

Implementation, Certification and Testing Workgroup

December 4, 2014 Homework Assignment - Comments and feedback from the May 7, 2014 Certification Hearing

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# Panel 1: Providers

## Zabrina Gonzaga

* Broaden MU Incentive program to include long term care and post-acute care providers
* Consider incorporating teleHealth and mobile Health encounters as part of MU. This supports access to care
* Extend interoperability focus and testing to include data exchange between acute care, ambulatory, and LTPAC

**Comments**

Based on the Provider Panel feedback, I would recommend interoperability as a priority.  Specifically addressing their feedback “Certification does not adequately cover interoperability.  They may not interoperate with other products.”

In addition, another general area for improvement is aligning standards in the certification and testing rules to support eCQM reporting.  For example, eCQMs version references a specific version of a value set which make them static. The ONC rule for MU requires the use of a “minimum standard” for adoption of vocabulary which allows for flexibility in the version adopted and implemented by an CEHRT.   Therefore, CEHRT may adopt and implement a newer version of a code system than what is referenced in a eMeasure value set.

## Andrey Ostrovsky

Slide referenced - **Panel 1: Providers**

* EHR products may meet certification criteria, but the way the functions are implemented may disrupt workflow
  + Some functions fulfill the letter of the criteria, but not the intent (e.g., clinical summaries, patient education)
    - Some functions are implemented as “check the box,” this may be easy for vendor, but creates burden for provider and less useful

**Comments**

In my experience as a physician, fewer requirements (check boxes, processes, etc.) for EMR certification generally translate into more simplicity for the provider and less workflow interruption. Although it may not be feasible to overly regulate an emphasis on usability, I think it could be productive to acknowledge the reviews of external bodies like KLAS research (and similar entities) that research user feedback on EMR products. Since switch costs are so high for EMRs, existing providers are rarely empowered to make a purchasing decision based on their dissatisfaction with user experience. However, provider input into external ranking of an EMR (like KLAS rankings) could get a response from EMRs to improve/streamline their processes to ensure they are able to sell better due to better rankings. Certification criteria that encourage and expedite this type of feedback loop without over-regulating could be productive.

Slide Referenced – Panel 1: Providers (II)

* Certification does not adequately cover interoperability
* Certification program should be less prescriptive; focus on what and less on how
* More flexibility and time for implementation is needed
* An ideal certification program would provide product comparisons in terms of their functionality

**Comments**

Agree with these points. Opportunities for comparing products could be the following semi-peer-reviewed processes:

* Agency for Healthcare Research and Quality (AHRQ). Innovation Exchange. <https://innovations.ahrq.gov/>
* Center for Care Innovations (CCI). Innovator Database. <http://www.careinnovations.org/knowledge-center/innovator-database/>
* Global Lab for Innovation. Innovation Inventory. University of California, Los Angeles (UCLA). <http://uclainnovates.org/intake-form>

Although not traditionally dedicated to comparing EMRs, it would be interesting if EMRs were put on these platforms for comparison purposes and social-network empowered, peer-review.

## Steve Waldren

### Implementation Variation

There was discussion about the challenges of interoperability due to the variations in implementation of standards and specifications. Stated a lack of implementation guidance.

Opportunities for

* Providing implementation guidance, such a reference implementation
* Tightening certification specifications
* Performing testing on real-world implementations

### Checkmark the box implementation

There was discussion about how vendors and providers are implementing functionality to meet the “letter of the regulation” due to challenges, such as aggressive timelines and volume of change. Also discussion about how providers needed to change workflow to meet vendor implementation for certification; although the current workflow, allowed by the vendor, complied with the intent of the criterion but not the way it was required or counted.

Opportunities for

* Focus certification and requirements on core needs
* Decrease specification on implementation and more on outcomes
* Evaluation of vendor implementations for usability in practice

### Fear of Audit

Lack of guidance around what is required in an audit or how an audit would be conducted.

Opportunities for

* Creation of improved guidance regarding audits
* Improved implementation assistance

### Workflow

There were several mentions of workflow, either the lack of a workflow or the inflexibility of implemented workflows.

Opportunities for

* Exploration of standardized workflows
* Certification criteria for the inclusion of workflow engine functionality

# Panel 2: Vendors

## John Travis, Sarah Corley, and Udayan Mandavia

Comments are framed against the outline of the summary points of feedback from the hearing, and then have recommendations listed at the end.

### Complete Set of Requirements Are Not Provided With Adequate Time for Development

Vendor development life cycles generally follow an 18 month time line. Requirements are gathered from market analysis, regulatory requirements, customer requests, and changes in medical care. The underlying business needs must be clearly identified, any vocabularies identified, workflows evaluated to understand who might be entering data and where in the process of care the data would be entered. Any dependencies must be identified for data sharing across the application, impacts on existing functionality including interfaces must be considered. User centered design principles require all of these to be done prior to starting development. After coding, new products generally must go through extensive QA including unit testing, smoke testing of the build, regression testing, and then go through an alpha and beta testing process with clients. Rushed development decreases the time available for each of these steps and can lead to products that are not as efficient or defect free as they might otherwise be.

End users do not generally take a new release immediately as they must do their own testing first to make sure that all interfaces are working and that the new version will have adequate performance with their existing hardware. Increased demands for computing power such as occur with auditing and reporting often requires additional hardware which must be purchased and tested. End users must be trained and any new workflows incorporated and refined. This process may take 12-18 months or more after the product is put into general release. We have found the Meaningful Use program has interrupted the smooth flow of this process with artificial deadlines that do not meet developers or end users time cycles.

We have learned that shortened timelines carry significant issues for the cycle time needed for the industry to address gaps, provide updates, support client adoption and meet the challenges of particularly the first year of use in a new MU stage. We have seen slow adoption of certified product[s] and even with adoption of CEHRT, EHs and EPs are slow to attest to the new requirements and are opting to use the flexibility rule in large numbers. We have a number of clients who have opted to drop out of the MU program because the risks and costs outweigh the incentives or penalties. With the stage 3 requirements still not available, we are at risk for the same or worse time pressure for the 2015 criteria edition. This will not allow time for thoughtful user centered development of new criteria requirements.

### Certification Requirements and Testing Tools Are Not Mature At Release

In addition to the short time lines, we have seen CMS and ONC change test procedures and methods and interpretations of requirements which have led to redevelopment work. This does not allow for a level playing field and vendors who certify early may have products which support an alternative interpretation of the requirements that was present when they certified.

Certification testing scripts like software must undergo pilot testing prior to release. The test data sets had significant issues of clinical validity and in many cases used expired or clinically inappropriate code set values that required substitution. Test scripts that contain medications no longer available, outdated code sets, and medical inaccuracies can be identified in the pilot process and save time for vendors, test labs, certifying bodies, and ONC, CMS, and NIST who must then rapidly respond as they are identified in live testing. In addition, the pilots could show were there were excessive or redundant test steps that prolonged certification time and costs to no additional benefits.

Testing tools must also be pilot tested. It is not appropriate to have testing tools that must undergo repeated revisions. The stability of the testing requirements in 2014 certification after certification was opened provided evidence that the test procedures, data sets, methods and tools were not ready for full scale production certification testing. Conformance testing tools had many errors in the testing logic that necessitated corrections and update or required vendors to be “held harmless” from false negatives to allow a pass without a flawed conformance test result. It highlights the need to have more extensive pilot testing effort prior to full certification testing use.

Vendors spend months aligning their product with the Certification Requirements, and changes in the Test Procedures just prior to the vendor’s certification test dates causes rework and delays in certification. Rather than allowing a vendor to select which version to test on or to redevelop, well piloted processes will prevent this from happening. Similarly, release of new versions of the tools just prior to the vendor’s test date increase the burden on the vendors to ensure the compliance to the newer versions.

Testing tools must be available for all options provided for attestation. The ability to test data exchange for transitions of care is only available for EPs and EHs using a product that is Direct Trust accredited but that is not a certification requirement. This failure causes confusion among software users as to whether they are eligible to attest for MU or not.

The release of the testing tools and test procedures are not synchronized. For example, the updates to the Cypress tool are not in sync with the release of eCQMs by CMS, forcing vendors to test with older specifications.

Frequent changes in the specifications can cause interoperability files to fail. We have seen files which were successfully tested during the certification process fail in implementation (e.g. QRDA Cat I and III files which were successfully validated in Cypress during the certification process fail in the CMS SEVT tool). CMS and ONC must ensure that the newer versions of interoperability specifications must be backwards compatible so that changing them does not interfere with the fundamental objective of interoperability between EHRs certified on different versions of the requirements.

Now that certifying bodies are starting to perform surveillance testing which requires vendors to retest on certain functionalities, it is our understanding that for retesting the current version of any given test procedure is used. There have been significant changes in some test procedure requirements and interpretation that lead to the retest being applied in a materially different manner than the original testing. Vendors may have additional development work to bring their products up to conformance with the new scripts. These changes increase the costs of development and therefore costs of product. It also adds a burden on end users who have additional upgrades they must make to keep current.

### Interpretation of The Requirements Have Changed

The interpretive guidance provided to the ONC-ACBs, the ATLs, the vendor community and the provider community that occurred through ONC and CMS FAQs and communications had a material effect on the testing requirements over time. This highlights the need for the interpretive guidance used in testing to stabilize more fully before certification opens or an uneven bar is applied to vendors who test early in the cycle versus those who test later. In addition to CMS published changes in interpretation of the requirements, where ambiguity exists, there can be a difference on how each of the ATLs interprets them. Test requirements and expected results must be specified clearly, leaving very little room for interpretation by ATLs, end users, and vendors. A notable example is the FAQ on whether data to support a core measure can be entered before during or after the reporting period. Initially vendors interpreted the requirement to mean that data must be entered at the time of an encounter, then we received guidance that data could be entered before during or after the reporting period up until attestation unless the measure specified a specific time, later it was amended to be before, during, or after only if it was within the reporting year unless there were other reasons to enter it outside of that period. As you can imagine the last interpretation added even more ambiguity. All of these FAQs required adjustments of reports and clinical workflows and has led to variability across vendors. The variability prevents conclusions to be made about aggregate data as it may not be consistent across vendors.

In addition to the rework necessary to support the fluid interpretations, there is uncertainty as to whether changing a report requires recertification with its attendant costs.

### Meaningful Use Objectives and Quality Measures Must be Aligned with Each Other, with Certification Requirements, and with Clinical Practice

While the requirements for using EHRs certified to the most recent specification of e-CQMS for PQRS and IQR was removed from the final 2015 PFS and IPPS rules, they may be subject to retesting for surveillance purposes using the current version of the e-CQM specifications versus what they may have originally tested with. Many vendors spent the time, money and effort to redevelop the measures and recertify because of the confusion. Users of products may have an additional upgrade in order to use the new specifications that are in addition to their original upgrade to 2014 CEHRT.

Many CQMs had flaws in the measures that could have been detected in pilot testing. An example is the exclusion for a diabetic foot exam only includes codes for traumatic foot amputations and not for surgical amputations. CMS does not make changes to the measure outside of the measure release cycle so vendors are forced to either inaccurately represent all amputations as having been traumatic, or show poor performance scores for providers by not applying the exclusion to those patient who had non-traumatic amputations.

The Coding System provided in the datasets and eCQMs is not aligned with the certification requirements. For example, for Interoperability, both CPT and SNOMED codes are accepted for procedures in a C-CDA, but in most of the test data sets and eCQMs only the SNOMED codes are provided.

All CQMs or core measures should be evaluated prior to release for their impact on clinical workflow. Consideration should be given as to whether the required data elements are already being collected and are relevant for the care that is being provided. Much provider dissatisfaction is related to the increased documentation burden from MU measures. This also applies to the requirements for automated numerator and denominator calculations. Many additional clicks have been added so that care that is already being provided can be counted and exclusions can be tracked. Users of the EHRs do not find this additional documentation to be a reasonable use of their time.

Certification requirements should be in-line with what is available in the industry. For example, Certification requires that patient education and clinical decision support be made available using the HL7 infobutton standard. In the case of lab values, there is no implementation available in the industry; the only implementation available is for the lab code. If the expectations were NOT to test infobutton based on the value / results and test it only based on the CPT codes of labs, this information should have been specified so that the early adaptors do not spend unnecessary efforts in searching for such sources and seeking clarifications from ACBs and ONC.

### Recommendations

1. Minimizes certification and attestation requirements to focus on a few key priority areas
2. Understand the business case for each requirement including what will be done with the data, how does the requirement improve efficiency or improve outcomes, what costs are involved, who is the intended beneficiary of the data being collected, who should cover those costs, workflow changes, and any unintended consequences that might occur.
3. Assess the impact of new requirements on documentation burden and time impacts to enter, track, and report data
4. Address data mapping issues prior to specification of code sets. For example mappings available through the UMLS for mapping between ICD and SNOMED are not of sufficient granularity to be performed without clinical intervention.
5. Involve all stakeholders in creation of testing scripts to insure accuracy, clinical validity and relevance, and efficiency of data entry to reduce time spent prepping the database for testing and time spent actually testing.
6. Review certification and attestation requirements for ambiguity and address prior to releasing final requirements.
7. If there is still a need for guidance, discussion should occur with all stakeholders prior to release so all implications of the guidance can be understood and addressed including whether retesting is necessary and whether attestations that have already occurred need to be amended.
8. Quality control needs to be improved by those answering the CMS e-mail questions. We have numerous examples of completely opposite answers to the same questions.
9. Pilot test scripts, methods, data sets, procedures, and testing tools. Pilot testing should include a sample of vendors of different size, scope, and architecture.
10. Allow adequate time for vendors to develop safe and efficient products including the new functionality.
11. Do not require all EHR users to have to upgrade in an unrealistically short time line.
12. Assure there are tools or systems in place to test all options available for EHs and EPs.
13. Consider deeming for functionality already certified elsewhere such as Surescripts for e-prescribing.
14. Investigate the use of hubs prior to creating interoperability requirements that might entail significant costs. For example with nearly 70 immunization registries, all with different requirements, interfaces are slower to be developed, costlier to purchase and more difficult to maintain. There should be a Public Health hub where immunizations, syndromic surveillance, and reportable labs can be sent similar to the e-prescribing hub in use today. One interface per vendor makes it cheaper to develop, easier to maintain, and reduces the barriers to aggregating data because there is one data set collected.
15. Simplify the CHPL listing. Most of the products are listed on the ONC CHPL multiple times as they have a separate listing for every time they certified an additional CQM or feature or released a patch with a new version number. It is difficult to search the certification details of a specific product and attesters have to put all versions into their shopping cart in order to have all of the quality measures available to them. These should be combined to show one listing with all of the items available in the version.

# Panel 3: Certification and Accreditation Bodies

## Rick Moore

Slide referenced: Key Points - Panel 3: Certification/Accreditation Bodies

* Pilot test new procedures and test tools prior to publication
* Improve consistency between testing labs. Pilot tests should be a venue for all ATLs and ACBs to:
  + Observe testing to understand the expected results
  + Learn how the test tools operate
  + Provide feedback to ONC
* Testing tools need to be more automated to efficiently handle more:
  + Test cases, reuse test data sets, and;
  + Employ more robust types of testing methodologies including testing the security of products
* Focus on certification criteria related to interoperability and security testing
* How EHRs handle various functionality should be left to developers to innovate

**Comments**

I concur with pilot testing the test procedures/tools with testing bodies AND please include a ROTATING number of currently certified EMR/EHR vendors in the pilot (for full transparency and feedback prior to production). In terms of test procedures, tools, etc. being “automated” – I concur there is a need to be more robust in this area.  It would be most beneficial to the testing process if ONC would produce and publish thousands of test decks per “testable procedure” in an automated fashion that were consumable (via required interoperability standards – e.g., CCD, CDA, etc.).  Producing test procedures where a known quantity of consumable cases were ingested by the receiving system with a resultant output expected would most assuredly be more efficient and rigorous than the current “hand jamming” of a small sample of cases.  Such an automated process would be more rigorous in terms of challenging the targeted systems’ interoperability, as well as its embedded algorithms to output the correct measures/results.  The current test case tool (Project Cypress) does not provide nearly enough test cases and to my knowledge there is no ability provided by ONC or other system that can provide test-ready cases for the targeted measure or better yet targeted function under review.

Re: Leaving EHR functionality to developers … I concur that ONC needs to be parsimonious in terms of being prescriptive on what a vendor “must” do to meet certification; however, it would be in the best interest of the industry (vendors) and certainly its customers (EH/EP) if ONC would require EHRs to undergo standardized usability test (e.g., <http://www.measuringu.com/sus.php>)  – at a minimum, publish those scores – may not be practical to state a “threshold” usability score to become certified – just completing the test and publishing the scores is a step in the right direction.

# Panel 4: Private Sector

## David Kates

### Certification

* Certification efforts have shifted in focus from their original intent
  + Originally designed to overcome barrier to EHR/HIT adoption (lack of trust, lack of transparency, insufficient knowledge/expertise among buyers – particularly small physician practices and rural hospitals).
  + Current processes lack visibility and operate more as obligatory regulatory function rather than drive by broader industry objectives (e.g., improve quality/efficiency of care, population health).
* Regulatory process driven by calendar rather than higher level objectives resulting in
  + adoption of immature requirements/standards,
  + focus on features rather than well designed usable capabilities,
  + lack of visibility into future requirements, reduced engagement by community experts, and inadequate time for input/refinement resulting in lack of readiness by vendors and providers, and
  + insufficient time to fully implement and make requisite process changes to make effective use of technology.
* Focus in certification should shift from feature/function and dictating product roadmaps to interoperability and outputs (e.g., quality measures, care summary records, etc.)
  + Current process stifling innovation, leading to dissatisfaction (e.g., poor usability, convoluted user interactions viz. alerts and data capture).
* Improvements from 2011 to 2014 include greater standards, improved implementation guides, and greater use of conformance testing/tools. Still the requirements are becoming overly burdensome with verbose/complex test procedures with room for interpretation leading to inconsistency among products particularly between different test labs (ATLs and ACBs).
  + Changes to test procedures late in the process resulting in vendors holding off on development given the high degree of flux
  + Broad consensus for **pilot testing procedures and tools** to work out kinks prior to broad rollout of program
  + Recommendations to improve collaboration among testing labs and between labs and ONC
* Need for improvements in ongoing surveillance
  + Address need to ensure products being implemented and operate in a manner compliant with the testing and certification requirements
  + Consistency in monitoring products as they are enhanced/upgraded

### Interoperability

* There is a pressing need for more focus on health information technology interoperability and data liquidity
* Efforts need to focus on adopting robust standards, consistent implementation, and ongoing inspection/surveillance
  + Consensus input that CCDA certification is flawed. Urgent need to address at the risk of losing momentum towards achieving interoperability and losing credibility
    - Evidence of non-compliant CCDAs “in the wild”. The Advisory Board Company has seen this first hand with the myriad CCDAs we’ve received from different vendors’ MU2-certified EHR technology
    - Inconsistent implementation of CCDAs viz. content/scope
  + The interoperability challenges apply both to content (CCDA) and transport (e.g., DIRECT). While voluntary efforts like DirectTrust have been effective, inconsistencies remain.
  + Recommendation that implementation guide be tightened and that more rigorous testing both as part of certification process and with EHRs in actual production use
* Need to recognize unique aspects of health information interoperability viz. identity management (in the absence of a unique national patient identifier); security/consent related to PHI; and the distributed nature of health care delivery (e.g., record locator service functionality)

## Kyle Meadors

As a member of the Implementation, Certification and Testing (ICT) Workgroup, I was charged with reviewing the comments made by the Certification/Accreditation Bodies and also Private Sector Representatives from the May 7, 2014 HIT Policy Committee hearing on the ONC HIT Certification Program and then making recommendations based on these comments, as well as my own experience, on improving the ONC HIT Certification Program. As a matter of transparency, I was one of the invited speakers at this hearing based on my role with one of the authorized testing labs (ATLs), Drummond Group.

I have focused my recommendations to those primarily dealing with the conduct and operations of the certification program rather than those directly involving regulatory policy of criteria requirements, for example reduce certification criteria to areas related to interoperability and security. Those type of regulatory guidance likely come more from the policy committee or other work groups, although they may be touched on in some comments below.

Recommendations to ICT Workgroup on improvements based on May 7, 2014 certification hearing comments and my personal suggestions are as follows:

* **ONC should more consistently interact with ATLs to observe testing activities for consistency and also overall improvement.** A good goal would be to observe at least 50 criteria tested (either in single test event or over multiple events) per quarter for each ATL. As ONC representatives are observing testing activities across different ATLs, they should also offer feedback to the labs on areas they (the labs) should either better focus on or adjust their approach of testing. Likewise, ONC will likely learn “better” means of testing or areas of focus based on observation and then distribute these finding as “best practices” or other types of improvements in updated test procedures. This should ideally result in better consistency across ATLs but also improve the overall testing efforts via continual improvement.
* **ONC should enhance test procedures to include more checks for security and interoperability besides testing for their “main” focus.** The goal would be to improve test procedures so that they are not so much a unit test as testing a component of an integrated system where interoperability and security are very much interrelated. At the least, the test procedures would include specific sections on security and interoperability which should be considered for this criterion. For example, in a test for CPOE of medications, it should be verified, or at least indicate as a point of consideration, that the ordered medication should be added into patient record and then clearly reflected in the patient summary record (CCDA). Similarly, consider including key security checks within each respective test scripts, such as exporting of a CCDA in transition of care is verified to be included in audit log. This would a re-focusing off the test procedure design to always include considerations of impact of interoperability and security in any test rather than making those activities “separate”. These interoperability and security checks can be separate sections of the test procedures. In doing this, additional granularity in test data or at least consistent test data across test scripts should be employed.
* **Within test procedure scripts, simplify and reduce the wording to be more precise.** Current test procedures are so “wordy” it is difficult to follow, especially when changes are made. Also, consider making test procedure design to be more modular so that upon updating of test procedures specific sections of what is updated can be identified, like Expected Results or Interoperability or Test Data. Consider including sections like “Best Practices” which provide non-normative requirements but general suggestions of good design. This could help vendors and user groups better identify changes made, although ONC does a good job currently of identifying updates to test procedures.
* **Identify private sector test groups, like DirectTrust or Surescripts, and coordinate or at least share information learned between both groups (government and private).** The goal here would be so that vendors testing in both sectors do not have to undo changes made to pass on test event so that the other test event can succeed. This would require some thoughtfulness in identifying private sector group as it may not be possible to include everyone, but if an effort can be made to harmonize the work across private sector groups, or at least identify clear differences, overall interoperability will likely be improved.
* **Be careful about attempting a formal pilot program for new test procedures/test tools.** Several individuals mentioned in testimony to pilot testing of test procedures and test tools as a program improvement. In my view, I think 1.) ONC does allow opportunity for comment on draft test procedures/test data/test tools but also 2.) there are some challenges in both logistics and maintaining MU schedules by introducing formal pilot programs. If a formal pilot program is introduced, it automatically pushes back any start dates for “official” certification which then affects dates for MU. Also, it is my experience that vendors, even very large ones, do not start developing functionality, at least full functionality, until test procedures are finalized. Thus, you wind up with a chicken-and-the-egg conundrum that vendors are waiting until pilot testing is done before doing their final push on development work but then you don’t have vendors ready to fully participate in a pilot as their functionality is not completed. When we (Drummond Group) have offered pilot testing on draft 2014 Edition test procedures, we did not find any vendors ready to conduct testing as they were awaiting the final test procedures. At the very least, any recommendation for pilot testing should include considerations on how to identify and secure commitment from vendors to be able to fully participate in pilot testing and schedule impact.

Kyle Meadors

Director of EHR Testing, Drummond Group

Member of Implementation, Certification and Testing Workgroup of Health IT Standards Committee



## Rick Moore

Slide Referenced – Key Points Panel 4: Private sector representatives

•       Need additional up-front testing and quality assurance

•       Mid-cycle revisions are disruptive to the overall program

•       Need subject matter experts in program development

•       Enhanced collaboration between the private sector and the federal government would help

•       Focus on critical few

**Comments**

I concur with pilot testing the test procedures/tools with testing bodies AND please include a ROTATING number of currently certified EMR/EHR vendors in the pilot (for full transparency and feedback prior to production). In terms of test procedures, tools, etc. being “automated” – I concur there is a need to be more robust in this area.  It would be most beneficial to the testing process if ONC would produce and publish thousands of test decks per “testable procedure” in an automated fashion that were consumable (via required interoperability standards – e.g., CCD, CDA, etc).  Producing test procedures where a known quantity of consumable cases were ingested by the receiving system with a resultant output expected would most assuredly be more efficient and rigorous than the current “hand jamming” of a small sample of cases.  Such an automated process would be more rigorous in terms of challenging the targeted systems’ interoperability, as well as its embedded algorithms to output the correct measures/results.  The current test case tool (Project Cypress) does not provide nearly enough test cases and to my knowledge there is no ability provided by ONC or other system that can provide test-ready cases for the targeted measure or better yet targeted function under review.

Re: Leaving EHR functionality to developers … I concur that ONC needs to be parsimonious in terms of being prescriptive on what a vendor “must” do to meet certification; however, it would be in the best interest of the industry (vendors) and certainly its customers (EH/EP) if ONC would require EHRs to undergo standardized usability test (e.g., <http://www.measuringu.com/sus.php>)  – at a minimum, publish those scores – may not be practical to state a “threshold” usability score to become certified – just completing the test and publishing the scores is a step in the right direction.

## Andrey Ostrovsky

Slide referenced: Final Recommendations (I) -Kaizen

**Comments**

Kaizen, or a rapid cycle approach to improvement, is a perfect application for a complex multistep process that has room for improvement.

Use cases showing how elements of rapid cycle testing and improvement can be used to improve the certification process would be help vendors and providers they serve to implement their own improvement strategies because they could use a templated example. Also, providing opportunities for building capacity to learn rapid cycle improvement techniques could be very productive across all uses involved in interoperability and MU.