

The effect of patient portal use on diabetes health metrics during the COVID-19 pandemic



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Introduction

- Over the past few years there has been a substantial increase in the use of patient portals that are tied to complete electronic health records
- These portals allow patients to access their medical records (view laboratory/imaging records), request prescription refills, and directly communicate with their healthcare team
- These benefits of patient portal use can be particularly useful for improving the quality of care of patients with chronic diseases that require ongoing self-management, such as diabetes.

Purpose

- To examine the association with use of patient portals and diabetic quality metrics during the COVID-19 pandemic

Methods

Study Design: Cross-sectional

Setting: Network of 23 primary care offices

Participants: Patients age ≥ 21 with a known diagnosis of diabetes mellitus from 3/15/2020-3/14/2021

Outcome Measures: % of patients meeting the following metrics: A1c <8.0%, BP < 140/90, Nephropathy Screening and Treatment, Diabetic Eye Exam, and Statin use.

Data Collection: from Epic using Slicer/Dicer

Chi-square was used to compare proportions. Odds ratios determined by binary logistic regression. Analysis performed using STATA 13.1

Results

Table 1. Demographics, medical history, and PCP office use

	Patient Portal User (n=10,961)	No Patient Portal Use (n=8,227)	p-value
Mean (SE) Age	63.2 (0.12)	67.6 (0.14)	<0.001
Females	48	49	0.17
White	67.8%	56.7%	<0.001
Hispanic	6.4%	8.7%	<0.001
Black	18.8%	27.2%	<0.001
Other race	13.5%	16.1%	<0.001
Medicare	45.8%	57.9%	<0.001
Medicaid	8.9%	11.9%	<0.001
Obesity (BMI ≥ 30)	65.9%	59.3%	<0.001
Insulin Use	23.1%	24.3%	0.07
ACEI/ARB Use	72.0%	71.0%	0.16
Statin allergy/intolerance	7.4%	7.0%	0.32
PCP visit, in person	77.7%	78.9%	0.04
Video visit	47.1%	19.8%	<0.001
Telephone visit	37.5%	38.2%	0.3

Table 2. Diabetes Health Metrics Met

	Patient Portal	No Portal	p-value
A1c <8%	61.2%	51.8%	<0.001
BP <140/90	72.0%	67.7%	<0.001
Eye Exam within 1 year	33.8%	20.5%	<0.001
On statin	82.9%	80.7%	<0.001
Nephropathy Managed	82.5%	74.8%	<0.001

Table 4. Logistic Regression for odds of a patient using the portal

	Odds Ratio (95% CI)	p-value
Age	0.97 (0.96-0.97)	< 0.001
Sex		
Male	-	-
Female	1.10 (1.04-1.17)	0.002
Race		
White	-	-
Black	0.52 (0.48-0.56)	< 0.001
Other	0.67 (0.62-0.74)	< 0.001
Hispanic		
No	-	-
Yes	0.65 (0.58-0.73)	< 0.001
Medicaid		
No	-	-
Yes	0.51 (0.46-0.56)	< 0.001
Medicare		
No	-	-
Yes	0.86 (0.80-0.93)	< 0.001

Table 3. Proportion of Patients with total number of metrics met

	Patient Portal	No Portal	p-value
0	1.0%	2.2%	<0.001
1	5.4%	9.6%	<0.001
2	16.0%	22.0%	<0.001
3	29.5%	30.4%	<0.001
4	34.0%	28.4%	<0.001
5	14.1%	7.5%	<0.001

Table 5. Odds of having a metric met when using the portal, compared to no portal use

	Odds Ratio (95% CI)	p-value
A1c < 8.0%	1.66 (1.56-1.77)	< 0.001
BP < 140/90	1.23 (1.16-1.32)	< 0.001
Diabetic Eye Exam	2.05 (1.9-2.19)	< 0.001
Statin Use	1.37 (1.26-1.48)	< 0.001
Nephropathy Managed	1.79 (1.65-1.93)	< 0.001

Conclusion

- Our results show that there was a positive correlation with use of patient portals and diabetic quality metrics met
- Patients using the portal were more likely to have their A1c and blood pressure at goal, have completed an annual eye exam, were on a statin, and also have their nephropathy managed (either were already on an ACEI/ARB or had screening for urine microalbuminuria completed)
- There was also a positive correlation with patient portal use and the number of health metrics met
- There was an inverse association with age and portal use. Patients who were non-white were also less likely to be using the portal, along with patients insured by Medicare or Medicaid.
- Patients were more likely to have met their diabetic health metrics with portal use even when controlling for demographics and medications used to treat each condition.
- Given our findings, we can reasonably conclude that diabetic patients should be encouraged to use patient portals as they may help to improve disease management.

