

**The Feasibility of a Shared Data System in
the Kenyan Medical Insurance Sector as a
Means to Reduce Fraud**
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Fraud in the healthcare industry is a serious problem with recent studies estimating that close to a staggering \$487 billion per year is being lost to fraud. Health Insurance Fraud (HIF) leads to increased policy fees, which in turn leads to a reduction in the number of people who can afford to insure themselves and are therefore unprotected in the event of unexpected health crises. Although HIF has become a widely studied issue in many developed countries, there are currently very few studies focused specifically on HIF in developing countries, making it extremely difficult to estimate with any degree of accuracy the true extent of the problem.

In Kenya, for example, some studies have reported that HIF is reported to be as high as 40-50% of paid out claims^{1,2}, and a recent survey found a radical increase in identified fraudulent claims in the past four years.³ One fraud reduction method which has been implemented in numerous programs around the world with a high degree of success is the sharing of data among the insurance companies in order to better identify fraudulent claims. Through background research and interviews with leading anti-fraud experts, two main types of data sharing programs were identified; all claims data bases and shared fraud listings. In order to establish the feasibility of implementing either of these programs in Kenya, further background research and interviews with key stakeholders was conducted. Along with issues such as mistrust in the insurance industry and a lack of skilled personnel, competition in the Kenyan insurance industry was found to be extremely fierce, a major potential barrier to data sharing. However all respondents were very receptive to the idea of the implementation of a data sharing program and based on factors such as cost, complexity and the type of data submitted, a shared fraud listing was identified as a potentially beneficial first step in combating HIF in Kenya.

Introduction

Insurance Fraud in the Healthcare Industry

In the 2010 World Health Report, the World Health Organization listed fraud as one of the top ten leading causes of inefficiency in healthcare⁴ and recent studies have calculated that nearly 6.9% of all healthcare expenditure is lost to fraud.⁵ Health Insurance Fraud (HIF), which is when an individual or organization intentionally defrauds an insurance company or government run health scheme, generally leads to insurance companies raising the price of premiums in order to cover HIF related losses. This in turn puts financial strain on existing policy holders and pushes out or entirely excludes individuals who are unable to afford the higher costs. Government and employer sponsored schemes are also effected, as seen with the recent discovery of the American Medicare and Medicare fraud schemes which have been estimated to cost the country tens of billions of dollars annually.⁶

Due to immensely high health care expenditures in developed countries, the proportional loss associated with HIF in these countries is also tremendous; consequently, cases of HIF in developed countries are highly publicized and frequently studied. However no country is immune to HIF and although there is currently very little research which specifically investigates the extent and impact of HIF in developing countries it is assumed to be a problem of equal, if not greater magnitude.

Types of Healthcare Insurance Fraud

Perpetrators of HIF can be divided into three groups; Providers, Policy holders and Payers (Insurers), with the Providers generally committing the highest amount of fraud.^{7, 3}

Table 1
Most Common
Types of Fraud, by
Perpetrator Group

Provider	Policy Holder
- Billing for services never rendered ^{8, 9, 3, 7}	- Obtaining duplicate prescriptions through various doctors ^{9, 3}
- Unbundling (billing each step of a procedure as a separate procedure) ^{8, 9, 7}	- ID card misuse (use of card by someone other than the cardholder) ^{8, 3}
- Accepting bribes or kickbacks for referrals ^{3, 7}	- Falsifying Records ^{8, 3}
- Performing unnecessary procedures or tests ^{8, 3}	- Invented or embellished claims ^{8, 3}
- Prescribing unnecessary drugs ³	- Multiple policies ^{3, 7}
- Upcoding ^{8, 7, 9}	

Methods of HIF Reduction, Data Sharing Specific

In order to combat the financial losses incurred from fraud, health insurance companies and healthcare schemes must adopt strategies to reduce the toll on their organizations. Fraud reduction methods used by insurance companies can generally be classified into three different groups:⁷

- 1. Fraud prevention** aims to reduce the occurrence of fraudulent acts.
- 2. Fraud detection** entails identifying and investigating suspicious claims before they are paid out.
- 3. Fraud enforcement** (aka “pay and chase”) means that the claim is paid out first and if subsequent research then discovers that the claim was falsified, the company then attempts to recoup the funds.

Data Sharing as a Means of Reducing Health Insurance Fraud

Numerous methods are currently being used by the health insurance industry in its effort to prevent and reduce fraud, varying widely in complexity, cost and effectiveness. One relatively inexpensive method which is becoming increasingly widespread is the sharing of relevant industry data amongst insurance companies. By combining the claims data of individual insurers within a shared database, the ability of analysts to detect fraudulent claims is drastically expanded.

Health Insurance Fraud in Kenya

This paper will focus specifically on the effect of HIF in Kenya, where some estimates put the rate of fraudulent claims as high as 40-50% of paid claims.^{1, 2} HIF is acknowledged to be an issue in Kenya and there is increasing press coverage regarding the problem, however the true extent of HIF and the impact it has on the health care system is poorly understood and fraud reduction methods among the insurance companies vary widely.

Aim

This paper will first give a general background of the status of health care in Kenya with a specific focus on the state of the health insurance industry and HIF, and then will look at the different types of data sharing systems currently in use globally by the insurance industry to reduce HIF. Following will be the results of interviews conducted with representatives of key interest groups in the Kenyan medical insurance industry to ascertain their views on data sharing and HIF and finally, the paper will examine some of the specific barriers that might be faced when implementing a data sharing system among the Kenyan insurance companies and will give recommendations on the feasibility of undertaking a data sharing project.

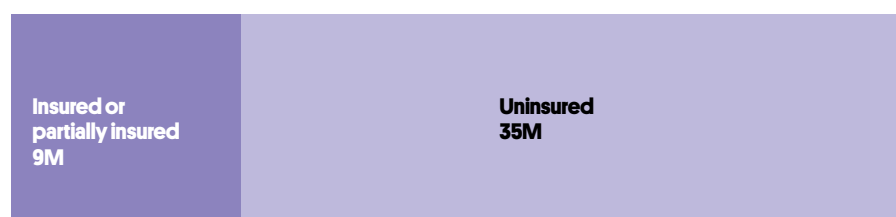
Results

Overview of the Kenyan Health Care Sector

Although the health care system in Kenya is improving there are still considerable problems such as a significant lack of resources, the acute shortage of healthcare workers, long wait times and a shortage of crucial drug supplies. The health care system is primarily funded by out of pocket payments (*payments made by the individual or household to cover medical expenses*) which constitute nearly 38% of health care funding, with the government financing just under 29% of the health system.¹⁰ Poor quality of the public health system coupled with access fees for all but the most basic services make the private health sector an attractive option for those who can afford it.

Due to high rates and a general mistrust of the health insurance industry, the Kenyan insurance sector has a very low rate of penetration with nearly 35 million of a population of 44 million currently without insurance coverage.¹¹ Additionally, it has been found that the rate of households unwilling or unable to seek required medical attention due to financial difficulties is as high as 33%.¹² Although there is much yet to improve, a recent 2014 initiative, supported by the World Bank is working to address the problem by providing subsidized health insurance to the poor.¹¹

Figure 1
Kenyan Population with Insurance Coverage



Insurance Fraud in Kenya

Both the Association of Kenya Insurers (AKI), which is the largest insurance association in Kenya, as well as the Insurance Regulatory Authority (IRA), the government funded insurance regulatory body, have identified fraud as a significant problem within the insurance sector and have made efforts to begin to quantify and reduce fraud in the industry. Despite increasing public discussion and awareness of the issue of fraud the true extent of HIF is not known. Fraud reduction methods vary widely among the different medical insurance agencies and there very little cohesion or cooperation between them. In an effort to better understand the scope of fraud in the health care industry, the AKI commissioned Maxworth Associates, an independent consulting agency, to study HIF and its effect on medical insurance companies in Kenya. The survey found that 21% of respondents working

in the medical insurance industry had encountered fraudulent claims and that reported fraudulent claims had increased from 22 in 2008 to 225 in 2012.³ Both figures were considered to be much lower than the actual amount due to weak fraud detection methods and infrequent reporting of fraud.

The Maxworth Associates report concluded with a series of recommended actions which could potentially reduce HIF, one of which urged stakeholders to “Plan and organize platforms for sharing information and experiences on fraud including ... sharing [a] database of perpetrators...”³ The requirements and implications of this recommendation were further studied in this paper in order to ascertain the possibility of implementing such a system in Kenya.

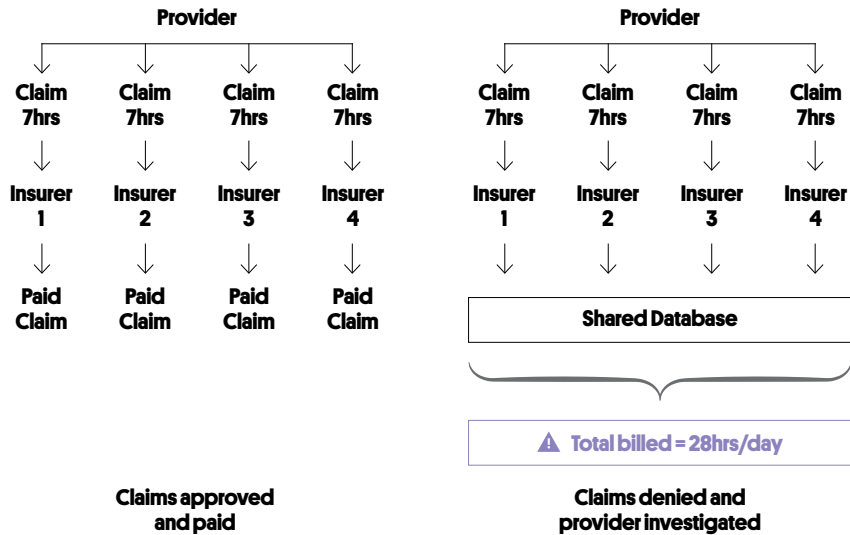
Data Sharing Systems as Fraud Reduction Methods in the Medical Insurance Industry

Data sharing has been widely accepted as an effective fraud reduction method within the health insurance industry, with calls by many leading anti-fraud experts to increase data sharing as a way to combat rising rates of fraud.^{5,13} The specifics of each data sharing program vary across participating insurance organizations however the fundamental concept of data sharing can be described as joint cooperation among the insurance companies to share their claims related data via a centralized system thereby making it accessible for analysis by other companies and/or third parties. The actual information which is shared depends on the complexity and dimension of the system. During the course of the research two distinct types of data sharing designs were identified as being commonly used in the industry; an all claims database (ACDB) and a shared fraudster list (SFL). Although there were many variations within programs, all organizations which practiced some sort of data sharing used at least one if not both of these types of data sharing arrangements.

All Claims Database

An ACDB is a shared repository of the details obtained when a claim is filed with an insurance company. After receiving and internally analyzing the claim, the insurance company then uploads all or at least some portion of the claim information to the shared database where it is then accessible to all participating parties. The combined claim data of the insurance companies participating in the program means that the data set is much larger than that of an individual company and as such, is much more statistically powerful. The healthcare industry is plagued by “under the radar” fraud or fraud in which the perpetrator is aware of the pre-defined limits used by insurance companies to automatically identify suspicious claims and only submits claims which fall below such limits to avoid being flagged by the claims processing system.¹⁴ This type of fraud is undetectable by a single insurer but by aggregating the details of many small fraudulent claims by the same perpetrator it is possible to identify claims which exceed industry limits. A clear example of the power of an ACDB can be seen in the detection of provider overbilling. If, for example, a provider submits a claim to an insurance company for seven hours worth of work in any one day this is considered standard (under the radar) and the claim will be paid. However if the provider submits a claim for seven hours worth of work on the same day to four other insurers, the total billable time of the combined claims amounts to 28 hours worth of work in a single day by a single provider, an obvious impossibility. The use

Table 2
Example of Excessive Hours Billed in a Day Model (All Claims Shared Database)



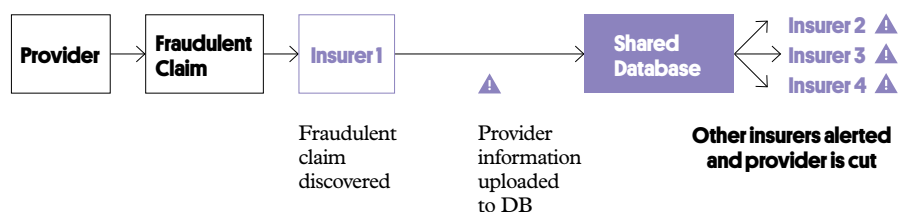
of an ACDB allows the aggregation of billable claim time by a single provider across multi insurers and as such is able to catch fraudulent claims that would be impossible to detect based only on a single insurer’s data set.

Shared data also allows insurers to identify policy holders holding multiple memberships through various providers which is impossible to detect without an exchange of membership data between the insurers. Although extremely powerful in their capacity to reduce fraud, ACD- Bs can be costly to implement and maintain, require a high level of analytical capability, (either human or machine), and have the disadvantage that sensitive claim information is uploaded which insurers are generally uneasy about due to issues related to trust and competition.

Shared Fraudster List

A shared fraudster list (SFL) allows the participating insurers to benefit from the anti-fraud efforts of one another. Individual companies use their own in house fraud analytics to identify fraudulent claims and then list the offending provider or policy holder in the SFL database. This in turn allows other insurance companies which are working with the fraudster to take appropriate measures such as auditing past claims or dropping the fraudster from their roster. Although larger insurance companies tend to have more robust forensic departments with stronger analytical capabilities, this does not necessarily mean that small insurers cannot make meaningful contributions to the SFL. It has been shown that larger companies tend to have a much higher fraud detection threshold (the level at which their fraud system or analysts are set to trigger an alert), meaning that many smaller fraudulent claims go undetected. As small insurers usually work with smaller claims their fraud detection threshold is lower and they often catch cases that slip through the cracks of the larger company’s fraud detection programs.

Figure 2
Diagram of a Shared Listing Database



This recently occurred among a group of insurers using a SFL when a small insurance company detected 800 GBP worth of fraudulent claims by one of their providers and listed the providers information in the SFL. A large insurance firm detected that the provider was also working with them and audited all past claims. As a result, 60,000GBP worth of fraudulent claims were discovered to have been paid out to the provider. The provider was reported to the authorities and the larger insurance firm was able to recoup 50,000 GBP worth improper payouts.¹⁵

Drawbacks and Limitations to Data Sharing

Each type of anti-fraud measure has certain advantages and limitations which need to be carefully considered along with the needs of each individual insurance company before being implemented. Currently there are no studies which the author is aware of which compare the effectiveness of each type of data sharing method in reducing fraud however the main advantages and disadvantages are listed in the table below.

Table 3
Comparison
of Data Sharing
Systems

	All Claims Shared Database	List Providers and Policy Holders Convicted of Fraud
Type of Data Shared	All claim information	Names and ID of fraudulent providers and policy holders
Pros	<ul style="list-style-type: none"> - Data mining of aggregated data allows for more complex fraud to be discovered - Policy holders holding policies with multiple insurers can be identified 	<ul style="list-style-type: none"> - No sensitive claims data - Easy to implement - Inexpensive
Cons	<ul style="list-style-type: none"> - Data analysis necessary - Sensitive claims data accessible to industry players - Costly implementation and maintenance - Issues surrounding legal restrictions of personal data and data breaches 	<ul style="list-style-type: none"> - Limited capability to identify fraud types

Summary: Expert Interviews

Experts in the field of insurance fraud were interviewed for insight into key elements of implementing a successful data sharing system as well as potential barriers that can arise. Consensus was reached in a majority of the topics, with trust and confidentiality identified as key issues to be considered when implementing a shared data system. That the insurers trusted each other as well as the system was crucial in order for the program to be a success, as was the confidentiality of the data and successfully addressing concerns that the insurers had about their quote information being shared with other insurers.

“They were really worried about the commercial aspect. If you start to reveal all of my business to my competitors, you know, that puts me at a competitive disadvantage... [you have to explain to them]we’re not going to reveal what you’re paying to one another, we’re not going to reveal your customers... that’s what makes it really, really frightening to them.” (Expert 4)

Legal Issues

Local laws and their impact on data sharing were also commonly mentioned as crucial issues that could present significant problems at the inception of the program. *“Local laws and legislation is paramount. Wording –does policy/law/regulations allow data sharing and if so is it de-*

fined what can be shared and how?” (Expert 1) Half of the respondents brought up local laws and rules as the first issue that came to mind when asked about potential barriers and stated the importance of being aware and knowledgeable about the law in order to ensure the success of the data sharing program.

Data Quality and Analyst Expertise

The quality of data that was used was also frequently mentioned as being an important factor with a significant impact on a programs ability to contribute towards fraud reduction. The importance of having good, clean, and complete data was stressed, with all experts stating that poor quality data was an issue that they had grappled with and that improperly formatted or missing data could severely affect the outcome of the program.

The training and expertise of the analysts working the data was also mentioned as a factor to the success of the program “...*getting the right level of skill is one key component.*” (Expert 1), stressing the importance that the analyst had experience and proper training in order to be able to successfully interpret the results.

Governance and Ownership of the System

Strong governance and the willing and unanimous participation of the insurers to contribute data to the system was mentioned as a key to success: “*Success relies on everyone uploading and sharing data.*” (Expert 1) however there was little agreement on what organization should be in charge of overseeing the implementation and maintenance of the shared database. Responses varied, with two experts opining that the organization should be an independent third party provider, unrelated to the Government in order to insure independence and to avoid conflicts of interest or improper use of the data. One expert expressed preference for a system overseen by a governmental agency, although stress was placed on the importance of having a willing, capable and trustworthy government in order for the data system to be successful and to insure neutrality. One expert professed support for an independent member-run organization funded by member contributions but with close ties to the government.

Success of Data Sharing Programs

As expected the experts were unanimously in favor of data sharing programs and saw them as highly effective fraud fighting tools. Importance was placed on the need to unify the industry “*we must stand together*”(Expert 3) and the power of sharing data in the fight against fraud: “...*if you aggregate the data that’s when you really hit it.*” (Expert 4). Although all expressed confidence that the data sharing programs were working they acknowledged that fraud continues to be a pressing issue in the industry which requires a holistic, unified approach to confront: “*Fraud has become such a big problem that you can’t deal with in isolation*” (Expert 3)

Stakeholder Interviews

In order to get a deeper understanding of the medical insurance industry in Kenya and the role that fraud plays, stakeholders involved in the medical insurance industry were interviewed about the industry as a whole, as well as their views on fraud and on sharing data as a method to reduce fraud. Interviewees included a representative of a patients' rights group, directors from the two prominent insurer representative groups and the Insurance Regulatory Body. Neither of the groups representing the medical providers were able to be reached for an interview.

Table 4. Comparison of Data Sharing Systems

	Legal	Data Quality	Trust/Confidentiality	Qualified Analysts	Competition	Solid Governance	Insurer Participation
Financial Crime Consultant, UK	×			×		×	×
Manager, Healthcare Forensic Unit, South Africa		×	×	×	×		
Anti-fraud Analyst Advisor, USA	×	×	×		×		
Financial Crime Manager, UK Questionnaire	×	×	×	×		×	×

Problems of Competitiveness and Lack of Trust within the Industry

Competition amongst the insurers was mentioned by nearly all respondents and was felt to be a major problem in the industry; *"The relationship amongst insurers is fiercely competitive and antagonistic"* (SH 5), *"players perceive each other as competitors characterized by undercutting in pricing of similar products or bids"* (SH 7) as was lack of cooperation and an unwillingness to help other insurers *"We ourselves are our own enemies"*. (SH 2) Lack of trust was frequently mentioned as an issue between the insurance companies and the patient representative also identified the patients lack of trust in the insurance companies as a issue, stating that patients would be unhappy if they found out that insurance companies were sharing data amongst themselves: *"The other [issue] is confidentially, fear of their documents being shared with the insurance company because they fear ... their stuff being out there, being exposed to everyone."* (SH 1)

Potential Barriers to the Implementation

When asked to specifically identify barriers, inter industry competitiveness and lack of trust was the most frequently cited potential barrier to setting up a system of shared data, *"...insurance companies are forever trying to get clients from their competitors, hence the lack of trust would be a barrier."* (SH5). Competition was identified by nearly all of the stakeholders as the most significant barrier to a data sharing system. Financing (*"the initial investment may be prohibitive against competing priorities"* (SH7)), data quality (*"Submission of incomplete ... incorrect data"* (SH3)) and technical ability (*"Companies not being at the same level of computerization"* (SH7)) were also mentioned by a number of stakeholders.

Poor Opinions amongst Stakeholder Groups of Each Other

Along with a lack of trust identified as being a problem among the insurers, blame and responsibility for fraud was placed by different stakeholder groups on other stakeholder groups. The patient representative had a negative view of the providers, identifying them as perpetrators of fraudulent behavior *“They’ll get an extra thing to do, even if you don’t need it”* (SH1) giving the example of a *“being sent to the theater to check you tummy instead of going to scanningbecause going to theater has more money than go for scan.”* (SH1) however insurance companies were also negatively viewed *“Health insurance companies are out for money”*(SH1) The insurer reps were equally critical of both of the other stakeholder groups, citing providers as major perpetrators of fraud *“We know they are ripping everyone off, double charging”* (SH2) as well as the patients *“Patients are in collusion with the hospitals....members hop from one insurance company to another”* (SH2). Unfortunately the perspective of the providers is lacking here but results from the literature review portion point to similar feelings of distrust towards the insurers along with complaints of long reimbursement waits.²

Responsible Organization

There was no solid consensus as to what organization should govern the implementation and management of a shared data system. Support was expressed for both the IRA as well as AKI as possible leaders of a shared data system, stating that the *“IRA is regulating body, we trust them”*, and that *“AKI is the body to push”* (SH1) when asked what organization would be best suited to oversee a data sharing system. The IRA was the only stakeholder expressing support for it to be governed solely by the IRA, stating that the *“IRA would be better placed to handle the data due to competitive interest of the members if left to AKI...”* (SH2) The lead researcher of the AKI report and the AKI representative all expressed strong support for the system to be implemented and overseen by AKI due to perceived neutrality on the part of AKI: *“...in the sense that we have a bigger interest in ensuring that our members do profitable business. More over our members trust us much more with their data than they would trust say a third party”* (SH3) and the perceived weakness of the IFIU: *“It is basically a Police Unit with limited or no budget to detect, investigate and prosecute perpetrators.”* (SH7)

Positive Response to Data Sharing

There was an overall consensus that sharing data amongst the insurers could reduce fraud and all stakeholders responded with a supportive and positive attitude towards the idea. Stakeholders said that it would be *“a wonderful idea”* (SH2) and that sharing data *“would work for the insurance companies really quiet well”* (SH4). Payment was not seen as a problem; *“Once the value propositions are clearly laid out (which can be done very easily) they would willingly pay.”* (SH5). The patient rep, had limited views on data sharing as a fraud reduction method but viewed it as a way to encourage cooperation between the Insurers and policy holders.

Barriers and Considerations Related to Kenya

To be able to thoroughly address the feasibility of a data sharing system, the barriers identified during the initial research stage as well as throughout the interviews were collected and analyzed in the specific context of Kenya.

Legal

As laws related to data collection and data sharing were cited as a key consideration to investigate when implementing a data sharing program, the Kenyan Insurance Bill was consulted in order to determine if any sections referred to or prohibited data sharing. The bill takes a relatively liberal stance on collecting and sharing data, stating that document and information sharing is allowed when “*not prevented by this or any other written law from disclosing.*” (Kenyan Insurance Bill, Part X, §155 part 2, IRA, pg 99).

Qualified Analysts

It is of great importance that data analysts are well trained and capable. The difficulty finding qualified staff was an issue discussed both in the expert interviews as well as in the literature review. A simple data sharing program such as a SFL does not require deep analysis of the data however an ACDB requires a trained data specialist in order to be able to successfully work with the data. The 2011 USAID report on Kenya found that:

“There is a notable lack of skills and expertise in health management and information and communication technology (ICT) across both the private and public sector for health insurance...”¹⁶

This is an important issue to be explored when considering the feasibility of a data sharing project, if there is a lack of qualified experts to perform the analysis then a complex data sharing system would not be used to its full potential and could be a misuse of funds.

Lack of Coordinated Efforts, Funding and Resources

As laid out in the “Comprehensive Approach To Countering Fraud and Corruption”¹⁷ there are important steps which should be followed prior to the implementation of any anti-fraud programs in order to insure that the program achieves full potential and that resources are not wasted. Currently Kenya has only taken tentative steps towards fully addressing the problem, a factor which should be considered when assessing a data sharing system. Furthermore, the medical insurance sector suffers from the highest loss ratio in the insurance industry, at 78% and would most likely be hesitant or unable to contribute significant funding towards the implementation of a data sharing system.¹⁸ Lack of up to date technology and infrastructure could also present a problem as standard computing systems is a requirement of most of the data sharing systems.

Proper Cleaning, Input and Regularity of Data

In order for a shared data system to be successfully utilized, the data must have the same format or the system will be unable to link claims from different insurers. Examples of this are different digit formats for the same provider code (0000124 vs. 124), different formatting standards for defining the same medical condition (i.e. text description, code, or Y/N), missing values, or simple data entry errors, all of which detract from the systems ability to associate similar data thereby reducing or eliminating its effectiveness.⁸ Limited information exists on data quality in the Kenyan health insurance industry however a survey on the type of data collected by eight Kenyan insurers showed that there was a wide disparity in the type and extent of data collected, with many of the insurers surveyed only collecting a minimum amount of data elements.¹⁹ This lack of quality data could be a serious hindrance to the effectiveness of an ACDB and more studies should be conducted into the extent of what data elements are collected, how data is cleaned, how data is entered into the system and who is overseeing it.

Conclusion

Data sharing programs were found to be a widely popular method within the medical insurance sector to reduce fraud. Data sharing among insurers provides a richer data set which increases analytical capabilities and promotes collaboration and efficiency. Two main types of data sharing models were identified; an all claims shared database and a database containing a list of providers and policy holders convicted or under investigation for fraud. A number of variations to these two models were also found, and insurance companies frequently combined different types of models to create a more robust and complete system.

The expert interviews and literature review identified a variety of potential barriers to implementing a data sharing program in Kenya. These included a lack of qualified data analysts, a lack of up to date technology, no strong, neutral entity to undertake the project and concerns about data quality. Subsequent stakeholder interviews revealed that competition and lack of trust in the insurance sector were the overriding issues that were identified as the biggest potential challenge to any joint project within the insurance sector. Low data quality and lack of qualified experts were also mentioned although not to the same degree as the issue of competition. Lack of funding was also mentioned as was data security. It was determined that upon the preliminary literature review that no legal barriers existed which would hinder or prevent the implementation of a shared data system.

Expert and stakeholders were in unanimous agreement to the utility of implementing a shared data system as a means to fight fraud. Stakeholders expressed desire and willingness to implement a shared data system. Despite agreement on the benefits of sharing data among the insurers, both experts and stakeholders were divided on what governing body should oversee it, with the experts undecided between independent parties, the government, or a mix, and stakeholders divided between the IRA and AKI.

Methodology

Two methods were used to gather the information and data contained in the paper. The first was a literature review on HIF, specifically in Kenya, and an examination into the different types of data sharing systems currently being used to combat MIF. Following the literature review, individual interviews were conducted with leading antifraud experts as well as representatives of key stakeholder groups of the Kenyan medical insurance industry including patients, insurers and related government agencies.

Limitations

Although studies on systems using data mining and analytical techniques as a method to reduce insurance fraud are fairly common, few studies have been undertaken which specifically examine data sharing and the role it plays in fraud reduction. Studies on the effectiveness and features related specifically to data sharing to reduce health insurance fraud are sparse. As a result, comparison of the features, benefits and drawbacks of each model of data sharing system were based on research and insight gained during the literature review and not on specific quantitative study results or reports.

The very small sample size of stakeholders and the lack of response from certain stakeholder groups, namely the providers, is also considered a significant deficit in the study. Providers form a key part of the insurance industry and their input on the feasibility and potential barriers to implementing a data sharing system is crucial. However among the interviewed stakeholders agreement was reached on the majority of issues which gave credibility to the overall findings.

The interviewees were convenience based and in some cases may have been biased. Expert respondents were contacted based on their extensive experience with data sharing as a successful antifraud method leading to a skewed response in favor of the use of data. In order to mitigate this, questions were aimed at the expert's past experiences implementing data sharing systems in order to focus more on factual experiences rather than opinion.

In some of the cases emailed surveys were used instead of personal interviews due to extreme difficulty making contact with interviewees over the phone due to a variety of reasons which were explained in the Methodology section. This meant that the responses did not benefit from the in depth insight that can be gained from a personal interview, however follow up questions were emailed and responded to when required to clarify certain points, and responses tended to be long and rich in detail so they were considered valid contributions to the overall findings of the study.

Recommendations

- The Ministry of Health should be involved in talks among the AKI and IRA to establish which entity should oversee the establishment of a shared database.
- A detailed survey should be done among the Kenyan medical insurance providers in order to ascertain current technology in use by each company, attitude towards a shared database, and willingness to contribute financially to the implementation and maintenance of a shared fraud database.
- If a shared listing database is implemented it should be highly publicized to increase awareness among the providers and the public which can serve to deter would be fraudsters from attempting fraud.
- Comprehensive initial and follow up training on the shared database should be provided in order to insure that the system is utilized to full potential.

Further Reading

- 1.** Gee, Jim, Button, Mark. *The Financial Cost of Healthcare Fraud 2014*. London: BDO LLP, 2014
An informative and alarming look into the financial impact of fraud on the healthcare industry as well as in introduction to a new way of approaching fraud from the perspective as a business cost.
- 2.** Jiwaji, Aamera. *Robbing the Sick*. Nairobi: Nairobi Business Monthly, 2012, Vol. June.
An interesting overview of the health insurance industry in Kenya and the way that fraud contributes to high insurance costs.
- 3.** Olson, Dan. *Tackling Fraud, Waste, and Abuse in the Medicare and Medicaid Programs*. Irving: HMS, 2013.
Solid overview of the measures undertaken to tackle fraud and waste in the Medicare and Medicaid programs.

References

- 1** Musyoka, David. Business News. *Business Today*. [Online] December 27, 2011. 2011/news/2012/01/23/kenya's-insurance-industry-gets-police-anti-fraud-unit.
- 2** Open Capital Advisors. *The Next 33,000,000*. Nairobi : Open Capital Advisors, 2012.
- 3** Association of Kenya Insurers. *Health Insurance Fraud Survey Report*. Nairobi: s.n., 2013.
- 4** WHO, *Global Health Observatory (GHO)*. [Online] [Cited: 01 01, 2013.] <http://www.who.int/gho/countries/ken/en/>.
- 5** Jim Gee, Mark Button. *The Financial Cost of Healthcare Fraud 2014*. London : BDO LLP, 2014.
- 6** Federal Bureau of Investigation. The FBI. *The FBI*. [Online] http://www.fbi.gov/about-us/investigate/white_collar/health-care-fraud.
- 7** *No Evidence of the Effect of the Interventions to Combat Health Care Fraud and Abuse: A Systematic Review of Literature*. Rashidian, Arash, Joudaki, Hossein and Vian, Taryn. 2012, Plos One.
- 8** *A survey on statistical methods for health care fraud detection*. Jing, Li, et al. September 2008, Health Care Management Science, Vol. 11(3).
- 9** Rudman, William J., et al. *Healthcare Fraud and Abuse*. 2009. p. 24.
- 10** Ministry of Public Health and Sanitation. *Kenya National Health Accounts 2009/2010*. Nairobi : s.n., 2010.
- 11** The World Bank Group. [Online] October 28, 2014. [Cited: November 10, 2014.] <http://www.worldbank.org/en/news/feature/2014/10/28/improving-healthcare-for-kenyas-poor>.
- 12** Xu, K., James, C., Carrin, G., & Muchiri, S. *An empirical model of access to health care, health care expenditure and impoverishment in Kenya*. Geneva : World Health Organization, 2006.
- 13** Olson, Dan. *Tackling Fraud, Waste, and Abuse in the Medicare and Medicaid Programs*. Irving : HMS, 2013.
- 14** Henderson, Greg and Hammersburg, Carl. *An Enterprise Approach to Fraud Detection and Prevention in Government Programs*. SAS Institute Inc. 2013. p. 12, Conclusion Paper.
- 15** Collins, R. [Interviewed by: Wine, N: 9 May 2014]
- 16** Barnes, Jeff, et al. *Private Health Sector Assessment in Kenya*. The World Bank. Washington : s.n., 2010.
- 17** Gee, Jim. [Power Point Presentation] 2013.
- 18** Insurance Regulatory Authority. *Insurance Regulatory Authority Web site*. [Online] 2013. <http://www.ira.go.ke/>.
- 19** *Health insurance systems in five Sub-Saharan African countries: Medicine benefits and data for decision making*. Carapinha, JL. 11 2010, HealthPolicy.

- 20** Kangethe, Kennedy. More Kenyans set to access medical insurance. *www.capitalfm.co.ke*. [Online] 01 22, 2014. [Cited: 01 25, 2014.] <http://www.capitalfm.co.ke/business/2014/01/more-kenyans-set-to-access-medical-insurance/>.
- 21** Association of Kenya Insurers. *Association of Kenya Insurers Website*. [Online] 2012. <http://www.akinsure.com/>.
- 22** Sturges, Judith E. *Comparing Telephone and Face-to-Face Qualitative Interviewing: a Research Note*. Pennsylvania State University. Pittsburgh : s.n., 2004. p. 14. 10.1177/1468794104041110.
- 23** International Association of Insurance Supervisors. *IAIS Report on the survey on preventing, detecting and remedying fraud in insurance*. IAIS Insurance Fraud Subcommittee, International Association of Insurance Supervisors. Amsterdam : s.n., 2007. p. 38.
- 24** America's Health Insurance Plans (AHIP). *AHIP*. [Online] 2004-2014. <http://www.ahip.org/>.
- 25** Thomas D., Musco and Kathleen, Fyffe. *Health Insurers' Anti-Fraud Programs*. Health Insurance Association of America. Washington, D.C. : s.n., 1999. p. 20, Research Findings. 202/824-1600.
- 26** Cardno Emerging Markets (UK) Ltd. *A Formative Survey of the Private Health Sector in Kenya in the Context of the Working Poor*. Private Sector Innovation Programme for Health (PSP4H). Oxon : s.n., 2014. p. 58.
- 29** Sekhri, Neelam and Savedoff, William. *Private Health Insurance: Implications for Developing Countries*. Health System Financing, Expenditure and Resource Allocation (FER), World Health Organization. Geneva : s.n., 2004. p. 25, Discussion Paper. EIP/FER/DP.04.3.
- 28** Mose, Victor and Kuloba, Robert. *2013 KENYA INSURANCE INDUSTRY OUTLOOK*. Policy Research and Development Division, Insurance Regulatory Authority. Nairoboi : s.n., 2013.
- 29** Bosch, Enosh. *Interviewed by Nina Wine*. [Interviewed by: Wine, N: 6 June 2014]
- 30** *Robbing The Sick*. Jiwaji, Aamera. Nairobi : Nairobi Business Monthly, 2012, Vol. June.

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