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I will gather requirements using a Goal-Based approach and the Use Case method.

**Goal-Based Approach**

I chose this method because patient monitoring systems are used for a specific reason. If you flood the system with too many features, it will become impractical to use and can negatively impact patient care.

Mission Statement: The patient monitoring system will safely, securely, and effectively provide various visual and audio data to the patient’s support staff with minimal functionality interruptions

Goal 1: Device data is safe and secure

1. The base shall adhere to all applicable policies for each type of data displayed

* Secure data is necessary for any medical device. The data feeds viewed by the user need to follow the appropriate policies set forth by the hospital, any governing body, or standards.

1. The base unit shall securely store patient data

* Patient identification data will need to be stored in the device so that the central station knows which data belongs to whom. This data must be stored securely

1. The base unit shall transmit data securely over the network while it is not connected to the docking station

* Data must be protected while being transmitted over the network. Unsecured data can be intercepted during this point.

Goal 2: The device has the appropriate technical specifications to display data and maintain high availability

1. The base unit shall have one signal processor
2. The base unit shall have one graphics processor
3. The base unit shall have one to three standard processors
4. The base unit shall be diskless
5. The base unit shall have fixed amount of memory for code and data
6. The base unit shall fall back to battery power if connected to the docking station and the power goes out

* The specs are defined in the system background. Assuming this information is correct, meet these specs will allow the system to function as expected

Goal 3: The system can be used safely in a medical environment

1. The base unit shall be made out of materials that comply with biocompatibility standards set forth by the FDA

* We can be sure the device can be used safely in a medical environment by complying with the appropriate manufacturing standards

1. The battery in the base unit shall comply with either IEC 60086-4 or IEC 62133

* Complying with these standards will reduce possible hazards, such as fires, caused by the battery component.

1. The LCD screen shall meet all federal regulations

* Meeting the safety and manufacturing regulations will make sure the device is safe to use (and not just in a medical environment).

**Use Case**

I chose Use Case as an elicitation method because the functionality of the device is key to patient safety. Explicitly stating how the device will be used will make sure that the requirements accurately reflect the intended functionality of the device.

Use Case 1: Hospital staff will be able to see/hear various data feeds accurately on the device

1. The base unit will have an LCD screen

* This is defined in the system background

1. The base unit shall be compatible with a wide range of pods or sensors that are attached to the patient

* The system can only output data that is receives, so it must be compatible with as many measuring devices as possible

1. The base unit shall be able to at least display the following data/graphs at the same time:
   1. EKG
   2. Pulse Oximetry
   3. Respiration
   4. Temperature
   5. Cardiac Out

* This is defined in the system background

1. The base unit shall allow staff to customize which data and how the data is displayed

* Since there are any number of attachments, the users will need to be able to change the data that is displayed

1. The base unit shall store data for at least 24 hours

* As specified in the system background, the system must be capable of displaying data trends over the past 24 hours

1. The base unit shall have speakers to play alarms

* Defined in the system background
  1. The alarm settings shall have the following customizable options
     1. Audio level
     2. Sound of alarms
     3. When alarm goes off
     4. enable/disable of alarms
* The alarm settings should be able to be changed per data feed as well as with each patient to ensure the user is getting accurate and meaningful information

Use Case 2: The patient monitoring system shall be easily portable

1. The base unit shall be removable from the docking station

* In order for it to be considered portable, it must be able to be detached from the docking station

1. The base unit shall have battery with charge for at least 2 hours

* The device will need a power source while it away from the docking station

1. The base unit shall be made of lightweight, yet durable material

* If the unit it too heavy or awkward, it will become cumbersome to move around and not be very portable

1. The base unit shall be able to transmit data over a wireless signal

* The device must be able to function while disconnected from the docking station, so it will still need to connect to the central state

1. The sound system for alarms shall be built into the base unit

* The alarms or other audio cues must be heard while the device is not connected to the docking station in order to maintain functionality.