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Establishing an AHRQ Learning Collaborative: A White Paper

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Executive Summary

At the 2010 National Research Service Award (NRSA) meeting, directors of T32 training programs funded by the Agency for Healthcare Research and Quality (AHRQ) discussed the importance of sharing knowledge and working more closely together. Following this rich discussion, AHRQ issued a request for proposals for the formation of a study group to explore the feasibility of establishing a mechanism for collective knowledge production, specifically the formation of a learning collaborative. Collaborations are formed when two or more stakeholders invest their resources (e.g., talent, information, money), to solve problems that they could not solve by themselves. Central to this concept of collaboration is knowledge translation and knowledge transfer.

Collaborations have become necessary for organizations performing complex work, with emerging technologies and rapidly changing environments. The rapidly changing field of health services research necessitates knowledge transfer and translation among health services researchers spanning multiple disciplines and housed in a number of organizations representing the public and private sectors in academic, medical, public health, and numerous other settings.

Recognizing the rapidly increasing complexity of the field of health services research, all T32 program directors, assisted by Brenda Harding and external staff from Team PSA (Professional and Scientific Associates), were invited to participate in an initial conference call that provided an overview of the concept of an AHRQ Learning Collaborative. This initial conference call helped establish the broad goals of the AHRQ Learning Collaborative, which are to: foster partnerships across institutions; facilitate the exchange of information, networking, and mentoring opportunities; and improve the training of health services researchers by sharing best practices, curricula, and innovative training efforts across institutions.

To gain a better understanding of the unique needs, preferences, and challenges of AHRQ training programs with respect to achieving these goals, a brief initial survey involving 10 of the 18 training programs was conducted. Responses were received from 8 program directors, 14 predoctoral trainees, and 2 post-doctoral trainees. Respondents recommended three key functions for an AHRQ Learning Collaborative: sharing, collaborating, and networking. In particular, some of the specific areas for sharing included: curricula, training opportunities, methods, best practices, ideas and information, career resources, data sources, and presentation opportunities. Collaboration on research projects and publications was often noted as a potential function of the collaborative. Lastly, the prospect of developing relationships among students, alumni, and fellow researchers was seen as a way to network, seek mentorship, enhance communication about the exchange of ideas and future opportunities, and perhaps acquire publications.

To explore these themes in more detail, 15 semi-structured interviews were conducted (five each with program directors and pre- and postdoctoral trainees). Additionally, interviews were conducted with individuals with expertise in establishing and working with collaboratives. These experts represented: AcademyHealth, AHRQ, The Institute for Healthcare Improvement, the NEWMEDS Project, and the PCMH/MU (Patient-Centered Medical Home/Meaningful Use) Collaborative. Applying a conceptual framework developed from a literature review of collective

learning, themes were identified and consolidated as they emerged. Through the in-depth interviews, it became clear that both program directors and trainees view the collaborative as a tremendous opportunity for augmenting the learning process at their home institutions, specifically through sharing, building relationships, and developing an identity.

With regard to sharing, the AHRQ Learning Collaborative could shed light on program characteristics with respect to research methods training, knowledge of techniques for secondary data collection and analysis, and overall competence in health services research. With regard to building relationships, trainees expressed a strong belief that mentoring from senior health services researchers was a critical element of their training and professional development and that faculty at their home institutions could leverage their networks of expertise for these purposes. Related to building relationships is the development of a health services research identity. Specifically, trainees agreed that, within the field of health services research, there is a substantial but untapped opportunity to develop a well-solidified community of health services researchers and indicated that the AHRQ Learning Collaborative could be a valuable mechanism for creating this community among fledgling health services researchers, specifically through T32 training programs.

In order to organize and manage the collaborative, AHRQ could play a critical role in institutionalizing the collaborative, and program directors could be co-champions of the collaborative alongside trainees. Both program directors and trainees agreed that, although a variety of communication strategies could be effective, strong networks require periodic face-to-face meetings, at least initially. Additionally, an effective learning collaborative must operate within the information-rich environment in which we exist, and it must be sensitive to time and money constraints.

In order to assess the impact of the collaborative, measures of success should be directly linked to the stated goals and activities of the collaborative, which may change over time and/or with changes related to different issues the collaborative wishes to address. Additionally, these measures would have to be clearly linked with changes in individual training programs that are expected to result as a direct consequence of the efforts of the collaborative.

Recommendations

Based on a synthesis of the current literature as well as the essential insight from current trainees, program directors, and experts in the field, recommendations for an AHRQ Learning Collaborative are as follows:

Structure: Explore establishing two mechanisms for mutual helping among T32 programs: one, an informal, voluntary network of AHRQ T32 programs, and two, several ongoing learning collaboratives that would be supported by formal communication mechanisms, such as in-person meetings and virtual forms of communication.

- Following the T32 program directors meeting, program directors, trainees, and faculty were invited to join a LinkedIn AHRQ Training Program Group, which included three sub-groups:

one for training directors and one each for pre- and postdoctoral trainees. The network could be informal and Internet-based, with portals and other electronic media.

- In the startup phase, one or more learning collaboratives could be created based on new issues generated at the T32 annual meetings and/or organized around specific research interests. Each collaborative would be championed by several people and could cover a wide range of technical or problem-driven areas. The work led by Chris Forrest and Diane Martin on health services research core competencies, as well as their affiliations (at the time of that work) can be found at <http://www.biomedcentral.com/1472-6963/9/107>.

Activities: The key activities of an AHRQ T32 Network would include:

- Establishing mentoring relationships between trainees and senior researchers within and across T32 programs.
- Networking through social media and in-person events.
- Solving problems.
- Helping each other with requests for information.
- Collaborating based on complementary skills and experience.
- Pooling resources, including data, expertise among faculty and trainees, and other assets.
- Discussing critical training issues.
- Sharing best practices.

Roles and Responsibilities: The AHRQ Learning Collaborative would be a joint effort by trainees and program directors with support from AHRQ. Representatives from AHRQ, program directors, and trainees will play an important role in investing in and building social relationships across programs.

- AHRQ T32 program directors meet once a year at the annual NRSA meeting, which offers an opportunity for productive helping and collaborating.
 - Trainees could be invited to participate with program directors during T32 meetings to brainstorm about how to build capacity and enhance innovation across programs. Trainees, with the support of program directors, could co-lead and be engaged in these discussions.
 - AHRQ could support the learning collaborative by setting aside time during the annual T32 meeting to engage in collaborative activities (for example, sharing what we are learning about tough problems and identifying candidate issues for ongoing learning collaboratives).

Funding: Trainees and directors could apply for AHRQ's Small Conference Grant Program to fund and establish one-year learning collaboratives that result in workshops and sessions at the annual NRSA conference. This program is intended to encourage members to share learning, connect with stakeholders and programs, develop new thinking, and build capacity in health services research.

Launching the Collaborative: Begin preliminary conversations on issues relating to engagement and evaluation, which may include:

Engagement:

- How do we create a national identity?
- How do we cultivate and leverage an open network of training programs whose members have promising ideas and want to help each other?
- How do we create opportunities for faculty and student exchanges or linkages across programs among faculty and students with common interests (e.g., student rotations at AHRQ and/or collaboration with AHRQ researchers)?
- How do we engage the more than 1,500 past and present trainees in new and interesting ways?
- How do we find better ways to connect and develop existing AHRQ research and dissemination awards?
- How do we connect with AcademyHealth and other stakeholders around the work they are doing?
- What communication media will help to rally the people interested in collaborating?
- In addition to the Annual AHRQ T32 Program Directors Meeting, what other forms of collaboration could be conducted (e.g., webinars, in-person local or regional meetings, discussion forums, and wikis)?

Evaluation:

- Can we establish a set of common performance measures with common definitions for the purpose of comparative benchmarking across programs?
- How would the network and future collaborations help to establish a national identity for AHRQ trainees that transcends fellowship appointments and funding?
- Should one criterion for AHRQ training grant renewal be the amount of mutual helping, networking, and collaborating with other training programs the grantee has done? Would AHRQ want to establish "proof of collaboration" as part of renewal? How would this be measured?
- For each core competency, can we create a knowledge map (K-Map) that identifies the experts, practitioners, locations, and sources of knowledge? The model for this is the work that Jonathan Weiner, Diane Martin, Tim Carey, and other programs have been doing to map courses, resources, and other capabilities to health services research core competencies.
- How can we highlight achievements of former and current trainees to demonstrate the value of this investment and solidify a national identity?
- How do we work to sustain this effort and maintain buy-in over the long term?

During the 2011 NRSA conference, feedback on a draft white paper was solicited from attendees of the director's meeting. Comments have been integrated into this final white paper, which will guide the next steps for establishing an AHRQ Learning Collaborative.

Next Steps

We offer the following concrete suggestions for moving forward with the AHRQ Learning Collaborative:

- Brand the AHRQ Learning Collaborative with a name and a catchphrase that is memorable or appealing. For example: “SpAHRQ: Training the Next Generation of Health Services Researchers.” Individual T32 programs could be referred to as “SpAHRQ Plugs” because they are individually necessary but only collectively sufficient for powering the health services research engine.
 - Solicit trainees’ thoughts on a name and catchphrase. The thinking behind the name and catchphrase would have to be explained briefly and be immediately clear to others.
- Develop an explicit mission or charter.
- Develop clear objectives and/or goals. These could be selected from those suggested in this White Paper, and they could be field tested for relevance among AHRQ program directors and trainees.
- Develop routine activities. For example, a periodic check-in call or webinar on training program issues where trainees are the prime participants. Program directors, alongside AHRQ personnel, could take turns hosting the call/webinar. Another potential activity would be to publish a brief periodic letter about the AHRQ T32 programs to share program highlights and opportunities for collaboration. Finally, trainees could be “invited” into other programs’ classrooms.
- Collate a list of current AHRQ T32 trainees (pre- and postdoctoral) that includes information about research interests, current project work (intra- and inter-institutional), leisure interests (to integrate a more informal component), and contact information.
 - “Research interests” could be specific or more general. Also, information to supplement research interests could include: area(s) of expertise, research and/or statistical methodologies of interest, and theories of interest (and discipline in which they are housed).
 - Another option for this listing (or a complementary action) is to create a searchable database of trainees (similar to academic institutions’ online directories).
 - Extend the list/directory to alumni; a particular effort could be made to reach out to recent alumni (i.e., those one 1-2 years out).
- Establish “Career Ladder” interest groups (again with a memorable name) for trainees heading towards a postdoctoral degree and/or academia, the private sector, the government, a think tank, etc.

- One possible way to capture the attention of trainees might be to title these groups using their words. For example, “Major Players in ... [various sectors].”
- Collate curricula and include them in a searchable database. Curricula could also be mapped onto the core health services research competencies to highlight where opportunities for improvement exist and/or to allow programs to highlight specifically (and uniquely) how they are ensuring training in the core health services research competencies.
- Identify brokers within AHRQ T32 programs (e.g., directors, faculty, and trainees) who could create buy-in for working collaboratively across T32s.
 - Brokers could begin with the questions identified in the “Engagement and Evaluation” portion of the recommendations and report back (perhaps during the periodic check-in call and/or webinar as part of the routine activities).

1. Introduction

The AHRQ Learning Collaborative is an effort across institutional health services research (HSR) training programs funded by the Agency for Health Services Research (AHRQ) to foster an ongoing dialogue among program directors, current and past pre- and postdoctoral trainees, program faculty, and AHRQ leadership. The goals of this collaborative are to foster partnerships across institutions; facilitate the exchange of information, networking, and mentoring opportunities; and improve the training of health services researchers by sharing best practices, curricula, and innovative training efforts across institutions. It is worth noting that these goals are a work in progress, and we expect that they will be refined following the release of this white paper. The tasks associated with these goals will be discussed in more detail throughout this white paper and in followup discussions.

This paper provides an overview of relevant theories related to organizational learning and learning collaboratives, highlight some existing learning collaboratives and networks, describe the process of gathering input for the development of an AHRQ Learning Collaborative, and synthesize the findings from that process. In addition, we will then propose next steps for establishing an AHRQ Learning Collaborative.

2. Background

On June 26, 2010, during the annual meeting of program directors from the AHRQ-funded Institutional Health Services Research Training Programs (T32 programs), the group discussed the idea of working more closely together. A rich discussion followed, and several ideas surfaced regarding how to share collective knowledge and experience in ways that would build a greater capacity to connect across programs. At the end of the meeting a group of 18 training directors volunteered to be part of an informal conversational study group that would explore how to create more connections among programs and transfer program knowledge and experiences more effectively. A request for proposals (RFP) to support this initiative was issued by AHRQ, and Professional and Scientific Associates (PSA) was hired by the Agency to manage the logistics of the study group that would culminate in a draft white paper to be discussed at the June 2011 Annual AHRQ T32 Program Directors' Meeting in Seattle.

In January 2011, an informal working group of 18 program directors, assisted by Brenda Harding from AHRQ and staff from PSA, began to explore establishing a learning collaborative across the 28 AHRQ-funded T32 programs (Appendix A). Participants agreed that a survey was needed to understand the unique needs, preferences, and challenges of AHRQ training programs with respect to developing ways to help each other.

Responses came from 10 of the 18 surveyed training institutions. In total, 24 individuals responded to the survey: 8 program directors, 14 predoctoral trainees, and 2 postdoctoral trainees. To follow up on the survey, we conducted semi-structured, telephone interviews between February and June 2011. We conducted a total of 18 interviews; each interview lasted approximately 45 minutes, and extensive notes were taken. A team of three researchers conducted the interviews; in most cases, each informant was interviewed by only one researcher.

Analysis proceeded in two steps. First, we used a literature review to develop a conceptual framework of a learning collaborative as a construct. In the second step, each researcher identified themes from the interviews and consolidated those themes into emergent dimensions for a learning collaborative. These dimensions are presented in this white paper and serve as a basis for many of the recommendations offered for building mutual helping relationships among training programs.

In the next section, we present the theoretical frameworks that guided our work and shaped our conceptual understanding of learning collaboratives. Extending from this conceptual basis, we identify some existing models of collaboration, in particular highlighting practices these models have in common. Then, we present the findings of the survey and interviews and present a set of recommendations. We organized the interviews into three sections:

1. Creating Value for Program Directors and Trainees.
2. Organizing and Managing a Collaborative.
3. Succeeding and Sustaining.

3. Theoretical Frameworks

Need for Collaboration in Health Services Research

According to Gray,¹ collaborations are formed when two or more stakeholders invest their resources (e.g., talent, information, money), to solve problems that they could not solve as individuals. Collaborations are defined as:

...a process in which autonomous actors interact through formal and informal negotiation, jointly creating rules and structures governing their relationships and ways to act or decide on the issues that brought them together; it is a process involving shared norms, and mutually beneficial interactions...²

Put another way, a collaboration is “a mechanism for collective action.”³ For researchers, collaboration provides an opportunity to share individual intellectual strengths and expertise and to collectively expand the boundaries of knowledge through joint production. Irrespective of the intended outcomes of the collaboration, the “individual-to-collective” process is critical to success both theoretically, because individuals “are exposed to diverse kinds of relevant and legitimate information”⁴ and practically because these individuals are likely competing with one another for resources (i.e., funding). Thus, collaboration is a mechanism for increasing understanding of and appreciation for others’ perspectives (through the joint production process) and doing so in a more efficient manner. Collaborations have become necessary for organizations performing complex work, with emerging technologies and rapidly changing environments.²

Central to this concept of collaboration is knowledge translation and knowledge transfer. Knowledge translation involves the exchange, assessment, review, and utilization of evidence-based research in organizations.⁵ Distributing knowledge by traditional mechanisms, such as publications and peer-reviewed journals, however, creates a gap between “what we know” and

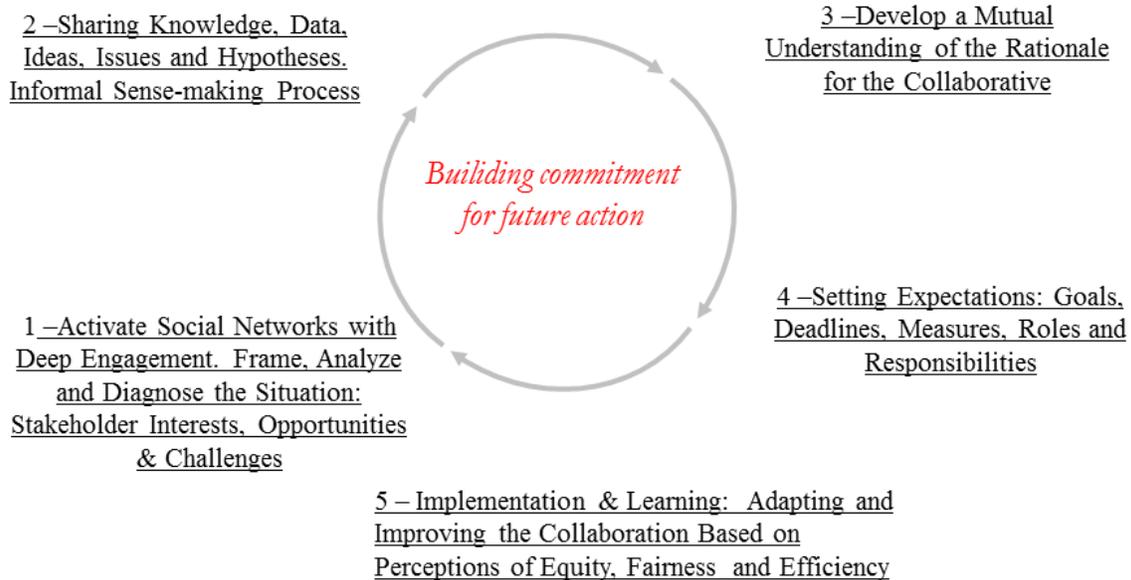
“what is being done.”⁶ Sometimes, good scientific papers “get lost in the flood of bad papers.”⁷ Knowledge transfers across disciplines, organizational boundaries, or domains tend to be “sticky” and difficult, as opposed to fluid. Knowledge “stickiness” can occur because the source of knowledge is unreliable, the source is not motivated to support transfer, or the recipient is unable to identify, value, and apply new knowledge.⁸ Knowledge translation is particularly difficult, costly, and time consuming in the field of medicine and HSR.

However, HSR is fast changing, ever expanding, multidisciplinary, and multi-institutional. HSR is housed in and supported through research universities (especially Schools of Medicine and Public Health), academic medical centers, research institutes, and government agencies (like AHRQ and the National Institutes of Health [NIH]), as well as a multiplicity of professional associations such as AcademyHealth. If we look at the landscape (or knowledge map) of Federal training programs in comparative effectiveness research developed by Tim Carey, we find we find a case in point (Appendix B). There are 55 (Clinical and Translational Science Awards (CTSAs) and 14 Evidence-based Practice Centers, as well as DeCIDE II, K12, and NIH KM1 programs. NIH funds HSR training programs and, in addition to supporting 28 T32 programs offering both pre- and postdoctoral training, AHRQ also supports (with ARRA [American Recovery and Rehabilitation Act of 2009] funding), eight K12 and seven T32 programs specific to comparative effectiveness research. All of these programs play important roles in seeking and creating knowledge that advances the technical, social, and political missions of HSR. But how can we become more adept at sharing and transferring knowledge when the organization of knowledge is separated by programs, disciplines, and otherwise-gated communities?

Although the theoretical benefits of collaboration should exceed the sacrifices, studies report that value is created only if a collaboration can be sustained over time.^{9,10} Successful and sustainable collaborations are not self-managing; rather, they require well-explicated processes and structure and capacity building.² Capacity solves two problems: one, how to foster mutually beneficial relationships and effective participation without overloading the time and attention of members, and two, how to set common goals and work together to carry out activities related to those goals.¹⁰

A useful framework for thinking about the social requirements of a collaboration come from Fair Process Theory.^{11,12} This framework (see Figure 1) conceives collaboration as a periodic cycle of interactions. The model depends on the relational and rational processes over time. When people are deeply engaged in framing and defining a situation, exploring alternatives, and understanding the rationale for all decisions, they will commit to a course of action as long as they are able to negotiate “minimal and congruent” expectations.⁹ Evaluating commitments is based on their perceptions about fairness and reciprocity. If commitments are not reciprocal, people will renegotiate or reduce their participation.

Figure 1. Fair Process Framework for Developing Learning Collaboratives



In the next section, we review some of the literature relevant to organizing and sustaining collaborations.

Communities of Practice: A Mechanism for Organizing and Sustaining Collaboration

One novel perspective on knowledge translation and collaboration comes from the work of Jean Lave and Etienne Wenger.¹³ According to Wenger and Snyder,¹⁴ today knowledge only exists in learning networks or what are called “communities of practice.”

Communities of practice are groups of people who share a concern or a passion for something they do, and learn how to do it better as they interact regularly...¹⁵

Wenger argues that communities of practice have three characteristics: a domain, a community, and a practice. First, there is a shared identity, defined by a domain or area of interest. Members are committed to that domain. Second, a community is defined by members who help and share information. When help is given, it "enables another person to solve a problem, to accomplish something, or make something easier."¹⁶ Help is a social process that runs to the heart of any successful collaboration.²¹⁷ Third, practice involves practitioners who interact regularly and who

develop and share tools, concepts, resources, and capabilities for dealing with recurring problems and opportunities. To enable “reflective practitioners,” some face-to-face interactions are essential.

Community of Practice theory argues that many different experts in widely dispersed universities are doing their own research, using their own methods, and making scientific progress much more slowly than if everyone worked together. Organizations that can source external knowledge via networks and collaborative partners build innovative products and effective programs faster than internally focused organizations.^{18,19}

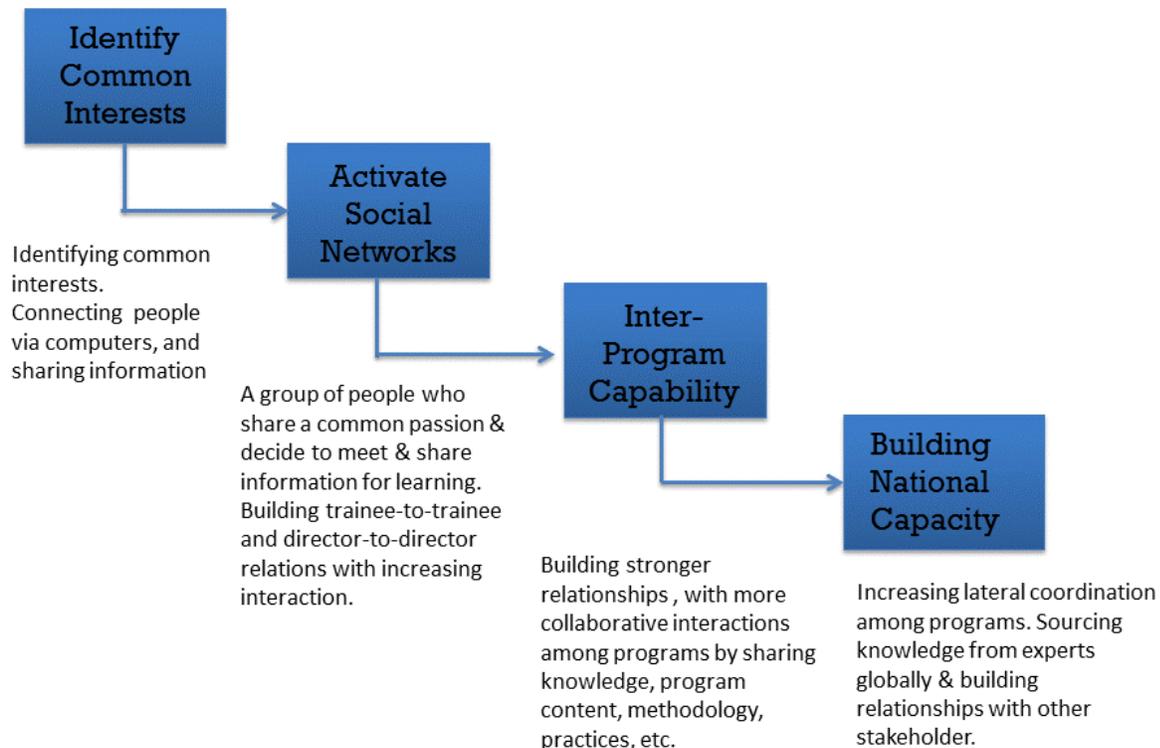
According to Cross and Parker,²⁰ collaborations facilitate two major processes: one, making sense out of the opportunities and problems in the environment, and two, coordinating responsive actions. Although the type of collaboration depends on the situation, the nature of the work and the objectives require building a network of relationships. Two network archetypes have been noted:

1. Customized response networks that can define problems rapidly and perform sense-making activities.
2. Routine response networks that can deal with well-defined problems and solutions.

When problems are very complex, ill-defined, require sourcing knowledge from multiple disciplines or locations, and require different levels of expertise, groups can outperform individuals. Academic fields and industries driven by innovation and science have developed a capacity to source knowledge by learning from collaborations and learning how to collaborate with external partners.

Recently, an unprecedented number of organizations have blossomed into communities of practice to accelerate scientific and other advances. One successful model for developing collaboration was developed by MindTree, an information technology company.²¹ MindTree wants to deepen collaboration and learning by creating communities of practice. They conceptualize knowledge management and communities of practice as a developmental pyramid that starts with common interests and can ultimately build capacity. In Figure 2, we show how this might work to build a collaborative among the AHRQ programs. The model in Figure 2 works as follows. When AHRQ trainees or faculty from two or more programs share interest in an issue, topic, data set, method, or theory, a potential community of interest emerges. At this basic stage, there are no objectives and not much information sharing or impact. A social network is activated, and stage two develops when there is shared learning across programs via interpersonal communication, activity, and interactions. At this stage, trainees and/or faculty have matured beyond shared interests and have discovered a way to build group competency across programs. The third stage develops a capability among several programs by transferring data, methods, tools, and best practices. In the final stage, not only has a national training capacity been established in a specific area, there also are bridges to knowledge and experts in the world who have become part of this collaboration.

Figure 2. A Developmental Model for an AHRQ Learning Collaborative



In conclusion, the literature notes that one key to knowledge translation and transfer is engaging researchers and users in collaborative efforts. In theory, teams can outperform the "smartest" individuals or groups when multiplex tasks require a wide range of skills, experiences, and ideas.²² The opposite can also be true. Tom Malone, who has pioneered research on collective intelligence at MIT, has bemoaned, "Having a bunch of smart people in a group doesn't necessarily make the group smart."²³ Group dynamics can lead to inferior performances well below the poorest performing members of a group. The Center for Collective Intelligence at MIT frames the challenge of collaborating as, "How can people and computers be connected so that collectively they act more intelligently than any individuals, groups, or computers have ever done before?"²⁴ The literature suggests that the relational aspects of collaborating are critical. Thomson and Perry² find that there must be complementarity and mutual benefits. Since trust is a key ingredient, collaborations cannot be forced. It takes time for the filaments to connect.

4. Existing Learning Collaboratives

Largely owing to the complexity of knowledge that exists, collaboration has become the preferred mechanism within and across a number of industries and professions.³ Appendix C details several collaboratives and networks that currently exist across North America, Europe, and Asia with an emphasis on efforts that focus on the fields of health care and health services

research. The collaboratives presented in Appendix C appear to have the following characteristics in common:

1. There is an explicit mission or charter and, in some cases, clearly articulated objectives and/or goals driving the efforts of the collaborative.
2. Collaboratives contain a set of routine activities that are customizable depending on the needs of constituents. Examples of routine activities that are customizable include: continuous learning work groups, peer learning groups, sub/interest groups that convene during larger meetings, “action learning” that meets constituents where they are, and flexible work plans that allow for innovation.
3. Relationship-building is emphasized through ongoing communication, which occurs through a variety of mechanisms, including in-person meetings, conferences, and a variety of online resources such as Web sites, list-servs, social networking tools, and other means of communication and sharing of resources.

Several aspects of the existing initiatives are highlighted in Appendix C, including: background and history, mission and goals, tools and mechanisms used, lessons learned, and measures of success. The selected collaboratives were based on Internet searches related to learning collaboratives and networks, input from our partners at AHRQ, recommendations from interviewees, and our own experience and knowledge with respect to learning collaboratives. In our research and conversations, it was suggested that we consider not only the terms “learning collaborative” and “collaborative” but also that we explore the term “network.” It seems that in some cases, these terms have clear distinctions, while in others they are used more interchangeably. The information provided in Appendix C is based on available resources, and in some cases, is supplemented by input from leaders of the particular initiative gathered through informal email or telephone conversations. We were not always able to get in contact with leaders of the collaborative, which resulted in some gaps with respect to lessons learned and measures of success.

These collaboratives and networks offer insight into what kind of form an AHRQ Learning Collaborative could take. For example, many of the collaboratives were developed to focus on a specific issue or problem – a key feature of the Institute for Healthcare Improvement’s Breakthrough Series model²⁵ – and to enhance learning across distinct entities with common practices and interests. For example, the Medicaid Medical Director’s Learning Network is a forum for State Medicaid directors to share ideas and best practices with respect to improving access, quality, and costs in Medicaid. While each State program is different, they share some common goals, and they have focused on solving specific common problems, such as reducing C-section rates and improving preventive screenings. Similarly, the National Association of State Medicaid Directors (NASMD) Multi-State Collaborative was formed to support the implementation of Medicaid Transformation Grants with a focus on electronic health records (EHR) and Health Information Exchange (HIE). Again, the goal here is to share best practices across States and focus on targeted areas of interest to all participants, such as implementing meaningful use requirements in Medicaid. Intermountain Health Care emphasizes the importance

of these best practices coming not only from the literature, but also from the experiences of practitioners.

Together, these examples offer a model for the AHRQ Learning Collaborative. To the extent that specific issues or areas of interest could be identified that are common to participating T32 training programs, these could be used as a focal point for collaboration. While recognizing that each program is unique, with different strengths, identifying common areas for improvement could provide a useful roadmap for sharing best practices by drawing on both the research literature and the experiences of individual programs and fostering learning across the training programs.

There are also networks that are explicitly focused on advancing research in a certain area. For example, Knowledge Translation Canada is a collaborative to “identify and study solutions to ensure that key stakeholders in the Canadian health care system, have the opportunities, tools and skills necessary to achieve health for Canadians.”²⁶ Specifically, they focus on translating research into practice and making the link between health services research and the delivery of health care. Similarly, collaboratives in the pharmaceutical field focus on advancing drug development. Specifically, the NewMeds Collaboration between the pharmaceutical industry and academic institutions focuses on identifying new methods for developing drugs to treat schizophrenia and depression.²⁷ Relatedly, the Centre of Excellence for External Drug Discovery (CEEDD) brings together drug developers to form alliances through the discovery and development process of a drug in order to enhance value for patients.²⁸ In a very specific case, the Pediatric Acute Lung Injury and Sepsis Investigators (PALISI) Network brings researchers from pediatric intensive care together to provide feedback and identify best strategies for serving this specific population through sharing and providing feedback on relevant research.²⁹

In the case of the AHRQ Learning Collaborative, this approach could be a way for trainees to share their research with one another across institutions, perhaps developing smaller working groups that would focus in specific areas of health services. Such a model could not only include presentations of research by trainees, but also webinars presented by experts in the field (e.g., program directors or faculty from participating institutions), which could help foster mentoring relationships across institutions and build networks within specific issue areas of health services research.

The models for communication offer some insight into the potential structure for building relationships across partners in a collaborative. First and foremost, Mindtree, Inc. stresses that “communities of practice” should have face-to-face interactions as a venue to solve problems, share best practices, and brainstorm.^{14,21} However, many of these collaboratives, recognizing the limitations of geography, acknowledge the necessity of virtual forms of communication. For example, the Patient-Centered Medical Home/Meaningful Use Collaborative combines in-person meetings with virtual forms of communication.³⁰ Regular communication takes a number of forms, but importantly begins with an in-person meeting (four in total) between which three “activity periods” occur. Activity periods are punctuated by ongoing webinars, webinets, one-on-one coaching, conferences, and e-sharing of resources. All of the collaboratives listed in Appendix C used some blend of these components. Finding the balance between in-person

meetings and virtual forms of sharing and communication will be a critical component of the AHRQ Learning Collaborative.

Another important component of effective collaboration is developing and communicating a structure for the activities of the collaborative, specifically a work plan that clearly communicates responsibilities, deadlines, and deliverables. For example, the NewMeds Collaboration developed 10 “workpackages,” which are focused around a particular sub-component of the collaborative’s activities with clear objectives and two leaders - an academic leader and a deputy.²⁷ Each workpackage fits into the project structure as a whole. Similarly, Knowledge Translation Canada features four thematic research projects that individually examine the methodological and conceptual issues unique to the research project and then connect these issues to the objectives of the collaborative.²⁶ Knowledge Translation Canada also features working groups, which appears to be a common, though less formal, structure characterizing collaboratives, including the NASMD (continuous learning workgroups), AHRQ Primary Care Practice-Based Research Networks (PBRNs; peer learning groups), and the PALISI Network (subgroups).

To provide structure to the activities of the AHRQ Learning Collaborative, it is important to establish:

- Clear objectives and deliverables.
 - What specifically will be accomplished and what evidence will be provided?
- Responsibilities.
 - By whom?
- Timelines.
 - By when?

Once the formal project structure is determined, it is likely that more informal and flexible arrangements will emerge to guide the process itself.

The Institute for Healthcare Improvement (IHI) is a leader in helping organizations establish collaboratives. One of their experts notes, “To make a collaborative successful, you need a well-structured problem, a group of interested people, and a process that engages people” (Andrea Kabcenell, Vice President, IHI, personal communication, March 30, 2011). Through communication with IHI and other individuals with expertise in establishing collaborations and consortia at a number of organizations, the following best practices emerged:

1. The more well-defined a problem is, the more amenable it may be to the collaborative approach. The collaborative approach may not be suitable for problems with many moving parts.
2. Groups should be smaller and include a mix of strangers and people who know each other. To overcome communication barriers, at least one (maybe two) face-to-face communication session is necessary and should be supported by virtual communication (e.g., webinars, webinettes, and other interactive tools).

3. The benefits of collaborating must outweigh the sacrifices. The efforts of the collaborative must be clearly linked to mutual interests and eventual benefits for every participant.
4. For each collaborative, a team charter should be established, followed by a work plan with a clear set of objectives to be accomplished.
5. Scheduling meetings, rotating locations, and planning for followup communication are required – the work of the collaborative will not just happen on its own.
6. Continuous evaluation of the collaborative, particularly at the outset, can foster success and better align the tasks of the collaborative with the needs of the participants.
7. Effective leadership is essential, to engage the group, schedule meetings, and cultivate a climate of trust. More importantly, rotating leaders will deepen the commitments.
8. Learning collaboratives succeed when there is support from “top executives” and an expectation that there will be productive collaboration among people across programs. In this case, AHRQ could play an important role in investing, building, and expecting social relationships across programs.

5. Developing an AHRQ Learning Collaborative

This section describes the steps taken to gather input from participants about the potential for an AHRQ Learning Collaborative and summarizes the findings from that information-gathering process. There were three main components of this information gathering process: conference calls with interested program directors; a survey of predoctoral trainees, postdoctoral trainees, and program directors; and interviews with a convenience sample of predoctoral trainees, postdoctoral trainees, program directors, and expert consultants.

Conference Calls

To assess the level of interest in the existence of an AHRQ Learning Collaborative, AHRQ T32 program directors were contacted and provided with a basic overview of the concept. Interested program directors were then invited to participate in a series of conference calls to move this initiative forward.

The first conference called laid the foundation for this effort and served as a brainstorming opportunity for what such a Collaborative might look like, what the goals of this initiative would be, and how information would be gathered to inform the process. Through the conference calls, a plan to distribute a short survey to AHRQ T32 programs was developed, and the process of interviewing program directors, trainees, and external experts was recommended. These venues provided an opportunity to present the survey results and offer additional guidance for the information-gathering activities going forward.

Survey

As a first step to gathering input for the proposed AHRQ Learning Collaborative, a short survey was distributed via email. The email was sent to all program directors at AHRQ T32 funded training programs who expressed interest in the AHRQ Learning Collaborative. This included 18 of the 28 Institutional Health Services Research Training Programs (T32s). See Appendix A for a complete listing of the training programs. We received 24 responses, including feedback from 8 program directors, 14 predoctoral trainees, and two postdoctoral trainees. Responses came from 10 of the surveyed training institutions.

Respondents recommended three key functions for an AHRQ Learning Collaborative: sharing, collaborating, and networking. In particular, some of the specific areas for sharing included: curricula, training opportunities, methods, best practices, ideas and information, career resources, data sources, and presentation opportunities. Collaboration on research projects and publications was identified by several respondents as a potential function of the collaborative. Lastly, the prospect of developing relationships among students, alumni, and fellow researchers was seen as a way to network, seek mentorship, enhance communication about the exchange of ideas and future opportunities, and perhaps acquire publications.

Related to the functions of the AHRQ Learning Collaborative, several issues and opportunities were raised as potential topics to be addressed by the Collaborative. Some of the broad themes that were mentioned included curricula/coursework, methods (e.g., mixed methods, qualitative), research interests, the current deficits in programs (based on trainees' perspectives), specific research topics in health services research (e.g., quality of care, disparities, changing health care organizational structures, accountable care organizations, and rural health), theory, health data resources, dissertation development and support, and career opportunities. In addition, the importance of networking and social networking was highlighted through opportunities for communication and mentoring. Lastly, some specific areas of interest were highlighted by respondents, such as funding for international students, a greater focus on informatics and computer science, creating meaningful practicum experiences in public health, and funding NRSA trainees beyond NRSA.

The recommended target audience varied, with many respondents suggesting a broad audience inclusive of pre- and postdoctoral trainees, program directors, and faculty. However, some saw the audience as more focused on trainees only (more common) or program directors only (less common).

The respondents described several topic areas that they would be interested in learning about; these fell into one of four broad domains: other training programs, activities, opportunities, and specific issues. Several details of other programs were mentioned, including: the structure of program requirements, curricula, the scope of the program (e.g., domestic or international), types of students, the program's financial model, methods, research interests of faculty, approaches to teaching, placement following completion of the program, and names and contact information for current trainees. In addition, respondents were interested in hearing about the activities of the different programs, with a particular focus on student projects and research. Opportunities for fellowships, jobs, research, and data were highlighted, as well as the potential for other institutions to learn about well-qualified graduates looking for postdoctoral positions. Lastly,

several specific issues were highlighted, including how to balance the need for both a broad exposure to a variety of topics with the need for specialized knowledge and learning about different career trajectories in health services research.

When asked about potential innovations or best practices at their own institutions to share through the Collaborative, respondents mentioned specific program details, areas of emphasis, activities, and content expertise. In particular, some of the program details that respondents would be interested in sharing about their own programs included: course materials, syllabi, presentation slides, a learning objective matrix, structured timelines for students, program handbooks, and health services research doctoral competencies. In addition, several areas of emphasis were noted for sharing, including the unique experience of a health program within a degree of applied economics, interdisciplinary research methods and statistics, the use of large databases for health services research, organization theory and behavior, and multidisciplinary approaches to health services research.

Participants also described specific activities at their own institutions that they would share with a broader collaborative, including multiple mechanisms for in-person sessions with trainees; incorporating mentoring, career development, and broad health services research content areas; and inviting other scholars, faculty, outside speakers, and trainees from different parts of the university; bringing trainees into ongoing research projects, out of which they can carve their own project; a coordinated course tutorial program that results in all trainees writing an article by the end of their first year in the program; and a formal system to track evaluations of fellows, mentors, and the program as a whole.

There was a broad spectrum of recommendations for potential mechanisms to be used through the Collaborative. Specifically, most respondents emphasized some Web-based communication mechanisms, some suggested only Web-based communication, some suggested coupling it with NRSA and no other session, and some suggested more in-person events in addition to NRSA, possibly regionally. Specific forms of Web-based communication that were suggested included: Web pages, podcasts, blogs, e-forums, social media (e.g., Twitter, Facebook, and Ning), and annual webcasts. In-person events included with NRSA, separate from NRSA, local or regional, annual, roundtable events, and workshops. Conference calls were also recommended as a form of communication. Tools recommended for sharing were predominantly Web-based and included lectures via the Internet (e.g., webinars), Web-based sharing of large databases, and a Web-based system to share information about trainees' research projects, including the topics and methods used.

Lastly, participants were asked to suggest some existing learning collaboratives and best practices that might serve as a potential model for this effort. The collaboratives highlighted included collaboration among contractors at the Centers for Medicare & Medicaid Services (CMS), the Massachusetts Institute of Technology (MIT) Center for Biomedical Innovation (MIT CBI), the Nonprofit Technology Network (Nten.org), a collaborative model around the burden of disease project, collaboration across Centers for Education & Research on Therapeutics (CERTs) programs, the Institute for Healthcare Improvement (IHI), and the patient-centered medical home transformation process, where doctors and practice leaders come together quarterly to share experiences. In addition, several best practices were noted, including the

participation of alumni on committees to offer a helpful perspective after leaving the program; offering standardized open-ended evaluations for all courses and other programs, and consideration for using this approach across programs; and webinars and other forms of interactive online learning.

Interviews

To gather insight into the potential for the AHRQ Learning Collaborative and to explore possible structures, topics, and mechanisms for the Collaborative, we conducted several semi-structured interviews with participants in the AHRQ training programs. Specifically, five program directors, five postdoctoral trainees, and five predoctoral trainees were interviewed. In addition, we also sought feedback from experts at AcademyHealth, AHRQ, IHI, the NEWMEDS Project, and The PCMH/MU Collaborative. The latter interviews have been incorporated throughout this paper, and a sample interview protocol is included in Appendix D.

Creating Value for Trainees

Through speaking with trainees, it became clear that they view the collaborative as a tremendous opportunity for augmenting the learning process at their home institutions. We grouped trainees' rich and creative ideas for the collaborative into the following three categories: sharing, building relationships, and developing an identity. The categories appear to overlap greatly with Wenger and Snyder's three characteristics of communities of practice.¹⁴

Sharing

Trainees were curious about how training differs across programs and were concerned in particular about where the programs stood with respect to: training in research methods, knowledge of secondary data and analysis techniques, and overall competence in health services research.

A predoctoral trainee noted:

I think [a collaborative is] definitely valuable, especially when it comes to the nitty gritty – hot methods in this field, are we getting all that we need to be competitive in this field, and if not, where else can we get that?

Another trainee (postdoctoral) remarked:

[It is] really important to share ideas across institutions...Great to be able to see what other trainees are doing across the country, get research ideas, share research ideas, meet people who have similar research ideas.

Trainees were specifically interested in understanding methodologies offered in different programs and were curious about what methods gaps were not being filled by existing methods workshops. This interest carried over into knowledge of (and access to) secondary data and analysis techniques where trainees believed the collaborative could serve a problem-solving function. One postdoctoral trainee noted that the collaborative could, "Have students who are struggling with the same data problems communicate with each other."

Many trainees also believed that getting a firmer sense of the training process and knowledge base across programs could help to shed further light on their program's strengths as well as to identify areas of their program that are underdeveloped.

For example, one predoctoral trainee at the 2011 NRSA Conference remarked:

My school is weak at bridging methods to practice. I would prefer to work with a faculty member at another school with T32/NRSA traineeships. I wish this process was more flexible.

Another (postdoctoral) trainee remarked:

One starting point would be to know what other people with these AHRQ fellowships do – I don't really know. I don't really know what people tend to study on these fellowships. That would be part of this idea about sharing information.

And another predoctoral trainee at the 2011 NRSA conference suggested:

It would be nice to have a database listing students/trainees and what they are researching, so we could reach out to each other for potential collaborations

Trainees were adamant about knowing what knowledge base was needed to become "major players" in the health services research field. As one predoctoral trainee noted, "I am stuck with the resources I am aware of and that holds true for others in every other program so that ability to share could be beneficial."

Another predoctoral trainee remarked:

Maybe program directors would also be able to see something good in another program – maybe [they] could adopt that. I don't know how much interaction there is [among] current programs.

While the ultimate goal of knowing these details about other training programs, is to strengthen health services research training, the next section demonstrates that the process of sharing (i.e., building relationships) itself can contribute to a strong professional identity among health services researchers, which contributes to successful communities of practice.

Building Relationships

Trainees consistently expressed that a core function of the collaborative should be to build relationships, which would include: mentoring, peer-to-peer interactions, and professional development. Trainees believed mentoring from senior health services researchers was a critical component of their health services research training. While one postdoctoral trainee noted that mentoring "begins on campus," another postdoctoral trainee suggested that mentorship beyond

one's home institution was a key component for idea generation among trainees who may be in settings that, though nurturing, may not have the particular expertise to guide their thinking.

This postdoctoral trainee noted:

It would be wonderful for me to be able to say, when I'm coming up with a new definition of a medical error...that there's somebody who I know that I can bounce a question [off of] or maybe get a twice yearly discussion with.

As part of their networks of expertise, mentors are ideally positioned to foster this type of interaction desired by trainees. Trainees also understood that mentoring relationships involve some element of risk, and that a good fit was most conducive to a successful relationship. However, even in instances where the fit is not right, at least some interaction has occurred.

Several trainees also expressed that the collaborative would be valuable for (re)connecting with T32 alumni:

[We are] trying to establish a network with our alumni who are scattered across the country...would envision that [effort] as something similar to [the learning collaborative].

Also, we are struggling with trying to figure out how alumni can all talk to each other...Maybe this could be a part of this broader AHRQ Learning Collaborative so they don't need to go to multiple groups to touch base. It needs to be easy enough so people will make use of [it].

Current trainees (both pre and postdoctoral) were also interested in connecting with one another:

Interacting with students in our program is a very important part [and] helps everyone grow a lot, but there isn't really any organized way for us to meet other students, see what other programs are like, [and] see how they differ.

Connecting students is where this collaborative could have some value added...Connecting students is the most important part.

Trainees expressed the belief that peer-to-peer connections are invaluable in developing a sense of identity – both as AHRQ fellows and health services researchers – an important point that will be discussed further below.

For many trainees, building relationships also means professional development, a function that the collaborative may consider depending on how familiar trainees are with existing professional development resources, such as those offered through AcademyHealth or their home institutions. One postdoctoral trainee was unclear about how professional development was integrated into their training process, but, “Now that I am a postdoc, I am especially interested in this.” Another postdoctoral trainee noted, “Professional development would be really useful in terms of job talks and where to look for jobs.”

During the 2011 NRSA Conference, a predoctoral trainee noted the importance of “[c]onnecting with other [trainees] who are considering not going into postdoc/academia,” which clearly implies that trainees have different professional goals and would benefit both from connecting with other trainees who have similar goals and understanding more concretely how to pursue relationships and opportunities that move trainees towards them. Workshops that mirror the “Transition from T to K” workshop during the 2011 NRSA Conference might be one mechanism for providing trainees with this sort of guidance. Here again, a mentor can play an important role. Many trainees believed it was important to have senior health services researchers as “point people” for professional development, in particular to leverage their networks of expertise.

Developing an Identity

Many of the trainees we interviewed believed very strongly that, although there is a sense of commitment to the field and a belief in the importance of health services research, a health services research identity is absent. As one predoctoral trainee remarked:

I felt like at Academy Health, this may sound kind of corny, that I felt a lot of pride in what we do, and I don’t always get the sense that I’m part of a community of health services researchers. I’m part of a health policy and management department, and I am not an epidemiologist or a biostatistician, so it’s hard to explain who I am and what I do. I think generating a community of health services researchers, making connections, and having pride in our field would be great. I think it could help faculty as well to be part of this greater community.

Trainees agreed that there is a substantial, but untapped opportunity to develop a “lockstep” approach across the community of health services researchers and indicated that the collaborative could be a valuable mechanism for creating a “cohort-like feeling” across the T32 programs. Cross-program connections may prove exceptionally useful for trainees who are in smaller training programs or have interests that are not extensively shared within their particular training program. One predoctoral trainee noted that they are the only individual with management interests in a program that is very “econ-heavy” and believed the opportunity to be connected to peers with similar interests outside their institution would be invaluable.

Trainees thought that increasing a sense of community through a collaborative could also create a more unified vision for the health services research field. One predoctoral trainee noted that, because of its interdisciplinary nature, there is a need to “set the direction” for health services research and that a common identity would be critical to that process. One postdoctoral trainee views AHRQ as an integral part of creating a health services research identity that could “get them in the web” and help junior health services researchers “tap into the greater network” of health services researchers to understand the macro implications of micro efforts.

Organizing and Managing a Collaborative

Target Audience, Buy-In, and Launching

Trainees believed the collaborative could be a joint effort among trainees and program directors. One postdoctoral trainee remarked:

I don't see why [program directors] would not be interested. Certainly, program directors and faculty that work closely with AHRQ fellows [have an] interest in making sure students/mentees get access to more resources...trainees – if there was a way to bring them in too – that would be great.

Another postdoctoral trainee further emphasized that “If program directors aren't champions, it might not take off.”

Trainees also believed that the collaborative would likely have immediate appeal for current trainees – possibly most heavily concentrated among predoctoral trainees – but that the collaborative could “open up” to other trainees, including alumni. The collaborative may also be accessed at different points in training, as suggested by one postdoctoral trainee:

I'm just finishing up my fellowship and am really just now learning how to get a research project done. This would be the time to get involved and learn from other trainees – it would be really nice to involve people along different stages. I would certainly want to stay connected.

Trainees understood that launching the collaborative, though exciting, would be difficult:

I think people are interested in collaborating. Like everything else, some people will take charge, others will free ride. I think it's in everyone's best interests.

At the beginning it is especially important to have high quality events. If [people] have a good experience, [they] would be more willing to participate. Starting off strong is probably the most important thing.

For the sake of publicity in the immediate future, trainees thought the collaborative could and should be represented at the AcademyHealth and NRSA meetings. Several trainees also believed AHRQ should be a primary convener and that it should play a central role in institutionalizing the collaborative and, in the words of one postdoctoral trainee, “help move it along.” Reflecting on the perceived churning that occurs in the training program, one postdoctoral trainee remarked:

There is so much turnover in postdocs and predocs – so much turnover, it would be hard to have a lot of continuity. So, AHRQ would help to the extent that they would be willing to be involved.

Another postdoctoral trainee made the following suggestions:

I don't know in terms of infrastructure – maybe a central person at AHRQ who helps coordinate training programs. Helpful to start from AHRQ, but could it be

trainees or recent graduates who take this on – or one group in particular – it takes work, continuing to have excitement. Helpful to have some people at AHRQ, may help to have a more senior person to be able to get people to lecture, more helpful to bring in people. It could be a lot of time initially up front to get excitement. If we can get people across the country – a committee to work on across the country.

Mechanisms for Interaction Through a Collaborative

There was substantial agreement among trainees that in-person contact was paramount to successful relationships and, by implication, the success of the collaborative. One postdoctoral trainee remarked, “[You] get buy-in when people meet each other. It’s not just a virtual world – you’re a real person.” A predoctoral trainee echoed this sentiment, “You don’t make friends online – you connect with people you already know.” The seeds of strong networks – professional and otherwise – are sown in person. Trainees, while recognizing that physical distance represented a substantial barrier, continually emphasized the importance of face-to-face contact and believed leveraging professional meetings more effectively as opportunities for connection could be critical to the success of this collaborative.

Several trainees suggested ad-hoc events around the AcademyHealth and NRSA meetings. One predoctoral trainee was careful to point out the “conference mentality” that surrounds professional meetings. For example, trainees may be more inclined to stay inside their comfort zone (i.e., with students from their own programs) when attending professional meetings. A possible solution to step away from this in-group/out-group mentality is to link students with similar interests – or those who are attending the same meeting events – across programs more formally. Here again, a mentor can serve as an important role as a medium for interaction.

As a complement to more structured, formal interactions, trainees emphasized the importance of informal socializing during and around professional meetings in developing a sense of comfort with colleagues. One postdoctoral trainee remarked:

A lot of times at these conferences, they have these social mixers - schools will have their party in the evening with alumni and others affiliated. If AHRQ had something like that, that could be a way to bring people together.

While trainees emphasized the importance of in-person interaction, they acknowledged the practical difficulties of ongoing interaction in the absence of geographic proximity. That said, trainees were also enthusiastic about virtual interaction so long as the interaction is engaging and, according to one predoctoral trainee, “cuts through the noise” of the information-rich environment in which we exist. For example, trainees expressed some interest in a Web site, provided it was engaging and not duplicative. One predoctoral trainee remarked:

[I] could see [a Web site] happening as well. Although I think it would depend on the students and how interested everyone is. There are a lot of discussion forums online that die off, if everyone is interested and active then I guess it could work online.

Another predoctoral trainee noted, “I think people will be engaged if they get a lot out of it or if they really have ties to other people in it.” Trainees expressed mixed thoughts with regards to email, ListServes, and social networking sites like LinkedIn and Facebook. While some suggested emails are likely to get lost in the shuffle, given all the emails that people receive, others suggested that ListServes were probably the easiest form of communication. Trainees also proposed both webinars and virtual classrooms as forms of interaction, which would allow for remotely attending lectures and important talks given at other institutions. Again, the importance of webinars and virtual classrooms being interactive emerged.

Sustaining and Succeeding

Sustaining

Trainees believed that AHRQ could foster collaboration by designing funding opportunities that require collaboration across training programs, which might include “kick-off” funding for trainees to meet in person. These collaborations could be regionally based, which might be possible given distinct clusters of training programs in the Northeast, South, Midwest, and along the West Coast. Another aspect of this type of collaboration would involve the role of a mentor. A practical concern with this type of collaboration might involve authorship, as one predoctoral trainee noted, training programs may expect their students to be first authors. Additionally, as predoctoral students are generally busy with program coursework and qualifying exams, these collaborations might be more appealing to postdoctoral students or to predoctoral students who have completed their coursework. One predoctoral trainee suggested that a “progression of interest” might develop over time, but noted, “To lift yourself out of [coursework] in the first 2 years would be superficial, but this would really pick up steam after the coursework lessens.”

As noted above, AHRQ could work to institutionalize the collaborative more formally. One postdoctoral trainee suggested that participants should have “permission to say ‘No, I can’t do this’” with no hard feelings. This postdoctoral trainee continued, “AHRQ has to recognize and support that ‘No’ may be a great option and the best thing for everyone at that moment.” That said, it would be imperative for AHRQ and training programs to consider how they can “sell” the collaborative to its prospective members.

Succeeding

Measures of success appeared difficult to “think through” with trainees, and that might be explained, at least in part, by the fact that the collaborative is in its formative stages. Trainees were particularly curious about AHRQ’s perspective, intentions, and expectations regarding the collaborative.

Trainees suggested a number of potential measures of success:

1. Participation rates during collaborative activities.
2. Participant feedback evaluations after collaborative activities. These measures might ask participants to numerically evaluate the expected (“Where do you think we should be?”) and actual (“Where do you think we are?”) progress of the collaborative as well as its component parts before and after collaboration.

3. Periodic evaluations of the collaborative's presence – for example, what opportunities individuals and institutions were made aware of (and took advantage of) as a direct result of the collaborative.
4. Professional achievement, including: number of publications within a given time period and in which journals; job and postdoctoral placement of trainees, and funding types.
5. Measures of engagement, connection, and/or network richness.

Measures of success should be directly linked to the stated goals and activities of the collaborative, which may change over time, and/or with different issues the collaborative wishes to address. Additionally, these measures would have to be clearly linked with changes in individual training programs that are expected to result as a direct consequence of the efforts of the collaborative.

6. Intersection of the AHRQ Learning Collaborative and the Health Services Research Community

As part of assessing the need for an AHRQ Learning Collaborative, we also explored current collaborations in the field of health services research to better understand the landscape and avoid unnecessary duplication. Central to that process were discussions with key leaders at AcademyHealth, a predominant convener of health services researchers, and a review of the previous work done on doctoral core competencies in health services research. It is important to keep in mind that the goals of these institutions and efforts, while all focused on health services research, may be distinct. Thus, consideration of how cross-institution efforts in the health services research community can be enhanced through collaboration should take into account the respective goals and interests of the distinct partners.

AcademyHealth

One example of existing efforts by AcademyHealth is the Health Services Research (HSR) Consortium.

The HSR Consortium is a forum for educators, employers, and students to address training needs for the field of health services research (HSR). A key goal of the HSR Consortium is to improve communication between stakeholders in the field and encourage partnerships to ensure that HSR training is appropriately meeting the needs of employers in the public and private sector, as well as academia.³¹

The first meeting of the HSR Consortium was held on June 30, 2009, during AcademyHealth's Annual Research Meeting. Since that time, the HSR Consortium has met annually to engage in conversations about updates in the field and how to support and advance training in health services research. Meeting materials are shared with members of the Consortium to promote enhanced collaboration and communication across the Consortium.

In addition to the HSR Consortium, there are several online resources available on the AcademyHealth Web site that are particularly focused on training, professional development, and career resources.^{32,33} These Web resources include listings of pre- and postdoctoral health services research training programs, information about online and in-person methods workshops, resources to support professional skill-building, resources for enhancing research skills and staying on top of the latest health services research literature, and a variety of opportunities, including employment, scholarships, fellowships, and funding. AcademyHealth is also developing a member profile, a social networking platform to be called “My AcademyHealth,” where members can communicate in a manner similar to Facebook. This offers a way for members to communicate outside of the formal channels (Personal communication, Lisa Simpson, April 29, 2011).

To further promote participation in the broader health services research community, AcademyHealth has started Student Chapters. The main goal of a Student Chapter is “to enhance the learning and professional development experience for students of health services research and health policy” (Personal communication, Eric Kokuma, May 12, 2011). Currently, there are 26 Student Chapters, up from 13 last year (Personal communication, Lisa Simpson, April 29, 2011). Student Chapters participate in monthly journal clubs, host archived webinars at their respective universities, and invite speakers. AcademyHealth works with these chapters to support activities that could enrich the training experience. In addition, chapter leaders are invited to participate in the HSR Consortium meetings (Personal communication, Eric Kokuma, May 12, 2011). Encouraging all AHRQ T32 predoctoral training sites to establish a Student Chapter is of great interest to AcademyHealth at this time (Personal communication, Erin Holve, April 27, 2011). Furthermore, AcademyHealth is working to develop ways that Student Chapters can work together in the future to organize regional events (Personal communication, Eric Kokuma, May 12, 2011).

Ongoing conversations will be needed to fully understand how the AHRQ Learning Collaborative can interact with these efforts at AcademyHealth to prevent duplication of efforts and promote a value-added component for members of the AHRQ Learning Collaborative. Leaders at AcademyHealth are interested in staying involved in the continuing efforts of the AHRQ Learning Collaborative, as they develop.

Health Services Research Doctoral Core Competencies

There has been a concerted effort to establish a common set of knowledge and skills-based core competencies needed for health services researchers trained at the doctoral level. In 2005, several stakeholders participated in this conference, including training directors and students from T32 training programs, directors of the Council on Education for Public Health (CEPH)-accredited doctoral programs, and representatives from AcademyHealth, AHRQ, CEPH, and employers of health services researchers in both the public and private sector.³⁴ The conference attendees reviewed a draft set of core competencies developed through an assessment of current literature, training grants funded by AHRQ, and accreditation materials from academic institutions that were submitted to CEPH. Drawing on Lohr and Steinwachs,³⁵ health services research was defined as:

The multidisciplinary field of scientific investigation that studies how social factors, financing systems, organizational structures and processes, health technologies, and personal behaviors affect access to health care, the quality and cost of health care, and ultimately our health and well-being. Its research domains are individuals, families, organizations, institutions, communications, and populations.

The report recognizes that several disciplines, including “psychology, economics, anthropology, biomedicine, mathematics, political science, sociology, and management sciences” contribute to the health services research community, and this is reflected in the diversity of the training programs sponsored by AHRQ.³⁴ Maintaining a balance between establishing a core set of standards across these training programs while continuing to support and enable innovation in training practices was a common concern of this effort. Those who receive doctoral degrees in health services research pursue careers in diverse settings including academic institutions, health care delivery systems, policy analysis organizations, and research institutes. However, as students enter these fields, they often lack a common identity about what it means to be a health services researcher and what skills and knowledge they are expected to demonstrate.³⁴ Thus, the three primary goals of this effort are to:

1. Assist program directors with developing and identifying the most important learning objectives for training students in health services research.
2. Clarify for employers of graduates of health services research training programs what the skills and abilities are for individuals in health services research.
3. Give health services research trainees a unique professional identity.

As a result of the conference, 14 health services research doctoral core competencies were established, based on a consensus of conference participants, and later published for dissemination purposes.³⁶ The 14 core competencies as defined through this conference are included in Appendix E. The core competencies that resulted from this first effort were termed Version 1.³⁴ To continue this effort, another conference was held to revisit the doctoral level core competencies, assess the extent to which programs used the competencies, and develop a revised set of core competencies.³⁷ The result was a revised set of 11 HSR doctoral competencies (Version 2) as outlined in Table 1.

Table 1. Health services research doctoral core competencies (version 2)

Number	Label	Competency
1	Foundational knowledge	Acquire knowledge of the context of health and health care systems, institutions, actors, and environment
2	Theoretical knowledge	Apply or develop theoretical and conceptual models relevant to health services research (HSR)

Number	Label	Competency
3	Relevant and important HSR question development	Pose relevant and important research questions, evaluate them, and formulate solutions to health problems, practice and policy
4	Conceptual models and operational methods	Use or develop a conceptual model to specify study constructs for an HSR question and develop variables that reliably and validly measure these constructs
5	Study designs	Describe the strengths and weaknesses of study designs to appropriately address specific HSR questions
6	Data collection and management methods	Sample and collect primary health and health care data and/or assemble and manage existing data from public and private sources
7	Research conduct management	Execute and document procedures that ensure the reproducibility of the science, the responsible use of resources, and the ethical treatment of research subjects
8	Data analysis	Demonstrate proficiency in the appropriate application of analytical techniques to evaluate HSR questions
9	Professional development	Work collaboratively in teams within disciplines, across disciplines, and/or with stakeholders
10	Communication	Effectively communicate the process, findings, and implications of HSR through multiple modalities with stakeholders
11	Knowledge transfer	Knowledge translation to policy and practice

An important aspect of this initiative was to work to standardize the core knowledge and skills, yet at the same time encourage flexibility and innovation across the diverse training programs in health services research. Perhaps this could be one way that an AHRQ Learning Collaborative could support this effort—facilitating more sharing of innovative practices across programs, while at the same time valuing the diversity of training experiences that this field has to offer. In addition, a task of the AHRQ Learning Collaborative could be encouraging training programs to build on these core competencies across programs by refining the core competencies and establishing new ones for clinical and research postdoctoral trainees. Furthermore, core competencies could be developed in specific areas of health services research, such as

comparative effectiveness research. These efforts could be one example of smaller collaborative efforts that take place within the larger AHRQ Learning Collaborative community. The result of these and similar initiatives could be increased awareness of health services research as a profession and a better defined identity for the health services research community.

7. Recommendations for the AHRQ Learning Collaborative

Based on a synthesis of the current literature, as well as the essential insight from current trainees, program directors, and experts in the field, we recommend the following for an AHRQ Learning Collaborative.

Structure

Explore establishing two mechanisms for mutual helping among T32 programs: (1) an informal, voluntary network of AHRQ T32 programs; and (2) several ongoing learning collaboratives. These will be supported by formal communication mechanisms such as in-person meetings and virtual forms of communication.

- Informal network: Following the 2011 T32 program directors meeting, program directors, trainees, and faculty would be invited to join a LinkedIn AHRQ Training Program Group. Within that group, there would be at least two sub-groups: one for training directors, and one for pre and postdoctoral trainees. The network could be informal and Internet-based, with portals and other electronic media.
- Ongoing collaboratives: In the startup phase, one or more learning collaboratives could be created based on new issues generated at the T32 annual meetings and/or organized around specific research interests. Each collaborative would be championed by several people, and could cover a wide range of technical or problem-driven areas. The model for this is the work that Chris Forrest and Diane Martin led on health services research doctoral core competencies.³⁶

Activities

The key activities of an AHRQ T32 Network would include:

- Establishing mentoring relationships between trainees and senior researchers within and across T32 programs.
- Networking through social media and in-person events.
- Solving problems.
- Helping each other with requests for information.
- Collaborating based on complementary skills and experience.
- Pooling resources, including data, expertise among faculty and trainees, and other assets.
- Discussing critical training issues.
- Sharing best practices.

Roles and Responsibilities

The AHRQ Learning Collaborative is a joint effort by trainees and program directors with support from AHRQ. AHRQ representatives, program directors, and trainees will play an important role in investing in and building social relationships across programs.

- AHRQ T32 program directors meet once a year at NRSA, and those meetings offer an opportunity for productive helping and collaborating.
 - Trainees could be invited to participate with program directors during T32 meetings to think about how to build capacity and enhance innovation across programs. Trainees with the support of program directors could co-lead and be engaged in these discussions.
 - AHRQ could support the Learning Collaborative by setting aside time during the annual T32 meeting to engage in collaborative activities (for example, sharing what we are learning about tough problems and identifying candidate issues for ongoing learning collaboratives).

Funding

Trainees and directors could apply for funding through AHRQ's Small Conference Grant Program to support and establish 1-year learning collaboratives that result in workshops and sessions at the annual NRSA conference. This program is intended to encourage members to share learning, connect with stakeholders and programs, develop new thinking, and build capacity in health services research.

Launching the Collaborative

To launch the Collaborative, we would need to begin preliminary conversations on issues relating to engagement and evaluation, which may include:

Engagement

- How do we create a national identity?
- How do we cultivate and leverage an open network of training programs whose members have promising ideas and want to help each other?
- How do we create opportunities for faculty and student exchanges or linkages across programs among faculty and students with common interests? Student rotations at AHRQ and/or collaboration with AHRQ researchers?
- How do we engage the more than 1,500 past and present trainees in new and interesting ways?
- How do we find better ways to connect and develop existing AHRQ research and dissemination awards?
- How do we connect with AcademyHealth and other stakeholders around the work they are doing?
- What communication media will help to rally the people interested in collaborating?

- In addition to the Annual AHRQ T32 Program Directors Meeting, what other forms of collaboration could we use (e.g., webinars, in-person local or regional meetings, discussion forums, and wikis)?

Evaluation

- Can we establish a set of common performance measures with common definitions for the purpose of comparative benchmarking across programs?
- How would the network and future collaborations help to establish a national identity for AHRQ trainees that will transcend fellowship appointments and funding?
- Should one criterion for AHRQ training grant renewal be the amount of mutual helping, networking, and collaborating with other training programs? Would AHRQ want to establish "proof of collaboration" as part of renewal? How would this be measured?
- For each core competency, can we create a Knowledge Map (K-Map) that identifies the experts, practitioners, locations, and sources of knowledge? The model for this is the work that Jonathan Weiner, Diane Martin, Tim Carey, and other programs have been doing to map courses, resources and other capabilities to health services research core competencies (Appendix F).
- How can we highlight achievements of former and current trainees to demonstrate the value of this investment and solidify a national identity?
- How do we work to sustain this effort and maintain buy-in over the long-term?

8. Next Steps

A meeting to discuss this white paper and develop next steps for creating this AHRQ Learning Collaborative was convened on June 11, 2011, as part of the Annual NRSA Program Directors Meeting. Feedback from that meeting was incorporated into this white paper and will guide the next steps for establishing an AHRQ Learning Collaborative. The following are concrete suggestions for moving forward with the AHRQ Learning Collaborative:

- Brand the AHRQ Learning Collaborative with a name and a catchphrase that is memorable or appealing. For example: “SpAHRQ: Training the Next Generation of Health Services Researchers.” Individual T32 programs could be referred to as “SpAHRQ Plugs” because they are individually necessary but only collectively sufficient for powering the health services research engine.
 - Solicit trainees’ thoughts on a name and catchphrase. The thinking behind the name and catchphrase would have to be explained briefly and immediately clear to others.
- Develop an explicit mission or charter.
- Develop clear objectives and/or goals. These can be selected from this white paper and be field-tested for relevance among AHRQ program directors and trainees.
- Develop routine activities. For example, a periodic check-in call or webinar on training program issues where trainees are the prime participants. Program directors, alongside AHRQ personnel, could take turns hosting the call/webinar. Another potential activity would

be to publish a brief periodic letter about the AHRQ T32s, with program highlights and opportunities for collaboration. Finally, trainees could be “invited” into other programs’ classrooms.

- Collate a list of current (as of the 2010-2011 academic year) AHRQ T32 trainees (pre- and postdoctoral) that includes research interests, current project work (intra- and inter-institutional), leisure interests (to integrate a more informal component), and contact information.
 - “Research interests” could be specific or more general. Also, information that may supplement research interests may include: area(s) of expertise, research methodologies of interest, statistical methodologies of interest, and theories of interest (and discipline in which they are housed).
 - Another option for this listing (or a complementary action) is to create a searchable database of trainees (similar to academic institutions’ online directories).
 - The list/directory could be extended to alums, and a particular effort might be made to reach out to recent alums (i.e., those one 1-2 years out).
- Establish “Career Ladder” interest groups (again, with a memorable name) for trainees heading towards a postdoctoral degree and/or academia v. private sector v. government v. think tank, etc.
- One possible way to capture the attention of trainees might be to title these groups using their words. For example, “Major Players in...[various sectors]”
- Collate curricula and include them in a searchable database. Curricula could also be mapped onto the core HSR competencies to highlight where opportunities for improvement exist and/or to allow programs to highlight specifically (and uniquely) how they are ensuring training in the core HSR competencies. Appendix G provides links to some existing health services research resources.
- Identify brokers within AHRQ T32s (e.g., directors, faculty, and trainees who create buy-in for working collaboratively across T32s).
 - Brokers could begin with the questions identified in the “Engagement and Evaluation” pieces of the recommendations and report back (perhaps during the periodic check-in call and/or webinar as part of the routine activities).

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Appendix A. Agency for Healthcare Research and Quality T32 Training Programs

1. University of Alabama at Birmingham (predoctoral and postdoctoral)
<http://www.soph.uab.edu/listerhill/hsortp>
2. Brandeis University (predoctoral)
<http://heller.brandeis.edu/>
3. Brown University (predoctoral and postdoctoral)
<http://www.chcr.brown.edu/>
4. University of California at Los Angeles/RAND (predoctoral and postdoctoral)
http://www.ph.ucla.edu/hs/post_doctoral.html
5. Case School of Medicine (predoctoral)
<http://epbiwww.case.edu/>
6. University of Chicago (predoctoral and postdoctoral)
<http://harrisschool.uchicago.edu/>
7. Weill Cornell Medical College (postdoctoral)
http://www.cornellmedicine.com/clinical_practices_and_divisions/general_internal_medicine/
8. Duke University (postdoctoral)
<http://www.ahrq.gov/fund/training/T32-duke.htm>
9. Harvard University (predoctoral)
<http://www.fas.harvard.edu/~healthpl/>
10. Harvard Pediatric Health Services Research Fellowship (postdoctoral)
<http://www.ahrq.gov/fund/training/T32-harv2.htm>
11. Indiana University (postdoctoral)
<http://www.ahrq.gov/fund/training/T32-ind.htm>
12. Johns Hopkins University (predoctoral)
<http://www.jhsph.edu/dept/hpm/>
13. Johns Hopkins University (postdoctoral)
<http://www.ahrq.gov/fund/training/T32-jhu2.htm>
14. University of Michigan (predoctoral)
<http://www.sph.umich.edu/hmp/programs/>
15. University of Minnesota (predoctoral)
<http://www.sph.umn.edu/hpm/>
16. Tufts-New England Medical Center (postdoctoral)
<http://www.ahrq.gov/fund/training/T32-tufts.htm>
17. University of North Carolina at Chapel Hill (predoctoral and postdoctoral)
<http://www.shepscenter.unc.edu/>
18. Northwestern University (postdoctoral)
<http://www.feinberg.northwestern.edu/ihs/education/post-doc/>
19. Oregon Health & Science University, (predoctoral and postdoctoral)
<http://www.ahrq.gov/fund/training/T32-ohsu.htm>
20. University of Pennsylvania (predoctoral and postdoctoral)
http://www.med.upenn.edu/research_programs.shtml
21. University of Pittsburgh (postdoctoral)
<http://www.ahrq.gov/fund/training/T32-pitts.htm>

22. University of Rochester (predoctoral and postdoctoral)
<http://www.urmc.rochester.edu/education/graduate/phd/health-services-research/>
23. Stanford University (postdoctoral)
<http://healthpolicy.stanford.edu/>
24. University of Texas Health Science Center (predoctoral and postdoctoral)
<http://gulfcoastconsortia.org/ahrq/>
25. Vanderbilt University (postdoctoral)
<https://medschool.vanderbilt.edu/mpsh/>
26. University of Washington (predoctoral and postdoctoral)
<http://depts.washington.edu/hserv/>
27. University of Wisconsin (predoctoral and postdoctoral)
<http://www.pophealth.wisc.edu/>
28. Yale University (predoctoral and postdoctoral)
<http://publichealth.yale.edu/index.aspx>

Retrieved from <http://www.ahrq.gov/fund/training/t32.htm>, updated as of August 2009

Appendix B. Federal Training Programs in Comparative Effectiveness Research

	CTSA	EPCs	DEcIDE II	T32s	K12	NIH KM1
Albert Einstein College of Medicine	X					
Blue Cross and Blue Shield Association		X				
Boston University	X					
Brandeis University				X		
Brigham and Women's Hospital			X			
Brown University				X	X	
Case Western Reserve University	X			X		
Children's Hospital, Boston					X	
Children's National Medical Center	X					
Columbia University	X					X
Duke University	X	X	X	X	X	X
ECRI Institute		X				
Emory University	X					
Georgetown University and Howard University	X					
Harvard Pediatric Health Services Research Fellowship				X		
Harvard Pilgrim Health Care			X			
Harvard University	X			X		
Indiana University	X			X		
Johns Hopkins University	X	X		X	X	
Mayo Clinic	X					
McMaster University		X				
Medical College of Wisconsin	X					
Medical University of South Carolina	X					
Minnesota Evidence-based Practice Center		X				
Mount Sinai School of Medicine	X					
New York University School of Medicine	X				X	
Northwestern University	X			X		
Oregon Health & Science University	X	X		X	X	X
RTI International - University of North Carolina at Chapel Hill		X				
Rutgers University			X			
Southern California Evidence-based Practice Center - RAND Corporation		X				
Stanford University	X			X		
The Ohio State University	X					
The Rockefeller University	X					
The Scripps Research Institute	X					
The University of Alabama at Birmingham	X			X	X	

	CTSA	EPCs	DecIDE II	T32s	K12	NIH KM1
The University of Chicago	X			X		X
The University of Iowa	X		X			
The University of New Mexico Health Sciences Center	X					
The University of North Carolina at Chapel Hill	X		X	X	X	
The University of Texas Health Science Center at Houston	X			X		
The University of Texas Health Science Center at San Antonio	X					
The University of Texas Medical Branch at Galveston	X					
The University of Utah	X					X
Tufts University	X	X		X		X
University of Alberta		X				
University of Arkansas for Medical Sciences	X					
University of California at Los Angeles/RAND				X		
University of California Davis	X					
University of California San Diego	X					
University of California, Irvine	X					
University of California, San Francisco	X					
University of Cincinnati	X					
University of Colorado Denver	X				X	
University of Connecticut		X				
University of Florida	X					
University of Illinois at Chicago	X		X			
University of Massachusetts Medical School Worcester	X					
University of Michigan	X			X		
University of Minnesota			X	X		
University of Ottawa		X				
University of Pennsylvania	X		X	X		X
University of Pittsburgh	X			X	X	
University of Rochester School of Medicine and Dentistry	X			X		
University of Southern California	X					
University of Texas Southwestern Medical Center at Dallas	X					
University of Washington	X			X	X	
University of Wisconsin-Madison	X			X		
Vanderbilt University	X	X	X	X		
Virginia Commonwealth University	X					
Washington University in St. Louis	X					X
Weill Cornell Medical College	X			X		
Yale University	X			X		

Appendix C. Existing Learning Collaboratives and Networks

Name of Collaborative	History	Mission and/or Goal(s)	Tools and Mechanisms	Lessons Learned and Best Practice Reflections	Measures of Success
National Association of State Medicaid Directors (NASMD) Multi-State Collaborative ¹	Created in 2007 together with States that received Medicaid Transformation Grants to support development, implementation, and operation of electronic health records (EHR) and health information exchanges (HIE). Encourage all States to participate.	Share best practices and lessons learned and partner with other States to leverage Medicaid program and financing capabilities in implementing Medicaid EHR and HIE efforts. Will address a variety of topics over time, including maximizing American Recovery and Reinvestment Act of 2009 (ARRA) funding, implementing meaningful use requirements in Medicaid, and preparation for incentive payments for health information technology (health IT). The Collaboration will provide to its members: <ul style="list-style-type: none"> • Information collection and dissemination; • National meetings; and • Liaison between the Collaboration, Federal agencies, Federal policymakers, and relevant partners.² 	<ul style="list-style-type: none"> • Educational forums • State-to-State mentoring • Continuous learning workgroups • Workgroup discussions (calls and Web meetings) • Opportunities to comment on draft guidance from CMS and other Federal agencies • Technical assistance opportunities • Web site for sharing references, CMS guidance, environmental scan, health IT State plans, HITECH planning APDs by State, consent materials, workgroup archives, and other relevant resources.³ • Conducted survey with participants to assess: most useful technical assistance for HIE, EHR, and e-prescribing; most useful leadership and training opportunities; and level of staff participation in collaborative 	Not identified.	Not identified.

Name of Collaborative	History	Mission and/or Goal(s)	Tools and Mechanisms	Lessons Learned and Best Practice Reflections	Measures of Success
Medicaid Medical Directors Learning Network	<p>Since 2006, Medicaid medical directors have been meeting to share ideas and best practices related to issues of access, quality, and costs in Medicaid. Sponsored by the Agency for Healthcare Research and Quality (AHRQ) and supported by NASMD. As of 2009, 42 States had joined the Medicaid Medical Directors Learning Network.⁵</p>	<p>Improve the quality and safety of health care delivered to the Medicaid population.⁶ Focused on specific target problems such as reducing C-section rates, improving preventive screening and vaccinations. First project: benchmark antipsychotic and mental health drug use in Medicaid children. Data from 16 States were collected to provide best practices to work with providers of mental health to improve prescribing practices.⁵ This project resulted in a report <i>Antipsychotic medication use in Medicaid children and adolescents.</i>⁷ Similar approach used to reduce readmissions.⁵</p>	<p>workgroups.⁴</p> <ul style="list-style-type: none"> • Offer clinical programs during NASMD meetings in summer and fall. • Collaborate on targeted research and quality improvement projects. 	Not identified.	Not identified.
AHRQ Primary Care Practice-Based Research Networks (PBRNs)	<p>Primary care practice-based research networks (PBRNs) emerged between the 1970s and 1990s, all around the United States, primarily led by family physicians. Through partnerships with private foundations, professional societies, academic institutions, and State and Federal agencies, these PBRN have evolved into much more robust</p>	<p>PBRNs are defined as "a group of ambulatory practices devoted principally to the primary care of patients. Typically, PBRNs draw on the experience and insight of practicing clinicians to identify and frame research questions whose answers can improve the practice of primary care. By linking these questions with rigorous research methods, the PBRN can produce research findings that are immediately relevant to the clinician and, in theory, more easily assimilated into</p>	<p>Elements of the Network include:</p> <ul style="list-style-type: none"> • PBRN Resource Center – provides technical support, research methodology, education in best practices of primary care research, and data collection. • Peer Learning Groups – Conference calls and presentations on relevant topics such as comparative effectiveness research, quality improvement research, 	<ul style="list-style-type: none"> • Membership buy-in is critical. There needs to be value-added to maintain members' interest. The PBRN Resource Center helps networks conduct membership surveys to assess member interest, experience, and needs. (CL) • Even when strong interest exists, finding time is often an issue. (CL) • Many networks have established practice facilitators or practice coaches as part of the infrastructure. (CL) 	<p>Annual assessments are completed during the AHRQ PBRN registration process. These self-assessed areas include network governance, network membership, network operations, research issues, and information technology. (CL) PBRNs measure their own</p>

Name of Collaborative	History	Mission and/or Goal(s)	Tools and Mechanisms	Lessons Learned and Best Practice Reflections	Measures of Success
	<p>national networks.⁸ Since the 1990s, AHRQ has supported capacity- building among the PBRNs and currently funds the PBRN Resource Center.⁸ As of 2009, there were 113 primary care PBRNs operating throughout the United States.⁹</p>	<p>everyday practice."¹⁰ PBRNs are autonomous organizations, often affiliated with an academic medical center. Some focus primarily on research, while others incorporate member learning activities as well. (MP)</p>	<p>PBRN operations, health IT, and research methods.</p> <ul style="list-style-type: none"> • Annual PBRN Conference – three-day meeting sharing information related to primary care and PBRN research. Opportunity to interact and learn from primary care colleagues. • PBRN Literature – virtual library of research conducted through PBRNs. • PBRN Secure Portal – Secure Web site for registered PBRNs to share documents, communicate, collaborate, and develop resources with others involved in the network.¹⁰ 	<ul style="list-style-type: none"> • Coordination costs money, and PBRNs may have different cost structures.¹¹ • Less experienced networks gain a lot by collaborating with more experienced networks.¹¹ • Multisite research increases the profile of the networks.¹¹ • A project was conducted to identify best practices in PBRNs. This project was to be completed by August 2011. (CL) 	<p>successes, using metrics such as level of involvement, number of studies, finances, and number of publications. (CL)</p>
<p>Knowledge Translation (KT) Canada</p>		<p>The vision of the network is “To collectively lead knowledge translation theory and research nationally and internationally by creating a sustainable organizational structure that supports national and international collaboration advancing education, theory and research, and health care delivery service. We see KT Canada as the development of an intellectual commons to spark innovation, debate, theory building, and testing of KT research innovations across boundaries: disciplinary, geographical, institutional, and others.”¹²</p>	<p>KT Canada has four research programs aimed at the loop between knowledge and action (knowledge distillation; determinants of knowledge use; selecting, tailoring, and evaluating effectiveness and efficiency of KT interventions; and sustaining KT). These research projects are targeted at three key stakeholder groups (consumers, health care professionals and managers, and policymakers). Each research program and</p>	<p>Not identified.</p>	<p>Not identified.</p>

Name of Collaborative	History	Mission and/or Goal(s)	Tools and Mechanisms	Lessons Learned and Best Practice Reflections	Measures of Success
		<p>The mission of the network is, "To form a national Canadian research network to identify and study solutions to ensure that key stakeholders in the Canadian health care system have the opportunities, tools, and skills necessary to achieve KT in order to improve health for Canadians."¹²</p> <p>The networks goals are to:</p> <ul style="list-style-type: none"> • Improve the communication of research results. • Develop a consensus terminology in knowledge translations and approaches to measuring success. • Evaluate different approaches to knowledge translation. • Engage health professionals, members of the community, and other decisionmaking entities to ensure that the impact of knowledge translation initiatives is sustained.¹³ 	<p>stakeholder group has a study group that publishes the methodological insights drawn from the corresponding research program.</p> <p>Several training programs are offered by KT Canada for graduate students, postdoctoral fellows, physicians, and the general public.¹⁴</p>		
Pediatric Acute Lung Injury and Sepsis Investigators (PALISI) Network	<p>The Pediatric Acute Lung Injury and Sepsis Investigators (PALISI) Network was created in 2002, when investigators in pediatric clinical care who were participating in four multi-site research projects in the United States and Canada decided to join together and establish one research network.¹⁵</p>	<p>PALISI is a collaboration of clinical researchers from 79 pediatric intensive care units throughout North America. Together, the researchers aim to "identify optimal supportive, preventive, and therapeutic strategies for acute lung injury, sepsis, multi-organ failure, and other acute, life-threatening pulmonary or systemic inflammatory syndromes that affect infants and children."¹⁶</p> <p>The goal of the PALISI</p>	<ul style="list-style-type: none"> • Hold 3-day conferences, twice per year. Opportunity to share research and get feedback from fellow investigators. (SV) • Also have subgroups that focus on specific topic areas and have smaller group meetings during the biannual conferences. (SV) • Currently developing a Web site to be able to share research and 	Not identified.	Not identified.

Name of Collaborative	History	Mission and/or Goal(s)	Tools and Mechanisms	Lessons Learned and Best Practice Reflections	Measures of Success
	Participation in the network is voluntary. Participating sites must secure funding for their research projects from government, foundation, and industry sources. ¹⁵	Network is “to perform multi-center research studies to better describe disease processes and outcomes in pediatric patients and to evaluate interventions in this population.” ¹⁶	accommodate the needs of the growing network. (SV)		
Robert Wood Johnson Foundation Clinical Scholars	The Robert Wood Johnson Foundation (RWJF) Clinical Scholars program supports physician leaders in their efforts to conduct innovative research and work with communities, organizations, practitioners, and policymakers. ¹⁷	<p>“The goal of the program is to integrate Scholars’ clinical expertise with training in program development and research methods to help them find solutions for the challenges posed by the U.S. health care system, community health, and health services research.”¹⁷</p> <p>Through the typical 2-year training program, scholars receive a master’s degree, with significant time allotted for research.¹⁷</p> <p>Up to 29 scholars are selected each year to participate at one of four universities across the country.</p> <p>A critical part of the program is the mentorship.</p>	<ul style="list-style-type: none"> • The RWJF Clinical Scholars program maintains a strong network of current and past scholars. Several mechanisms are used to maintain the scholar network. • Clinical Scholars Online Directory.¹⁸ • RWJF Alumni Network creates connections between alumni of the RWJF’s scholars, fellows, and leaders programs to support their work improving health and health care in the United States.¹⁸ • Interactive Alumni Scholars Map.¹⁸ • Alumni Ambassadors program to support new scholar recruitment.¹⁸ • Social networking resources include Facebook, LinkedIn, and a private Wordpress blog, where scholars and alumni can post information and interact.¹⁹ • Web site offers several resources, including job opportunities, funding 	Not identified.	Not identified.

Name of Collaborative	History	Mission and/or Goal(s)	Tools and Mechanisms	Lessons Learned and Best Practice Reflections	Measures of Success
<p>Community Health Care Association of New York State (CHCANYS) and Primary Care Development Corporation (PCDC) Learning Collaborative for Meaningful Use (health IT) and the Patient-Centered Medical Home (The PCMH/MU Collaborative)²⁰</p>	<p>Initiated in July 2010. Combines the expertise of CHCANYS, which has the buy-in of community health centers (CHCs) across New York State with PCDC, which is a trusted entity within the primary care community (fits well with CHCs) and has a demonstrated record of success in building collaboratives.</p>	<p>Provides CHCs with training and tools to:</p> <ul style="list-style-type: none"> • Attain a level of PCMH recognition/designation that reflects capacities of CHC. • Enable collection of data that will demonstrate CHCs have satisfied Stage I Meaningful Use Standards and Measures. • Identify targets for improvement for CHCs to progress in PCMH and MU recognition. 	<p>resources, and a call for abstracts.</p> <ul style="list-style-type: none"> • Features an “action-learning” approach that “meets providers where they are” while focusing on teambuilding and identifying specific, measurable changes (i.e., process) that can be directly linked to corresponding outcomes. • Sustainability is “built into” this effort.²⁰ <p>Specific action elements of the collaborative (occurring over 6 months):</p> <ul style="list-style-type: none"> • Four learning sessions (4 days) • Three activity periods (8 weeks each) • Coaching (TBD by situation) • Phone conferences, Webinars, Webinettes, Sharepoint Tools (password-protected, shared e-workspace). 	<p>Not identified.</p>	<p>Feedback: “Does this meet your needs?”</p> <p>Detailed PCMH-MU assessments (Note these assessments are related to PCMH and MU achievements for individual CHCs within the collaborative, not the work of the collaborative, per se. However, the success of CHCs may be a measure of success of the collaborative)²¹</p>
<p>Novel Methods Leading to New Medications in Depression and Schizophrenia (NewMeds).²² Collaboration between pharmaceutical industry and academic institutions.</p>	<p>“Research academic-industry collaboration” initiated in 2009 to explore “new methods for the development of drugs for schizophrenia and depression.”²²</p>	<p>The collaboration seeks to address bottlenecks in the drug discovery, development, and clinical trials processes to bring more medications for schizophrenia and depression to market more rapidly.</p>	<ul style="list-style-type: none"> • 10 “Workpackages” introduced at various points during the drug discovery and development phases (e.g., pre-clinical, Phase I-III)²³ • Each workpackage has a deputy (administrative) and academic (scientific) “lead,” both of whom are responsible for the deliverables of the individual workpackage.²³ 	<p>“The one and only supporting action for every workpackage is communication...Nothing has more power than meeting someone face-to-face.” (KS)</p>	<p>Not identified.</p>

Name of Collaborative	History	Mission and/or Goal(s)	Tools and Mechanisms	Lessons Learned and Best Practice Reflections	Measures of Success
			<ul style="list-style-type: none"> • Notifies members of upcoming conferences relevant to their research interests. • Publications (potentially also a measure of success). 		
Centre of Excellence for External Drug Discovery (CEEDD) ²⁴	Idea stage: 2000-2005. In 2005, initiated first “autonomous scientific investment team.” ²⁴	As a “pioneer in the quest to find new medicines,” CEEDD brings together external collaborators to form alliances for drug discovery, development, and clinical trials at any point in the process. ¹⁸ Through this process, CEEDD hopes to “bring more medicines of value to patients.” ²⁴	<ul style="list-style-type: none"> • Provides formal guidance to potential collaborators to “form multi-program, risk-reward sharing alliances” that maintain member companies’ “independence and creativity.”^{24,25} • Seeks out collaborations at any point in the drug discovery, development, and clinical trials processes. • CEEDD carefully vets potential partners for an alliance and only selects those that strongly align with its mission.²⁶ <p>CEEDD approach:²⁴⁻²⁷</p> <ul style="list-style-type: none"> • Semi-autonomous, flexible team (of 25) • Two centers (U.S. and U.K.) • Work across multiple therapy areas • Form alliances at any point in clinical development • “Full strength of GlaxoSmithKline resources” <p>“CEEDD of Innovation” and the “Media Center” are the online voices and platforms through which</p>	Not identified.	Not identified.

Name of Collaborative	History	Mission and/or Goal(s)	Tools and Mechanisms	Lessons Learned and Best Practice Reflections	Measures of Success
			news about new alliances and progress in existing alliances is communicated. ^{28,29}		
MindTree, Ltd	Located in India and the United States (New Jersey), MindTree was founded in 1999 as an information technology and business process outsourcing (ITBPO) company. Within 6 years, they earned \$100 million in revenues. The 4,000 employees were called MindTree Minds. Building a culture of transparency and knowledge management, the basic organizational unit became a community of practice. ³⁰	"95% of the people should have 95% of the information, 95% of the time." ³⁰ <ul style="list-style-type: none"> • The company was founded on principles of creating emotional security, ensuring global communication of information, and developing capacity to absorb information by making it interesting. • To continually share learning with the world at large. • The purpose of knowledge management is helping people to do their jobs better and to develop as professionals. 	To ensure knowledge is created and disseminated, the organization supported the notion of voluntary communities of practice. ³¹ The community evolves over time and is motivated by two questions: <ol style="list-style-type: none"> 1. What do we want to learn? 2. What do you have to share? <ul style="list-style-type: none"> • When individuals share an interest and enjoy talking online, they become a "community of interest." This is just sharing not learning. • The next level of maturity is "competency-building." Here people meet face-to-face and learn from each other. • The next level (called capability-building) was building relationships between other communities, and directly impacting processes. • Finally, the last level called 'capacity- building' shifts attention from the internal to the external world. 	<ul style="list-style-type: none"> • Communities of practice are informal. If they can be found on an organizational chart, "they cease to be a community." All communities have multiple champions who are self-selected and lead the group. • Communities of practice should have some face-to-face interactions for brainstorming, telling stories, solving problems, sharing best practices and service visions, and offering new work tools. • Communities of practice allow for virtual interactions when people are geographically dispersed. • Shared goals and passionate people create successful communities of practice. • The key to innovation is collaboration; before you can become collaborative, you need a social network process. 	At the beginning of every project, they create a Knowledge Map (K-Map) to identify the knowledge requirements and the source of knowledge and an action plan. Teams that adopted Kmaps outperformed projects that did not use them, in terms of on-time, resource utilization, and, higher gross margins and fewer overruns. No organizational result is expected, so there are no metrics. 3% of the workforce were leading a community of practice, and 75% belonged to at least one community of practice.
Intermountain Health Care	In 1975, a group of 15 nonprofit hospitals came together to form	To actively manage clinical care delivery and to get physicians to learn how to	<ul style="list-style-type: none"> • They identified the 60 most common diagnoses and procedures and the 	<ul style="list-style-type: none"> • Knowledge exists not only in the literature, but it is embedded in the 	Intermountain dominates Utah's health system.

Name of Collaborative	History	Mission and/or Goal(s)	Tools and Mechanisms	Lessons Learned and Best Practice Reflections	Measures of Success
	<p>a system called Intermountain Health Care. Today, they have 150 facilities, 22 hospitals, 25 health centers, and more than 70 clinics. In 1991, they had a strong consensus that quality improvement and clinical care management were central to their mission, and they began to roll out clinical process management throughout their system. In order to do so, they developed a sophisticated learning collaborative. As a learning collaborative, they strived to "make it easy, to do it right."³²</p>	<p>use standardized, evidence-based clinical practices. To become a national leader in health quality and quality improvement.</p>	<p>core clinical care programs.</p> <ul style="list-style-type: none"> • In these areas, they established learning collaboratives that conducted literature reviews, defined protocols, and established key decision points to define current best practices. • They brought groups of clinicians together to review the protocols and relied on medical directors and nurses to oversee implementation. • They developed tools to manage patients according to protocols, and monitor performance. • To integrate clinical services, they designed an organization with a governance system, a toolbox with electronic protocols, decision support, and patient health records. • To manage the learning collaborative, they allowed physicians to override protocols by managing uncommon cases and documenting what needs to be improved. <p>Collaborative projects were based on outcome variance and then RCTs to improve protocols.</p>	<p>experiences of practitioners.</p> <ul style="list-style-type: none"> • To make sure that knowledge is not only disseminated but also used, a process is needed to support the creation of new knowledge. New knowledge emerges if outliers are observed when one benchmarks performance data. • Knowledge that exists in a community of practice should be codified. • To create a learning collaborative, learning should come from "real" experience and scientific testing. 	<p>They achieved strong commitment to adopt evidence-based practice, and much higher than average clinical outcomes. After developing and implementing protocols, the learning collaborative, achieved significant reductions in mortality and readmissions and patients discharged from cardiovascular units achieved 90% compliance with appropriate medications. They achieved huge savings in fast-track extubation, diabetes management, adverse drug event prevention, and ventilator management.</p>

Name of Collaborative	History	Mission and/or Goal(s)	Tools and Mechanisms	Lessons Learned and Best Practice Reflections	Measures of Success
Wisconsin Collaborative for Health Care Quality	In October 2002, nine physician-led health care organizations and their employer-partners founded a collaboration of major hospitals and physician groups. WCHC is a "voluntary consortium of organizations learning and working together to improve the quality and cost-effectiveness of health care for the people of Wisconsin by developing and publicly reporting measures of health care performance." Steady growth has been reported since the collaborative was launched. ³³	The primary goal is to improve the quality of health care in Wisconsin by publicly reporting performance measures. By making public outcomes data, increasing transparency of outcomes data, and working together, that will drive internal managerial and clinical process improvements.	<ul style="list-style-type: none"> • Defined a set of performance measures that incorporates safety, effectiveness, patient-centeredness, timeliness, efficiency, and equity.³⁴ • The group publishes the data at their Web site. • They also convene improvement meetings of providers and payers and promote frequent communication and informal interactions to share ideas. <p>To ensure the quality of the data, they hired an external auditor to check on data reliability and validity.</p>	<ul style="list-style-type: none"> • As a learning collaborative, the willingness to be open and reveal their weaknesses creates value. • Adopting a set of common performance measures with common definitions meant providers could not 'pick and choose' the outcomes to show. • Learning how to communicate and share ideas when physical distances do not allow face-to-face interactions requires relying on telephones and computers. • A learning collaborative should ultimately benefit the customer. 	Baseline performance data and tracking performance over time have accelerated change and led to a greater sense of organizational responsibility. Comparative benchmarking has had a "positive influence" on health care delivery. Over time, publicly reporting data created a sense of urgency to improve.

Personal communications are indicated in the table by initials. See details below.

CL - Carol Lange, email communication, May 3, 2011

KS – Kathrin Stoller, email communication, May 9, 2011

MP - Michael Parchman, email communication, April 21, 2011

SV - Stacey Valentine, email communication, April 19, 2011

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Appendix D. Sample Interview Protocol

AHRQ Learning Collaborative Interview Protocol Pre-Doctoral Trainee

A working group is exploring the establishment of a learning collaborative across AHRQ-funded Institutional Health Services Research Training Programs (T-32s). The AHRQ Learning Collaborative is an effort to foster an ongoing dialogue among program directors, current and past pre-doctoral and postdoctoral AHRQ trainees, program faculty, and AHRQ leadership. Our aim is to become increasingly responsive to current challenges and opportunities experienced by participants and leaders in these training programs.

The purpose of the collaborative is to capture and leverage existing knowledge and experience about the programs. By sharing innovations and effective training practices and by enhancing communication across programs, we hope to deepen our understanding of the core competencies and operating strategies of programs that train future scholars in health services research. To better understand the unique needs, preferences, and challenges of AHRQ training programs with respect to this collaborative, we would like to ask you a series of questions. Thank you in advance for offering your ideas.

Background (pre-doctoral trainee)

- Please indicate the name of your institution/program.
- How did you first hear about the AHRQ training program?
 - Prompts:
 - How are your interests aligned with the AHRQ training program?
- After you complete your doctorate, what are your plans?

Purpose of the AHRQ Learning Collaborative

- What should be the main focus of the AHRQ Learning Collaborative? (We would like to know what functions the AHRQ Learning Collaborative should serve)
 - Prompts:
 - A learning/knowledge collaborative (e.g. continuous learning and sharing of knowledge across institutions).
 - A problem-oriented collaborative (e.g. focused on solving one specific problem at a time).
 - An action-learning collaborative (learn-and-do cycle).
 - Example: this type of collaborative would be useful for implementing new practices and/or improving the effectiveness of existing practices. It is akin to the IHI Plan-Do-Study-Act cycle.
- What objectives do you think are accomplishable by an AHRQ Learning Collaborative in the short-term? The long-term?
- Do you have any specific immediate needs (e.g. skills training, professional development, job placements, other), opportunities, or challenges you believe the collaborative can address?

- Prompts:
 - Consider what you would like to improve, enhance, or change in your current program that may be available in another program.
 - Increase collaborative opportunities across programs.
 - Create a stronger network of AHRQ-trained health services researchers.
 - Share curricula across programs.
 - Other.
- Could you order these needs/opportunities/challenges from most to least urgent (or short-term to long-term)?
- Have you communicated these needs to anyone within your program or outside of your program?
 - Prompts:
 - With whom?
 - Program director
 - Peers within your program
 - Peers outside of your program
 - AHRQ
 - Other?
 - What prompted you to discuss these needs with these individuals?
- What barriers to change do you perceive within your institution?
- Would you be interested in discussing your needs, opportunities, and challenges with other AHRQ programs?
- What would you like to learn about other programs through this collaborative?
 - Prompts:
 - Program structure
 - Curricula
 - Opportunities for research collaboration
 - Practical issues (e.g., connecting trainees to researchers/projects)
 - Other

Target Audience and Participation

- Whom do you see as the target audience(s) for this collaborative?
 - Prompts:
 - Program directors
 - Pre-doctoral trainees
 - Postdoctoral trainees
 - Faculty
 - Other
 - All of the above
- Why do you see this/these as the target audience(s)?
 - Prompt:
 - Is there something particular (i.e., a particular issue/concern/missing link) about this/these target audience(s) that the collaborative can help with?
- How do you think we can get more (trainees, directors, programs) on board with this initiative?
 - Prompts:

- What types of initiatives or activities might stimulate interest among your fellow trainees at your institution?
 - What about your fellow trainees outside your institution?
- Who might be some potential leaders of the AHRQ Learning Collaborative? How do you see them as leaders?
 - Prompts:
 - At your institution (peers, faculty, program director)
 - Outside your institution

Measuring Success

- How would we know the collaborative is working?
 - Prompts:
 - Refer back to the objectives mentioned by the participant – how could we measure whether we accomplish these objectives?
 - How could we measure success?
 - Initial/baseline and followup: A survey of network “strength” (e.g., frequency, duration, and type of contact)?
 - Plan-Do-Study-Act model?
- How could we ensure accountability?
- Who would be responsible for holding the collaborative accountable for accomplishing its goals?

Best Practices

- Please describe innovations or current best practices at your institution that you would like to share with other programs through this collaborative.
 - Prompts:
 - Think about training styles, methodologies, courses, other opportunities.
- How did these innovations or best practices develop?
 - Prompts:
 - Was there a specific problem identified?
 - How was it identified?
- How are these innovations/best practices sustained?
 - Prompts:
 - Who was critical to this effort?
 - Would they be willing to speak with us, and would you be willing to facilitate contact?
- What are your suggestions for ensuring sustainability?
- Do you know of any examples of similar collaboratives and best practices from health care or other fields that may be useful for the development of an AHRQ Learning Collaborative? If so, could you tell us about them?
 - Prompts:
 - Can ask if know about IHI model (problem-focused) and ask their thoughts.

Communication Through the Collaborative

- What mechanisms for communication and sharing would you like to see used as part of this collaborative?
 - Prompts:
 - Web-based communication tools
 - In-person events
 - Working groups around specific research topics
 - Other?
- Which method(s) of communication are you most likely to use? What has worked in the past for you?
- How often do you currently communicate with other AHRQ programs?
 - Prompts:
 - Which programs?
 - For what purpose(s)?
- How frequently could you imagine purposefully interacting with other AHRQ programs?
- What are your thoughts regarding regional AHRQ collaboratives?

Thoughts on the AHRQ Training Program

- What is your overall impression of AHRQ training program?
 - Prompts:
 - How well did it meet your expectations prior to entering the program?
 - Do you feel you have received the training necessary to pursue your desired career path?
- What factors contribute to a great experience within the AHRQ training program?
- What factors get in the way of a great experience?
- What specific recommendations do you have to enhance the training experience within the AHRQ program?
- Can you think of any additional systems, actions, or programs that need to be implemented to support these recommendations?

Conclusion

- Are there other trainees within your program who might be interested in speaking with us about the AHRQ Learning Collaborative.
 - Followup:
 - Can you facilitate contact?

Appendix E. 2005 Health Services Research (HSR) Core Competencies

Number	Label	Core Competency
1	<i>Breadth of HSR theoretical and conceptual knowledge</i>	Know how to apply alternative theoretical and conceptual models from a range of relevant disciplines to HSR
2	<i>In-depth disciplinary knowledge and skills</i>	Apply in-depth disciplinary knowledge and skills relevant to health services research
3	<i>Application of HSR foundational knowledge to health policy problems</i>	Use knowledge of the structures, performance, quality, policy, and environmental context of health and health care to formulate solutions for health policy problems
4	<i>Pose innovative HSR questions</i>	Pose innovative and important research questions, informed by systematic reviews of the literature, stakeholder needs, and relevant theoretical and conceptual models
5	<i>Interventional and observational study designs</i>	Select appropriate interventional (experimental and quasi-experimental) or observational (qualitative, quantitative, or mixed methods) study designs to address specific HSR questions
6	<i>Primary data collection methods</i>	Know how to collect primary health and health care data obtained by survey, qualitative, or mixed methods
7	<i>Secondary data acquisition methods</i>	Know how to assemble secondary data from existing public and private sources
8	<i>Conceptual models and operational measures</i>	Use a conceptual model to specify study constructs for an HSR question and develop variables that reliably and validly measure these constructs
9	<i>Implementation of research protocols</i>	Implement research protocols with standardized procedures that ensure reproducibility of the science
10	<i>Responsible conduct of research</i>	Ensure the ethical and responsible conduct of research in the design, implementation, and dissemination of HSR
11	<i>Multidisciplinary teamwork</i>	Work collaboratively in multidisciplinary teams

Number	Label	Core Competency
12	<i>Data analysis</i>	Use appropriate analytical methods to clarify associations between variables and to delineate causal inferences
13	<i>Scientific communication</i>	Effectively communicate the findings and implications of HSR through multiple modalities to technical and lay audiences
14	<i>Stakeholder collaboration and knowledge translation</i>	Understand the importance of collaborating with policymakers, organizations, and communities to plan, conduct, and translate HSR into policy and practice.

Appendix F. Core Competencies and Learning and Evaluation Opportunities

Health Services Research and Policy PhD Degree
 Johns Hopkins Bloomberg School of Public Health Department of Health Policy and Management

#1- Demonstrate knowledge of the development and implementation of health policy

Specific Competencies	Courses / Learning Opportunities		Evaluation Opportunities											
			Course Work/Exam	Written Comps	Dept Preliminary Orals	School Preliminary Orals	Thesis	Final Defense	Public Thesis Presentation	Non-Thesis Research				
1.1- Identify and discuss the major public health problems in the US and provide examples of how health and health care policies have effectively reduced these health problems.	300.711	Health Policy I: Social and Economic Determinants of Health	X	X										
	300.721	Health Policy I: Social and Economic Determinants of Health PhD Lab												
	300.712	Health Policy II: Public Health Policy Formulation												
	300.722	Health Policy II: Public Health Policy Formulation PhD Lab												
	300.713	Health Policy III: Health Policy Analysis and Synthesis												
	300.714	Health Policy IV: Health Policy Research and Evaluation Methods												
	300.704	(First Year) HPM Doctoral Capstone												
1.2- Identify conceptual models linking the social, economic, and political context to population health and health care policy formation.	300.711	Health Policy I: Social and Economic Determinants of Health	X	X										
	300.721	Health Policy I: Social and Economic Determinants of Health PhD Lab												

Specific Competencies	Courses / Learning Opportunities	Evaluation Opportunities									
		Course Work/Exam	Written Comps	Dept Preliminary Orals	School Preliminary Orals	Thesis	Final Defense	Public Thesis Presentation	Non-Thesis Research		
	300.712 : Health Policy II: Public Health Policy Formulation										
	300.722 : Health Policy II: Public Health Policy Formulation PhD Lab										
	300.713 : Health Policy III: Health Policy Analysis and Synthesis										
	300.714 : Health Policy IV: Health Policy Research and Evaluation Methods										
	300.704 : (First Year) HPM Doctoral Capstone										
1.3- Describe the process of constructing policy alternatives	300.711 : Health Policy I: Social and Economic Determinants of Health	X	X								
	300.721 : Health Policy I: Social and Economic Determinants of Health PhD Lab										
	300.712 : Health Policy II: Public Health Policy Formulation										
	300.722 : Health Policy II: Public Health Policy Formulation PhD Lab										
	300.713 : Health Policy III: Health Policy Analysis and Synthesis										
	300.714 : Health Policy IV: Health Policy Research and Evaluation Methods										
	300.704 : (First Year) HPM Doctoral Capstone										
1.4- Describe the assessment and selection of policy from among different options	300.711 : Health Policy I: Social and Economic Determinants of Health	X	X								
	300.721 : Health Policy I: Social and Economic Determinants of Health PhD Lab										

Specific Competencies	Courses / Learning Opportunities	Evaluation Opportunities												
		Course Work/Exam	Written Comps	Dept Preliminary Orals	School Preliminary Orals	Thesis	Final Defense	Public Thesis Presentation	Non-Thesis Research					
	300.712	Health Policy II: Public Health Policy Formulation												
	300.722	Health Policy II: Public Health Policy Formulation PhD Lab												
	300.713	Health Policy III: Health Policy Analysis and Synthesis												
	300.714	Health Policy IV: Health Policy Research and Evaluation Methods												
	300.704	(First Year) HPM Doctoral Capstone												
1.5- Identify the role that various government agencies and officials, including public health agencies, play in the formation and implementation of policy, and the role of law and regulation	300.711	Health Policy I: Social and Economic Determinants of Health	X	X										
	300.721	Health Policy I: Social and Economic Determinants of Health PhD Lab												
	300.712	Health Policy II: Public Health Policy Formulation												
	300.722	Health Policy II: Public Health Policy Formulation PhD Lab												
	300.713	Health Policy III: Health Policy Analysis and Synthesis												
	300.714	Health Policy IV: Health Policy Research and Evaluation Methods												
	300.704	(First Year) HPM Doctoral Capstone												

#2 -Demonstrate knowledge of the organization and financing of health care services and their public health impact.

Specific Competencies	Courses/ Learning Opportunities	Evaluation Opportunities											
		Course Work/Exam	Written Comps	Dept Preliminary Orals	School Preliminary Orals	Thesis	Final Defense	Public Thesis Presentation	Non-Thesis Research				
2.1 - Describe and critique the financing and organization of health care services in the United States	300.651	Introduction to the US Health Care System	X	X									
	300.703	Doctoral Seminar in Health Services Research											
	300.704	(First Year) HPM Doctoral Capstone											
2.2- Describe and critique the theoretical and conceptual models relevant to health care seeking, access, use, quality, cost, health, health policy, and health care decisionmaking.	300.651	Introduction to the US Health Care System	X	X									
	300.713	Health Policy III: Health Policy Analysis and Synthesis											
	300.714	Health Policy IV: Health Policy Research and Evaluation Methods											
	313.640	Health Economics I											
	313.641	Health Economic II											
	551.601	Managing Health Services Organizations											

#3- Conduct research from conception of ideas through study design, selection and application of appropriate analytic methods, interpretation of results, and publication of findings.

Specific Competencies	Courses / Learning Opportunities	Evaluation Opportunities												
		Course Work/Exam	Written Comps	Dept Preliminary Orals	School Preliminary Orals	Thesis	Final Defense	Public Thesis Presentation	Non-Thesis Research					
3.1 - Pose innovative and unique research questions, informed by structured reviews of the literature and relevant theoretical and conceptual models; formulate testable hypotheses to address these questions	300.870-1	Research and Proposal Writing Process I-II	X		X	X	X	X						
		Written Proposal for Thesis Committee Approval												
3.2 - Select appropriate experimental, quasi-experimental, and observational study designs to address specific research questions and be able to argue in favor of a specific design as the most appropriate; design studies to minimize bias and maximize generalizability	140.621-4	Statistical Methods in Public Health I-IV	X		X	X	X	X						
	140.651-4	Methods in Biostatistics I-IV												
	300.714	Health Policy IV: Health Policy Research and Evaluation Methods												
	309.715	Advanced Methods for Health Services Research: Research Design												
	340.601	Principles of Epidemiology												
	340.602	Intermediate Epidemiology												
3.3 - Develop and implement research protocols that ensure adherence to ethical standards; prepare an application for IRB approval	306.655	Ethical Issues in Public Health	X		X	X	X	X						
	306.665	Research Ethics and Integrity												
		Written Proposal for Thesis Committee Approval												

Specific Competencies	Courses / Learning Opportunities	Evaluation Opportunities												
		Course Work/Exam	Written Comps	Dept Preliminary Orals	School Preliminary Orals	Thesis	Final Defense	Public Thesis Presentation	Non-Thesis Research					
	IRB Application to JHSPH CHR for Thesis Research													
3.4 - Obtain appropriate data sources from which sufficient variables can be validly measured to operationalize study constructs necessary for testing specific hypotheses	300.714	Health Policy IV: Introduction to Health Policy Research and Evaluation Methods	X		X	X	X							
	309.715	Advanced Methods for Health Services Research: Research Design												
	30X.820	Thesis Research												
3.5 - Analyze data using appropriate epidemiological, statistical, economic, or qualitative research techniques	140.621-4	Statistical Methods in Public Health I-IV	X				X							
	140.651-4	Methods in Biostatistics I-IV												
	140.658	Statistics for Psychosocial Research: Structural Models												
	224.690-1	Qualitative Research I-II												
	309.716	Advanced Methods for Health Services Research: Analysis												
	309.820	Thesis Research Health Services Research												
	313.630	Cost-Benefit Analysis: Theory and Techniques												
	313.631	Cost-Effectiveness, Cost Utility and Their Applications												
	313.640-1	Introduction to Health Economics I-II												
	313.642-3	Introduction to Microeconomics I-II												
	330.657	Statistics for Psychosocial Research: Measurement												
	340.601	Principles of Epidemiology												
340.602	Intermediate Epidemiology													
3.6 - Communicate research findings in oral and written form; place research	309.820	Thesis Research Health Services Research					X	X	X					
		Final Defense												

Specific Competencies	Courses / Learning Opportunities	Evaluation Opportunities												
		Course Work/Exam	Written Comps	Dept Preliminary Orals	School Preliminary Orals	Thesis	Final Defense	Public Thesis Presentation	Non-Thesis Research					
findings in the context of current knowledge; identify limitations and further areas for research; discuss policy implications and public health significance of findings	Public Thesis Presentation													

#4 -Communicate scientific findings through written and oral methods to technical and lay audiences.

Specific Competencies	Courses / Learning Opportunities	Evaluation Opportunities											
		Course Work/Exam	Written Comps	Dept Preliminary Orals	School Preliminary Orals	Thesis	Final Defense	Public Thesis Presentation	Non-Thesis Research				
4.1 - Write manuscripts of publishable quality for the peer reviewed literature that describe and explain research findings	Final Defense					X	X		X				
	Non-Thesis Related Research												
4.2 -Teach other students basic introductory materials in the student’s general area of expertise	300.700 Teaching Assistant Orientation Seminar	X											
	300.750 Teaching at the University Level												
	Teaching Assistant Opportunities												

#5 - Demonstrate knowledge of the issues, research literature, conceptual frameworks, and research tools of health services research and policy or gerontology and long-term care.

Specific Competencies	Courses / Learning Opportunities	Evaluation Opportunities												
		Course Work/Exam	Written Comps	Dept Preliminary Orals	School Preliminary Orals	Thesis	Final Defense	Public Thesis Presentation	Non-Thesis Research					
5.1 -Application of health services research and policy concepts and theories to the field of public health	300.714	Health Policy IV: Health Policy Research and Evaluation Methods	X		X	X	X	X	X					
	309.620	Managed Care and Health Insurance												
	309.712	Assessing Health Status and Patient Outcomes												
	309.715	Advanced Methods for Health Services Research: Research Design												
	309.716	Advanced Methods for Health Services Research: Analysis												
	311.615	Quality of Medical Care												
5.2 - Application of gerontology and long-term care concepts and theories to the field of public health (for special program only)	260.665	The Biological Basis of Aging	X		X	X	X	X	X					
	309.605	Health Issues for Aging Populations												
	309.606	Managing Long-term Care Services for Aging Populations												
	309.607	Innovations in Health Care For Aging Populations												
	340.616	Epidemiology for Aging												
	380.753	Dynamics of Population Aging												

Appendix G. Existing Health Services Research Resources

Health Services Research University Courses and Programs
<http://www.nlm.nih.gov/nichsr/hsruniv.html>

Kaiser Syllabus Library
<http://www.kaiseredu.org/Syllabus-Library.aspx>

Example of Open Courseware at Johns Hopkins University
<http://ocw.jhsph.edu/>

Summit on the Future of Health Services Research Data and Methods
<http://www.academyhealth.org/About/content.cfm?ItemNumber=2531>