

# The Creighton Interprofessional Collaborative Evaluation (C-ICE): An Instrument to Assess Student Interprofessional Team Interactions

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# Learning Objectives

- Describe the process for assessing and grading student team performance using the C-ICE tool.
- List educational settings in which the C-ICE tool would be appropriate to assess student team performance.

# Introduction

- NEXUS Assessment and Evaluation Website
- Instrument types
  - Self-report (e.g., survey, questionnaire, self-rating) - 35
  - Observer-based (e.g., rubric, rating tool, 360 degree feedback) - 15
  - Recording template (e.g., chart audit) - 1

<https://nexusipe.org/advancing/assessment-evaluation>

# Overview of Observer-Based Assessments

- Varying number of items (ranged from 5-43 items)
- Varying Likert scales (ranged from 4-8 point scales)
- Majority measure behaviors and skills
- Individual assessment – 5 tools
- Self-reported assessment – 4 tools
- Patient satisfaction surveys – 2 tools
- Patient-care specific for surgery (2), cancer (2), critical care (2) teams
- Student Teams – 6 tools

<https://nexusipe.org/advancing/assessment-evaluation>. Accessed 9/7/17

# The Beginning Conversation

- Between nurse practitioner and pharmacist at the Porto Clinic, a free clinic in a food pantry in Omaha
- Pharmacy, nurse practitioner, medical students staff clinic with pharmacist and nurse practitioner faculty
- In 2013, IPE 413 Developing Care for a Vulnerable Population: An Interprofessional Collaborative Approach for Health Promotion at Porto Clinic was first offered as an elective



# Instrument Development

- Modeled after the Creighton Competency Evaluation Instrument (CCEI) – a tool used to quantitatively assess nursing students in clinical and simulation environments
- Twenty-six essential items were identified and assigned to one of the four Core Competencies.
- The instrument consists of a dichotomous scale (1 = demonstrates competency or 0 = does not demonstrate competency) with an option to deem an item non-applicable.
- The final score is calculated adding up the items that were scored as competent and dividing by the total items that were applicable to the scenario.

# C-ICE Instrument

| Creighton Interprofessional Collaborative Evaluation (C-ICE)  |  |  |  |
|---|--|--|--|
| Team Participants:  | Date:  |  |  |
| Activity:   |  |  |  |
| <b>Values/Ethics for Interprofessional Practice</b>   | 0=Does not demonstrate competency<br>1=Demonstrates competency<br>NA- Not applicable                                     |  |  |
| Exemplifies patient-centered care (i.e. patient dignity, confidentiality, diversity, etc.) <ul style="list-style-type: none"> <li>Involves patient as a member of health care team (acknowledges, solicits information and listens to patient, NA if patient not present)</li> <li>Values patients' right to make their own health care decisions (references patient's perspective)</li> <li>Identifies factors influencing health status of the patient (verbalizes factors)</li> <li>Integrates patient-specific circumstances into care planning (considers factors in plan)</li> </ul> | Circle Appropriate Score for all Applicable Criteria<br>0    1    N/A<br>0    1    N/A<br>0    1    N/A<br>0    1    N/A |  |  |
| Demonstrates team goal setting <ul style="list-style-type: none"> <li>Identifies patient's goals (from patient's perspective, verbalizes goals)</li> <li>Identifies team goals for patient (verbalizes goals)</li> <li>Prioritizes goals (NA if only one goal established)</li> </ul>   | 0    1    N/A<br>0    1    N/A<br>0    1    N/A  |  |  |
| <b>Roles/Responsibilities</b>   | 0=Does not demonstrate competency<br>1=Demonstrates competency   |  |  |
| Demonstrates understanding of roles and responsibilities (i.e. communicate with team members) <ul style="list-style-type: none"> <li>*Verbalizes discipline specific role to patient (by two or more professions, NA if patient not present)</li> </ul>   | 0    1    N/A  |  |  |
| Respects roles, responsibilities and expertise of team members <ul style="list-style-type: none"> <li>*Acknowledges perspectives of team members (acknowledges or affirms team members' clinical input)</li> </ul>  | 0    1    N/A  |  |  |
| Recognizes one's limitations as a team member <ul style="list-style-type: none"> <li>Offers to seek guidance from colleague of the same discipline when uncertain about own knowledge, skills, or abilities (NA if not necessary)</li> </ul>  | 0    1    N/A  |  |  |
| <b>Interprofessional Communication</b>  | 0=Does not demonstrate competency<br>1=Demonstrates competency   |  |  |
| Clarifies profession-specific language during team interactions <ul style="list-style-type: none"> <li>Avoids discipline-specific terminology (i.e. acronyms, abbreviations, etc.)</li> <li>Explains discipline-specific terms when necessary (i.e. responds to requests for clarification in a professional manner, NA if no requests)</li> </ul>  | 0    1    N/A<br>0    1    N/A   |  |  |
| Uses effective communication tools and techniques with patients and team members <ul style="list-style-type: none"> <li>*Engages in active listening to team members (verbal/nonverbal communication, or acknowledges team members' opinions)</li> <li>Engages in active listening to patient (verbal/nonverbal communication, or acknowledges patient's opinions, NA if patient not present)</li> <li>*Encourages ideas and opinions of other team members</li> <li>*Acknowledges understanding of team member ideas using verbal and/or nonverbal communication</li> </ul>                | 0    1    N/A<br>0    1    N/A<br>0    1    N/A<br>0    1    N/A   |  |  |



# C-ICE Instrument

|  |  |   |     |
|--|--|---|-----|
| Gives and receives feedback during team interactions <ul style="list-style-type: none"> <li>*Recognizes verbally and/or nonverbally when team members provide an appropriate contribution to patient care</li> <li>*Respectful of other team members (i.e. maintains professionalism)</li> </ul>   | 0  | 1 | N/A |
|  | 0  | 1 | N/A |
| <b>Teams and Teamwork</b>  | 0=Does not demonstrate competency                          |   |     |
|  | 1=Demonstrates competency                                  |   |     |
| Engages in shared patient-centered problem solving <ul style="list-style-type: none"> <li>*Reaches consensus on care planning (i.e. integrates and prioritizes ideas and opinions of other team members, may be NA in certain situations i.e. emergency)</li> <li>Identifies appropriate referral to health care professions outside the team (NA if not necessary)</li> </ul>   | 0  | 1 | N/A |
|  | 0  | 1 | N/A |
| If arises, addresses conflict among team to develop collective decision for patient (i.e. differences of opinions or priorities) <ul style="list-style-type: none"> <li>Identifies disagreement within team interactions (NA if no conflict)</li> <li>*Discusses disagreement within team interactions (NA if no conflict)</li> <li>*Works through difficult situations and/or interprofessional conflicts with respect (i.e. team members diffuse confrontations, NA if no conflict)</li> </ul> | 0  | 1 | N/A |
|  | 0  | 1 | N/A |
|  | 0  | 1 | N/A |
| Reflects on team performance <ul style="list-style-type: none"> <li>*Reflects on strengths of team interactions (NA if not instructed to do so)</li> <li>*Reflects on weaknesses of team interactions (NA if not instructed to do so)</li> <li>*Identifies how to improve team interactions (NA if not instructed to do so)</li> </ul>   | 0  | 1 | N/A |
|  | 0  | 1 | N/A |
|  | 0  | 1 | N/A |
| <b>Faculty Evaluator:</b>  | Total:   |   |     |
|  | Total Applicable Items:                                    |   |     |
|  | Earned Score:<br>(Total divided by Total Applicable Items) |   |     |
| <b>Reviewer Comments for Team</b>  |  |   |     |
| Team Strengths:  |  |   |     |
|  |  |   |     |
| Team Weaknesses:   |  |   |     |
|  |  |   |     |
| Suggestions for Improvement:   |  |   |     |
|  |  |   |     |

# Validity Testing

- IPE experts (at the university and nationally) were consulted to test content validity. They assessed instrument items as follows:
  - 1) The item is essential to be included in the instrument
  - 2) The item is reflective of the section under which it is included
  - 3) The item is easy to understand.
  - 4) Experts also rated the appropriateness of the tool in a variety of scenarios.

# Results of Expert Panel Evaluating C-ICE

| Item  | Mean | SD   |
|---|------|------|
| This quantitative evaluation tool is useful.  | 3.4  | 0.52 |
| This quantitative evaluation tool is comprehensive                                    | 3.4  | 0.52 |
| This quantitative evaluation tool is easy to understand                               | 3.6  | 0.5  |
| This tool will effectively evaluate student team performance                          | 3.4  | 0.72 |
| This tool effectively measures the IPEC Core competencies                             | 3.5  | 0.52 |
| This tool is appropriate for assessment of interprofessional skills in the following: |      |      |
| Case study analysis   | 3.2  | 0.83 |
| Clinical simulation   | 3.6  | 0.5  |
| TOSCE   | 3.6  | 0.5  |
| Practicum   | 3.4  | 0.52 |
| Clinical Practice   | 3.4  | 0.72 |
| Community Engagement (Service-Learning)   | 3.1  | 0.78 |

# Reliability Testing

- Reliability testing was conducted by having trained raters independently score student teams in simulated clinical environments.
- Raters included faculty from nursing, pharmacy, exercise science, occupational therapy, and social work.
- Raters each assessed two of five simulated clinical environments that were recorded.
- Student teams received training with the Interprofessional Team Reasoning Framework and good/bad team videos.

<http://www.jripe.org/index.php/journal/article/view/96> or <https://healthsciences.creighton.edu/interprofessional-education/center-interprofessional-practice-education-research-ciper/ipe-tools>

# Reliability Measured by Krippendorff's Nominal Alpha

| Video | Number of Raters | nKALPHA |
|-------|------------------|---------|
| 1     | 5                | 0.833   |
| 2     | 5                | 0.887   |
| 3     | 5                | 0.558   |
| 4     | 5                | 0.796   |
| 5     | 5                | 0.827   |

# Student Teams Developing Care Plans for IPE 413



# Educational Settings

- Case study analysis
- Clinical simulation
- TOSCE (Team Observed Structured Clinical Examination)
- Practicum
- Clinical practice
- Community engagement (Service learning)

# Conclusion

- C-ICE designed to comprehensively evaluate collaborative behavior and performance in practice.
- Measurement conducted by independent observer, allowing it to be used for both formative and summative evaluation.
- Unique in using IPEC Core Competencies as framework.



# Conclusion

- C-ICE is both a reliable and valid instrument to measure interprofessional interactions and behavioral change of student teams.
- Recommend observers have required orientation to discuss expected behaviors of student teams prior to using a simulation evaluation tool.



Picture: <http://www.thebluediamondgallery.com/wooden-tile/q/questions.html>

Nick Youngson - <http://nyphotographic.com/>

# Tool Websites

- C-ICE (Creighton Interprofessional Collaborative Evaluation)

<https://healthsciences.creighton.edu/interprofessional-education/center-interprofessional-practice-education-research-ciper/ipe-tools/c>

- CCEI (Creighton Competency Evaluation Instrument)

<https://nursing.creighton.edu/academics/competency-evaluation-instrument>

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