Article

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Interoperability with IRIS and Pharmacy Robotics

I have attached a document that describes the product I have developed called NiPaRobotica Pharmacy. This is an interface I developed that accepts Pharmacy Dispense Requests and converts the line items on the order into dispense dialogues which it sends to pharmacy robots. I deployed the interface into 3 Hospital pharmacies two of which had 6 robots that were arranged in such a way that the dispense chutes channelled medications to desks by the pharmacists sitting in windows serving 1200 patients a day. The robots cut the average waiting time from 2 hours down to one hour. I then deployed the interface into 6 sites that were purpose-built in locations close to the homes of the patients with chronic conditions such as TB, HIV, Diabetes, Epilepsy, Hypertension and Asthma. The mission statement of this project was "Take the Medications to the Patient". These sites have 6 ATM-style Pharmacy Dispense Units (PDU) that has an interface allowing the patient to communicate with a call centre pharmacist. Behind each PDU is a large robot containing several thousand medications. My application sends a dispense instruction to the robot which dispenses the item onto a conveyor belt that carries the medication until it is positioned below a printer. The printer has been sent the contents of a pharmacy label with the patient's name, dosage instructions and other notes. The printer drops and attaches the label to the medication packaging. The item travels a bit further and a sponge pushes down on the label to more firmly attach it to the packaging. The conveyor belt then transfers the item to a bin in the PDU and once all items have been dispensed the Patient is able to open a flap on the PDU and retrieve the items. The most significant aspect of this project is that it removed the need for the patients to take a day off work, travel long distances to the clinic where their condition is monitored, collect their medications and travel home. By placing these sites in the high density and very poor neighbourhoods where the patients live means that they can pop into anyone f these sites and collect their medications on the way to or from work. There have been very few changes in the world of pharmacies since the late Victorian age. The ingredients have become more specialised and in many cases, life-saving. Penicillin, vaccines, pain relief, cancer therapies, immunotherapies have altered our ability to manage conditions that historically would have killed patients however the process of dispensing those medications has remained stuck in the depths of hospital pharmacies or high street chains that sell more gimmicks than medicines. The application does far more than transfer dispense requests from the pharmacy application to the robots and these features are discussed in the document. The application has been modified to support FHIR messages related to Inventory, medication requests and responses and medication statements. The document is in PDF format so that I could upload it to the DC site however I suggest that you use Adobe to print it or convert it into Word.

#FHIR #HL7 #Interoperability #InterSystems Business Solutions and Architectures #InterSystems IRIS for Health

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