



Medical Education Metrics Specifications and Description Document

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Version History

Version No.	Date	Changed By	Changes Made
1.0	26 August 2009		
1.1	27 December 2012	Valerie Smothers	Added the following elements: RegulatoryInformation, CompliantToRegulation, RelatedToRegulation, RegulatoryClassification, JointlyAccredited, AuditConsent, MultipleCategories. Modified ParticipantsByCategory datatype,
1.2	18 January 2013	Valerie Smothers	Changed MultipleCategories Number element to TotalNumber; Added the following elements to MultipleCategories: TargetedAudience, Registered, NumberReceivingCredit, CreditsAwarded, NumberOfDistinctHostsOrVisitors, NumberOfSuccessfulPageRequests, NumberCompletingActivity.
1.3	26 January 2013	Valerie Smothers	Added descriptions for Multiple Categories subelements; added ParticipantsByPracticeType to ParticipationMetrics, added PracticeType to MultipleCategories.
1.4	28 January 2013	Valerie Smothers	Deleted AuditConsent element. Added note about recommended values for dental specialties. Added sample XML for RegulatoryInformation, RegulatoryClassification, ParticipantsByCategory, Category, and MultipleCategories.
1.41	14 March 2013	Valerie Smothers and Gretchen Groff	Made visual changes to the specification, updated graphics, and added post course prior to assessment in the definition of RegulationClassification.

1.5	1 April 2013	Valerie Smothers	Removed JointlyAccredited and CommercialSupporter. Made CommercialSupportAmount nillable.
1.51	16 July 2013	Valerie Smothers	Updated FDA link examples
1.52	13 March 2014	Valerie Smothers	Added ReportingYear element to ReportDescription

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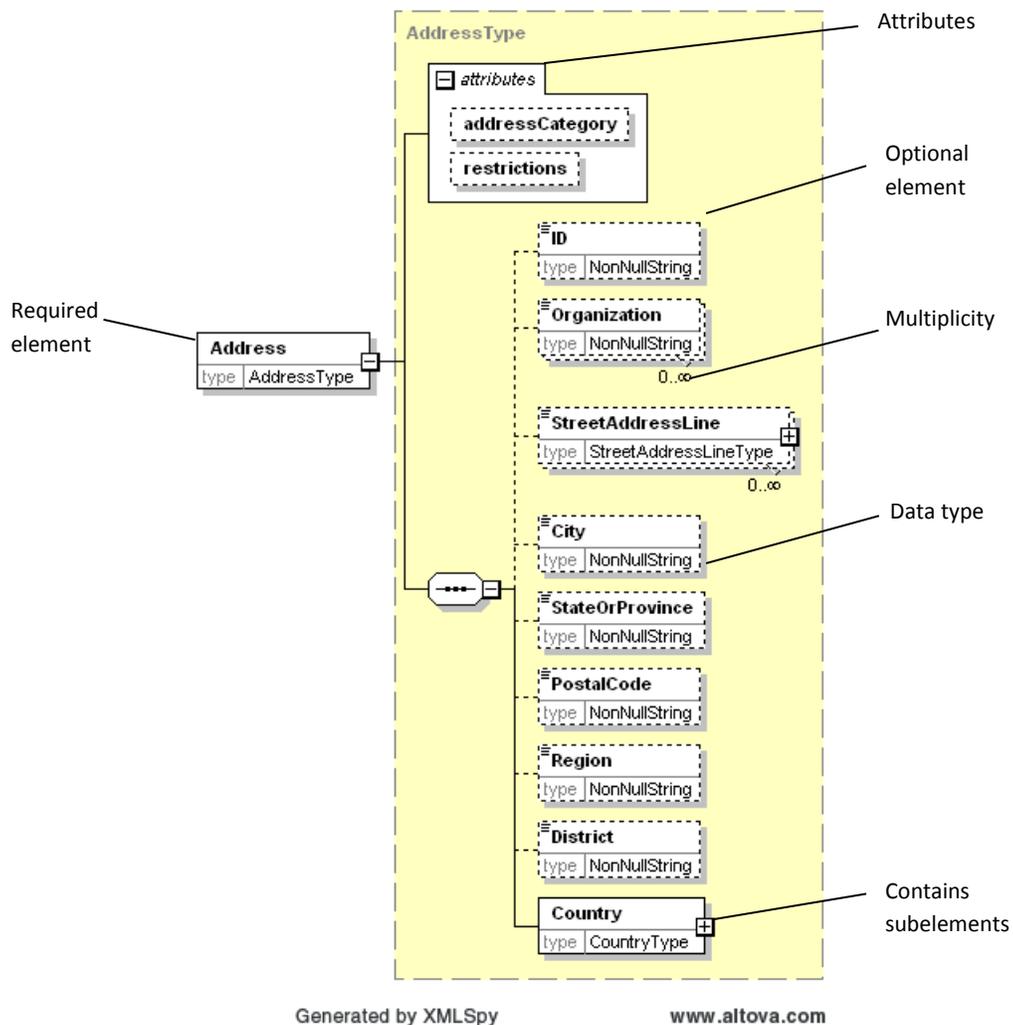
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2 Documentation Conventions

This document uses the following conventions:

Convention	Description
Bold Text	When used with an XML element name, indicates that the element contains sub-elements.
<i>Italics</i>	When used in an XML element description, an attribute of the XML element.
Monospaced type	Sample XML tags, code, schema, or portion thereof.

The document uses graphics generated by Altova XML Spy® software, which uses the following graphical conventions.



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3 Conformance

To conform to the MedBiquitous Medical Education Metrics 2.0 specification, an XML document shall:

- Validate against the Medical Education Metrics XML Schema available at:
<http://ns.medbiq.org/metrics/v2/medicaleducationmetrics.xsd>
- Conform to any additional requirements stated in this specification.
- Optionally include elements not defined in this document only in permitted areas and only if those elements are namespace qualified.

4 Common Data Types

Most of the elements and attributes in MedBiquitous XML documents use the data types defined by the W3C XML schema definition [[XML](#)]. In some cases MedBiquitous creates its own datatypes as part of its best practices or to meet a specific requirement. One commonly used datatype is described below.

Non-null string

Non-null string is a datatype derived from the XML string datatype. Non-null string imposes a minimum length of one character on a string and ensures that required elements are complete.

5 Introduction EDIT

This document describes MedBiquitous Medical Education Metrics specification, or MEMS, in detail. It is intended for use by anyone who wants to develop tools or implement electronic systems for measuring the quality of educational activities for health professionals or for aggregating such data. The status of the document is indicated at the bottom of the page; draft documents are subject to review and approval through the MedBiquitous and ANSI standards development processes [[MedBiquitous Procedures](#)]. The objective of MEMS is to provide a consistent format and data structure for representing metrics for health professions education, particularly continuing education activities. This structure then enables the exchange of education metrics between disparate systems and organizations over the Web.

As the Institute of Medicine and others call for reforms to Continuing Medical Education and other types of Continuing Education (CE) for the health professions, there has been an increasing focus on measuring the quality of CE activities. Educators may use aggregate data on the reach and efficacy of CE activities to evaluate the effectiveness of their educational activities or of their overall educational program. Educators, accrediting bodies, CE supporters, and government agencies often collect educational outcomes data in order to measure the reach of educational activities, gauge improvement and identify strong or weak activities. Certifiers, accrediting bodies, and supporters may use this data to monitor the success of multiple educational activities and programs as a whole. Industry groups may compile data to facilitate research and advancement across the industry.

Currently, the data collected comes in different formats and often measures different things, making it difficult to compare metrics within or across organizations. Promoting consistent evaluation measurements will enable many educators to look at measurements across activities within their own organization or across the industry. This in turn could help educators identify ways to improve their activities and programs.

The standard allows extensions so that evaluation data beyond the core set identified in this document may be communicated to other organizations. This specification is not intended to encapsulate all metrics data that will be maintained in an organization's internal systems; rather, it is intended to encapsulate the key quality metrics that may be compiled within the organization or transmitted to an outside organization interested in collecting data on the quality of educational activities.

6 Other Standards, Specifications, or Schemas Referenced

This standard references the following standards, specifications, or schemas. The informative references, which describe how these references are used, link to formal references appearing later in this document.

- ANSI/MEDBIQ LO.10.1-2008, Healthcare Learning Object Metadata [[Healthcare LOM](#)]
Healthcare LOM extends the IEEE LOM standard and provides a format for describing healthcare activities.
- ANSI/MEDBIQ AR.10.1-2009, Activity Report [[Activity Report](#)]
Activity Report allows organizations to electronically compile CE and Maintenance of Certification certificate data across providers. MEMS uses data types for credit from the Activity Report.

7 MEMS Schema

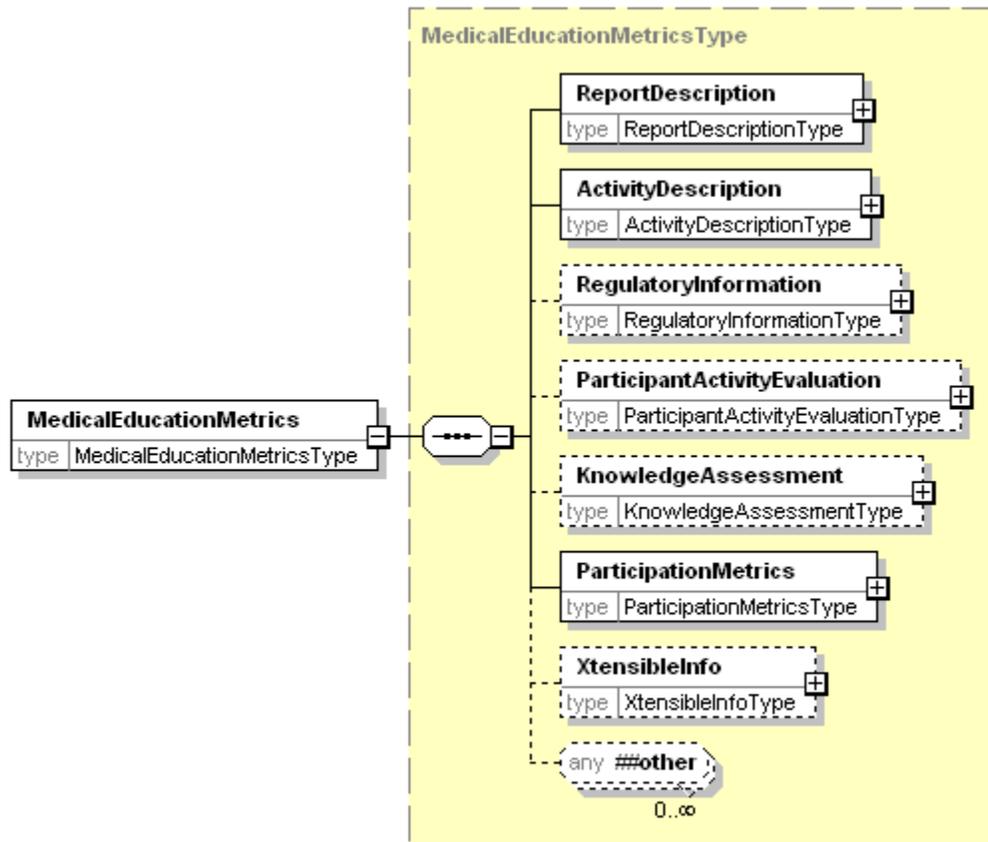
The following sections explain the MEMS schema grammar. Values in **bold** under XML Tags column indicate that the element has sub-elements.

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.

7.1 MedicalEducationMetrics

MedicalEducationMetrics is the root element. It contains evaluation data for one educational activity. MedicalEducationMetrics is required and must occur once within a MEMS document.

MedicalEducationMetrics has a series of subelements that are defined in this document.



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MedicalEducationMetrics ElementInformation

Element	Description	Required	Multiplicity	Datatype
MedicalEducationMetrics	MedicalEducationMetrics is the root element. It contains sub-elements that define evaluation data for a health professions educational activity.	Required	1	Container
ReportDescription	ReportDescription is the sub-element of MedicalEducationMetrics. It contains subelements that provide details about the scope of the report. See section ReportDescription for more information.	Required	1	Container
ActivityDescription	ActivityDescription is the sub-element of MedicalEducationMetrics. It contains elements that describe and identify the educational activity that is being evaluated. See section ActivityDescription for more information.	Required	1	Container
RegulatoryInformation	RegulatoryInformation contains elements that describe the relationship of this activity to any regulations. See section RegulatoryInformation for more information.	Optional	0 or 1	Container
ParticipantActivityEvaluation	ParticipantActivityEvaluation is the sub-element of MedicalEducationMetrics. It contains elements that define a how participants evaluated the educational activity in detail.	Optional	0 or 1	Container

	See section ParticipantActivityEvaluation for more information.			
KnowledgeAssessment	<p>KnowledgeAssessment is the sub-element of MedicalEducationMetrics. It contains elements that define how participants responded to a set of multiple choice assessment items.</p> <p>See section Knowledge Assessment for more information.</p>	Optional	0 or 1	Container
ParticipationMetrics	<p>ParticipationMetrics is the sub-element of MedicalEducationMetrics. It contains elements that define data on the number of learners participating in the activity and the extent of their participation.</p> <p>See section ParticipationMetrics for more information.</p>	Required	1	Container
XtensibleInfo	<p>XtensibleInfo contains sub-elements defined by the organization implementing the schema. See section XtensibleInfo for more information.</p> <p>XtensibleInfo is included for backward compatibility and is not the preferred method of extension.</p>	Optional	0 or 1	Container
Any	MedicalEducationMetrics may contain any elements defined by the organization implementing the schema provided those elements are defined in another namespace. This is the preferred method of extension.	Optional	0 or more	Any datatype

Example:

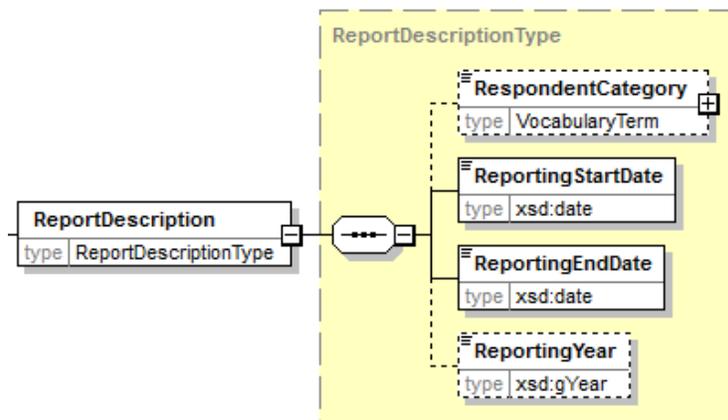
```

<MedicalEducationMetrics>
  <ReportDescription>
    ...
  </ReportDescription>
  <ActivityDescription>
    ...
  </ActivityDescription>
  <RegulatoryInformation>
    ...
  </RegulatoryInformation>
  <ParticipantActivityEvaluation>
    ...
  </ParticipantActivityEvaluation>
  <KnowledgeAssessment>
    ...
  </KnowledgeAssessment>
  <ParticipationMetrics>
    ...
  </ParticipationMetrics>
</MedicalEducationMetrics>

```

7.2 ReportDescription

ReportDescription contains subelements that provide details about the scope of the report data.



ReportDescription Information

Element	Description	Required	Multiplicity	Datatype
ReportDescription	ReportDescription is the sub-element of MedicalEducationMetrics. It contains subelements that provide details about the scope of the report.	Required	1	Container
RespondentCategory	RespondentCategory is the sub-element of ReportDescription. It identifies a respondent category for the metrics information contained in this dataset. This is useful when reporting evaluation data by profession or other category. RespondentCategory has the following attributes: <i>source</i> Indicates a source vocabulary for the respondent category. <i>id</i> Indicates the term identifier in the source vocabulary referenced.	Optional	0 or 1	NonNullString
ReportingStartDate	ReportingStartDate is the sub-element of ReportDescription. It defines the first day of the reporting period for the metrics described for this educational activity.	Required	1	Date
ReportingEndDate	ReportingEndDate is the sub-element of ReportDescription. It defines the last day of the reporting period for the metrics described for this educational activity.	Required	1	Date

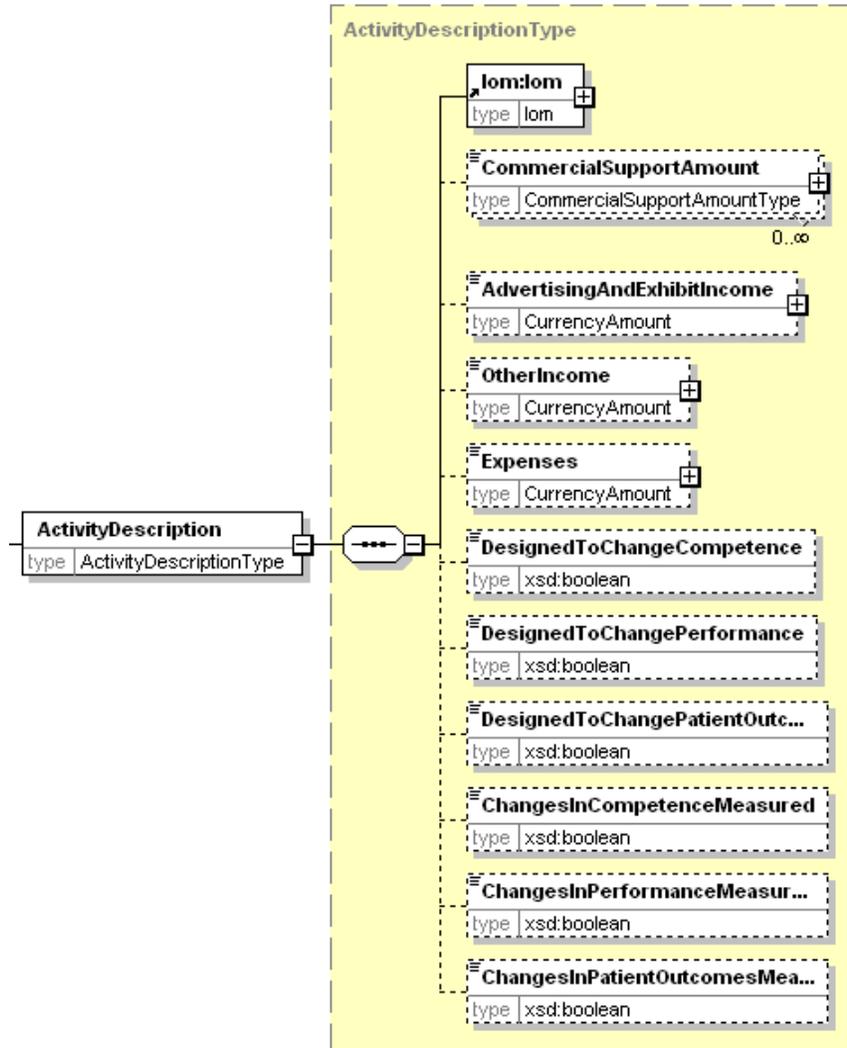
ReportingYear	ReportingYear is a sub-element of ReportDescription and defines the reporting year for this educational activity.	Optional	0 or 1	gYear (Gregorian Year)
----------------------	---	----------	--------	------------------------

Example:

```
<ReportDescription>  
  <RespondentCategory>practicing physicians</RespondentCategory>  
  <ReportingStartDate>2008-01-01</ReportingStartDate>  
  <ReportingEndDate>2008-03-31</ReportingEndDate>  
</ReportDescription>
```

7.3 ActivityDescription

ActivityDescription defines the educational activity that was evaluated. ActivityDescription uses the MedBiquitous standard for Healthcare Learning Object Metadata [[Healthcare LOM](#)] along with other data elements. Healthcare LOM allows providers to describe the title, format, unique identifier, credits, commercial support, intent, and other important information about an educational activity.



ActivityDescription Information

Element	Description	Required	Multiplicity	Datatype
ActivityDescription	ActivityDescription is the sub-element of MedicalEducationMetrics. It contains elements that identify and describe the educational activity evaluated in detail.	Required	1	Container
lom	lom is the sub-element of ActivityDescription. It contains sub-elements that describe the title, number and type of credits, subject, and other aspects of an educational experience in detail.	Required	1	Container The LOM element is defined by the Healthcare Learning Object Metadata standard [Healthcare LOM] and the XML binding for LOM [LOM XML].
CommercialSupportAmount	CommercialSupportAmount is the subelement of ActivityDescription that indicates the amount of commercial support received from a single source. CommercialSupportAmount has the following attributes: <i>currency</i> The currency of the amount indicated. Recommended values are ISO 4217 3-letter alphabetic codes. For example, USD	Optional	0 or more	Integer

	<p>for US dollar, CAD for the Canadian dollar, and EUR for the Euro. Valid values are limited to 3-character strings.</p> <p><i>supportsource</i> The organization that is the source of the commercial support.</p> <p><i>nil</i> CommercialSupportAmount is nillable to allow for the exchange of support source or currency in the absence of a support amount. If you are exchanging attribute values only, include the <i>nil</i> attribute for XML Schema Instances with a value of true.</p>			
AdvertisingAndExhibitIncome	<p>AdvertisingAndExhibitIncome is the subelement of ActivityDescription that indicates the amount of advertising and exhibit income received for this activity. AdvertisingAndExhibitIncome has the following attribute:</p> <p><i>currency</i> The currency of the amount indicated. Recommended values are ISO 4217 3-letter alphabetic codes. For example, USD for US dollar, CAD for the Canadian dollar, and EUR for the Euro. Valid values are limited to 3-character strings.</p>	Optional	0 or 1	Integer
OtherIncome	<p>OtherIncome is the subelement of ActivityDescription that indicates the amount of income from sources other</p>	Optional	0 or 1	Integer

	<p>than commercial support, advertising, and exhibits. OtherIncome has the following attribute:</p> <p><i>currency</i> The currency of the amount indicated. Recommended values are ISO 4217 3-letter alphabetic codes. For example, USD for US dollar, CAD for the Canadian dollar, and EUR for the Euro. Valid values are limited to 3-character strings.</p>			
Expenses	<p>Expenses is the sub-element of ActivityDescription that indicates the total expenses of the activity. Expenses has the following attribute:</p> <p><i>currency</i> The currency of the amount indicated. Recommended values are ISO 4217 3-letter alphabetic codes. For example, USD for US dollar, CAD for the Canadian dollar, and EUR for the Euro. Valid values are limited to 3-character strings.</p>	Optional	0 or 1	Integer
DesignedToChangeCompetence	<p>DesignedToChangeCompetence is the sub-element of ActivityDescription that indicates if the activity is designed to change competence. Valid Values are true and false.</p>	Optional	0 or 1	Boolean
DesignedToChangePerformance	<p>DesignedToChangePerformance is the sub-element of ActivityDescription that indicates if the activity is designed to change performance. Valid Values are true and false.</p>	Optional	0 or 1	Boolean

DesignedToChangePatientOutcomes	DesignedToChangePatientOutcomes is the sub-element of ActivityDescription that indicates if the activity is designed to change patient outcomes. Valid Values are true and false.	Optional	0 or 1	Boolean
ChangesInCompetenceMeasured	ChangesInCompetenceMeasured is the sub-element of ActivityDescription that indicates if changes in competence were measured as part of activity evaluation.	Optional	0 or 1	Boolean
ChangesInPerformanceMeasured	ChangesInPerformanceMeasured is the sub-element of ActivityDescription that indicates if changes in performance were measured as part of activity evaluation.	Optional	0 or 1	Boolean
ChangesInPatientOutcomesMeasured	ChangesInPatientOutcomesMeasured is the sub-element of ActivityDescription that indicates if changes in patient outcomes were measured as part of activity evaluation.	Optional	0 or 1	Boolean

Usage Note	<p>To uniquely identify an educational activity, use the identifier entry element within Healthcare LOM. URLs are one type of identifier that may be used.</p> <p>For example:</p> <p style="padding-left: 40px;">http://www.medbiq.org/course16355</p> <p>Please note that the URL in this context is used to uniquely identify the educational activity and does not need to map to the course web page or other course information.</p>
-------------------	--

Example:

```

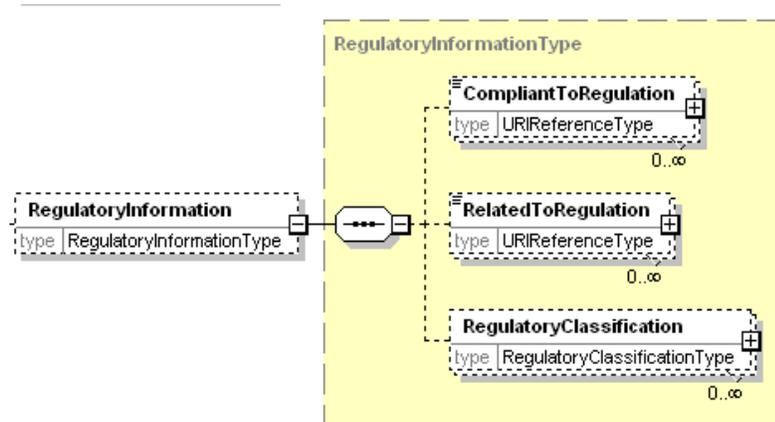
<ActivityDescription>
  <lom:lom>
    <lom:general>
      <lom:identifier>
        <lom:catalog>URI</lom:catalog>
        <lom:entry> https://www2.mysite.org/TNT_products.cfm?prod=COD77
</lom:entry>
      </lom:identifier>
      <lom:title>
        <lom:string>Case of the Day, May 2007</lom:string>
      </lom:title>
      <lom:language>en</lom:language>
      <lom:description>
        <lom:string>An introduction to breast imaging. Learning Objectives: 1) Identify,
characterize, and analyze abnormal findings on multimodality breast imaging studies. </lom:string>
      </lom:description>
      <lom:keyword id="D001940" source="MeSH">
        <lom:string>breast</lom:string>
      </lom:keyword>
      <lom:keyword id="D003952" source="MeSH" >
        <lom:string>diagnostic imaging</lom:string>

```

```
        </lom:keyword>
    </lom:general>
    <hx:healthcareMetadata>
        <hx:healthcareEducation>
            <hx:expirationDate>2010-07-19</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>Credit</hx:creditUnit>
                <hx:numberOfCredits>1</hx:numberOfCredits>
            </hx:credits>
            <hx:participationModality>technology based</hx:participationModality>
        </hx:healthcareEducation>
    </hx:healthcareMetadata>
</lom:lom>
    <CommercialSupportAmount currency="USD" supportSource="SeeRite Imaging
Company">5000</CommercialSupportAmount>
    <AdvertisingAndExhibitIncome>0</AdvertisingAndExhibitIncome>
    <OtherIncome currency="USD">5400</OtherIncome>
    <Expenses currency="USD">9550</Expenses>
    <DesignedToChangeCompetence>true</DesignedToChangeCompetence>
    <DesignedToChangePerformance>false</DesignedToChangePerformance>
    <DesignedToChangePatientOutcomes>false</DesignedToChangePatientOutcomes>
    <ChangesInCompetenceMeasured>true</ChangesInCompetenceMeasured>
    <ChangesInPerformanceMeasured>false</ChangesInPerformanceMeasured>
    <ChangesInPatientOutcomesMeasured>false</ChangesInPatientOutcomesMeasured>
</ActivityDescription>
```

7.4 RegulatoryInformation

RegulatoryInformation contains elements that describe the relationship of this activity to any regulations.



RegulatoryInformation Element Information

Element	Description	Required	Multiplicity	Datatype
RegulatoryInformation	Contains elements that describe the relationship of this activity to any regulations.	Optional	0 or 1	Container
CompliantToRegulation	CompliantToRegulation indicates that the activity described is compliant to requirements outlined in a regulation. The value of CompliantToRegulation is the URI of the regulation. CompliantToRegulation has the following attribute: <i>label</i> A label for the regulation. For example, ER/LA Opioid REMS.	Optional	0 or more	Any URI

Element	Description	Required	Multiplicity	Datatype
RelatedToRegulation	<p>RelatedToRegulation indicates that the activity described is related to requirements outlined in a regulation. The value of RelatedToRegulation is the URI of the regulation.</p> <p>RelatedToRegulation has the following attribute:</p> <p><i>label</i> A label for the regulation. For example, ER/LA Opioid REMS.</p>	Optional	0 or more	Any URI
RegulatoryClassification	<p>Contains subelements that describe how the activity described relates to a classification system used within the regulation, such as the Blueprint used within a Risk Evaluation and Mitigation Strategy. For more information, see section RegulatoryClassification.</p>	Optional	0 or more	Container

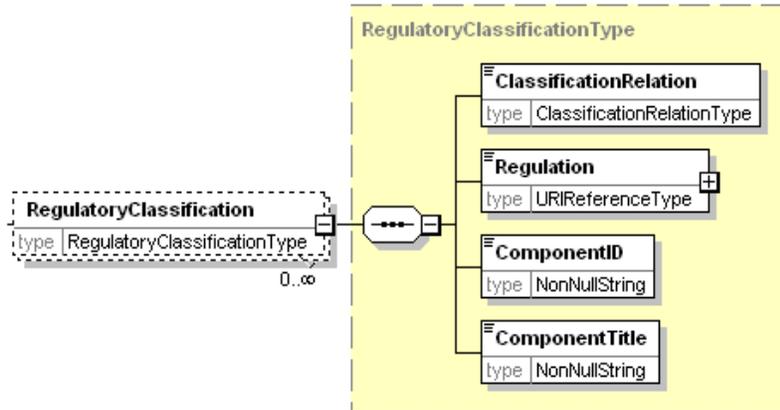
Example:

```

<RegulatoryInformation>
  <CompliantToRegulation label="ER/LA Opioid REMS">
http://www.accessdata.fda.gov/drugsatfda_docs/label/2012/OpioidREMJuly2012.pdf
  </CompliantToRegulation>
</RegulatoryInformation>
    
```

7.4.1 RegulatoryClassification

RegulatoryClassification describes how the activity described relates to a classification system used within the regulation.



RegulatoryClassificationElementInformation

Element	Description	Required	Multiplicity	Datatype
RegulatoryClassification	Contains subelements that describe how the activity described relates to a classification system used within the regulation, such as the Blueprint used within a Risk Evaluation and Mitigation Strategy.	Optional	0 or more	Container
ClassificationRelation	ClassificationRelation describes whether the activity’s post course assessment addresses the regulation component or whether the activity’s instruction addresses the regulation component. Valid values are Assessment Addresses and Instruction Addresses.	Required	1	Restricted

Element	Description	Required	Multiplicity	Datatype
Regulation	<p>Regulation points to the regulation that contains the classification system used to classify this activity. The value of Regulation is the URI of the regulation.</p> <p>Regulation has the following attribute:</p> <p><i>label</i> A label for the regulation. For example, ER/LA Opioid REMS.</p>	Required	1	Any URI
ComponentID	The identifier for the component of the classification system. For example, II.	Required	1	NonNullString
ComponentTitle	The title for the component of the classification system. For example, Initiating Therapy, Modifying Dosing, and Discontinuing Use of ER/LA Opioid Analgesics.	Required	1	NonNullString

Example:

```

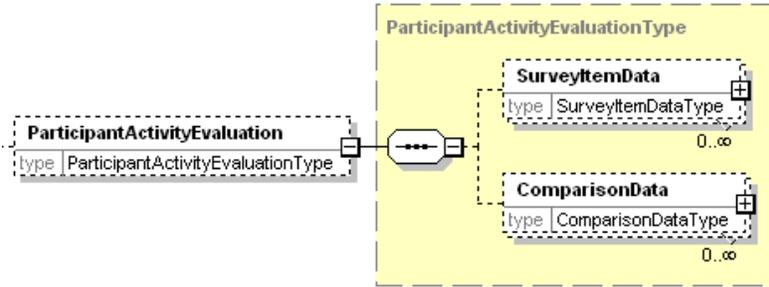
<RegulatoryClassification>
  <ClassificationRelation>Instruction Addresses</ClassificationRelation>
  <Regulation label="ER/LA Opioid
REMS">http://www.accessdata.fda.gov/drugsatfda_docs/label/2012/OpioidREMJuly2
012.pdf</Regulation>
  <ComponentID>II</ComponentID>
  <ComponentTitle>Initiating Therapy, Modifying Dosing, and Discontinuing
Use of ER/LA Opioid Analgesics</ComponentTitle>
</RegulatoryClassification>

```

7.5 ParticipantActivityEvaluation

ParticipantActivityEvaluation defines how participants evaluated the educational activity.

ParticipantActivityEvaluation is a sub-element of MedicalEducationMetrics.



ParticipantActivityEvaluation Information

Element	Description	Required	Multiplicity	Datatype
ParticipantActivityEvaluation	ParticipantActivityDescription is the sub-element of MedicalEducationMetrics. It contains elements that identify and describe the educational activity evaluated in detail.	Optional	0 or 1	Container
SurveyItemDataData	SurveyItemDataData is the sub-element of ParticipantActivityEvaluation. It contains subelements that define a survey question and learner responses to that question. See section SurveyItemDataData for more information.	Optional	0 or more	Container
ComparisonData	ComparisonData is the subelement of ParticipantActivityEvaluation. It contains subelements that define a set of related survey questions and learner responses. See section ComparisonData for more information.	Optional	0 or more	Container

Example:

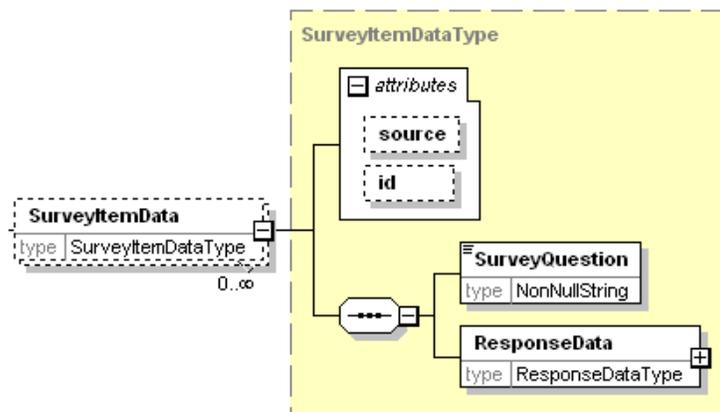
```
<ParticipantActivityEvaluation>
  <SurveyItemData>
    ...
```

```

</SurveyItemData>
<SurveyItemData>
    ...
</SurveyItemData>
<SurveyItemData>
    ...
</SurveyItemData>
<ComparisonData>
    ...
</ComparisonData>
<ComparisonData>
    ...
</ComparisonData>
</ParticipantActivityEvaluation>
    
```

7.5.1 SurveyItemData

SurveyItemData contains subelements that define a survey question and learner responses to that question. SurveyItemData may reference a question from a standardized question set.



SurveyItemData Information

Element	Description	Required	Multiplicity	Datatype
SurveyItemData	SurveyItemData is the sub-element of ParticipantActivityEvaluation. It contains subelements that define a survey question and learner responses to that	Required	0 or more	Container

	<p>question.</p> <p>SurveyItemData has the following attributes:</p> <p><i>source</i> Indicates a source vocabulary for the survey item.</p> <p><i>id</i> Indicates the item identifier in the source vocabulary referenced.</p>			
SurveyQuestion	SurveyQuestion is the sub-element of SurveyItemData that indicates the text of the survey question.	Required	1	NonNullString
ResponseData	<p>ResponseData is the sub-element of SurveyItemData. It contains subelements that show the response data for this question.</p> <p>For more information, see section ResponseData.</p>	Required	1	Container

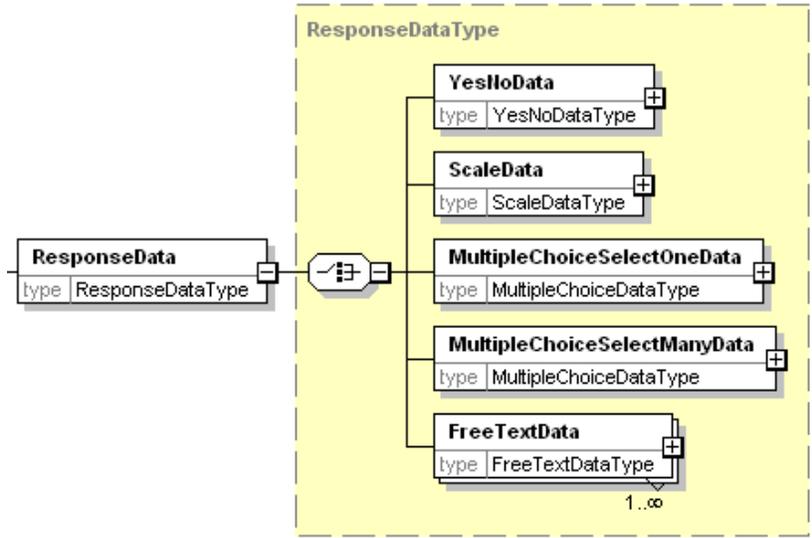
Example:

```

    <SurveyItemData source="CMEQual Survey" id="123">
      <SurveyQuestion>
        ...
      </SurveyQuestion>
      <ResponseData>
        ...
      </ResponseData>
    </SurveyItemData>
  
```

7.5.2 ResponseData

ResponseData shows the response data for a specific survey question.



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ResponseData Information

Element	Description	Required	Multiplicity	Datatype
ResponseData	Response is the sub-element of SurveyItemData or SurveyItemDataForComparison. It contains subelements that show the response data for this question.	Required	1	Container
YesNoDataData	YesNoData is the sub-element of ResponseData. It contains response data for yes/no questions. See section YesNoData for more information.	YesNoData or another subelement of ResponseData is required	0 or 1	Container
ScaleData	ScaleData is the sub-element of ResponseData. It contains response data for scale questions, including Likert scale questions. See section ScaleData for more information.	ScaleData or another subelement of ResponseData is required	0 or 1	Container
MultipleChoiceSelectOneData	MultipleChoiceSelectOneData is the sub-element of ResponseData. It contains response data for a multiple choice question in which the learner may select only one answer. See section MultipleChoiceSelectOneData for more information.	MultipleChoice SelectOneData or another subelement of ResponseData is required	0 or 1	Container
MultipleChoiceSelectManyData	MultipleChoiceSelectManyData is the sub-element of ResponseData. It contains response data for a multiple	MultipleChoice SelectManyData or another	0 or 1	Container

	<p>choice question in which the learner may select multiple answers.</p> <p>See section MultipleChoiceSelectManyData for more information.</p>	<p>subelement of ResponseData is required</p>		
FreeTextData	<p>FreeTextData is the sub-element of ResponseData and contains response data for free text questions.</p> <p>See section FreeTextData for more information.</p>	<p>FreeTextData or another subelement of ResponseData is required</p>	0 or more	Container

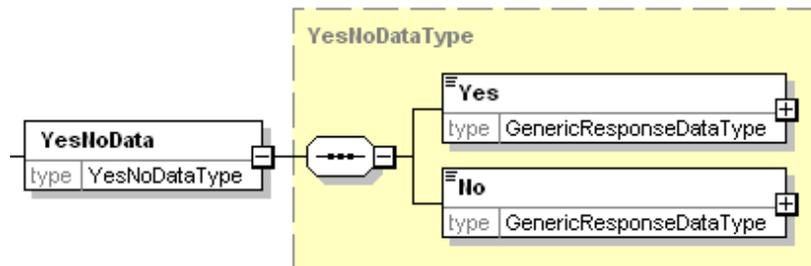
Example:

```

<ResponseData>
  <ScaleData type="likert" points="5">
    <One label="Strongly Agree">100</One>
    <Two>40</Two>
    <Three>10</Three>
    <Four>0</Four>
    <Five label="Strongly Disagree">0</Five>
  </ScaleData>
</ResponseData>
    
```

7.6 YesNoData

The YesNoData defines how many participants answered yes and no to a given question. Each response may be tied to a standardized instrument with unique identifiers for each response. Such identifiers facilitate data compilation across disparate data sets.



YesNoDataType Information

Element	Description	Required	Multiplicity	Datatype
YesNoData	YesNoData contains response data for yes/no questions.	YesNoData or another subelement of ResponseData is required	0 or 1	Container
Yes	Yes defines how many participants answered Yes to the question. <i>source</i> Indicates a source vocabulary or instrument for the item response. <i>id</i> Indicates the unique	Required	1	Integer

	response identifier in the source referenced.			
No	No defines how many participants answered No to the question. <i>source</i> Indicates a source vocabulary or instrument for the item response. <i>id</i> Indicates the unique response identifier in the source referenced.	Required	1	Integer

Example:

```
<YesNoData>
  <Yes>140</Yes>
  <No>10</No>
</YesNoData>
```

7.7 ScaleData

ScaleData contains response data for scale questions, including Likert scale questions. Each response may be tied to a standardized instrument with unique identifiers for each response. Such identifiers facilitate data compilation across disparate data sets.

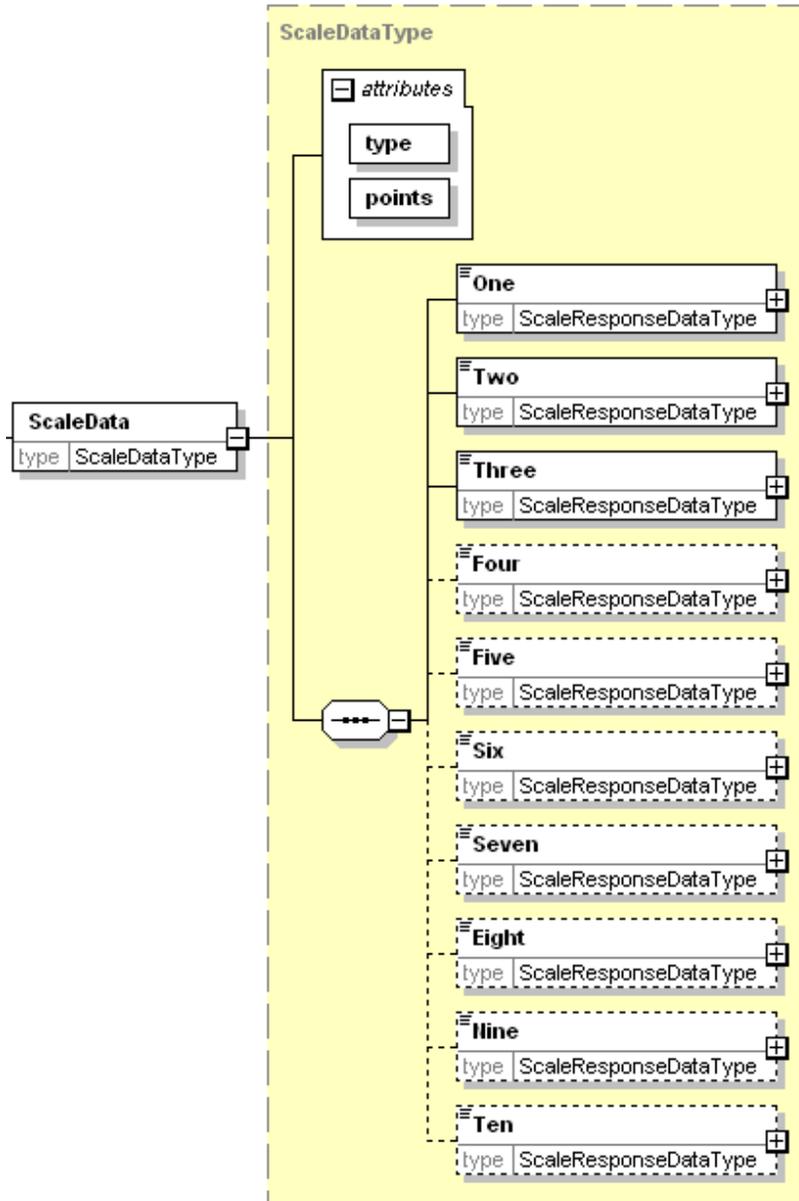
Scales are intended to measure an individual’s opinion or perception using a numeric or graduated scale. The following are examples of scales.

Strongly agree 1 2 3 4 5 6 7 Strongly disagree

Strongly agree Agree Neither agree nor disagree Disagree Strongly Disagree

Unsafe 1 2 3 4 5 Safe

Scales should only use subelements corresponding to the number of points in the scale. For example, a five point scale would use subelements one through five but not subelements six through ten.



ScaleData Information

Element	Description	Required	Multiplicity	Datatype
ScaleData	<p>ScaleData contains response data for scale questions, including Likert scale questions.</p> <p>ScaleData has the following attributes:</p> <p><i>type</i> Indicates the type of scale. For example, likert, unsafe/safe, ineffective/effective.</p> <p><i>points</i> Indicates the number of points in the scale. The value must be an integer that is equal to or higher than 3 and no higher than 10.</p>	ScaleData or another subelement of Response Data is required	0 or 1	Container
One	<p>One is a sub-element of ScaleData and indicates the number of individuals indicating one as their response on a scale question.</p> <p><i>label</i> Indicates a label for this point on the scale. For example, Strongly Agree. Labels should be used for the first and last point on a scale at a minimum.</p> <p><i>source</i> Indicates a source vocabulary or instrument for the item response.</p> <p><i>id</i> Indicates the unique response identifier in the source referenced.</p>	Required	1	Integer
Two	<p>Two is a sub-element of ScaleData and indicates the number of individuals indicating two as their response on a scale question.</p> <p><i>label</i> Indicates a label for this point on the scale. For example, Strongly Agree. Labels should be used for the first and last point on a scale at a minimum.</p> <p><i>source</i> Indicates a source vocabulary or instrument for the item response.</p>	Required	1	Integer

	<p><i>id</i> Indicates the unique response identifier in the source referenced.</p>			
Three	<p>Three is a sub-element of ScaleData and indicates the number of individuals indicating three as their response on a scale question.</p> <p><i>label</i> Indicates a label for this point on the scale. For example, Strongly Agree. Labels should be used for the first and last point on a scale at a minimum.</p> <p><i>source</i> Indicates a source vocabulary or instrument for the item response.</p> <p><i>id</i> Indicates the unique response identifier in the source referenced.</p>	Required	1	Integer
Four	<p>Four is a sub-element of ScaleData and indicates the number of individuals indicating four as their response on a scale question.</p> <p><i>label</i> Indicates a label for this point on the scale. For example, Strongly Agree. Labels should be used for the first and last point on a scale at a minimum.</p> <p><i>source</i> Indicates a source vocabulary or instrument for the item response.</p> <p><i>id</i> Indicates the unique response identifier in the source referenced.</p>	Optional	0 to 1	Integer
Five	<p>Five is a sub-element of ScaleData and indicates the number of individuals indicating five as their response on a scale question.</p> <p><i>label</i> Indicates a label for this point on the scale. For example, Strongly Agree. Labels should be used for the first and last point on a scale at a minimum.</p>	Optional	0 to 1	Integer

	<p><i>source</i> Indicates a source vocabulary or instrument for the item response.</p> <p><i>id</i> Indicates the unique response identifier in the source referenced.</p>			
Six	<p>Six is a sub-element of ScaleData and indicates the number of individuals indicating six as their response on a scale question.</p> <p><i>label</i> Indicates a label for this point on the scale. For example, Strongly Agree. Labels should be used for the first and last point on a scale at a minimum.</p> <p><i>source</i> Indicates a source vocabulary or instrument for the item response.</p> <p><i>id</i> Indicates the unique response identifier in the source referenced.</p>	Optional	0 to 1	Integer
Seven	<p>Seven is a sub-element of ScaleData and indicates the number of individuals indicating seven as their response on a scale question.</p> <p><i>label</i> Indicates a label for this point on the scale. For example, Strongly Agree. Labels should be used for the first and last point on a scale at a minimum.</p> <p><i>source</i> Indicates a source vocabulary or instrument for the item response.</p> <p><i>id</i> Indicates the unique response identifier in the source referenced.</p>	Optional	0 to 1	Integer
Eight	<p>Eight is a sub-element of ScaleData and indicates the number of individuals indicating eight as their response on a scale question.</p> <p><i>label</i> Indicates a label for this point on the</p>	Optional	0 to 1	Integer

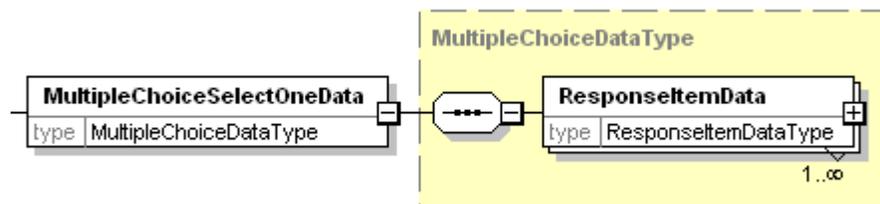
	<p>scale. For example, Strongly Agree. Labels should be used for the first and last point on a scale at a minimum.</p> <p><i>source</i> Indicates a source vocabulary or instrument for the item response.</p> <p><i>id</i> Indicates the unique response identifier in the source referenced.</p>			
Nine	<p>Nine is a sub-element of ScaleData and indicates the number of individuals indicating nine as their response on a scale question.</p> <p><i>label</i> Indicates a label for this point on the scale. For example, Strongly Agree. Labels should be used for the first and last point on a scale at a minimum.</p> <p><i>source</i> Indicates a source vocabulary or instrument for the item response.</p> <p><i>id</i> Indicates the unique response identifier in the source referenced.</p>	Optional	0 or 1	Integer
Ten	<p>Ten is a sub-element of ScaleData and indicates the number of individuals indicating ten as their response on a scale question.</p> <p><i>label</i> Indicates a label for this point on the scale. For example, Strongly Agree. Labels should be used for the first and last point on a scale at a minimum.</p> <p><i>source</i> Indicates a source vocabulary or instrument for the item response.</p> <p><i>id</i> Indicates the unique response identifier in the source referenced.</p>	Optional	0 or 1	Integer

Example:

```
<ScaleData type="likert" points="5">  
  <One label="Strongly Agree">100</One>  
  <Two>40</Two>  
  <Three>10</Three>  
  <Four>0</Four>  
  <Five label="Strongly Disagree">0</Five>  
</ScaleData>
```

7.7.1 MultipleChoiceSelectOneData

MultipleChoiceSelectOneData contains response data for a multiple choice question in which the learner may select only one answer.



MultipleChoiceSelectOneData Information

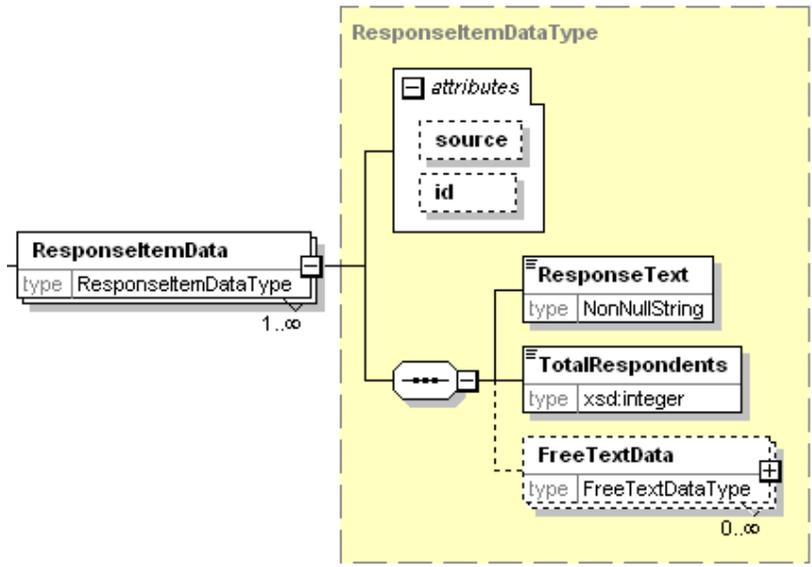
Element	Description	Required	Multiplicity	Datatype
MultipleChoiceSelectOneData	MultipleChoiceSelectOneData contains response data for a multiple choice question in which the learner may select only one answer.	MultipleChoice SelectOne or another subelement of ResponseData is required.	1	Container
ResponseItemData	ResponseItemData is a sub-element of MultipleChoiceSelectOneData that describes the response options to a multiple choice question and the number of respondents that selected each response. See section ResponseItemData for more information.	Required	1 or more	Container

Example:

```
<SurveyQuestion>How many years have you been in practice?</SurveyQuestion>
<ResponseData>
  <MultipleChoiceSelectOneData>
    <ResponseItemData>
      <ResponseText>less than 5 years</ResponseText>
      <TotalRespondents>20</TotalRespondents>
    </ResponseItemData>
    <ResponseItemData>
      <ResponseText>5-10 years</ResponseText>
      <TotalRespondents>50</TotalRespondents>
    </ResponseItemData>
    <ResponseItemData>
      <ResponseText>10-20 years</ResponseText>
      <TotalRespondents>70</TotalRespondents>
    </ResponseItemData>
    <ResponseItemData>
      <ResponseText>more than 20 years</ResponseText>
      <TotalRespondents>20</TotalRespondents>
    </ResponseItemData>
  </MultipleChoiceSelectOneData>
</ResponseData>
```

7.7.2 ResponseItemData

ResponseItemData describes the response options to a multiple choice question and the number of respondents that selected each response. Responses may be tied to a standardized instrument with unique identifiers for each response item. Such identifiers facilitate data compilation across disparate data sets.



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ResponseItemData Information

Element	Description	Required	Multiplicity	Datatype
ResponseItemData	<p>ResponseItemData describes the response options to a multiple choice question and the number of respondents that selected each response.</p> <p><i>source</i> Indicates a source vocabulary for the response item.</p> <p><i>id</i> Indicates the item identifier in the source vocabulary referenced.</p>	Required	1 or more	Container

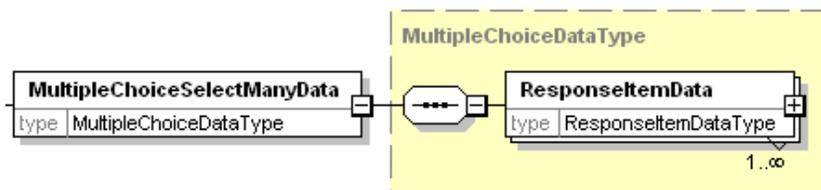
ResponseText	ResponseText is a sub-element of ResponseItemData. ResponseText defines the text of the response option.	Required	1	NonNullString
TotalRespondents	TotalRespondents is a sub-element of ResponseItemData that indicates the number of respondents that selected this response item.	Required	1	Integer
FreeTextData	FreeTextData is a sub-element of ResponseItemData. FreeTextData is used when a multiple choice question gives respondents the option to enter their own response. See section FreeTextData for more information.	Optional	0 or more	Container

Example:

```
<ResponseItemData>
  <ResponseText>less than 5 years</ResponseText>
  <TotalRespondents>20</TotalRespondents>
</ResponseItemData>
```

7.7.3 MultipleChoiceSelectManyData

MultipleChoiceSelectManyData contains response data for a multiple choice question in which the learner may select multiple answers.



MultipleChoiceSelectManyData Information

Element	Description	Required	Multiplicity	Datatype
MultipleChoiceSelectManyData	MultipleChoiceSelectManyData contains response data for a multiple choice question in which the learner may select multiple answers.	MultipleChoice SelectManyData or another subelement of ResponseData is required.	1	Container
ResponseItemData	ResponseItemData is a sub-element of MultipleChoiceSelectManyData that describes the response options to a multiple choice question and the number of respondents that selected each response. See section ResponseItemData for more information.	Required	1 or more	Container

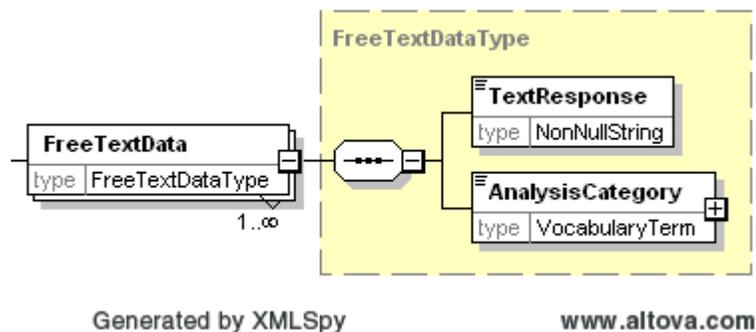
Example:

```

<SurveyQuestion>What factors influenced you to attend this
program?</SurveyQuestion>
<ResponseData>
  <MultipleChoiceSelectManyData>
    <ResponseItemData>
      <ResponseText>Course description</ResponseText>
      <TotalRespondents>95</TotalRespondents>
    </ResponseItemData>
    <ResponseItemData>
      <ResponseText>List of faculty</ResponseText>
      <TotalRespondents>100</TotalRespondents>
    </ResponseItemData>
    <ResponseItemData>
      <ResponseText>Host city</ResponseText>
      <TotalRespondents>40</TotalRespondents>
    </ResponseItemData>
  </MultipleChoiceSelectManyData>
</ResponseData>
    
```

7.7.4 FreeTextData

In some cases respondents will be asked to write in the response to a question using their own words. The FreeTextData element provides a way to send these responses along with any descriptive categories assigned to them as a result of content analysis.



FreeTextData Information

Element	Description	Required	Multiplicity	Datatype
FreeTextData	FreeTextData contains response data for free text questions.	Optional	0 or more	Container

TextResponse	TextResponse is a subelement of FreeTextData that contains the text of the individual's response.	Required	1	NonNullString
AnalysisCategory	<p>AnalysisCategory is a subelement of FreeTextData that indicates a category assigned to the free text response as a result of content analysis. AnalysisCategory has the following attributes:</p> <p><i>source</i> Indicates a source vocabulary for the category.</p> <p><i>id</i> Indicates the term identifier in the source vocabulary referenced.</p>	Required	1	NonNullString

Example:

```

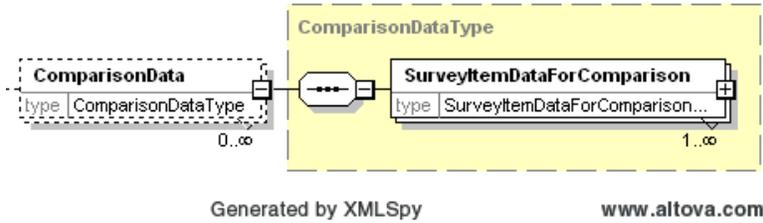
<SurveyQuestion>If there were one thing you would change about the
program, what would it be?</SurveyQuestion>
<ResponseData>
  <FreeTextData>
    <TextResponse>Great conference - wouldn't change a
thing.</TextResponse>
    <AnalysisCategory>Positive comment</AnalysisCategory>
  </FreeTextData>
  <FreeTextData>
    <TextResponse>Longer lunch for networking.</TextResponse>
    <AnalysisCategory>Logistics</AnalysisCategory>
  </FreeTextData>
  <FreeTextData>
    <TextResponse>Different faculty - we see the same faces every
year.</TextResponse>
    <AnalysisCategory>Faculty</AnalysisCategory>
  </FreeTextData>
  <FreeTextData>
    <TextResponse>Can we start later in the day?</TextResponse>
    <AnalysisCategory>Logistics</AnalysisCategory>
  </FreeTextData>

```

</ResponseData>

7.7.5 ComparisonData

ComparisonData contains response data for two or more complementary or related survey questions and learner responses. Often the questions are asked at different points in time. For example, the questions may compare a learner’s expectations before an activity with their perceptions following an activity or after a specified time period.



ComparisonData Information

Element	Description	Required	Multiplicity	Datatype
ComparisonData	ComparisonData is the subelement of ParticipantActivityEvaluation that defines a set of related survey questions and learner responses.	Optional	0 or more	Container
SurveyItemDataForComparison	SurveyItemDataForComparison is the subelement of ComparisonData that defines a single survey item and corresponding learner responses in a set of related survey items grouped for comparison. See section SurveyItemDataForComparison for more information.	Required	1 or more	Container

Example:

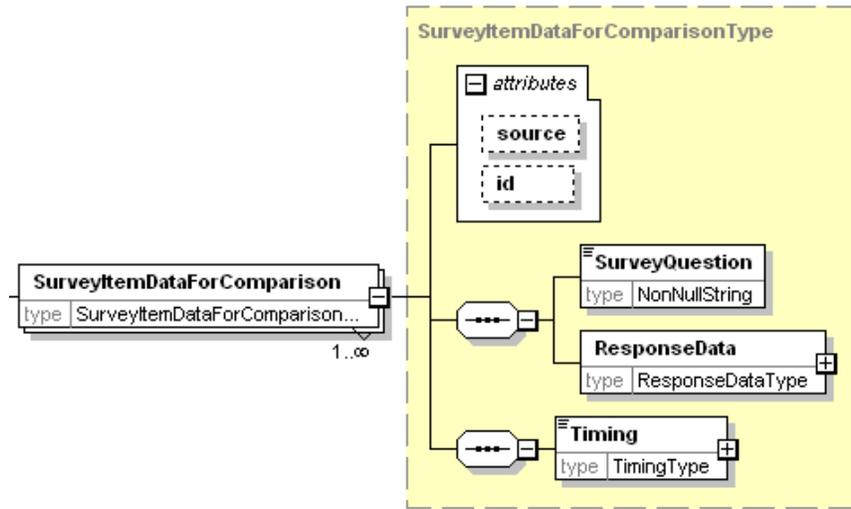
```
<ComparisonData>
  <SurveyItemDataForComparison>
    . . .
```

```

</SurveyItemDataForComparison>
<SurveyItemDataForComparison>
. . .
</SurveyItemDataForComparison>
</ComparisonData>
    
```

7.7.6 SurveyItemDataForComparison

SurveyItemDataForComparison defines a single survey item and corresponding learner responses in a set of related survey items grouped for comparison.



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SurveyItemDataForComparison Information

Element	Description	Required	Multiplicity	Datatype
SurveyItemDataForComparison	<p>SurveyItemDataForComparison is the subelement of ComparisonData that defines a single survey item and corresponding learner responses in a set of related survey items grouped for comparison. It has the following attributes:</p> <p><i>source</i> Indicates a source vocabulary for the survey item.</p> <p><i>id</i> Indicates the item identifier in the source vocabulary referenced.</p>	Required	1 or more	Container
SurveyQuestion	<p>SurveyQuestion is the sub-element of SurveyItemDataForComparison that indicates the text of the survey question.</p>	Required	1	NonNull String
ResponseData	<p>ResponseData is the sub-element of SurveyItemDataForComparison . It contains subelements that show the response data for this question.</p> <p>For more information, see section ResponseData.</p>	Required	1	Container

Timing	<p>Timing is the subelement of SurveyItemDataForComparison that indicates at what time in relation to the learning event this survey item was presented to the learner. Valid values are: Before, During, After.</p> <p>Timing has the following attribute.</p> <p><i>duration</i> Indicates the amount of time before or after the learning activity the survey item was presented to the learner. For example, P1D would indicate one day before or after the activity.</p>	Required	1	Restricted
--------	---	----------	---	------------

Example:

```

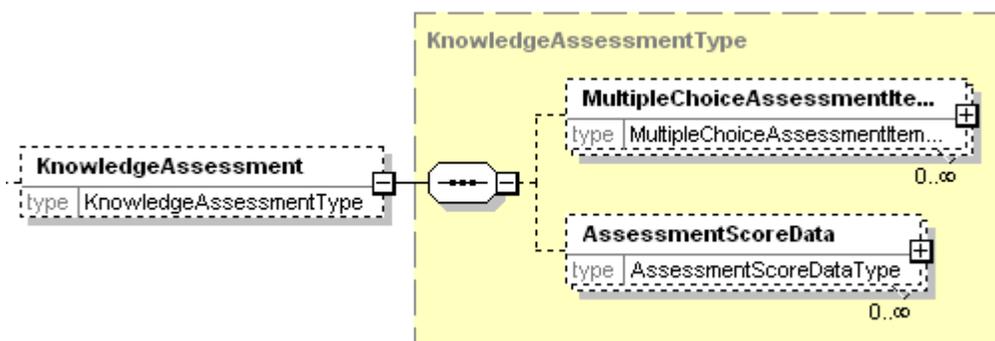
<ComparisonData>
  <SurveyItemDataForComparison>
    <SurveyQuestion>Thinking about my expectations for this CME
activity, it is important that it address my most pressing questions.
  </SurveyQuestion>
    <ResponseData>
      <ScaleData type="low/high" points="5">
        <One label="Low">5</One>
        <Two>15</Two>
        <Three>35</Three>
        <Four>70</Four>
        <Five label="High">25</Five>
      </ScaleData>
    </ResponseData>
    <Timing duration="P1D">Before</Timing>
  </SurveyItemDataForComparison>
  <SurveyItemDataForComparison>
    <SurveyQuestion>Thinking about my participation in this CME
activity, I thought it was able to address my most pressing questions.
  </SurveyQuestion>
    <ResponseData>
      <ScaleData type="minimally/completely" points="5">
        <One label="Minimally">5</One>
        <Two>10</Two>
        <Three>30</Three>
        <Four>75</Four>
      </ScaleData>
    </ResponseData>
  </SurveyItemDataForComparison>
</ComparisonData>

```

```
        <Five label="Completely">30</Five>
    </ScaleData>
</ResponseData>
    <Timing duration="P1D">After</Timing>
</SurveyItemDataForComparison>
</ComparisonData>
```

7.8 KnowledgeAssessment

KnowledgeAssessment indicates how participants responded to multiple choice assessment items. Knowledge Assessment is a sub-element of MedicalEducationMetrics.



KnowledgeAssessment Information

Element	Description	Required	Multiplicity	Datatype
KnowledgeAssessment	KnowledgeAssessment is the sub-element of MedicalEducationMetrics. It contains elements that define how learners responded to a set of multiple choice assessment items.	Optional	0 or 1	Container
MultipleChoiceAssessmentItemData	MultipleChoiceAssessmentItemData is the subelement of KnowledgeAssessment. It indicates the set of responses corresponding to a single multiple choice question. See section MultipleChoiceAssessmentItemData for more information.	Optional	0 or more	Container

<p>AssessmentScoreData</p>	<p>AssessmentScoreData is the subelement of KnowledgeAssessment that contains assessment scores for a particular assessment.</p> <p>See section AssessmentScoreData for more information.</p>	<p>Optional</p>	<p>0 or more</p>	<p>Container</p>
-----------------------------------	---	-----------------	------------------	------------------

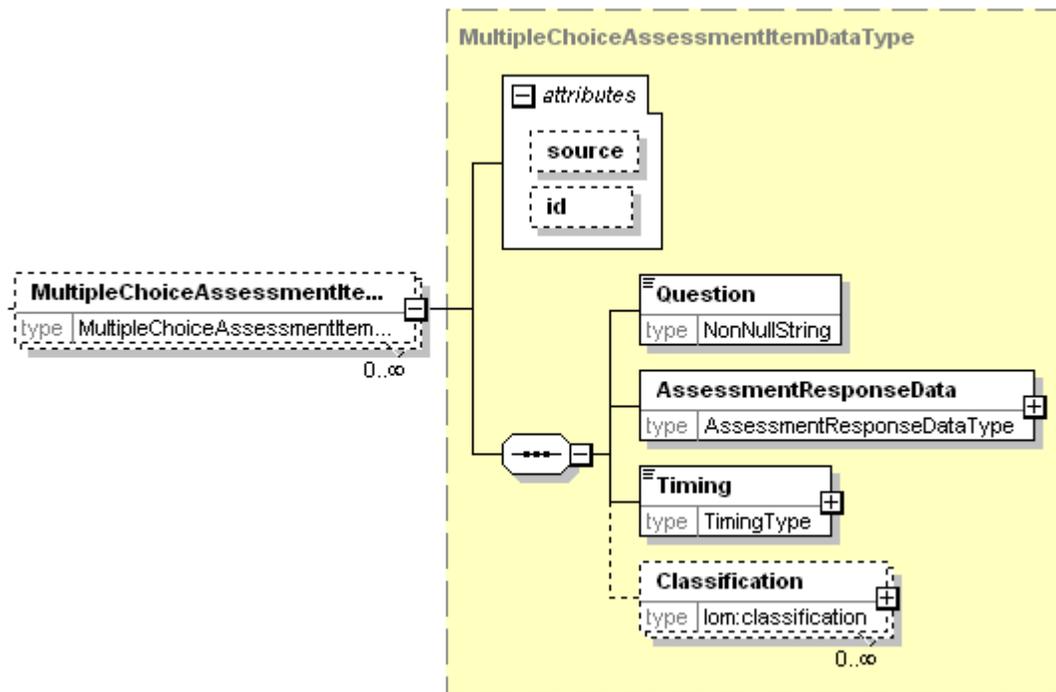
Example:

```

<KnowledgeAssessment>
  <MultipleChoiceAssessmentItemData>
    . . .
  </MultipleChoiceAssessmentItemData>
  <AssessmentScoreData>
    . . .
  </AssessmentScoreData>
  <AssessmentScoreData>
    . . .
  </AssessmentScoreData>
  <AssessmentScoreData>
    . . .
  </AssessmentScoreData>
</KnowledgeAssessment>
    
```

7.8.1 MultipleChoiceAssessmentItemData

MultipleChoiceAssessmentItem indicates how learners responded to a single multiple choice assessment item.



MultipleChoiceAssessmentItemData Information

Element	Description	Required	Multiplicity	Datatype
MultipleChoiceAssessmentItemData	MultipleChoiceAssessmentItemData is the subelement of KnowledgeAssessment. It indicates	Required	0 or more	Container

	<p>the set of responses corresponding to a single multiple choice question.</p> <p>MultipleChoiceAssessmentItemData has the following attributes:</p> <p><i>source</i> Indicates a source vocabulary for the assessment item.</p> <p><i>id</i> Indicates the item identifier in the source vocabulary referenced.</p>			
Question	<p>Question is a subelement of MultipleChoiceAssessmentItemData. It indicates the question or prompt for the assessment item.</p>	Required	1	Non-null string
AssessmentResponseData	<p>AssessmentResponseData is a subelement of MultipleChoiceAssessmentItemData. It indicates the possible responses to this question and how many learners indicated each response.</p> <p>For more information, see section AssessmentResponseData.</p>	Required	1	Container
Timing	<p>Timing is a subelement of MultipleChoiceAssessmentItemData that indicates at what time in relation to the learning event this survey item was presented to the learner. Valid values are: Before, During, After.</p> <p>Timing has the following attribute.</p>	Required	1	Restricted

	<p><i>duration</i> Indicates the amount of time before or after the learning activity the survey item was presented to the learner. For example, P1D indicates one day before or after.</p>			
Classification	<p>Classification is a subelement of MultipleChoiceAssessmentItemData that may indicate the educational objective or competency associated with this assessment item.</p> <p>Classification uses the classification element type from LOM as profiled in Healthcare LOM.</p>	Optional	0 or more	<p>Container</p> <p>For more information see ANSI/MEDBI Q LO.10.1-2008 Healthcare Learning Object Metadata Specifications and Description Document [Healthcare LOM].</p>

Example:

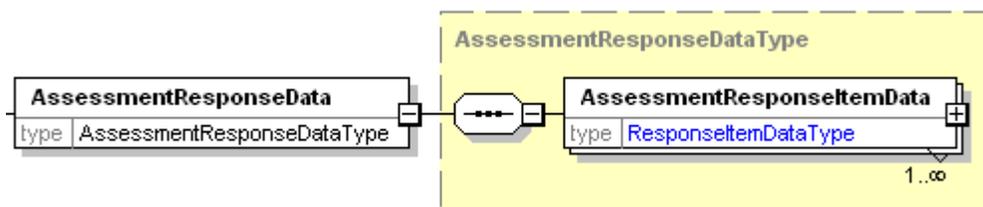
```
<MultipleChoiceAssessmentItemData>
  <Question>What class of medication are an appropriate treatment for asthma?</Question>
  <AssessmentResponseData>
    <AssessmentResponseItemData correct="true">
      <ResponseText>Long Acting Beta Agonists</ResponseText>
      <TotalRespondents>140</TotalRespondents>
    </AssessmentResponseItemData>
  </AssessmentResponseData>
</MultipleChoiceAssessmentItemData>
```

```

</AssessmentResponseItemData>
<AssessmentResponseItemData correct="false">
  <ResponseText>Acid Reducer</ResponseText>
  <TotalRespondents>5</TotalRespondents>
</AssessmentResponseItemData>
<AssessmentResponseItemData correct="false">
  <ResponseText>Antibiotics</ResponseText>
  <TotalRespondents>5</TotalRespondents>
</AssessmentResponseItemData>
</AssessmentResponseData>
<Timing>After</Timing>
</MultipleChoiceAssessmentItemData>
    
```

7.8.2 AssessmentResponseData

AssessmentResponseData indicates the possible responses to a multiple choice assessment item and the number of learners that indicated each response. Multiple choice items may offer the option to choose multiple responses or one response.



AssessmentResponseData

Element	Description	Required	Multiplicity	Datatype
AssessmentResponseData	AssessmentResponseData is a subelement of MultipleChoiceAssessmentItemData. It indicates the possible	Required	1	Container

	responses to this question and how many learners indicated each response.			
AssessmentResponseItemData	AssessmentResponseItemData is a subelement of AssessmentResponseData. Its subelements indicate a specific response option and the number of learners who gave that response. See section AssessmentResponseItemData for more information.	Required	1 or more	Container

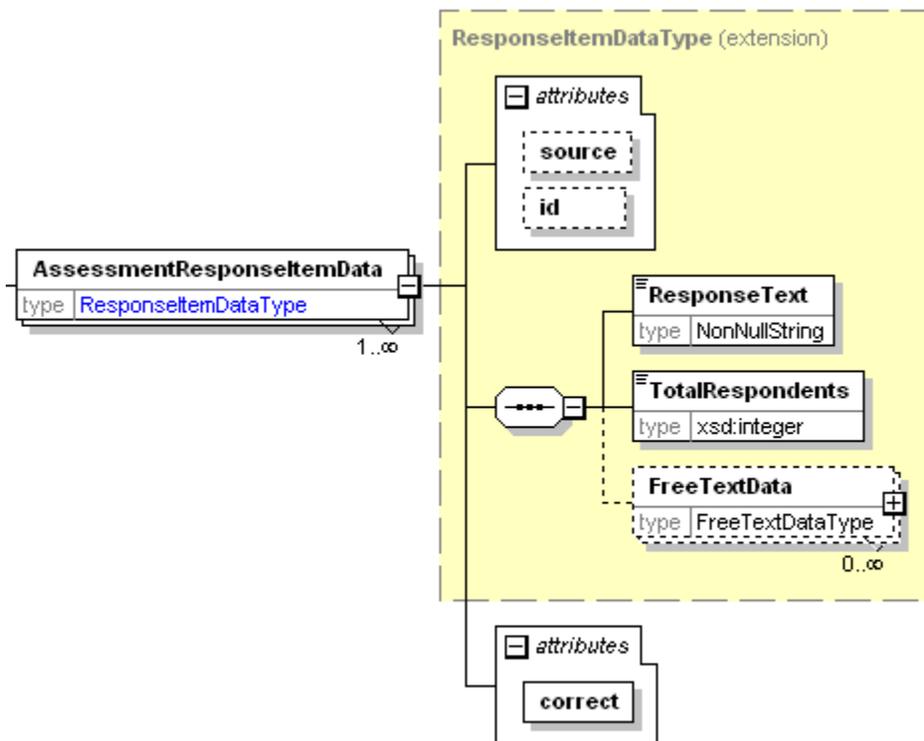
Example:

```

<AssessmentResponseData>
  <AssessmentResponseItemData correct="true">
    . . .
  </AssessmentResponseItemData>
  <AssessmentResponseItemData correct="false">
    . . .
  </AssessmentResponseItemData>
  <AssessmentResponseItemData correct="false">
    . . .
  </AssessmentResponseItemData>
</AssessmentResponseData>
    
```

7.8.3 AssessmentResponseItemData

AssessmentResponseItemData indicates a specific assessment item response option and the number of learners who gave that response. It also indicates whether or not the response is correct.



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AssessmentResponseItemData

Element	Description	Required	Multiplicity	Datatype
AssessmentResponseItemData	<p>AssessmentResponseItemData is a subelement of AssessmentResponseData. Its subelements indicate a specific response option and the number of learners who gave that response.</p> <p>AssessmentResponseItemData has the following attributes:</p> <p><i>source</i> Indicates a source vocabulary for the assessment response item.</p> <p><i>id</i> Indicates the item identifier in the source vocabulary referenced.</p> <p><i>correct</i> Indicates whether or not this response item is a correct response to the question. The correct attribute is required. Valid values are true and false.</p>	Required	1 or more	Container
ResponseText	<p>ResponseText is a subelement of AssessmentResponseItemData. ResponseText defines the text of the response option.</p>	Required	1	Non-null string
TotalRespondents	<p>TotalRespondents is the subelement of AssessmentResponseItemData that</p>	Required	1	Integer

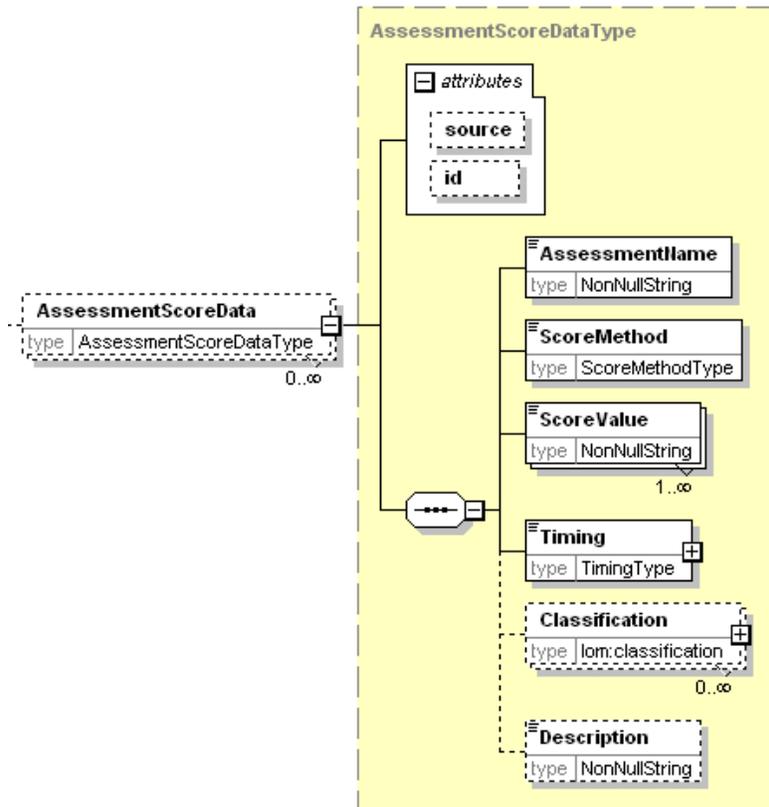
	indicates the number of respondents that selected this response item.			
FreeTextData	FreeTextData is the subelement of AssessmentResponseItemData. FreeTextData is used when a multiple choice question gives respondents the option to enter their own response. See section FreeTextData for more information.	Optional	0 or more	Container

Example:

```
<AssessmentResponseItemData correct="true">  
  <ResponseText>Long Acting Beta Agonists</ResponseText>  
  <TotalRespondents>140</TotalRespondents>  
</AssessmentResponseItemData>
```

7.8.4 AssessmentScoreData

AssessmentScoreData contains assessment scores for a particular assessment as well as the scoring method, assessment timing, and classification.



Generated by XMLSpy

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AssessmentScoreData

Element	Description	Required	Multiplicity	Datatype
AssessmentScoreData	<p>AssessmentScoreData is the dsubelement of KnowledgeAssessment that contains assessment scores for a particular assessment. AssessmentScoreData has the following attributes:</p> <p><i>source</i> Indicates a source vocabulary for the assessment.</p>	Optional	0 or more	Container

	<p><i>id</i> Indicates the assessment identifier in the source vocabulary referenced.</p>			
AssessmentName	<p>AssessmentName is the subelement of AssessmentScoreData that provides the name of the assessment instrument.</p>	Required	1	Non-null string
ScoreMethod	<p>ScoreMethod leverages the TestScoreMethodType definition from the Postsecondary Electronic Standards Council's Core Main Specification version 1.50, [PESC] which defines an XML schema for test score reporting, among other things. The following documentation and score method values defined all come from the PESC.</p> <p>Valid values are: Scaled, Graded, Standard, Raw, Percent, Mastery, Adjective, Stanine, Percentile, NormalCurve, Equated, Local.</p> <p>For definitions of score methods, please see Appendix 1.</p>	Required	1	Restricted
ScoreValue	<p>ScoreValue is the subelement of AssessmentScoreData that indicates one learner's score on the assessment. The score should reflect the ScoreMethod indicated. For example, if the ScoreMethod is percent, the ScoreValue is a</p>	Required	1 or more	Non-null string

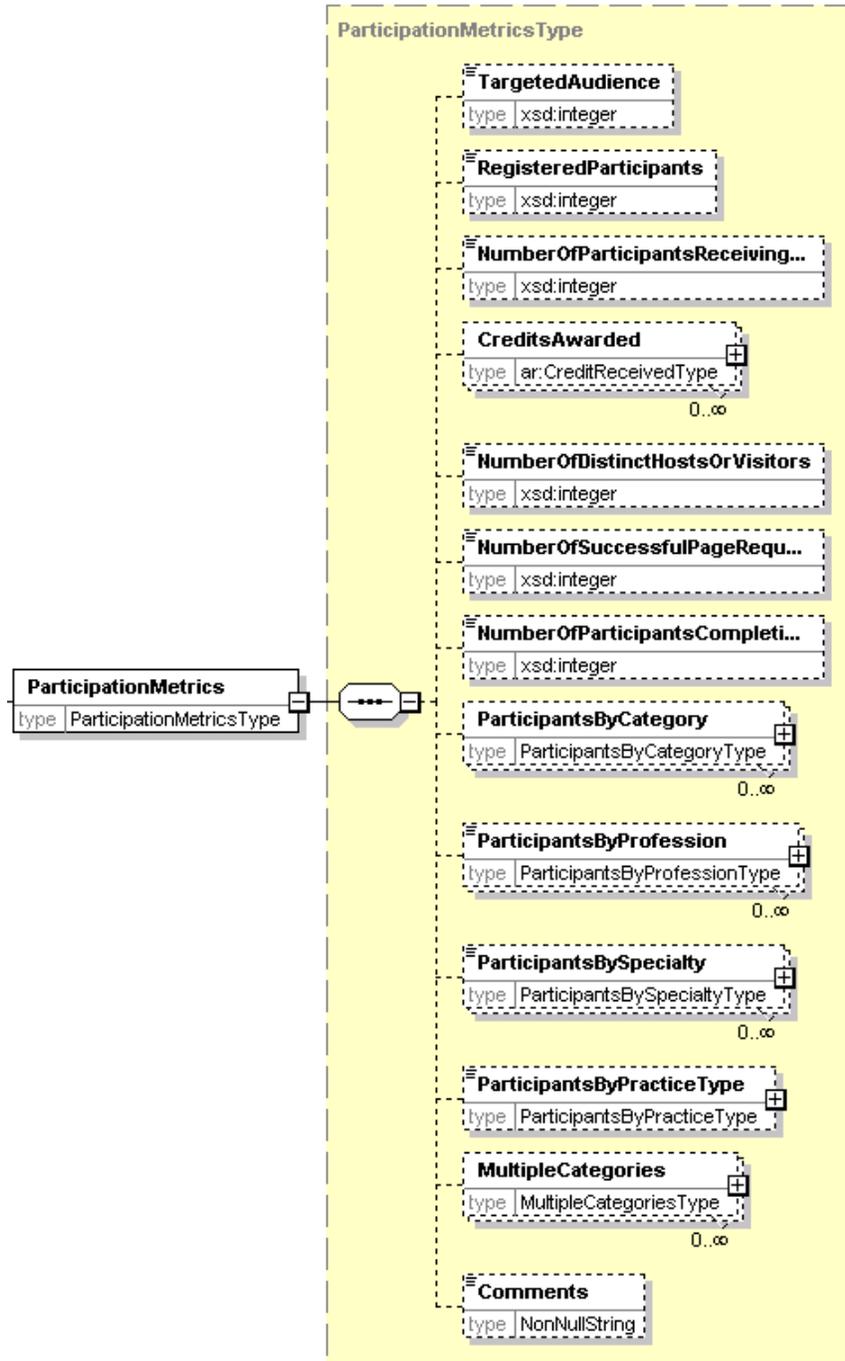
	number between 0 and 100.			
Timing	<p>Timing is the subelement of AssessmentScoreData that indicates at what time in relation to the learning event this assessment was presented to the learner. Valid values are: Before, During, After.</p> <p>Timing has the following attribute.</p> <p><i>duration</i> Indicates the amount of time before or after the learning activity the survey item was presented to the learner.</p>	Required	1	Restricted
Classification	<p>Classification is a subelement of AssessmentScoreData that may indicate the educational objective or competency associated with this assessment.</p> <p>Classification uses the classification element type from LOM as profiled in Healthcare LOM.</p>	Optional	0 or more	<p>Container</p> <p>See ANSI/MEDBIQ LO.10.1-2008 Healthcare Learning Object Metadata Specifications and Description Document [Healthcare LOM]</p>
Description	<p>Description is a subelement of AssessmentScoreData that contains further information about the assessment. If the ScoreMethod is Local, the local method may be defined in the description.</p>	Optional	0 or 1	Non-null string

Example:

```
<AssessmentScoreData>
  <AssessmentName>MySite Asthma Treatment Assessment</AssessmentName>
  <ScoreMethod>Percent</ScoreMethod>
  <ScoreValue>90</ScoreValue>
  <Timing duration="P30D">After</Timing>
</AssessmentScoreData>
```

7.9 ParticipationMetrics

ParticipationMetrics defines how many participants participated in the educational activity, including how many CE credits were awarded. ParticipationMetrics is a sub-element of MedicalEducationMetrics.



ParticipationMetrics Information

Element	Description	Required	Multiplicity	Datatype
ParticipationMetrics	ParticipationMetrics is the sub-element of MedicalEducationMetrics. It contains elements that provide data on the number of learners participating in the activity and the extent of their participation.	Required	1	Container
TargetedAudience	TargetedAudience is the sub-element of ParticipationMetrics. It defines how many clinicians received promotional materials for this educational activity or were otherwise targeted to participate in the activity.	Optional	0 or 1	Integer
RegisteredParticipants	RegisteredParticipants is the sub-element of ParticipationMetrics. It defines how many clinicians registered to participate in the educational activity.	Optional	0 or 1	Integer
NumberOfParticipantsReceivingCredit	NumberOfParticipantsReceivingCredit is the sub-element of ParticipationMetrics. It defines the number of participants that received continuing education credits for participating in this activity.	Optional	0 or 1	Integer
CreditsAwarded	CreditsAwarded is the sub-element of ParticipationMetrics. It defines the number of credits and type of credit awarded for an educational activity. Activities often are eligible for several different types of credit; to reflect this	Optional	0 or more	Container CreditsType See ANSI /MEDBIQ AR.10.1-2009

	<p>practice, the CreditsAwarded element is repeatable.</p> <p>CreditsAwarded uses the CreditReceivedType type definition from the Activity Report specification.</p>				<p>MedBiquitous Activity Report Specifications and Description Document [Activity Report] and ANSI/MEDBIQ LO.10.1-2008 Healthcare Learning Object Metadata Specifications and Description Document [Healthcare LOM].</p>
NumberOfDistinctHostsOrVisitors	<p>NumberOfDistinctHostsOrVisitors is the sub-element of ParticipationMetrics. It defines how many different computers have requested pages in the online course or resource. Web server reporting software keeps track of these statistics.</p>	Optional	0 or 1	Integer	
NumberOfSuccessfulPageRequests	<p>NumberOfSuccessfulPageRequests is the sub-element of ParticipationMetrics. It defines the number of requests for pages in the course or resource. Web server</p>	Optional	0 or 1	Integer	

	reporting software keeps track of these statistics.			
NumberOfParticipantsCompletingActivity	NumberOfParticipantsCompletingActivity is the sub-element of ParticipationMetrics. It defines how many individuals completed the course or activity. Learning management systems and other technologies allow educators to track a learner’s progress through an online course. Educators may have other criteria for determining if an activity has been completed.	Optional	0 or 1	Integer
ParticipantsByCategory	ParticipantsByCategory is the sub-element of ParticipationMetrics. It defines the number of participants by category. For more information, see section ParticipantsByCategory.	Optional	0 or more	Container
ParticipantsByProfession	ParticipantsByProfession is the sub-element of ParticipationMetrics. It defines the number of participants by profession. ParticipantsByProfession has the following attribute: <i>profession</i> Indicates the profession described. A recommended list for REMs CE is available by visiting Medical Education Metrics Vocabularies [MEMS Vocabularies]. For other activities, see	Optional	0 or more	Integer

	<p>the recommended list of professions in ANSI/MEDBIQ LO.10.1-2008 Healthcare Learning Object Metadata Specifications and Description Document [Healthcare LOM].</p>			
ParticipantsBySpecialty	<p>ParticipantsBySpecialty is the sub-element of ParticipationMetrics. It defines the number of participants by specialty.</p> <p>ParticipantsBySpecialty has the following attribute:</p> <p><i>specialty</i> Indicates the specialty described. See ANSI/MEDBIQ LO.10.1-2008 Healthcare Learning Object Metadata Specifications and Description Document for a list of recommended values for specialty [Healthcare LOM].</p> <p>Recommended values for dental specialties are also available [MEM Vocabularies]</p>	Optional	0 or more	Integer
ParticipantsByPracticeType	<p>ParticipantsByPracticeType is the sub-element of ParticipationMetrics. It defines the number of participants by broad category. For example, primary care.</p> <p>ParticipantsByPracticeType has the following attribute:</p> <p><i>practiceType</i></p>	Optional	0 or more	Integer

	<p>Indicates the practice type described.</p> <p>Recommended values for practice types related to ER/LA Opioid REMS [REMS] are available [MEM Vocabularies].</p>			
MultipleCategories	<p>MultipleCategories allows one to describe the number of participants meeting multiple categories simultaneously. For example, the number of physicians with a specialty of internal medicine that are active prescribers of long acting opioids. For more information, see section MultipleCategories.</p>	Optional	0 or more	Container
Comments	<p>Comments is a sub-element of ParticipationMetrics. It allows activity providers to provide comments or further explanation regarding any of the participation metrics.</p>	Optional	0 or 1	NonNullString

Example:

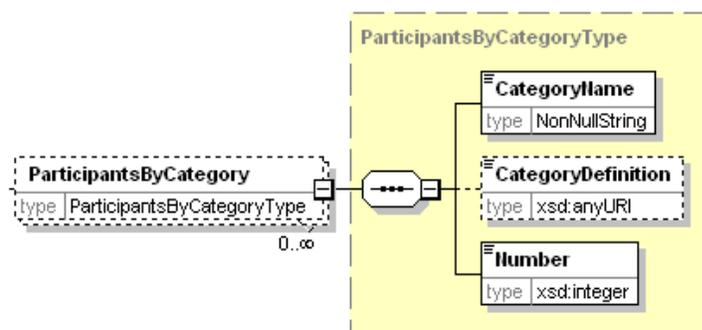
```

    <ParticipationMetrics>
      <TargetedAudience>1000</TargetedAudience>
      <RegisteredParticipants>200</RegisteredParticipants>
      <NumberOfParticipantsReceivingCredit>
150
    </NumberOfParticipantsReceivingCredit>
      <CreditsAwarded>
        <hx:creditType>CME</hx:creditType>
        <hx:numberOfCredits>150</hx:numberOfCredits>
      </CreditsAwarded>

      <NumberOfDistinctHostsOrVisitors>250</NumberOfDistinctHostsOrVisitors>
      <NumberOfSuccessfulPageRequests>500</NumberOfSuccessfulPageRequests>
      <NumberOfParticipantsCompletingActivity>
150
    </NumberOfParticipantsCompletingActivity>
      <ParticipantsBySpecialty specialty="radiology-diagnostic">
100
    </ParticipantsBySpecialty>
      <ParticipantsBySpecialty specialty="radiation oncology">
50
    </ParticipantsBySpecialty>
    </ParticipationMetrics>
  
```

7.9.1 ParticipantsByCategory

ParticipantsByCategory defines the number of participants by a category. The category may be defined by the person creating the metrics report, or it may be a definition agreed upon by a larger community.



ParticipantsByCategory Element Information

Element	Description	Required	Multiplicity	Datatype
ParticipantsByCategory	ParticipantsByCategory defines the number of participants by category.	Optional	0 or more	Container
CategoryName	A name for the category of participants.	Required	1	NonNull String
CategoryDefinition	A URI pointing to a definition of a particular category. For example: http://www.medbiq.org/mems/definitions#prescriber	Optional	0 or 1	Any URI
Number	The number of participants in this category.	Required	1	Integer

Example:

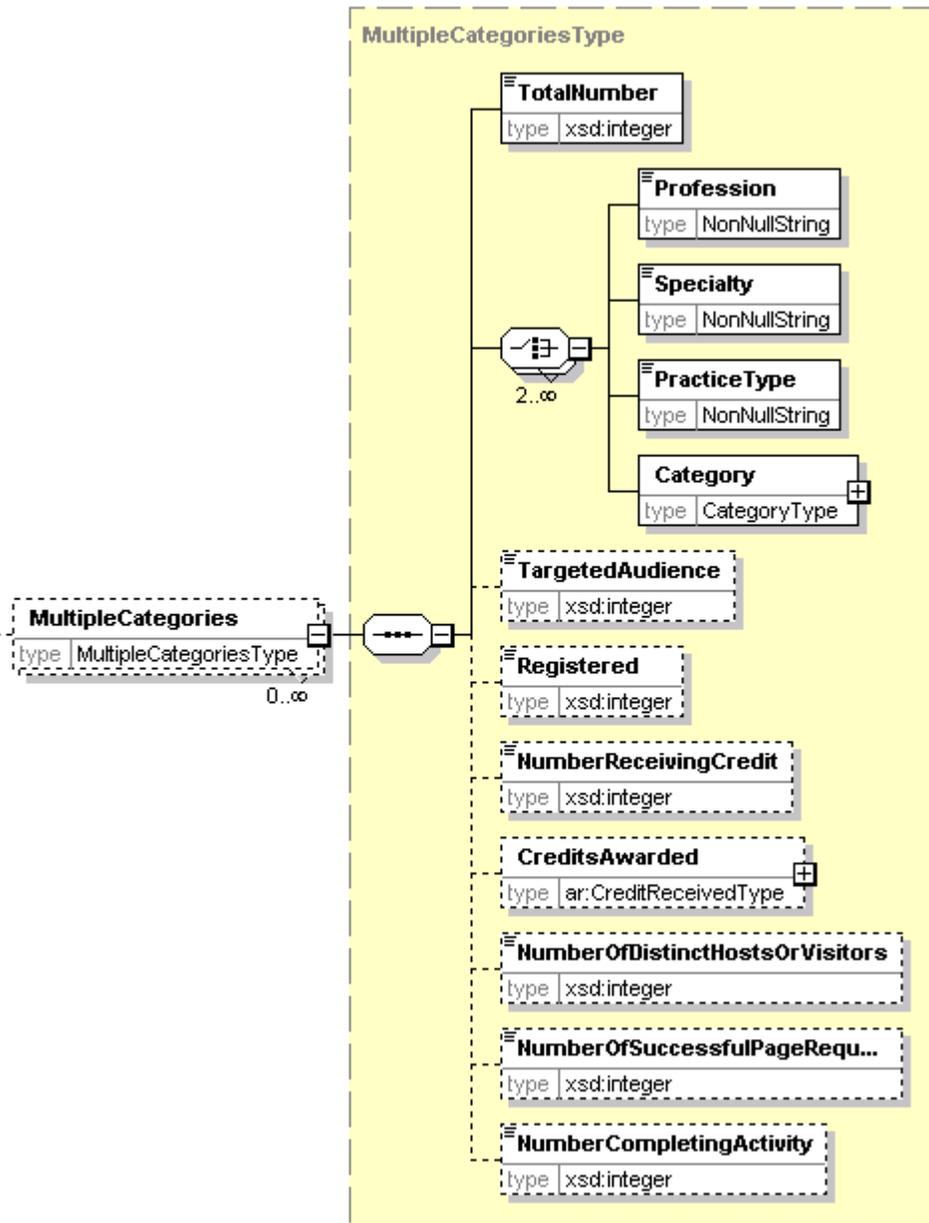
```

<ParticipantsByCategory>
  <CategoryName>ER/LA Opioid Prescriber</CategoryName>
  <CategoryDefinition>http://medbiq.org/mems/definitions#ER/LA_opioid_pre
  scriber</CategoryDefinition>
  <Number>190</Number>
</ParticipantsByCategory>

```

7.9.2 MultipleCategories

MultipleCategories allows one to describe the number of participants meeting multiple categories simultaneously. For example, the number of physicians with a specialty of internal medicine that are active prescribers of long acting opioids.



MultipleCategoriesElement Information

Element	Description	Required	Multiplicity	Datatype
MultipleCategories	Contains subelements that describe the number of participants meeting multiple categories simultaneously.	Optional	0 or more	Container
TotalNumber	The number of participants meeting the multiple categories specified.	Required	1	Integer
Profession	A healthcare profession. ANSI/MEDBIQ LO.10.1-2008 Healthcare Learning Object Metadata Specifications and Description Document contains a hierarchical list of recommended values for profession [Healthcare LOM]. A subset specific to ER/LA Opioid REMS is also available [MEMS Vocabularies].	Two or more Profession, Specialty, PracticeType, or Category elements are required.		Non NullString
Specialty	A healthcare specialty. ANSI/MEDBIQ LO.10.1-2008 Healthcare Learning Object Metadata Specifications and Description Document contains a list of recommended values for specialty [Healthcare LOM].	Two or more Profession, Specialty, PracticeType, or Category elements are required.		Non NullString
PracticeType	A broad category of clinicians. For example, primary care. A vocabulary of practice types related to ER/LA Opioid REMS [REMS] is available [MEM Vocabularies].	Two or more Profession, Specialty, PracticeType, or Category elements are required.		Non NullString

Element	Description	Required	Multiplicity	Datatype
Category	<p>Contains subelements that provide the name and a pointer to the definition of a category of participants.</p> <p>For more information, see section Category.</p>	Two or more	Profession, Specialty, PracticeType, or Category elements are required.	Container
TargetedAudience	Defines how many participants meeting the defined categories received promotional materials for this educational activity or were otherwise targeted to participate in the activity.	Optional	0 or 1	Integer
Registered	Defines how many participants meeting the defined categories registered to participate in the educational activity.	Optional	0 or 1	Integer
NumberReceiving Credit	Defines the number of participants meeting the defined categories that received continuing education credits for participating in this activity.	Optional	0 or 1	Integer

Element	Description	Required	Multiplicity	Datatype
CreditsAwarded	<p>Defines the number of credits and type of credit awarded for an educational activity for participants meeting the defined categories. Activities often are eligible for several different types of credit; to reflect this practice, the CreditsAwarded element is repeatable.</p> <p>CreditsAwarded uses the CreditReceivedType type definition from the Activity Report specification.</p>	Optional	0 or more	Container Credits Type See ANSI /MEDBIQ AR.10.1-2009 MedBiquitous Activity Report Specifications and Description Document [Activity Report] and ANSI/MEDBIQ LO.10.1-2008 Healthcare Learning Object Metadata Specifications and Description Document [Healthcare LOM].
NumberOfDistinctHostsOrVisitors	<p>Defines how many different computers have requested pages in the online course or resource for participants meeting the defined categories. Web server reporting software keeps track of these statistics.</p>	Optional	0 or 1	Integer
NumberOfSuccessfulPageRequests	<p>Defines the number of requests for pages in the course or resource for participants meeting the defined categories. Web server reporting software keeps track of these statistics.</p>	Optional	0 or 1	Integer

Element	Description	Required	Multiplicity	Datatype
NumberCompleting Activity	Defines how many individuals meeting the defined categories completed the course or activity. Learning management systems and other technologies allow educators to track a learner's progress through an online course. Educators may have other criteria for determining if an activity has been completed.	Optional	0 or 1	Integer

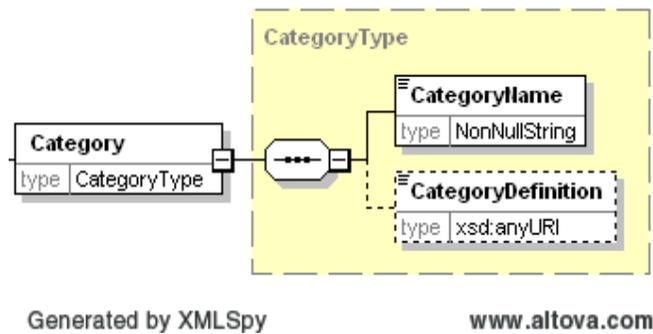
Example:

```

<MultipleCategories>
  <TotalNumber>106</TotalNumber>
  <PracticeType>Specialist</PracticeType>
  <Category>
    <CategoryName>Prescribers successfully completing</CategoryName>
    <CategoryDefinition>
      http://medbiq.org/mems/definitions#prescribers_successfully_completing
    </CategoryDefinition>
  </Category>
  <TargetedAudience>350</TargetedAudience>
  <Registered>150</Registered>
  <NumberReceivingCredit>106</NumberReceivingCredit>
  <CreditsAwarded>
    <hx:creditType>CME</hx:creditType>
    <hx:numberOfCredits>106</hx:numberOfCredits>
  </CreditsAwarded>
  <NumberOfDistinctHostsOrVisitors>232</NumberOfDistinctHostsOrVisitors>
  <NumberOfSuccessfulPageRequests>2035</NumberOfSuccessfulPageRequests>
</MultipleCategories>
    
```

7.9.3 Category

Contains subelements that provide the name and a pointer to the definition of a category of participants.



Category Element Information

Element	Description	Required	Multiplicity	Datatype
Category	Contains subelements that provide the name and a pointer to the definition of a category of participants.	Two or more	Profession, Specialty, or Category elements are required.	Container
CategoryName	A name for the category of participants.	Required	1	NonNull String

Element	Description	Required	Multiplicity	Datatype
CategoryDefinition	A URI pointing to a definition of a particular category. For example: http://www.medbiq.org/mems/definitions#prescriber	Required	1	Any URI

Example:

```
<Category>
  <CategoryName>Prescribers successfully completing</CategoryName>
  <CategoryDefinition>http://medbiq.org/mems/definitions#prescribers\_successfully\_completing</CategoryDefinition>
</Category>
```

7.10 XtensibleInfo

The XtensibleInfo element contains sub-elements defined by the organization implementing the schema. It extends the currently defined schema. XtensibleInfo is included for backward compatibility and is not the preferred method of extension.

XtensibleInfo is a sub-element of MedicalEducationMetrics.

8 Sample XML Documents

Non-REMS example

```
<?xml version="1.0" encoding="UTF-8"?>
<MedicalEducationMetrics xmlns="http://ns.medbiq.org/metrics/v1/"
xmlns:lom="http://ltsc.ieee.org/xsd/LOM"
xmlns:ex="http://ltsc.ieee.org/xsd/LOM/extend"
xmlns:ag="http://ltsc.ieee.org/xsd/LOM/unique"
xmlns:voc="http://ltsc.ieee.org/xsd/LOM/vocab"
xmlns:a="http://ns.medbiq.org/address/v1/"
xmlns:hx="http://ns.medbiq.org/lom/extend/v1/"
xmlns:hv="http://ns.medbiq.org/lom/vocab/v1/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://ns.medbiq.org/metrics/v1://ns.medbiq.org/metri
cs/v1/medicaleducationmetrics.xsd">
  <ReportDescription>
    <ReportingStartDate>2008-01-01</ReportingStartDate>
    <ReportingEndDate>2008-03-31</ReportingEndDate>
  </ReportDescription>
  <ActivityDescription>
    <lom:lom>
      <lom:general>
        <lom:identifier>
          <lom:catalog>URI</lom:catalog>

      <lom:entry>https://www2.mysite.org/TNT_products.cfm?prod=COD77</lom:ent
ry>
        </lom:identifier>
        <lom:title>
          <lom:string>Case of the Day, May 2007</lom:string>
        </lom:title>
        <lom:language>en</lom:language>
        <lom:description>
          <lom:string>An introduction to breast imaging. Learning
Objectives: 1) Identify, characterize, and analyze abnormal findings on
multimodality breast imaging studies. </lom:string>
        </lom:description>
        <lom:keyword id="D001940" source="MeSH">
          <lom:string>breast</lom:string>
        </lom:keyword>
        <lom:keyword id="D003952" source="MeSH" >
          <lom:string>diagnostic imaging</lom:string>
        </lom:keyword>
      </lom:general>
      <hx:healthcareMetadata>
```

```

    <hx:healthcareEducation>
      <hx:expirationDate>2010-07-19</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>Credit</hx:creditUnit>
        <hx:numberOfCredits>1</hx:numberOfCredits>
      </hx:credits>
      <hx:participationModality>technology
based</hx:participationModality>
    </hx:healthcareEducation>
  </hx:healthcareMetadata>
</lom:lom>
  <CommercialSupportAmount currency="USD" supportSource="SeeRite
Imaging Company">5000</CommercialSupportAmount>
  <AdvertisingAndExhibitIncome>0</AdvertisingAndExhibitIncome>
  <OtherIncome currency="USD">5400</OtherIncome>
  <Expenses currency="USD">9550</Expenses>
  <DesignedToChangeCompetence>true</DesignedToChangeCompetence>
  <DesignedToChangePerformance>false</DesignedToChangePerformance>

  <DesignedToChangePatientOutcomes>false</DesignedToChangePatientOutcomes
>
  <ChangesInCompetenceMeasured>true</ChangesInCompetenceMeasured>
  <ChangesInPerformanceMeasured>false</ChangesInPerformanceMeasured>

  <ChangesInPatientOutcomesMeasured>false</ChangesInPatientOutcomesMeasur
ed>
</ActivityDescription>
<ParticipantActivityEvaluation>
  <SurveyItemData>
    <SurveyQuestion>The course met its stated learning
objectives</SurveyQuestion>
    <ResponseData>
      <ScaleData type="likert" points="5">
        <One label="Strongly Agree">100</One>
        <Two>40</Two>
        <Three>10</Three>
        <Four>0</Four>
        <Five label="Strongly Disagree">0</Five>
      </ScaleData>
    </ResponseData>
  </SurveyItemData>
  <SurveyItemData>
    <SurveyQuestion>Did the course present a balanced view of
clinical options?</SurveyQuestion>

```

```

    <ResponseData>
      <YesNoData>
        <Yes>140</Yes>
        <No>10</No>
      </YesNoData>
    </ResponseData>
  </SurveyItemData>
  <SurveyItemData>
    <SurveyQuestion>How many years have you been in
practice?</SurveyQuestion>
    <ResponseData>
      <MultipleChoiceSelectOneData>
        <ResponseItemData>
          <ResponseText>less than 5 years</ResponseText>
          <TotalRespondents>20</TotalRespondents>
        </ResponseItemData>
        <ResponseItemData>
          <ResponseText>5-10 years</ResponseText>
          <TotalRespondents>50</TotalRespondents>
        </ResponseItemData>
        <ResponseItemData>
          <ResponseText>10-20 years</ResponseText>
          <TotalRespondents>70</TotalRespondents>
        </ResponseItemData>
        <ResponseItemData>
          <ResponseText>more than 20 years</ResponseText>
          <TotalRespondents>20</TotalRespondents>
        </ResponseItemData>
      </MultipleChoiceSelectOneData>
    </ResponseData>
  </SurveyItemData>
  <SurveyItemData>
    <SurveyQuestion>What factors influenced you to attend this
program?</SurveyQuestion>
    <ResponseData>
      <MultipleChoiceSelectManyData>
        <ResponseItemData>
          <ResponseText>Course description</ResponseText>
          <TotalRespondents>40</TotalRespondents>
        </ResponseItemData>
        <ResponseItemData>
          <ResponseText>List of faculty</ResponseText>
          <TotalRespondents>60</TotalRespondents>
        </ResponseItemData>
        <ResponseItemData>
          <ResponseText>Host city</ResponseText>
          <TotalRespondents>50</TotalRespondents>
        </ResponseItemData>
      </MultipleChoiceSelectManyData>
    </ResponseData>
  </SurveyItemData>

```

```

    </ResponseData>
  </SurveyItemData>
  <SurveyItemData>
    <SurveyQuestion>If there were one thing you would change about
the program, what would it be?</SurveyQuestion>
    <ResponseData>
      <FreeTextData>
        <TextResponse>Great conference - wouldn't change a
thing.</TextResponse>
        <AnalysisCategory>Positive comment</AnalysisCategory>
      </FreeTextData>
      <FreeTextData>
        <TextResponse>Longer lunch for networking.</TextResponse>
        <AnalysisCategory>Logistics</AnalysisCategory>
      </FreeTextData>
      <FreeTextData>
        <TextResponse>Different faculty - we see the same faces
every year.</TextResponse>
        <AnalysisCategory>Faculty</AnalysisCategory>
      </FreeTextData>
      <FreeTextData>
        <TextResponse>Can we start later in the day?</TextResponse>
        <AnalysisCategory>Logistics</AnalysisCategory>
      </FreeTextData>
    </ResponseData>
  </SurveyItemData>
  <ComparisonData>
    <SurveyItemDataForComparison>
      <SurveyQuestion>Thinking about my expectations for this CME
activity, it is important that it address my most pressing questions.
</SurveyQuestion>
      <ResponseData>
        <ScaleData type="low/high" points="5">
          <One label="Low">5</One>
          <Two>15</Two>
          <Three>35</Three>
          <Four>70</Four>
          <Five label="High">25</Five>
        </ScaleData>
      </ResponseData>
      <Timing duration="P1D">Before</Timing>
    </SurveyItemDataForComparison>
    <SurveyItemDataForComparison>
      <SurveyQuestion>Thinking about my participation in this CME
activity, I thought it was able to address my most pressing questions.
</SurveyQuestion>
      <ResponseData>
        <ScaleData type="minimally/completely" points="5">
          <One label="Minimally">5</One>

```

```

        <Two>10</Two>
        <Three>30</Three>
        <Four>75</Four>
        <Five label="Completely">30</Five>
    </ScaleData>
</ResponseData>
    <Timing duration="P1D">After</Timing>
</SurveyItemDataForComparison>
</ComparisonData>
</ParticipantActivityEvaluation>
<KnowledgeAssessment>
    <MultipleChoiceAssessmentItemData>
        <Question>What class of medication are an appropriate treatment
for asthma?</Question>
        <AssessmentResponseData>
            <AssessmentResponseItemData correct="true">
                <ResponseText>Long Acting Beta Agonists</ResponseText>
                <TotalRespondents>140</TotalRespondents>
            </AssessmentResponseItemData>
            <AssessmentResponseItemData correct="false">
                <ResponseText>Acid Reducer</ResponseText>
                <TotalRespondents>5</TotalRespondents>
            </AssessmentResponseItemData>
            <AssessmentResponseItemData correct="false">
                <ResponseText>Antibiotics</ResponseText>
                <TotalRespondents>5</TotalRespondents>
            </AssessmentResponseItemData>
        </AssessmentResponseData>
        <Timing>After</Timing>
    </MultipleChoiceAssessmentItemData>
    <AssessmentScoreData>
        <AssessmentName>MySite Asthma Treatment
Assessment</AssessmentName>
        <ScoreMethod>Percent</ScoreMethod>
        <ScoreValue>90</ScoreValue>
        <Timing duration="P30D">After</Timing>
    </AssessmentScoreData>
</KnowledgeAssessment>
<ParticipationMetrics>
    <TargetedAudience>1000</TargetedAudience>
    <RegisteredParticipants>200</RegisteredParticipants>

    <NumberOfParticipantsReceivingCredit>150</NumberOfParticipantsReceiving
Credit>
    <CreditsAwarded>
        <hx:creditType>CME</hx:creditType>
        <hx:numberOfCredits>150</hx:numberOfCredits>
    </CreditsAwarded>

```

```

    <NumberOfDistinctHostsOrVisitors>250</NumberOfDistinctHostsOrVisitors>
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      <ParticipantsBySpecialty specialty="radiology-diagnostic">100</ParticipantsBySpecialty>
      <ParticipantsBySpecialty specialty="radiation oncology">50</ParticipantsBySpecialty>
    </ParticipationMetrics>
  </MedicalEducationMetrics>

```

REMS Example

```

<?xml version="1.0" encoding="UTF-8"?>
<MedicalEducationMetrics xmlns="http://ns.medbiq.org/metrics/v2/"
  xmlns:lom="http://ltsc.ieee.org/xsd/LOM"
  xmlns:ar="http://ns.medbiq.org/activityreport/v1/"
  xmlns:hx="http://ns.medbiq.org/lom/extend/v1/"
  xmlns:hv="http://ns.medbiq.org/lom/vocab/v1/"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://ns.medbiq.org/metrics/v2/
  medicaleducationmetrics_test.xsd">
  <ReportDescription>
    <ReportingStartDate>2013-01-01</ReportingStartDate>
    <ReportingEndDate>2013-01-31</ReportingEndDate>
  </ReportDescription>
  <ActivityDescription>
    <lom:lom>
      <lom:general>
        <lom:title>
          <lom:string>Addressing the Risks of Pain
Management</lom:string>
        </lom:title>
      </lom:general>
      <hx:healthcareMetadata>
        <hx:healthcareEducation>
          <hx:credits>
            <hx:accreditingBody>ACCME</hx:accreditingBody>
            <hx:accreditedProvider>NoSuch
Society</hx:accreditedProvider>
          </hx:credits>
        </hx:healthcareEducation>
      </hx:healthcareMetadata>
    </lom:lom>
    <JointlyAccredited>>false</JointlyAccredited>

```

```

    <CommercialSupportAmount supportSource="REMS Program Companies"
xsi:nil="true"/>
  </ActivityDescription>
  <RegulatoryInformation>
    <CompliantToRegulation label="
http://www.accessdata.fda.gov/drugsatfda_docs/label/2012/OpioidREMSJuly2012
.pdf/>CompliantToRegulation>
    <RegulatoryClassification>
      <ClassificationRelation>Instruction
Addresses</ClassificationRelation>
      <Regulation label="ER/LA Opioid REMS">
http://www.accessdata.fda.gov/drugsatfda_docs/label/2012/OpioidREMSJuly2012
.pdf</Regulation>
      <ComponentID>II</ComponentID>
      <ComponentTitle>Initiating Therapy, Modifying Dosing, and
Discontinuing Use of ER/LA Opioid Analgesics</ComponentTitle>
    </RegulatoryClassification>
  </RegulatoryInformation>
  <ParticipationMetrics>
    <RegisteredParticipants>220</RegisteredParticipants>

    <NumberOfParticipantsReceivingCredit>200</NumberOfParticipantsReceiving
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    <CreditsAwarded>
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      <hx:numberOfCredits>150</hx:numberOfCredits>
    </CreditsAwarded>
    <CreditsAwarded>
      <hx:creditType>CNE</hx:creditType>
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    </CreditsAwarded>

    <NumberOfParticipantsCompletingActivity>200</NumberOfParticipantsComple
tingActivity>
    <ParticipantsByCategory>
      <CategoryName>prescribers successfully completing</CategoryName>

      <CategoryDefinition>http://www.medbiq.org/mems/definitions#prescribers_
successfully_completing</CategoryDefinition>
      <Number>89</Number>
    </ParticipantsByCategory>
    <ParticipantsByCategory>
      <CategoryName>ER/LA Opioid Prescriber</CategoryName>

      <CategoryDefinition>http://medbiq.org/mems/definitions#ER/LA_opioid_pre
scriber</CategoryDefinition>
      <Number>190</Number>
    </ParticipantsByCategory>
    <MultipleCategories>

```

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<TotalNumber>106</TotalNumber>
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<Category>
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completing</CategoryName>

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essfully_completing</CategoryDefinition>
</Category>
<TargetedAudience>350</TargetedAudience>
<Registered>150</Registered>
<NumberReceivingCredit>106</NumberReceivingCredit>
<CreditsAwarded>
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  <hx:numberOfCredits>106</hx:numberOfCredits>
</CreditsAwarded>

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  <Category>
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    <CategoryDefinition>http://www.medbiq.org/mems/definitions#ER/LA_opioid
_prescriber</CategoryDefinition>
  </Category>
</MultipleCategories>
<MultipleCategories>
  <TotalNumber>123</TotalNumber>
  <PracticeType>Primary care</PracticeType>
  <Category>
    <CategoryName>ER/LA opioid prescriber</CategoryName>

    <CategoryDefinition>http://www.medbiq.org/mems/definitions#ER/LA_opioid
_prescriber</CategoryDefinition>
  </Category>
</MultipleCategories>
  <MultipleCategories>
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      <CategoryName>ER/LA opioid prescriber</CategoryName>

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    </Category>
  </MultipleCategories>
</MultipleCategories>
</MultipleCategories>
```

```
    </Category>
  </MultipleCategories>
  <MultipleCategories>
    <TotalNumber>18</TotalNumber>
    <PracticeType>Non-pain specialist</PracticeType>
    <Category>
      <CategoryName>ER/LA opioid prescriber</CategoryName>

      <CategoryDefinition>http://www.medbiq.org/mems/definitions#ER/LA\_opioid\_prescriber</CategoryDefinition>
    </Category>
  </MultipleCategories>
</ParticipationMetrics>
</MedicalEducationMetrics>
```

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10 Appendix 1: Score Method Definitions

ScoreMethodType leverages the TestScoreMethodType definition from the Postsecondary Electronic Standards Council's Core Main specification [PESC] which defines an XML schema for test score reporting, among other things. The following documentation uses the score method values as defined by PESC. Where PESC does not provide definition, MedBiquitous has added definitions (Stanine and Percentile). For more information on PESC, visit <http://www.pesc.org>.

Method	Definition
Scaled	Scaled Score
Grade	Grade Equivalent or Grade Level Indicator
Standard	Standard Score
Raw	Raw Score
Percent	Percent of Items Correct
Mastery Score	Mastery Score
Adjective	Adjective Classification or Locally Defined Score
Stanine	Score on a nine-point standard scale, where the mean score is 5
Percentile	Percentile Score, indicating the percentage of scores falling below the given score
NormalCurve	Normal Curve Equivalent
Equated	Equated Score (pre-test and post-test were different)
Local	Locally Defined