the previous year
- **< 55%**
  - Score of physicians in training on financial literacy assessments
- **Does level of financial literacy affect desire for financial literacy education during medical training?**

**RESULTS**

- **38%**
  - was the average score on financial literacy assessment.
- **77%**
  - of medical students ranked improving financial literacy as extremely or very important.
- **89%**
  - of medical students believed they should receive financial literacy training as a part of their medical training.

**METHODS**

- A 51 item questionnaire was developed to assess financial literacy, desire for financial literacy education, and demographics factors.
- Anonymous, web-based survey administered to a convenience sample of first year (M1) through fourth year (M4) students at the University of Michigan.
- Respondents were able to complete the survey from April to May 2019. (N=224)
- This value was used to define proficiency for the financial literacy assessment.

**CONCLUSION**

- Low levels of financial literacy continue to be detected in medical students.
- Medical trainees express a strong desire for adding financial literacy development to medical education curriculum.
- It is likely that medical students are aware of their limited financial literacy and welcome the opportunity to address that knowledge gap.

Integrating financial literacy development into medical school education has the potential to increase personal financial stability, professionally enhance strategic financial decisions, and improve overall wellness in trainees.
Title: Medical Students Demonstrate Low Levels of Financial Literacy and High Desire in Finance Literacy Education

Authors: Anderson Lee IV, Jamaal Tarpeh, Kristian Black, Jesse Wilson, Niki Matsuko, Michael Englesbe M.D., Gurjit Sandhu P.h.D, University of Michigan, Ann Arbor, MI, USA

Background: The average graduating debt for 2018 medical school graduates was $196,520. This is a 3% increase from the year prior. As a result of high debt load, it is imperative that medical students are prepared to responsibly manage this burden. Previous studies have shown that medical students, residents, and fellows answer fewer than 55% of financial literacy questions correctly, reflecting low levels of financial literacy. Furthermore, higher levels of financial literacy have been associated with increased financial stability and overall wellness in medical professionals. Despite these findings, there are no requirements for financial literacy development in medical school curriculum. While exorbitant debt is acknowledged among learners, it is not well understood how level of financial literacy affects the desire for financial literacy education during medical training.

Objective: The objective of this study is to explore the relationship between financial literacy among medical students and their desire for financial literacy education during medical training.

Methods: From April to May 2019, a cross-sectional, anonymous, web-based survey was administered to a convenience sample of first-year (M1) to fourth-year (M4) medical students at the University of Michigan Medical School. Respondents voluntarily answered a 51-item multiple-choice survey designed to assess their financial literacy, assess desire for financial literacy education during medical school, and demographic factors. For the portion of the survey that was used to assess financial literacy, proficiency was defined as answering greater than 75% of items correctly for each respondent. Cohort proficiency on each item was defined as greater than 75% of respondents selecting the correct answer.

Results: 265 of 680 (39%) medical students completed the survey. Overall, respondents correctly answered 5.64 (37.6%) of the financial literacy questions, reflecting a low level of financial literacy among the cohort. Thirteen items captured low levels of literacy and two items showed proficiency. No respondent correctly answered all of the fifteen financial literacy items. Four respondents were considered proficient based on their number of correct answers. Improving their financial literacy was extremely important or very important to 77.32% of students. 88.89% of students believed that medical students should receive financial literacy as a part of their medical training and 86.57% of students said that they would take a related course if it was offered.

Conclusions: Low financial literacy levels continue to be detected among medical students. In addition, medical trainees express a strong desire for adding financial literacy development to medical education curriculum. It is likely that medical students are aware of their limited financial literacy and welcome the opportunity to address that knowledge gap. Integrating financial literacy development into medical school education has the potential to increase personal financial stability, professionally enhance strategic financial decisions, and improve overall wellness in trainees.
A New Frontier: Developing Competencies in Health Sciences Education Innovation

Nikki Zaidi, PhD; Rajesh Mangrulkar, MD; Helen Morgan, MD; Paula Ross, PhD
Office of Medical Student Education, University of Michigan Medical School

Background

• R.I.S.E. (Research, Innovation, Scholarship, Education) aims to improve learning and teaching for better health.

• To achieve this goal, we sought to identify innovation competencies deemed most essential to personal and professional development in innovation within HSE.

Methods

• We compiled a list of 15 possible innovation competencies and associated definitions, based on a review of the literature.1-3

• In April 2019, members of the RISE Core team (n=6) and the Advisory Council (n=31) were invited to rank order the list of potential competencies, via an online survey, based on their perceived level of importance for supporting innovation.

• Participants represented diversity among employee/learner classification, HSE specialties, and innovation expertise and experience.

Results

• Twenty-four individuals completed the rank-ordering survey.

• Seven competencies were adopted based on the aggregated mean rankings (Table 1).

Lessons Learned

• These innovation competencies have been used to guide RISE funding decisions, design curricula, and develop assessments to track longitudinal competency development among our community.

• During the design of our assessments, we learned the importance of clarifying competency definitions to ensure assessors could differentiate behaviors that represent each distinct competency.

Future Application and Next Steps

• We will continue to use these competencies to develop new and innovative assessments.

• Next steps include examining the validity of scores generated by our competency assessments.

Table 1. Mean Rankings of Potential Innovation Competencies

<table>
<thead>
<tr>
<th>INNOVATION COMPETENCY</th>
<th>MEAN (SD)</th>
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<tbody>
<tr>
<td>Creativity: thinks beyond traditional ideas, rules, and patterns to generate meaningful alternatives</td>
<td>3.6 (3.3)</td>
</tr>
<tr>
<td>Initiative: independently or collaboratively develops, assesses, and operationalizes ideas that foster positive changes, while overcoming real and perceived constraints that often impede the launching of ideas</td>
<td>4.7 (3.1)</td>
</tr>
<tr>
<td>Visioning: assesses future directions and risks based on existing and potential opportunities and threats to implementation</td>
<td>6.3 (3.9)</td>
</tr>
<tr>
<td>Intelligent Risk-taking: weighs potential benefits and disadvantages of an action or choice to assume calculated risks</td>
<td>6.4 (3.3)</td>
</tr>
<tr>
<td>Intellectual Curiosity: acquires new knowledge, challenges beliefs and knowledge constructs, and seeks explanations—even when the application of that new learning isn’t immediately apparent</td>
<td>6.5 (4.3)</td>
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<tr>
<td>Critical Thinking: pinpoints the actual nature and cause of problems and the dynamics that underlie them to logically identify strengths and weaknesses of alternative approaches</td>
<td>7.1 (4.2)</td>
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<tr>
<td>Teamwork: effectively and efficiently collaborates with others in a diverse group; works with stakeholders to assimilate ideas and needs towards outcomes and solutions</td>
<td>7.7 (3.5)</td>
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<tr>
<td>Effective Communication: provides consistent, efficient, and meaningful information; listens carefully to others to ensure message is understood; tailors messaging to audience</td>
<td>9.0 (3.5)</td>
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<tr>
<td>Nonconformity: challenges the status quo in order to set ambitious goals that challenge established practices, especially if tradition impedes improvements</td>
<td>9.1 (4.8)</td>
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<tr>
<td>Enterprising: initiates and leverages available resources to further a goal</td>
<td>9.1 (3.6)</td>
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<tr>
<td>Networking: identifies and engages internal and external stakeholders in common interest/goal</td>
<td>9.3 (2.9)</td>
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<tr>
<td>Leadership: motivates or persuades others to achieve a goal by communicating a vision, committing to the cause of the organization and inspiring trust</td>
<td>9.5 (4.2)</td>
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<tr>
<td>Perceptiveness: recognizes situational forces that promote and inhibit change</td>
<td>9.7 (4.3)</td>
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<tr>
<td>Flexibility: willingness to change or compromise according to the situation and/or new information</td>
<td>9.8 (3.7)</td>
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<tr>
<td>Self-efficacy: trust and expressed confidence in one’s abilities, talents, and judgement that s/he is capable of achieving a certain outcome</td>
<td>12.3 (4.0)</td>
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</table>

References


Title: A New Frontier: Developing Competencies in Health Sciences Education Innovation

Authors: Zaidi, Mangrulkar, Morgan, Ross

Background: The Research. Innovation. Scholarship. Education. (RISE) initiative aims to foster education innovation competency across the health sciences at Michigan Medicine. To achieve this goal, we sought to identify innovation competencies deemed most essential to personal and professional development in innovation within health sciences education (HSE). Developing competencies was necessary to ensure forward movement and development within the HSE innovation space.

Actions, Methods, or Intervention: We compiled a list of 15 possible innovation competencies and associated definitions, based on a review of the literature.1-3 This initial list included: creativity, initiative, teamwork, networking, visioning, intelligent risk-taking, enterprising, critical thinking, nonconformity, intellectual curiosity, flexibility, perceptiveness, positive self-efficacy, effective communication, and leadership. In April 2019, all members of the RISE Core team (n=6) and the RISE Advisory Council (n=31) were invited to rank order the list of potential competencies, via an online Qualtrics survey, based on their perceived level of importance for supporting innovation. Participants represented diversity among employee/learner classification, HSE specialties, and expertise and experience within HSE innovation.

Results: A total of 24 individuals completed the rank-ordering survey. Data were summarized based on the aggregate ranking of each competency. We decided a priori to take a data-driven approach to determine the most endorsed 6-8 competencies for this context. Based on the mean rankings (mean rank-ordering: 3.63-12.29) the sharpest demarcation was between the seventh highest-ranked competency (mean ranking: 7.67) and the eighth-ranked competency (mean ranking: 9.04). Therefore, we adopted seven innovation competencies: creativity, critical thinking, initiative, intellectual curiosity, intelligent risk-taking, teamwork, and visioning.

Lessons Learned: These innovation competencies have been used to inform an evidence-based selection process, guide RISE funding decisions, and to develop a 360 assessment to track longitudinal competency development among our community. During the design of our assessments, we learned the importance of clarifying the definition used for each of these competencies to ensure assessors are able to differentiate behaviors that represent each distinct competency.

Future Application and Next Steps: We will continue to use these competencies to develop new and innovative assessments. Next steps include examining the validity of scores generated by our competency assessments.
BACKGROUND

- Effectiveness of using interprofessional health care teams to improve patient health outcomes and access to care has been well researched, but barriers to provider participation in interprofessional collaboration (IPC) still exist.
- For example, stereotypes or misconceptions of other team member’s level of academic degree (associate, bachelor’s, master’s, doctorate) may influence the provider’s attitude toward participation in IPC.
- Healthcare professionals often have their first experiences with IPC while in their training programs, therefore, health profession faculty play an important role in establishing norms, attitudes, and practice culture of future health professionals when engaging in IPC.
- Understanding and predicting factors influencing behaviors is important in developing future IPC activities.
- Assessing a provider’s attitudes, opinions, or confidence through the lens of behavior theories can help researchers to further understand what attributes motivate someone to perform or engage in a certain behavior as well as reasonably predict the person’s intention to do so.
- There are few studies investigating the influence of level of academic degree specifically on a provider’s willingness to collaborate with other members of the healthcare team or with a dental hygienist.

AIMS

The aims of the study were to determine:

- Level of academic degree of those outside their own discipline affects healthcare providers’ perception of IPC.
- Level of academic degree of those outside their own discipline affects healthcare providers’ willingness to collaborate with other members of the interprofessional team.
- Dental hygienists’ own level of academic degree affects self-confidence in contributing to the interprofessional team.

METHODS

- A 22 item, digital survey was created with the U-M Survey Research Center. Eligible participants were licensed healthcare providers with U-M faculty appointments. (HUM0162959).
- Attitudinal questions were based on two established behavioral theories, Theory of Planned Behavior and Social Cognitive Theory, and assessed perceptions, attitudes, intentions, and self-efficacy toward IPC with providers who held different levels of academic degree than their own.
- An email invitation and link were sent via the U-M Center for Interprofessional Education to the academic deans of the nine U-M health professions education schools for dissemination to their faculty.

RESULTS

- Forty-six of the respondents indicated they most often think of collaborating with people who have similar academic degrees as their own.
- Ninety-five percent indicated they are comfortable taking recommendations on patient treatment from a provider with a doctoral/professional degree and 55% are comfortable taking treatment recommendations from a provider with an associate degree (Table 3).
- Ninety-seven percent of providers were confident in their ability to contribute to the interprofessional team.
- Self-confidence levels of the dental hygiene respondents were consistent with those of other professions (Table 4).

<table>
<thead>
<tr>
<th>Table 1. Demographic characteristics of respondents.</th>
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<tbody>
<tr>
<td>Characteristic</td>
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<td>Gender</td>
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<td>Degree</td>
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<td>Prefer not to answer</td>
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<td>Age</td>
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<td>Profession</td>
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<td>Specialty</td>
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<td>Physical Therapy</td>
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<td>Dentistry</td>
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<td>Counseling</td>
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<td>School of Social Work</td>
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<td>Academic Degree Level</td>
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<td>Master’s degree</td>
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<td>Years in Practice</td>
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<td>Role</td>
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<td>Attitudes to Collaborate with on a daily basis</td>
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<tr>
<th>Table 2. Respondents’ perceptions of collaborating with healthcare providers with lesser academic degrees. (5-point scale with 1 = positive and 6 = negative)</th>
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<tbody>
<tr>
<td>Attitudes and Perceptions</td>
</tr>
<tr>
<td>Beneficial for the patient or helpful for the patient</td>
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<tr>
<td>Pleasant for me or unimportant for me</td>
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<tr>
<td>A good use of my time or even a good use of my time</td>
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<tr>
<td>Useful or worthless</td>
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<tr>
<th>Table 3. Respondents’ comfort in taking treatment recommendations from healthcare providers with different academic degrees, 5-point scale with 1 = “Strongly Disagree” and 6 = “Strongly Agree”</th>
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<tr>
<td>Willingness to Collaborate with on a daily basis</td>
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<th>Table 4. Respondents’ confidence in collaborating with healthcare providers with higher, lesser, or the same academic degree. (6-point scale with 1 = “Strongly Disagree” and 6 = “Strongly Agree”)</th>
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<tbody>
<tr>
<td>Self-Efficacy Index (alpha=.68)</td>
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<tr>
<td>Health care provider with higher academic degrees</td>
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<tr>
<td>Health care provider with a master’s degree</td>
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<tr>
<td>Health care provider with a bachelor’s degree</td>
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<tr>
<td>Health care provider with less academic degrees</td>
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<td>Health care provider with the same academic degree</td>
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</table>

LESSONS LEARNED

- While faculty value IPC in improving patient outcomes, their perceptions of other healthcare providers’ level of academic degree may play a role in their willingness to collaborate with other providers.
- Despite an institution’s positive culture of IPC, faculty buy-in and stereotypes about provider level of academic degree need to be addressed.
- These results indicate a need to create a more level playing field among the varying professions and a culture in which each provider is valued to the full extent of their license.

NEXT STEPS

- Future research should investigate why faculty value the role of providers with lesser degrees but are less likely to seek collaboration or treatment recommendations from those providers.
- Researchers should also explore interventions to promote provider participation in IPC that address behavioral factors related to provider attitudes, confidence, and intentions.

The authors would like to express their appreciation to the U-M Survey Center, U-M Center for Interprofessional Education, and to Nolan Kavanagh for their assistance in this project. Their collaboration and support were critical to its success.
Title: Impact of Level of Academic Degree on Healthcare Provider Perceptions of Interprofessional Collaboration

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Background: Effectiveness of using interprofessional health care teams to improve patient health outcomes and access to care has been well researched, but barriers to provider participation in interprofessional collaboration (IPC) still exist. For example, stereotypes or misconceptions of other team member’s level of academic degree (associate, bachelors, masters, doctorate) may influence the provider’s attitude toward participation in IPC. Healthcare professionals often have their first experiences with IPC while in their training programs, therefore, health profession faculty play an important role in establishing norms, attitudes, and practice culture of future health professionals when engaging in IPC. Understanding and predicting factors influencing behaviors is important in developing future IPC activities. Assessing a provider’s attitudes, opinions, or confidence through the lens of behavior theories can help researchers to further understand what attributes motivate someone to perform or engage in a certain behavior as well as reasonably predict the person’s intention to do so. The purpose of this study was to determine if health profession faculty perceptions of a provider’s academic degree level affect their willingness to collaborate with other providers. Specifically, this study explored whether differing academic degree levels affect a provider’s attitude, opinion, or confidence related to IPC.

Actions, Methods, or Interventions: This study was determined to be exempt from oversight by the Health Sciences and Behavioral Sciences Institutional Review Board at the University of Michigan (U-M) (HUM#00162953). A 22 item, digital survey was created with the U-M Survey Research Center. Eligible participants were licensed healthcare providers with U-M faculty appointments. Attitudinal questions were based on two established behavioral theories, Theory of Planned Behavior and Social Cognitive Theory, and assessed perceptions, attitudes, intentions, and self-efficacy toward IPC with providers who held different levels of academic degree than their own.

Results: Respondents (n=179) primarily included faculty in medicine (29%), dentistry (23%), nursing (13%), dental hygiene (11%), physical therapy (8%), and pharmacy (7%). Ninety-five percent indicated they are comfortable taking recommendations on patient treatment from a provider with a doctoral/professional degree and 55% are comfortable taking treatment recommendations from a provider with an associate degree. Almost half (46%) of respondents indicated they think of collaborating with people with similar academic degrees as their own most often. Ninety-seven percent of providers were confident in their ability to contribute to the interprofessional team. Self-confidence levels of dental hygiene respondents were consistent with those of other professions.

Lessons Learned: While faculty value IPC in improving patient outcomes, their perceptions of other healthcare providers’ level of academic degree may play a role in their willingness to collaborate with other providers. Despite an institution’s positive culture of IPC, faculty buy-in and stereotypes about provider level of academic degree need to be addressed. These results indicate a need to create a more level playing field among the varying professions and a culture in which each provider is valued to the full extent of their license.
Future Applications and Next Steps: Future research should investigate why faculty value the role of providers with lesser degrees but are less likely to seek collaboration or treatment recommendations from those providers. Researchers should also explore interventions to promote provider participation in IPC that address behavioral factors related to provider attitudes, confidence, and intentions.