

# Introduction to Information Quality

## Draft - Incomplete

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## 1. Learning outcomes check list for the session

Each of the sessions aims to provide you with both skills (the 'be able to's' below) and useful information (the 'know what's' below). After you have completed this session you should come back to these points ticking off those with which you feel happy.

Learning outcome	Tick box
Be aware that criteria exist to measure data / information quality	<input type="checkbox"/>
Be aware of the main characteristics of data quality	<input type="checkbox"/>
Be aware of an appropriate questionnaire to measure data quality quantitatively	<input type="checkbox"/>
Be aware of the The American Health Information Management Association (AHIMA) Data Quality Management (DQM) model	<input type="checkbox"/>
Realise that 'data quality' can mean different things to various writers	<input type="checkbox"/>

## 2. Introduction

There is a large amount of information available about Information quality. Within the NHS there is often said to be vast seas of data with virtually no quality. What does this exactly mean.

Martin & Powell 1992 Provide the following list of characteristics that they believe are usually associated with information quality:

1. **Accuracy** - How correct and valid is it?
2. **Completeness (comprehensiveness)** - Is all the information available to make an informed decision?
3. **Conciseness** - Is it the minimum amount necessary to convey what is required?
4. **Cost-effective** - Does the value gained equal or outweigh the cost of producing it?
5. **Presentation** - It is presented in the appropriate format; Textual or graphical for different cognitive styles?
6. **Relevancy** - Does it assist or hinder the recipients decision making process?
7. **Timeliness** - Does the information appear at the appropriate time in the decision making process?
8. **Up-to-date (age / currency)** - Does the information reflect current known facts

Various other writers (Bowley 1996; AHIMA's Data Quality Management model -DQM etc) have added other categories or divided the above. These include:

**Accessibility** - Tom Peters argues that information should be made available to everyone in an organisation and such an approach is a powerful motivator. This is in opposition to the traditional view that information is power (Bowley 1996).

**Consistency** - Such as one hospital number across all medical records, and one diagnostic coding system used across the specialties. Standardised data collection procedures etc.

**Definition** - Clear unambiguous, concise definitions. Acceptable ranges of values

**Granularity** - Is the collection and reporting at the appropriate level of detail and accuracy

**Precision** - Is the data item just large enough to serve the purpose (i.e. number of decimal points; level of coding etc). [AHIMA's DQM - separates this from accuracy - see above]

**Frequency** - Is the period of time that the receive each batch of information appropriate?

**Flow of information** - Is it open and free [good] or do people hoard it?

**Exercise:**

Considering clinical information: Are all the above categories relevant? Can you suggest any additional ones?

Other writers suggest such things as job satisfaction or job enhancement and professional competency should also be taken into account. This is discussed in other areas of the web site (<http://www.robinbt2.free-online.co.uk/virtualclassroom/contents.htm>).

The American Health Information Management Association (AHIMA) Practice Briefs on Data Quality Management (DQM) recommend that Data quality characteristics should be considered during four stages of the data management process:

- Application - The purpose for which the data are collected
- Collection - The processes and systems by which the data elements are accumulated
- Warehousing - Processes and systems used to store the data
- Analysis - The processes of presenting / analysing the data

These basically equate to my simplistic; input, process, output model.

Bowley 1996 provides a questionnaire listing some of the above characteristics:

<b>Information Questionnaire</b>									
For each of the following, circle the number that you think best describes the information in your organisation, where a score of 1 is very poor and 7 excellent.									
<b>1. The completeness of the information provided</b>									
Incomplete	1	2	3	4	5	6	7	Complete	
<b>2. The relevance of the information to the recipient</b>									
Irrelevant	1	2	3	4	5	6	7	Relevant	
<b>3. The accuracy of the information provided</b>									
Inaccurate	1	2	3	4	5	6	7	Accurate	
<b>4. The age of the information provided</b>									
Out of date	1	2	3	4	5	6	7	Up of date	
<b>5. The timeliness of the information provided</b>									
Untimely	1	2	3	4	5	6	7	Timely	
<b>6. The frequency of the information provided</b>									
Inadequate	1	2	3	4	5	6	7	Adequate	
<b>7. The accessibility of the information</b>									
Inaccessible	1	2	3	4	5	6	7	Accessible	
<b>8. The degree to which the flow of information is open and free</b>									
People hoard information	1	2	3	4	5	6	7	People share information	
<b>9. The format of the information provided</b>									
Unsuitable	1	2	3	4	5	6	7	Suitable	
<b>10. The clarity of the information provided</b>									
Unclear	1	2	3	4	5	6	7	Clear	

### **3. References / Further Information**

Bowley I 1996 Enabling people, enabling organisations. (pages B.9.2-01 - B.9.2-06) In Information management in Health Care - A series of handbooks. Handbook B - Aspects of Informatics eds. Abbott, Bryant & Sotheran. Published by HISG Eastbourne. [ISBN 0 901865 907]

Fletcher D M 1998 Destination Data - Data quality management is the key to organising information. Healthcare Informatics Feb p155 - 157 [www.healthcare-informatics.com](http://www.healthcare-informatics.com)

Johns M L 1996 Information Management of Health Professionals Delmar publishers Albany N.Y.

Martin C, Powell P 1992 Information Systems - A management perspective. (p12 - 16). McGraw-Hill Maidenhead England

AHIMA (American Health Information Management Association) Practice Briefs on Data Quality Management (DQM):

[Data Quality -- February 1996](#)

[Data Quality Management Model -- June 1998](#)

[A Checklist to Assess Data Quality Management Efforts -- March 1998](#)

[Designing a Data Collection Process -- May 1998](#)

[Developing Info Capture Tools -- February 1997](#)

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#### **Document info:**

Robin Beaumont Tel:0191 2731150 e-mail: [robin@robinbt2.free-online.co.uk](mailto:robin@robinbt2.free-online.co.uk)

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