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Nurse call system Ul requirements

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Dear Rose and the Research and Development Engineering team,

We want to express our gratitude for selecting us to provide a user requirements list for The Cicero Project. This report focuses on the interaction of The Cicero Project with patients in a non-clinical setting.

Our research involved a comprehensive investigation into nurse calling systems, their potential users, analysis of adverse event reports, adherence to recommended regulatory standards, and a thorough examination of product reviews. The outcome of this research is a user interface requirements list that we believe will greatly assist your team in the research and development of The Cicero Project.

We have also included a concise description of a nurse call system and emphasized its significance in ensuring user safety and satisfaction. This description will contribute to a better understanding of the report's content.

If you require any further assistance with your current or future requirements, please do not hesitate to contact us at your convenience.

Best regards,

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Nurse call systems

Nurse call systems play a crucial role in patient treatment and care by facilitating communication not only between healthcare providers and patients but also among the healthcare staff themselves. Additionally, they provide valuable information such as patient vital signs, location data, alerts for critical situations, as well as comprehensive reports and analytics. These systems typically consist of four primary components: the central station, patient communication devices, indicator lights, and hardware.

The central station serves as the core unit of nurse call systems, typically operated by healthcare professionals, allowing them to monitor and attend to patients effectively. Patients also have access to communication devices, which they can use in emergencies or whenever they require assistance. Furthermore, indicator lights positioned at the top of patient rooms convey crucial information to healthcare providers from outside using different colors like green, yellow, and red to signify varying states or needs.

Finally, the hardware component facilitates the integration of power supply, telecommunications, and networking equipment, ensuring the seamless operation of the entire system. The effectiveness of these systems significantly impacts the patient's overall experience and safety, as an efficient nurse call system can prevent numerous adverse events.

User Interface Requirement list

The following table provides an organized by topic overview of user needs and their corresponding user interface requirements, as well as their source. This table will facilitate the development and implementation of user-centered features that are not only safe but also pleasant.

No.	Торіс	User need	UI requirement	Reference
1	Suicidal threats	Remote should be wireless	Patient's remote should be wireless to avoid any suicidal attempts.	Input from interview of healthcare professional
2	Accessibility	Placement of the remote should be next to lap	Remote should be at arm reach.	Input from interview of healthcare professional

3	Reminders	Add reminder button	Distinct reminder button to notify the nurse again.	Input from interview of healthcare professional
4	Volume	Speaker volume control	Speaker volume control on both ends of the system.	Input from interview of healthcare professional
5	Emergency	Emergency button should be added	A distinct emergency button for notifying without talking in case of life threatening emergency.	Input from interview of healthcare professional
6	Elimination	Eliminate TV remote	Minimizing the features on remote can make it more user friendly and less complex.	Input from interview of healthcare professional
7	Accessibility	Braile for visually impaired patients	Would be easier of visually impaired patients to use the remote seamlessly.	Input from interview of healthcare professional; Also, <u>link</u>
8	Accessibility	Colors and contrast of the screen interface (color blindness)	Color palette and contrast should be curated mindfully so the color blind nurses can make right decisions with lesser errors or close calls.	Input from interview of healthcare professional
9	Adding features	Adding multiple press feature to the remote	Pressing a button multiple times should perform an alternate function. For example, pressing the call button twice can indicate extreme emergency.	Input from interview of healthcare professional
10	Connectivity	Emergency notification alert to the respective doctor of the patient	In case the nurse/ patient calls for an emergency, their respective doctor must receive a notification, so they can be prepared for the urgent calls per se	Input from interview of healthcare professional

11	Accessibility	Device attachment for	There should be a	link
		paralyzed patients	device designed for patients who are paralyzed or or may potentially fall in paralysis so they may use the interface	
			seamlessly.	
12	Accessibility	Visual or auditory feedback from the remote.	Remote should make a sound providing the feedback to the patient.	link
13	Compatability	Compatible with current system, seamless training	The system should no require any special accommodations or maintenance for it to be replaced by the old system.	Input from interview of healthcare professional
14	Information	Customizable alerts and notifications for different patient needs	Nurse should be able to customize the alerts, notification sounds, screen contrast, brightness and font sizes of the screen.	Observation
15	Connectivity	Support for 2-way video communication for telehealth consultations.	There should be a camera attached to the system so the doctors/healthcare providers can guide the patients in their absence or shall the patient acts difficult and wants to see a doctor.	Input from interview of healthcare professional
16	Records	Quick access to medical history, integrated with current app used for storing the patient information.	Nurse should be able to pull out the medical history in case they want to study the previous conditions and medications followed.	Observation
17	Records	Nurse station should have default and customizable tabs to keep record of the patient requirements.	Nurse should be able to create a database of the requirements of the patients which may help iterating the system to make it better.	Observation

18	Information	Setting a reminder	Nurse should be able to set a reminder for themselves to remind for a patient specific tasks.	Observation
19	Automation	Screen must sort the calls based on the urgency automatically.; Manual sorting.	In case the patient presses the call button multiple times that very call should pop up as a priority call on screen	Observation
20	Connectivity	Ability to communicate with colleagues through the System.	Nurse should be able to contact the doctors, pharmacists, other healthcare profeesionals through the central station.	Observation
21	Accessibility	Requests made by voice commands	The central station must have an option to call the patients using voice commands for nurse/receptionist with disabilities.	Observation
22	Central station screen	Alarms should be easily identifiable	Alarms' text shall use red for text rather than black	AAMI HE75:2009 Section 15.4.7 Information-providing visual- alarm signals.
23	Indicator lights on patient room	Users should know the status of a room depending on the color	Indicator light colors shall follow the color codes to show the status of the patient room	AAMI HE75:2009 Section 21.4.9.3 Table 21.7 Color codes for medical applications in the United States
24	Patient communications	Users might have to use the device while showering or being wet	Input device located in the bathroom shall be waterproof	Observation
25	Controls	All buttons travel distances should provide adequate tactile feedback	Buttons' travel distance shall be 3 millimeters or more	AAMI HE75:2009 Section 18.3.1.2.2.d Geometry and layout, travel distance
26	Central station screen	Users should be able to properly read the information displayed on the screen	Central station screen characters shall be between 20 to 22 minutes of visual angle	AAMI HE75:2009 Section 19.4.1.2 Optimal character height

27	Central station screen	Users should be able to properly read the information displayed on the screen	Minimum space between lines shall be at least one pixel and should be greater that 15% of the character height	AAMI HE75:2009 Section 19.4.3 Character, line, and word spacing
28	Controls	Users want to press the buttons with little effort	Button resistance shall be kept below 3.1 Newtons	AAMI HE75:2009 Section 18.3.1.2.3 Force and feedback
29	Controls	All buttons travel distances should provide adequate tactile feedback	Buttons' travel distance shall be 3 millimeters or more	AAMI HE75:2009 Section 18.3.1.2.2.d Geometry and layout, travel distance
30	Central station touchscreen	Users want to avoid pressing the wrong target	Touch targets shall be spaced 2.0 centimeters apart from each other	AAMI HE75:2009 Section 21.4.11.3.c Touchscreen user interfaces, target spacing