RERC on Communication Enhancement

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Prototype Design Features

* using Delphi Prioritization Procedures

- Access with minimal head, hand, or foot movement
- Support low-tech communication boards without speech output
- Support communication boards with digitized speech output
- Support letter-by-letter text generation on a conventional laptop or desktop computer
- Support environmental control with X10

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- Support "environmental pointing"
- Lightweight (less than 5 lbs)
- Approximately 12"x12" front profile
- Stand upright on flat surface with or without additional mounting support
- Mountable to wheelchair, bed, or chair
- Moveable with one hand by staff and/or communication partners

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Data Collection ■ Following introduction of the Safe-Laser Keyboard, data were collected on the following: Amount of physical ability required to use device Communication functions served by device Rate and accuracy Ease of use, fatigue, and ease of set-up ■ Impact of environmental lighting and positioning on use Use of laser pointer to facility communication regarding environmental information

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Communication Functions

- 1 Spell messages related to care, detailed needs, and social communication with family.
- 2. Communicate basic and detailed needs and ask questions regarding medical condition to staff (nursing and respiratory).
- 3. The participant, family, and staff indicated that the effectiveness of communicative interactions was greater using the Safe Laser Keyboard compared to low-tech AAC strategies (e.g., less frustrations, less misinterpreted messages, less repetitions required).
- 4. Used the prototype to point to objects in environment on several occasions during trial (e.g., pointing to a picture on the wall to clarify topic of conversation, pointing to calendar on wall to clarify appointment).

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Ease of Use, Fatigue, and Ease of Set up

- Ease of use (1= very easy, 5= very hard)
 Safe Laser Keyboard prototype= 1
 - Vmax/HeadMouse= 4
- Fatigue (1= no fatigue, 5= very fatiguing)
- Safe Laser Keyboard prototype= 2
- Vmax/HeadMouse= 4
- Ease of Set-up (1= very easy to set up, 5 = very difficult to set up)
 - Safe Laser Keyboard prototype= 1
 - Vmax/HeadMouse= 3

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