

Colloquium: Physician Portfolios

Background

Portfolios are increasingly in use or under development as educational tools for documenting learner achievement of competence and fostering reflection on practice with the intent of improvement.. Simultaneously, electronic communication and dissemination systems are increasingly replacing traditional paper systems. For example, residency application processes are almost entirely on-line now through the Electronic Residency Application Service (ERAS). A range of professional organizations, including the AAMC, the ACGME, the FSMB and the NBME, is interested in organizing a community of practice to document professional formation across the continuum of education and professional practice. The aim is to develop an electronic portfolio infrastructure that would serve to longitudinally document learner experiences, reflections and outcomes as well as assessments by self and others, throughout the developmental continuum of medical school, residency and out into practice. Such a system could also be used for a variety of credentialing applications (e.g. licensing, certification and privileging) and to promote self-reflection, self-assessment and improvement, the foundations of life-long learning.

In discussions at the “Physician’s Summit group”^a meetings it has become clear that with the movement toward Maintenance of Competence, it will be critical for physicians to have some sort of record of their professional growth, ideally from the beginning of their education to the conclusion of their professional life. Portfolios have the potential to generate important new collections of both learning expectations and data documenting the professional growth of individuals as well as the teams and environments in which they learn, reflect and undergo assessment. It is clear that there is considerable innovation underway on the topic – reflected in the collaborative of undergraduate medical education, efforts by the ACGME and other initiatives. However, recent growth in interest, combined with an extraordinarily complex and fragmented system of medical training, practice and oversight, raise the risk that, if development is not coordinated, the resultant portfolio systems will be highly heterogeneous, and tailored to local context with little or no portability across locales, time, or the training: practice continuum. In effect, the medical education community is poised to create a fragmented system of tools that cannot communicate. It therefore seemed timely for relevant organizations to come together to focus attention nationally on the development of transportable portfolios, and thereby acknowledge and promote life-long learning to serve the public’s need for safe and transparent care.

^a Stimulated initially by the Federation of State Medical Boards, this group includes numerous medical professional and public organizations intent on assuring the public about the continuing competence of physicians – see <http://www.innovationlabs.com/summit/summit4/>.

As a first step, the AAMC and NBME invited a small group of individuals with interest and expertise in portfolios to participate in a colloquium in May 2007. The goal of the colloquium was to develop a white paper - the current document - for use at an Invitational Conference in October 2007. This conference will include a broad cross-section of leaders in education and assessment from academic institutions and national organizations, including the AAMC, ACGME, FSMB and NBME as co-conveners. With this in mind, the colloquium included discussion under the following major headings:

- The Purpose(s) of a Portfolio
- How a Portfolio Works
- Themes in the Portfolio Literature
- Design of a National Portfolio Framework
- Next Steps

The colloquium participants were charged to discuss what would be ideal, as well as what “is”. They worked in small groups as well as a group of the whole. This report is organized according to the agenda for the colloquium. It is intended to raise as many questions as answers and to be used as a “straw man” for deliberations at the fall Invitational Conference.

The Purpose(s) of a Portfolio

Since the quantity, quality and variety of data that can be contained in an electronic portfolio can vary enormously, it is important at the outset to establish purpose(s) in order to ensure that the appropriate data elements are available. Examples of salient purposes for which portfolios might be used include:

- Designation of learning objectives and expectations
- Documentation of learning experience (case and procedure logs)
- Performance measures and processes of care
- Patient outcomes
- Self-assessment (e.g. knowledge, skills, behaviors)
- Reflection and self-appraisal
- Mentoring
- External assessment of competencies
- Evaluation of programs
- Targeting of CME/CPD and maintaining CME/CPD logs
- Transparency for consumer choice

The participants in the colloquium recognize that portfolios are not a panacea for all that ails our current health care system and attendant challenges. At the same time, they recognize the importance of creating a coherent national framework that could begin to provide physicians with “just-in-time” individualized data compilations, together with analytical tools and benchmarks derived in a somewhat standardized fashion from others with comparable experience and

practice. This could provide a powerful mechanism to support their education and professional development, and could lead to improvement of safety and practice processes and outcomes.

How a Portfolio Works

The colloquium participants recognized at the outset that they all tend to use the term portfolio differently, and that there are currently a variety of different definitions. One solution discussed was simply to avoid use of the term, or to use other equivalent terms (e.g. learning system, professional development folio (PDF), or learning e-folio), but none of these seemed entirely satisfactory or sufficiently succinct. The group therefore agreed on a high level characterization of portfolios as

- “a learner-centered system for self-directed learning and assessment that provides a spectrum of meaningful data compilations and tools that stimulate self-assessment, reflection and self-appraisal, practice improvement, and which has the ability to report out selected portions to other individuals and organizations for a variety of purposes.”

This framework should be able to tell the story of an individual’s professional development across time providing on one hand an explicit statement of expectations and on the other a clear record of achievement in relation to such expectations. The primary mechanism is that of guided data compilations that serve the functionalities or purposes described above along with ongoing mentoring. This relatively broad conceptual sweep demands that standards and criteria be applied to each functional compilation and its component data elements, to maximize data accuracy and the ability to use the same data elements in data compilations with very different functionalities. The output of portfolios should also be formatted and presented in a fashion that is as compelling as possible to all viewers.

These considerations prompted several important derivative questions and related discussion, many of which appear to argue for a framework and related processes that are orchestrated at a national level.

- Who selects the material that goes into a portfolio and determines the criteria for judging the merit of the information in a portfolio? The working assumption was that in general the learner/professional is the primary determinant of much of the data entered; but that the mentor and other external agencies provide broad standards for categories and quality of information and content.
- Is the portfolio primarily for learning, for assessment, or both? Participants felt that this could vary, but that any national framework that might

eventuate should enable data compilations that speak to both. Other thoughts included:

- Key to the success of the portfolio is that the user has to believe it is helpful, and it can only be helpful if the individual engages with it and finds it useful.
 - Active engagement of the learner/professional is consistent with competency-based education.
 - Portfolios can facilitate physician learning after formal education is completed, and encourage integration of new information, context-specific assessments, and illustration of progression of a physician's abilities over time. They are also expected to play an important role in maintenance of certification.
 - Competencies are complex skill sets that must be comprehensively assessed – a portfolio lends itself to a practical and more effective way to apply multiple methods, tools, and evaluators.
- To whom does the portfolio belong: learner, educational facility or assessor? It was clear that this is a difficult question, because of considerable divergence of opinion around the definition of ownership. For example, it can be argued that the learner is legally the owner of any data that relates to his individual identity, competencies and performance. However, if relevant data is stored in a national repository, is the organization responsible for the repository the owner or the custodian of relevant data? Discussion moved to consideration of “control” rather than ownership. There was a clear consensus that the learner should control access to data identifying them. This would be achieved if the learner granted a license to third part(ies) to see selected data.
 - What material or information should be shared and what should not be shared? The starting assumption is that this is largely under the control of the learner/ professional. Some personal material, for example, from self reflection, should be beyond discovery because learners will never trust and engage with a portfolio if this principle is not perceived to be sacrosanct. However, certain realities intrude. Some data has to be reported to regulatory agencies for credentialing purposes (e.g. licensure, certification, privileging), or for demonstration of ongoing competence (e.g. MOC). In the case of such external mandates, the learner could theoretically withhold relevant data or provide it in some other fashion, but this is not likely to be a realistic option.
 - Who assesses the success of the learner? This will depend on the assessment paradigm. For relatively low stakes, formative assessment, the learner would ideally be in control and also the primary locus of accountability, undertaking a process of data review, self-appraisal, reflection and goal-oriented planning. The one big proviso is that this

process absolutely requires periodic external input or audit from one or more mentors, professional peers and regulatory agencies, to be sure that the learner develops the necessary insight to appropriately utilize these data to foster professional formation and practice improvement.. Guidance and mentoring are particularly important, given discussion of possible gender differences in self-assessment abilities and different generational expectations. On the other hand, for high stakes, summative assessment, control moves to the assessor, increasing with the level of standardization required of the assessment. The participants expressed some concern that assessment might be overly dependent on the learner's writing skills, particularly for higher stakes applications. Alternatively, the learner might "game" the process, for example in a lower stakes context. These difficulties might be reduced by specific training of faculty and others that serve as mentors and assessors.

- Who are the various consumers of the portfolio? They include the learner/professional and anyone with interest in viewing the data compilations (who must be authorized by the learner). These could include peers, mentors, faculty, educators, employers, regulators, professional peers, payers and eventually patients.
- What is the role for mentors? Data compilations should ideally provoke both learner self-appraisal and a conversation with a trusted mentor. To be useful, portfolios therefore need to involve, and be supported by, mentors who are experienced and preferably trained. Mentors can play several different roles, providing support and external validation, identification of needed resources, general advice on professional development and, if necessary, explicit guidance on remediation. The latter is particularly important for those learners with poor ability to self assess, or deficient insight, many of whom may otherwise drift towards academic consequences or disciplinary actions.

Themes in the Portfolio Literature

There is a great deal in the literature about the application of portfolios in teaching and assessment, particularly in primary and secondary education. The literature can be organized around a number of themes:

Principles in the preparation and development of professionals

Portfolios are seen to offer several strengths that are relevant to contemporary views of education and assessment. For example, they focus on collecting evidence across time and, in contrast to an episodic assessment approach, portfolios can capture a more dynamic profile of the professional development of the learner across time. By the same token, education and assessment are not necessarily viewed as activities that should be separated in time and place, and there is greater attention on learning expectations and outcomes than on

structural and process measures. Portfolios encourage collection of data across a fuller range of competencies beyond the knowledge, reasoning and clinical skills that are the major focus of our current assessment approach, and can therefore speak to other important competencies e.g. professionalism, communication, teamwork, cultural sensitivity; and processes and outcomes of care, etc. Moreover, it is hoped that the more integrated approach inherent in portfolios might eventually enable assessment approaches that allow a more holistic view of learner proficiency beyond the deconstructed view of component competencies. From the viewpoint of the educator, portfolios offer a clearer connection between educational theory and practice and the likelihood of enhanced learner/mentor interaction. The mentor can also have a more direct view of whether or not the learners are engaging in effective reflection and self-appraisal, and in particular if they can accurately identify their strengths and weaknesses. Learners meanwhile acquire a comprehensive and living record of their learning and its trajectory, a “CV on steroids.”

Colloquium participants agreed that a key component of the portfolio application is mentorship. The mentor is an individual who serves as a coach and a “reality check” for the learner. In the case of the practicing physician, this role might be best served by Specialty Societies. The development of mentors will be a high priority. It will also be important to be able to separate the mentorship role from the assessment function so that candidates can discuss their weaknesses with someone who is not involved in their summative assessment or the high stakes that may attend it.

Types of Portfolios

Certain authors distinguish a clear taxonomy in relation to the primary purpose of the portfolio. For example:

- *Dossiers* collect proscribed materials but do not necessarily demonstrate a strong link with learning theory.
- *Course portfolios* link learning to specific learning outcomes for a curricular unit.
- *Reflective portfolios* are personally driven, professional directed, systematic and continuous reflections upon one’s professional development.
- *Assessment portfolios* can emphasize formative assessment, summative assessment, or both.
- *Mixture* of the above

Depending on the type of portfolio, or its primary purpose, it can include biographical information, resume, past and present professional roles, prior learning history (education and assessment), learning goals (both generic and individual) and self assessment. The overall strategy is to include multiple approaches, multiple instruments, multiple observations, and multiple raters.

Design of a National Portfolio Framework

The operational assumption in developing the structure of the portfolio is that the undergraduate medical education portfolio will coordinate with the graduate medical education portfolio. Ultimately both will inform the portfolio for continuing professional development for the practicing physician, creating a seamless continuum of learning and assessment from medical school through the physician's career. These considerations lead to some fundamental questions that include:

- How do we create systems (educational and technological) that are integrated and provide a sense of continuity for the learner?
- How do we create an infrastructure with which the learner feels comfortable and which conforms well to the realities of the continuum?

For the purposes of this discussion, colloquium participants assumed that learning involves both education and assessment. The necessary functional components of an effective national portfolio can therefore be separated into two categories: 1) Learning and Reflection and 2) Authorized Release of Data to Third Parties

Learning and Reflection

This component would include:

- Expectations (e.g. learning objectives, professional milestones)
- Achievement (e.g. self-assessment of work, documentation of improvement, external assessment)
- Strengths and weaknesses (e.g. finding and addressing issues relevant for practice improvement)
- Reflection (e.g. narrative journaling , documenting reflective practice)
- Involvement of mentors (e.g. as a reality check, reflection coach), or assessors (for summative assessment)

Authorized Release of data to Third Parties

Examples of what might be released include data relevant to:

- Licensure (both initial and maintenance thereof)
- Certification (both initial and maintenance of certification)
- Credentialing and privileging (e.g. for payers and institutions of practice)
- Accreditation (e.g. LCME, ACGME and Joint Commission)
- Public disclosure (both voluntary and mandated e.g. by states)

Barriers and Unanticipated Outcomes

Colloquium participants identified several issues that must be addressed as a portfolio framework of national scope is developed and implemented. Perhaps the most important is cost. While it is easy to envision the cost of building the

necessary infrastructure, these costs are potentially dwarfed by the human costs of portfolio use and maintenance, including collection and entry of data, administration, reflection, and mentoring. Then there are opportunity costs due to the fact that mentors will inevitably be diverted away from other activities, resulting in potential loss of revenue. These same factors may also contribute to a perception that portfolios increase dramatically the upfront overhead and thereby the hassle factor. For example, if large amounts of data require entry repetitively because of a lack of inter-operability between portfolio platforms, the burden might be far more visible than the benefits

There is also likely to be considerable anxiety over data security and confidentiality. If a national portfolio framework were to take the form of a “super-repository”, it would provide a tempting target for legal discovery, and simplify considerably collection of sensitive data that is currently stored in highly fragmented form across many different repositories. A “super-repository” would also raise fears of a “big brother” amongst learners, a situation in which the learner no longer controls their data. For example, the practicing physician is now vulnerable to mandates for public release of data (e.g. by states). Then there is the difficulty of refreshing data in a “super-repository and ensuring that any changes made in the primary repository from which data is drawn are reflected accurately and in timely fashion in the “super-repository”. These factors argue strongly for evanescent data compilations that are gathered “just-in-time” across the various primary repositories in which the data elements are now stored, and expunged immediately after report out to the learner and any authorized third party viewers. One version of this real time data-sharing model, termed the Trusted Agent, has been successfully piloted for the purposes of compiling initial licensure applications in three participating states, namely KY, NH and OH^b.

Another real barrier concerns measurement aspects. Even if we agree that the concept of a national portfolio framework is a good idea, we will need to come to general consensus in short order on metrics, method, form, and scope. In addition, data included in portfolios is not just the quantitative, more objective data typical of current educational practices; much of it is qualitative or more subjective in nature. For the portfolio to be useful, it will be important to accept and embrace the use of data traditionally viewed as “squishy” that is concerned less with overall proficiency and more with process and how people create meaning. This will require a significant shift in our thinking.

Some potential difficulties may be more salient at some points in the continuum than at others. For example, for practicing physicians, it will clearly be appropriate to involve licensing and certification boards and payers to reduce inertia in the system. Moreover, they are likely to be recipients of an authorized third party report out (e.g. for purposes of licensure, MOC and pay-for-performance). Another major consideration for any national portfolio framework

^b www.trustedagent.org

is that of issues related to International Medical Graduates (IMG). Would it be necessary to create a potentially cumbersome entry point at time of entry into residency training that is required, or might it be possible to gather relevant UME data and pre-populate the learning record?

There are also likely to be many unintended consequences, both bad and good. For example, what might be the impact on the “CME Industry” if physician competencies, self-assessment and CME logs were included in a portfolio? How might the role of Specialty Societies change, especially in relation to mentorship of practicing physicians?

There are larger political realities. Who will be the champion for a national portfolio framework? Given our highly fragmented system of training and practice, no single entity currently has the kind of political muscle necessary. The one exception might be the federal government, but this hardly seems workable given antipathy of the public and physicians to government control of healthcare. The government has also shown scant evidence of enthusiasm for taking a leadership position in relation to another national framework – the Electronic Health Record. A better approach might be a functional collaboration between key organizations engaged in education and assessment across the continuum. The identification of a champion(s) is arguably the most important issue in development of an effective national framework. It has a direct bearing on whether or not this concept is in fact sustainable, or just another passing fad. This is particularly true since there will be predictably a long lag time between implementing any framework and the accumulation of useful data.

Finally, it is prudent to consider the kind of objections that are often raised in response to major change in the learning environment. Thus, “the current system is not that bad – tell me how this is better?” or “There is no proof/data that the implementation of portfolios will improve learning or professional development, learner satisfaction, much less patient care”. These will need to be addressed sympathetically and directly.

Research Agenda

There was general agreement that while there is much in the literature on the uses of portfolios, there is still considerable room for organized research in the medical learner context. For example, there is little evidence to support when to employ portfolio methodology and how best to use it. Participants felt that research should be organized in a fashion consistent with the continuum of medical education, and using the general competencies developed by the ACGME and ABMS for undergraduate and graduate medical education to determine standards and identify baseline data. Major research thrusts would include:

- Educational outcomes
- General assessment issues

- Predictive validity
- Quality and safety of healthcare
- Efficiency and resource utilization
- Costs and cost effectiveness
- Mentorship and related faculty mentor development
- Functionality and usability

It is worth emphasizing that a national portfolio framework has the potential to make available for the first time a longitudinal record that can be combined across individuals in various ways (e.g. by program, school, residency program, specialty/subspecialty, payer or region). If such data sets were appropriately de-identified, and individual learners approved de-identified disclosure, such data sets could provide hitherto unavailable insights into the effects of particular curricula or educational practices on the downstream proficiency of physicians and the healthcare delivered. Educational and learning paradigms, and models for development of proficiency and expertise, could be tested empirically. Similarly, it seems plausible that the availability of such rich data sets in real time would result in more informed choice of CME, identification of areas of weakness requiring remediation, and truly reflective practice that leads to improvement.

Next Steps

Overall Goal

While as many questions and issues were raised as there was consensus derived, there was agreement that the overall goal is: To conceptualize and initiate the development of a new national framework providing physicians with learner-centered data compilations and tools that support their education, professional development, and practice improvement, and which can be authorized for reporting to external entities.

Key Decision Points

Several questions emerge. How will the portfolio be structured? To what extent can the portfolio be used to allow comparisons within and across institutions? How will relevant standards evolve? Who must be involved? Who should be involved, and how can we foster a shared commitment and vision for this integrated national framework? Which pilot(s) should be done to test feasibility of the vision? These and many other salient questions will be addressed at the upcoming Invitational Portfolio Consensus Conference for which a key task will be to develop a document that is an expansion of this “white paper” to serve as a roadmap for the vision. The conference should result in a commitment to action steps and, perhaps, delineation of a pilot to test the feasibility of the portfolio.

The colloquium concluded with agreement about the specific objectives for a national portfolio framework:

- Built by physicians, for physicians and patient well-being
- Seamless and transportable technology across the education/practice continuum
- Inter-operable within educational and practice settings
- Productive engagement of a majority of physicians
- Improved transparency in healthcare
- Broadened basis of meaningful assessment across the developmental continuum of medical education, training, and practice (e.g. behaviors and skills, as well as knowledge)
- Ability to assess performance in context
- National blueprint for continuing development of the “good physician”
- Non-punitive self-improvement in addition to traditional high stakes external assessment
- Reflective practice with the goal of improvement and lifelong learning
- Provides a longitudinal data set currently unavailable for educational research to begin the process of evidence-based education
- Moves the locus of accountability for the professional development record from the external, regulatory function more towards the individual learner
- Could allow evaluation of micro-environments as well as the assessment of individuals and teams
- A mechanism to satisfy external mandates but only with authorization of the individual physician
- State-of-the-art security, no increased vulnerability to discovery
- A system of learning and assessment that is worth the effort – decreases hassle, and associated with nominal costs