

**ANALYSIS OF THE RELATIONSHIP BETWEEN INFORMATION COMMUNICATION
STRATEGY AND FINANCIAL PERFORMANCE OF HEALTHCARE INSURANCE COMPANIES
IN NAIROBI COUNTY, KENYA**

^{1*} **Gilbert Osoro**
gilbertosoro@gmail.com

^{2**} **Kibe Lucy Wairimu**
lwairimu@mku.ac.ke

^{1, 2} *School of Business and Economics; Department of Accounting and Finance, Mount Kenya University, Kenya*

Abstract: *The study focused on fraud management and challenges of fraud management in the insurance industries. This made it difficult to ascertain the impact of fraud on the financial performance of healthcare insurance firms which are the most important in the economy because they ensure availability of health and productive workforce. This study analyzed the relationship between information communication and financial performance of healthcare insurance companies in Nairobi County, Kenya. The study utilized mixed methodology and correlation research design. The target population of the study was 557. The study made use of a sample size of 80 respondents. Questionnaires were the main primary data collection instruments. With the assessment of the relationship between information communication and financial performance of healthcare insurance companies, the highest number of the respondents agreed to invest in advanced video analytics such as motion sensing, behavioral and facial recognition exists. In the regression analysis, the collinearity statistics showed tolerance results on information communication having a significant impact on financial performance.*

Keywords: *financial performance, fraud, healthcare insurance, information communication insurance claims, security*

I. BACKGROUND OF THE STUDY

Public Health insurance companies are said to perform well when they increase their collection of premiums and in turn use the amount collected to invest in profitable portfolio investments (Njenga & Osiemo, 2013). The financial performance of insurance companies is negatively affected by different kinds of risks such as incompetence, lack of market share and fraud activities. These activities, especially fraud which is the main subject of the study have resulted in losses. In many instances, due to poor strategies of handling fraud, health insurance organizations are threatened by closure, loss of clients and low financial performance in terms of profitability of premiums (Dalizu, 2018).

Empirical Literature

Entry controls requires authorizing the right people in sensitive areas and places where insurance information and premiums are kept within the organization. Secure areas should withstand disasters including fires which are used to destroy documents after fraud is committed, as this makes it difficult to arrest, investigate and detain criminals involved in fraud. Supervision of delivery and loading facilities makes sure information and funds are carefully stored for safety. For digitalized systems, power supplies and cable need to be secured to ensure safety from access to information and property by fraudsters. This includes making sure that there are

burglary prevention mechanisms in place and application of technology against cybercrimes (Kimani, et al., 2012).

Fraud detection should be continuously adapted with reference to new ways of committing fraud, keeping up to task existence of detection methods. Fraud deterrence strategies should stop fraud immediately, whereas fraud detection should identify fraud once it is perpetrated. Fraud prevention involves supervising workforce, division of responsibilities, work performance monitoring and instituting strategies to enhance access of systems and to ensure that they are under authorized control (Battistoni, et al., 2013).

Theoretical Framework

The study was guided by system theory, and finance theory of strategic management. A system can be interrelating codependent constituent sections of an insurance firm, thus making a complex intricate entity towards achieving set goals. An organization which is divided into departments applies integration systems to control subdivisions and make departments to efficiently share information; thus Harvey and Brown (1998) assert that perceived opportunities arise making it easy to commit fraud in such structured systems.

Controlled situation and accounting classification besides control actions forming key components of fraud controls. Grieves (2000) states that a fraud control structure accessible for a company consists of administration oversight as well as control philosophy, control programs, hazard determination and recognition, information communication, monitoring actions and adjustment insufficiencies. Most insurance firms face external and internal risks that relate to fraud, thus fraud control identifies risks and achieves organization's objectives necessary for managing risks and financial performance.

The finance theory of strategic management as expounded in Brealey and Myers (1991) explains the interface between strategy and strategy and how strategic decisions are influenced by financial decisions. The theory answers such questions as financial management, internal control and financial risk management, strategy implementation and corporate liquidity. There is recognition of the central role of financial management in the pursuit of strategy. For instance, this study focuses on financial performance as a strategic end by itself.

Statement of the Problem

Financial performance of most healthcare insurance companies has decreased with change in premium-claim ratio. This ratio is increasingly tilting towards an increase in claims because of fraudulent approaches to acquire wealth in form of fake claims, embezzlement of funds by staff, collusions between senior staff and stakeholders such as hospitals (Battistoni, et al., 2013). The Insurance Regulatory Authority (2012) revealed 143 medical insurance fraud cases which equaled to the loss of Ksh 253.6 million, with recoveries only 2.05% (Ksh. 5.2 million). In the year 2015, 81% was the loss ratio for this category of business, with five-year period from 2012 to 2016 loss ratio average at 85%. It is known that fraud wastage exists but the level and extent are not known (Ondigi, 2016).

However, past studies (Njenga & Osiemo, 2013; Kuria & Moronge, 2014; Mutua, 2014; Micheni, 2016) have focused on fraud management and challenges of management of fraud in the banking and insurance industries. This makes it difficult to ascertain the relationship between fraud control strategies and financial performance of healthcare insurance firms which are critical to the economy because they ensure availability of health and productive workforce. Therefore, this study sought to analyze the relationship between information communication and financial performance of healthcare insurance companies in Nairobi County, Kenya.

Objectives of the study

To assess the relationship between information communication and financial performance of healthcare insurance companies in Nairobi County, Kenya

II. RESEARCH METHODOLOGY

The study utilized mixed methodology. It involves taking many ways to approach the research problem, especially by fusing quantitative and qualitative research approaches. Primary and secondary data were collected, where primary data was about first-hand collection of data and secondary data was from secondary sources, mostly review of existing literature.

Research Design

This study utilized correlation research design, which established relationships between the variables of the study, and this approach led to the use of correlate of variables.

Location of the Study

Nairobi County was the study location. Nairobi County was selected because it had a vibrant commercial activity with the highest number of healthcare insurance firms in Kenya. It was also recorded to have the highest number of people with health insurance as per the Grim figures (2018) which states that 41% of population while other counties had less than 40%.

Target Population

The study targeted senior staff in 18 healthcare insurance companies within Nairobi County. They included a target population of 557 respondents. The staff shall include chief executive officers, general managers, regional managers, managers, assistant managers, branch managers, principals, and senior offers.

Sampling Procedures and Techniques

Proportionate sampling method was utilized to select respondents from the different healthcare insurance firms; whereas simple random sampling was used to select the chosen respondents to make sure that each had an equal chance of participating in the study.

The sample size of the study was 85, as determined using Slovin’s formula (Ryan, 2013). This formula was best for calculating samples sizes in situations where the behavior of the target population was not known in advance. The following is the formula and calculation of the sample size:

$$n = \frac{N}{1 + N(e^2)}$$

$$1 + N(e^2)$$

Whereby,

N=Target Population

n=Sample size

e= the desired precision rate (acceptable level of sampling error)

The target population for this study was 557, which was less than 10,000; therefore, the researcher used $n=N/N+N(e^2)$ formula to compute the sample size for this study. The researcher used the desired precision (e) rate of 90%% (0.1):

$$n = N$$

$$1 + N(e^2)$$

$$= 557$$

$$1+557(0.1^2)$$

$$= 85.$$

Research Instruments

Questionnaires were the main primary data collection instruments. The questionnaire was constructed with both closed- and open-ended questions in order to capture all elements of the data required. The variables of the questionnaire were pre-tested by computing Cronbach coefficient which was confirmed as above 0.7 which gave a cobalt alfa. Validity was confirmed by the experts. In addition, a pilot test was carried out at National Hospital Insurance Fund (NHIF) that is a public healthcare insurance company working on a legal mandate, not profit. A pilot sample of 9 respondents, equivalent to 10% of the actual sample size was utilized.

Data Analysis Techniques and Procedures

The quantitative data from the study was coded, entered into Statistical Package for the Social Sciences (SPSS) version 24.0 and analyzed. The qualitative data was summarized into themes and analyzed qualitatively. Correlation and regression analyses were employed to find out the relationship between the independent and dependent variables. Pearson correlation was utilized by the study, whereas the following linear regression model was employed:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where: Y = financial performance of healthcare insurance firms, X1 = information communication, β_0 = Constant, ε = standard error.

III. RESEARCH FINDINGS/RESULTS

Questionnaire response rate

The research had a sample size of 85 respondents and there were 80 questionnaires returned, making 93% response rate.

Relationship between information communication and financial performance of healthcare insurance companies

In Table 1, majority or 31.8% (25/80) of the respondents agreed, 23.5% (19/80) strongly agreed, 21.2% (17/80) were undecided, and a similar number disagreed, 2.4% (2/80) strongly disagreed to investing in advanced video analytics such as motion sensing, behavioral and facial recognition exists.

Table 1. Investing in advanced video analytics such as motion sensing, behavioral and facial recognition exists

	Frequency	Percentage
Strongly Agree	19	23.5
Agree	25	31.8
Undecided	17	21.2
Disagree	17	21.2
Strongly Disagree	2	2.4
Total	80	100.0

Source: Researcher (2022)

In Table 2, most 31.8% (25/80) of the respondents agreed to investing in advanced video analytics such as motion sensing, behavioral and facial recognition exists. This implied to mean that healthcare insurance companies has installed and invested much towards making sure that staff and unauthorized people are unable to commit fraud within the organization. However, these systems were limited to motion and tracing of physical activities that related to fraud. However, it did not stop the transactions conducted inside the computers and within the phones of the criminals committing fraud. The perpetrators continue to target the healthcare insurance companies’ funds through other means. They continued to conduct fraud related activities in areas such as outside the building where these technologies are not available. Thus, it was proper to combine these technologies with the other internal controls to make them useful. However, with the use of cash still dominating the operations of healthcare insurance companies, these technologies were considered essential for the prevention and detection of fraud. The finding is aligned to another study by Reynolds and Bank (2006) who revealed that multiple alarms (correct and false) were established, with the technology being extremely accurate at the middle of its operations, though it was always the correct alarm that was high, and thus enabling the stoppage of fraud activities.

Internal communication is clear

The study established that 27.1% (22/80) of the respondents agree, which was the highest, followed by 23.5% (19/80) who strongly disagree, 15.3% (12/80) strongly agreed, 17.7% (14/80) were undecided, 16.5% (13/80) disagree on internal communication being clear.

Table 2. Internal communication is clear

	Frequency	Percentage
Strongly Agree	12	15.3
Agree	22	27.1
Undecided	14	17.7
Disagree	13	16.5
Strongly Disagree	19	23.5
Total	80	100.0

Source: Researcher (2022)

The study established that 27.1% (22/80) of the respondents agree to internal communication being clear. This meant that ICT improved various forms of communication. It enabled staff to staff communication, and staff to management communication on occurrences that made it possible to allow for different targets e.g., anonymity, whistle blowing, and direct information sharing on the issue of fraud and its related controls.

The finding is connected to Oguda, Odhiambo and Byaruhanga (2015) who studied the effect of internal control on fraud detection and prevention. The study established that information and communication had 39.1% of respondents who agreed to its contribution in the fight against fraud. This was further interpreted to mean that information and communication was exchanged to avail useful information among employees to helps in carrying out fraud control activates. That the use of more permanent record enabled managers and review the information, and this enabled the mapping of trends of fraud activities.

Tasks and targets are communicated effectively

In Table 3, the main finding was that majority or 35.3% (28/80) agreed, 31.8% (25/80) were undecided, 8.2% (7/80) disagreed, 12.9% (10/80) strongly disagreed, 11.8% (9/80) strongly agreed that tasks and targets were communicated effectively.

Table 3. Tasks and targets are communicated effectively

	Frequency	Percentage
Strongly Agree	9	11.8
Agree	28	35.3
Undecided	25	31.8
Disagree	7	8.2
Strongly Disagree	10	12.9
Total	80	100.0

Source: Researcher (2022)

In Table 3, the main finding was that majority or 35.3% (28/80) agreed that tasks and targets were communicated effectively. The finding was interpreted to mean that healthcare insurance companies was determined to share information that was suitable for specific roles and skills. That management received information that was implementable based on their capabilities, e.g., the information concerning the need to pass policies, make investments, and authorize or unauthorized transactions. On the other hand, staff at the department level received information that suited their departmental objectives towards fraud control, e.g., security department was responsible for tracking and apprehending or physically stop fraud by making arrests and investigating incidences. They were also charged with securing physical cash in their deposits and transport. The information technology department communicated with the management department on findings concerning the different surveillances the healthcare insurance companies had installed. The finance department looked into financial transactions and reviewed financial reports to determine the fraud activities which were mostly likely to disrupt the balance of their statements e.g., books of accounts. The Human resource department was informed and communicated the needs for training staff on fraud prevention and detection methods.

The study was in line with Harding and Trotman (2017) who studied effect of partner communications of fraud likelihood and skeptical orientation on auditors' auditing, and revealed that audit partners were communicated to for them to understand the implications of fraud and asked to share information regarding the same. That partner communicated information regarding fraud, which was then used by management to improve the quality of service and control of fraud.

Use of technology in financial management is enhanced

In Table 4, majority 25.9% (21/80) of the respondents were undecided, which was followed by 20% (16/80) who agreed, 16.5% (13/80) strongly agreed, 18.8% (15/80) disagreed, and a similar number also strongly disagreed to the use of technology in financial management is enhanced.

Table 4. Use of technology in financial management is enhanced

	Frequency	Percentage
Strongly Agree	13	16.5
Agree	16	20.0
Undecided	21	25.9
Disagree	15	18.8
Strongly Disagree	15	18.8
Total	80	100.0

Source: Researcher (2022)

In Table 4, majority 25.9% (21/80) of the respondents were undecided, which was followed by 20% (16/80) who agreed to the use of technology in financial management is enhanced. The finding could be interpreted to mean that most of the healthcare insurance companies systems had replaced the use of manual application and payment methods. In the recent era, the organization has fully automated its operations, which aimed at increasing its effectiveness in the management of risk factors that led to fraud. That because of automation, the organization performed better and effective than in the past.

The finding was in line with the findings presented by Jepkoech (2021) who studied the operational determinants and revenue collection efficiency found that majority (37.6%) of the respondents was undecided followed by 33.7% who strongly agreed to using the latest technological systems. The study also established that 53.5% agreed that they had automated their systems. It was found that 29.7% of respondents’ technology for revenue collection was regularly changed towards being advanced. 26.7% strongly agreed that mobile technology especially mobile money was the most used to transact funds. 38.6% agreed that all documentation were put into system and automatically generated. 45.5% of the respondents were of the opinion that systems are developed using the latest hardware devices.

Secured and irrefutable electronic communication is utilized

In Table 5, the study found that majority or 24.7% or 20/80 of the respondents disagreed, 23.5% (19/80) strongly disagreed, 23.5% (19/80) agreed, 20 (16/80) were undecided, 8.2% (6/80) strongly agreed to the secured and irrefutable electronic communication being utilized.

Table 5. Secured and irrefutable electronic communication is utilized

	Frequency	Percentage
Strongly Agree	6	8.2
Agree	19	23.5
Undecided	16	20.0
Disagree	20	24.7
Strongly Disagree	19	23.5
Total	80	100.0

Source: Researcher (2022)

In Table 5, the study found that majority or 24.7% of the respondents disagreed to a secured and irrefutable electronic communication being utilized. This implied to mean that healthcare insurance companies is still under a huge risk of being attacked by people who are interested in conducting fraud related activities and steal funds. It also meant that a lot of the systems operations was still being developed and thus, not fully operational or non-manual, thus making the system less effective in addressing the issues relating to it being insecure or non-irrefutable.

The finding can be linked to another study by Koech and Akuku (2021) who studied effect of biometric registration technique on service delivery established that services deliver was measured through increasing Number of entries, which had a mean of 4.34; responsiveness of service providers on customer satisfaction with a mean of 4.21; healthcare insurance companies being dependable in customers’ service problems handling with a mean of 4.3; and empathy when delivering service providers as a satisfaction with a mean of 3.95.

Financial performance

Table 6. Normality Assumption - Financial performance

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Financial performance	.296	80	.000	.813	80	.000

a. Lilliefors Significance Correction

Source: Researcher (2022)

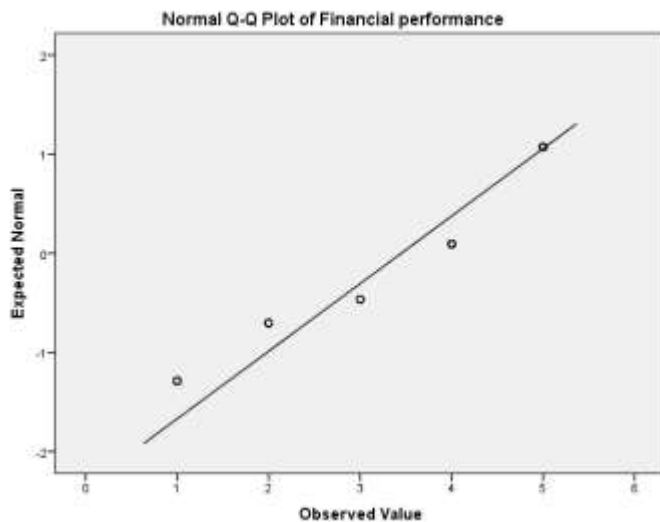


Figure 1. Normality Assumption - Financial performance

Source: Researcher (2022)

In Figure 1, the finding showed the dots being concentrated to form four larger dots, which indicated large dispersions e.g., 1, 2, 3, 4, 5 unlike the other previous findings that displayed closely associated data or dots e.g., 1, 1.1, 1.2, 1.3, 1.5, 1.7..., or 2.1, 2.2, 2.3, 2.5... etc. for the rest of the values up to 5. Thus, the fact that there were equal distributions and that the dots did not skew far from the line implied to mean the normality assumption was not violated. This was proved by the p-value being zero (0.000) for both Kolmogorov-Smirnov and Shapiro-Wilk in Table 7.

Multicollinearity Assumption

Table 7. Multicollinearity Assumption - Information communication

		1	2	3	4	5
Investing in advanced video analytics such as motion sensing, behavioral and facial recognition exists	Pearson	1	.948**	.911**	.932**	.937**
	Correlation					
	Sig. (2-tailed)		.000	.000	.000	.000
	N		80	80	80	80
Internal communication is clear	Pearson	1		.920**	.962**	.951**
	Correlation					
	Sig. (2-tailed)			.000	.000	.000
	N			80	80	80
Tasks and targets are communicated effectively	Pearson			1	.918**	.908**
	Correlation					
	Sig. (2-tailed)				.000	.000
	N				80	80
Use of technology in financial management is enhanced	Pearson				1	.941**
	Correlation					
	Sig. (2-tailed)					.000
	N					80
Secured and irrefutable electronic communication is utilized	Pearson					1
	Correlation					
	Sig. (2-tailed)					
	N					

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Researcher (2022)

Key: 1-Investing in advanced video analytics such as motion sensing, behavioral and facial recognition exists; 2-Internal communication is clear; 3-Tasks and targets are communicated effectively; 4-Use of technology in financial management is enhanced; 5-Secured and irrefutable electronic communication is utilized.

In Table 7, the study showed that the lowest Pearson Correlation was 0.908 with p-0.000. This implied to mean that the multicollinearity assumption was met by data provided in the information communication section. This backed-up the results from the normality assumption.

Linearity Assumption

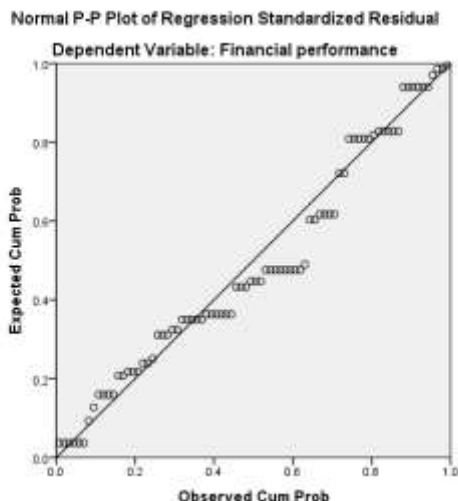


Figure 2. Linearity Assumption - Information communication vs Financial performance

Source: Researcher (2022)

In Figures 1 and 2, the linearity assumption was not violated. This is because of the results showing the data produced as being consistent with the straight line. The results backed up the finding from the correlation analysis. In general, all the assumptions e.g., multicollinearity, normality, and linearity were met. Thus, the study had a go ahead to conduct the multiple regression model with the assured that the results will be positive and significant for most of the variables.

Linear regression analysis

This section tries to answer the questions by demonstrating the relationship between the independent variables and dependent variable. This section demonstrates the relationship between the independent variables through a regression analysis. The extent to which the independent variables affected are shown by the regression results on table 8, whereas the reliability of the model employed is explained by the analyses of variance on table 9. In addition, the extent of the influence on the dependent variable change at healthcare insurance companies by the independent variables is demonstrated by the regression coefficients on table 10.

Table 8. Regression model summary

Model Summary^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.939 ^a	.883	.876	.51546

a. Predictors: (Constant), Information communication
 b. Dependent Variable: Financial performance

Source: Researcher (2022)

The value of the coefficient of determination (R square value) from Table 10 above is 0.883. This explains that the independent variable can explain variability of the dependent variable to 88.3%, whereas other factors not studied by the study can explain the variability to about 11.7%. The adjusted R square is 87.6% reliable in explaining the chosen model of the study. Thus the findings from the regression analysis are significant and

can be relied in explaining the influence of the predictor variable. This indicates that, the variability in change at healthcare insurance companies is 88.3% explained by the independent variable information communication.

Table 9. Analysis of variance

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	149.873	4	37.468	141.017	.000 ^b
	Residual	19.927	75	.266		
	Total	169.800	79			

a. Dependent Variable: Financial performance
 b. Predictors: (Constant), Information communication

Source: Researcher (2022)

The F statistic is used to test the significance of the relationship between the dependent variable and the predictor variables as shown on Table 10 above. The F value in the table is 141.017 and the significance is at 0.000, which is less than the p-value 0.05. Therefore, there is strong indication that the regression model chosen is statistically significant.

Table 10. Regression coefficients^a

Coefficients ^a							
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Col lin ear ity Sta tist ics Tolerance
		B	Std. Error	Beta			
1	(Constant)	.315	.212		1.484	.142	
	Information communication	1.118	.457	.946	2.448	.017	.010

a. Dependent Variable: Financial performance

Source: Researcher (2022)

The Table 10 above gives the regression coefficients which were used to prove the proposed regression model:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \epsilon \dots\dots\dots Eq1$$

Where: Y = financial performance at healthcare insurance companies X₁ information communication β₀ = Constant ε = Error term

Thus,

$$Y = 0.315 - 0.603X_1 + \dots\dots\dots Eq2$$

In Table 10, the regression results showed that information communication had a significant relationship with financial performance. The study went ahead and corrected the errors that were there by using a Collinearity Statistics which yielded Tolerance 0.017, 0.018, 0.020, and 0.010 on Internal control audit, Staff competence,

Risk assessment and Information communication respectively. It is recommended that if the VIF are greater than 5 to 10; while the tolerance lower than 0.1 to 0.2, then multicollinearity exists. In this case, all the VIFs were above 10, and all the tolerance were lower than 0.2, which implied to mean that the independent variables were significantly related to the dependent variable.

IV. CONCLUSIONS AND RECOMMENDATIONS

Conclusion

In conclusion, on the relationship information communication and financial performance of healthcare insurance companies, the highest number of the respondents agreed to investing in advanced video analytics such as motion sensing, behavioral and facial recognition exists. This implied to mean that healthcare insurance companies have installed and invested much towards making sure that staff and unauthorized people are unable to commit fraud within the organization. However, these systems were limited to motion and tracing of physical activities that related to fraud. However, it did not stop the transactions conducted inside the computers and within the phones of the criminals committing fraud. The perpetrators continue to target the healthcare insurance companies' funds through other means. They continued to conduct fraud related activities in areas such as outside the building where these technologies are not available. Thus, it was proper to combine these technologies with the other internal controls to make them useful. However, with the use of cash still dominating the operations of healthcare insurance companies, these technologies were considered essential for the prevention and detection of fraud.

Recommendations for practice

The study recommended increase the amount of resources, empowering staff properly, reconfiguring organizational structure in order to improve communication, phasing out legacy technological systems while putting together a more focused technology team, enhancing regulatory compliance by creating a legal division sole in charge of that, and healthcare insurance companies should engage its stakeholders on information communication strategies at the organization.

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