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Formulating the Business Case for Hospital Information Systems – Analysis of Kaiser Permanente Investment Choice

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Abstract - This research paper focusses on the business case for the Hospital Information Systems (HIS) which represents the businesses that contemplate the fundamental investment in the Electronic Medical Record (EMR) information technology framework. In that case, Kaiser permanent framework is tasked with the obligation to maintain social mission which will develop the medical fields and can be applied by medical practitioners to effectively develop the clinical sector. Nonetheless, Kaiser framework might be stimulated to underscore just like many investment organizational cases, the data presented in this framework signifies our 'effective thinking' at a certain timeframe in relation to limited information. This represents both the internalized Kaiser Permanent information and the paucity of the essential sets of data in the wide-range medical and bioinformatics sector. We project that this research contributes to the upcoming measure of EMR to the clinical aspect of communities and patients. Moreover, there are critical analyses that have been executed in relation to the medical information technology and has been designed based on the framework's cost and benefit analysis for the electronic HIS.

Keywords - Hospital Information Systems (HIS); Electronic Medical Record (EMR); Kaiser Permanent Framework.

1. Introduction

The organizational case discussed in this article is based on various contingent success elements: timely implementation, leadership commitments, coding compliance, workflow design and partnership with labor. The constraints and issues which affect the potential transferability of this organizational case over the delivery frameworks is based on the advantages which have been evaluated in this research. The safety and quality of the medical field is dependent significantly on the citizens for the best purpose. The medical sector is error prone and fragmented in relation to the inconsistent procedures which potentially yield inconsistent results. The medical information technology (IT) is identified by the experts of healthcare quality Hospital Information Systems (HIS) to potentially save the lives of patients and facilitate optimal case whereas minimizing the potential costs.

A developing segment of the empirical evidence shows the advantages of the medical IT and its capacity to change the medical efficiency, safety, quality and care delivery. Significant scientific evidence indicates that computer physicians and the order of entry in medical systems might significantly minimize the preventable adverse effects. The clinicians and researches have showcased the efficacy of the computed prompts and reminders on the illness managements and the preventable medical guidelines and their compliance. In that case, considerable evidence critically confirms that medical IT tools might effectively enhance the process of drug administration and prescribing [1].

Nonetheless, in the timeframe of scarce resources a lot of medical providers are stimulated to create organizational cases which are firm enough to provide justification on the fundamental investment of human and monetary capital that is essential for the purpose of deploying medical IT frameworks. Moreover, the most ardent stress is aware of the elusive condition of the medical IT organizational case and the extreme variation of the supportive evidence of the cost, benefit value and its proposition. The present knowledge leaves minimal doubts concerning the capacity of IT to enhance the medical results. Nonetheless, equally facilitating evidence of positive monetary returns on the healthcare investment is presently yet to be found [2]. In the wide speculation of the organizational case for quality, the medical observers have commented on the ineffective economic incentives for quality enhancement and the necessity for policy actions to be accorded to the incentives and the demands of the market. Various factors progress to obscure the medical IT organizational case. For instance, calculating the relevant costs or benefits of the IT frameworks and tools, effectively managing the opportunity costs based on the application of the paper-centered records is considered problematic.

As such, this makes the process of decision-making more challenging. Within the present organizational

framework, saving based on non-capitated reimbursement connection is considered to accrue to the contributors instead of the entities which are investing in technological advancements. Moreover, a lot of medical IT merits such as the provider conveniences, enhanced communication and patient satisfaction are not captured with ease based on the bottom-line organizational revenue. This is a decreasing expense or a segment that avoids these expenses [3]. However, companies are gradually making the healthcare IT investment decisions in reference to the prospect of the quantifiable value identification. This research evaluates the organizational case for the HIS investment of a prepaid and large organized delivery framework which is known as Kaiser Permanent.

Following the discussion of the organizational case background and the strategic approach, we have evaluated the advantages of the results and the rationale defining the business imperatives for HIS application. We have found with the relevant discussion of the success policies and factor effects for Kaiser Permanent, including other businesses that consider investing in medical information systems. Many healthcare practitioners spend a lot of time in hospitals time-chasing the processing patient data and looking for paper clinical records that will be combined with the pertinent history of the patients. This data is essential for the diagnostic services and the medical crosschecking [4]. The efforts of this healthcare practitioner are widely based on bookkeeping. Over the past few decades, computers provided major assistance to the bookkeepers and financial experts. It was considered as management to create an illusion of the medical chart and its management process.

2. Background Analysis of the Medical Record Systems

The application of Medical Record Systems (MRS) at the Indiana and Wishard University and Medical Centre is varied in terms of medical records whereby more than 1.4 million patients are on prescription records. About 100,000 of the patients are in complete narrative documents and patients are coded according to patient observations and the test findings in the medical sector [5]. This data incorporates the relevant orders, encounters and diagnoses of the medical variables from the chosen medical sites. This does not carry significant proportion of the things that healthcare providers know and have identifies concerning the patients. However, this does not incorporate everything. This is probably due to the fact that healthcare givers are obliged to handwrite daily notes in the healthcare facility which does not necessarily capture the computing content. In that case, EMR has taken the place of a lot of the charts required in the healthcare sector. The physicians typically handle the computing records first. This might either be through the direct terminals or through the look-ups (Fig 1). Moreover, this can be based on the paper-pocket rounds and reports as evident in Fig 2 below. Whenever folded half way, it is capable of fitting effectively in the complete white coat and pockets whereas the physicians utilize them and carry them around (Fig 3).

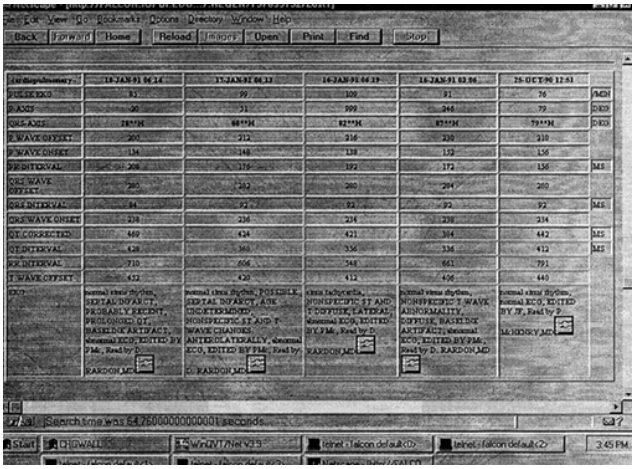

Fig 1: The web browsers with the capacity to display RMRS patient information that indicate EKG diagnoses and measurements which include the links to track the elements that can be viewed through a click on icons found beneath the figure.

Fig 2: Pocket rounds analyses which include the orders, allergies, actions, issues, signs and vital weights in the flow chart formal with precise impressions of imaging evaluations.

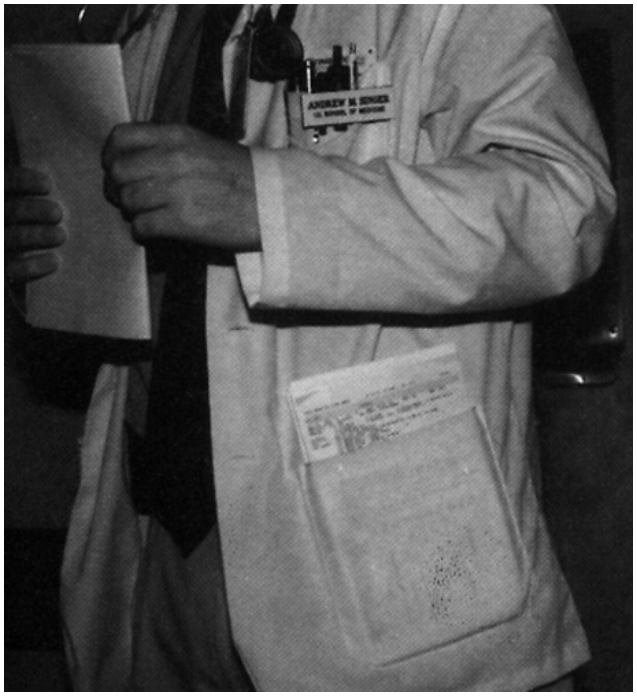

Fig 3: Physicians with typical configuration packets in the pocket

Healthcare practitioners and physicians are now glad with the Regenstrief orders and the entry frameworks that physicians utilize in writing the inpatient orders. This was not the case whenever we began eight years ago [6]. They prefer the active computing reminders and the suggested measures that can be done in the right way. Physicians prefer using the rolling pole radio connector and portable computers to effectively compute the admission evaluations (Fig 4).

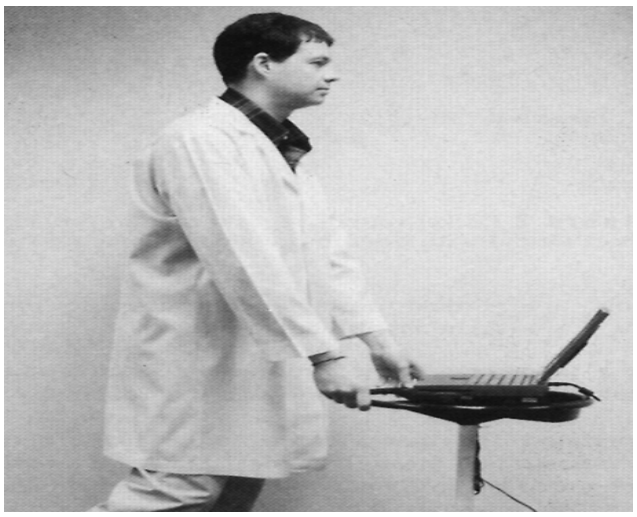

Fig 4: The radio-connected portable computer on the rolling pole stands are utilized for collecting the medical assessment regularly based on the notes submitted by physicians which is taken based on experiments.

Some of the organizations have effectively maintained and installed the healthcare records. Actually, some of them began in the late 70s [7]. These are identified as early adopters that have showcased the potential value in EMR. They have also showcased based on the application of the medical trials that the potential reminders are produced by EMR and have substantial beneficial effects on the behaviour of physicians and the care processes. Apart from that they have showcased the importance of computer-organized data and their potential providers which are enthusiastic concerning the present capacity of the patient data that the EMR records can possibly provide. Apart from that EMR might eliminate the logical issues of the ancient clinical records even when it has completely been replaced with paper charts.

The pending issue is the manner in which institutions can be motivated to create the EMR system since everyone now wants it. The system is needed to mitigate the logistic issues of the paper charts and might not find the specific records within its databases. The multi-site businesses are considered desperate for the system due to the lack of means of using a single chart on multiple sites. In that case, they purpose on having EMR to enhance the coherence and quality of the healthcare process via automate principles and guidelines. They purpose them to effectively provide the aggregated information concerning the patients through the doctors, procedures, diseases and clinical analysis, including developing novel care products, process enhancement and result management. Moreover, the healthcare practitioners' purpose is to save money that would have been spent in the paper works, filling the expenses, the time that would have been spent looking for regulatory reporting and physical records [8].

In case everyone wants EMR and the basic sources of the electronic patient information that are abundant, why are they limited? The answer to this is twofold, the sources of these electronic patient data which are unavailable (such as physician dictation, pharmacy information and laboratory information) is incorporated in many isolated databases which cannot be accessed. Secondly, we have not figured out the manner in which we can capture the information from the medical experts in a more computerized and structured manner. Fig 5 shows the issue of most of these isolated databases. When the patients come in contact with the healthcare providers, the medical data in trial is left in sites such as the physician's office, hospitals, nursing homes and the healthcare sites. Every site makes use of various radiological and pharmacy services. Every site also carries a portion of the patients' healthcare information. The patients might be able to visit a lot of various physicians' offices and pharmacies. In a single business entity such as a medical facility, a lot of the isolated databases are present.

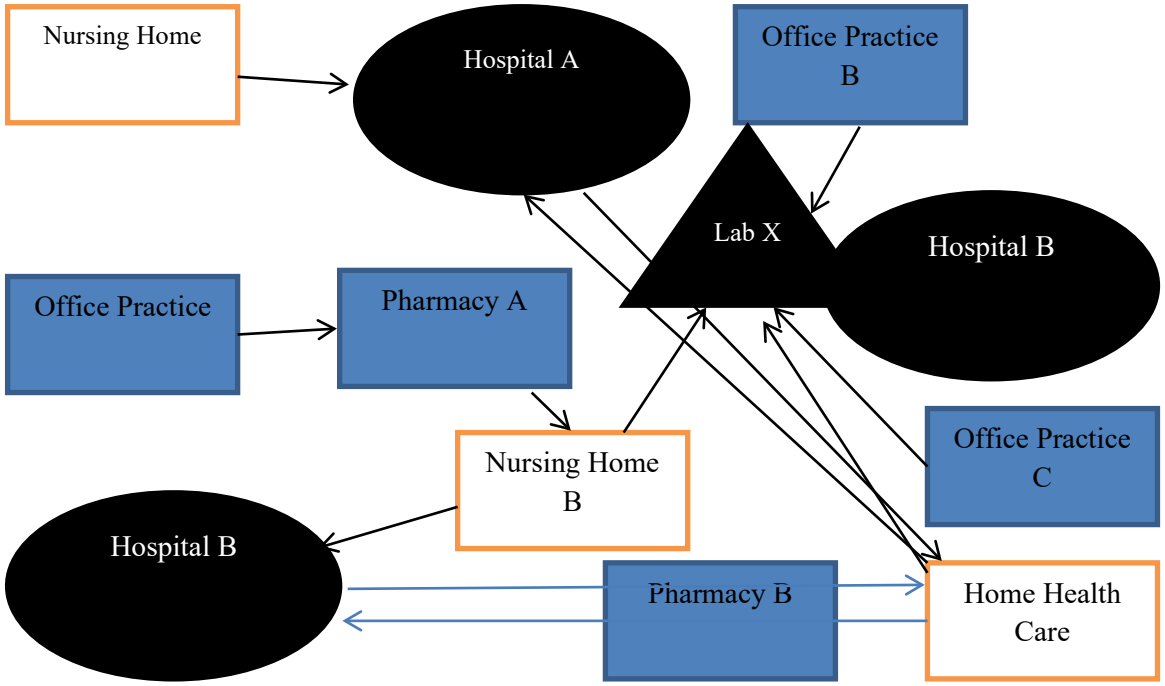

Fig 5: Overview of isolated dataset formed as patients' transverse framework though the healthcare framework

Every isolated framework includes various information structures and levels that are using the various coded frameworks to effectively identify the same clinical models. The external island is different compared to those within a specific healthcare sector. All these isolated databases tend to apply various patients, location identifiers and medical providers including the independent frameworks which are legion [9]. These various cubby-holed frameworks present the significant entropy barriers which are projected to affect the entropy through the interfacing of various islands and the regularization of information contained in them more than it might afford.

Apart from that, massive organizations like hospitals are not capable of capturing the required datasets for the practitioners. They transfer them to the labs for testing in the external reference clinical departments [10]. The patients are required to fill their discharge details and prescriptions at their localized pharmacies and not the clinical pharmacy. Businesses are invariably frustrated whenever they find out the planning stages that they are incapable of attaining all the quality assurance obligations. For instance, the identification of the patients who are in need of influenza vaccines do not require to spend much to access manual data. This might happen if the healthcare sector falls sufficient of the influenza shots provided by the nursing homes and the offices provided by physicians.

In that case, what are the remedies? For the last three decades, the participants in the medical sector and informatics have effectively fixated the medical records and systems which are considered to be the vessel that transports patient information. In this process, we have concentrated on the unwanted part of the issue. Medical information does not produce spontaneously in the clinical records. However, it originates from the sources available in isolated parts of the world. Moreover, all the obstacles structures by EMR are linked to external information sources which transfer the data into EMR. The face and vase illusion are considered a metaphor for the issue (Fig 6). We have been focusing on the vase, including the moment when faces should be focused on.

3. The Purpose of the Standard

The remedy to the initial issue which is merging information of the various sources into a single. EMR, is dependent on the standards that informatics society started to structure in the late 1980s. These standards have the capacity to provide the required brides to the majority of isolated databases that encrypt the patient information to make it easier to link the EMR. These standards require transferring information from one framework to another which are considered to be in a single position. Apart from that the standards can be utilized to mitigate some issues that are present in a particular system. For instance, dictation, EKG cart, pharmacy, laboratory and case abstraction framework [11]. The standard aspect of communication in these networks is considered secure since standards are considered to be in a medical content and format for the patient records, test results and registry orders, including the standard identifiers meant to code these concepts in medical records.

The communication protocols and standards of choice represent the internet standards which include the base-internet protocols for transferring the packets of data, the secure sockets layers for safeguarding encrypted transmitted data, certificates of verification and the identified communicant. The internet standards and protocols represent the communication frameworks of choice for the private internet which also includes the publicized internet [12]. It is believed that the present or announced privacy tools are effective when it comes to threatening the public internet. As for the users who do not believe this, it might control their accessibility to publicize internet until it attains the essential confidence level. Users might be able to explore their internet protocols and standards which might be downloaded from the internet at a cheaper price.

4. The Kaiser Permanente

The country's largest private managed delivery framework which serves more than eight million members in the district of Columbia and other mini states is capable of investing about three billion dollars in the deployment of electronic medical frameworks. These frameworks are projected to enhance the quality delivery of patient services in HIS. The framework's HealthConnectTM is considered as an electronic medical record system that deals with both the outpatient and inpatient data which has the capacity to integrate the medical records in billing, registration and appointment aspects. Moreover, it has been grounded in relation to the base framework of the standardized medical content, charting framework, workflow process and supportive protocols which can communicate to vendors in HIS. This process started in 2004 and is known for its 3-year implementation timeline [13]. In the process of implementation and its completion, the Health Connect has been considered as the largest civilian medical data framework throughout the U.S., when it comes to the number of providers who use it. As such, this is capable of providing novel laboratory for the purpose of value demonstration.

The framework's rollout will incorporate the implementation of more HIS in approximately 33 hospitals that have been founded by Kaiser. The inpatient suit is capable of catalyzing the transition of the non-compliance risk based on regulatory requirements. In cycle with the Health Connect process of implementation, the framework is going through fundamental restructuring of the inpatient workflow to consider the fundamental advantage of the novel HIS and the accelerated information transfer systems to be delivered. Following the process of investment with HIS, the foundation and its health planners have requested a more defined business case evaluation to effectively quantify the potential benefits and costs.

This paper provides a business case analysis for targets and tools for implementation planning, operational planning and financial planning. Another relevant objective was to effectively verify that the element of functionality is assured by HIS and is based on strategic connection of the company's vision and mission. Health Connect is a critical element of Kaiser Permanent's long-lasting strategy meant to assure the flexibility of the market, compliance of regulations and the capacity of effective management of the company's costs and the structures based on the application of both the operational and clinical information that has been produced by HIS.

4.1 The Organizational Case Design

The organizational case includes the Kaiser Permanent geographical regions which operate all the inpatient facilities. These regions include Northwest California, Northern California, Hawaii and Southern California. The salient functions and features of HIS have been evaluated and incorporates the inpatient healthcare records, CPOE, medical registration, documentation, billing and scheduling, including the inpatient operation rooms, emergency departments and the inpatient pharmacy modules. The research has been done to consider the strategic and synergy merits of the connected outpatient and inpatient products that incorporates the consistent information and elements over a vast geographical regions and care continuums which include a single patient record and the developed communication framework. An in-depth evaluation of the crucial implementation and opportunity costs of HIS depends on the baseline of information gathered on various medical centers that extrapolate to other medical services.

When there is no experience with Epic framework, the project management is obliged to do an extensive primary and secondary analysis. They are also obliged to consider the best practices based on literature evaluation to effectively quantify, define and identify the potential benefits. The research term has done 150 interviews with the elementary healthcare practitioners and considered undertaking a thorough evaluation of a quantitative evaluation of Kaiser Permanent information whenever possible. To comprehend the potential achievement in the efficiency and workflow, including the validation of the research result, the research team collected information through the site focus and visits groups for the purpose of the interviews [14]. The organizational case has been evaluated and reviewed before being refined in the validation procedure which included the relevant regional leaders, experts and stakeholders. Evaluating the magnitude of HIS application was a crucial element of the organizational case. The enterprise and region-wide costs initiators have been expressed and quantified as a single cost or progressive cost.

The onetime infrastructure cost incorporates the electric wiring, networking devices and desktop products which have been amortized for more than six years now. The labor expenses for project management, backfill, training, testing and implementation have been considered as a single-time expense. The progressive system support expenses incorporate the medical content management, desktop support and framework administration which have been spread over a period of one decade. The project team structured the financial costs and benefits under three projected scenarios: aggressive, medium and conservative which are the instances considered as span for a period of one decade.

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The aggressive cases assume complete, expedient application and incorporation of operating geographical regions. The conservative cases assume minimal returns on the investment which significantly moderate evaluation in the cost reduction and revenue increment. The medium that is the most case evaluated is found in the two segments. To evaluate the overall present value two forms of timing lags, have to be captured. First, it is based on the implementation lags, the timeline between the periodic installation, actual utility and training. Secondly, it is based on the advantageous realization lags which accounts for the benefits such as malpractices and liability reductions which might not be manifested until decades after application.

4.2 The Organizational Case Results

The analysis in this research shows that a firm business case is possible for the HIS evaluation, where it is contrasted to the senior management, clear leadership targets and work redesigns. The organizational case quantifies a wide-range financial benefits that fundamentally fall under a wide class of minimized operational costs, enhanced revenues and minimized capital expenditure. More areas of benefits have been explored but have not been quantified correctly. As such, an optimistic cumulative new cash flow was done based on cost and benefit analysis which has been identified as a break-even measure over the end of the horizon of investment. It is fundamental to note that a lot of benefits cannot be quantified with ease such as quality enhancement, continuity care, patient safety and patient centeredness. Nonetheless, these are the most essential elements due to the fact that they are accorded to the Kaiser Permanente mission and strategic planning.

4.3 Financial Evaluation

The overall cash flow which includes the variation between the quantifiable merits of HIS and the general implementation cost of the system have been projected for a single year. As such, the cumulative cash flow is structured and projected for eight years (i.e. the aggressive and conservative scenarios are forecasted for less than a decade). More than two billion dollars identified that cash flow is projected from about one billion dollars for HIS investment in the investment horizon. The forecasted payback of the investment fund within a period of one decade potentially confirms for the framework to project a lengthy return on an investment. The timeframe is taken to attain the break-even condition motivated by the loaded costs whereas the bulk financial merits are considered back-loaded. The organizational case projects members that determine that the moment the financial merits start to mate, they might possibly minimize the organization's lengthy hospital cost structure expenses by about 3% and advance the projection of revenue by about 0.6%.

The Average Lengthy Stay (ALS) procedure facilitated by HIS will affect the average duration which projects an indicator for efficiency and a key driver of savings in HIS organizational case. About 35% of the overall benefits in the organizational case have been attributed to the ALS efficacy achievements [15]. The people familiar with the medical operators will identify that a lot of manual paper-centered procedures that have the capacity to sustain the potential delays in the flow of data. For instance, whenever the healthcare sector writes a specific order, it is gathered by the unit clerks and nurses who communicate it through fax and the vacuum tubes before computing it to an automated and independent ancillary framework. The order is then accepted by the lap or pharmacy that has to compute it to the ancillary framework before manually fulfilling or processing it.

Presently, it is not common for the orders in the inpatient settings be delayed for more than four hours. With CPOE, the order can possibly be transferred in seconds and delay minimized time delivery of the healthcare services enabled. HIS will therefore provide the emergency departments and the admitting physicians with the comprehensive and integrated views of the patients' medical data in an actual-time. With an immediate accessibility to the patient data and evidence-centered medical practice protocols, the framework is capable of enabling the enhancement and the establishment of the care protocols and paths. Moreover, the framework can enhance the decision support capacities and to help the physician's capacity to effectively manage the patients.

4.4 Staff Efficacy

The diminishing aspect in costs, mostly the savings attributed to the staff efficacy is a critical driver of the HIS organizational case. About 40% of the projected financial benefit has been attributed to efficacy achievements that have been achieved under complete framework maturity and deployment. The change from paper to EMR will minimize chart pulling, manual entry of data and manual assembly of charts hence improving on the effectiveness of the billing staff and processes meant to evaluate, code and review the charts. The medical timeframe might be used effectively through the reduction of the redundant documentation which contributes to the enhanced staffing capacity based on direct patient care. HIS might replace a number of manual procedures that the current healthcare sectors are possessing. Moreover, the handwritten orders in the patient charts are replaced. The workflow enhancements with the framework's CPOE functionality interfaced with the laboratory framework might minimize the effective measures to duplicate the orders and might enhance the laboratory staffing and its efficiency.

4.5 The Costs of Transcription

Presently, in the inpatient healthcare setting patient physicals, procedure notes, consult discharges, histories transfer and discharge the relevant summaries which are typically transcribed and dictated. HIS formulates the chancers to enhance the actual-time, directed transcription which further decreases the potential costs. The experts evaluate approximately 60% of the items presently transcribed and have to be captured by the framework's structure. The implication of the transcription expenses might significantly be enhanced based on organizational policies concerning the electronic extensive evaluation and charting with physicians and staff. It is fundamental to note

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that the conservative scenarios are projected to be 10% more in transcriptional expenses since the potential healthcare practitioners provide resistance to information typing and entry.

4.6 Patient Privacy and Safety

The EMR and the automatic prescribing frameworks in HIS are capable of potentially enhancing and safeguarding the minimized medical errors structured as a result of inaccurate poor documentation in the healthcare setting. The framework will critically project medication feedbacks and request pharmacists to aid in the reduction of the adverse drug effects that stem from transcribing errors to the prescribing errors. The implication of the patient privacy and safety enhancement in the organizational case is identified in two significant areas. Firstly, Kaiser Permanent has to evaluate the diminishing costs connected to the injury projecting adverse drug effects. Every injury-projecting result is released within duration of 2.2 additional patient days.

Consequent to that, Kaiser Permanente has to consider the minimized litigation levels and the considerable drop in litigation expenses and malpractices. Certain mistakes in treatment and diagnosis have to be prevented based on the application of inpatient automated healthcare records. This incorporates the continuity and handoff issues of missing documentation, illegibility of documents and dispensing the mistakes. Moreover, in reference to the analysis of settled medical cases, about 5% of the overall case settlement can be mitigated. Actually, the major advantage of the enhanced quality of patient care is outside the organizational case.

5. The Medical Forms and Records

The amount of purchasing, distributing and inventing the printing records and forms is expensive. Due to the fact that HIS will permit the electronic documentation aspect, a lot of paper documents and forms are deemed to be removed. The business case approximates about 30% to 50% reduction is the clinical records that are based on associated and supplies based on non-payroll funds. All the medical records might be shifted to permit the present storage spaces which have to be redeployed. The savings were therefore attributed to the diminishing future of the off-site spaces required for paper storage. Moreover, efficiency achievements have been projected to permit more than 60% of the clinical records that can be re-deployed to other essential activities.

5.1 Legacy Framework Retirement

Presently, Kaiser Permanente has been viewed as a patchwork of the patient data framework which is evidently overlapped based on HealthConnect. A lot of the disparate legacy computing frameworks will be retired whenever the framework has fully been implemented which in most cases might potentially diminish the costs of maintenance which include licensing and hardware operation expenses.

5.2 Enhanced Revenues

HIS will possibly promote complete and seamless medical information to enhance billable charges which include clinical ancillaries, procedures, drugs and supplies. The frameworks will possibly project more granular data for the inpatient encountering which can potentially amount to the patient care and automatic charge capturing for the purposes of identification of bills. In reference to internal analysis, the organizational case assesses that collections might be enhanced by approximately 15% in case the bills are transferred without any form of delays. Moreover, enhancements in the capacity to capture medical diagnoses might effectively ensure effective reimbursement of clinical risk patients hence advancing the accurate premium calculation.

5.3 Non-Fiscal Advantages

There are many merits and cannot be touched. However, non-fiscal is not ignored in the process of making investment decisions in the company. These merits incorporate the mission-essential advantages such as patient safety, quality of care and the membership services and their enhancement. Enhanced communication and expedited decisions might be advanced based on efficiency. However, this is essential in the process of minimizing the potential issues and errors. As such, the readily-available patient data might be deemed beneficial to assure the continuity of medical care during the patients' transition from a single care unit to another. HIS might also be implied as a driving force which is behind the adoption of the healthcare management best practices and protocols confirmed as healthcare outcomes.

The families and patients will enjoy from the streamlined care delivery framework and informed admission which is based on the discharged procedures. Although the strategic advantages derived from the advancements are fundamental, the aspect measure attributed to them is challenging to compute and thus cannot be quantified in the organizational case. As such, the merits from the enhanced nurse retention and recruitment are considered unquantified. Over a lengthy duration of time, HIS might have the capacity to enhance job satisfaction among the healthcare-centred nurses and advances the healthcare reputation among the novel medical practitioners.

HIS will possibly permit novel healthcare frameworks which promote expert nursing procedures and deals with a number of mundane, repetitive tasks and low-value tasks which create substantial elements of nurses' works. As such, the framework might minimize nurse burnouts and enhance the workable conditions based on the streaming care procedures hence enhancing the workplace communication. In turn, this advances the medical staffing capacity to develop patient safety. Medium to long-term measures are based on the recruitment of medical expenses which might be minimized in case the staff turnover is incredibly diminished. In case these benefits have been materialized, the organization might be controlled based on the reliance of registry nurses. A community benefit which

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accrues from the investment of HIS is sufficient for the data flow based on population information for epidemiological, healthcare and clinical services. Kaiser will report unprecedented quantities of patient information hence permitting unparalleled analysis and research. The information might be utilized for the purpose of best practice and identification, benchmarking, clinical evaluation and quality enhancement initiatives.

5.4 Success Elements of the Research

The success factor of deploying HIS on some critical factors is considered in various means. Firstly, the commitment of leaders to effectively implement the clear expectation and target is fundamental to enhance the success of the organizational case. The transitions to effectively operate the procedures, organizational cultures and job roles might necessitate the resources which have to strongly concentrate on the consistent leadership roles. All the identifiable management levels have to be accountable and informed for critical actions which necessitate actions meant to maximize the framework benefits. Secondly, timed implementation of the inpatient information frameworks is considered imperative as a result of the consequent implication of the potential delays and the costs of realization.

The potential estimates based on the project calculation for the organizational case have been set to annual form of delays of investment capital of approximately $250 million. Thirdly, due to the majority of Kaiser Permanent yearly expenses which include the labour costs the members and stakeholders of the foundation have to collaborate with the labour forces to make use of the enough savings which amount to 38% of the realized cash flows. Fourthly, the internalized policies necessitate the frontline staff and physicians to effectively codify the healthcare sectors including the medical procedures and discharges. An essential portion of the organizational case is based on the enhanced coding meant to reflect on the actual illness cost and burden of patients. Lastly, the workflows have to be restructured to effectively exploit and incorporate the framework's functionality.

6. Conclusion and Future Directions

In conclusion, contributing to this HIS organizational case, Kaiser Permanent business model is based on the prospective group practice and payment practices in an integrated delivery framework. HIS with a high aggregation measure has been structured around the population-centred care which has been deemed to rise the required capital to install the requirements of medical IT. This enhancement is projected to spread to the wide-range consumer base. The prepaid group practices and organizations such as Kaiser have been known to have firm financial incentives which are targeted to deal with the underuse, overuse and misuse of healthcare services as a result of poor service quality. As analysed in this research, the costs of the medical IT are normally borne disproportionately based on the providers of healthcare services, whereas most of the medium-term and short-term benefits accrue to the society and payers as publicized goods. Apart from that, the prevailing providers' reimbursement aspects are not capable of differentiating between the outstanding optimal and quality care. There is nonetheless an advancing identification that the private and public healthcare purchase have to be more explicit as a part of the financial equation for the purpose of enhancing the quality of services. This is seen from the gradual numbers of the incentive programs which are tasked with the obligation to assess the medical performance. Future research should focus on how the incentive will be widespread. In the analysis, a framework such as a catalyst should be formed for the purpose of adopting the IT frameworks which permit quality innovations that will enhance the HIS.

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