# THE UNIVERSITY OF IOWA

## Assessment of a Short Interactive Case Study Using the

Interprofessional Collaborative Competencies Assessment Survey (ICCAS)



Paula Weistroffer DDS, MS, Mary Berg, DNP, and Joel Gordon, MD **Colleges of Dentistry, Nursing and Medicine** 

#### BACKGROUND

- Emphasis on interprofessional education (IPE) has increased in recent years.
- Assessment is of special importance, because of the many challenges associated with these types of programs.
- Many tools are available and have been developed in an evaluate program curriculum and satisfy to attempt accreditation standards.

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#### RESULTS

- The overall response rate was 72%.
- The majority of participants were women (64-100%), except for

Dentistry, Medicine and PT, which had nearly equal women and men (47%, 46% and 52%).

• Women scored statistically higher on both pretest and posttest, but

both women and men showed improvement at the same rate.

• The vast majority of students reported previous multi-disciplinary team experience (52-100%), with the exception of Dentistry at 10%. • Pretest scores ranged from 4.65-6.17, with PA students scoring

- More recently, the Institute of Medicine has placed renewed emphasis on the assessment of interprofessional education.<sup>1</sup>
- Miscommunication and inadequate teamwork among healthcare providers is associated with two-thirds of sentinel events.<sup>2</sup>
- The perceptions of quality of patient care and collaborative relationships were the most important predictors of job satisfaction for healthcare providers.<sup>3</sup>

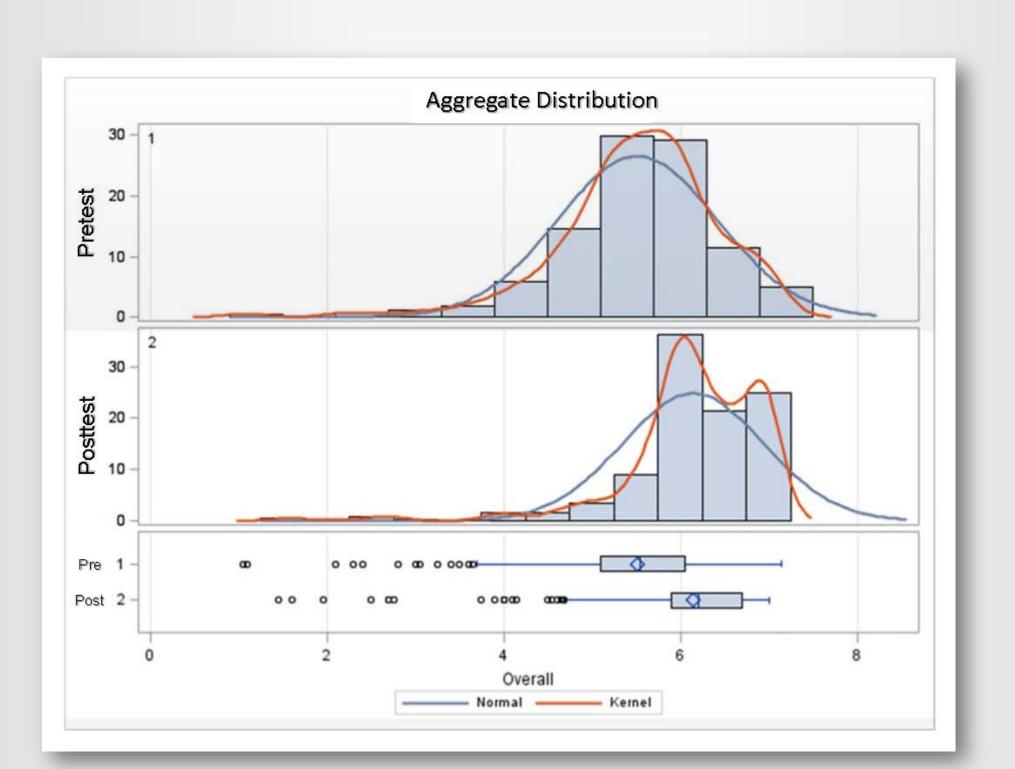
#### **PURPOSE**

• To assess the impact of a  $2\frac{1}{2}$  hour interactive case study on the attitudes and skills of health science students toward collaborative patient-centered health care teams using a published and validated tool.

1 = Strongly Disagree; 2 = Moderately Disagree; 3 = Slightly Disagree; 4 = Neutral; 5 = Slightly Agree; 6 = Moderately Agree; 7 = Strongly Agree, na = not applicable								
Communication	] 1	2	3	4	5	6	7	na
1. Promote effective communication among members of an	$\odot$	2	6	4	G	6	$\bigcirc$	8
interprofessional (IP) team*	(1)	Q	3	4	6	6	7	U
2. Actively listen to IP team members' ideas and concerns		2	3	4	(5)	6	$\bigcirc$	8
3. Express my ideas and concerns without being judgmental	(1)	2	3	4	6	6	$\overline{\mathcal{O}}$	8
4. Provide constructive feedback to IP team members	1	2	3	4	6	6	$\overline{\mathcal{O}}$	8
5. Express my ideas and concerns in a clear, concise manner	1	2	3	4	6	6	7	8
Collaboration								
6. Seek out IP team members to address issues	(1)	2	3	4	5	6	7	8
7. Work effectively with IP team members to enhance care	$\bigcirc$	2	3	4	(5)	6	$\bigcirc$	8
8. Learn with, from and about IP team member to enhance care	1	2	3	4	6	6	$\overline{\mathcal{O}}$	8
Roles and Responsibilities								
9. Identify and describe my abilities and contributions to the IP team	1	2	3	4	6	6	7	8
10. Be accountable for my contributions to the IP team	1	2	3	4	6	6	$\overline{\mathcal{O}}$	8
11. Understand the abilities and contributions of IP team members	1	2	3	4	6	6	$\overline{\mathcal{O}}$	8
12. Recognize how others' skills and knowledge complement and overlap	(1)	2	3	4	6	6	$\overline{\mathcal{O}}$	(8)
with my own		U	U	<u>O</u>	O	O	0	C
Collaborative Patient/Family-Centered Approach								
13. Use an IP team approach with the patient to assess the health situation	( <b>1</b> )	2	3	4	6	6	7	8
14. Use an IP team approach with the patient to provide whole person care	( <b>1</b> )	2	3	4	6	6	7	8
15. Include the patient in decision-making	(1)	2	3	4	6	6	$\overline{\mathcal{O}}$	8
Conflict Management/Resolution								
16. Actively listen to the perspectives of IP team members	(1)	2	3	4	6	6	$\bigcirc$	8
17. Take into account the ideas of IP team members	(1)	2	3	4	6	6	7	8
18. Address team conflict in a respectful manner	(1)	2	3	4	6	6	7	8
Team Functioning								
19. Develop an effective care** plan with IP team members	1	2	3	4	5	6	7	8
20. Negotiate responsibilities within overlapping scopes of practice	(1)	2	3	4	5	6	$\bigcirc$	8
*The patient's family or significant other, when appropriate, are part of the IP team.								
**The term "care" includes intervention, treatment, therapy, evaluation, etc.	J							

Adapted from MacDonald, Archibald, Trumpower, Jelley, Cragg, Casimiro, & Johnstone, 2009

Figure 1. University of Iowa's adapted version of ICCAS (pretest).



statistically higher than the other disciplines (Fig. 2 & 3).

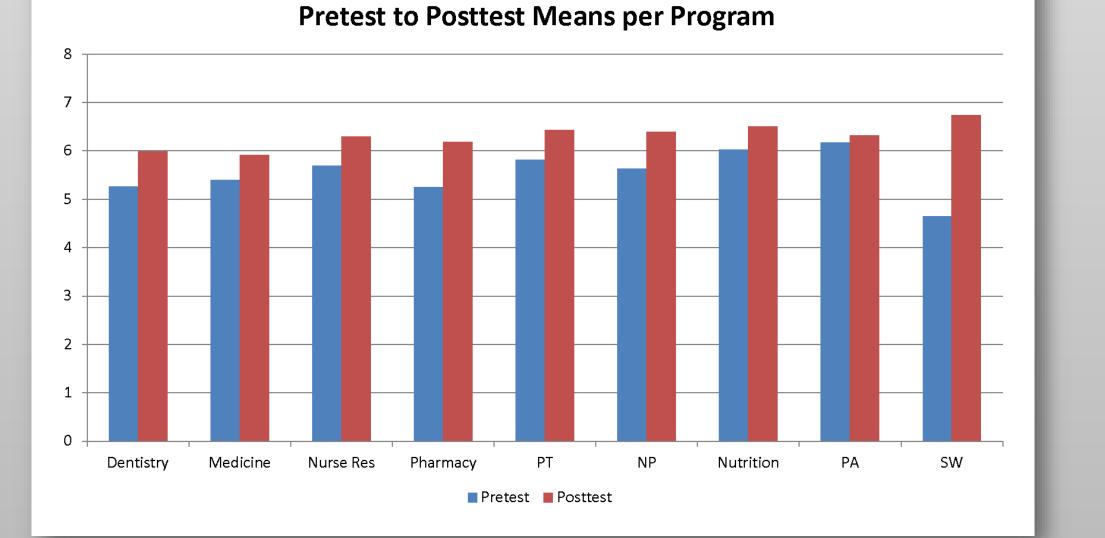
- Posttest scores ranged from 5.91-6.74, with the largest increase observed in SW (2.09), followed by Pharmacy (0.94) and the least in PA (0.15) (Fig. 2 & 3).
- Five disciplines had high enough student numbers (>25) for statistical analysis (Dentistry n = 65, Medicine n = 117, Nurse Resident n = 51, Pharmacy n = 29 and PT n = 29).
- Our results demonstrate a statistically significant improvement in the pretest to posttest scores in aggregate (p < 0.0001), in each of the 5 disciplines (p < 0.0001), in all 20 questions, and within all 6 subscales, with few exceptions.
  - The only subscales with non-significant results were S1

Communication and S4 Collaborative Patient/Family-Centered Approach.

### **MATERIALS AND METHODS**

- The interactive case utilized an interprofessional student team (6-8 members), 1-2 facilitators and a standardized patient (SP). Teams were given basic patient information, had to create a question list for the patient and then create a treatment plan. The teams had two opportunities to interact with the SP, one to gather unknown information and the second to deliver the treatment plan. Teamwork, communication and sharing of roles and responsibilities were stressed in these sessions.
- Students attended from the University of Iowa Colleges of Dentistry, Medicine, Nursing, and Pharmacy, as well as, Physician Assistant (PA), Physical Therapy (PT) and Social Work (SW) programs. Students in Nutrition, from Iowa State University, also attended.
- IRB approval was obtained for this study (#201406739).
- We utilized the Interprofessional Collaborative Competencies

*Figure 2.* Overall distribution showing changes in scores using bar graphs and forest plots.



- These were found only in 3 disciplines and were within the same two survey items.
  - Q2 Actively listen to IP team members' ideas and concerns (Medicine & PT)
  - Q15 Include the patient in decision-making (Dentistry & PT)

## CONCLUSIONS

- The ICCAS tool was effective in assessing changes in student attitudes and self-assessed skills following an interactive case study, which for many, was their first experience learning with students from other health science disciplines.
- Although the time was brief, attitudes about IPE improved in all domains.
- This tool, along with course evaluations, allowed us to demonstrate the value of this activity.

Attainment Survey (ICCAS) tool, developed by MacDonald

(2010)<sup>4</sup> and validated by Archibald (2014),<sup>5</sup> a 20-question survey, with 6 sub-scales, that is evaluated on a 7 point Likert scale (Fig.

- Data on gender and prior multi-disciplinary team experience were also collected.
- The survey was offered to a total of 504 students and was administered on paper before and after the interactive case study (n = 504).
- The data were collected and analyzed to determine statistical significance.
- Pre and post comparisons were made in aggregate and among the individual colleges and programs.

Figure 3. Pretest to Posttest overall survey means by discipline.

A special thanks to all the members of the University of Iowa Interdisciplinary Planning Group, especially Kristine Dawkins and Jeff Emrich, as well as Kristi Ferguson, our statistician.



These results indicate that even a short IPE experience can result in improvement in attitude, behavior and development of collaborative patient-centered health care teams.

## REFERENCES

- Okun S, Schoenbaum SC, Andrews D, Chidambaran P, Chollette V, Gruman J, Leal S, Lown BA, Mitchell PH, Parry C, Prins W, Ricciardi R, Simon MA, Stock R, Strasser DC, Webb E, Wynia MK & Henderson D. Patients and Health Care Teams Forging Effective Partnerships. Institute of Medicine, 2014.
- 2. Sentinel Event Data: Root Causes by Event Type. The Joint Commission, 2014. Retrieved from: www.jointcommission.org/sentinel\_event\_statistics/default.asp>
- 3. Chang WY, Ma JC, Chiu HT, Lin KC, & Lee PH. Job satisfaction and perceptions of quality of patient care, collaboration and teamwork in acute care hospitals. Journal of Advanced Nursing, 2009: 65(9), 1946-1955.
- MacDonald CJ, Archibald D, Trumpower DL, Casimiro L, Cragg B, Jelley W. Designing and Operationalizing a Toolkit of Bilingual Interprofessional Education Assessment Instruments. Journal of Research in Interprofessional Practice and Education, 2010; Vol. 1.3: 304-316.
- Archibald D, Trumpower D, MacDonald CJ. Validation of the interprofessional collaborative competency attainment survey (ICCAS). Journal of Interprofessional Care, 2014; 28(6): 553-558.