NEW GENERATION OF MOBILE HEALTHCARE SYSTEM

New Experience of Efficiency and Innovation

CHAINWAY®

I. PROFILE

The world is more connected. Smart sensors including barcode and RFID labels assigned to patients and medication give everything a digital voice. That digital voice captured by handheld barcode scanners and RFID readers can help improve patient care and operational efficiency, and reduce medical errors and costs. That's why barcode and RFID technologies are more and more valued in healthcare these days.
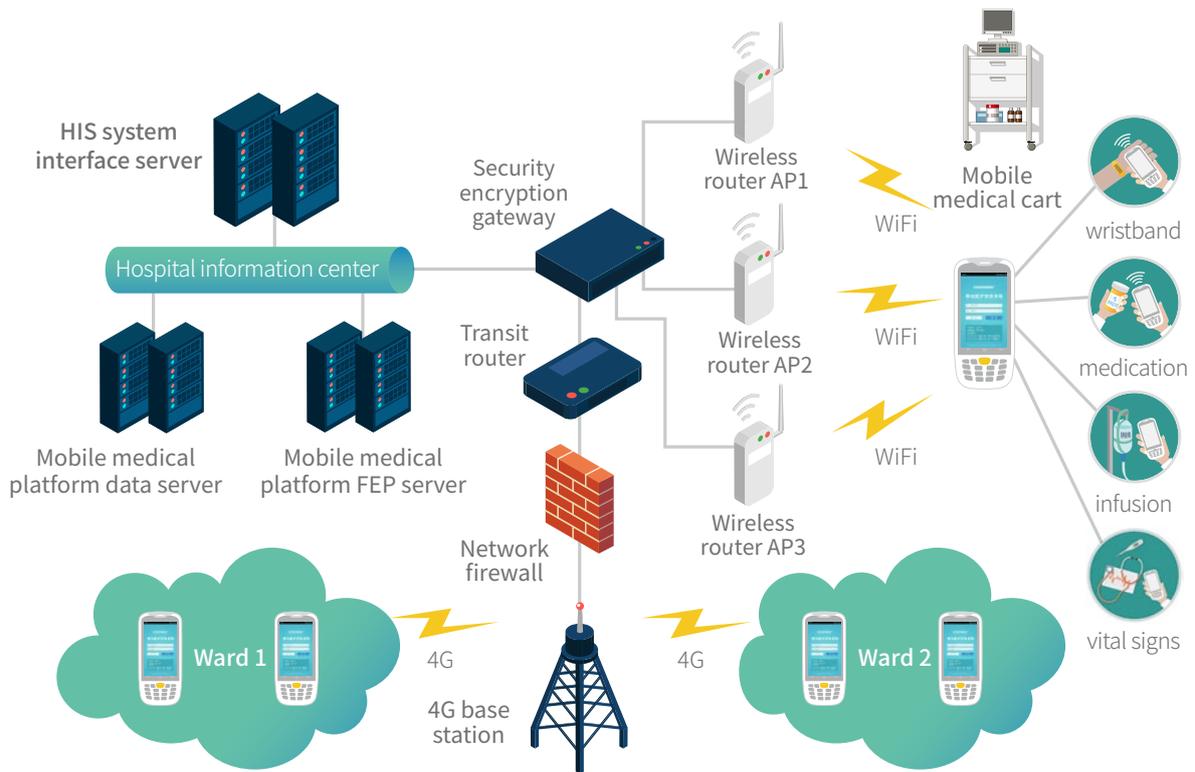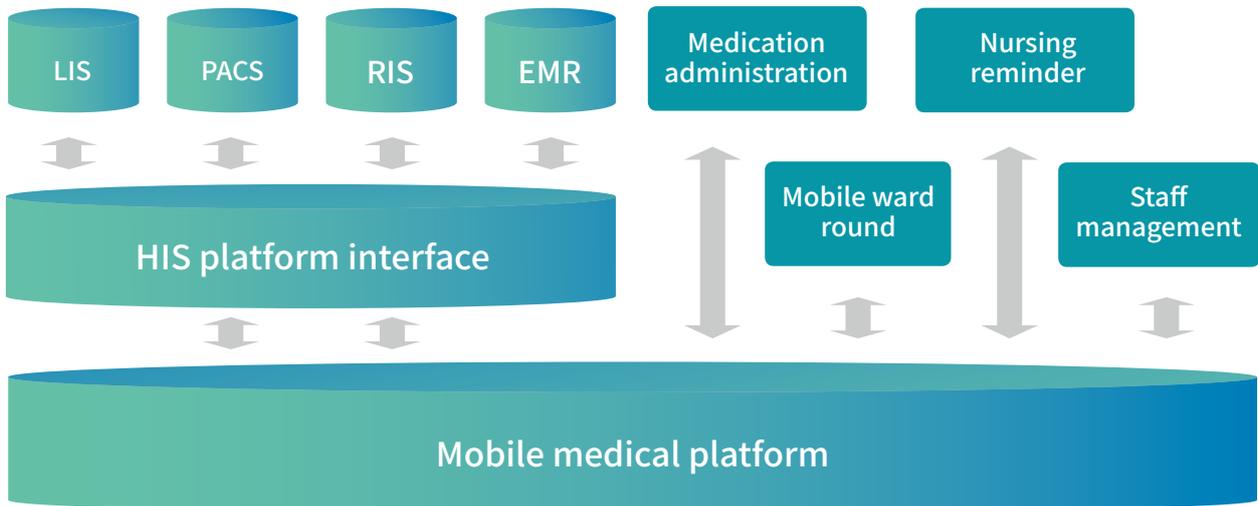
Chainway provides Mobile Nursing Solution based upon IoT and Cloud computing technologies, integrated handheld computer and compatible software, seamlessly connected to HIS, EMR systems through Wi-Fi or 4G networks.

By incorporating all these into the workflow of the nursing staff, our solution aims to bring an all-round improvement to the hospital's health care system.

II. CHEME

LIS | PACS | RIS | EMR | Medication administration | Nursing reminder

HIS platform interface

Mobile ward round | Staff management

Mobile medical platform

HIS system interface server

Security encryption gateway

Wireless router AP1

Mobile medical cart

WiFi

wristband

Hospital information center

Transit router

Wireless router AP2

WiFi

medication

Mobile medical platform data server

Mobile medical platform FEP server

Network firewall

Wireless router AP3

WiFi

infusion

Ward 1

4G

4G base station

4G

Ward 2

vital signs

III. MOBILE HEALTHCARE INFORMATION SYSTEM

Having all medication verified electronically before they are administered (i.e., confirming that the five rights of medication administration are met), medical errors can be significantly reduced. So, should concerns be raised to check and confirm medication, it will be easy to ensure the patient receives appropriate treatment.

The easy-to-use phone-sized handheld computer, enabling care givers to record and document patients' vital diagnoses at their bedside in real-time. The diagnoses, for example the body temperature, can be shown in an automate-generated run chart on the handheld device and background system, which is a direct way for doctors to see the patient condition.

The background system can be used not only to verify care prescribed for a patient, but also to document every significant step in the medication-use and care-giving processes. It ensures

compliance, traceability, efficiency, and patient's safety. Patients will leave the hospital with the feeling that they have been treated by caring, dedicated and professional team.

Standard patient data, including profile, medical history, insurance and payment information, as well as nurse data, including workload and shift, are updated to handheld devices and the background system for real-time check. Whether you are administrators or nursing staff, you can benefit from this solution when critical real-time data is available wherever they are needed.

Improve Accuracy and Efficiency of Medication Administration

To avoid the incidence of errors, health care providers need to make sure every time the right medication and treatment is given to the right patient, in the right dose, at the right time and through the right route of administration. However, since the medication and treatment administration is a complex multistep process that encompasses prescribing, transcribing, dispensing, administering and monitoring patient response, the error might happen at any step, and sometimes it is inevitable since all the processes are operated manually. In order to reduce errors during administration, many technological solutions have been developed, and among them, barcode and RFID technology have been proved as a promising approach for preventing medication errors. A study conducted in 2010 found that barcode usage prevented about 90000 serious medical errors each year and reduced mortality rate by 20%.

How does barcode / RFID technology improve the medication administration exactly?

Before starting the care, nurse can check all the pending orders on their handheld computers. (All the orders are accepted directly from the physician order entry system.) When a patient is due for a medication, the nurse opens the corresponding patient information page to check the details and requirements of that order. All the information, including the patient's name, bed number, medication name, strength and dosage, route and dose frequency, will be clearly displayed. Nurse can do the dispensing accordingly, with an improved efficiency, and a higher accuracy. At the bedside, scan the patient's wristband (Barcode or RFID) and scan the barcode label on every single medication dose or infusion bottle. If the dose being scanned corresponds to an approved medication order and patient is due for this dose, then the nurse can proceed to administer the medication or injection, otherwise the application will issue a warning and stop the process. This step can effectively prevent medication errors and ensure each medication and treatment are given to the exactly right patient.

During the administration, all the information, including the time and status of the implementation, the drugs have been taken, and who administered the medication will all be automatically documented, and transferred to the backstage system simultaneously, so nurse do not need to record those information each time manually. This brings more convenience, accountability and effectively avoid the possibility of human error during recording.

Enable Convenient and Real-time Collection of Patient Vital Signs

In the field of healthcare, keeping patient vital signs taken as efficient and well-managed as possible is of utmost importance. The traditional manual collection requires nurses to record the vital sign data on paper, move to the next room to complete the same process again and then transcribe all patient data to the computer, which not only subjects nurses to an inefficient process of duplicating documentation for each patient but also cannot realize real-time information collection healthcare sector deserves. The deployment of mobile medical cart may solve the above problems, but it's too heavy and quite inconvenient to carry. The proposed Chainway solution integrated barcode or RFID technology is more effective and safer, which avoids duplicating documentation, realizes real-time information collection, also, the handheld computer is as light as a phone. Its pocketable size enables the nurses to carry it anywhere they need, easily and conveniently.

How dose barcode / RFID technology facilitate the collection of vital signs data exactly?

Chainway mobile nursing system is expected to be a solution for the speedy and accurate data input of information. Health care providers first carry the handheld computer to take the patient vital signs, such as temperature, pulse, respiration, blood pressure, and etc., enabling nurses to take and chart patient vitals at the bedside, eliminating

the need for manual transcription. It is a step toward new generation of point of nursing care systems where scanners (barcode / RFID) take over the tasks of data input from the nurses.

Then vital sign data is automatically transcribed directly into the backstage system from the point of care, which halves the times for vital signs input and relieves nurses from input tasks. What is worth mentioning is that nurses can choose the data instead of inputting manually, which optimizes patient vital sign documentation and eliminates input errors. In this way, the system can generate statistical statements about patient temperature, pulse, respiration, blood pressure, and so on.

Chainway PDA offer real-time, accurate and secure information presentation, ensuring that healthcare providers can view and retrieve the vital sign data and charts as well as medical care records via a touch-screen display wherever they are and whenever they need it. The solution allowed nurses to have access to electronic health information throughout the patient journey, from admissions to discharge, enabling the best possible patient outcomes.

Provide Visibility and Convenience for Information Inquiry

A lot of information is available on the handheld computer, having no restrictions of place or time. Nurses can at the patient bedsides have real-time visibility into patient information (such as patient profile, medical history, hospital admission number, ward number, bed number, payment information and etc.), medication administration records (drug name, dose and usage, time of administration, prescriber, administrator, status of the administration and so on), and vital sign charts (temperature, pulse, respiration etc.), enabling nurses to have a better understanding of patients' physical performance and health conditions. Also, nurses can have quick access to their patient lists, working schedules and nursing records anytime and anywhere they need to, ensuring better time arrangement, higher working efficiency and safer patient treatment.

From the desktop terminal, the powerful system incorporates all the data and information, including patient profiles, ward round records, medication administration records, doctor instructions, patients' vital sign histories, nurses'schedules, workload and etc. The backstage system can automatically analyze above information and generate various statistical charts to help hospital administrators make optimal strategies, which can best streamline clinical workflows and improve the efficiency of hospital operations.
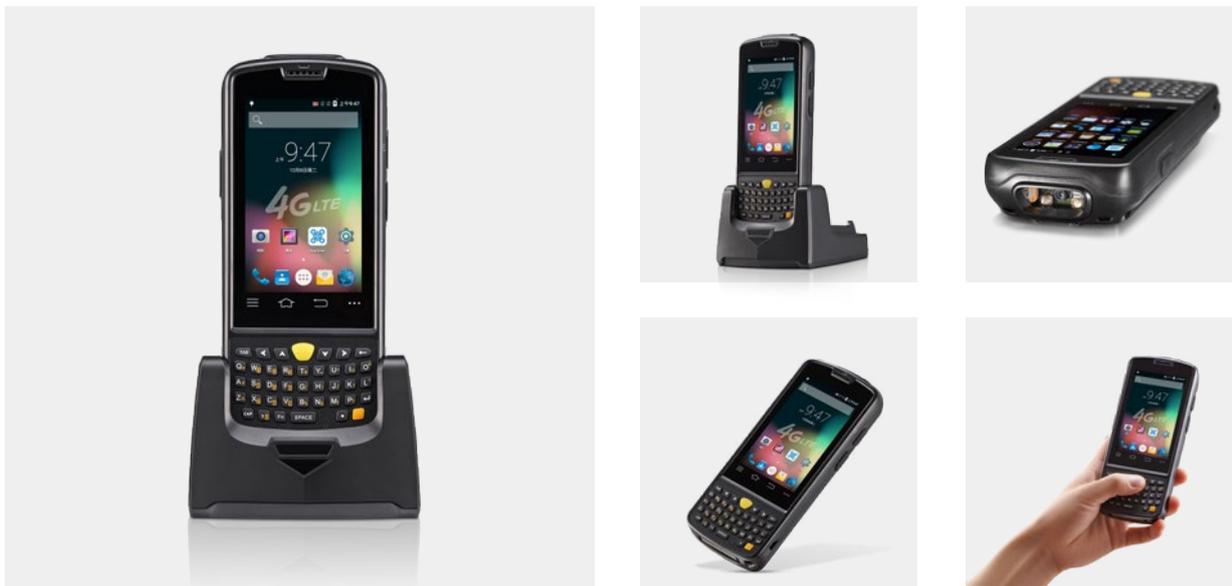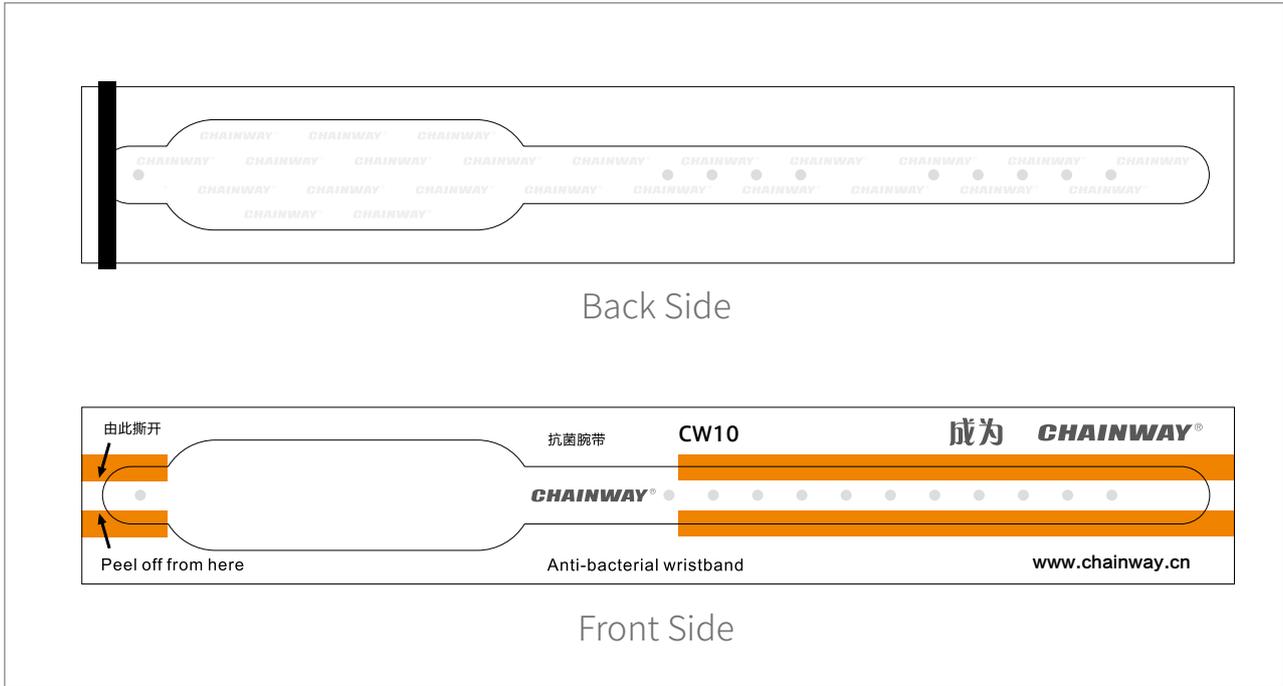
IV. PRODUCTS (C6000)

ITEM	CHARACTERISTICS	REMARK
CPU	Qualcomm Snapdragon Quad-Core 1.3GHz	
RAM	2G	
ROM	16G	32GB Micro SD (TF) expansion
1D scan engine	Zebra	SE965
2D scan engine	Zebra	SE4500
Bluetooth	BT4.0	External BT printer
Power	4000mAh	
O.S.	Android 5.1	
WLAN	Protocol IEEE802.11 a/b/g/n, build-in antenna	
3G/4G	4G LTE network	
Display	4 in. LCD capacitive touch screen, 480 × 800	

IV. PRODUCTS (C4050-Q4)

ITEM	CHARACTERISTICS	REMARK
CPU	Qualcomm Snapdragon Quad-Core 1.3GHz	
RAM	2G	
ROM	16G	32GB Micro SD (TF) expansion
1D scan engine	Zebra	SE965
2D scan engine	Zebra	SE4500
Bluetooth	BT4.0	External BT printer
Power	4000mAh	
O.S.	Android 5.1	
WLAN	Protocol IEEE802.11 a/b/g/n, build-in antenna	
3G/4G	4G LTE network	
Display	4 in. LCD capacitive touch screen, 480 × 800	

V. WRISTBAND

Back Side

由此撕开

抗菌腕带   CW10   成为   **CHAINWAY** ®

CHAINWAY ®

Peel off from here   Anti-bacterial wristband   **www.chainway.cn**

Front Side

VI. ABOUT US

Shenzhen Chainway Information Technology Co., Ltd., established in 2005, specializes in manufacturing and developing intelligent mobile computers. For over 10 years, Chainway's complete and innovative data collection solutions have been applied to a variety of industries such as healthcare, finance, personnel and asset management and so on. We provide comprehensive products and services worldwide, currently having 12 branches in China and a wholly-owned subsidiary in India. We have earned the trust of over 3000 customers and are now still offering services to them.

WECHAT