



Linking Interprofessional Education (IPE) to Interprofessional Practice

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Good evidence exists for the following:

- Interprofessional education is effective for improving attitudes, knowledge, and teamwork skills of prelicensure, graduate and clinician learners
- Interprofessional practice is effective in improving the delivery high quality healthcare, reducing error, and meeting the goals of the Triple Aim (patient experience, population health, cost)



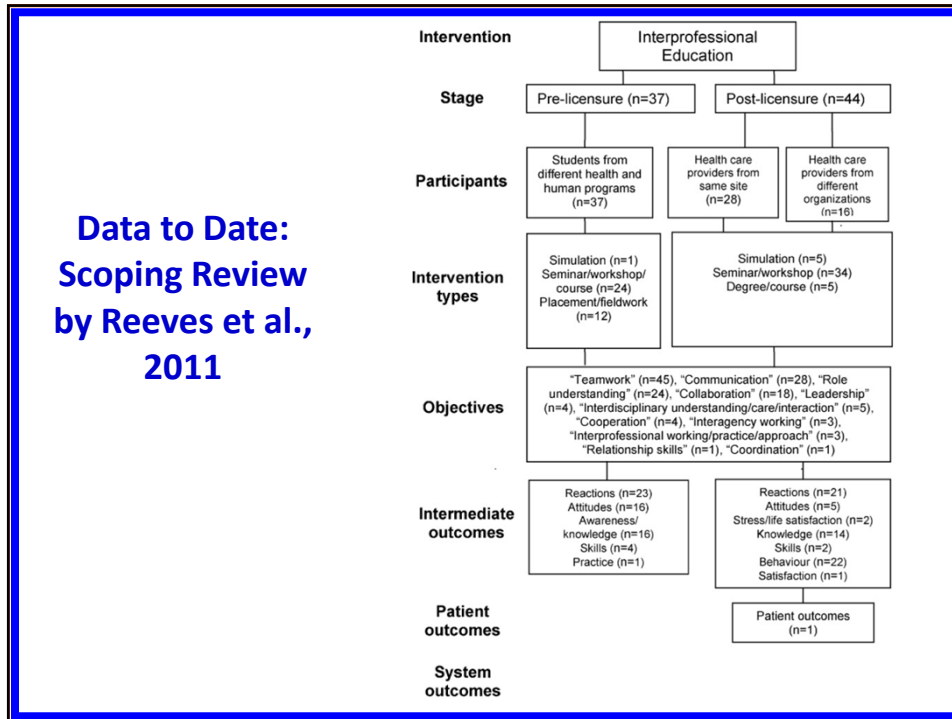
What we have not yet proved adequately:

- That interprofessional education (and team training) leads to effective team-based practice processes and improved patient outcomes in measurable and significant ways.



The goals of this presentation are to discuss

- the current evidence linking IPE to effective team-based practice processes and improved patient outcomes
- positive indicators for success in using IPE to achieve improvements in team-based practice processes and improved patient outcomes
- methodologic challenges faced in objectively studying the impact of IPE on practice process and improved patient outcomes
- how this knowledge can be applied to future research



- Data to Date:
Reeves et al. Cochrane Review 2011**
- 15 studies met the criteria
8 RCTs, 5 CBA, 2 ITS
 - 7 indicated IPE produced positive outcomes
diabetes, ED and OR teams, domestic violence,
mental health provider competencies
 - 4 had mixed results
 - 4 showed no impact
 - All had serious methodologic problems even though they met the criteria for Cochrane Review



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IOM Report April 22, 2015

Measuring the Impact of Interprofessional Education on Collaborative Practice and Patient Outcomes

“Only recently have researchers begun to look beyond the classroom and beyond learning outcomes for impacts of IPE on such issues as patient safety, provider and patient satisfaction, quality of care, health promotion, population health outcomes, and costs (Moore et al., 2009; Walsh et al., 2014).”



The Center for
ASPIRE

Data to Date: IOM 2014



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- Brashers was recruited by IOM to conduct an “expanded” Review to build upon Reeves et al. 2013 Cochrane report
- Brashers and UVA colleagues Malpass and Phillips conducted the Review in fall 2014 and reported outcomes to IOM working group in Nov 2014
- Review is incorporated into April 22, 2015 IOM Report



Inclusion Criteria for Review



- 2347 abstracts retrieved and jointly reviewed. Did not include studies reporting only learning outcomes, must report measurable practice or patient outcomes
- 39 studies identified and independently reviewed that met methodologic quality criteria and included IPE → practice process or patient outcomes
- Types of studies:
 - 10 Randomized Controlled Trials (RCT)
 - 6 Controlled Before and After (CBA) studies
 - 3 Interrupted Time Series (ITS) studies
 - 20 Uncontrolled Before and After (BA) studies



Overall Characteristics of Included Studies



- All were independently rated as high-quality studies, yet all had significant methodologic limitations
- Huge range of sample sizes for outcomes measures (range from a handful of patients in some studies to thousands of procedures in the VA studies)
- Learners all clinicians = mostly RN with MD (but far fewer MDs than RNs); some studies with PharmDs, therapists, social workers and technicians.
- Settings included U.S. academic and community acute and primary care, VA, and five international studies.



Patient Outcomes Measures



- Majority focused on patient safety issues such as adverse events and error rates
- Some measured specific disease-related outcomes, length of stay, readmission rates, and morbidity, mortality.
- Many focused on specific care quality goals (such as HgA1C)
- Two focused on provider-patient communication
- Only four focused on patient or family satisfaction



Practice Outcomes Measures



- Use of checklists and care briefings most common
- Adherence to guidelines, changes in care organization and error reporting also reported
- Nine included direct observation of teamwork behaviors at the point of care.
- Several looked at care efficiency
- Only one directly reported costs.



Assessment Tools



- Clinical database
- OR reports
- Incident/Error reports
- Validated observational tools
- Press Ganey
- Tools of own design



IPE Interventions



- Mostly in-house design (most not well described)
- Modified Crew Resource Management (CRM)
- Modified TeamSTEPPs with or without simulation



Summary of Results:



Patient Safety

- Adverse outcomes –inconsistent improvements within and across studies; difficult to discern a pattern
- Error rates declined in two studies, error reporting increased in several
- Improvements in “safety culture” a commonly described outcome, but not always correlated with decreased errors or adverse outcomes.



Summary of Results:



Care Quality

- Team training almost always implemented as one part of a more comprehensive approach to practice changes (e.g. mandatory briefings, checklists, new reporting systems)
- Many studies demonstrated positive impact on practice processes such as use of checklists, OR briefings, and adherence to best practices
- Specific patient care quality outcomes such as HgbA1C, cholesterol, BP, and mobility after stroke improved in four studies
- Morbidity and mortality changes reported in L & D and OR



Summary of Results



Patient Satisfaction

- Improved significantly in two out of four studies
- Family satisfaction improved in one out of one studies.

Costs

- Indirect measures of costs via care efficiencies reported in only a few studies
- Only one study directly measured costs - reported significant improvements for surgical patients



Characteristics of Studies with Positive Outcomes



- High learner participation rates (incentivized with release time and administrative recognition)
- Combination of IPE with goal-specific education (teamwork+ taskwork);
- Use of simulation and videotaping for training
- Focus on a high-priority clinical need for which teamwork is needed.
- Correlation of IPE intervention with observed and measurable changes in teamwork behaviors/skills prior to measuring practice or patient outcomes
- Repetition of IPE interventions with regular feedback to learners



Data from Previous Studies Suggest IPE Should also Include:



- Involvement of local stakeholders in IPE design
- Incorporation of key IPE theoretical underpinnings and clear learning objectives
- Use of Adult Learning techniques plus self-reflection
- Adequate mix of trainees from all relevant disciplines
- Comprehensive faculty development for instructors
- In situ (workplace) training
- Follow-up training opportunities



Overview of Methodologic Limitations



1. Difficulty controlling for all the variables

- a) Inability to control for differences between control and intervention study groups
- b) Inability to control for multiple other simultaneous practice changes that affect patient and practice outcomes



Overview of Methodologic Limitations

2. Lack of clear, comparable, and provider – and patient-centered outcomes reporting

- a) Heterogenous nature of reported outcomes (? selective reporting)
- b) Paucity of evidence for provider-centered changes in satisfaction and turn-over
- c) Paucity of evidence for patient-centered changes in satisfaction and perceptions of care
- d) Lack of studies addressing cost outcomes (business case)



Overview of Methodologic Limitations

3. Lack of consistent high-quality IPE training programs and inadequate follow up

- a) Lack of evidence-base for the type and quality of the IPE intervention
- b) Poor description of participants (how many, which disciplines) and lack of clarity if those trained together actually work as a team in the practice setting
- c) Lack of adequate timeline to document sustained changes in outcomes



Overview of Methodologic Limitations



4. Lack of clear documentation that training resulted in clinical behavior change prior to measuring outcomes

- a) Only a few measured teamwork behaviors in simulation or clinical setting after training
- b) Most went from IPE training event straight to patient outcomes measurements
- c) Difficult to conclude that training impacted patient outcomes unless changes in behavior are documented




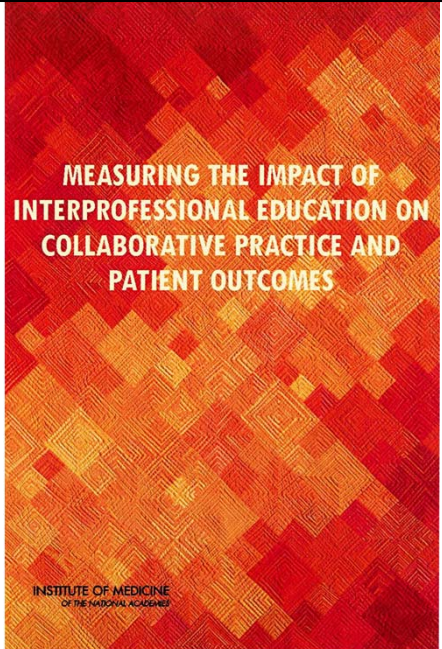
Brashers Review: Suggested Framework for Future Studies

- Control for other variables
 - Conduct large scale controlled studies
 - When this is not possible, consider conducting well-designed ITS studies
- Select Appropriate Outcomes Measures
 - Choose objective and relevant practice, provider, patient, and cost-related outcome measures
 - Choose measures prospectively and report all results.
 - Obtain measures at multiple points prior to and after the IPE intervention to document changes within the context of other practice changes and determine whether improvements are sustained



Brashers Review: Suggested Framework for Future Studies

- Optimize IPE interventions
 - Ensure that the IPE intervention is theory-, evidence-, and competency-based
 - Provide adequate instructor/faculty development
 - Incentivize learner participation
- Observe and measure team-behaviors in the clinical setting prior to collecting practice or patient outcomes data.
 - Creates much stronger link between training and outcomes
 - Need to implement nationally-shared measures of teamwork competencies so studies can be compared



MEASURING THE IMPACT OF
INTERPROFESSIONAL EDUCATION ON
COLLABORATIVE PRACTICE AND
PATIENT OUTCOMES

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IOM (Institute of Medicine). 2015. Measuring the impact of interprofessional education on collaborative practice and patient outcomes. Washington, DC: The National Academies Press.

Conclusion 1

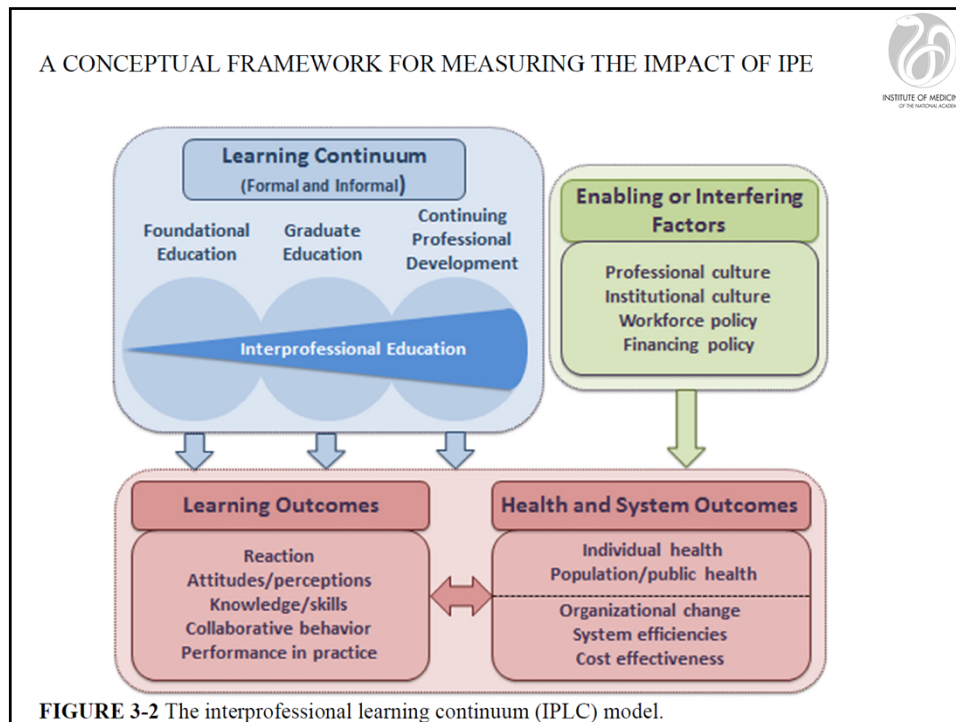


- Without a purposeful and more comprehensive system of engagement between the education and health care delivery systems, evaluating the impact of IPE interventions on health and systems outcomes will be difficult.

Conclusion 2



- Having a comprehensive conceptual model would greatly enhance the description and purpose of IPE interventions and their potential impact. Such a model would provide a consistent taxonomy and framework for strengthening the evidence base linking IPE with health and system outcomes.



Conclusion 3

- More purposeful, well-designed, and thoughtfully reported studies are needed to answer key questions about the effectiveness of IPE in improving performance in practice and health and system outcomes.

Appendix A

Review: Measuring the Impact of Interprofessional Education (IPE) on Collaborative Practice and Patient Outcomes

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Jessica Malpass, Ph.D., R.N., John Owen, Ed.D., M.Sc.*



“Hybrid” recommendations by Drs. Cox and Brashers for IOM panel April 22



- Address an urgent clinical need
- Design/adopt a meaningful conceptual model
- Engage leadership
- Include a team of evaluators –use a mixed methods approach
- Choose measurement tools and outcomes carefully
- Identify the right learning and practice sites
- Create an evidence-based IPE intervention
- Provide high-quality faculty/preceptor development
- Obtain immediate, intermediate and long term outcomes data
- Calculate return on investment



Primary Reference:



Brashers V., Phillips E, Malpass J, Owen J.
**Review: Measuring the Impact of
Interprofessional Education (IPE) on
Collaborative Practice and Patient Outcomes.**
(Appendix A)

Institute of Medicine Report April 22, 2015



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