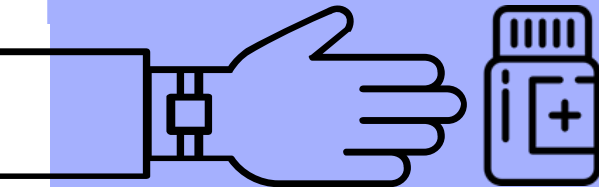
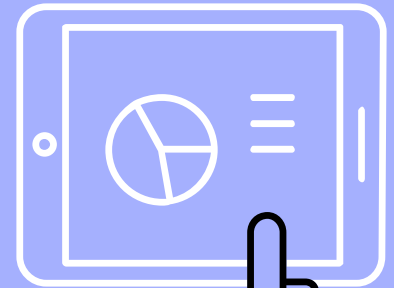



AlesiaRx

Leveraging diverse data & artificial intelligence to improve medication adherence among patients



Anna Dizik - Jordan Fraker - Michelle Nguyen

The Problem

50% 

of patients who take chronic medications are non-adherent¹

\$290 billion

is spent on complications that arise due to nonadherence¹

81%

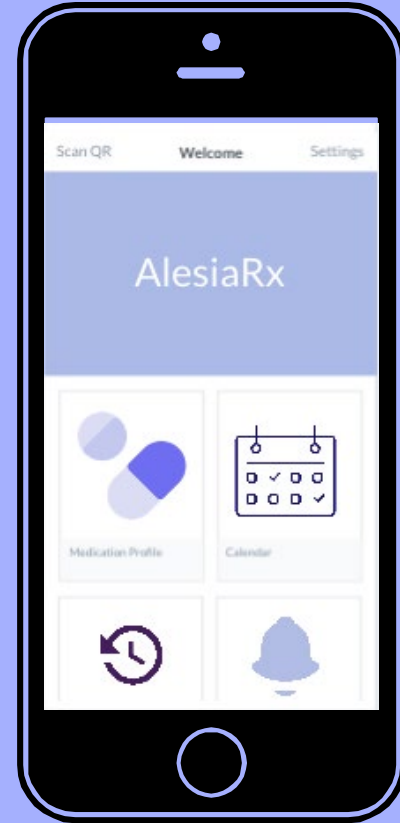
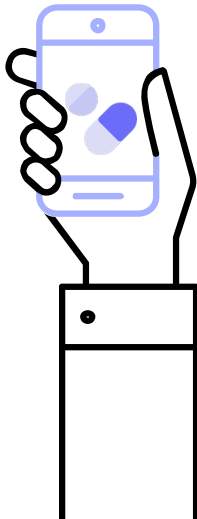
of positive clinical outcomes depend on medication adherence³

30%

of clinical trials fail due to non-adherence⁴

The Solution: AlesiaRx

A user-friendly mobile application that allows the patient to build a medication profile, syncs to their calendar, learns their behavior, and suggests a dosing schedule that works for them.



Why are patients non-adherent?

Complexity of Dosing Regimen



Dosing schedule made simple & easy to follow with notifications sent in the event of missed dose & optional syncing with google calendar

Disruption of Lifestyle



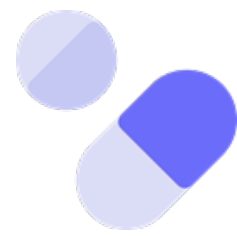
Machine learning allows app to adjust regimen to patient's lifestyle while balancing safety & effectiveness considerations

Lack of Understanding of Risks & Benefits of Medication

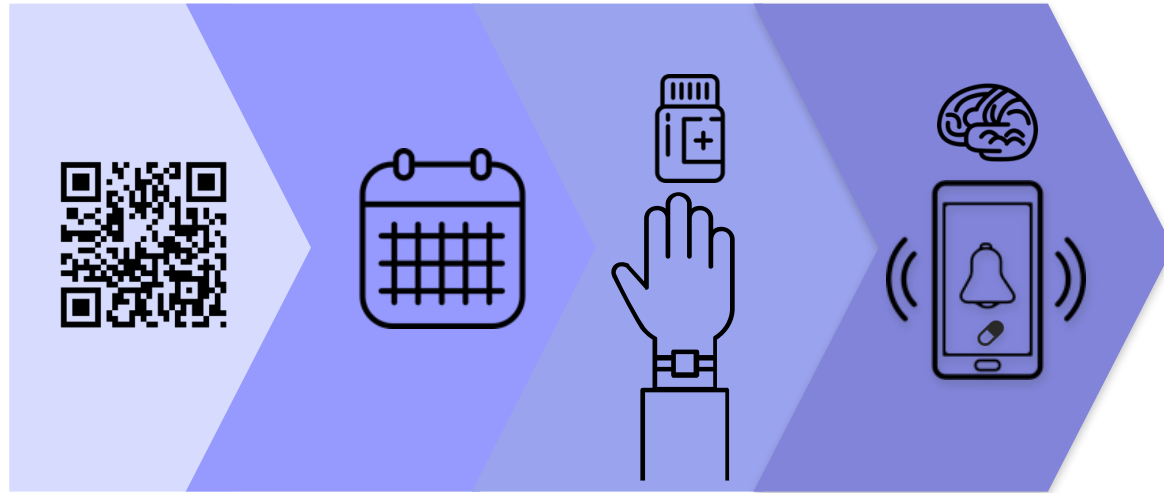


App communicates key information about the medication, with an emphasis on risks & benefits of taking it under the prescribed regimen

What does AlesiaRx do to help?



How Does It Work?



openFDA API Status

Continuously
Updated

Adverse Events

api.fda.gov/drug/event

Last Updated: 2018-04-19

Total Records: 8,068,496

Labeling

api.fda.gov/drug/label

Last Updated: 2018-04-19

Total Records: 121,725

current query

```
https://api.fda.gov/drug/label.json?search=effective_time:  
[20090601+TO+20180419]+AND+Lamictal&count=dosage_and_administration
```

search= parameter

Lamictal



count= parameter

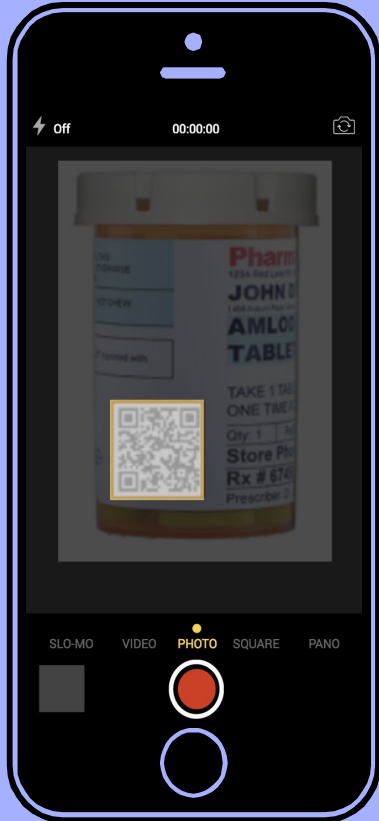
dosage_and_administration

Type in a custom search parameter, and then press Enter to update the chart

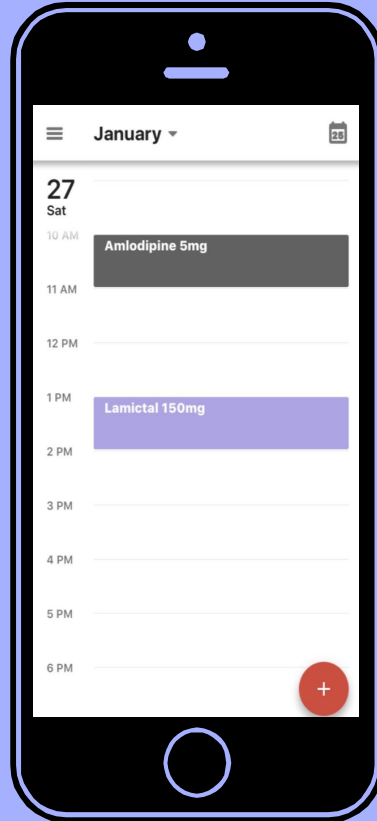
dosage_and_administration



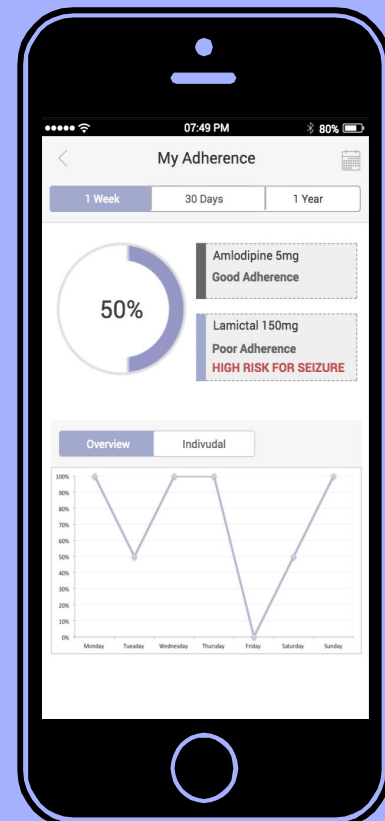
Scan QR Code From Prescription Bottle



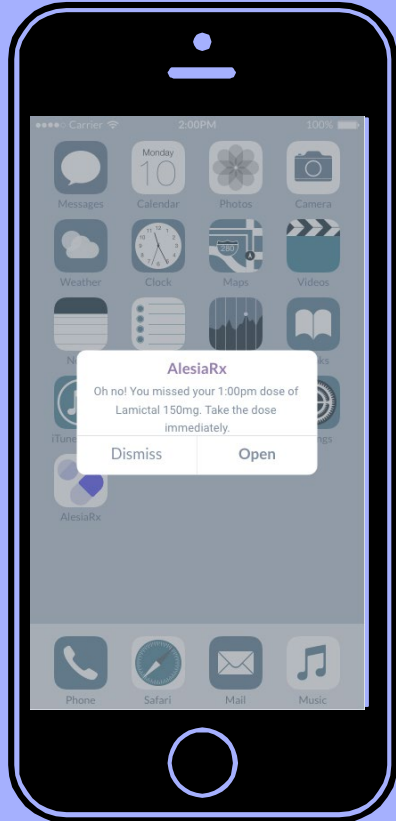
Sync Dosing Schedule To Google Calendar



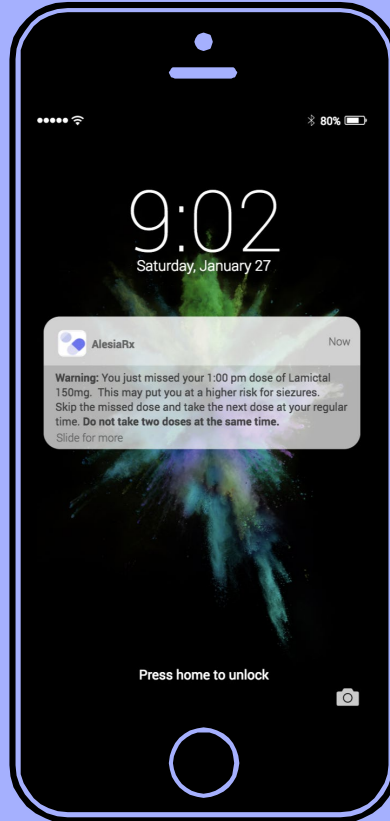
Track Adherence and Modify Dosing Schedule Accordingly



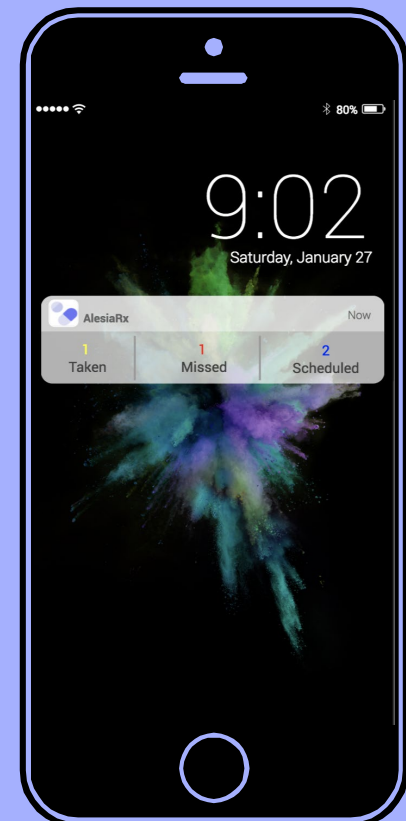
Receive Notification When You Miss a Dose



Warning Notifications Provide Scheduling Information and Possible Adverse Effects



Optional Widget Provides Daily Medication Overview



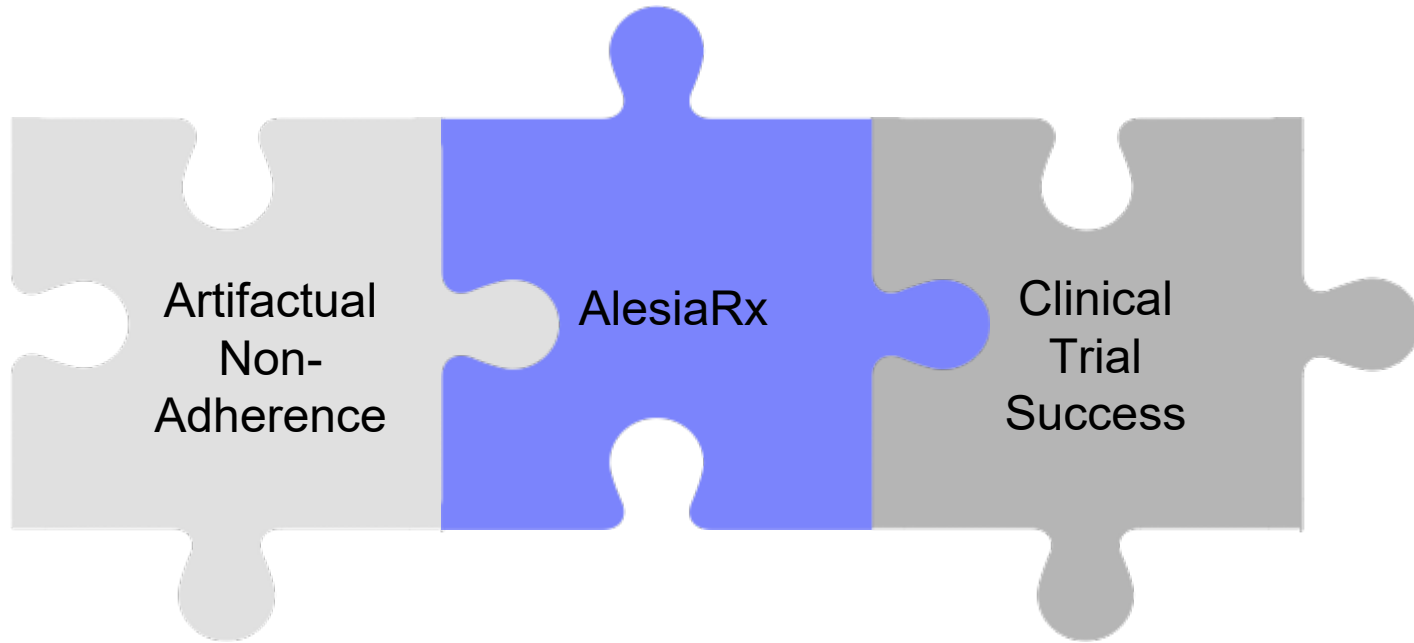


Population Health

Clinical Trials



Why do clinical trials fail?



Partnerships

- ▶ Clinical Trial Leaders
 - Pharmaceutical companies
 - Academic/ research institutions
- ▶ FitBit
- ▶ Corporate chain pharmacy





- HIPAA-compliant facial recognition
- Population Health & Clinical Trials
- Visual confirmation of medication ingestion

vs.



- HIPAA-compliant motion monitoring
- Population Health & Clinical Trials
- **Motion tracking** of medication ingestion

VALUE-ADDED BENEFITS:

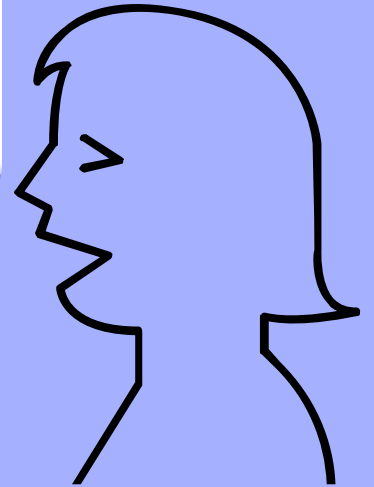
- **Non-disruptive:** patient doesn't need to log on every time they take dose
- **Individualization:** patient-specific dosing schedule through machine learning
- **Communication:** regimen initiation & detailed missed dosing instructions

Goals



THANKS!

Questions?



Sources

1. Akinbosoye, O. E., Taitel, M. S., Grana, J., Hill, J., & Wade, R. L. (2016). Improving Medication Adherence and Health Care Outcomes in a Commercial Population through a Community Pharmacy. *Population Health Management*, 19(6), 454–461. <http://doi.org/10.1089/pop.2015.0176>
2. Thinking outside the pillbox. New England Healthcare Institute. August 2009.
3. Boswell, K.A. & Cook, C.L. & Burch, Steven & Eaddy, Michael & Cantrell, Christopher. (2012). Associating medication adherence with improved outcomes: A systematic literature review. *American Journal of Pharmacy Benefits*. 4. E97-e108
4. AiCure. Clinical Research. Retrieved from <https://aicure.com/clinical-research/>
5. Shiovitz, T. M., Bain, E. E., McCann, D. J., Skolnick, P., Laughren, T., Hanina, A., & Burch, D. (2016). Mitigating the Effects of Nonadherence in Clinical Trials. *Journal of Clinical Pharmacology*, 56(9), 1151–1164. <http://doi.org/10.1002/jcph.689>

