Top Ten Things To Know
Hospital Telemetry Systems

1. Significant improvements have been made in the design and functionality of telemetry systems from their initial introduction in the 1980s.

2. Despite improvements over the years, significant delays exist between the actual real time status of the patient and what is displayed on the monitor.

3. This report advises healthcare providers in a number of ways:
   - Identifies the potential delays that exist with telemetry systems used to monitor heart rhythm and the real-time status of the patient and the electrocardiogram information displayed on the patient monitor,
   - clarifies the intended use of the systems,
   - outlines ways to reduce risk, and
   - recommends how manufacturers and stakeholders can minimize the risk associated with current and future telemetry systems.

4. Advances in wireless communication in recent years have led to the development of wireless telemetry systems, which were designed to reduce the electromagnetic interference from other in-band-radio-frequency sources.

5. Recent observations by healthcare providers have suggested that some hospital wireless telemetry systems used for monitoring of patients’ heart rhythm, hemodynamic parameters, and oxygen saturation may create a significant delay between the real-time status of the patient and the information displayed on the patient’s monitor.

6. Although as much as a 5-second delay has been observed, the amount of delay observed in a patient or across the system varies, depending on wireless interference, network load, and server processing time, or an interaction of these factors.

7. Wireless telemetry systems are designed to only monitor physiological parameters such as the assessment of rhythm disturbances in “near-time,” not “real-time.”

8. To avoid delays, it is recommended that patients be “hard-wired” to a bedside monitor in plain view of care providers. For cardioversion or defibrillation, patients should be connected separately to monitoring leads directly to the monitor of the external defibrillator to ensure instantaneous assessment.

9. Medical facilities with wireless telemetry systems should contact the manufacturer to find out what the known delays are if any exist and educate clinical personnel with patient care responsibility about these delays.

10. Although many advances have been made to improve wireless communications utilized by telemetry systems, manufacturers need to recognize the problems of latency and data dropout and ensure that these issues are clearly understood by purchasers and healthcare providers.


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