



ANSI /MEDBIQ AR.10.1-2009 MedBiquitous Activity Report Specifications and Description Document



Version: 1.0
Date: 26 August 2009
Author: Valerie Smothers
Author email: valerie.smothers@medbiq.org

Version History

Version No.	Date	Changed By	Changes Made
1.0	26 August 2009		

MedBiquitous Consortium XML Public License and Terms of Use

MedBiquitous XML (including schemas, specifications, sample documents, Web services description files, and related items) is provided by the copyright holders under the following license. By obtaining, using, and or copying this work, you (the licensee) agree that you have read, understood, and will comply with the following terms and conditions.

The Consortium hereby grants a perpetual, non-exclusive, non-transferable, license to copy, use, display, perform, modify, make derivative works of, and develop the MedBiquitous XML for any use and without any fee or royalty, provided that you include the following on ALL copies of the MedBiquitous XML or portions thereof, including modifications, that you make.

1. Any pre-existing intellectual property disclaimers, notices, or terms and conditions. If none exist, the following notice should be used: "Copyright © [date of XML release] MedBiquitous Consortium. All Rights Reserved. <http://www.medbiq.org>"
2. Notice of any changes or modification to the MedBiquitous XML files.
3. Notice that any user is bound by the terms of this license and reference to the full text of this license in a location viewable to users of the redistributed or derivative work.

In the event that the licensee modifies any part of the MedBiquitous XML, it will not then represent to the public, through any act or omission, that the resulting modification is an official specification of the MedBiquitous Consortium unless and until such modification is officially adopted.

THE CONSORTIUM MAKES NO WARRANTIES OR REPRESENTATIONS, EXPRESS OR IMPLIED, WITH RESPECT TO ANY COMPUTER CODE, INCLUDING SCHEMAS, SPECIFICATIONS, SAMPLE DOCUMENTS, WEB SERVICES DESCRIPTION FILES, AND RELATED ITEMS. WITHOUT LIMITING THE FOREGOING, THE CONSORTIUM DISCLAIMS ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND ANY WARRANTY, EXPRESS OR IMPLIED, AGAINST INFRINGEMENT BY THE MEDBIQUITOUS XML OF ANY THIRD PARTY PATENTS, TRADEMARKS, COPYRIGHTS OR OTHER RIGHTS. THE LICENSEE AGREES THAT ALL COMPUTER CODES OR RELATED ITEMS PROVIDED SHALL BE ACCEPTED BY LICENSEE "AS IS". THUS, THE ENTIRE RISK OF NON-PERFORMANCE OF THE MEDBIQUITOUS XML RESTS WITH THE LICENSEE WHO SHALL BEAR ALL COSTS OF ANY SERVICE, REPAIR OR CORRECTION.

IN NO EVENT SHALL THE CONSORTIUM OR ITS MEMBERS BE LIABLE TO THE LICENSEE OR ANY OTHER USER FOR DAMAGES OF ANY NATURE, INCLUDING, WITHOUT LIMITATION, ANY GENERAL, DIRECT, INDIRECT, INCIDENTAL, CONSEQUENTIAL, OR SPECIAL DAMAGES, INCLUDING LOST PROFITS, ARISING OUT OF ANY USE OF MEDBIQUITOUS XML.

LICENSEE SHALL INDEMNIFY THE CONSORTIUM AND EACH OF ITS MEMBERS FROM ANY LOSS, CLAIM, DAMAGE OR LIABILITY (INCLUDING, WITHOUT LIMITATION, PAYMENT OF ATTORNEYS' FEES AND COURT COSTS) ARISING OUT OF MODIFICATION OR USE OF THE MEDBIQUITOUS XML OR ANY RELATED CONTENT OR MATERIAL BY LICENSEE.

LICENSEE SHALL NOT OBTAIN OR ATTEMPT TO OBTAIN ANY PATENTS, COPYRIGHTS OR OTHER PROPRIETARY RIGHTS WITH RESPECT TO THE MEDBIQUITOUS XML.

THIS LICENSE SHALL TERMINATE AUTOMATICALLY IF LICENSEE VIOLATES ANY OF ITS TERMS AND CONDITIONS.

The name and trademarks of the MedBiquitous Consortium and its members may NOT be used in advertising or publicity pertaining to MedBiquitous XML without specific, prior written permission. Title to copyright in MedBiquitous XML and any associated documentation will at all times remain with the copyright holders.

Table of Contents

MedBiquitous Consortium XML Public License and Terms of Use.....	2
Acknowledgements	5
Introduction.....	7
Documentation Conventions.....	8
Data Elements.....	9
Other Schema Referenced.....	10
Activity Report Schema Grammar	11
1 ActivityReports	11
2 ActivityReport.....	12
3 Activity	14
4 Module	16
4.1 Metadata.....	20
4.2 CreditCertificate.....	21
4.3 CreditReceived.....	24
4.4 Credit Focus	25
5 PointOfCareLearning.....	26
5.1 ResourceUsed	29
6 XtensibleInfo.....	31
Sample XML Document.....	32
References.....	34

Acknowledgements

The MedBiquitous Consortium wishes to acknowledge the help of the MedBiquitous Consortium Activity Report Working Group and the MedBiquitous Point of Care Learning Working Group members and other individuals that contributed to the creation of this document, including:

- Nick Ackerson, Thomson
- Michelle Adams, American Academy of Dermatology
- Spencer Aden, Healthstream
- Zalman Agus, University of Pennsylvania
- Archana Aida, American Board of Pediatrics
- Dawn Ainger, Genova Technologies
- Mary Pat Aust, American Association of Critical-Care Nurses
- Mary Carol Badat, Radiological Society of North America
- Skip Bartolanzo, American Board of Pediatrics
- Scott Bradbury, American Academy of Pediatrics
- Ron Carovano, METI
- Antony Chan, American Academy of Pediatrics
- Nancy Davis, Ph.D., National Institute for Quality Improvement and Education
- Bill Deluise, Blackwell
- Ray Evenrgam, CTSNet
- Scott Foutz, American Academy of Pediatrics
- Tom Godden, Wolters Kluwer
- Cyndi Grimes, Medscape
- Anne Grupe, American Society for Clinical Oncology
- Monica Hanks, American Association of Critical-Care Nurses
- Jeanette Harmon, American Medical Association
- Lorena Hitchens, HighWire Press
- Laird Kelly, RSI Focal Search
- Edward Kennedy, Accreditation Council for Continuing Medical Education
- Irina Laghidze, Moberg Research
- Matt Lewis, Boehringer Ingelheim
- Rachel Makleff, American Thoracic Society
- Laura Martin, American Board of Pediatrics
- Paul Martin, EEDS
- Jacqueline Mayhew, American Heart Association
- J.B. McGee, University of Pittsburgh
- Dick Moberg, Moberg Research
- Spencer Moore, Radiological Society of North America
- Christie Morales, American Heart Association
- Kevin O'Hara, Healthstream
- Jerry Osheroff, Thomson

- Bryan Pawlak, American Osteopathic Association
- Mellie Pouwels, Radiological Society of North America
- Monica Quiroz, American Medical Association
- Andy Rabin, CECity
- Kelly Reddick, American Board of Pediatrics
- Shelly Rodrigues, California Academy of Family Physicians
- Michael Rowan, LearnSomething
- Deborah Samuel, American Academy of Pediatrics
- Tarang Shah, American Osteopathic Association
- Damon Silver, HighWire Press
- Carl Singer, CECity
- Danette Somers, Wiley
- Robert Stern, MedPage Today
- Todd Tischendorf, CECity
- Toby Vandermark
- Leah Wang, Medscape
- Scott Weber, Med-IQ
- Jabin White, Silverchair, Working Group Chair
- Charles Willis, American Gastroenterological Association
- Walter Wolyniec, Boehringer Ingelheim
- Beverly Wood, American Academy of Pediatrics
- Jake Zarnegar, Silverchair
- Mike Zarski, American Osteopathic Association

Other XML schema were reviewed in the creation of this schema, specifically, the IMS Global Learning Consortium's Learner Information Package.

Introduction

This document describes the MedBiquitous Consortium Activity Report XML Schema in detail. It is intended for use by anyone who wants to develop tools or implement electronic systems for tracking the learning and certification activities of physicians and other medical professionals. The status of the document is indicated at the bottom of the page; draft documents are subject to review and approval through the MedBiquitous Consortium Process (see http://www.medbiq.org/about_us/consortium_process/processdocument.pdf).

The objective of this Activity Report Schema is to provide a data structure that allows one to represent the educational and maintenance of competence activities of physicians and other medical professionals in a standard format. This structure then enables the exchange of activity report information between related business systems and over the Web.

Within professional medicine, there is a need for societies, certifying boards, licensing entities, and other organizations to exchange information about the educational activities of physicians and other medical professionals. Professional societies often serve as the providers of medical education and other resources to enhance the competency of physicians and other medical professionals. Many certifying boards track these educational and competency activities as part of their requirements for maintaining certification. The Activity Report Schema will provide a lingua franca for the structure of this data and facilitate the educational and public service missions of these organizations and others. The schema in no way compromises the confidentiality, integrity, or security of activity data.

The Activity Report also provides a way to represent Point of Care Learning data. The American Academy of Family Physicians (AAFP) defines point of care learning as “practice-based learning that takes place in support of specific patient care.” Clinicians are increasingly developing and using point-of-care learning products such as Up-to-Date, InfoRetriever, and Physicians Information and Education Resource (PIER). Other types of evidence-based clinical literature may be used at point of care as well.

In 2005, the American Medical Association (AMA) Physician’s Recognition Award (PRA) and Credit System and the American Academy of Family Physicians (AAFP) Credit System began to award Continuing Medical Education (CME) credit for Internet Point of Care learning. In order to claim CME credit, the AMA and AAFP require learners to review the clinical question, identify relevant sources, and describe the application of findings to practice. This specification enables the exchange of such data. While credit may be awarded for point-of-care learning activities, this specification is intended for use with a broad scope of point-of-care learning activities regardless of whether or not credit is designated or awarded.

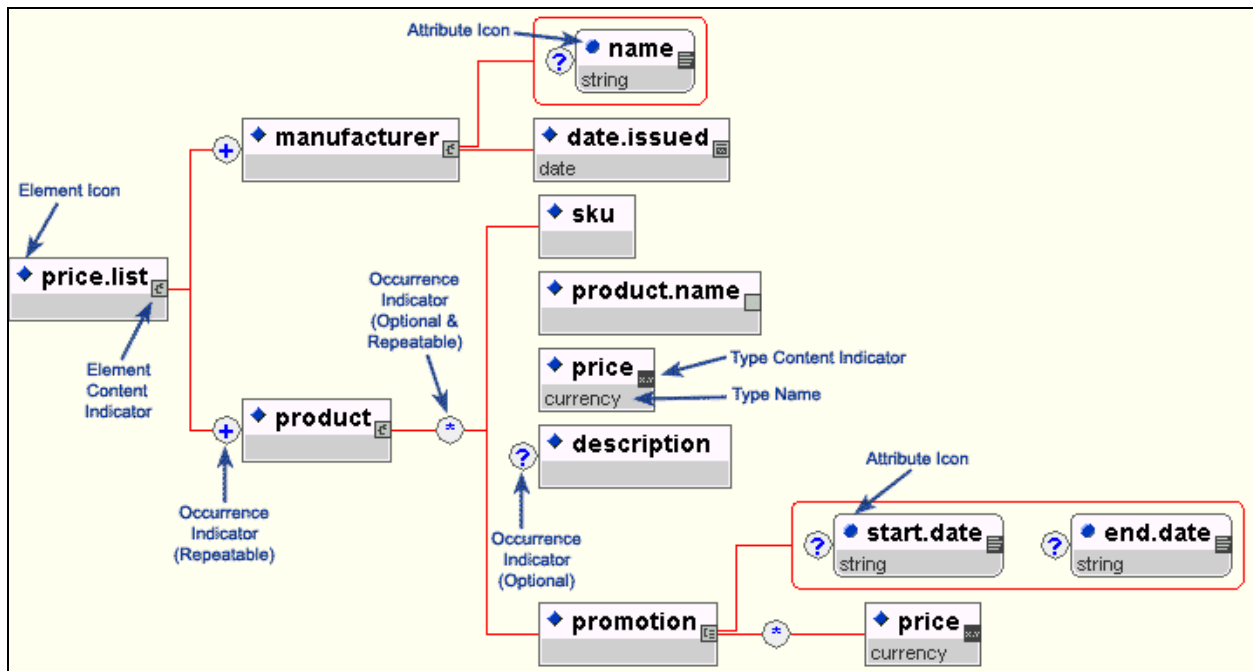
The Activity Report Schema serves as the payload specification for the Activity Report Transmission Web service, which describes the automated transmission of activity reports from one organization to another. This Activity Report Schema forms a portion of MedBiquitous’ technology blueprint for medical education and is part of its overall XML framework and software architecture for professional medicine.

Documentation Conventions

This document uses the following conventions.

Documentation Conventions	
Convention	Description
monospaced type	Sample XML tags, code, schema, or portion thereof
BoldText	When used with an XML tag name, indicates that the element contains sub-elements
<i>Italicized Text</i>	When used in an XML tag description, an attribute of the XML tag.
Tag description	Shading indicated that the tag is further described in a later part of the document

The following graphical standards are used for the XML diagrams in this document.



Graphical Standards from TIBCO's Turbo XML, Copyright TIBCO Software Inc.

Data Elements

The Activity Report schema includes the following data elements. In some cases, these elements contain subelements.

1. ActivityReports
2. DateTimeCreated
3. ActivityReport
4. ReportingOrganization
5. Member
6. Activity
7. XtensibleInfo
8. ProviderOrganization
9. ActivityName
10. Module
11. PointOfCareLearningData
12. Metadata
13. CreditCertificate

The root element is ActivityReports.

Other Schema Referenced

This Activity Report schema imports and refers to components of the MedBiquitous Professional Profile as described in the MedBiquitous Healthcare Professional Profile Specifications and Description Document and components of the Healthcare Learning Object Metadata (Healthcare LOM) Specifications and Descriptions Document.

The MemberType datatype was imported from the Professional Profile schema, and text describing the Member element and its subelements can be found in the specification document, http://www.medbiq.org/working_groups/professional_profile/ProfessionalProfileSpecifications.pdf.

The lom element and credits datatype are imported from Healthcare LOM, and text describing these can be found in the specification document, available for download at: http://www.medbiq.org/working_groups/learning_objects/HealthcareLOMSpecification.pdf

Schemas are available for download from the MedBiquitous XML Repository at <http://www.medbiq.org/repository>.

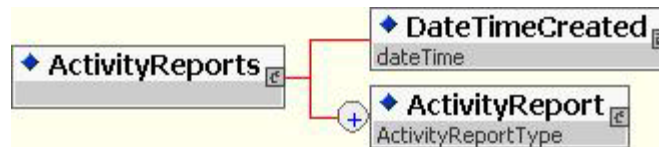
Activity Report Schema Grammar

The following sections explain the Activity Report Schema grammar. Values in bold under XML Tags column indicate that the element has sub-elements.

All the elements having sub-elements will be defined in separate sections. All elements without sub-elements will be defined within the appropriate element sections that use them.

1 ActivityReports

ActivityReports is the root element. It contains information on registration for, completion of, or expiration of learning activities, maintenance of competence activities, or other relevant activities for one or more healthcare professionals. ActivityReports must occur once within an activity report.



Example:

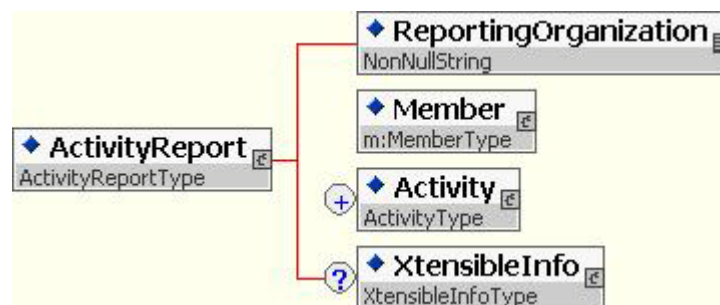
```
<ActivityReports>
  <DateTimeCreated>2004-01-23T09:00:00</DateTimeCreated>
  <ActivityReport>
    ...
  </ActivityReport>
  <ActivityReport>
    ...
  </ActivityReport>
</ActivityReports>
```

ActivityReports Element Information

Element	Description	Required	Multiplicity	Datatype
ActivityReports	ActivityReports is the root element. It contains information on registration for, completion of, or expiration of learning activities, maintenance of competence activities, or other relevant activities for one or more healthcare professionals.	Required	1	Container
DateTimeCreated	DateTimeCreated is the subelement of ActivityReports. It defines the date and time this set of reports was created. For example: 2004-01-23T09:00:00 Indicates January 23, 2004, 9 AM.	Required	1	dateTime
ActivityReport	ActivityReport is the subelement of ActivityReports. It contains subelements that define the activities of a single person. See section ActivityReport for more information.	Required	1 or more	Container

2 ActivityReport

ActivityReport is the subelement of ActivityReports. ActivityReport contains subelements that define the activities of a single physician or medical professional. ActivityReport is required and may occur multiple times.



Example:

```

<ActivityReport>
  <ReportingOrganization>HighWire Press</Organization>
  <m:Member>
    <m:Name>
      <n:GivenName>Percy</n:GivenName>
      <n:GivenName>Bysshe</n:GivenName>
      <n:FamilyName>Shelley</n:FamilyName>
      <n:Degree>MD</n:Degree>
    </m:Name>
  </m:Member>
<Activity>
  . . .
</Activity>

```

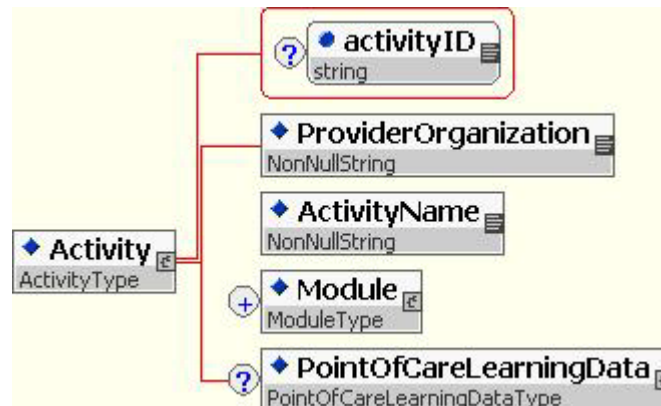
ActivityReport Element Information

Element	Description	Required	Multiplicity	Datatype
ActivityReport	ActivityReport is the subelement of ActivityReports. It contains subelements that define the activities of a single person.	Required	1 or more	Container
ReportingOrganization	ReportingOrganization is the sub-element of the ActivityReport element that defines the name of the organization that is the source of the activity report.	Required	1	NonNullString
Member	Member is imported from the MedBiquitous Professional Profile schema. It contains subelements that define name and profile information for a single person. Member is a sub-element of ActivityReport. See the <i>MedBiquitous Healthcare Professional Profile Specifications and Description Document</i> for more information.	Required	1	Container (See <i>MedBiquitous Healthcare Professional Profile Specifications and Description Document</i> for more information)

Element	Description	Required	Multiplicity	Datatype
Activity	This is the sub-element of the ActivityReport element. It defines one activity and its status for one person. See section Activity for more information.	Required	1 or more	Container
XtensibleInfo	XtensibleInfo is the subelement of Member. XtensibleInfo contains sub-elements defined by the organization implementing the schema. See section XtensibleInfo for more information.	Optional	0 or 1	Container

3 Activity

The Activity element identifies the type of educational or other activity completed or started by an individual. For example, in pediatrics this may be eQIPP or PREP SA (both of which are activities that can be applied towards a pediatrician's maintenance of certification requirements in the US). If Activity Report is describing an individual's educational accomplishments, the activity element describes a continuing education activity. The Activity element is a subelement of ActivityReport. Activity may occur multiple times and is required.



Example:

```

<Activity>
  <ProviderOrganization>
    American Academy of Pediatrics
  </Providerorganization>
  <ActivityName>eQIPP</ActivityName>
  <Module>
    <ModuleName>Asthma</ModuleName>
    <Status>Registered</Status>
    <StartDate>2003-27-01</StartDate>
  </Module>
</Activity>
  
```

```

    <DueDate>2004-27-01</DueDate>
  </Module>
</Activity>

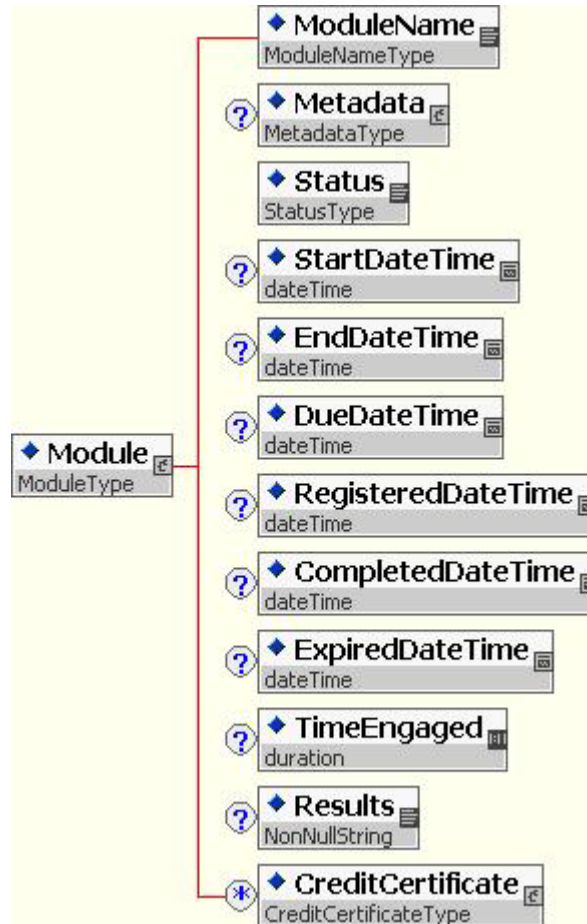
```

Activity Element Information

Element	Description	Required	Multiplicity	Datatype
Activity	The Activity element is a subelement of ActivityReport. Activity has one attribute: <i>activityID</i> A unique identifier for this activity.	Required	1 or more	Container
ProviderOrganization	This is the sub-element of the Activity element. ProviderOrganization defines the name of the organization that is the official provider of this activity. For continuing education activities, ProviderOrganization is the accredited CE provider.	Required	1	NonNullString
ActivityName	This is the sub-element of the Activity element. It defines the name of the activity completed. For example, PREP Self Assessment. If the Activity Report describes a continuing education activity, ActivityName is the title of the educational activity or course.	Required	1	NonNullString
Module	This is the sub-element of the Activity element. It contains subelements that further define the activities of a single person. See section Module for more information.	Required	1 or more	Container
PointOfCareLearningData	PointOfCareLearningData contains subelements that document data about a point of care learning activity. PointOfCareLearningData is a sub-element of ActivityReport. See section PointOfCareLearningData more information.	Optional	0 or 1	Container

4 Module

Module is the subelement of Activity. Module contains subelements that define an educational or other activity and an individual's status in relation to that activity. Module is required and may occur multiple times.



Example:

```
<Module>
  <ModuleName>Preventive Guidelines for Women</ModuleName>
  <Metadata>
    <Location>http://my.americanheart.org/metadata/001.xml</Location>
  </Metadata>
  <Status>Completed</Status>
  <CompletedDateTime>2005-11-09T21:30:00</CompletedDate>
  <TimeEngaged>PT1H30M</TimeEngaged>
  <Results>Pass</Results>
  <CreditCertificate>
    <CreditReceived>
      <hx:accreditingBody>ACCME</hx:accreditingBody>
      <hx:activityCertification>
        AMA PRA category 1
      </hx:activityCertification>
    </CreditReceived>
  </CreditCertificate>
</Module>
```



```

<hx:creditType>CME</hx:creditType>
<hx:creditUnit>Credits</hx:creditUnit>
<hx:accreditedProvider>
  American Heart Association
</hx:accreditedProvider>
<hx:releaseDate>2005-10-30</hx:releaseDate>
<hx:expirationDate>2006-10-30</hx:expirationDate>
<hx:numberOfCredits>1.5</hx:numberOfCredits>
  </CreditReceived>
  <CreditID>ccid:americanheart.org:12345.8767<CreditID>
</CreditCertificate>
</Module>

```

Module Element Information

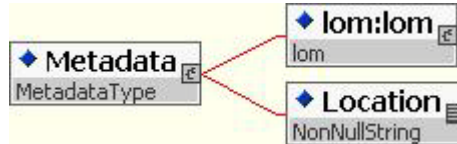
Element	Description	Required	Multiplicity	Datatype
Module	Module is the subelement of Activity. It contains subelements that further define the activities of a single person.	Required	1 or more	Container
ModuleName	This is a sub-element of the Module element. It defines the name of the module within this activity. For example, if the activity is the Pediatrics eQIPP resource for practice improvement, the module may be Asthma. This element has the following attribute: <i>moduleID</i> A unique identifier for this module.	Required	1	NonNullString
Metadata	This is a sub-element of the Module element. It contains subelements that provide or reference descriptive metadata for the activity.	Optional	0 or 1	Container
Status	This is a sub-element of the Module element. It defines the individual's status in relation to this module. Valid values are registered, completed, and expired.	Required	1	Restricted

Element	Description	Required	Multiplicity	Datatype
StartDateTime	This is a sub-element of the Module element. It defines the date and time the individual started this module.	Optional	0 or 1	dateTime
EndTime	This is a sub-element of the Module element. It defines the date and time that the individual ended the module.	Optional	0 or 1	dateTime
DueDateTime	This is a sub-element of the Module element. It defines the final date and time for this individual to complete this module according to the sending organization. The receiving organization (e.g. the certifying board) may have a different due date for this module if it is required to maintain certification.	Optional	0 or 1	dateTime
RegisteredDateTime	This is a sub-element of the Module element. It defines the date and time the individual registered for this module.	Optional	0 or 1	dateTime
CompletedDateTime	This is a sub-element of the Module element. It defines the date and time the individual completed this module.	Optional	0 or 1	dateTime
ExpiredDateTime	This is a sub-element of the Module element. It defines the date and time the individual's access to the module expired.	Optional	0 or 1	dateTime
TimeEngaged	This is a sub-element of the Module element. It defines the amount of time the participant spent engaged in the activity.	Optional	0 or 1	Duration
Results	This is a sub-element of the Module element. It defines the individual's results for this module. For example, pass or fail.	Optional	0 or 1	NonNullString

Element	Description	Required	Multiplicity	Datatype
CreditCertificate	This is a sub-element of the Module element. It contains subelements that describe and identify the credits received for completing this activity. See section CreditCertificate for more information.	Optional	0 or more	Container

4.1 Metadata

Metadata is the subelement of Module. It contains subelements that provide or reference descriptive metadata for the activity.



Example:

```

<Metadata>
  <Location> http://www.cd.gov/metadata/001</Location>
</Metadata>
  
```

Or:

```

<Metadata>
  <lom:lom>
    <general>
      <identifier>
        <catalog>URL</catalog>
    </general>
  </lom:lom>
  <entry>http://www.atsdr.cdc.gov/HEC/CSEM/arsenic/index.html</entry>
  </entry>
  <title>
    <string language="en">Arsenic Toxicity</string>
  </title>
  </general>
  <metaMetadata>
    <identifier>
      <catalog>URL</catalog>
      <entry>http://www.cd.gov/metadata/001</entry>
    </identifier>
  </metaMetadata>
  <hx:healthcareMetadata>
    <hx:healthcareEducation>
      <hx:expirationDate>2006-10-30</hx:expirationDate>
      <hx:creditsAvailable>yes</hx:creditsAvailable>
      <hx:credits>
        <hx:accreditingBody>ACCME</hx:accreditingBody>
        <hx:activityCertification>AMA PRA category
1</hx:activityCertification>
        <hx:creditType>CME</hx:creditType>
        <hx:creditUnit>Credits</hx:creditUnit>
        <hx:accreditedProvider>
          Centers for Disease Control and Prevention
        </hx:accreditedProvider>
        <hx:releaseDate>2005-10-30</hx:releaseDate>
        <hx:expirationDate>2006-10-30</hx:expirationDate>
        <hx:numberOfCredits>1.5</hx:numberOfCredits>
      </hx:credits>
    </hx:healthcareEducation>
  </hx:healthcareMetadata>
  
```

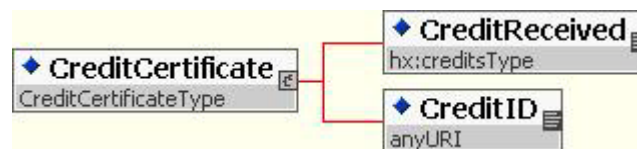
```
</lom:lom>
</Metadata>
```

Metadata Element Information

Element	Description	Required	Multiplicity	Datatype
Metadata	This is a sub-element of the Module element. It contains subelements that provide or reference descriptive metadata for the activity.	Optional	0 or 1	Container
lom	This is a sub-element of the Module element. It contains subelements that provide a full learning object metadata record using the Healthcare Learning Object Metadata specification. Metadata provides descriptive information about an activity.	Either lom or Location is required	1	lom See the <i>Healthcare Learning Object Metadata Specifications and Description Document</i> for more information.
Location	This is a sub-element of the Module element. It provides a URL or other location reference for a learning object metadata record that uses the Healthcare Learning Object Metadata specification.	Either lom or Location is required	1	Non-null string

4.2 CreditCertificate

CreditCertificate is the subelement of Module. CreditCertificate describes and identifies the credits received for completing an education or certification activity.



Example:

```
<CreditCertificate>
  <CreditReceived>
    <hx:accreditingBody>ACCME</hx:accreditingBody>
    <hx:activityCertification>
      AAFP Elective
    </hx:activityCertification>
    <hx:creditType>CME</hx:creditType>
    <hx:creditUnit>Credits</hx:creditUnit>
    <hx:accreditedProvider>
```

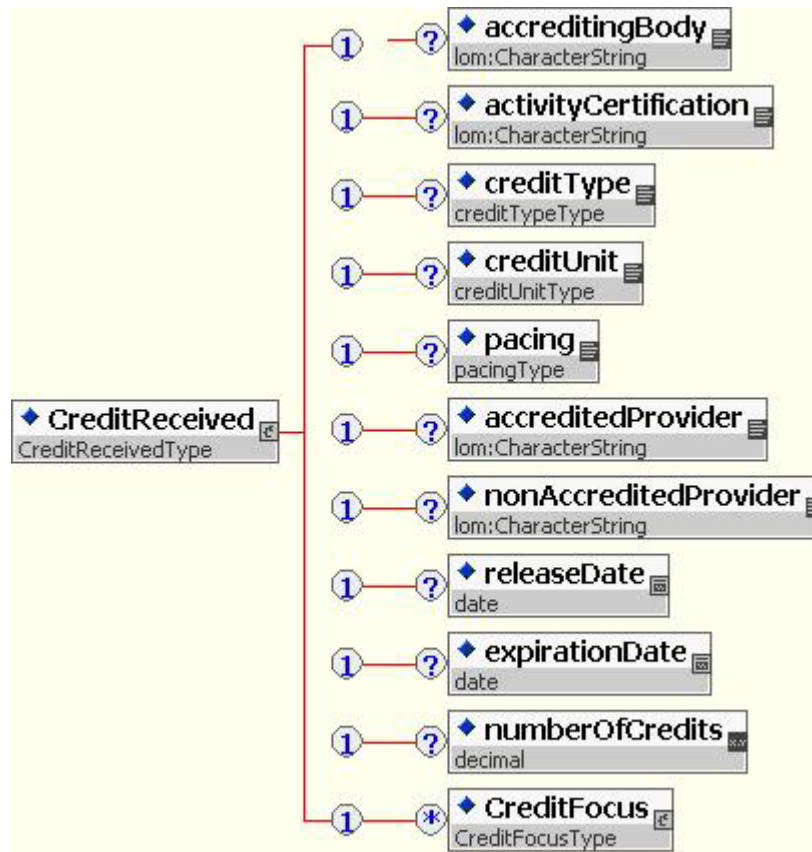
```
    American Academy of Pediatrics
  </hx:accreditedProvider>
  <hx:releaseDate>2006-04-01</hx:releaseDate>
  <hx:expirationDate>2007-04-01</hx:expirationDate>
  <hx:numberOfCredits>3</hx:numberOfCredits>
</CreditReceived>
  <CreditID>ccid:aap.org:6789012345</CreditID>
</CreditCertificate>
```

CreditCertificate Element Information

Element	Description	Required	Multiplicity	Datatype
CreditCertificate	This is a sub-element of the Module element. If a learner received multiple types of credit for an activity, repeat the credit certificate element to describe each type of credit received.	Optional	0 or more	Container
CreditReceived	This is a sub-element of the CreditCertificate element. Its type definition extends the credits type from Healthcare Learning Object Metadata. This element is required if the CreditCertificate element is used. It has subelements that define the number of credits (CME, CE, CPE, or other professional credit) that the individual has received as a result of completing this module.	Required	1	Container See the section CreditReceived for more information.
CreditID	<p>CreditID is the subelement of CreditCertificate. This element is required if the CreditCertificate element is used. It provides a globally unique identifier for the specific credits awarded by the provider to the learner.</p> <p>CreditID uses the Credit Certificate Identifier (heid) Uniform Resource Name (URN) format as shown below:</p> <p><i>ccid:providerdomain:localidentifier</i></p> <p><i>providerdomain</i> is a the domain name that uniquely identifies the provider of the educational activity.</p> <p><i>localidentifier</i> is a locally unique identifier for the credit certificate created by the provider.</p>	Required	1	Healthcare Education Identifier URN

4.3 CreditReceived

CreditReceived is sub-element of the CreditCertificate element. . It has subelements that define the number of credits (CME, CE, CPE, or other professional credit) that the individual has received as a result of completing this module.



Example:

```

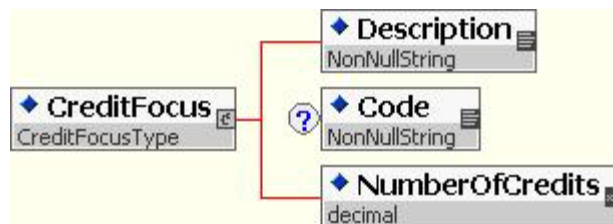
<CreditReceived>
  <hx:accreditingBody>ACCME</hx:accreditingBody>
  <hx:activityCertification>
    AAFP Elective
  </hx:activityCertification>
  <hx:creditType>CME</hx:creditType>
  <hx:creditUnit>Credits</hx:creditUnit>
  <hx:accreditedProvider>
    American Academy of Pediatrics
  </hx:accreditedProvider>
  <hx:releaseDate>2006-04-01</hx:releaseDate>
  <hx:expirationDate>2007-04-01</hx:expirationDate>
  <hx:numberOfCredits>3</hx:numberOfCredits>
</CreditReceived>
  
```


CreditReceived Element Information

Element	Description	Required	Multiplicity	Datatype
CreditReceived	This is a sub-element of the CreditCertificate element. Its type definition extends the credits type from Healthcare Learning Object Metadata. This element is required if the CreditCertificate element is used. It has subelements that define the number of credits (CME, CE, CPE, or other professional credit) that the individual has received as a result of completing this module.	Required	1	Container
accreditingBody activityCertification creditType creditUnit pacing accreditedProvider nonAccreditedProvider releaseDate expirationDate numberOfCredits CreditFocus	See the <i>Healthcare Learning Object Metadata Specifications and Description Document</i> description of the credit element for more information.			
CreditFocus	CreditFocus is a subelement of the CreditReceived element. It contains subelements that define a category or area of focus included in this credit certificate. See section CreditFocus for more information.	Optional	0 or more	Container

4.4 Credit Focus

CreditFocus defines a category or area of focus included in the credit certificate. Some organizations award subspecialty certificates, others provide categories of credit. CreditFocus enables organizations to describe those category-based credits and certificates.



Example:

```

<CreditFocus>
  <Description>CME Computed Tomography</Description>
  <Code>CT</Code>
  <NumberOfCredits>2.5</NumberOfCredits>
</CreditFocus>

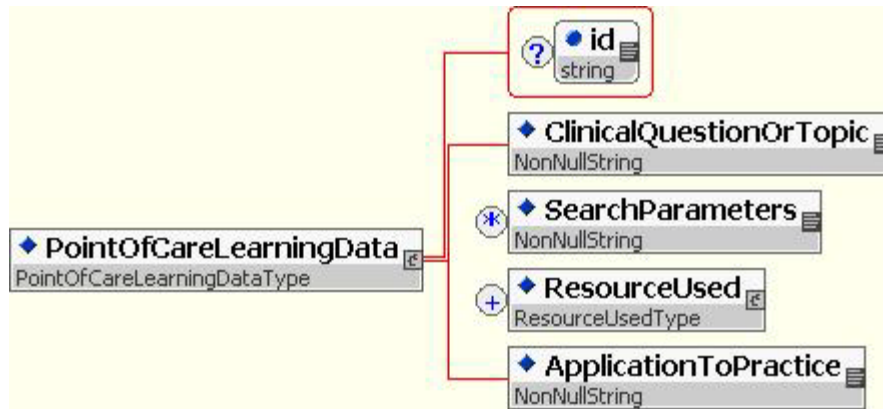
```

CreditFocus Element Description

Element	Description	Required	Multiplicity	Datatype
CreditFocus	CreditFocus is a subelement of the CreditReceived element. It contains subelements that define a category or area of focus included in this credit certificate.	Optional	0 or more	Container
Description	Description is a subelement of CreditFocus. It provides a text description or category of the credit focus.	Required	1	Non-nullstring
Code	Code is a subelement of CreditFocus that provides a succinct code matching the description.	Optional	0 or 1	Non-nullstring
NumberOfCredits	NumberOfCredits is the subelement of CreditFocus that defines how many credits are associated with this credit focus or category.	Required	1	Decimal

5 PointOfCareLearning

PointOfCareLearningData contains elements that provide data about a point of care learning experience. PointOfCareLearningData must occur once within a PointOfCareLearningData instance document.



PointOfCareLearningData has the following elements.

PointOfCareLearningData Element Information

Element	Description	Required	Multiplicity	Datatype
PointOfCareLearningData	PointOfCareLearningData is the root element. It contains elements that provide data about the point-of-care learning experience. PointOfCareLearningData has the following attribute: <i>id</i> A unique identifier for this set of point of care learning data.	Optional	0 or 1	Container
ClinicalQuestionOrTopic	ClinicalQuestionOrTopic is the subelement of PointOfCareLearningData that describes the clinical question asked or topic selected by the learner to begin the search for learning resources at the point of care.	Required	1	Non-null string
SearchParameters	SearchParameters is the subelement of PointOfCareLearningData that describes the search parameters entered by the learner if a collection search was used to find relevant resources at the point of care.	Optional	0 or more	Non-null string

Element	Description	Required	Multiplicity	Datatype
ResourceUsed	ResourceUsed is the subelement of PointOfCareLearningData that describes the title of a learning resource used as part of this point of care learning experience. If the resource is an article in a collection, use the title of the article. See ResourceUsed section for more information.	Required	1 or more	Container
ApplicationToPractice	ApplicationToPractice is the subelement of PointOfCareLearningData that indicates how the learner describes applying the learning resource to his or her practice. ApplicationToPractice may indicate that the learner was unable to apply the learning to the question at hand.	Required	1	Non-null string

Example:

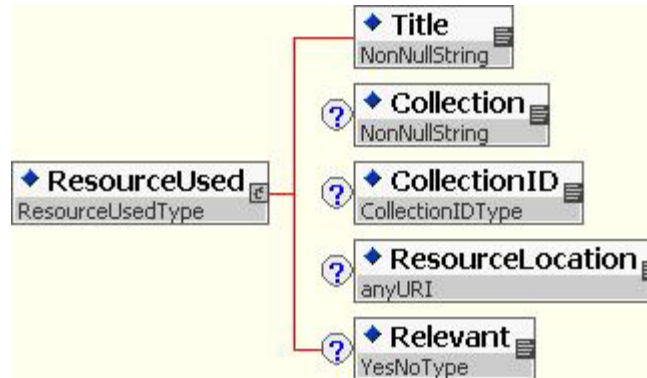
```

<PointOfCareLearningData>
  <ClinicalQuestionOrTopic>
    Is zinc recommended for type 2 diabetic patients?
  </ClinicalQuestionOrTopic>
  <SearchParameters>zinc</SearchParameters>
  <SearchParameters>diabetes</SearchParameters>
  <ResourceUsed>
    <Title>
      Zinc Supplementation for the Prevention of Type 2 Diabetes Mellitus
    </Title>
    <Collection> The Cochrane Library</Collection>
    <CollectionID type="uri">
      "http://www.cochrane.org/reviews/en/ab005525.html"
    </CollectionID>
    <ResourceLocation>
      "http://www.cochrane.org/reviews/en/ab005525.html"
    </ResourceLocation>
    <Relevant>>true</Relevant>
  </ResourceUsed>
  <ApplicationToPractice>Advised patient that zinc supplementation was not helpful to her condition.</ApplicationToPractice>
</PointOfCareLearningData>

```

5.1 ResourceUsed

ResourceUsed contains subelements that describe a resource used as part of this point of care learning activity.



ResourceUsed has the following elements:

Element	Description	Required	Multiplicity	Datatype
ResourceUsed	ResourceUsed is the subelement of PointOfCareLearningData. It's subelements describe the title and source of a learning resource used as part of this point of care learning experience.	Required	1 or more	Container
Title	Title is the subelement of ResourceUsed that describes the title of a learning resource used as part of this point of care learning experience.	Required	1	NonNull String
Collection	Collection is the subelement of ResourceUsed that describes the name of the collection that is the source of the article. For example, The Cochrane Library.	Optional	0 or 1	NonNull String

Element	Description	Required	Multiplicity	Datatype
CollectionID	<p>CollectionID is the subelement of ResourceUsed that provides the unique identifier of the article used by the collection. If the article has a digital object identifier (DOI), it may be used.</p> <p>CollectionID has one attribute:</p> <p><i>type</i> the type of identifier used. For example, DOI, PubMed, or URI.</p>	Optional	0 or 1	Nonnull String
ResourceLocation	<p>ResourceLocation is the subelement of ResourceUsed that provides the URL of the article.</p>	Optional	0 or 1	URI
Relevant	<p>Relevant is the subelement of ResourceUsed that indicates whether or not the learner found the resource relevant. Valid values are: true, false.</p>	Optional	0 or 1	Restricted

Example:

```

<ResourceUsed>
  <Title>
    Zinc Supplementation for the Prevention of Type 2 Diabetes Mellitus
  </Title>
  <Collection> The Cochrane Library</Collection>
  <CollectionID type="uri">
    "http://www.cochrane.org/reviews/en/ab005525.html"
  </CollectionID>
  <ResourceLocation>
    "http://www.cochrane.org/reviews/en/ab005525.html"
  </ResourceLocation>
  <Relevant>true</Relevant>
</ResourceUsed>

```

6 *XtensibleInfo*

The *XtensibleInfo* element contains sub-elements defined by the organization implementing the schema. It extends the currently defined schema. Elements listed in *XtensibleInfo* may be candidates for inclusion in a revision of the MedBiquitous Activity Report. We encourage submission of these ideas to the MedBiquitous Activity Report Working Group. The group's home page is located at http://www.medbiq.org/working_groups/activity_report/index.html. You can also submit suggestions to info@medbiq.org.

XtensibleInfo is a sub-element of *ActivityReport*.

Sample XML Document

```
<?xml version = "1.0" encoding = "UTF-8"?>
<ActivityReports xmlns = "http://ns.medbiq.org/activityreport/v1/" xmlns:xsi
= "http://www.w3.org/2001/XMLSchema-instance" xmlns:lom =
"http://ltsc.ieee.org/xsd/LOM" xmlns:m = "http://ns.medbiq.org/member/v1/"
xmlns:n = "http://ns.medbiq.org/name/v1/" xmlns:hx =
"http://ns.medbiq.org/lom/extend/v1/" xsi:schemaLocation =
"http://ns.medbiq.org/activityreport/v1/ activityreport.xsd">
  <DateTimeCreated>2006-04-15T00:00:00</DateTimeCreated>
  <ActivityReport>
    <ReportingOrganization>HighWire Press</ReportingOrganization>
    <Member>
      <m:UniqueID domain = "American Academy of Pediatrics">
        654321
      </m:UniqueID>
      <m:Name>
        <n:GivenName>Paul</n:GivenName>
        <n:GivenName>Lawrence</n:GivenName>
        <n:FamilyName>Dunbar</n:FamilyName>
      </m:Name>
    </Member>
    <Activity>
      <ProviderOrganization>
        American Academy of Pediatrics
      </ProviderOrganization>
      <ActivityName>NeoReviews, Volume 7, Issue 4</ActivityName>
      <Module>
        <ModuleName>NeoReviews, Volume 7, Issue 4</ModuleName>
        <Metadata>
          <location>
            http://neoreviews.aappublications.org/metadata/v7i4.xml
          </location>
        </Metadata>
        <Status>Completed</Status>
        <TimeEngaged>PT3H</TimeEngaged>
        <Results>passed</Results>
        <CreditCertificate>
          <CreditReceived>
            <hx:accreditingBody>ACCME</hx:accreditingBody>
            <hx:activityCertification>
              AAFP Elective
            </hx:activityCertification>
            <hx:creditType>CME</hx:creditType>
            <hx:creditUnit>Credits</hx:creditUnit>
            <hx:accreditedProvider>
              American Academy of Pediatrics
            </hx:accreditedProvider>
            <hx:releaseDate>2006-04-01</hx:releaseDate>
            <hx:expirationDate>2007-04-01</hx:expirationDate>
            <hx:numberOfCredits>3</hx:numberOfCredits>
          </CreditReceived>
          <CreditID>ccid:aap.org:6789012345</CreditID>
        </CreditCertificate>
      </Module>
```



```
</Activity>  
</ActivityReport>  
</ActivityReports>
```

References

MedBiquitous Healthcare Learning Object Metadata,
http://www.medbiq.org/working_groups/learning_objects/HealthcareLOMSpecification.pdf

MedBiquitous Healthcare Professional Profile,
http://www.medbiq.org/working_groups/professional_profile/ProfessionalProfileSpecifications.pdf.

IEEE Learning Object Metadata
<http://ieeeltsc.org/wg12LOM/>