Introduction

The American Medical Informatics Association Task Force on Usability has laid out 14 usability principles for the design of electronic medical records as part of its report on enhancing patient safety by improving usability of EHR systems in the Journal of the American Medical Informatics Association.

Credit: http://www.beckershospitalreview.com/healthcare-information-technology/amias-14-usability-principles-for-emr-design.html

The Principles, according to the AMIA

1. **Consistency:** Design consistency & standards utilization
2. **Visibility:** System state visibility
3. **Match:** System & world match
4. **Minimalism;** Minimalist design
5. **Memory:** Memory load minimization
6. **Feedback:** Informative feedback
7. **Flexibility:** Flexible & customizable
8. **Message:** Useful error messages
9. **Error :** Use error prevention
10. **Closure:** Clear closure
11. **Reversibility:** Reversible actions
12. **Language:** User language utilization
13. **Control:** User control
14. **Documentation:** Help & documentation

EMR Usability Principles

The following principles of software usability can be applied directly to the development and evaluation of EHR/EMR systems:
1. **Simplicity**
2. **Naturalness**
3. **Consistency**
4. **Forgiveness & Feedback**
5. **Effective Use of Language**
6. **Efficient Interactions**
7. **Effective Information Presentation**
8. **Preservation of Context**
9. **Minimize Cognitive Load**

Credit: http://www.himss.org/himss-emr-usability-evaluation-guide-clinicians-practices-9-essential-principles-emr-usability

EHR/EMR Usability Attributes

Ways to Improve Usability

An American Medical Informatics Association Task Force on Usability recommended 10 ways to improve the usability of electronic health record systems in the Journal of the American Medical Informatics Association.

The task force, which included representatives from academia, clinical settings and industry, aimed to increase safety and quality through improved usability of EHR systems. They examined the literature, vendor experiences with EHR design, implementations and made 10 recommendations across four areas: **human factors health information technology research, health IT policy, industry and the clinician end-user of EHR software.**

Usability Recommendations

■Human factors health IT research

1. Prioritize standardized use cases.

2. Develop a core set of measures for adverse events related to health IT use.

3. Research and promote best practices for safe implementation of EHR.

■Health IT policy

4. Standardization and interoperability across EHR systems should take account of usability concerns.

5. Establish an adverse event reporting system for health IT and voluntary health IT event reporting.

6. Develop and disseminate an educational campaign on the safe and effective use of EHR.

■Industry

7. Develop a common user interface style guide for select EHR functionalities.

8. Perform formal usability assessments on patient-safety sensitive EHR functionalities.

■Clinical end-user

9. Adopt best practices for EHR system implementation and ongoing management.

10. Monitor how IT systems are used and report IT-related adverse events.