

# MEDBOT2GO

## Developing a Medication Assistance Device to Reduce Noncompliance With Prescription Medication

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### INTRODUCTION

**Our mission:** to solve the problem of noncompliance with prescription medication and medical treatment. Close to 70% of Americans take at least one prescription medication, and more than half of them take two or more.

**Our proposed solution includes:**

- a medical bracelet that will interface
- a prescription medication storage system
- a record of the patient's medicine regimen provide a reminder mechanism to ensure patients know when to take their medication and the administration mode.

### CLINICAL NEED

- Patients don't their medication to completion or at the prescribed times
- They don't keep track of their medication intake.

Reasons for a patient not being able to adhere to a medication regime are:

- forgetting
- busy schedules
- ailments/diseases
- memory loss
- having multiple medications

Keeping a record could detect side effects of medication or whether or not the medication is working properly.

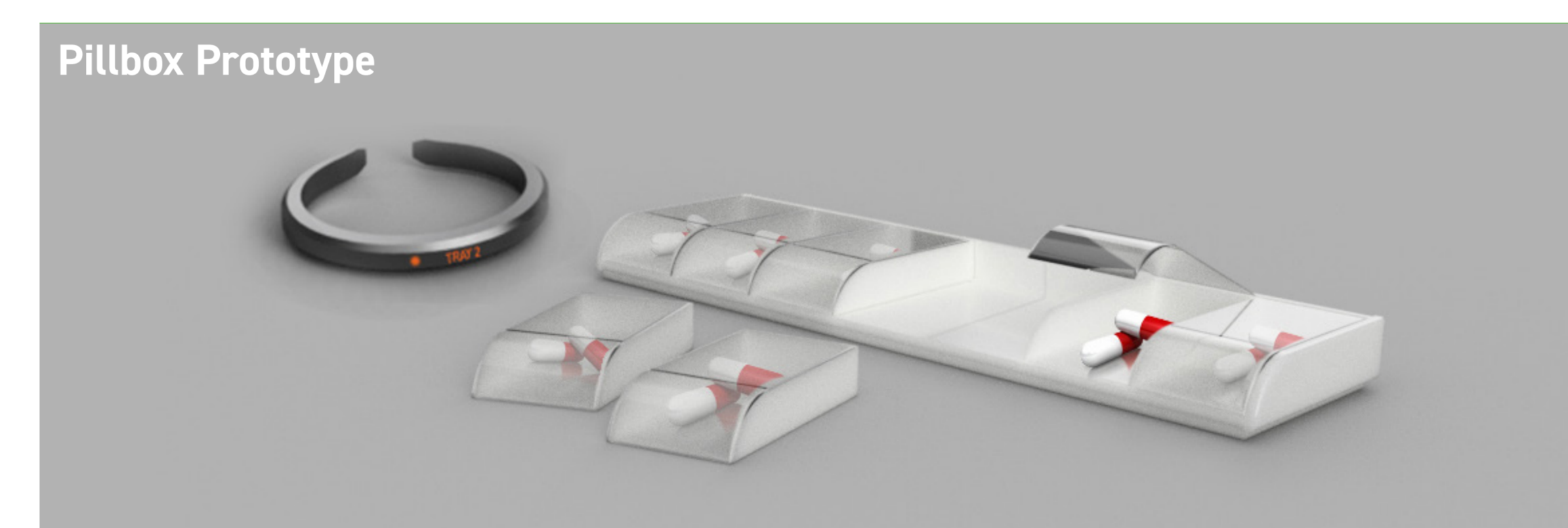
### POTENTIAL MARKET SIZE

The potential market size of Medbot2Go would be around **80 million**, which is a quarter of the American population, since more than half of the people are taking two or more prescription medication and 50% of the patients do not adhere to their prescribed medication regimens. The hospital may be purchasing the products in order to encourage people who are more likely to take their medications (older people, people with brain disease) to make sure that their patients take their medication on at the right time. Otherwise, it would be mostly the caregivers who buy the product so that they can set up the medication schedule and notifications for the patients to use the product.

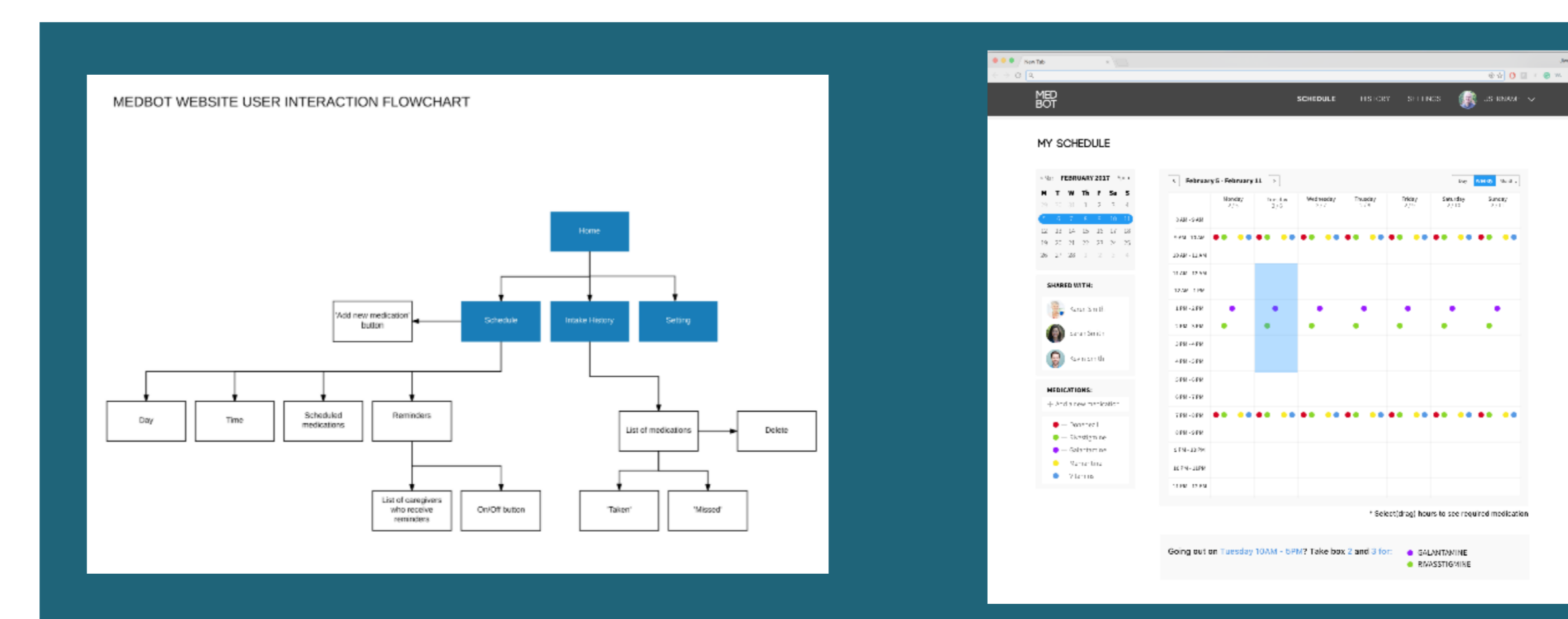
### PRODUCT DESIGN

After researching the potential users, we decided on targeting the **elderly generation**, who had not been exposed much to technology. Therefore, the device does not operate on smartphones, or wifi, which most elderly people are not comfortable using. The product consists of two parts: a **wristband**, and a **chain of pillboxes**. A **website** is also designed for the product. The user should wear the wristband and carry the pillboxes that contain the pills they are to take when they leave their home. The wristband can be used as a watch and a reminder for medication taking.

- 1. When it is time to take a medication**, the wristband will vibrate and the corresponding LED on the pill box that contains the pills to be taken will light up.
- 2. When the user has taken the pill**, the LED will turn off, and the intake will be recorded. The website contains a schedule that shows the time all medications are scheduled, and the history of medication intake.
- 3. When the users get a new prescription**, they will be able to update the schedule and what medication is stored in which pillbox. The medicine schedule could be performed on the website by the caregiver, physician, family member or the patient themselves.



### Website Flowchart and Prototype



### EXISTING SOLUTIONS

- **PillDrill<sup>5</sup>** - a pill box reliant on a phone application that reminds the user when to take their medication. This limits the users to people who own smartphones, which is uncommon in older generations.
- **Livi<sup>5</sup>** - sort pills into their specific container. Size of a kitchen appliance thus it is not portable. Requires the user to return home at the time his or her prescription is scheduled, which could be inconvenient for some patients.
- **Regular Medicine Boxes**- have seven or more compartments to store medication, but do not remind the user when to take it nor do they create a medical intake history.

### INNOVATIVE

- Portable
- Does not require technological background to use
- Does not require to be connected to WiFi
- Makes a medical intake history file

### FUTURE WORK

We used a Raspberry Pi and Arduino, which made the bracelet bulky. If this project were to collaborate with a company like FitBit it could integrate the ideas and concepts of MedBot2Go in a smaller scale.

### ACKNOWLEDGEMENTS

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