

## HIM Principles in Health Information Exchange: Data Quality Attributes Grid

The “Data Quality Process Grid” is an extension of the 1998 practice brief “Data Quality Management Model,” which was used in AHIMA’s position paper “Quality Healthcare Data and Information” revised and adopted October 7, 2006.<sup>1,2</sup> This model provides an excellent background in understanding the nature of the data quality attributes. The new grid incorporates the data quality attributes and describes key process issues important to the success of an HIE. The underlying HIM principles that support each data quality attribute are included in the corresponding “Rationale” column.

The overriding HIM principles and professional activities address patient care, patient safety, and regulatory compliance. “HIM Principles Related to Data Quality Attribute” below presents a list of these principles most of which are discussed in the February 2006 *Journal* article “Data Standard Time: Data Content Standardization and the HIM Role.”<sup>3</sup>

**Data Quality Process Grid**

<b>Data Quality Attribute</b>	<b>Key Process Issues in HIE</b>	<b>Rationale (see table below)</b>	<b>Comments</b>
<b>1. Accuracy</b> <i>Ensure data are the correct values, valid, and attached to the correct patient record.</i>	The RHIO must establish a policy and provide guidance that ensures the integrity, validity, and reliability of all data exchanged among its participants.	A, J, M, Q	
<b>2. Accessibility</b> <i>Data items should be easily obtainable and legal to access with strong protections and controls built into the process.</i>	The RHIO must define and agree on the types of data as well as the minimum necessary amount required to be accessible to its participants to support its mission and objectives. The RHIO must provide protection and controls to ensure the privacy and security of the data with traceability and audit capability.	A, B, I, J, M, O, P, Q,	Demographic data, payer data, physician orders, medication records, radiology images, lab data, allergy HX, nursing notes, immunization records, etc.
<b>3. Comprehensiveness</b> <i>All required data items are included; ensure the entire scope of data is collected and document intentional limitations.</i>	The RHIO must establish a policy determining that the RHIO will provide for the most recent and comprehensive data required for the RHIO’s defined purposes or mission. This should be coupled with consensus on the definition of scope of records (hospital, clinics, MD offices, etc.)	A, C, J, K, L, M, P	
<b>4. Currency</b> <i>The data should be up-to-date.</i>	The RHIO must provide a definition of the currency for each type of data.	A, B, I, J, M, O, P, Q	

<b>Data Quality Attribute</b>	<b>Key Process Issues in HIE</b>	<b>Rationale (see table below)</b>	<b>Comments</b>
<b>5. Consistency</b> <i>The value of the data should be reliable and the same across applications.</i>	The RHIO needs to reach consensus on the gold standards/data owners of each major data type, including defined responsibilities of those data owners in order that the data are maintained consistently and integral across the RHIO	A, C, D,G, I, J, L, M	
<b>6. Definition</b> <i>Clear definitions should be provided so the current and future data users will know what the data mean; each data element should have clear meaning and acceptable values.</i>	The RHIO needs to agree on the standardization of the data dictionary supporting the RHIO. This would include definitions, acceptable ranges/tolerances, normals/abnormals, etc.	A, C, D, E, F, G, H, J, K, M, N	
<b>7. Granularity</b> <i>Attributes and values of data should be defined at the correct level of detail.</i>	The RHIO must agree on the hierarchy of the data granularity.	A, C, G, H, J, L, M, N, Q	At what point are the data too detailed or incompatible across systems? Data are only as “fine” as the “coarsest” contribution.
<b>8. Precision</b> <i>Data values should be just large enough to support the application or process.</i>	The RHIO must agree and define data ranges and categories to support the RHIO’s mission and objectives.	A, C, G, H, J, L, M, N,Q	
<b>9. Relevancy</b> <i>The data are meaningful to the performance of the process or application for which they are collected.</i>	The RHIO must agree on the criteria that support the data population of the participants of the RHIO based on relevancy to the RHIO’s mission and objectives.	A, C, G, H, J, L, M, N, Q	
<b>10. Timeliness</b> <i>Timeliness is determined by how the data are being used and their context.</i>	The RHIO needs to set the standard/policy regarding timeliness of the data collected relative to the clinical event.	A, B, I, J, M, O, P, Q	

## HIM Principles Related to Data Quality Attribute

	Data Quality Attributes	Accuracy	Accessibility	Comprehensiveness	Currency	Consistency	Definition	Granularity	Precision	Relevancy	Timeliness
	<b>Principles</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
<b>A</b>	Support quality patient care and patient safety	X	X	X	X	X	X	X	X	X	X
<b>B</b>	Support regulatory/accreditation requirements.(HIPAA, CFR 21, JCAHO)		X		X						X
<b>C</b>	Advocate leadership endorsement that standardization of data content is a strategic aim of the organization			X		X	X	X	X	X	
<b>D</b>	Provide education and knowledge transfer of data content standards across the HIE member organizations and vendors					X	X				
<b>E</b>	Support cooperative initiatives related to data standardization efforts, such as selection criteria for purchasing (or designing) new applications.						X				
<b>F</b>	Lead HIE in data dictionary development and data mapping						X				
<b>G</b>	Provide leadership for development of data content standards					X	X	X	X	X	
<b>H</b>	Provide leadership in ongoing management of the data dictionary						X	X	X	X	
<b>I</b>	Coordinate data integration between and among systems		X		X	X					X
<b>J</b>	Work with vendors toward standards compliance	X	X	X	X	X	X	X	X	X	X
<b>K</b>	Liaison with clinical staff to facilitate adoption of data content standards			X			X				
<b>L</b>	Provide support for interoperability efforts among participants in HIE			X		X		X	X	X	
<b>M</b>	Bridge clinical and technological knowledge domains	X	X	X	X	X	X	X	X	X	X
<b>N</b>	Be the domain expert for health information standards						X	X	X	X	
<b>O</b>	Ensure security of data		X		X						X
<b>P</b>	Ensure privacy of data		X	X	X						X
<b>Q</b>	Provide quality data to support confidence in clinical decision making	X	X		X			X	X	X	X

## Notes

1. AHIMA Data Quality Management Task Force. "Data Quality Management Model." *Journal of AHIMA* 69, no. 6 (June 1998): 2-7.
2. AHIMA. "Quality Healthcare Data and Information." Revised and adopted October 7, 2006. Approved by AHIMA's Board of Directors, October 2006.
3. AHIMA e-HIM Workgroup on EHR Data Content. "Data Standard Time: Data Content Standardization and the HIM Role." *Journal of AHIMA* 77, no. 2 (Feb. 2006): 26-32.

Prepared by:

James H Braden, MBA

Barbara Demster, MS, RHIA, CHCQM

Karen G. Grant, RHIA, CHP

Beth Haenke Just, MBA, RHIA

Margie White, MS, RHIA, NHA, CPHQ

Theresa Wisdom, MBA, RHIA

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