

Introduction to smart pill box nursing essay



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Remembering to take your pills can be difficult at any age. Taking incorrect doses of important medications, not taking them at the right time - or even worse, skipping them entirely - can leave you not feeling up to par, and can affect your overall health. But managing your medicines does not have to be difficult or complicated.

Most important problem with the old age people is about not taking the medication in time, or forgetting to take in time. There was a survey by American Society of Health System Pharmacists that most of senior people take average 8 to 10 medicines daily for different purpose. It is actually a big challenge for them at such a age as old people forget to take medicine on time and because of these their occur several different problems and also sometimes hospitalization or death. Forgetting to take medicines is not because of they don't want to take medicine there are several other reasons like; problems like forgetfulness or memory problem are common among old people. They are so common that we can put forgetfulness as part of their life and part of normal aging also some type of disease like Alzheimer's diseases which plays big part in old age people in forgetfulness, depression also helps in forgetfulness. Also the 1 big reason are some of the medicine itself whose side effect is to forgetfulness like a medications taken for blood pressure or also named as beta-blocker medication, for example Lopressor whose generic name is metoprolol or other generic drugs like propranolol, carvedilol , labetalol , sotalol and many more such medications may cause short-term memory problems. If there are people taking anti-depressant medication they also suffer from short term-memory problems and there are so many other medicines which boost or cause forgetfulness.

Now for these types of people it is very important to take their medicine at proper time but for the elderly, physical limitations can make it particularly challenging to take medicine according to a set schedule.

To stay away from hospitals and stay better health in day today life both prescription and OTC medicines should be taken according to instructions if individual fail to do so there is high possibility of having drug interactions and severe side effects which invites some new health issue.

Many old age people know why they are having some medicine, but they don't expect the side effects itself cause them to forget to take their medications without expert advice. Many individual don't even understand the purpose of the medicine or the consequences of not taking it as prescribed. However, recent findings reported by Science Daily indicate older adults are more inclined to forget to take their medication on days when their schedule is more hectic than normal.

Forgetting to take prescribed medicines make serious issues like delay recovery or stage 1 of disease can go to higher stage, and worse it may also cause death.

Also there are so many people hospitalized because of drug over dose or drug reaction in elderly populations and that are related to not taking prescribed drug in proper way and time.

Medication adherence is a significant problem the healthcare system currently faces. Roughly 50% of patients with chronic illnesses do not take their medications as prescribed. [1] Poor medication adherence can increase

morbidity and death in patients. It has been estimated that poor medication adherence costs the United States \$100 billion per year. [2] In the World Health Organization's 2003 report [3], Adherence to long-term therapies, evidence for action, Haynes [4] was quoted that " increasing the effectiveness of adherence interventions may have a far greater impact on the health of the population than any improvement in specific medical treatments."

According to Statistics Canada , the average Canadian, in 2005, had 14 prescriptions for that year and Canadians between the ages of 60 and 79 had 35 prescriptions in 2005. Canadians, 80 years and older, received on average 74 prescriptions in 2005. Over 75% of individuals over 65 years of age are prescribed prescription medications and they take three or more medications per day. The information that a patient must remember in order to take just one pill is actually complex and is made up of seven properties: the name of the drug, for which disease it is used, how to take it, the number of daily intakes, when to take it (before, during, or after a meal), dosage, and duration of the treatment. The complexity of medication regimens and the pill burden patients face impacts medication adherence.

1. 2 What is a Smart Pill Box?

Right Medications,

In the Right Dosage,

At the Right Time..

The term " Pill Box " can refer to many different kinds of pill containers, from a single compartment to those with a built in timer.

It is a safe, convenient and automated solution that organizes, reminds and dispenses medications so they are taken properly and on-time.

SMART PILL BOX makes it easy for you to take charge of your health by taking charge of your medications.

It is designed to address one of the biggest problems in healthcare - medication non-adherence. classified as " the world's other drug problem",

Great product for organizing & planning your weekly medicines. Use at home, on business trip, vacation, college etc. Very flexible use.

Pillbox was developed to aid in the identification of unknown solid dosage pharmaceuticals.

This system is designed for use by emergency physicians, first responders, other health care providers, Poison Control Center staff, and concerned citizens.

Pillbox enables rapid identification of unknown solid-dosage medications (tablets/capsules) based on physical characteristics and high-resolution images.

For patients with memory pathologies, such as Alzheimer's or Parkinson's disease, maintaining this schedule are especially challenging. To combat some of these unfortunate situations,

Project Smart Pill Box is a visual verification system that will keep reminding patients to take their medications until they provide visual proof of taking the pills out of the box and lifting them up to their mouths to ingest. This is

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achieved using face detection algorithms and a primitive form of hand tracking.

Smart Pill box (SPB) is a very simple to use device to improve medication compliance. It can be connected to a simple phone line like an answering machine or to a DSL/Internet Connection. The prescription bottles obtained from pharmacy can be kept in the SPB for daily use. SPB will buzz at the time prescribed for taking the medicine. If the patient forgets to take the medicine at a given time the system will (after a grace period) generate a automated phone call to alert the patient if he has forgotten to take the medicine. The system will also warn the patient if it seems that he is taking the medicine twice or taking at a wrong time.

The advance version of the Smart Pill Box can be connected to other healthcare devices like Blood Pressure and blood Glucose Meter. In addition to improving patient compliance, the technology providing the back office support will also maintain a patient diary. All the data collected will be stored securely.

PRODUCTS:-

Pill Boxes.

Pill Organizers.

Pill Timers.

Pill Splitters

Alarm Watches.

Pill Holders.

Pill Crushers.

Pill Dispenser.

1. 3 Importance of Smart Pill Box :-

Statistics currently show that medication adherence is a significant problem in the healthcare system. To improve medication adherence The Smart Pillbox is developed with a web-based application and mobile application to help patients take their medications. The device addresses the functional issues of adherence, portability, monitoring, notification, and cleaning.

‘ Smart’ Pillbox Could Help Seniors Live at Home Longer!

A good pill box can help in many ways:-

1. Help you not too overdose medication.
2. Help you take the medication at the time it is supposed to be taken.
3. Save money by allowing you to take the medication the way it is supposed to be taken.
4. Help you be healthier through taking medication properly.
5. Help you be more independent and active in your life.
6. Reduce the risk of medication errors.
7. Try to reduce the risk of medication mistakes by using technology and education.

8. It can prevent the mistakes that can cause a health and financial crisis for you or a loved one.

1. 4 Problem

The American Society of Health System Pharmacists found that about one third of older adults are prescribed to take eight or more medications each day. With such a large amount of prescriptions, the consequences of forgetting to take medications at a particular time or, worse, accidentally taking the same medication twice are significantly heightened. The British Pharmacological Society noted that greater than 80 percent of elderly hospitalizations due to harmful drug reactions are caused by dosage errors. While prescription bottles have strict instructions covering their surfaces, all of these reminders are futile in patients struggling with memory pathologies, such as Alzheimer's.

1. 5 Solution to the Problem

While it may be sound like an adequate solution to simply provide an elderly Alzheimer's patient with a pill box and alarm clock, that's honestly not enough. Even if the patient hears the alarm, understands it's time to take his/her 3: 00pm meds, and opens to the correct day, there is still a large possibility that the patient will become distracted before actually ingesting any pills. On the other hand, the patient could successfully take the 3: 00pm pills but forget that he/she took them, so when 3: 15pm comes around, the result would be an accidental overdose or a very confused patient.

To combat some of these unfortunate situations, Project Smart Pill Box aims to add a visual verification system that will keep reminding patients to take

their medications until they provide visual proof of taking the pills out of the box and lifting them up to their mouths to ingest.

1. 6 Assumptions

It can be assumed that the patients opting to use the Smart Pill Box desire to maintain a healthy medication schedule; in other words, the patients would not be trying to trick the software. Also, the pill box is assumed to be filled correctly each week by either the patient or a caretaker. Ultimately, this stage of Project Smart Pill Box aims to eliminate accidental overdoses caused by patients who forget that they already took their medication and to prevent exacerbating diseases by failing to take a prescribed medication at the correct time.

1. 7 How to use “ Smart Pill Box”?

The Smart Pill Box™ is easy to use

The Smart Pill Box™ works in the following way:-

The patient inserts Pillboxes in the Smart Pill Box.

Each time the patient takes a pillbox out to consume medicine, photo sensor will register this and mark the time he/she took the pill.

The Smart Pill Box uses a telephone line to send the stored information to the disease management system.

The disease management system uses this information to supervise whether the patient is complying with the treatment.

If the patient is not complying with the treatment the system will telephone him and tell him to take his pills using landline or cell phone.

If there is no reaction from the patients for more than a physician specified period the disease management system alerts a nurse or a physician to call him.