

Patient Engagement & Activation for Better Adherence Using Digital Platforms

Wednesday, September 15, 2021 12-1pm ET



Susan Baumgartner, PharmD, MBA Former VP, Clinical Regulatory Affairs, **etectRX**



Kelly Brassil, PhD, RN Director, Research & RWE Pack Health



Allison Rosen, MS Patient, Research and Policy Advocate



Edward Greeno, MD Professor of Medicine; Chief, Cancer Care Service Line **Univ of Minnesota MHealth**



Mark Sapp Director, Digital Platforms Janssen Pharmaceuticals



Eric Buffkin President and CEO etectRx



But first, housekeeping

- Please note: today's session is being recorded
 - Slides and recording will be available on DiMe's webinar page after the session
- To ask a question for discussion during live Q&A, please either:
 - **'Raise your hand'** in the Reactions and the moderator will unmute you to ask your question live, or
 - **Type your question** into the chat box



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Digital Pill Systems for Medication Adherence and Patient Engagement: Where are We Now?

Susan L. Baumgartner, Pharm.D, MBA



September 15, 2021

Who We Are



etectRx is a digital health company.



Our FDA cleared ID-Cap™ System uniquely addresses the issue with patient adherence to (oral) medication.



Our accurate, flexible and elegant digital pill system allows pharmaceutical companies to rethink approaches to medication adherence, innovate with confidence and accelerate patient outcomes.



A platform-level technology delivered with high-quality services to accurately measure and improve medication adherence



FDA-Cleared ID-Cap System: Data Flow

ID-Capsule

The **ID-Capsule** contains an ingestible sensor that creates a low power radio frequency signal when activated by the patient's gastrointestinal fluid.

Reader

The **Reader** processes the signal from the ingested sensor and forwards a message via Bluetooth to the Patient App.

Patient App

The **Patient App** displays the information and sends data to the etectRx secure server.

Dashboard

The etectRx server sends patient ingestion information to the **Clinician Dashboard.**

ID-Cap Digital Pill System and etectRx Services Have Strong Track Record and Ongoing Success

"

This technology has been a game-changer, because we now have unequivocal proof of medication ingestion by the patient and can make the right correlation of adherence to drug concentrations in our studies.."

-Dr. Jose Castillo-Mancilla, MD, Univ. of Colorado Denver





Patient Acceptance and Willingness to Use

Patient Verbatims:

"

I thought it was easy. It helped, because I had a routine of just take the reader off of the charger and go get the medicine."

"

I like getting the (text) message it showed me that the device was working."

"

It would be nice if it was a medication I had to take daily, because people, like myself, forget to take their medication."

"

Using the system actually really helped me to realize how much (oxycodone) I was taking."

Acceptance of system (9/10, 90%)*

90% of participants reported a positive experience integrating digital pill in medication regimen



~

Digital pills were easy to swallow

✓

System became part of medication routine and participants developed different techniques for system use based on individuals

Appreciated receiving text messages after taking medication when an ingestion event was recorded

Willingness to use in chronic disease (8/10, 80%)*



Participants were willing to use in coordination with healthcare provider for observation of medication taking behavior

~

e: Chai PR, Carreiro S, Innes BJ, Rosen RK, O'Cleirigh C, Mayer KH, Boyer EW. Digital Pills to Measure Opioid Ingestion Patterns in Emergency Department Patients With Acute Fracture Pain: A Pilot Study. J Med Internet Res. 2017 Jan 13;19(1):e19. doi: 10.2196/jmir.7050. PMID: 28087496; PMCID: PMC5273398.

Real-World Experience During COVID: 98% Engagement with ID-Cap System

Quick Study Facts

- July 2020-Feb 2021
- 1,270 use-days
- In only 2.6% of use-days was an ingestion self-reported



Data-Driven Interventions

Data-driven insights from the ID-Cap[™] System enable the following interventions to be delivered digitally and/or personally:

- Reinforcement
- Encouragement and/or corrective feedback after missed doses
- Reminders when needed
- Patient engagement based on real-time data and use patterns
- Alerts and escalation to care team
- Remote patient monitoring with real-time, doseverified medication adherence data





For More Information: etectRx.com <u>info@etectRx.com</u> 352-443-5713



Oral Adherence & Digital Support Real World Evidence & Patient Experience

Allison Rosen, MS Patient, Research, and Policy Advocate @ARosen380 Kelly J Brassil, PhD, RN, FAAN Director, Research & Real-World Evidence @dr_kbrass

PACK | a better way to HEALTH | better health™

PACK HEALTH

Disclosures

Allison Rosen

• No disclosures

Kelly Brassil

- Employment at Pack Health
- Research funding from:
 - Daiichi Sankyo
 - Genentech
 - Astellas
 - Abbvie
 - Sanofi
 - GSK
 - Novartis



Oral Adherence insights from a digital health coaching platform



BARRIERS & OPPORTUNITIES

oral adherence

INTENTIONAL				··· UNIN1	ENTIONAL
	PERSONAL BELIEFS		ACCESS AND COST		FORGETTING
TREATMENT SIDE EFFECTS		MEDICATION SELF-EFFICACY		SOCIAL DETERMINANT OF HEALTH	S



BARRIERS & OPPORTUNITIES analysis of real-world data

- In context of a digital health coaching program,
- barriers are captured through a one-question
- survey.
- •
- In addition to coaching, participants complete the CASE Index for Medication Adherence at enrollment and every three months.

In a retrospective analysis of data from coaching
participants, data was analyzed from those who
reported medication non-adherence.

 Using patient reported barriers, the number of missed doses per week was evaluated using the CASE Index.

BARRIERS TO MEDICATION ADHERENCE

Identify barriers to medication adherence and how significant the barriers are to daily life.

Barrier	Significance
Cost	Minor Major
Efficacy of Med.	Minor Major
Knowledge	Minor • • • • • Major
Side Effects	Minor • • • • • Major
Forgetting	Minor • • • • • Major

A weighted average was used to calculate the average number of missed doses per barrier type.

BARRIERS TO MEDICATION ADHERENCE



- In a sample of 851 individuals, 325 (38%)
- reported missing at least one dose of
- medication.
- •

.

- Of those who missed at least one dose, the most common barriers to adherence were:
- γ side effect (25.23%, n=82)
- • • forgetting (20%, n=65)
 - cost (14.1%, n=46)
- Of those who reported any barriers, the average number of missed doses per week was <1.

CANCER					
	n = 325/851 (38%)				
Barrier Type (n)	% of patients who missed	avg. missed doses per week			
Access (17)	5.2%	0.84			
Cost (46)	14.15%	0.49			
Efficacy (31)	9.53%	0.67			
Knowledge (20)	6.15%	0.86			
Side Effects (82)	25.23%	0.49			
Forgot (65)	20.0%	0.88			

BARRIERS TO MEDICATION ADHERENCE pre/post COVID-19

	TYPE 2 DIABETES				CANCER			
	Through Ja	anuary 2020	February 2	020-Present	Through J	anuary 2020	February 2	020-Present
	n = 572/1	226 (47%)	n = 1422/3	3559 (40%)	n = 112/2	276 (41%)	n = 213/!	575 (37%)
Barrier Type*	% of patients who missed	avg. missed doses per week	% of patients who missed	avg. missed doses per week	% of patients who missed	avg. missed doses per week	% of patients who missed	avg. missed doses per week
Access	8.35%	0.98	8.27%	0.70	5.73%	0.73	4.57%	0.91
Cost	31.84%	0.89	34.51 %	0.67	18.06%	0.52	12.27%	0.47
Efficacy	18.52%	1.09	10.33%	0.76	8.81%	0.60	9.54%	0.70
Knowledge	10.55%	1.05	4.52%	0.84	4.87%	0.69	6.64%	0.91
Side Effects	30.16%	0.96	16.95%	0.71	25.99%	0.49	24.84%	0.50
Forgetting	31.52%	1.19	20.63%	1.00	20.70%	1.08	19.46%	0.78

'Individuals could report more than 1 barrier type

BARRIERS & OPPORTUNITIES COVID-19 related barriers

Trends from previous slide suggest:

- Knowledge could be impacted by absence of caregiver at the time of education.
- Side effects continue to be the most significant determinant of adherence.
- Home-based monitoring and support may be even more pivotal in the absence of traditional visits.

COVID-19:

- Demonstrated the need for enhanced digital health options for the clinical care and management of individuals with cancer⁴
- Precipitated uptake in oral oncolytic prescribing where clinically indicated ⁵
- Emphasized the need for collaborative solutions to medication dispensing and monitoring ⁶
- Highlighted the need for financial support to ensure persistence⁷

interventions to support adherence

To promote both medication adherence and persistence:

- Enhance self-efficacy
- Improve knowledge of medication efficacy
- Provide early support for anticipating and managing side effects

Studies⁸ highlight the benefits of:

- Smartphone applications ⁹
- Web-based applications ¹⁰
- Structured education ¹¹

Qualitative studies suggest uptake of digital interventions may be influenced by **cost, language availability, or competency.**

Patient Reported Outcomes (PROs) may be associated with adherence, especially the presence of **high symptom burden**.



Medication Adherence

exactly following your clinician's instructions so you get the most out of your medications. Interventions should focus on the unique needs of populations and communities disproportionately affected by **SDOH related barriers**, for whom adherence and persistence may be further impacted. ¹⁴

PACK>HEALTH

integrating digital health coaching

An independent, third-party analysis of 2,527 Pack Health Members found that patients **increased their prescription fill rate** while engaged in the digital health coaching program.

Patients filled 4.86/6 prescriptions during 6-month program.

+	+	+	+	+	+	

12%

increase in medication adherence for members enrolled in an oncology program.



Oral Adherence: A Lived Experience in the Context of Cancer Care



Who am I?

9 year Colorectal cancer survivor

- 4 open surgeries Treatment included: radiation and oral chemotherapy
- Permanent ostomy
- Sepsis survivor
- Kidney disease: infections and kidney stones
- Cognitive ability affectedHistory of: Crohn's disease and asthma

"Cancer does not define me but it has made me the person I am today, stronger, happier and healthier."





A year in the life of oral adherence

2 full cycles of Xeloda Oral medications (too many to count) for:

- Nausea
- Vomiting
- Constipation
- Pain
- Anxiety
- Fertility/Hormones
- Long term side effects





What helped me

- Hand-written calendars
- Setting alerts/alarms on my phone
- Caregiver reminders

What I did not know about

- Technology
 - Applications
 - Websites
 - Support programs



All of these had to turn into oral medications



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Expanding the walls of the Cancer clinic **Digitizing oral chemotherapy**

Ed Greeno, MD

Professor of Medicine, University of Minnesota

Chief, MHealth-Fairview Cancer Care



History of chemotherapy Management

- Originally given only in the Hospital
- Highly specialized Pharmacists/Nurses/Doctors
- Narrow Therapeutic Window
- High opportunity/consequence for errors



History of chemotherapy Management

- Move administration to clinic
 - Structured order process only by qualified physicians
 - o show your thinking and your math
 - Structured Review by oncology specific pharmacy staff
 - o Double check regimen, math, preparation
 - Structured evaluation by cancer certified infusion nurse
 - o Review my thinking and is it ok to treat today



Shift to Home treatment

- Many cancer therapies now oral medications
 - Anyone can write a prescription
 - Any pharmacy can fill the prescription
 - The patient treats themselves
 - o -look in the mirror and ask:
 - Am I taking the right dose at the right time?
 - Am I well enough to take the dose?
 - Am I having toxicity that needs to be managed?



Real World Examples

- 66 yo retired nurse with colon Ca
 - on xeloda having no side effects
 - o doesn't believe its working so she doubles her dose
- 45 yo with bipolar disorder on xeloda/temodar for high grade neuroendocrine Ca
 - o getting drugs from sluggish out of state specialty pharmacy
 - Acute psychiatric deterioration, can't determine where she is in treatment cycle
- 35 yo rectal cancer progressed on all standard chemo
 - Discussed lack of benefit to retrying failed drugs
 - admits when he previously progressed on xeloda he wasn't actually taking



Digital Oral Chemotherapy

- Patient/Pharmacist set up schedule in clinic
 - patient is active participant
- Patient applies sensor, takes pills, enters symptoms in App
 - creates a record of dose/time/side effects
- Patient, Pharmacist, Provider get realtime feedback
 - reduces prior need for regular phone contact
 - able to intervene proactively
 - automatically collates events over time



Real World examples

- Patient interpretation of "2 pills twice /day"
 - one in the morning and one at night
 - Pharmacist able to recognize and correct within 24 hours
- Exhausted single mom frequently unsure if she took her evening dose
 - opens app to see what she actually took
- Patient with history of poor compliance
 - Misses evening dose and app asks for reason
 - "hands hurt, can't open pill bottle when daughter isn't here"



Digital Oral Chemo Management

- Next step: Add chip to supportive care meds
 - Antiemetics
 - Antidiarrheals
 - Pain meds



October 13th, 11a EST

The Playbook Driving Adoption >>>> a D₩E Tour of Duty

Show me the money! Academic research is critical to building trust

Meet the Creators





Brown-Lifespan Center for Digital Health





<u>Jessilyn</u> <u>Dunn</u>

BIG Ideas Lab

Duke

BIG Ideas Lab Duke

Md Mobashir

Shandhi





<u>Simona</u> <u>Carini</u>

Open mHealth

Activinsights

Tina

Hurst

Alphabetical by first name



Jordan Silberman, MD, PhD

Director, Clinical Analytics and Research, Digital Care Delivery **Anthem**



Yasaman Damestani, PhD Associate Director, Digital Medicine Karyopharm Therapeutics



Isaac Rodriguez-Chavez, PhD SVP, Scientific & Clinical Affairs ICON Moderator

Death by Pilot

How solid evidence can help digital health vendors achieve scale

October 26, 2021 at 12-1pm ET