The GuideView System for Interactive, Structured, Multi-modal Delivery of Clinical Guidelines

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**Main Features of GuideView**

- **Complex features are broken down into simple steps in a process flow**
- **Instructions for each step are presented in multi-modal modes**
- **Text**
- **Voice and sound**
- **Images**
- **Full-motion video**
- **Live action (with annotations)**
- **Animation**
- **GuideView interacts with the user in two modes**
- **Mouse clicks**
- **Video Navigation**: both hands can be free to assist the patient
- **GuideView interacts with medical sensors using Bluetooth (wireless) or wired connections**
- **Automatically translates guideline pathways depending on data values received**
- **Saves time and improves accuracy**
- **GuideView is a rich platform with consistent look and feel**
- **Over the web on Windows and Macintosh clients running Internet Explorer**
- **Stand-alone on Windows computers**
- **On Windows Mobile PDAs (Pocket PCs)**

**GuideView User Interface**

- **User interface identical to the desktop version**
- **New assistance for the user**
- **Dx and Ty of red eye problems**
- **Procedure steps**
- **History with active links**
- **Navigation tools**
- **Voice**

**GuideView Design Goals**

- **Reduce Complexity**
- **Each process step is a simple task that can be completed even by those with minimal medical training**
- **Decrease Cognitive Load**
- **At each step only a small (5 max) choices to select next step**
- **Support backtracking**
- **No choice is final. Can always return easily to a previous step and follow different path**
- **Enable repetition**
- **Provides instructions for any step as often as desired**
- **Support modularity and re-usability of guidelines**
- **Guidelines can be developed in small modules**
- **Modules can be chained and nested as needed to create complex protocols**
- **Enhance learning by providing multiple instructional modes**
- **Each step is presented using multiple media, text, voice and visual aids**
- **Look and feel as similar as possible over multiple platforms**
- **Achieves the Flash technology from Macromedia**
- **GuideView may need to be used by mobile professionals, either within a space habitat or terrestrially**
- **Separation of content and presentation**
- **Content saved as XML**

**GuideView supports mobility**

- **User interface identical to the desktop version**
- **Full-motion video and voice output available**
- **Wizard-like and form-factor very desirable for mobile professionals and astronauts**
- **Voice navigation is being developed**

**GuideView Author**

- **Used to develop clinical guidelines and save them in a form capable of being played back using GuideView**
- **Up to 5 branch points at each node**
- **Path and zoom functions for navigating across complex, lengthy protocols**
- **Supports insertion of text, voice, pictures and video**
- **Content saved as XML**
- **Cross-platform capability**
- **Can create GuideView-compatible protocols over the web**
- **A graphical editor for creating, editing, and updating GuideView process flows**

**Usability Study**

- **A usability study was performed at the Human Patient Simulation Laboratory, WYLE Life Sciences, Houston, TX**
- **Ten subjects used GuideView on a laptop to perform two procedures: Heimlich maneuver and insertion of ILMN**
- **A usability questionnaire and the NASA Task Load Index** were administered immediately after completion

**Future Work**

- **Interface GuideView with electronic health record systems**
- **Improve voice navigation**
- **Add an expert mode for use by physicians**
- **Develop extended module library with management and search features**
- **Enable connectivity with medical devices and sensors**
- **Explore engineering applications for GuideView technology**

**References**

3. Contact

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