

An Approach to Designing Accessible Prescription Packaging for  
Adults with Visual, Physical and Mental Impairments.

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Creative Honors Thesis Proposal  
October 27th, 2017

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## I. Introduction

One of the most essential parts of growing old is maintaining a healthy body. As natural decline creeps in on daily life, routine visits to a physician and careful attention to prescribed drugs becomes increasingly important and sometimes the central focus in life. The problem adults over the age of 65 years in the United States face is the misuse or neglect of taking the necessary prescription medication to live a healthy life. Sadly, this is due to problems that should have been easily addressed if not for a long history poorly and inconsistently designed prescription packaging. Adults over the age of 65 old count for 30% of the United States pharmaceuticals expenditures although they only account for 13% of the total population. For those that prefer to live independently from any home-care, assisted living, or family members, things that used to be simple suddenly become risks. In the case of Deborah Adler, Clear Rx was a project inspired by her mother accidentally taking her fathers medicine because she simply couldn't read the label. Luckily this wasn't a life-threatening situation, but it may not be the same for the next couple with vision impairment. In a local case inspired by my grandmother, Lue Clore, she often does not remember which pill she took or what time she last ingested it. It may be under suspicion that there may be non-adherence or intentional mis-use to the regimen. She would be a primary case for those with signs of early onset dementia or other degenerative cognition ailments. These cases serve as real examples for the need of a design in the realm of medicine and medical systems.

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## II. Argument and Importance

This thesis will address the main factors that affect the efficiency of a prescription design including, but not limited to, rheumatoid arthritis, vision impairment, and memory loss. All three of these factors affect adults today in the United States. By researching the problems this population faces, and products that have hit the market in attempt to resolve these problems, I

hope to create a robust solution that may be tested by pharmaceutical companies that if successful, could become or lead to a national standard policy. There will be three outlined directions to address the issues I stated. The first is to analyze a variety of design labels from typical prescriptions, including liquid bottles and bill bottles to address the issue of visual impairment and to take note of the cap design in regards to accessibility for those with arthritis and security for children. The second is to understand and address the implications and benefits of creating a standardized bottle design for the United States and countless pharmaceutical companies. Thirdly, I will attempt to address the problems with non-adherence and mis-use of prescription drugs by those with cognitive decay by creating an easily used application for pill reminders and recording.

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### III. Primary Sources

This research analyzes products already introduced to the market to solve the problems at hand. For memory loss and vision impairment, Deborah Adler's Clear Rx for Target in partnership with Klaus Rosburg features colored rings for prescription bottles with an easy-to-read label featuring new and custom designed iconography. After the such success with Clear Rx, she partnered with a prescription safety specialist to present a new labeling system to CVS. However, a new labeling system would prove difficult to fabricate at such a large scale with thousands of different medications. These two cases will address how crucial it is to start designing for accessibility and to standardize procedures in prescription design nationally as soon as possible. For those with severe rheumatoid arthritis, over the counter products like Aleve, Advil, and Equate have manufactured easy-open caps. This poses a threat to those that may have children living with or visiting those that take these medicines. Children can easily overdose on what are considered mild pain-medication for adults. It is necessary to find a secure solution that adults with arthritis may be able to open with ease but is difficult for children to understand. For this reason, prescription bottle patents will be a part of this study in order to determine if that is a easily feasible feature to include or if other parameters will be needed.

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## IV. Secondary Literature

In order to support new concept designs, secondary sources varying from medical journals to forums will serve as a reference point for recurrent issues that would otherwise be observed in a physical study. Due to the nature and timeline of this thesis, all research will be sourced from the most recent and relevant studies. In addition, national organizations dedicated to liberating information for patients provide widely available information in articles and resources for those with the addressed problems. The organizations that will be used for reference include The Center for the Visually Impaired ([cviga.org](http://cviga.org)), the Arthritis Foundation ([arthritis.org](http://arthritis.org)), the United States Access Board ([access-board.gov](http://access-board.gov)), and VisionAware™ ([visionaware.org](http://visionaware.org)). Publications that have conducted formal lab study include The Journal of the American Geriatrics Society and the Journal of Clinical Pharmacy and Therapeutics.

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