



Background on the Re-Launch of the Measurement Instrument Collection and the New Assessment and Evaluation Home Page on the National Center Website

Connie C. Schmitz, PhD, and Barbara F. Brandt, PhD

National Center for Interprofessional Practice and Education

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The Early Measurement Collection

Since 2014, the National Center for Interprofessional Practice and Education (National Center) has been a “go-to” place to find measurement tools for assessing students, residents and clinicians in a variety of interprofessional teamwork perceptions and skills, and evaluating programs designed to promote interprofessional collaborative practice. In its first iteration, the Measurement Instrument Collection (Collection) housed a mixture of published tools from two sources: 1) those identified in a variety of sources by National Center staff, and 2) instruments uploaded by community members into the National Center Resource Center. The latter, community submissions, included both nationally recognizable instruments, hosted by government agencies or professional societies, as well as “home-grown” tools that served local grant-funded projects and curriculum needs.

At the time, to fulfill its national coordination role and to respond to the significant volume of requests, the National Center’s approach in creating the Resource Center was an entirely community-generated, open-source platform which encouraged sharing among members without formal peer-review. Therefore, the National Center encouraged community feedback on the Collection with the website’s “likes” feature next to each tool, and by a network of community moderators, who were asked to promote dialogue among users. The open-source philosophy at the time anticipated that the best tools would emerge as a result of “communities of practice” experimenting with the tools. The National Center intentionally did not position itself to either recommend or exclude instruments from the Collection.



Mirroring the state of the field, the predominant types of tools in the Collection were self-report questionnaires measuring attitudes about (a) other professionals, (b) interprofessional learning, or (c) the concept of interprofessional teamwork / collaborative practice. The Collection also contained many surveys of individuals' perceptions of interprofessional relationships and collaborative practices in the work place. Using the Kirkpatrick evaluation framework long used in the interprofessional education and collaborative practice literature, these types of tools represent Levels 1 (reaction) and 2 (attitudes / perceptions), in that they capture reactions to education efforts, attitudes believed to predispose people towards certain behaviors, and subjective perceptions amenable to change. Such tools are useful for collecting needs assessment and baseline data, but they serve a limited range of evaluation needs in the critical Kirkpatrick 3, 4, 5 levels of knowledge/skills, collaborative behaviors, and performance in practice (Kirkpatrick D & Kirkpatrick J, 2006; Barr, et al., 2005).

Why the Collection Needed to Evolve

Based upon what has been learned through experience and interactions with those who seek measurement tools and information, the National Center needed to evolve its thinking about the Collection (and about assessment and evaluation in general) for five main reasons:

- 1) **Consumer demand.** Assessment of interprofessional education and collaborative practice has consistently – and surprisingly --been one of the top requests of the National Center since 2013. After the National Center launched its Collection in 2014, it experienced unexpected demand for help from community members to “choose the right tool”. Members were seeking measurement guidance and expertise (i.e., “just tell me what to use”); they wanted more than a tool repository. Today, there are so many tools available (a typical literature search begins with over 10,000 abstracts to review), it is difficult for even experts to know what’s best – and what’s “best” depends to a great extent on the particular assessment context and specifically what is being assessed. Today, most National Center community members are educators without research and measurement backgrounds and expertise. It has become apparent to the National Center that community members need help understanding



how to make the right choice and how to use tools wisely. In response to this need, the National Center commissioned the Schmitz & Cullen [“Primer”](#) on measurement, which was made available in 2015 (see below).

2) **Popular doesn’t mean good.** Given the state of the field, tool selection in the interprofessional education and collaborative practice field has been mostly word-of-mouth and based on reputation. We hoped that the National Center’s open-source philosophy to make instruments and literature available to support the end-users would facilitate thoughtful consideration of and conversations about measurement tool selection. Instead, the philosophy continued to promote the “word of mouth” approach. For example, tools such as the Readiness for Interprofessional Learning Scale (RIPLS) – a flawed instrument – were rapidly adopted because it was readily available, and it was widely used because of that ease of access. Indeed, the National Center originally included this instrument in the Collection because of the considerable peer-reviewed literature since 1999. As a result, people were downloading the RIPLS from the Resource Center, believing that whatever we put on our website was recommended by the National Center. Our contribution to its popularity caused us to rethink our open-source policy and the need for a more carefully designed collection.

3) **Gaps in the Collection.** The lack of appropriate assessments and tools to measure the effects of interprofessional education on collaborative practice, and the effects of collaborative practice on Triple Aim outcomes, is well-reported in the literature (e.g. Reeves, 2016, Pechacek et al, 2015). There have been multiple calls to move the field forward. The National Center’s experience with the National Innovations Network (Network) and building the National Center Data Repository (NCDR) identified an especially acute need to find good measures of “teamwork,” as experienced by different kinds of groups working in different education and clinical environments. These pressures made even more visible the limitations in our early Collection and support for the demand for use of tools.



4) **Messiness of the Collection.** Because of its history, tools could be found in two different places on the website: The Resource Center (community-generated) and the Measurement Collection (National Center staff review and selection). It wasn't always clear why a tool was in one place or the other, and sometimes they were in both. Additionally, community members who upload documents are asked to designate the type of submission from a drop-down list of options, including the option of calling it a "tool." Some of these "tools" were planning documents or guidelines, rather than what we would call assessment tools. Further, the descriptive profiles of the tools varied considerably in terms of format, specifics, and quality. Tools identified in 2014 by the National Center were written by an evaluation expert and a staff member with an evaluation background, using a standardized format that included psychometric information and additional research references. In contrast, tools submitted by community members followed no set format in their profiles. Tool *authors* tended to include more research details than those submitted by tool *users*. A few author submissions, however, can be considered more self-promotional in nature than providing objective information (e.g., *"...is the most comprehensive tool of its kind"*).

5) **Assessment is more than a tool.** Last but not least, the experience of the first two years with the Collection and with the Network highlighted the need to build capacity among our membership not just in tool selection, but in the principles and rigors of assessment planning and strategies for evaluation. The National Center recognized the opportunity to provide assessment resources (materials) and programming; to teach people how to fish, not just provide the fish.

For all these reasons, the National Center asked Constance (Connie) Schmitz, PhD (an educational psychologist working as a consultant for the National Center) to redesign and re-launch the Collection. During the course of this year (2016), Connie worked with a team of experts (Teresa Russell, PhD and Justin Purl, MS from the Human Research Resources Organization (HumRRO), Eduardo Salas, PhD Professor and Allyn R. and Gladys M. Cline Chair of



Psychology from Rice University, and the National Center team to create the “Assessment and Evaluation Home Page.”

The Assessment and Evaluation Home Page

The purpose of the relaunched Assessment and Evaluation Home Page is to:

1. House the Measurement Instrument Collection
2. Provide ancillary resources to promote best practices in assessment and evaluation

The Home Page and subsequent components were re-designed to:

- Provide a more user-friendly navigation system that enables viewers to better search for instruments and find resources.
- Provide newly written, standardized, descriptive profiles for each of the 48 instruments currently in the Collection. Many of the tools are new to the Collection, and were identified by Eduardo Salas, an internationally recognized expert on teamwork and teams who has been working with the National Center to develop Practical Guides on teamwork and performance measurement. Other tools were identified through literature review and networking.
- Provide selected resources to help National Center stakeholders understand basic measurement principles, avoid flawed tools, and benefit from a “consumer report” of teamwork tools. As shown on the Home Page, these resources are currently readily available.
 1. The “Primer” on measurement – [Evaluating Interprofessional Education and Collaborative Practice: What Should I Consider when Selecting a Measurement Tool?](#) by Connie Schmitz and Michael Cullen (2015).



2. An Editorial published in the *Journal of Interprofessional Care*, – [To RIPLS or not to RIPLS: That is Only Part of the Question](#) by Connie Schmitz and Barbara Brandt (2015).
 3. The “Consumer Report” of 54 teamwork assessment tools – ***Assessing Health Care Team Performance*** by Eduardo Salas and students from the Rice University (2016).
- Provide overviews of and links to the National Center’s series of “Practical Guides,” vols. 1-5. These are concise (10-15 page) guides, developed under the leadership of Barbara Brandt, Frank Cerra, MD Senior Advisor (Retired) at the National Center, Eduardo Salas, and Teresa Russell. The first three Guides were piloted in a pre-conference workshop on teamwork assessment led by Drs. Salas, Russell, and Schmitz for the National Center’s inaugural *Learning Together at the Nexus Summit* (August 22-25, 2016). Incorporating feedback from the Summit attendees, these three were then updated and then sent out for in-depth peer review. They were then revised prior to release. As shown on the website, these first three Guides became available for purchase in January, 2017. Volumes 4 and 5 are scheduled for release later in 2017.
1. ***What is Teamwork in Interprofessional Collaborative Practice?*** — Introduces and explains teamwork concepts, based on the literature of effective teams across many disciplines, including health and social care. Release date: January 30, 2017.
 2. ***Assessing Interprofessional Collaborative Practice Teamwork*** — Describes important measurement concepts for assessing IPCP teamwork competencies and performance across the continuum, from undergraduate training through continuing professional development. Release date: January 30, 2017.
 3. ***Steps for Developing an Assessment Plan*** — Provides a step-by-step process for developing an assessment plan of IPCP teamwork competencies and performance; can be applied at the undergraduate, graduate, or professional development levels. Release date: January 30, 2017.



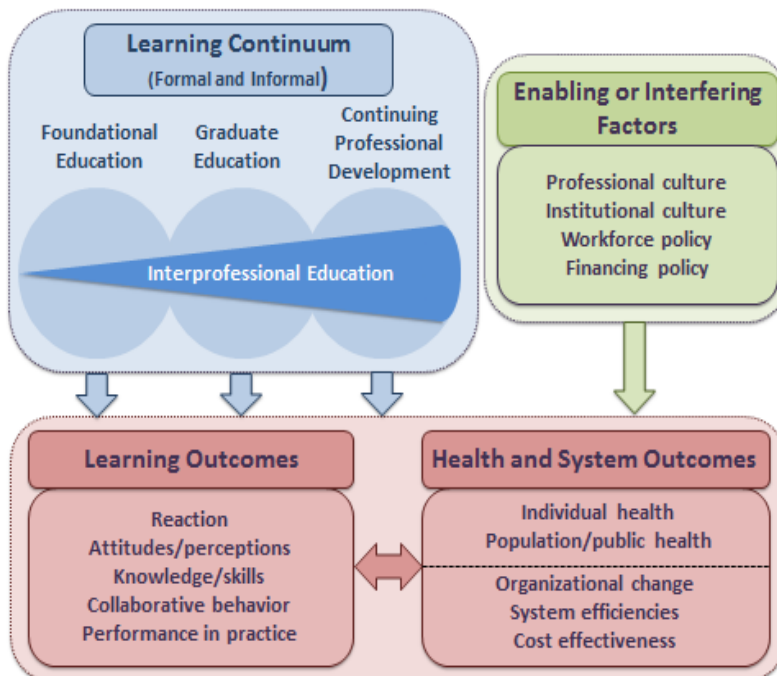
4. **Assessing Teamwork: Stories from the Field** — Provides case studies of assessing IPCP teamwork in academic and practice settings. To be published in Spring 2017.
5. **Incorporating IPCP Teamwork Assessment into Program Evaluation** – Provides guidance for evaluating programs designed to strengthen teamwork capacity and performance. To be published in Fall, 2017.

Guiding Principles of the Measurement Instrument Collection’s Redesign

“Fewer tools, but also new tools in order to fill gaps”

To advance the field of IPECP, we need to shape the Collection so it offers tools for all levels of the Kirkpatrick framework for evaluation, as modified by Barr, et al. (2005) and reinforced in the National Academy of Medicine (formerly Institute of Medicine)’s report, *Measuring the Impact of IPE on Collaborative Practice and Patient Outcomes* (2015). We therefore limited the number of attitudinal surveys and increased the number of tools that measure:

- 1) Skills (e.g., changes in teamwork, leadership skills)
- 2) Behaviors (e.g., changes in individuals, team performance, collaborative practices)
- 3) Outcomes (e.g., changes in organizational practices)
- 4) Outcomes (e.g., benefits to patients / clients, society)



Reprinted with permission from [Measuring the Impact of Interprofessional Education on Collaborative Practice and Patient Outcomes](#) (2015), by the National Academy of Sciences, courtesy of the National Academies Press, Washington, DC.



“No bad tools in the Collection”

In reorganizing the Collection, we sought to keep or find tools with the following characteristics:

- 1) Clearly focused on *interprofessional* practice or education
- 2) Publication history
- 3) Psychometric data
- 4) Broadly applicable to the professions
- 5) General quality
- 6) Fills important gap
- 7) Accessible via our website, other public sites, journal subscription, or from the author

What did we exclude?

- Tools that measured related important constructs (e.g., “patient centered care”), but weren’t truly focused on interprofessional practice or education
- Tools that focused on just one provider group’s point of view regarding collaboration
- Instruments that assessed the degree to which young trainees hold stereotypical views of other professions, because the consequential validity of these items is in question. That is, we lack evidence that there are no *unintended* consequences of items, such as reinforcing negative stereotypes.
- Instruments that were too overtly pushing a pro- IPECP agenda with biased items
- Instruments that were poorly constructed
- Licensed instruments were largely eliminated from consideration because we did not have access to a copy of the tool

Another decision rule we employed in selecting instruments was to focus on the original tool, or the most recent version by the original authors, and not try to include all of the possible adaptations or revisions by others. This rule in particular may be revisited in the future, if time and person power becomes sufficient to track down all possible subsequent versions, and if later ones prove to be qualitatively better than the original.



We included new tools identified in Eduardo Salas' 2016 "Consumer Report" and from the following literature reviews:

- Valentine, 2014— a broad search of teamwork literature led to a subset of assessment tools with good validity evidence, but not all of the tools had actually been implemented in a health care setting.
- Havyer, 2014 – a large review of tools designed to assess teamwork outcomes in internal medicine, along with validity evidence.
- Havyer, 2016 – a large review of tools deemed most appropriate for assessing medical students on the AAMC's four interprofessional collaborative competencies.
- Shoemaker, 2016 – a review of instruments to measure interprofessional team-based primary care, which led to a web-based tool repository.

"Instrument profiles should be fair, informative, concise, and clear"

- Our overall purpose in writing the instrument profiles for the Collection is not to judge the tools, per se, but to provide objective information and guidance to users. There is no such thing as a perfect tool. As stated previously, we believe all of the tools in the new Collection are of high enough quality to use for their intended purpose.
- The Overview for each tool's profile says what type of tool it is, describes its intended audience, setting, and purpose; it summarizes the tool's content, and highlights the major findings from validity testing. In some cases, we comment on potential applications of the tool.
- The Resource section provides links to the original study and to the instrument if it is "open source." In some cases, we included links to other websites where the tool and accompanying materials could be found, such as the MedEdPortal Directory and



Repository of Educational Assessment Measures (DREAM) Collection (see below), which provides peer-review critiques of measurement tools.

- Other sections of the profile provide information on instrument content, sources of data, instrument length, formatting, scoring, language, and accessibility.
- Last but not least, the Validity section lists evidence, reported in the article, according to the National Standards' five sources of validity data: content, response process, internal structure, relationship to other variables, and consequences. When reporting reliability and validity estimates in this section, we use adjectives such as “low,” “moderate,” “strong,” “good,” and “very good.” We did this to make the numbers more meaningful to the majority of users of the Collection who do not have expertise in measurement.
- Prior to launching the website, we contacted all of the authors and asked them to review their profiles for accuracy and completeness. Several important corrections and additions were made as a result of their reviews.

“Lead but do not prescribe”

The National Center can influence what tools people use by virtue of what we include / exclude from the Collection, and from our efforts to educate and promote best practices. We stop short, however, of trying to rank the tools, or even provide recommendations. This is because:

- Quality is an integrated judgment about the appropriateness of a given tool for a given context and purpose; it is hard to make definitive judgments from a 10,000-foot review.
- A single editor can't effectively judge all tools. In the coming year, our Advisory Board will be asked to provide further counsel on the overall shape and quality of the Collection. In so doing, they may advise us (and help us) to address tool strengths and limitations more overtly, or to set a more rigorous bar for what goes into the Collection.
- The Collection is a living thing. New tools are always being found or developed; new research on existing tools may come to light. Rankings and recommendations would soon be out of date.



“Acknowledge other repositories”

Our Collection was not the first, nor is it the only repository for measurement instruments focusing on IPECP. The National Center created the Collection in response to overwhelming demand. Other sites are listed below, along with a brief summary of their content.

- The Canadian Interprofessional Health Collaborative (CIHC) – www.cihc.ca – provided us with a starting point in developing our Collection. As stated on their website (October, 2016), many of the tools listed there were developed or used by 20 IPECP projects in the “Evolving IECPCP Framework” (D’Amour and Oandasan, 2005) in Canada. The collection houses many practical measures for needs assessment and for formative evaluation of changes in organizations, faculty, administrators, and students. Most of the tools are qualitative in nature, e.g.: focus group protocols, diaries, journals, and logs; non-participant observation forms; field notes, tools for social network analysis; protocols for reviewing documents; and some course evaluation tools.
- Several years ago the Association of American Medical Colleges (AAMC) started its “Directory and Repository of Education Assessment Measures (DREAM)” collection (www.mededportal.org). This repository contains “critical synthesis packages” of assessment tools submitted for publication in the MedEdPortal. The “packages” contain a peer-review critique of the instrument as well as the tool and accompanying materials, such as scoring guidelines or links to manuals. These descriptive profiles include information similar to ours, but the reviewers go further in identifying a tool’s strengths and limitations, based on a more comprehensive analysis of validity data across multiple studies (when possible). Of the over 100 tools listed, about a dozen are relevant for IPECP.
- The literature review conducted by Shoemaker, et al., (see above), was conducted as part of an Agency for Healthcare Research and Quality (AHRQ) grant that led to the establishment of a website: <http://primarycaremeasures.ahrq.gov/team-based-care/>. The site contains 48 tools, with brief descriptive profiles, and links to references.



Conclusion: “Continue to grow”

The National Center was funded to provide leadership in scholarship, research and evidence to advance the field of interprofessional education and collaborative practice. To this end, the Collection still has many gaps. More research on a set of the most promising tools needs to be done. Involving researchers and end-users, this research needs to go beyond content, response process, and internal structure / construct validity. We need to see how data from the instruments correlate with / predict outcomes. This type of research is not inexpensive or easy; it requires sustained funding and collaboration. The National Center hopes to partner with many of the existing leaders and organizations devoted to IPECP to move this agenda forward.

Measurement Collection Re-Design Team

- Connie C. Schmitz, PhD, consultant to the National Center for Interprofessional Practice and Education (National Center)
- Teresa Russell, PhD, Principal Staff Scientist with the Human Resources Research Organization
- Justin Purl, MS, Staff Scientist with the Human Resources Research Organization
- Eduardo Salas, PhD, Professor and Allyn R. and Gladys M. Cline Chair of Psychology at Rice University
- Huy Hoang, MS, Web Developer with National Center
- Jenna Callinan, Student Administrative Assistant, National Center
- Curt Turner, MBC, Communications Manager, National Center
- Angela Willson, Education and Training Manager, National Center



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