

A.A. STERNS, J. SMITH, J.H. HUGHES. **Platform to ensure patients medication and care compliance.** *Gerontechnology* 2016;15(suppl):165s; doi:10.4017/gt.2016.15.s.797.00 **Purpose** We have developed and successfully tested a technology platform called iRxReminder, created for supporting patient medication adherence. iRxReminder's platform consists of three components: (i) a cloud-based iRxControl center, (ii) smartphone apps, and (iii) a patent pending medication dispensing device (*Figure 1*). Each pill dispensing device (PDD) or 'pod' holds a two-week to 90-day supply of a single medication. The amount of medication is determined by the size and shape of the medication. **Method** Two studies have been completed demonstrating the app and iRxControl significantly improve medication adherence to over 80% with individuals recovering (Xage=65) from transient ischemic attacks (TIAs or mini-strokes) and patients living with heart failure (Xage=72). The first full test of the completed system including the pod is being executed at the University of Michigan Cancer Center, testing improving adherence of an oral chemotherapy medication. **Results & Discussion** Unique aspects of the pod include: (i) easy dispensing through a 'hold, place, and tilt'<sup>TM</sup> procedure we refer to as gesture-based dispensing; (ii) total control of the medication dispensing that can only be done during the scheduled window for taking the medication, preventing overdosing and tracking exact dosing; (iii) effortless data-tracking with reporting of dispensing utilizing Bluetooth LE to the app and then on to the iRxControl Center and patient's electronic medical record. Symptoms, side effects and other health information are tracked in parallel using the iRxCapture and ESmCapture (experience sampling mobile data capture) smartphone apps. Using multiple pods, housed in a medicine cabinet (a jewelry-box like container with a display on the inner lid) adherence for complex, dynamic medication schedules can be greatly enhanced. This system is ideal for integration with healthcare-focused smart homes.

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**Address:** iRxReminder, 1768 East 25<sup>th</sup> Street, Suite #308, Cleveland, Ohio, USA;  
**E:** asterns@irxreminder.com



*Figure 1. iRxReminder medication cabinet with each pill dispensing pod holding one type of medication*