

MedBiquitous
CAPETIHP Workshop
Second Breakout
Defining Action Plans

MedBiquitous: CAPETIHP Workshop

Second Breakout

Theme: Vendor Relationships

List the resources that are currently involved in the data exchange component of the challenge you are trying to address:

Systems/platforms:

- LMS, ExamSoft, Lecture Capture, SIS, ERP, Canvas, MediaSite, D2L, eValue, OASIS, CI, Ilios, CoursEval, Leo (formerly LCMS+)

Data and other technology standards:

- LTI, SCORM, MedBiquitous

Local/custom settings:

Key stakeholders:

- Leadership, EdTech team, Technology integration team (programmers), Faculty

Knowing the above information, describe the gaps that are contributing to your interoperability challenge.

- Lack of leadership
- Lack of universal data standards
- Lack of market power
- Vendors keep getting bought out and changing their business models
- Lack of understanding of field-based needs
- Different constituents want different things from the data
- No one defines the KPIs (key performance indicator) for the institution

What outcomes would you like to achieve if your gaps can be addressed?

- **This is the question - institutions don't really know what they want with regards to vendors.**
- A longitudinal profile of the student across the curriculum not nested within courses. (Including transition to residency and Dean's student performance letters.)
- Relationship between accreditation body and vendors? Or does this become a conflict of interest. This is where a standards body comes in to navigate between - so **we need MedBiquitous** and THIS PROJECT!

Describe what you would define as best practices for interoperability and data governance/management that will help you address the challenge.

- Need a data standards body to organize and promote
- E.g., MedBiquitous defined the standard for the CI, AAMC was the sponsor of the standard for CI and approved the vendors, MedBiquitous had no direct relationship with the vendors
- Need cooperation from accreditation bodies (LCME, etc.) to allow innovation
- Need cooperation with NBME, NBOME, FSMB, and other licensing bodies

Define at least one actionable step that can be taken to address this challenge.

- Creation of standards/best practices
 - Validation from AACOM/AAMC of the role of MedBiquitous in initiating and leading this work
 - Working group that identifies what needs a standard and MedBiquitous (?) leads the creation of the standard
- Driving consensus on standards
- Standard-building body (representing ALL Health Profession schools) build relationships with vendors - create a vested interest in them serving us
- **END GOAL: Certify approved vendors** who use standards

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Second Breakout

Theme: Data Standards & Common Vocabularies

List the resources that are currently involved in the data exchange component of the challenge you are trying to address:

Systems/platforms:

- Including learning management systems, curriculum management systems, simulation, business support tools, survey systems, student information systems, assessment systems, scheduling and lottery systems, electronic medical record and patient outcome tracking systems.
- Some examples of these systems include but are not limited to: Canvas, Moodle, B-line, EMS, MedHub, E-Value, Ilios, Smartsheet, Google sheets, Tableau, Qualtrics, Brightspace with continuous release, FormStack, Ellucian/Banner SIS, PeopleSoft Campus Solutions, Homegrown, Campus Solutions SIS. Examsoft, OASIS, and EMedley (All of E Solutions)

Data and other technology standards:

- Data from vendor systems listed above and nationally/internationally normed curriculum mapping vocabularies (ACGME, EPAs, PCRS) and USMLE Content Areas.
- One school organized their LMS data as they were formatted in the Brightspace Data Hub and standardized all those data sets into a “Data Mart.” Their Ellucian/Banner environment came with a data warehouse + Cognos reporting but that is managed by a different team with different setup. Cognos can only be used against the Banner data warehouse.

Local/custom settings:

- Campus governance is frequently geared toward undergraduate education and student tracking, additionally, systems are commonly acquired and used within med school unit silos.

Key stakeholders:

- Deans, Student Services staff, Students, Community hospital and clinic sites, community professionals, Admin Staff (both UME and GME), organizers of interdisciplinary programs, faculty, administrative staff tracking student development, Accreditation bodies, university administration, and vendors

Knowing the above information, describe the gaps that are contributing to your interoperability challenge.

- Gap: lack of people (resource) to master the integration pain points of any given two/three systems (all systems?) - in terms of standards/vocabulary gaps.
- We need a standard to determine how to establish a Primary Key (unique data field that exists in all data sets so that when you wish to join data tables there is a consistent field in all data sets to join on) that will link all the data sets, we do not plan to have one single master data warehouse but a collection of data marts that have continuous updates so that the different silos can then pull whatever data sets they need for their reporting requirements.
- Different interpretations of standards for alignment purposes. Lack of contextual automation alignment (NLP for medicine and standards).

What outcomes would you like to achieve if your gaps can be addressed?

- Real time longitudinal reporting of student progress by competency
- Demonstrating equivalent educational experience aligned with curriculum from different sites
- Also need to identify ways to capture evaluation of professors and other clinical teachers for feedback to educators - Faculty also need to see effective reflections of their educational skills for purposes of mentoring and identifying staff development opportunities

Describe what you would define as best practices for interoperability and data governance/management that will help you address the challenge.

- Ability to integrate data from various departments and institutions where students go to have a comprehensive picture of student progress.
- A challenge is to have comparable data for students training at different sites to demonstrate equivalent educational experience.

Define at least one actionable step that can be taken to address this challenge.

- Can the Curriculum Inventory be used as a model for how medical schools could collect data so that aggregate reporting can be done? A data dictionary would be a great start so that our vocabulary can be systematic.
- Do we need to revisit/revise the MedBiquitous terms/vocabularies that are out there and ensure that they currently reflect our teaching and learning environments? Ongoing curation would be optimal.
- How can we leverage the standards from other health professions such as nursing, advanced practice (PA/AP), and more to advance the standard language to document teaching and learning approaches? Veterinary as well? Yes, it could be very helpful.

- Have competency-based measurements been made across medical schools? ACGME, PCRS, EPA language (this is important) are important for horizontal reporting across professions and leading into professional development as a practitioner. EPAs lend themselves very well to assessment so that would be important.
- Assessment of clinical faculty is also very important - people in those roles need to have a standardized approach so that students get consistent feedback/assessments. This is important when rural/community/non-academic practitioners are in a clinical faculty.
- Learner self-assessment which connects to information collected about individual students' goals.

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Second Breakout

Theme: Leadership & Governance

List the resources that are currently involved in the data exchange component of the challenge you are trying to address:

Systems/platforms:

- Communication with Registrar and Curriculum team/LMS

Data and other technology standards:

- Leadership focus on domain vs. data
- Lack of awareness of the decisions that need to be made related to interoperability
- Governance driven by FERPA considerations vs. being practical with data needs

Local/custom settings:

- Curriculum committees, e.g., decisions during the time of COVID-19 without taking into consideration relevant factors

Key stakeholders:

- Deans, curriculum office and chairs
- University technology services
- Medical school technology leaders
- Faculty, end users
- State and national accreditors

Knowing the above information, describe the gaps that are contributing to your interoperability challenge.

- Lack of accountability
- Lack of awareness of the decisions that need to be made related to interoperability
- FERPA considerations vs. being practical with data needs
- Lack of consensus around the need to standardize
- Focus on exceptions vs. rules
- Data governance workflows

What outcomes would you like to achieve if your gaps can be addressed?

- Dashboards that integrate systems
- Recover time/decrease errors (by humans or systems) in data reporting
- Educational improvement - inform students/learners about their own performance; help faculty/teachers identify opportunities for improvement
- End user satisfaction
- Consensus statements and standards

Describe what you would define as best practices for interoperability and data governance/management that will help you address the challenge.

- Transparency and accountability
- Breakdown silos, e.g., expertise in particular/single systems
- Develop better understanding of systems for health professions and their unique needs
- Longitudinal data tracking

Define at least one actionable step that can be taken to address this challenge.

- Hands-on workshops to bring different types of leaders, e.g., curriculum, technology, to help build shared understanding and work on common use cases with goal to share plans/best practices that can be implemented locally
- Promote cross-training on systems within an institution
- Engagement - making an effort to understand and not just imagine what they want to see and how quickly it can be possible
- Petition to the major vendors, e.g., One45, New Innovations, MedHub, etc., to make their products compatible with other systems and holding them accountable
- Ask vendors to make new systems interoperable

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Second Breakout

Theme: Data Capture & Aggregation

List the resources that are currently involved in the data exchange component of the challenge you are trying to address:

Systems/platforms:

- LMS
- Curriculum management (CMS) - learning objectives/competencies/mapping
- Systems student information systems (SIS)
- AAMC data - y2k/GQ/MCATS
- Assessment systems
- Evaluation systems
- Specialized systems (e.g., Simulation Center)

Data and other technology standards:

- MedBiquitous
- SCORM/ADL?
- IMS (specially for assessment)

Local/custom settings:

- Institutional standards - using what the rest of university uses
- Accessibility
- Reporting body standards
- Data standards from AI platform provider
- Home grown systems and data standards

Key stakeholders:

- UME leadership
- Instructors and curriculum staff
- IT department

Knowing the above information, describe the gaps that are contributing to your interoperability challenge.

- Home grown systems - go against adoption of standards

- Commercial systems that silo information (closed systems)
- Lack of common taxonomy/definitions/data models
- Data governance

What outcomes would you like to achieve if your gaps can be addressed?

- Accreditation process would be ongoing. Ongoing tracking of accreditation elements.
- Ongoing feedback on accreditation metrics
- Educational outcomes (competency-based medical education, assessment progression)

Describe what you would define as best practices for interoperability and data governance/management that will help you address the challenge.

- Common information model - standard way to receive and share data

Define at least one actionable step that can be taken to address this challenge.

- Develop a data hub that supports/promotes a common information model
- Promote community-based strategic plan working towards an educational common data standard
- Consider/leverage inter-professional needs and build cross-discipline standards
- Focus on data that leaves an organization and ensure that it is standardized globally (that's why the MedBiquitous curriculum data standard was largely adopted)
- For data that stays within an organization, focus on vendor compliance to allow us to leverage our technical investments over time (cost efficiency and upgrade to other systems)

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Second Breakout

Theme: Cost, Time & Efficiency

List the resources that are currently involved in the data exchange component of the challenge you are trying to address:

Systems/platforms:

- What resources? Is there a budget?
- Are there dedicated teams/software for the express purpose of data exchange?
- Seems data exchange is an afterthought, NOT a core guiding value to system setups/designs
- Systems and Platforms have various costs associated with them. Standards will potentially alleviate some
- Move to modern systems such as low code, loosely coupled or COTS can increase efficiency of implementation, cost and time - Need to accelerate paying down technical debt
- How to extract actionable data to meet student needs
- Longitudinal performance views for students
- Mediation layer such as ESB/integration platforms that streamlines data exchange between various systems and applications

Data and other technology standards:

- LTI
- SSO
- xAPI
- QTI
- Caliper
- CASE (Competencies and Academic Standards Exchange)
- Master data management

Local/custom settings:

- What local or custom settings are currently in use?
- Should it be local/custom?
- Data access controls?
- Real time or set intervals?
- Unidirectional or Bidirectional?
- Clinical data, Educational data or both?

Key stakeholders:

- MedEd IT (in-house analysts/back-end developers)
- Data consumers
- Program Directors
- Curriculum/Assessment Deans
- Vendors
- Proctoring companies
- Students/Residents?
- Faculty?
- Accrediting bodies?

Knowing the above information, describe the gaps that are contributing to your interoperability challenge.

- Competing technical priorities (from IT, Security, EdTech, Campus etc.)
- Legacy architecture
- Lack of a common language. Too much time spent interpreting across systems
- Insufficient level of IT support (e.g., small staff)
- Is there an explicit budget for this? (Interoperability)
 - vs. budgets for specific software(s)
 - vs. budgets for discrete projects
 - vs. budgets for discrete departments
- Lack of standards
- Lack of enough critical mass to support standards
- No clear standards body
- Poor organizational data governance practices
- Lack of faculty and students training

What outcomes would you like to achieve if your gaps can be addressed?

- Increased usability and a lower barrier for entry for each stakeholder
- More consistent and more accessible reporting
- More time for instruction
- Better workflow between programs/departments/external stakeholders
- Systems that are humane: focused on the end product---"What makes a "good" ("sufficient") graduate?
 - How do we know?
 - Where the philosophy is supported by the tech
 - The tech is flexible; as we learn what is "good" or "sufficient," we can change the tech accordingly with minimal friction/inertia
- Increased focus on professional development
- Improved data governance (data availability, usability, integrity, security)
- Less time learning (or worrying about) technology integration

Describe what you would define as best practices for interoperability and data governance/management that will help you address the challenge.

- Standard nomenclature
 - Ontology of terms
 - Data exchange standard
- Standard roles defined - Data Steward, Data Owner, and etc.
- Adopt open interoperability standards to avoid silos or vendor lock-in
- Standards defined across the Medical Education community for exchanging data such as curriculum and assessments (items, scores etc.)
- Wholistic data strategy that addresses data governance and business intelligence and mining challenges

Define at least one actionable step that can be taken to address this challenge.

- Educate key stakeholders regarding the costs and resource demands around the issue and provide an opportunity for buy-in from them to the building up of resources
- Determine internal/external stakeholders that need to reach consensus on the business processes to be used and establish roles and responsibility.
- Conduct needs assessment to determine areas of priority in order to meet outcomes, or define minimum viable product needed.
- Separate and/or integrate clinical and educational data needs
- Leverage modern continuous integration and deployment capabilities to increase delivery speed and efficiency
- Make strategic decisions based on business value and optimize overall system efficiencies
- Common, standardized, “blueprint” of data exchange standards
 - Published by AAMC?
 - Easy to code/program to
 - Incentivize (carrot vs. stick...more carrot?) vendors to adopt
 - Incentivize vendors to share data
 - Maybe the official AAMS statement/stance that data is owned by the client/college, NOT the vendor (sorry Facebook!)
- Start small with something high priority and high value (example?)
 - Best practices. API for real time, other methods for non real-time
 - Published standard of data exchange that all vendors can understand and code to
- MVP (Minimum Viable Product):
 - What is the least we can do in terms of cost, time, efficiency?