



**Clock
Systems
Service**
Precision Timing Solutions

A White Paper by Clock Systems Service Ltd.

Why Hospitals Cannot Function Properly Without a Synchronised Clock System

In the ever-growing healthcare industry, “wasting time” is not a phrase heard often. In fact, medical facilities struggle to keep up with the day-to-day operations of patient care and hospital maintenance. Due to this lack of downtime, and the integral function of time in health services, hospitals find themselves entirely reliant on clocks dispersed throughout their facilities.

When doctors, nurses and other personnel perform medical practices, they are constantly recording time to provide rapid and punctual service.

The vital role of time, therefore, requires that health care providers effectively, efficiently, and precisely use time in every aspect of service. There are four major reasons medical practices should consider: technological issues, medication dispensation, surgery issues, and daily appointment scheduling.



The new Papworth Hospital at Cambridge

Technological Issues

Hospitals are facing constant challenges to meet the needs of patients. Outdated technologies within old clock systems are unsafe and unreliable for patient care. Lack of system effectiveness puts the hospital at risk in the event of time error while keeping accurate records not only enhances the care a patient receives, but also protects the hospital against any legal issues that may arise. Staff becomes liable for mistakes and hesitant to perform risky procedures while patients lose confidence in the care they are receiving. Failure to implement a trusted source of time may diminish work ethic and healthcare quality.

Medical Dispensation

When dispensing medication, time is of the utmost importance. Not only must staff determine what medications can be used with others and the proper dosage, they must also consider the intervals of medication dosages. To properly track the dispensing of medications to patients, doctors and nurses alike must accurately record the time of each dosage when administered. Mistakes are easily made when employees dispensing medications are forced to rely on their personal watch or mobile phone because there is no uniform time displayed on the clocks throughout the hospital. Considering the frequency at which patients' rooms are switched (for space or additional care), synchronised clock systems are the only way to guarantee the reliability of patient records. This eliminates timing errors and health hazards that could otherwise occur from administering medication in one room and then administering the next dose in another.

Fact: *Approximately one in five medication doses hospitals administer are done so in error. The most common error is dispensing medicine at the wrong time.*¹

Medical Dispensation

Time is extremely significant for operating rooms. Surgeons and anaesthesiologists must spend hours upon hours performing a large variation of surgeries on multiple patients every day of the week. One major concern for anaesthesiologists is administering the proper amount of anaesthesia at the correct time intervals. Benefits of using a synchronised clock system include the ability to have digit digital clocks for precise time records, a countdown display on digital clocks to ensure proper administration of anaesthesia, and an elapsed timer feature in the event of a Code Blue event. Surgical staff will find the use of digital clocks and timers most beneficial in this field, making the system essential to the time-sensitive aspects of surgeries.

Fact: *In 2000-2002 alone, approx. 24% of at-risk patients developed complications due to anaesthesia in America.*²



Daily Appointment Scheduling

Being on time is everything in a medical facility. The scheduling of appointments and surgeries and staff shift changes happen constantly throughout the day. Failure to meet with patients, start a shift or begin surgeries on time have serious implications on hospital functionality. Due to the serious nature of many medical conditions that must be treated, neither the patients nor the staff can afford to waste valuable time. To ensure the continuous flow of various scheduled activities in a hospital, every room, hallway, wing, or building must have synchronised clocks based on an accurate time source. Since much of society now runs on the precise time received from technology such as mobile phones and computers, the same accuracy is expected within a professional health institution.

Fact: A survey published in 2007 found that longer waiting times are associated with lower patient satisfaction.³

The Clock Systems Service Ltd Answer

To solve time issues in hospitals such as those mentioned, the use of a synchronised clock system with master clock capabilities significantly eliminates the errors that are made in the rush of medical services. Such a clock system will ensure that every clock in a facility displays the same accurate time and can be controlled from one location. Clock Systems Service Ltd master clocks are capable of more advanced features, such as automatically updating for Daylight Saving Time, and are connected to highly accurate time, preventing any clocks from drifting from the correct time.

The implementation of Clock Systems Service Ltd wireless clocks, for example, is an easy and affordable solution to the time issues of a hospital. The Clock Systems Service Ltd wireless clock system uses a license-free, frequency technology to synchronise every clock within range and requires no wiring expenses. Just insert 4 AA batteries and hang them to the wall. Battery life is guaranteed at 5 years. When powered, each clock will receive a time signal, repeaters can advance the signal to ensure signal coverage throughout a facility. The Clock Systems Service Ltd wireless master clock retrieves its time from a GPS antenna to guarantee 100% accuracy.

The Clock Systems Service Ltd wireless system remains ideal for any occasion. In the event of a power outage, all wireless analogue clocks will continue to function on their battery power and automatically synchronise when power has been restored to the master clock.

What differentiates the Clock Systems Service Ltd wireless clock system from others in the industry? Aside from Clock Systems Service Ltd reputation for producing products of the finest quality and durability, there are significant technological differences in its products that set it apart from competitors. For instance, unlike an average clock system, Clock Systems Service Ltd repeaters can carry the signal further due to multiple use and not limited in the number that can be used.

Clock Systems Service Ltd offers both digital and analogue wireless clocks that can be used simultaneously. When looking for a traditional feel, analogue clocks, available in both round and square and different sizes, are ideal in-patient rooms, hallways, cafeterias and waiting areas. When brightly lit, easily read clocks are needed in places like surgical rooms, the Clock Systems Service Ltd digital clocks are the perfect choice. Digital clocks come in either four or six digit displays and are available in 2.5" (6.4cm) and 4" (10cm) high digits. Perhaps the best feature the digital clocks have to offer a hospital facility is their elapsed timer capabilities. With the installation of the Clock Systems Service Ltd elapsed timer, users can interface with the digital clock via remote control to start both countdowns and count up.

This is extremely useful and convenient in operating rooms for Code Blue situations. Because both analogue and digital clocks may be used on the same system, there is no limit to the combination of clocks desired.

Medical services provided by hospitals put a heavy burden on time. Assuring those hospitals are efficient and effective with their time management protects both patients and staff. Drawbacks of an ineffective time system in a hospital can include accidental overdose or lack of administering medications, failure to reach a patient in time or even unacceptable surgery durations and use of anaesthesia. Such occurrences may cause the medical facility to be liable and vulnerable to malpractice suits. Having synchronised clocks throughout a facility not only allows everything to run smoothly, but also minimizes mistakes and can potentially even help save lives.

¹. "Medication Errors Observed in 36 Healthcare Facilities," Archives of Internal Medicine, 2002;162:1897-1903, http://www.datarayusa.com/index.php?option=com_content&view=article&id=82&Itemid=106

². Patient Safety in American Hospitals, Health Grades 2004, http://www.wrongdiagnosis.com/s/surgical_errors_complications/stats.htm

³. "Willing to wait? The influence of patient wait time on satisfaction with primary care". BMC Health Serv Res. 2007; 7: 31, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1810532/>