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### Lipid Profile and Admission/Discharge Locations as Predictors of 60 Day Readmission in Adults 65 or Older with Type 2 Diabetes Mellitus

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### Abstract

**Introduction:** Reducing 30 and 60 day hospital readmissions is critical to our healthcare systems. Older folks with type 2 diabetes mellitus (T2DM) account for a disproportionate amount of readmissions. Through recognizing factors that correlate to readmissions, patients at risk may be identified.

**Objective:** To conduct a retrospective review of electronic medical records (EMR) to determine if there is an association between the lipid profile and admission and discharge locations of hospitalized older adults and whether they were rehospitalized 60-days post discharge.

**Methods:** EMRs were reviewed of 86 randomly selected consenting participants who were admitted to a community hospital and were age  $\geq 65$  and older with T2DM.

**Results:** Patients readmitted within 60 days of their incidental hospitalization had no statistically significant difference in their demographics, the location they were admitted to, or with the components of their lipid profile. There did exist a statistically significant difference in the locations patients were discharged to.

**Conclusion:** Readmitted patients and non-readmitted patients did not differ on their demographics, admission location, or with the components of their lipid profile. Among those non-readmitted, it was more likely that they would be discharged to a skilled nursing facility then back to the community.

### INTRODUCTION

- People with T2DM account for 25% of hospitalizations and for 14.4-22.7% of 30 day readmissions, substantially higher than the 8.5-13.5% rate among those without T2DM<sup>1</sup>
- Adults age 65 or greater represent 26.9% of those affected with T2DM, which is more than any other age group<sup>2</sup>
- Readmission rates among Medicare beneficiaries whose principal diagnosis for their index hospitalization is diabetes with complications is 23.6%, as found by the Healthcare Cost and Utilization Project<sup>3</sup>
- Current research has not evaluated any correlations between lipid panels, admission/discharge locations, and 30 and 60 day hospital readmission rates
- Through evaluating this potential relationship, more investigation may be warranted to determine if interventions have the potential to improve outcomes

### SPECIFIC AIM

- To conduct a retrospective review of electronic medical records (EMR) to determine if there is an association between the lipid profile and admission and discharge locations of hospitalized older adults and whether they were rehospitalized 60-days post discharge

### Methods

#### Participants

**Inclusion Criteria:** Participants were older adults who were admitted to a community hospital between January 1, 2012 to January 1, 2017 with a principal diagnosis of T2DM.

**Exclusion Criteria:** Participants were excluded if they died during their hospitalization or were discharged to hospice.

#### Procedures

Of the participants who met the inclusion criteria, 86 were randomly selected and the electronic medical records were reviewed. Variables that were investigated included patient demographics, admission/discharge locations, and lipid profiles.

### Results

**Readmission Rate:** Of the 86 patients records that were reviewed, 5.8% (N=5) had an unplanned readmission within 60 days of their initial admission.

Data on patient demographics is displayed on Table 1.

Characteristic	Readmitted (N=4)		Not Readmitted (N=74)		p-value		
	N	(%)	N	(%)			
Race (N=78)	African American	2	50	10	13.51	0.136	
	White	2	50	59	79.73		
	Other	0	0	5	6.76		
	N (%)		N (%)				
Sex (N=86)	Female	4	80	52	64.2	0.472	
	Male	1	20	29	35.8		
	N (%)		N (%)				
Hospitalization 12 months prior (N=86)	Yes	3	60	21	25.9	0.099	
	No	2	40	60	74.1		
	N	M (SD)	N	M (SD)			
Age	5	78	8.72	81	76.77	8.28	0.75
BMI	5	31.8	9.65	80	28.88	7.37	0.4
Length of Stay	5	5.4	2.97	81	6.14	3.95	0.684

Of the characteristics on which data was collected, there was no statistically significant difference between those who were readmitted and those not readmitted.

Data comparing readmitted vs. non-readmitted patients on admission/discharge location is displayed on Table 2.

Location	Readmitted (N=5)		Not Readmitted (N=80)		p-value	
	N	(%)	N	(%)		
Community	3	60	64	80	0.326	
Senior Independent Living	0	0	4	5		
Assisted Living	1	20	3	3.8		
Long Term Care	1	20	5	6.3		
Skilled Nursing	0	0	4	5		
	N (%)		N (%)			
Discharged to (N=84)	Community	3	60	42	53.2	0.045
	Senior Independent Living	0	0	3	3.8	
	Assisted Living	1	20	1	1.3	
	Long Term Care	1	20	6	7.6	
	Skilled Nursing	0	0	27	34.2	

There was no statistically significant difference among admission locations. However, there did exist a statistically significant difference among discharge locations.

Data comparing readmitted vs. non-readmitted patients on the basis of lipid profiles is displayed on Table 3.

Lipid on Admission	Readmitted			Readmitted			p-value
	N	M	(SD)	N	M	(SD)	
Cholesterol (N=48)	4	183.75	52.23	44	153.29	51.41	0.236
Triglycerides (N=47)	4	117.25	56.12	43	126.05	63.65	0.791
HDL (N=48)	4	52	20.72	44	40.58	14	0.139
VLDL (N=48)	4	23.45	11.22	44	25.08	12.6	0.804
LDL (N=48)	4	118.25	49.55	44	86.52	43.83	0.176

Of the components of the lipid panels on which data was collected, there was no statistically significant difference between those who were readmitted and those not readmitted.

### Conclusions

Patients who were readmitted and those who were not were similar in all of the demographics studied within the scope of this project.

On the basis of their admission location both readmitted and non-readmitted patients were the same, however, there was a significant difference among discharge locations. Among those not readmitted, approximately half were discharged back to the community, with 34.2% being admitted to a skilled nursing facility post hospitalization.

Lastly, on the basis of lipid panels, there was no significant difference among the lipid components of those readmitted vs non-readmitted.

Although some of the above conclusions so no significant difference between most groups, there was also only a small number of patients who were readmitted after the 60 days of their initial hospitalization. It is because of this, that future directions of this investigation should involve expanding the number of EMRs reviewed to gain a larger sample size of readmitted patients

### References

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