Swiss University Hospitals
"Dossier Patient 2003"
Quality Standards for Electronic Patient Records

med**X**change

META DATA BASE AND INFORMATION SYSTEM
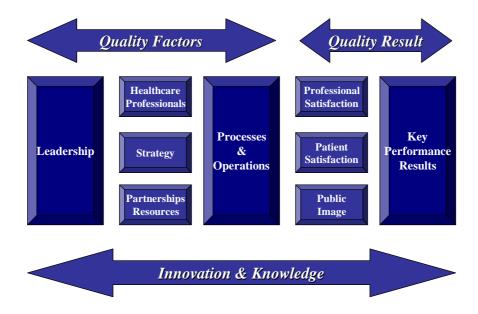## FOR MEDICAL AND HEALTH MANAGEMENT

TABLE OF CONTENTS

1. <u>Introduction</u>

The "Projet Dossier Patient 2003" initiated by the Swiss University Hospitals has issued a quality standard evaluation document "Standards de qualité pour le dossier patient informatisé" (Quality standards for electronic patient records). Nine areas are evaluated which deal with business strategy, management commitment, partnerships, technology strategy, operations, patient and healthcare professional satisfaction, and effect on healthcare.

The Swiss University Hospitals of Basel, Bern, Geneva, Lausanne and Zurich have initiated the "Projet Dossier Patient 2003" (Patient Record 2003 Project) with the objective to coordinate the implementation of health information management systems and electronic patient records.

The Quality Standards for Electronic Patient Records is based on the Excellence Model of the European Foundation for Quality Management (EFQM). This model takes 9 basic criteria into account.

This document covers the Excellence Model of the European Foundation for Quality Management (EFQM) as applied to Electronic Medical Records and how **med*X*change** complies to this model.

2. <u>Quality Standards and Criteria</u>

The following sections give the quality factors and evaluations applied to the Electronic Patient Record.

2.1 Leadership

Does management planning and implementation follow an explicit strategy and model for patient data management? Are all levels of management and employees throughout the enterprise clearly committed to the implementation of this strategy.

Evaluation Criteria	a)	Do the objectives of the enterprise show an adequate commitment to good management of patient information? Are management structures, practices and procedures appropriate?
	b)	Is there a management commitment to patient electronic medical records and are the benefits perceived by management?
	c)	Does management understand the customer requirements for electronic patient record?
Type of Criteria	Quality Factor	
Weighting	9%	
Evaluation	As per table 3.1	

2.2 Healthcare Professional Involvement

Are healthcare professionals regularly involved in the planning and implementation of the electronic patient records.

Evaluation Criteria	a)	Are representatives of all levels of healthcare professionals involved in the strategy, planning and implementation of electronic patient record projects? Is the involvement of healthcare professionals adequate?
	b)	Will healthcare professionals be adequately trained to fully use the potential of electronic medical records? Is there an adequate adaptation period planned?
	c)	Do healthcare professionals actively use the system and do they give feedback on improvements? Are recommendations for improvements systematically evaluated (for example in a knowledge based and innovation system)?
Type of Criteria	Quality Factor	
Weighting	9%	
Evaluation	As per table 3.1	

2.3 Information Technology Strategy

Has the enterprise established compulsory technology guidelines for the management of information. Do these technology guidelines conform to recognized international standards.

Evaluation Criteria	a)	Does the strategy of the enterprise adequately take into account the management of information? Is there a clearly defined Information System strategy? Are strategic directives regularly followed up?
	b)	Are Information System structures and their integration incorporated into the business operations of the enterprise? Are responsibilities clearly defined? Are there compulsory data protection and security regulations?
	c)	Is there an adequate Information System architecture? Do Information Systems conform to established norms and standards?
Type of Criteria	Quality Factor	
Weighting	8%	
Evaluation	As per table 3.1	

2.4 Partnerships & Resources

Does the enterprise take the steps to ensure a long-term development of information management in line with strategic objectives.

Evaluation Criteria	a)	Is there a long-term financing and investment plan for information and communication technologies? Is there an adequate technology risk management in place?
	b)	Is there an adequate structure in place for the evaluation and management of Information Technology? (Following of Information Technology standards and trends and evaluation of their impact).
Type of Criteria	Quality Factor	
Weighting	9%	
Evaluation	As per table 3.1	

2.5 Operational Processes

There is a relationship between the operational processes and information management.

Evaluation Criteria	a)	Does the enterprise have a defined operations model that takes information management into account.
	b)	Are the technology capabilities fully used to optimize the operational processes?
	c)	Are the information systems implemented in an inter-professional and inter-disciplinary environment? Is the information available at any time at the location of the patient?
Type of Criteria	Quality Factor	
Weighting	14%	
Evaluation	As per table 3.1	

2.6 Effect on Healthcare Professionals

The Healthcare Professionals recognize the value of using the electronic patient record.

Evaluation Criteria	a)	Is the feedback from Healthcare Professionals on the use of the electronic patient record predominantly positive? (Based on surveys of participating Healthcare Professionals). Are there any "objectors" to the electronic patient record?
	b)	Do they have confidence in the security and confidentiality of information and communication technology? (e.g. Compared to traditional paper based patient records)
Type of Criteria	Quality Result	
Weighting	9%	
Evaluation	As per table 3.2	

2.7 Effect on Patients

Does the Information Management System allow patients to be involved with and collaborate closely with the medical examination, diagnosis and treatment.

Evaluation Criteria	a)	Are the patients satisfied with the contribution of the Management Information System to the quality of healthcare services? (Documented through surveys and feedback from patients)?
	b)	Do patients readily have access to their electronic health records? Does the Information Management system and presentation favor the use and access by the patient?
	c)	Does the patient have a good "Help" facility as well as access to Tele-medical services.
	d)	Is there the possibility for representatives of patient and consumer organizations to collaborate and participate in the planning of patient information management?
Type of Criteria	Quality Result	
Weighting	20%	
Evaluation	As per table 3.2	

2.8 Public Image

Does the public have a fundamental confidence in the electronic patient record.

Evaluation Criteria	a)	Is the public well informed on the information technology and its usability and limitations? Do representatives of the enterprise have a dialogue with the public?
	b)	Are representatives of external patient and consumer groups implicated in major projects that have a potential influence on the general consumer public?
Type of Criteria	Quality Result	
Weighting	6%	
Evaluation	As per table 3.2	

2.9 Effect on Healthcare

The effect of the electronic patient record on the quality and efficiency of healthcare.

Evaluation Criteria	a)	Does the quality of healthcare have a measurable improvement by using information technology to communicate with other healthcare institutions and providers?
	b)	Are new and innovative healthcare services developed with the assistance of information and communication technology?
	c)	Are efficiency and qualitative improvement objectives in healthcare realized through the information management systems?
	d)	Does the enterprise have a positive internal and external image of its information management?
Type of Criteria	Quality Result	
Weighting	15%	
Evaluation	As per table 3.2	

3. Quality Evaluation

3.1 Quality Factor Evaluation Matrix

Evaluation Criteria	Evaluation Points	Implementation
Anecdote or without value	0%	Very few operational implementations
Indications of a sound approach based on preventive health. Regularly benchmarked on commercial effectiveness. Good integration in the daily commercial activity and planning	25%	Utilized at 25% of potential taking all-important factors into consideration.
Proof of a systematic approach based on preventive health. Regularly benchmarked on commercial effectiveness. Good integration in the daily commercial activity and planning	50%	Utilized at 50% of potential taking all-important factors into consideration.
Tangible evidence of a systematic approach based on preventive health. Tangible proof of refinement and improvement through regular evaluation reviews. Good integration in the daily commercial activity and planning	75%	Utilized at 75% of potential taking all-important factors into consideration.
Tangible evidence of a systematic approach based on preventive health. Tangible proof of refinement and improvement through regular evaluation reviews. Quality procedures are totally integrated into the daily operation of the enterprise. Serves as example to other enterprises.	100%	The total potential is used in all areas and key activities.

3.2 Quality Result Evaluation Matrix

Result	Evaluation Points	Implementation
Anecdote	0%	The results concern almost none of the key areas and activities
Some results show a positive trend. Some objectives have been met.	25%	Results obtained in a few key areas and activities.
Several results show a positive trend over at least 3 years. The majority of objectives have been met. Some benchmark comparisons with other enterprises. Some results can be attributed to the implementation of sound procedures.	50%	Objectives and criteria met in several key areas and activities
The majority of areas of activity show a clear and positive trend over at least 3 years. The majority of objectives have been met or exceeded. Positive benchmark comparisons with other enterprises in several areas. Most results can be attributed to the implementation of sound procedures.	75%	Objectives and criteria met in most key areas and activities
All areas of activity show a clear and positive trend over at least 3 years. Excellent comparisons with objectives and other enterprises in most areas. "Best of Class" in several areas and activities. Results can be clearly attributed to the implementation of sound procedures. Positive indications that leadership position will be maintained.	100%	Objectives and criteria met in all key areas and activities of the enterprise.

4. EFQM Quality Evaluation

4.1 EFQM Quality evaluation matrix

Section	EFQM Criteria	Evaluation %	Weighting	Total Points
4.1	Leadership	Max. 100	1.0	Max 100
4.2	Personnel Involvement	Max. 100	0.9	Max. 90
4.3	Information Technology Strategy	Max. 100	0.8	Max.80
4.4	Partnerships & Resources	Max. 100	0.9	Max. 90
4.5	Operations / Services	Max. 100	1.4	Max 140
4.6	Healthcare Professional satisfaction	Max. 100	0.9	Max 90
4.7	Patient Satisfaction	Max. 100	2.0	Max. 200
4.8	Public Image	Max. 100	0.6	Max 60
4.9	Effect on Healthcare	Max. 100	1.5	Max 150
	TOTAL			**Max 1000**

4.2 EFQM Quality Evaluation Result Interpretation

Points Obtained	Interpretation
0 – 200	There are a large number of conditions missing to make an impact in relation to the competition.
201 – 300	The organization has recognized fundamental factors and has established corresponding strategies and procedures. However, the positioning in relation to competition is below average.
301 – 400	The organization has good systematic procedures as found in enterprises with quality certification.
401 – 500	The organization understands the business. It has taken several steps to become competitive or has created the infrastructure necessary to become competitive.
501 – 600	The organization is well underway to obtain "Business Excellence"
600 – 1000	The organization has an excellent European market leadership position.

5. *med**X**change* Implementation

5.1 Leadership

Section	Criteria	*med**X**change* Implementation
2.1	**Leadership**	
a)	Enterprise Commitment	The *med**X**change* vision is to provide electronic health and medical management services for every European.
b)	Management Commitment	Key management of *med**X**change* has over 30 years experience in the healthcare Industry and electronic medical record solutions.
c)	Knowledge of customer requirements	*med**X**change* works with hospitals and clinics, medical institutions and groups, healthcare organizations, health insurers, corporate health programs and clinical research organization throughout Europe.

5.2 Healthcare Professional Involvement

Section	Criteria	*med**X**change* Implementation
2.2	**Healthcare Professional Involvement**	*med**X**change* works closely with local partner to involve all parties in the project.
a)	Project Planning	*med**X**change* provides the customer with full participation in planning the implementation and customization of the Electronic Health and Medical Management databases and applications.
b)	Project Implementation	*med**X**change* proposes a phased implementation with adequate training and evaluation. Extensive Help facilities are provided as well as an electronic help desk.
c)	System Evaluation	*med**X**change* will work with customer to constantly evaluate the effectiveness of the system and will quote for any specific changes.

5.3 Information Technology Strategy

Section	Criteria	*med**X**change* Implementation
2.3	**Information Technology Strategy**	*med**X**change* is an Application Service Provider ASP providing meta data base and information management solutions for electronic health and medical management.
a)	Information Management	*med**X**change* uses web based proprietary data base and knowledge-based application technologies.
b)	IT Structure	.
c)	IT Architecture	*med**X**change* uses the latest Internet server and object oriented data base technologies to provide health and medical management solutions.

5.4 Partnerships & Resources

Section	Criteria	*medXchange* Implementation
2.4	**Partnerships & resources**	A wide range of healthcare industry, medical and technology partnerships have been created to provide a broad range of medical solutions and services. *medXchange* plans substantial investments in order to build the structure and resources to maintain high quality and standards of service to its customers.
a)	Financing and investment Technology management	*medXchange* has invested over €4 million in developing the electronic health and medical management solutions and services. A further €10 million is expected to be invested in European marketing and sales.
b)	Evaluation and management of information technology	*MedXchange* has ongoing technology assessment programs in place as applied to medical information and application management to ensure the highest quality of service.

5.5 Operational Processes

Section	Criteria	*medXchange* Implementation
2.5	**Operational Processes**	
a)	Operations model	The *medXchange* operation is totally centered around medical information management and its security and quality.
b)	Technology utilization	Latest technologies are constantly integrated to provide health and medical management services to physicians and healthcare professionals that are easy and effective to use in their daily work and that allows them to achieve healthcare rationalization objectives.
c)	Information systems implementation environment	The *medXchange* health and medical management services have a wide range of applications for general practitioners, consulting physicians, ophthalmologists, dentists and other healthcare professionals that assists them in the delivery of healthcare to their patients. Through web enabled information services coupled with secure technology, the *medXchange* services are available world-wide at any location with Internet access and the appropriate security procedures.

5.6 Effect on Healthcare Professionals

Section	Criteria	*medXchange* Implementation
2.6	**Effect on healthcare professionals**	Healthcare professionals use the *medXchange* electronic health and medical management services in their daily work for the majority of patients consulted.
a)	Feedback from healthcare professionals	There is regular feedback from all healthcare professionals using the *medXchange* services. Any negative feedback is promptly dealt with to ensure the highest quality services are provided.
b)	Confidence in security and confidentiality	The core of the *medXchange* services is medical information security and confidentiality. Steps are continually taken to create the utmost confidence with healthcare professionals.

5.7 Effect on patients

Section	Criteria	*medXchange* Implementation
2.7	**Effect on patients**	The patient controls the access to his electronic medical record and can selectively make it available to healthcare professionals. The patient has secure access to his own health and medical documentation. However, the healthcare professional can control access to detailed medical information that is sensitive and subject to wrong interpretation.
a)	Contribution to the quality of healthcare services	Patients recognize that the availability of complete and detailed health and medical information to the healthcare professional assists him in making more timely and higher quality decisions with as consequence a higher quality of healthcare at lower costs.
b)	Patient access to their electronic health record	Patients have secure access to their electronic health record through web enabled services. Their general health and medical information is instantly available in easy to use and clear formats. Specialized medical information such as scans and examination and lab test results is presented in formats designed for the physician and the healthcare professional.
c)	"Help" and tele-medical services.	Through secure communication links, the patient can communicate and make available his medical documentation to healthcare professionals through the Internet. This includes secure communication with Web based medical help desks and advisory services.
d)	Patient and consumer organization participation	*medXchange* plans to work closely with consumer and patient organizations on the overall health and medical management strategy as well as specific projects.

5.8 Public Image

Section	Criteria	*medXchange* Implementation
2.8	**Public image**	
a)	Dialogue with public	
b)	Participation of patient and consumer groups in major projects	

5.9 Effect on Healthcare

Section	Criteria	*medXchange* Implementation
2.9	**Effect on healthcare**	
a)	Measurable improvement of quality of healthcare	*medXchange* has developed a number of healthcare rationalization models for general healthcare, physicians, hospitals and clinics, health insurers, corporate health and clinical studies. In each area, measurable healthcare rationalization and quality improvement objectives are set.
b)	Development of new and innovative healthcare services	*medXchange* actively assists partners to develop new and innovative healthcare services through the integration of electronic health and medical management.

Examples are the "Heart Handy" which provides direct online connection of pacemakers to online information systems through a mobile telephone allowing online monitoring of cardiac patients anywhere in the world. |
| c) | Healthcare efficiency and qualitative improvement objectives realized | The healthcare efficiency and qualitative improvements are defined and agreed on for each project and monitored on a constant basis through online electronic medical records and databases. |
| d) | Positive internal and external image of information management | |