Assistive Application for Patient to Healthcare Profession Interpretation

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The Problem
Miscommunications in healthcare due to language barriers can lead to negative outcomes and missed diagnoses.

Current Solutions

<table>
<thead>
<tr>
<th>Method</th>
<th>Shortcoming</th>
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</thead>
<tbody>
<tr>
<td>In-person Interpreters</td>
<td>High cost, limited capacity, increased time</td>
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<tr>
<td>Current family members</td>
<td>Not certified, not always available</td>
</tr>
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<td>Other translation services/apps (i.e. Stratus)</td>
<td>Difficult to scale, technical issues, not always available, high cost for technology</td>
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Needs Statement
Patients and healthcare providers who speak different languages need to exchange information in brief healthcare interactions to reduce medical miscommunications and negative health outcomes.

Our Solution
An easy-to-use Android application that can be used by patients and healthcare professionals to translate key phrases for optimal patient care.

The Inspiration
Modeled after adaptive communication devices given to children with speech or language delays.

Background

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Requirement</th>
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<tr>
<td>Translation</td>
<td>50+ phrases, 3+ other languages</td>
</tr>
<tr>
<td>Simplicity</td>
<td>New clinician: Learn in &lt;5 min. New patient: Learn in &lt;10 min. Trained user: Ready for use in &lt;1 min.</td>
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<td>Usability</td>
<td>Not dependent on Wi-fi</td>
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<tr>
<td>Customizability *</td>
<td>Language packs, Phrases based on healthcare setting and location</td>
</tr>
<tr>
<td>Cost</td>
<td>&lt;$100 per unit</td>
</tr>
<tr>
<td>Organization *</td>
<td>Phrase categorization, Easily searchable phrases</td>
</tr>
</tbody>
</table>

* Out of scope for this semester

Method
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Current Solutions

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Future Directions

- Application: Medical Design
- Software Architecture: IEEE: Graphic User Interface: Needed Design Characteristics for Successful Physician Use
- Future Directions: Short-Term Goals
- Future Directions: Long-Term Goals

Acknowledgements
We would like to thank Kitan Akinosho and Elizabeth Woodburn from the Carle Illinois College of Medicine, Dr. Holly Golecki and Hannah Harris. We would also like to thank the University of Illinois Department of Bioengineering and the Carle Institute for funding.

References