WHY IS WIRELESS IMPORTANT?

Allan Wilson MD PhD

Wireless data transmission is the key to an efficient, flexible information system. It is prerequisite to the development of increasingly comprehensive information and home care systems.

Med-ic® and eCAP™ both support wireless data transmission and connectivity.

CertiScan® Reader and Software

Certiscan uses the world-wide standard 13.56 MHz band to download compliance and temperature data securely using RFID (Radio-frequency Identification) protocol. While CertiScan can be connected to a PC via a USB cable, the wireless, hand-held version offers significant advantages in the field.

NFC (Near Field Communication)

The data from Med-ic and eCAP can also be downloaded using any NFC-enabled smart phone. NFC also operates at 13.56 MHz and has a maximum range of 10cm.

Advantages:

1) many NFC readers are already deployed in the field as smart phones and tablets
2) smart phones are relatively inexpensive
3) NFC's limited range (<10cm) contributes to data security

Bluetooth® Data Transmission

Bluetooth replaces hard wiring as the standard for wireless interconnectivity of a wide variety of digital devices. It operates in the Wi-Fi 2.4 GHz band using frequency hopping to reduce interference between devices. Its range varies from 10m upward depending on power, and it is relatively power hungry.

Advantages

1) ubiquitous
2) provides flexibility through interconnectivity of devices
3) can support multiple devices simultaneously

Bluetooth LE (Bluetooth® Smart)

This lower power, shorter propagation version of Bluetooth is available in some smart phones.

Advantages:

1) has most of the advantages of Bluetooth
2) its lower power requirement facilitates applications running off small batteries
3) limited range contributes to data security

Wi-Fi™

Wi-Fi is a standard that allows electronic devices to connect to the internet wirelessly. To do this there must be a wireless local area network (WLAN) connected to the internet within the range of the device. This makes Wi-Fi coverage inconsistent as WLANs are irregularly deployed and of limited range (<50m indoors and <100m outdoors).

Advantages:

1) deployed worldwide
2) free

Disadvantages:

1) low security due to easy access
2) requires internet connection
3) generally requires encryption
4) variable availability

GSM™ (Global System for Mobile Communications)

GSM is the standard governing cellular phones and other smart devices such as tablets. It allows voice and data to transmitted over the ubiquitous cellular network, offering an alternative means of long-distance transmission where Wi-Fi and the Internet are not available.

Advantages:

1) deployed world-wide
2) widely-used smart phones and tablets act as sources

Disadvantages:

1) requires costly data plan
2) works only where there is cellular coverage