

EVALUATION PAPER

A MEASURABLE PLAN FOR CHANGES MADE TO A PATIENT PORTAL

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Introduction: A patient portal is a tool to record personal health records and helps in elevating personal healthcare for the patients. It basically provides access to patients about their own medical information, engaging healthcare management, tracks visits to the providers, results for various laboratory tests, access to the bills for the medical procedures and visits to the healthcare personnel along with prescriptions and for communication with the providers.

Ensuring that these patient portals are working a necessity for performance measures and evaluation for their functionality, periodically is needed when certain changes are implemented (*Patient Portals - an Online Tool for Your Health: MedlinePlus Medical Encyclopedia*, n.d.).

Recent changes have been made to the patient portal which includes addition of text reminders of appropriate aged patients who possess prostate for scheduling a prostate exam and patients who possess breasts for scheduling of a mammogram respectively, as per the CDC guidelines, in order to understand their functionality and evaluate based on the results of the functionality. The guidelines suggest that men who are 55 to 69 years old should individually decide for screening with PSA test for prostate cancer. Likewise, the new guidelines recommends women from age 50 and above who are at a higher risk to develop breast cancer should get regular checkups and its varies according to age and accounting different factors medically as well. (*Should I Get Screened for Prostate Cancer?*, 2019) and (CDC, 2020).

This paper proposes a detailed plan measuring performance of these changes made in the patient portal during several durations of implementation of the change which are 2 to 6 months before the implementation, 3 months after the implementation and one year after the implementation where discussion of target patients, several stakeholders, evaluation methods selection, success metrics and team roles will be done.

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Objective: The objective of this plan is assessing the impactfulness of the text reminders added in the patient portal for prostate examinations and breast examinations as done per the new CDC guidelines and understanding the patient compliance and provider-patient engagement.

Identification of Target Patients: Demographic variables present in the Electronic Health Record system can be used to identify the patients who are going to be affected by the changes in the patient portal. The eligibility of the patients can be based on variables such as gender, age, medical history, family history, genetic history, congenital history and other medical problems, relevant and active prescriptions. A data analysis from the Electronic Health Record systems can be done for these patients by filtering the above variables and the list of the patients can be made. Pop-ups and alerts can be reflected in the patient portal so that the patients can understand the need of the examinations along with that several brochures and educational materials in the form audio-visual data can be associated with those pop-ups which can educate the patients towards the severity leading to increased patient engagement and in turn them reaching to their primary physician or the concerned healthcare personnel.

Stakeholders: In the healthcare industry, there are various stakeholders, and it is required to understand perspective of every stakeholder in order to understand the content for evaluating the performance and understand the process along with the dynamics of the interaction that takes place hence decreasing the complexity in the changes made along with understanding the outcomes (Eslami Andargoli et al., 2017). Hence, the following are some of the stakeholders involved for the changes in the patient portal.

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- a) **Patients** are the most benefitted and direct stakeholders who are getting affected by the changes made to their own personal health record information. Evaluation done for the outcomes based on their patient engagement with the examinations conducted can be critical and hence their feedback is one of the utmost important criteria in implementing any change (Eslami Andargoli et al., 2017).
- b) **Healthcare Professionals** includes all the professionals who are clinical staff such as nurses, doctors, and other professionals who are attached to the changes implemented because they are providing the quality of care to the patients and are in charge of the patient safety. They can directly engage with the patients and their feedback is unbiased and opens a scope for improvement (Eslami Andargoli et al., 2017)
- c) **Patient's family members** are one of the important stakeholders because they aid the patients and can influence their decision for any medical or surgical treatment. They can also contribute to decision-making processes for the patients along with scheduling the important procedures with the healthcare professional. They are a pillar of support to the patients and hence can influence the patients in a rigorous way and their feedback is important for improvement (Eslami Andargoli et al., 2017).
- d) **Admin Department** are another important stakeholder because they help in implement the changes by doing budgeting, dividing the resources among valid departments and come up with the help of management a cost-effective plan which can be helpful to everyone and their involvement in implementing the

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changes is needed because they serve as a bridge between medical and non-medical personnels (Eslami Andargoli et al., 2017).

- e) **Experts/ IT developers** are one of the important stakeholders as well because they help in providing the technical expertise of the patient portal end by imparting knowledge and information about the performance of the patient portal, help in troubleshooting and eradicating any technical problems and understand the efficiency and effectiveness of the new changes implemented (Eslami Andargoli et al., 2017).

Evaluation Metrics: When adopting changes to the patient portal there are several clinical care metrics that can be considered:

- a) **Improved diagnosis:** When the changes are implemented, more patients are educated to get the examination done and thus leading to increase in the detection of any abnormalities leading to a good prognosis and along with that preventive measures can be taken (Granja et al., 2018).
- b) **Patient-centered care:** The quality of care increases with customization to the eligible patients who accesses the patient portal and who responds to the reminders and thus increasing patient engagement and compliance leading to increased patient safety and quality of care (Granja et al., 2018).
- c) **Quality measurement for the hospitals:** When the hospitals set up the changes in their patient portals and this leads to an increase in the prostate exams and mammograms leading to obedience with the CDC guidelines, hence increasing efficacy (Granja et al., 2018).

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- d) **Satisfaction ratio of the patients:** For the healthcare industry it is very important that patient satisfaction be considered whenever new changes are implemented which can be measured by different techniques of surveys which can be direct or indirect that can interpret how effective and useful are the changes and decisions which are implemented (Granja et al., 2018).
- e) **Evaluating Performance:** Performance of the patient portal can be measured by seeing the periodical downtimes, technical checks, response time and issues discovered on periodical basis, ticket ensuing which will at the end show probability of the changes to work successfully leading to enhanced performance. Measure of the test performance will reduce the misadventures hence increasing smoother integration of the changes in daily operations (Owens et al., 2021, pp. 114-117).

Team Roles: A team is needed to execute a plan so that a well-detailed plan can be executed with ease hence some team roles are mentioned:

- a) **User:** User is responsible for checking the implemented changes and its functionality hence helping all the other stakeholders to take corrective and preventive actions ensuring the evaluation and measuring the outcome level (Eslami Andargoli et al., 2017).
- b) **Manager:** The project manager overlooks all the operations among all the teams and team members and helps the team to do root cause analysis and coordinate with all the stakeholders for upper management level to lower management level and maintain the progress of the project and ensures that deadlines are met along with maintaining harmony among the stakeholders (Eslami Andargoli et al., 2017).

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- c) **IT expert and team:** They will be responsible for collection and analyzing the healthcare data recorded and stored in the patient portal hence increasing engagement of the patients, and they can use the data to provide more insights along with eliminating the errors by using their technical expertise (Eslami Andargoli et al., 2017).
- d) **UX designers:** The designers help in the designing a patient portal which is based on the feedback of users and stakeholders which can improve the traffic on the patient portal making it more appealing and satisfactory to use leading to more patient engagement on the website (Eslami Andargoli et al., 2017).
- e) **Medical Providers:** The healthcare professionals provide the team members expertise as they are directly in contact with the patients and their family members hence providing essential medical and non-medical opinions and thus help in implementation of the changes needed to be done keeping in mind the medical perspective (Eslami Andargoli et al., 2017).

Timeline: The evaluation plan needs to have a timeline so that the plan can be executed within the deadline and changes can be implemented within that timeline.

Months 1-4 – Defining the evaluation plan, understand objectives, recruitment of the appropriate team, onboarding different stakeholders, understand the healthcare policies, formation of various team and defining team roles, understanding different metrics for evaluation of performance and outcomes, collection of the data via feedbacks surveys and increasing patient engagement.

Month 5-10 : Implementation of the changes to the patient portal and inculcating reminders via text in the patient portal and collection of the data, analyzing the technical difficulties and

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eliminate them along with improve the design of the patient portal. Analyzing the data and evaluating the quality of care provided along with overseeing the compliance with CDC guidelines and measurement of quality assurance by the team.

Month 11-16 : Summarize the analysis of data using different tools and software, developing reports and formulate presentations along with representing the results to the stakeholders and users and implement the recommendations by overcoming the shortfalls, revalidate the data and perform quality checks.

Evaluation Methods: Evaluating the efficacy of the changes done to the patient portal various evaluation methods can be used for 3 different time periods which are 2-6 months before implementation, 3 months after implementation and 1 year after implementation. An aggregation of quantitative and qualitative evaluation methods can be used which can help in evaluating the outcomes keeping in mind performance of the patient portal. A system is formulated which includes human interactions, technology interactions for the successful implementation of the changes done in patient portal (Eslami Andargoli et al., 2017). Healthcare has different sets of instruments and outcome variables to understand the effectiveness and efficacy (Scott et al., 2014).

2-6 months before implementation - Analysis of socio-technical and socio-political perspective where technical, political and social factors along with demographic and organizational factors are taken into consideration and data is analyzed to understand the need of the change in the patient portal leading to formulation of the need of the framework and data analysis is done. (Eslami Andargoli et al., 2017). Along with that, the data which is needed to send the reminders is demographic variables of the patient so that filtering out of the patients

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from EHRs for examination can be done. Pre and post Surveys can be introduced to the cohort of patient for collecting their responses which can produce usefulness of the text reminders and they can be done before implementation, 3 months after implementation and 1 year after implementation for better results. The collection of data can also be done via feedback surveys of the stakeholders, analyzing the data of feedbacks over several years by the analyst, a direct interview with the providers and collecting the responses and evaluating them against different statistical scales to calculate patient satisfaction ratio. The data when undergoes statistical analysis and decision analysis where various quantitative techniques such as descriptive statistics, probability of the events happening and sensitivity analysis is done to understand whether the predicted change is needed or not and at last decision is implemented after assessing the risks associated with the changes which are going to be implemented (Owens et al., 2021, pp. 101-108).

3 months after implementation – After the implementation of the changes in the patient portal, patient surveys can be conducted to collect the feedback of the changes implemented and gather the patient satisfaction ratio with the help of Qualtrics surveys, Likert scale which can make the quality assurance specialists and analysts understand the patient engagement, their experience with the changes and patient compliance to the CDC guidelines. Patient behavior can also be recorded during in-patient visits by the providers and other paramedical personnel. Direct interviews with the patients and their families can also be done in order to understand patient satisfaction with the text reminders, usage ease and impact of the change on their own personal health. The data collected in the feedbacks can be further analyzed to solve any difficulties faced by the patients or to overlook any scope of improvements and to understand the attitude of the patient towards the change whether they feel the change was necessary or was not required. With

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the help of the results obtained from the feedbacks the analysts can further do meta-analysis where comparison with different studies can be done and understanding the analysis of the results of the particular project. (Owens et al., 2021, pp. 92-95).

1 year after implementation – Electronic Health Records System analysis along with measuring the performance of the changes in the form of outcomes measurement of the surveys and understanding the month by month growth of the changes implemented can be compared to the previous year results. Potential growth can also be predicted for the changes implemented. Other than that, the provider's outlook towards the changes can also be recorded whether they see any performance elevation in their daily routine examination. Education of the patients regarding prostate exams and breast mammograms can also be assessed as an outcome measure. Furthermore, positive, and negative predictive values can be used to understand the results of the patients and make further assumptions about the changes implemented and their indirect effect on the patient's well-being (Owens et al., 2021, pp. 95).

Rationale for Evaluation Methods: Evaluation methods which are used to assess the effectiveness and efficiency of the changes done in the patient portal are helpful in making a comprehensive approach which amalgamates quantitative and qualitative approach where statistical tools as well as surveys are used to assess the outcomes of the changes done to evaluate measurement of performance. A holistic approach when used can help in understanding the patient's attitude and overall patient satisfaction to understand the adaptability of the changes made. A well-designed approach for inculcating the changes as text reminder which abide by the CDC guidelines for prostate exams and breast mammogram can help in elevating patient safety and quality of care where patient engagement can be recorded. The role of various stakeholders

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in regulating the functionality along with different members of the team working towards a directed goals can enhance the overall performance and user satisfaction. Data validation and quality assurance can be a promising factor in troubleshooting problems leading to increased scores of the feedback surveys from users and patients. Continuous reporting and data visualization of the acquired data can give more insights to the providers about their performance leading to more patient-provider engagement. Recommendations can include usability issues in patient portal interface, solving technical difficulties, modifying design of the portal, increasing the frequency of the reminders of text and improvement in the process of evaluation and implementation. Continuous follow-ups and monitoring are needed to identify the areas of improvement and thus undertaking preventive and corrective actions by doing root cause analysis for the issues faced.

Conclusion: A successful evaluation plan for assessment of the changes implemented of text reminders for prostate examination and breast mammogram can be accomplished via great evaluation systems, continuous monitoring, quality assurance checks and improved patient care along with patient-provider enhanced engagement.

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