

Facilitating Patient Adoption of and Feature Utilization within the Electronic Patient Portal in an Ambulatory Family Medicine Clinic

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Introduction

- Technology and medicine are increasingly becoming interwoven. Recent world events have precipitated and facilitated the adoption of alternative, technological advances in providing medical care.
- One arm of this integration is the adoption and implementation of electronic patient portals. Electronic patient portals have emerged as a recognized strategy to facilitate the delivery of medical care.
- As research has grown in this area, best practice guidelines and accepted optimal strategies appear to be lagging. It is not clear how these portals are being used by patients and which patients are engaged with the system.
- The objective of this study was to explore the adoption, utilization, and usefulness of a patient portal in an outpatient Family Medicine clinic to improve access, patient engagement, and patient satisfaction.

Materials & Methods

- Design: cross-sectional prospective clinical research study
- Facility: Ascension Providence Medical Center - South Lyon, an outpatient Family Medicine residency clinic.
- A questionnaire regarding patient demographics, insurance type, number of devices owned, and portal usage was administered to patients during scheduled office visits.
- Twenty-nine patients participated in the study (n=29).
- Responders were primarily Caucasian females aged 40-64 years old.
- Chi-square analysis was used to identify patient factors associated with portal utilization.

References

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Results

NO. OF DEVICES				PORTAL REG			FREQUENCY OF PORTAL USE					
GENDER	1 DEVICE	2 DEVICES	3 DEVICES	TOTAL	YES	NO	TOTAL	0	1-2+	TOTAL		
Male	3	2	3	8	Male	17	0	8	Male	2	0	6
Female	6	5	9	20	Female	8	3	20	Female	4	1	15
TOTAL	9	7	12	28	TOTAL	25	3	28	TOTAL	6	1	21

EXPECTED FREQUENCIES				PORTAL REG			FREQUENCY OF PORTAL USE					
GENDER	1 DEVICE	2 DEVICES	3 DEVICES	TOTAL	YES	NO	TOTAL	0	1-2+	TOTAL		
Male	2.571428571	2	3.428571429	8	Male	7.142857143	0.8571428571	8	Male	1.714285714	0.2857142857	6
Female	6.428571429	5	8.571428571	20	Female	17.85714286	2.142857143	20	Female	4.285714286	0.7142857143	15

P VALUE: 0.9302180717 P VALUE: 0.2463297901 P VALUE: 0.7918895463

Table 1. Gender: Number of devices owned; Portal Registration; Frequency of Portal Usage

NO. OF DEVICES				PORTAL REG			FREQUENCY OF PORTAL USE					
AGE	1 DEVICE	2 DEVICES	3 DEVICES	TOTAL	USES PORTAL	NO PORTAL	TOTAL	0	1-2+	TOTAL		
18-39	3	1	1	5	18-39	4	1	5	18-39	1	0	4
40-64	4	4	9	17	40-64	16	1	17	40-64	3	1	13
65+	1	2	2	5	65+	5	0	5	65+	1	0	4
TOTAL	8	7	12	27	TOTAL	25	2	27	TOTAL	5	1	21

NO. OF DEVICES				PORTAL REG			FREQUENCY OF PORTAL USE					
AGE	1 DEVICE	2 DEVICES	3 DEVICES	TOTAL	USES PORTAL	NO PORTAL	TOTAL	0	1-2+	TOTAL		
18-39	1.481481481	1.296296296	2.222222222	5	18-39	4.62962963	0.3703703704	5	18-39	0.925925926	0.1851851852	3.888888889
40-64	5.037037037	4.407407407	7.555555556	17	40-64	15.74074074	1.259259259	17	40-64	3.148148148	0.6296296296	13.22222222
65+	1.481481481	1.296296296	2.222222222	5	65+	4.62962963	0.3703703704	5	65+	0.925925926	0.1851851852	3.888888889

P VALUE: 0.895634062 P VALUE: 0.806332643 P VALUE: 0.9613398079

Table 2. Age: Number of devices owned; Portal Registration; Frequency of Portal Usage

NO. OF DEVICES				PORTAL REG			FREQUENCY OF PORTAL USE					
INSURANCE	1 DEVICE	2 DEVICES	3 DEVICES	TOTAL	USES PORTAL	NO PORTAL	TOTAL	0	1-2+	TOTAL		
MEDICAID	5	2	0	7	MEDICAID	6	1	7	MEDICAID	2	0	5
MEDICARE	2	2	2	6	MEDICARE	4	0	4	MEDICARE	1	0	5
PRIVATE	1	3	9	13	PRIVATE	21	1	22	PRIVATE	2	1	10
UNINSURED	1	0	0	1	UNINSURED	0	1	1	UNINSURED	1	0	1
TOTAL	9	7	11	27	TOTAL	33	3	36	TOTAL	6	1	20

NO. OF DEVICES				PORTAL REG			FREQUENCY OF PORTAL USE					
INSURANCE	1 DEVICE	2 DEVICES	3 DEVICES	TOTAL	USES PORTAL	NO PORTAL	TOTAL	0	1-2+	TOTAL		
MEDICAID	2.333333333	1.818181818	2.851851852	7	MEDICAID	6.416666667	0.5833333333	7	MEDICAID	1.555555556	0.292592593	5.185185185
MEDICARE	2	1.555555556	2.444444444	6	MEDICARE	5.5	0.5	6	MEDICARE	1.333333333	0.2222222222	4.444444444
PRIVATE	4.333333333	3.703703704	5.296296296	13	PRIVATE	20.16666667	1.833333333	22	PRIVATE	2.888888889	0.4814814815	9.62962963
UNINSURED	0.3333333333	0.292592593	0.4074074074	1	UNINSURED	0.1666666667	0.08333333333	1	UNINSURED	0.2222222222	0.03703703704	0.7407407407

P VALUE: 0.0382128576 P VALUE: 0.0000000000 P VALUE: 0.5292758423

Table 3. Insurance: Number of devices owned; Portal Registration; Frequency of Portal Usage

PORTAL REG				FREQUENCY OF PORTAL USE			
DEVICES OWNED	USES PORTAL	NO PORTAL	TOTAL	DEVICES OWNED	0	1-2+	TOTAL
1	7	2	9	1	3	0	6
2	7	0	7	2	1	1	5
3	11	1	12	3	2	0	10
TOTAL	25	3	28	TOTAL	6	1	21

PORTAL REG				FREQUENCY OF PORTAL USE			
DEVICES OWNED	USES PORTAL	NO PORTAL	TOTAL	DEVICES OWNED	0	1-2+	TOTAL
1	8.035714286	0.9642857143	9	1	1.928571429	0.3214285714	6.75
2	6.25	0.75	7	2	1.5	0.25	5.25
3	10.71428571	1.285714286	12	3	2.571428571	0.4285714286	9

P VALUE: 0.340099003 P VALUE: 0.393270188

Table 4. Number of devices owned: Portal Registration and Frequency of Portal Usage

PORTAL REG				FREQUENCY OF PORTAL USE			
DEVICES OWNED	USES PORTAL	NO PORTAL	TOTAL	DEVICES OWNED	0	1-2+	TOTAL
TABLET	17	1	18	TABLET	3	0	15
SMARTPHONE	23	3	26	SMARTPHONE	6	1	19
DESKTOP	14	1	15	DESKTOP	2	1	12
TOTAL	36	19	55	TOTAL	18	33	84

PORTAL REG				FREQUENCY OF PORTAL USE			
DEVICES OWNED	USES PORTAL	NO PORTAL	TOTAL	DEVICES OWNED	0	1-2+	TOTAL
TABLET	11.78181818	6.218181818	18	TABLET	3.857142857	7.071428571	10.92857143
SMARTPHONE	17.01818182	8.981818182	26	SMARTPHONE	5.571428571	10.21428571	15.78571429
DESKTOP	9.818181818	5.181818182	15	DESKTOP	3.214285714	5.892857143	9.107142857

P VALUE: 0.0003764525 P VALUE: 0.0000000000

Table 5. Device Type owned: Portal Registration and Frequency of Portal Usage

Results (contd.)

- Results of chi-square analyses revealed statistical significance between the variables of:
 - Portal Registration and Type of Insurance (Table. 3)
 - (p = 0.006)
 - Portal Registration and Type of Device owned (Table. 5)
 - (p < 0.05)
 - Frequency of Portal Usage and Type of Device owned (Table. 5)
 - (p < 0.05)

Conclusions

- Results indicated that portal registration and usage were higher in patients with private insurance and type of device owned.
- Overall ease of use and user interface drove dissatisfaction scores.
- These results highlight the importance of broadening the scope of portal access to those who are un- or underinsured and those who may not have reliable technology resources.
- Understanding the factors that underlie such variability was beyond the scope of this study.

Future Directions

- Future work on identifying barriers to portal usage.
- Employing EHR data repository.
- Controlling for concomitant conditions and engagement.
- Further elucidation into feature utilization.
- Pilot program introducing alteration to the portal to address areas of identified needed improvement.