Georgia Tech "Jack" Team Solution - Clear

Image: Illustration of a touchscreen smartphone with rubberized housing and large red and green buttons.

Clear is a rugged smartphone with large, easy-to-see buttons, and an added antenna for reliable use in remote areas. An emergency call button is located on the back of the phone and is concaved inwards, so that it will be difficult for users to accidentally press the button.

An alarm interface assists users with complicated medication schedules by alerting them at specific times to take the required medication. The alarm also notifies the user of any warning associated with medication consumption and keeps and inventory of pills in its memory. This inventory is used to remind the user when he/she is running low on a specific medication. The interface is picture-based to make it easy to use for limited English literacy. A blinking red LED feature is a visual cue for the user when the alarm for the medication goes off. The light blinks red until the user has confirmed that he/she has taken the pills.

The Clear phone's home screen has only six icons in order to keep the device's ease of use simple. The four icons on the first screen are the most vital to the user- diet (for daily food entry,) alarms (for medication and activity schedule,) contacts (to access four primary contacts: doctor, pharmacy, next of kin, and 911/hospital.) Two icons are provided for editing personal information editing and for viewing medication records and diet consumption.

A final icon provides access to a "digitalnurse" application, which enables the phone to be used as a limited diagnostic device. DIgitalnurse offers suggestions to the user based on their reports of their current conditions. It serves as a way to determine the level of emergency of a user's symptoms, suggesting either rest, a call to the primary doctor, or immediate 911 action.

Persona: Jack

Jack is a 68-year old native of rural West Virginia. Jack left school in the 5th grade to work on his family's farm when his father became ill. He eventually took over the farm from his parents. Jack later developed hypertension and chronic obstructive pulmonary disease (COPD). He decided to sell the farm, keeping only a small piece of the property and the family home. Jack receives monthly Social Security checks totaling about $1100.

Wireless service is unreliable where Jack lives, and he is unable to afford monthly wireless service. So he bought a refurbished cell phone, paying only for the airtime minutes he needs for emergencies. He finds himself much more comfortable living alone, and especially driving in bad weather. He spends about $8 a month on pre-paid minutes.

Jack has survived his share of medical crises as his conditions worsen. Understanding little about his conditions, Jack is inconsistent with his diet and complicated medication schedule. Sudden weight gains and breathing problems send him rushing 15 miles to his doctor. These symptoms usually only require an adjustment in his medications. Jack is resisting his doctor's suggestion that he move closer to a city where medical services for his conditions are more accessible.

Throughout the world, as in many rural areas of the US, access to wireless technologies holds the potential for ready access to medical help for people with serious medical conditions. Though the technology is improving, low income and limited literacy and language skills remain common barriers.

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