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Healthcare patient portal usage: Benefits, issues, and challenges

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Abstract

The world is on the verge of rapid technological advancements, and acceptance. Healthcare is also influenced by recent innovations such as medical imaging and electronic patient health records. Thus, to maintain the patient's record in this digital era giant healthcare providers are adopting internet-based services such as patient portals that are portraying great results for patient involvement in this mechanism. However, it has been observed that patients, physicians, and healthcare providers are facing certain challenges to synch the health information cycle among them. Therefore, the focus of this study is to examine the interleaved issues, challenges, and benefits of healthcare patient portals. We have studied existing literature to retrieve our findings that accomplished the identified objective. We have found that patient portals are beneficial for maintaining and updating patients' health histories at any time and can be shared across the healthcare network. However, physician acceptance and patient resistance are key challenges to implementing patient portals in healthcare settings.

Keywords: Patient portal; Electronic health records; Healthcare; Patient outcome; Healthcare information management

1. Introduction

An electronic patient portal (e.g., AveraChart, MySanfordChart) is a potentially powerful tool to facilitate self-management support for patients. The identification of best practices related to the portal is just beginning to emerge. There are some best practices such as assisting the patient with the first portal login and the provider encouraging the use of specific portal functions. It has been observed that old age people required the portal more than younger ones. But age alone does not seem to be a barrier to use, hence it is crucial to suppress expectations about patient usage that are based on age. To fully reap the rewards of portal integration in self-care management as portal use spreads, best practices should be put into place.[1]

However, it has been also observed that patients are not taking advantage of portals. Some believe that the electronic patient portal is an emerging technology that is in its infancy. Moreover, during a pandemic like COVID-19, patient portals can be the key to promoting state-of-the-art mechanisms such as telemedicine. Furthermore, as suggested by [2], there is a need to investigate the benefits of patient portals to judge the improvement in patient care, information communications, and quality of care. Therefore, the purpose of this paper is to explore how patients are interacting with portals, what are the benefits and challenges and how to overcome those challenges [1].

Basically, in general understanding, a patient portal can be in the form of a website or mobile application that can be utilized to monitor the care of the patient's health. These tools help to analyze patients' clinical visits, laboratory results, bills, medication, and prescriptions. One can consult with their physicians with the help of these tools by raising a query. The emergence of the internet and smartphones makes it easy for everyone (no age barriers) to access the portal with

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a click. Many healthcare providers encourage patients for setting up their free accounts on the provider's integrated patient portal. These portals follow the Health Insurance Portability and Accountability Act (HIPPA) policies for the privacy of a patient's information.

Many healthcare regulatory government agencies defined patient portals in their way. Such as Healthcare Information and Management Systems Society (HIMSS) stated, the patient portal allows patients to interact with healthcare providers. Patients can view their selected records provided by the providers and create a dialogue with the provider regarding the records. Further for the implementation of "Meaningful Use" policies entitled by the Centers for Medicare & Medicaid Services (CMS) Electronic Health Record (EHR) Incentive Program, providers must integrate or develop patient portals. Also, it required that the provider actively utilize these portals and encourage patients to use them [1].

According to [3], An online gateway for patients provides quick, round-the-clock access to their own health information from any place that has an Internet connection. Patients may examine health information like recent medical visits, discharge summaries, medicine records, vaccination records, allergy data, and lab results by using a protected login and password. One can manage their health and treatment through a patient portal. Patient portals can also aid with time management, communication with the physician, and care during appointments [3]. The sole contribution of this paper is to enhance the literature base on patient portal advancement by listing important benefits, issues, challenges, and rectifications to the successful implementation of patient portals. The next section will showcase the various benefits of patient portals followed by issues, challenges, and solutions.

1.1. Benefits of Patient Portals

For obtaining the maximum benefits of patient portals, one should inquire about them through their healthcare provider. First, ask or check for the designated health provider's patient portal. Access to the required patient portal will help to make an appointment, consult with doctors, fetch lab results, and check ongoing medication. Some patient portals also provide immunization information [4].

In the present scenario, when the COVID-19 pandemic situation got worsen the usage of a Patient Portal for outpatients was really essential and advisable. Recently CDC regulated new guidelines for patient care and emphasized the usage of a patient portal for those who are not affected by COVID-19 to treat seasonal diseases such as normal cough and cold [5]. If the required information is not present on the portal, one can ask directly to the provider for making it available. One can even have the right to get all sorts of information related to his/her. Once someone has complete access to personal medical records, he/she can analyze the information's authenticity, integrity, and update. This is essential because if one forgot to tell something relevant to the physician or the physician themselves forgot to update something important on the portal, so, such exercise helps to remove the anomalies. The patient portal helps to perform the following operations: - 1. Update if Someone forgot to mention current medication or allergy, 2. Update if any staff member or physician misinterpreted something or left out essential information, 3. Update if someone forgot to inform about any hereditary in the family, 4. Update about newly developed symptoms (e.g., Loss of smell and taste during COVID-19), 5. Reminders for appointments, medication, and immunization, and 6. Update any irregularities in billing.
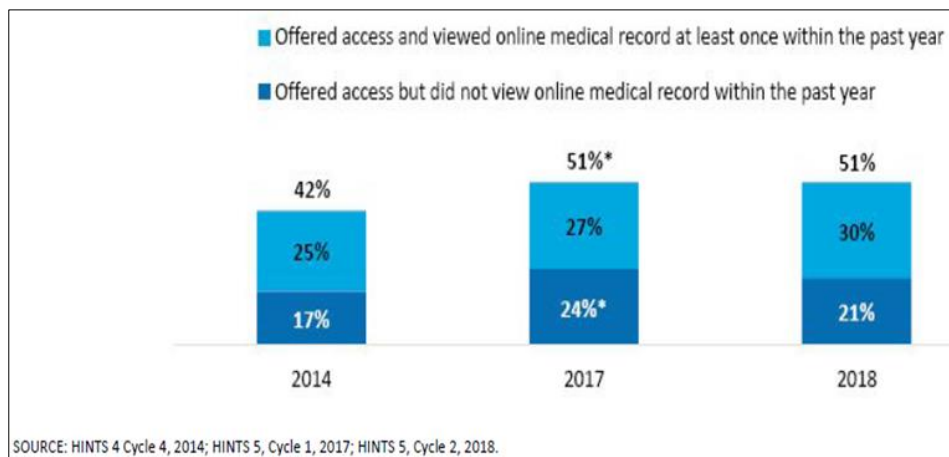
Figure 1 Percentage of individuals offered access. Source: [6]

Furthermore, there are important facts to consider that are utilized from the study organized by the office of national coordinator of health information technology (ONC) in 2019 on the "trends in individuals' access, viewing and use of

online medical records and other technology for health needs: 2017-2018 [6]". Figure 1 statistics can be summarized as- people continued to access and see their online health records at the same rate and frequency in both 2017 and 2018. A healthcare provider or insurer allowed online access to patient's health records to almost half of people in 2018. Within the previous year, 58 percent of these people checked their online health records at least once. Nationally, this represents about three in 10 individuals [6]. Table 1 shows that most individuals cited their preference to speak to a provider directly and perceived lack of need as reasons for not viewing their online medical records in 2017 and 2018.

Table 1 Reasons for not using online records. Source [6]

Reason for not using online record	2017	2018
Prefer to speak to health care provider directly	76%	73%
Did not have a need to use your online medical record	59%	65%
Concerned about the privacy/security of online medical record	25%	14%
No longer have an online medical record	19%	13%
Do not have a way to access the website	20%	10%

The results of the above statistics are discouraging in terms of usage and access to patient portals. Instead of these real-time results, one cannot deny the necessity of the patient portal and its role in an individual's life. Someone gets patient portal access only if he/she has medical records to maintain and this will help them to practice self-care. One can also access the patient portal on behalf of family members to know about health concerns and take better care. Although patients sometimes worry about the privacy of their credentials, then declared safeguards (Ex. technical, administrative) comes into play. There is a functionality named audit trail, with this, patients can check who accessed their account, what changes were made, and when. Nowadays, one new feature of the patient portal flourishing is known as E-visit: which is a virtual clinic visit that is safe and handy. Most of the insurers also started the reimbursement of E-visits because it is cheaper than the usual method of examination. In the present scenario, The Coronavirus (COVID-19) may be treated through e-visits from any location, including residences (homes, nursing homes, and assisted living facilities) [7].

1.2. Current Issues and Concerns

There are many issues and concerns identified for the acceptance of the patient portal's implementations. First, Physician Acceptance- Most of the self-practicing and small-scale physicians have a concern that whether these portals are worth their time and money. They are also concerned that; messaging medical services may lead to increase spamming in their inbox with irrelevant health queries. Second, Physician's incentive- Another major concern is physicians are not getting incentives for these portals. Although they are receiving incentives for EHR implementation for meaningful use. Third, the extra workload on staff- providers have concerns that it may increase the workload for the staff because they must manage the increased number of online messages like scheduling and refills [8]. Fourth, patient resistance - Providers also have a concern that it is hard to convince patients who belong to the above mid-age group (above 50 yr.) to use patient portals. Since they are not that tech-savvy and handy, it makes it difficult to explain to them the benefits of the portal. And if there is not any efficient communication between patient and staff then it further leads to negative patient response to the hospital recommendation [9, 10]. Fifth, patient limitations - Patients' age and language are the biggest limitations to using portals because many patients belong to the bilingual group, and they are not confrontable with the English language. Sixth, security, and privacy concerns-

A group of patients who are aware of the cyber-attacks on government databases and healthcare databases has shown their concern regarding the security of the portal and the privacy of their information. Seventh, standardization - One of the major concerns, patients feel about the patient portals is that there are not any standardized ways to exchange data between providers and clinics. What if a patient visited different clinics at various places, then he can access all information on a single platform having access to different portals itself is a big question on technology.

1.3. Challenges

There are various challenges identified; First, Access - In some cases, patients will not have access to all the records because the portal may not include that information. Second, Accuracy- It is difficult to fully rely on the patient portal's information because in some cases the information may be incomplete or irregular which may lead to unnecessary tests

and examinations. Third, Management- There are plenty of records available on paper, and uploading them on portals and managing them is laborious work until the whole procedure of healthcare adopts the online medium. However, the use of advanced machine learning and deep learning techniques can resolve this issue of migrating physical documents onto online mediums. Such techniques have already shown their potential in various application areas such as e-commerce and misinformation detection on the web [11, 12]. Forth, Portability- Each provider has their systems what if a patient moved and visited a different provider then he must require his old records available to a new provider? Here interoperability comes into play [13]. Fifth, Transparency- There must be laws and regulations regarding transparency for requesting records [13].

1.4. How to Overcome the Challenges

Learning, integration, and outcome-driven approach are the three major requirements identified for the acceptance and increase of the usage of patient portals [1]. Some doctors are strongly motivated to adopt portals because they can deliver patient-centered care when and how patients desire it [8]. Moreover, some encouraging solutions are, First, staff must encourage patients to sign up for the portal and use it. Second, staff should include the discussion of the portal and its benefits in part of the physical visit workflow. Third, staff should make a dialogue with patients regarding their health goals and how the portal can help them to accelerate their progress to achieve their goals. Fourth, always look for ways to improve patients' experience with portals by tracking their activities and usage, and Fifth, when discussing portals with patients, doctors should explain to patients the multiple technical safeguards incorporated into EHRs and portals in general [8]. Additionally, it has been observed that the invention of medical imaging has shown promising results during COVID-19 detection [14, 15] that can further foster patient portals by incorporating state-of-the-art techniques such as transfer learning for the patient's lab result diagnosis.

2. Conclusion

Although federal policies increased the pace of development and integration of patient portals still there is a requirement to adopt best practices and conduct research for improvement. In the present scenario when everyone's life is at the stake including staff and physicians, social distancing appeared as a key factor in the treatment of COVID-19. The concepts such as E-Visits could have created a significant impact on lowering the spread. Although some developed facilities adopted this technique to see infected patients by allowing them to message through patient portals and book E-visits for observations. Apart from this patient portal can be more beneficial in the treatment of chronic diseases for both physician and patient.

Compliance with ethical standards

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Disclosure of conflict of interest

There is no conflict of interest to declare.

References

[1]   K. R. Powell, C. R. Myers, and others, "Electronic patient portals: patient and provider perceptions," On-Line J. Nurs. Informatics, vol. 22, no. 1, 2018.

[2]   M. M. Kelly, R. J. Coller, and P. L. T. Hoonakker, "Inpatient portals for hospitalized patients and caregivers: a systematic review," J. Hosp. Med., vol. 13, no. 6, pp. 405–412, 2018.

[3]   Portal, "What is a patient portal? | HealthIT.gov," 2017. https://www.healthit.gov/faq/what-patient-portal (accessed Dec. 17, 2022).

[4]   Healthit, "How to Get It - The Guide to Getting and Using Your Health Records - HealthIT.gov," 2022. https://www.healthit.gov/how-to-get-your-health-record/get-it/ (accessed Dec. 17, 2022).

[5]   "Guidance for Outpatient and Ambulatory Care Settings | CDC." .

[6]   V. Patel and C. J. Mph, "Access and Use of Online Medical Records and Technology for Health Needs 1 Trends in Individuals' Access, Viewing and Use of Online Medical Records and Other Technology for Health Needs," 2017.

[7]   Evisit, "E-Visits Coverage," 2022. https://www.medicare.gov/coverage/e-visits (accessed Dec. 17, 2022).

[8]   D. Twiddy, "Removing six key barriers to online portal use," Fam. Pract. Manag., vol. 22, no. 1, pp. 26–31, 2015.

[9]   P. Vyas, L. Ambati, G. Bojja, and G. Vyas, "Utilizing Timely and Preventive Care Measures to Predict Patient's Response for Hospital Recommendation," MWAIS 2021 Proc., May 2021, Accessed: Dec. 08, 2022. [Online]. Available: https://aisel.aisnet.org/mwais2021/25.

[10]   P. Vyas, G. R. Bojja, L. S. Ambati, J. Liu, and M. Ofori, "Prediction of Patient Willingness to Recommend Hospital: A Machine Learning-Based Exploratory Study," AMCIS 2021 Proc., Aug. 2021, Accessed: Dec. 08, 2022. [Online]. Available: https://aisel.aisnet.org/amcis2021/healthcare_it/sig_health/26.

[11]   P. Vyas and O. El-Gayar, "Credibility Analysis of News on Twitter using LSTM: An exploratory study," AMCIS 2020 Proc.,   Aug.   2020,   Accessed: Dec.   08,   2022.   [Online].   Available: https://aisel.aisnet.org/amcis2020/social_computing/social_computing/17.

[12]   P. Vyas, J. Liu, and O. El-Gayar, "Fake News Detection on the Web: An LSTM-based Approach," AMCIS 2021 Proc.,   Aug.   2021,   Accessed: Dec.   08,   2022.   [Online].   Available: https://aisel.aisnet.org/amcis2021/virtual_communities/virtual_communities/5.

[13]   Healthit, "Improving the health records request process for patients insights from user experiences research," The   Ofce   of   the   National   Coordinator   for   Health   Information   Technology,   2022. https://www.healthit.gov/sites/default/files/playbook/pdf/ONC-Records-Request-Research-Report.pdf (accessed Dec. 18, 2022).

[14]   P. Vyas, K. N. M. Ragothaman, A. Chauhan, and B. P. Rimal, "Classification of COVID-19 Cases: The Customized Deep Convolutional Neural Network and Transfer Learning Approach," AMCIS 2022 Proc., Aug. 2022, Accessed: Dec. 08, 2022. [Online]. Available: https://aisel.aisnet.org/amcis2022/sig_health/sig_health/22.

[15]   P. Vyas, K. Ragothaman, A. Chauhan, and B. Rimal, "Classification of COVID-19 Cases: An Exploratory Study by Incorporating Transfer Learning with Cloud," MWAIS 2021 Proc., May 2021, Accessed: Dec. 08, 2022. [Online]. Available: https://aisel.aisnet.org/mwais2021/8.