Curriculum Inventory
CI Structure & the Competency Framework

Introduction

The MedBiquitous *Curriculum Inventory Implementation Guidelines* version 0.2 *(*dated November 1, 2012) state:

> Before implementing the Curriculum Inventory, analyze the context in which it will be used and determine:
> 1. Which data elements and attributes are necessary to achieve your goals.
> 2. Whether additional business rules or policies are necessary to achieve your goals.
> 3. Whether your business partners have additional requirements or business rules or policies.

This document describes the AAMC use of the MedBiquitous Curriculum Inventory (CI) standard, required of schools that will participate in the annual AAMC Curriculum Inventory upload process. It describes the data elements and rules determined by the AAMC as necessary to implement Curriculum Inventory (www.aamc.org/cir).

Assuming a CI submission has been validated against the documented MedBiquitous standard's XML schema, a second evaluation ensures the submission's curriculum inventory structure (CS) and competency framework (CF) meet the AAMC guidelines and business rules described below. Some guidelines and business rules are the direct result of MedBiquitous standards which cannot be validated via an XML schema. A submission that successfully passes MedBiquitous XML schema validation is then validated against the following AAMC business rules. If the submission meets core rules, the XML file is made available on the portal, whether or not there are other AAMC business rule errors.

Core Rules

Core rules must be met before additional rules for the competency framework and the curriculum inventory structure are applied. If it is detected that a submission does not meet a core rule: a) processing of the submission discontinues immediately and b) an error notification is generated that describes the invalid core rule.

Approved Sender?

a. Senders must be certified via AAMC's on boarding process before the web service will allow them to send submissions. A submission attempt from an uncertified Sender is rejected. It is not possible to send an error notification for this rule error. Rule ID CR01

   Note: Unlike subsequent rules, this rule is evaluated as soon as a Sender attempts to connect to the web service before a submission is sent and the MedBiquitous XML

schema validation is applied. If an uncertified Sender attempts to connect to the service, it is immediately rejected. An error notification is *not* sent.

b. Schools must select their Sender via the School CI Portal 'Manage Vendor' page. Before a submission is validated against core rules, the AAMC web service will verify that the Sender (e.g., a vendor) has been selected by the school as their associated Sender. Rule ID CR02

Submission for One Curriculum Inventory?

c. A submission, or file sent to the web service, must include data for only one curriculum inventory for one school. Each submission therefore must have one <CurriculumInventory> tag, which is related to one <InstitutionID>. A submission that attempts to include data for multiple schools or curriculum inventories is rejected. Rule ID CR03

Institution Identified?

d. The <InstitutionID> must match an AAMC institution ID for a school. For examples, see section 'Institution IDs' in the appendix. If the institution ID does not match the an AAMC-provided institution ID, the submission is rejected. Rule ID CR04

Submission File Size Below 19MB?

A submission, or a file sent to the web service, is not allowed to exceed 19 megabytes in size. If the file is greater than 19MB, the submission is rejected. Files with size > 19MB can instead be compressed/zipped and uploaded. Rule ID CR05

Competency Framework & Competency Object Rules

The following rules are evaluated only once all core rules have been met. If it is detected that a submission does not meet a competency framework or competency object rule, a) processing of the submission continues to the extent possible and b) upon completion of processing an error notification is generated that summarizes all errors with competency framework and curriculum inventory structure rules.

> *Note*: As described in the following rules, **program-level competencies are required and must be mapped to the Physician Competency Reference Set (PCRS)**. A submission that does not meet this requirement will not process successfully. Thus, there may not be further competency mapping within a curriculum unless program-level competencies are mapped.

<CompetencyObject> Tags

a. Within <Expectations>, <CompetencyObject> tags must be used to identify all competencies except for PCRS that are used throughout the <CurriculumInventory>. An error is generated if an event, sequence, or program competency URI is referenced within <CurriculumInventory> without the presence of a corresponding <CompetencyObject> tag. Rule ID CF01

Note: <CompetencyObjects> may be referenced via their URIs by <Includes>, <Relation>, or <CompetencyObjectReference> tags.

b. Within <Expectations>, <CompetencyObject> tags cannot share the same URI. An error is generated if there are duplicate <CompetencyObject> tags within <Expectations>. Rule ID CF02

c. Within <Expectations>, <CompetencyObject> tags must not be used to identify PCRS competencies. The Curriculum Inventory will automatically integrate PCRS information (e.g., competency description) based on the URI. An error is generated if a <CompetencyObject> tag attempts to use a URI reserved by the PCRS framework. (See appendix section 'Physician Competency Reference Set.') Rule ID CF03

d. The level of all <CompetencyObject> tags must be identified using the <Category> sub-element, as in the following example: Rule ID CF04

```
<co:Category term="program-level-competency" />
```

Valid terms include:

a. program-level-competency
b. sequence-block-level-competency
c. event-level-competency

An error is generated if a <CompetencyObject> does not have a <Category> sub-element with one of the above terms.

Note: This is of importance upon evaluation of <Relation> tags, as described in the '<Relation> Tags' section below. Also, category terms are case sensitive; i.e., the term 'Event-Level-Competency' is not recognized as 'event-level-competency'.

e. One or more <CompetencyObject> tags must exist with the "program-level-competency" <category> assigned. An error is generated if a submission does not include one or more program-level competencies. Rule ID CF05

f. All sequence block-level or event-level <CompetencyObject> tags must have a corresponding <CompetencyObjectReference> tag within a <SequenceBlock> or <Event> tag. An error is generated if a sequence block-level or event-level competency object is not referenced by at least one sequence block or event. Rule ID CF06

g. The Title sub-element for each <lom> for each <CompetencyObject> should not contain characters outside of the Unicode Latin script and must contain at least one alphabetic character. Rule ID CF16

<Includes> Tags

h. <Includes> tags should contain any competency – including PCRS, program-level, sequence block-level, and event-level competencies – that is subsequently used in a <Relation> tag. An error is generated if a <Relation> tag refers to a competency URI that does not have a corresponding <Includes> tag. Rule ID CF07

i. The same URI cannot be present in two or more <Includes> tags. An error is generated if a duplicate URI is identified in <Includes> tags. Rule ID CF08

<Relation> Tags

j. <CompetencyFramework> relationships that map program-level, sequence block-level, and event-level competency pairs must be specified in a <Relation> tag using either the #broader or #narrower relationship. Valid relationships are described by the relationship tables in appendix section 'Valid Competency Framework Relationships'. An error is generated if a relationship of the aforementioned type is not specified in conformance with the relationship tables. Rule ID CF09

k. All program-level competencies must be mapped to PCRS. An error is generated if a program-level competency does not have a corresponding <Relation> tag that relates it to a PCRS URI. Rule ID CF10

l. Program-level competencies may not be mapped to domain-level PCRS (e.g., 1.00 - 'Patient Care'). Program-level competencies must be mapped to PCRS such as 1.07 - 'Develop and carry out patient management plans' or 1.99 - 'Other Patient Care'). An error is generated if a program-level competency attempts to map to a domain-level PCRS URI. Rule ID CF11

m. Mapping of program-level competencies to PCRS must be specified in <Relation> tags using a #related relationship. An error is generated if a <Relation> tag that includes a PCRS URI uses a #broader or #narrower relationship. Rule ID CF12

n. Mapping of sequence block-level or event-level competencies directly to PCRS is not allowed. They must be mapped through program-level competencies. An error is generated if a <Relation> tag includes a PCRS URI related to any competency other than a program-level competency. Rule ID CF13

o. Relationships must not result in circular references as described in the 'Note about Hierarchical Conflict' section (pp. 33-36) of the Competency Framework Specification, version 1.0. An error is generated if a circular reference between competencies is detected. Rule ID CF14

p. Several sub-elements and attributes of the CompetencyFramework or CompetencyObject elements are restricted in field (or text) length. The maximum allowable field lengths are summarized below. An error is generated if any field exceeds its maximum allowable length. Rule ID CF15

Parent Element	Sub-element or Attribute	Max Length
CompetencyFramework	Lom:General:Title	4000
	Lom:General:Description	4000
CompetencyObject	Lom:Entry (i.e., URI)	2048
	Lom:Title	4000
	Lom:Description	4000

Curriculum Structure Rules

The following rules are evaluated only once all core rules have been met. If it is detected that a submission does not meet a curriculum structure rule, a) processing of the submission continues to the extent possible and b) upon completion of processing an error notification is generated that summarizes all errors with competency framework and curriculum inventory structure rules.

<CurriculumInventory> Tag

a. The <ReportID> sub-element must be unique for each of a school's submissions and may only use alphanumeric characters (i.e., no punctuation or symbols). An error is generated if a school's submission uses the same <ReportID> as one of its prior submissions or uses invalid characters in the <ReportID>. Rule ID CS01

b. Submissions are checked to ensure they contain information for only the previous academic year (AY). Schools must submit data with <ReportingStartDate> and <ReportingEndDate> in between July (of the previous year) and June (of the current year). For example, in a submission for AY 2013, it would be an error if the reporting start date is before July 2012. An error is generated if a submission contains information for any other AY or if the <ReportingStartDate> does not precede the <ReportingEndDate>. Rule ID CS02

   Note: Dates at the sequence block or event level are <u>not</u> checked to ensure they are within the previous academic year. Dates specified at these levels that fall within 8 years of the date range for a previous academic year will not cause an error or rejection.

<AcademicLevels> Tag

c. The number of academic levels, or phases, are defined by <LevelsInProgram> and each academic level is defined as a <Level> within the <AcademicLevels> tag. An error is generated if there is a mismatch between <LevelsInProgram> and the number of <Level> tags. Rule ID CS03

d. A <Level> that is not defined within the <AcademicLevels> tag cannot be referenced by a sequence block. An error is generated if a <SequenceBlock> attempts to refer to an undefined level. Rule ID CS04

e. <Level> sub-elements of the <AcademicLevels> tag must have sequential numbers (i.e., the *number* attribute) starting with 1. An error is generated if a submission has academic levels that are not in a sequence <u>or</u> the sequence does not start with 1. Rule ID CS05

f. Each academic level must be referenced by at least one sequence block. An error is generated if a <Level> tag is not referenced by at least one <SequenceBlock> tag. Rule ID CS06

<SequenceBlock> Tag

g. <SequenceBlock> tags must have unique identifiers (i.e., the *id* attribute). An error is generated if a <SequenceBlock> identifier is duplicated. Rule ID CS07

h. <SequenceBlock> tags must be associated to a defined academic level using the required <Level> sub-element. An error is generated if a sequence block is associated with a level number that has not been defined within <AcademicLevels>. Rule ID CS08

i. The <Timing> sub-element of all <SequenceBlocks> tags must specify a <Dates> element. The <StartDate> must precede the <EndDate>. An error is generated if the start date and end date are not specified for a sequence block, or if the <StartDate> does not precede the <EndDate>. Rule ID CS17

j. The <Timing> sub-element of <SequenceBlocks> tags with a *ClerkshipModel* attribute must specify <Dates> and <Duration>. An error is generated if the duration, start date, and end date is not specified for a clerkship sequence block. Rule ID CS09

k. The <StartDate> and <EndDate> subelements of <Dates>, a subelement of <Timing>, must be no earlier or later than 8 calendar years before or after the <ReportingStartDate> and <ReportingEndDate>. Rule ID CS20

l. The <StartDate> and <EndDate> subelements of <SequenceBlockEvent>, a subelement of <SequenceBlock>, must be no earlier or later than 8 calendar years before or after the <ReportingStartDate> and <ReportingEndDate>. Rule ID CS21

m. If it is provided, the duration of a sequence block must be specified as a number of days. An error is generated if the <Duration> (sub-element of <Timing>) for a sequence block includes any units of time other than days. Rule ID CS16

   Note: As described in rule CS09, duration is required for clerkship sequence blocks.

n. When nesting sequence blocks, <SequenceBlockReference> must not result in circular references similar to those described for competencies in the 'Note about Hierarchical Conflict' section (pp. 33-36) of the Competency Framework Specification, version 1.0. An error is generated if a circular reference between sequence blocks is detected. Rule ID CS10

<Event> Tag

o. <Event> tags must have unique identifiers (i.e., the *id* attribute). An error is generated if an <Event> identifier is duplicated. Rule ID CS11

p. All <Event> tags must be referenced by at least one <SequenceBlockEvent> tag within a <SequenceBlock>. An error is generated if an <Event> is not referenced by one or more <SequenceBlock>. Rule ID CS15

q. An Event ID that is not defined by a corresponding <Event> tag cannot be referenced by a sequence block. An error is generated if a <SequenceBlock> attempts to refer to an undefined event. Rule ID CS18

r. Within <Event> tags, the <AssessmentMethod>, <InstructionalMethod>, and <ResourceType> tags must reference a unique ID from their respective vocabularies, as in the following example. Rule ID CS12

```
<Event id="E1">
    <Title>White Coat Ceremony</Title>
    <EventDuration>PT2H</EventDuration>
    <Description>First year students are given their white coats to mark the
    transition to clinical rotations. The ceremony includes a declaration of
    professional values.</Description>
        ...
    <InstructionalMethod primary="true">IM013</InstructionalMethod>
    <AssessmentMethod purpose="Summative">AM012</AssessmentMethod>
    <ResourceType>RE002</ResourceType>
</Event>
```

The vocabularies are listed in the appendix section titled 'Vocabularies'.

An error is generated if an <AssessmentMethod> does not match the unique ID of an assessment method, an <InstructionalMethod> does not match the unique ID of an instructional method, or a <ResourceType> does not match the unique ID of a resource.

s. At a minimum, each <Event> must reference at least one <AssessmentMethod> or <InstructionalMethod>. An error is generated if an <Event> does not reference any <AssessmentMethod> or <InstructionalMethod>. Rule ID CS13

Note: An <Event> may contain one or more of only <AssessmentMethod> tags, only <InstructionalMethod> tags, or both <AssessmentMethod> and <InstructionalMethod> tags.

t. If one or more <InstructionalMethod> tags are provided, one and only one must be denoted as the primary. An error is generated if two or more <InstructionalMethod> tags are marked as primary. Rule ID CS14

u. Several sub-elements and attributes of the CurriculumInventory, Institution, SequenceBlock and other elements in the curriculum structure are restricted in field (or text) length. The maximum allowable field lengths are summarized below. An error is generated if any field exceeds its maximum allowable length. Rule ID CS19

Parent Element	Sub-element or Attribute	Max Length
CurriculumInventory	ReportID	500
	Title	4000
	ReportDate	100
	ReportingStartDate	100
	ReportingEndDate	100
	Language	100
	Description	4000
	SupportingLink	2048
Institution	InstitutionName	4000
	Address:Organization	500
	Address:StreetAddressLine	200
	Address:City	100
	Address:StateOrProvince	100
	Address:PostalCode	40
	Address:Region	100
	Address:District	100
	CountryName	200
	CountryName	50
	CountryCode	15
	AddressCategory	15
Program	ProgramID	200
	ProgramName	4000
	EducationalContext	4000
	Profession	500
	Speciality	500
Event	ID	30
	Title	4000
	Description	4000
	Keyword	4000
	ResourceType	250
Level	Label	50
	Description	4000
Sequence	Description	4000
SequenceBlock	ID	15
	Title	4000

	Description	4000
	Minimum	3
	Maximum	3
	Timing:Dates:StartDate	100
	Timing:Dates:EndDate	100
	Precondition	4000
	Postcondition	4000
	SequenceBlockReference:Order	3
SequenceBlockEvent	StartDate	100
	EndDate	100
Integration	Description	4000
IntegrationBlock	ID	15
	Title	4000
	Description	4000

Appendix

A. Valid Competency Framework Relationships

There are three types of relationships one may express using the <Relation> tag:

- narrower (or "has narrower concept")
- broader (or "has broader concept")
- related ("is related to concept")

The following two examples of hierarchical relationships are logically equivalent:

<A> skos:narrower <D> → <D> has a narrower concept than <A>
<D> skos:broader <A> → <A> has a broader concept than <D>

The following two examples of 'related' relationships are logically equivalent:

<A> skos:related <C> → where <C> is related to <A>
<C> skos:related <A> → where <A> is related to <C>

Competency relationships are defined within the <CompetencyFramework> tag using a <Relation> tag. In the following fictitious example, a #related relationship is drawn between two competencies.

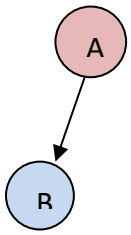
```
<cf:Relation>
  <cf:Reference1>
      <cf:Catalog>URI</cf:Catalog>
      <cf:Entry>http://medicine.osu.edu/competencies/pc_1_2_1</cf:Entry>
  </cf:Reference1>
<cf:Relationship>http://www.w3.org/2004/02/skos/core#related</cf:Relationship>
  <cf:Reference2>
      <cf:Catalog>URI</cf:Catalog>
      <cf:Entry>https://services.aamc.org/30/ci-school-web/pcrs/PCRS.html#aamc-pcrs-
          comp-c0101</cf:Entry>
  </cf:Reference2>
</cf:Relation>
```

The following tables and diagrams depict relationships between competencies.

- ✓ indicates a valid relationship per the CI profile of the MedBiquitous CI standard.
- X indicates an invalid relationship. An error is generated if an invalid relationship is detected, as described above in the '<Relation> Tags' section.

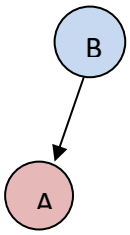
<A> skos:narrower <B>

<A> \ <B>	PCRS	Program-level Competency	Sequence block-level Competency	Event-level Competency
PCRS	X	X	X	X
Program-level Competency	X	X	✓	✓
Sequence block-level Competency	X	X	✓	✓
Event-level Competency	X	X	X	✓



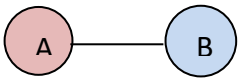
<A> skos:broader <B>

<A> \ <B>	PCRS	Program-level Competency	Sequence block-level Competency	Event-level Competency
PCRS	X	X	X	X
Program-level Competency	X	X	X	X
Sequence block-level Competency	X	✓	✓	X
Event-level Competency	X	✓	✓	✓



<A> skos:related <B>

<A> \ <B>	PCRS	Program-level Competency	Sequence block-level Competency	Event-level Competency
PCRS	X	✓	X	X
Program-level Competency	✓	X	X	X
Sequence block-level Competency	X	X	X	X
Event-level Competency	X	X	X	X



B. Vocabularies

The following tables list the valid unique identity (UID) of each instructional and assessment method and resource. The UIDs are used in applicable tags to identify a specific method.

Instructional Methods

UID	Instructional Method
IM001	Case-Based Instruction/Learning
IM002	Clinical Experience - Ambulatory
IM003	Clinical Experience - Inpatient
IM004	Concept Mapping
IM005	Conference
IM006	Demonstration
IM007	Discussion, Large Group (>12)
IM008	Discussion, Small Group (≤12)
IM009	Games
IM010	Independent Learning
IM011	Journal Club
IM012	Laboratory
IM013	Lecture
IM014	Mentorship
IM015	Patient Presentation - Faculty
IM016	Patient Presentation - Learner

UID	Instructional Method
IM031	Patient Presentation-Patient
IM017	Peer Teaching
IM018	Preceptorship
IM019	Problem-Based Learning (PBL)
IM020	Reflection
IM021	Research
IM022	Role Play/Dramatization
IM023	Self-Directed Learning
IM024	Service Learning Activity
IM025	Simulation
IM026	Team-Based Learning (TBL)
IM027	Team-Building
IM028	Tutorial
IM029	Ward Rounds
IM030	Workshop Assessment

Resources

UID	ResourceType
RE001	Animation
RE002	Audience Response System
RE003	Audio
RE004	Cadaver
RE005	Clinical Case
RE006	Distance Learning - Asynchronous
RE007	Distance Learning - Synchronous
RE008	Educational Technology
RE009	Electronic Health/Medical Record (EHR/EMR)
RE010	Film/Video
RE011	Key Feature
RE012	Mannequin
RE013	Medical Images
RE014	Mobile Application
RE000	Other
RE015	Patient - Receiving Clinical Care
RE016	Patient - Teaching
RE017	Plastinated Specimens
RE019	Scenario
RE020	Searchable Electronic Database
RE021	Standardized/Simulated Patient (SP)
RE022	Task Trainer
RE023	Ultrasound
RE024	Virtual Patient
RE025	Virtual/Computerized Laboratory
RE026	Wet Laboratory
RE018	Written or Visual Media (or Digital Equivalent)

Assessment Methods

UID	Assessment Method
AM001	Clinical Documentation Review
AM002	Clinical Performance Rating/Checklist
AM003	Exam - Institutionally Developed, Clinical Performance
AM019	Exam - Institutionally Developed, Laboratory, Practical
AM005	Exam - Institutionally Developed, Oral
AM004	Exam - Institutionally Developed, Written/ Computer-based
AM006	Exam - Licensure, Clinical Performance
AM007	Exam - Licensure, Written/Computer-based
AM008	Exam - Nationally Normed/Standardized, Subject
AM009	Multisource Assessment
AM010	Narrative Assessment
AM011	Oral Patient Presentation
AM012	Participation
AM013	Peer Assessment
AM014	Portfolio-Based Assessment
AM015	Practical (Lab)
AM016	Research or Project Assessment
AM017	Self-Assessment
AM018	Stimulated Recall

C. Physician Competency Reference Set (PCRS)

Refererences to competencies in the PCRS are required in order to create a valid CI XML submission. The related requirements are described in the 'Competency Framework & Competency Object Rules' section above (e.g., see rule ID CF10).

Uniform Resource Indicators, or URIs, are used to reference school competencies and AAMC-defined competencies in the PCRS. For example, the URI for the first PCRS competency is: https://services.aamc.org/30/ci-school-web/pcrs/PCRS.html#**aamc-pcrs-comp-c0101**

The portion of the URI in bold may be changed to any 'Partial URI' value listed in the table below – except those denoted by an asterisk – to reference the corresponding competency.

Note: * denotes domain-level PCRS competencies which, according ot rule ID CF-11, may not be referenced within a CI submission.

Partial URI	Physician Competency Reference Set (AAMC 2013)
aamc-pcrs-comp-c0100*	**PATIENT CARE: Provide patient-centered care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health**
aamc-pcrs-comp-c0101	Perform all medical, diagnostic, and surgical procedures considered essential for the area of practice
aamc-pcrs-comp-c0102	Gather essential and accurate information about patients and their condition through history-taking, physical examination, and the use of laboratory data, imaging, and other tests
aamc-pcrs-comp-c0103	Organize and prioritize responsibilities to provide care that is safe, effective, and efficient
aamc-pcrs-comp-c0104	Interpret laboratory data, imaging studies, and other tests required for the area of practice
aamc-pcrs-comp-c0105	Make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date scientific evidence, and clinical judgment
aamc-pcrs-comp-c0106	Develop and carry out patient management plans
aamc-pcrs-comp-c0107	Counsel and educate patients and their families to empower them to participate in their care and enable shared decision making
aamc-pcrs-comp-c0108	Provide appropriate referral of patients including ensuring continuity of care throughout transitions between providers or settings, and following up on patient progress and outcomes
aamc-pcrs-comp-c0109	Provide health care services to patients, families, and communities aimed at preventing health problems or maintaining health
aamc-pcrs-comp-c0110	Provide appropriate role modeling
aamc-pcrs-comp-c0111	Perform supervisory responsibilities commensurate with one's roles, abilities, and qualifications
aamc-pcrs-comp-c0199	Other patient care
aamc-pcrs-comp-c0200*	**KNOWLEDGE FOR PRACTICE: Demonstrate knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to patient care**

Partial URI	Physician Competency Reference Set (AAMC 2013)
aamc-pcrs-comp-c0201	Demonstrate an investigatory and analytic approach to clinical situations
aamc-pcrs-comp-c0202	Apply established and emerging bio-physical scientific principles fundamental to health care for patients and populations
aamc-pcrs-comp-c0203	Apply established and emerging principles of clinical sciences to diagnostic and therapeutic decision-making, clinical problem-solving, and other aspects of evidence-based health care
aamc-pcrs-comp-c0204	Apply principles of epidemiological sciences to the identification of health problems, risk factors, treatment strategies, resources, and disease prevention/health promotion efforts for patients and populations
aamc-pcrs-comp-c0205	Apply principles of social-behavioral sciences to provision of patient care, including assessment of the impact of psychosocial and cultural influences on health, disease, care-seeking, care compliance, and barriers to and attitudes toward care
aamc-pcrs-comp-c0206	Contribute to the creation, dissemination, application, and translation of new health care knowledge and practices
aamc-pcrs-comp-c0299	Other knowledge for practice
aamc-pcrs-comp-c0300*	**PRACTICE-BASED LEARNING AND IMPROVEMENT: Demonstrate the ability to investigate and evaluate one's care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and life-long learning**
aamc-pcrs-comp-c0301	Identify strengths, deficiencies, and limits in one's knowledge and expertise
aamc-pcrs-comp-c0302	Set learning and improvement goals
aamc-pcrs-comp-c0303	Identify and perform learning activities that address one's gaps in knowledge, skills, and/or attitudes
aamc-pcrs-comp-c0304	Systematically analyze practice using quality improvement methods, and implement changes with the goal of practice improvement
aamc-pcrs-comp-c0305	Incorporate feedback into daily practice
aamc-pcrs-comp-c0306	Locate, appraise, and assimilate evidence from scientific studies related to patients' health problems
aamc-pcrs-comp-c0307	Use information technology to optimize learning
aamc-pcrs-comp-c0308	Participate in the education of patients, families, students, trainees, peers, and other health professionals
aamc-pcrs-comp-c0309	Obtain and utilize information about individual patients, populations of patients, or communities from which patients are drawn to improve care
aamc-pcrs-comp-c0310	Continually identify, analyze, and implement new knowledge, guidelines, standards, technologies, products, or services that have been demonstrated to improve outcomes
aamc-pcrs-comp-c0399	Other practice-based learning and improvement
aamc-pcrs-comp-c0400*	**INTERPERSONAL AND COMMUNICATION SKILLS: Demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals**

Partial URI	Physician Competency Reference Set (AAMC 2013)
aamc-pcrs-comp-c0401	Communicate effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds
aamc-pcrs-comp-c0402	Communicate effectively with colleagues within one's profession or specialty, other health professionals, and health related agencies
aamc-pcrs-comp-c0403	Work effectively with others as a member or leader of a health care team or other professional group
aamc-pcrs-comp-c0404	Act in a consultative role to other health professionals
aamc-pcrs-comp-c0405	Maintain comprehensive, timely, and legible medical records
aamc-pcrs-comp-c0406	Demonstrate sensitivity, honesty, and compassion in difficult conversations, including those about death, end of life, adverse events, bad news, disclosure of errors, and other sensitive topics
aamc-pcrs-comp-c0407	Demonstrate insight and understanding about emotions and human responses to emotions that allow one to develop and manage interpersonal interactions
aamc-pcrs-comp-c0499	Other interpersonal and communication skills
aamc-pcrs-comp-c0500*	**PROFESSIONALISM: Demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles**
aamc-pcrs-comp-c0501	Demonstrate compassion, integrity, and respect for others
aamc-pcrs-comp-c0502	Demonstrate responsiveness to patient needs that supersedes self-interest
aamc-pcrs-comp-c0503	Demonstrate respect for patient privacy and autonomy
aamc-pcrs-comp-c0504	Demonstrate accountability to patients, society, and the profession
aamc-pcrs-comp-c0505	Demonstrate sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation
aamc-pcrs-comp-c0506	Demonstrate a commitment to ethical principles pertaining to provision or withholding of care, confidentiality, informed consent, and business practices, including compliance with relevant laws, policies, and regulations
aamc-pcrs-comp-c0599	Other professionalism
aamc-pcrs-comp-c0600*	**SYSTEMS-BASED PRACTICE: Demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care**
aamc-pcrs-comp-c0601	Work effectively in various health care delivery settings and systems relevant to one's clinical specialty
aamc-pcrs-comp-c0602	Coordinate patient care within the health care system relevant to one's clinical specialty
aamc-pcrs-comp-c0603	Incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population-based care
aamc-pcrs-comp-c0604	Advocate for quality patient care and optimal patient care systems
aamc-pcrs-comp-c0605	Participate in identifying system errors and implementing potential systems solutions
aamc-pcrs-comp-c0606	Perform administrative and practice management responsibilities commensurate with one’s role, abilities, and qualifications

Partial URI	Physician Competency Reference Set (AAMC 2013)
aamc-pcrs-comp-c0699	Other systems-based practice
aamc-pcrs-comp-c0700*	**INTERPROFESSIONAL COLLABORATION: Demonstrate the ability to engage in an interprofessional team in a manner that optimizes safe, effective patient- and population-centered care**
aamc-pcrs-comp-c0701	Work with other health professionals to establish and maintain a climate of mutual respect, dignity, diversity, ethical integrity, and trust
aamc-pcrs-comp-c0702	Use the knowledge of one's own role and the roles of other health professionals to appropriately assess and address the health care needs of the patients and populations served
aamc-pcrs-comp-c0703	Communicate with other health professionals in a responsive and responsible manner that supports the maintenance of health and the treatment of disease in individual patients and populations
aamc-pcrs-comp-c0704	Participate in different team roles to establish, develop, and continuously enhance interprofessional teams to provide patient- and population-centered care that is safe, timely, efficient, effective, and equitable
aamc-pcrs-comp-c0799	Other interprofessional collaboration
aamc-pcrs-comp-c0800*	**PERSONAL AND PROFESSIONAL DEVELOPMENT: Demonstrate the qualities required to sustain lifelong personal and professional growth**
aamc-pcrs-comp-c0801	Develop the ability to use self-awareness of knowledge, skills, and emotional limitations to engage in appropriate help-seeking behaviors
aamc-pcrs-comp-c0802	Demonstrate healthy coping mechanisms to respond to stress
aamc-pcrs-comp-c0803	Manage conflict between personal and professional responsibilities
aamc-pcrs-comp-c0804	Practice flexibility and maturity in adjusting to change with the capacity to alter one's behavior
aamc-pcrs-comp-c0805	Demonstrate trustworthiness that makes colleagues feel secure when one is responsible for the care of patients
aamc-pcrs-comp-c0806	Provide leadership skills that enhance team functioning, the learning environment, and/or the health care delivery system
aamc-pcrs-comp-c0807	Demonstrate self-confidence that puts patients, families, and members of the health care team at ease
aamc-pcrs-comp-c0808	Recognize that ambiguity is part of clinical health care and respond by utilizing appropriate resources in dealing with uncertainty
aamc-pcrs-comp-c0899	Other personal and professional development

D. Institution IDs

A sample set of institution IDs for US allopathic schools is provided below.

INST_ID	INST_TYPE_CD	INST_NAME_120
101	MSUS	University of Alabama School of Medicine
102	MSUS	Albany Medical College
103	MSUS	University of Arkansas for Medical Sciences College of Medicine
104	MSUS	Baylor College of Medicine
105	MSUS	Boston University School of Medicine
106	MSUS	Wake Forest School of Medicine of Wake Forest Baptist Medical Center
107	MSUS	University at Buffalo State University of New York School of Medicine & Biomedical Sciences
108	MSUS	University of California, San Francisco, School of Medicine
109	MSUS	University of California, Los Angeles David Geffen School of Medicine
110	MSUS	Chicago Medical School at Rosalind Franklin University of Medicine & Science

INST_ID = Institution ID; also referred as an EIS code.
INST_TYPE_CD = Institution type; allopathic or osteopathic.
INST_NAME_120 = Institution name; 120 characters.

E. Rules Glossary

Abbreviations

CF = Competency Framework
CI = Curriculum Inventory
CS = Curriculum Inventory Structure
URI = Universal Resource Identifier

Terms

Competencies =

The CI implementation recognizes different levels of competencies: PCRS, Program-level, Sequence-level, and Event-level. Each is described in their respective definitions below.

Error =

If one or more rules are not met then an error is generated. Error notifications are sent via email to applicable school users with a description of the rule(s) not met and the specific failures under each rule.

Event-level competencies =

School competencies that are categorized as event-level, often referenced by events.

PCRS =

Physician Competency Reference Set; an external competency framework provided by AAMC.

Program-level competencies =

School competencies that are categorized as program-level, which may be mapped to event and sequence block-level competencies. Program-level competencies must be mapped to the PCRS.

Sequence block-level competencies:

School competencies that are categorized as sequence block-level, often referenced by events.

Sender =

A vendor or school that submits an XML file. Senders must be certified via AAMC's on boarding process before the web service allows them to submit on behalf of a school.