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Evaluation of a Pharmacist-Led Health Literacy Workflow in the Ambulatory Clinic

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Parkview Health | Fort Wayne, Indiana

The speaker has no actual or potential conflict of interest in relation to this presentation.

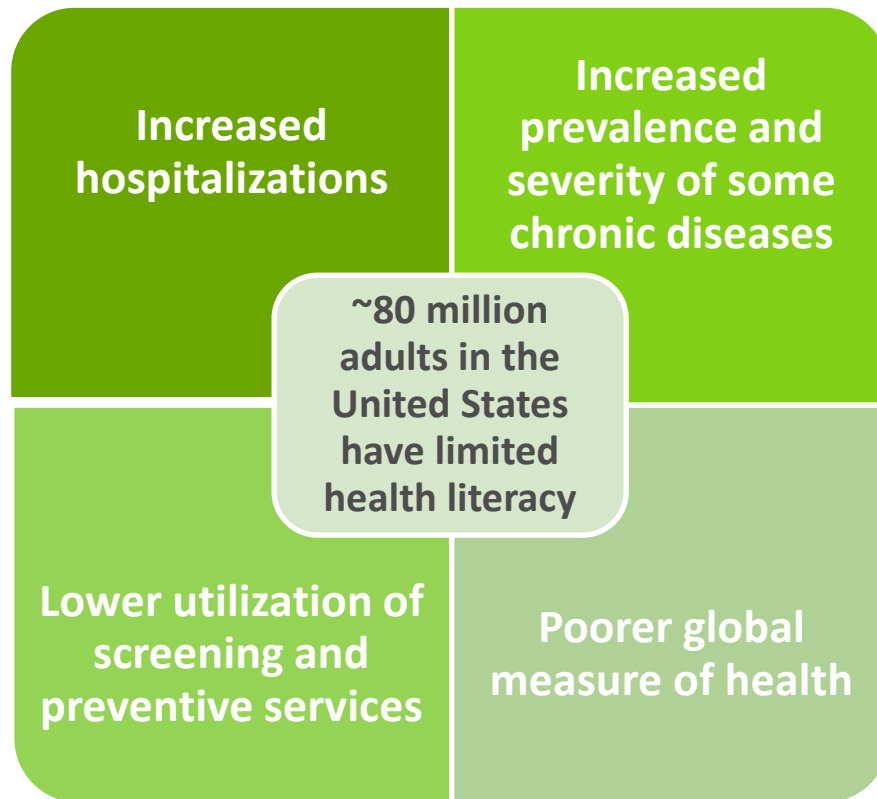
What is Health Literacy?

Healthy People 2030

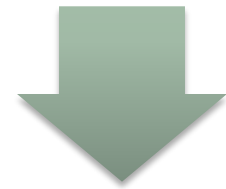
Personal health literacy is the degree to which **individuals** have the **ability** to **find, understand, and use information and services to inform health-related decisions** and actions for themselves and others.

Organizational health literacy is the degree to which **organizations** equitably **enable individuals to find, understand, and use information and services to inform health-related decisions** and actions for themselves and others.

Why is Health Literacy Important?



Two times the emergency department use in the last year compared to health literate peers



\$47 billion in avoidable medical costs

Assessment Question #1

Which of the following are part of Healthy People 2030's definition of health literacy?

- a. Hospital health literacy and Physician health literacy
- b. Personal health literacy and Organizational health literacy
- c. Caregiver health literacy and Physician health literacy
- d. Structural health literacy and Fluid health literacy

Assessment Question #1

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Assessment Question #2

Which of the following is an outcome associated with poor health literacy?

- a. Sleeping greater than 10 hours a day
- b. Greater probability of having a primary care provider
- c. Overutilization of emergency department services
- d. Having a hemoglobin A1c $> 8\%$

Assessment Question #2

Which of the following is an outcome associated with poor health literacy?

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Literature Review

Pharmacist intervention to improve medication adherence in heart failure

Randomized, controlled trial

Intervention

- Pharmacist driven intervention by using a protocol
 - Baseline medication history
 - Assessment of medication knowledge and skills
- Verbal and written instructions were given when medications were dispensed

Results

Taking adherence:
67.9% and 78.8%; 95% CI, 5.0 to 16.7

Scheduling adherence:
47.2% and 53.1%; CI, 0.4 to 11.5

Refill adherence:
105.2% vs. 109.4%;
P=0.007

Clinical exacerbations:
19.4% fewer exacerbations;
RR 0.82 [CI, 0.70 to 0.95]

Literature Review

Low–health literacy flashcards & mobile video reinforcement to improve medication adherence in patients on oral diabetes, heart failure, and hypertension medication

Prospective, matched, quasi-experimental design

Intervention

- Survey
 - Rapid Estimate of Adult Health Literacy Medicine-Short Form (REALM-SF)
 - Short Assessment of Health Literacy-50 (SAHLSA-50)
 - Newest Vital Sign (NVS)
- Intervention
 - Low Health Literacy Flashcards for targeted medications and disease states
 - Online pharmacist counseling video for each flashcard and linked to a QR code that was affixed to the prescription bottle

Results

Difference in medication adherence at 180 days:
71% vs 44%;
P=0.0069

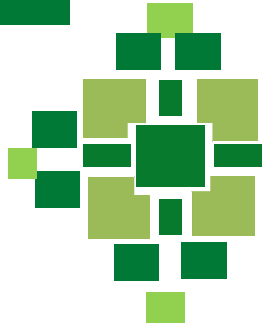
90-day PDC:
67% vs 38%;
P=0.01

Improvement in PDC from baseline:
64% vs 47%

Final PDC indicating compliance:
35.3% vs 14.7%

PDC: percent of days covered

Parkview's Pharmacist Led Health Literacy Workflow



Parkview Regional Medical Center – Heart Institute & Parkview Physicians Group

Pharmacist Presence

- 4 Cardiology Clinics
 - Hypertension
 - Hyperlipidemia
 - Cardio-metabolic
 - Heart Failure
- 17 internal/family medicine clinics
 - Diabetes management



Screening Tool - Rapid Estimate of Adult Literacy in Medicine – Short Form (REALM-SF)

Score	Grade Range
0	Third grade and below; will not be able to read most low-literacy materials; will need repeated oral instructions, materials composed primarily of illustrations, or audio or video tapes
1-3	Fourth to sixth grade; will need low-literacy materials, may not be able to read prescription labels
4-6	Seventh to eighth grade; will struggle with most patient education materials; will not be offended by low-literacy materials
7	High school; will be able to read most patient education materials

Menopause	<input type="checkbox"/>
Antibiotics	<input type="checkbox"/>
Exercise	<input type="checkbox"/>
Jaundice	<input type="checkbox"/>
Rectal	<input type="checkbox"/>
Anemia	<input type="checkbox"/>
Behavior	<input type="checkbox"/>

Parkview's Pharmacist Led Health Literacy Workflow



PARKVIEW

FOR YOUR HEALTH

“Water Pills” Loop Diuretics

furosemide, torsemide, bumetanide

What is it used for? Remove extra water from your body

How does it work? It tells your kidneys to move extra salt and water from your blood into your urine. By doing this it reduces swelling and difficulty breathing

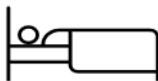
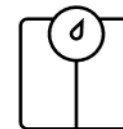
What are the side effects? The most common and normal side effect is having to go to the bathroom more than you did before. It can also lower your blood pressure and make you feel dizzy. This medication can lower the amount of potassium, magnesium, and calcium in your blood.

Tips for taking this medication

You can take it with or without food



Weigh yourself every morning



Get up slowly after sitting or lying down

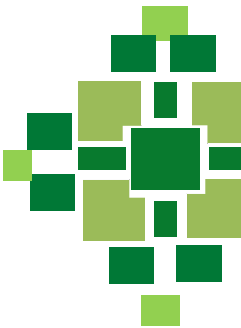


Take this medication in the morning or afternoon to avoid waking up in the middle of the night to use the bathroom



PARKVIEW

Study Design



Purpose

Evaluate the impact of a pharmacist led health literacy workflow in the ambulatory cardiology and diabetes clinics on healthcare utilization

Design

- Multi-site, retrospective, chart review of electronic medical records of those patients screened between November 2021 and February 2022

Patient Eligibility

Inclusion

- Adult patients screened at a pharmacist led cardiology or diabetes appointment

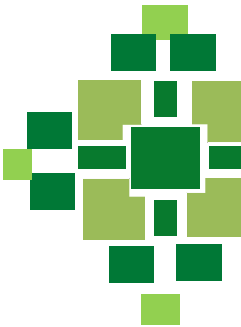
Exclusion

- REALM-SF score of 7
- Primary language other than English

Outcomes

- **Primary:** A change in a composite of emergency department visits and hospital admissions between 3 months pre- and post-intervention
- **Secondary:**
 - Difference in a composite of emergency department visits and hospital admissions between 1 month pre- and post-intervention
 - Difference in emergency department visits 1 month and 3 months pre- and post-intervention
 - Difference in hospital admissions 1 month and 3 months pre- and post-intervention

Results



Patients

Screened:
116

- Excluded for REALM-SF of 7: 90
- Excluded for primary language other than English: 2



Included:
24

Baseline Characteristics

Characteristic	N = 24
Age, yrs, avg	67±10.7
Male, no.	20 (80%)
Ethnicity – White, no.	20 (80%)
REALM- SF Score, avg	5
Score of 0, no.	3 (12%)
Score of 1 to 3, no.	0 (0%)
Score of 4 to 6, no.	21 (88%)
Clinic Type	
Heart Failure, no.	11 (42%)
Hypertension, no.	1 (4%)
Cardiometabolic, no.	1 (4%)
Lipid, no.	0 (0%)
Diabetes, no.	11 (42%)
Co-morbidities	
heart failure, no.	13 (50%)
Diabetes, no.	18 (69%)
Hypertension, no.	20 (77%)
Hyperlipidemia, no.	14 (54%)

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Primary Outcome

	3 months pre-screening date (n=24)	3 months post-screening date (n=24)
Composite of hospitalizations and ED visits, avg	1.50	0.46
ED visits, avg	0.83	0.21
Hospitalizations, avg	0.67	0.25

Secondary Outcomes

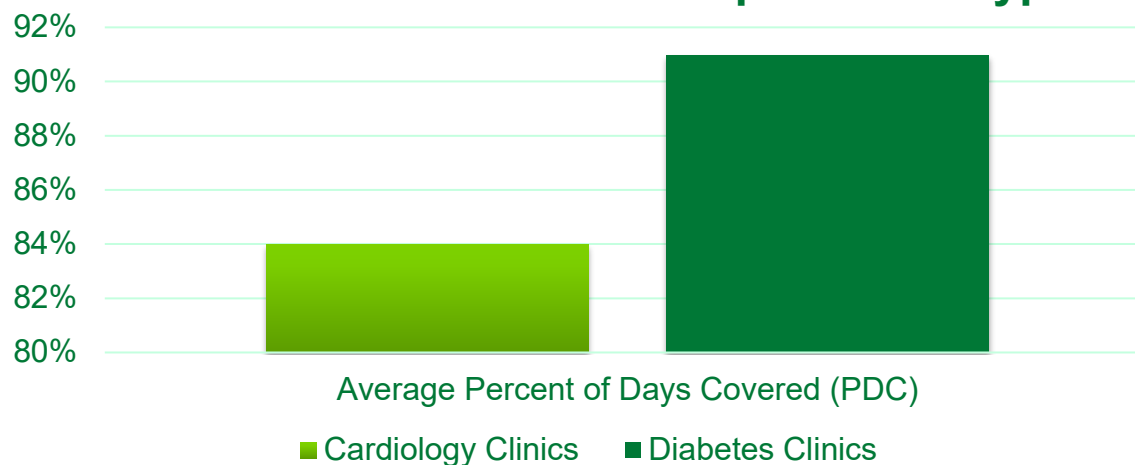
	1 month pre-screening date (N=24)	1 month post-screening date (N=24)	Relative reduction of event
Composite of hospitalizations and ED visits, avg	0.5	0.13	77%
ED visits, avg	0.20	0.04	80%
Hospitalizations, avg	0.3	0.08	75%

Subgroup Analysis

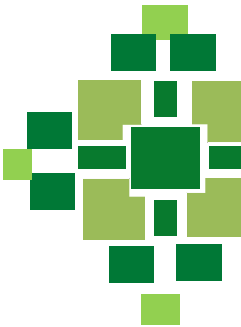
Outcomes 1 month pre-screening vs 1 month post-screening

	Composite of hospitalizations and ED visits, avg		ED visits, avg		Hospitalizations, avg	
	Pre	Post	Pre	Post	Pre	Post
Cardiology Clinics (n = 13)	1.08	0.23	0.38	0.08	0.62	0.15
Diabetes Clinics (n = 11)	0	0	0	0	0	0

Medication Adherence per Clinic Type



Discussion



Discussion - Results



Most of our patients have adequate health literacy

Heart failure patients utilize services more often at baseline

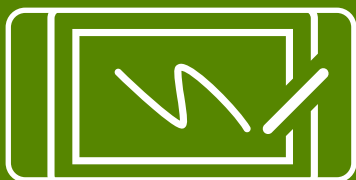
Reduction in hospitalizations and ED visits within 3 months

Reductions in hospitalizations and ED visits within 1 month

Discussion - Limitations

- Time constraints with dual provider appointments
- Use of REALM-SF vs REALM
- “Card Burden”
- Language barriers

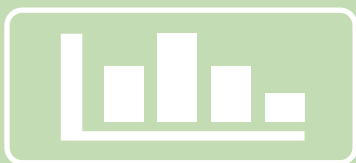
Discussion - Future Directions



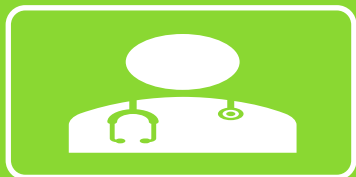
Official documentation in the EHR



Providing medication cards for new medications and/or recognized knowledge deficits



Continued data collection



Inpatient screening

Acknowledgements

Mentors

- Jennifer Sposito, PharmD, BCPS
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- Ashley Parrot, PharmD, MBA, BCACP, BCPS
- Elizabeth Meisberger, PharmD, BCPS, BCCP

References

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