Reducing Fraudulent Healthcare Claims Using Behavioral Science

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Executive Summary

Background

Fraudulent healthcare claims cost RIMAC millions of dollars per year. Behavioral science offers insights that can provide low cost, easy to implement intervention ideas that address dishonest behavior. If successful, these interventions would reduce the number of fraudulent claims filed, thereby saving RIMAC money.

Our background research revealed a recurring theme of David versus Goliath. In many specific instances, RIMAC was viewed as Goliath - a large corporation that could afford to lose money from fraudulent claims. The clinics were viewed as David - the underdog simply looking out for their patients by filing fraudulent claims.

There are two primary types of fraud with which RIMAC contends:

1. A doctor conducts two exams but submits claims for four exams for that patient.
2. A doctor administers an exam that is not covered by insurance. Upon submitting the claim, the exam code is changed to an exam type that is covered by insurance.

Intervention Ideas

In order for a clinic to file a healthcare claim, a medical auditor must review and approve the claim before it can be submitted to RIMAC (see claims process behavior map for the entire process). The proposed intervention ideas are targeted at the medical auditor. The messaging ideas included below would be sent in a letter specifically addressed to the medical auditor. The impact of the treatments could be assessed using A/B testing.

This table includes a summary of the three recommended messages for an intervention. Two additional message ideas are also included in the Messaging Interventions section.

Intervention Concept	**Proposed Intervention Language**	**Behavioral Science Concept**
Salience	**Inaccurate forms cost your patients money.** Inaccurate claims require RIMAC to deploy more resources, resulting in higher premiums for your patients.	Salience is the quality of being particularly noticeable or important. This language combats the David versus Goliath mentality and makes it clear that fraudulent claims end up costing the patient money. Salience also challenges present bias by making it clear that premiums will increase in the future if fraudulent claims are filed now.
Intervention Concept	**Proposed Intervention Language**	**Behavioral Science Concept**

Deterrence + Descriptive/ Injunctive Norms	RIMAC is committing itself to verifying an increasing number of claims forms in an effort to reduce the number of fraudulent forms being sent. Please be aware that your clinic has more claims bounced back than comparable clinics in Lima.	This intervention first uses deterrence, an act of preventing or controlling actions or behavior through fear of punishment or retribution. Injunctive norms are perceptions of what is approved or disapproved of by others (i.e. what someone ought to do). Descriptive norms are information about how people actually behave.
Trending Norms	In the past, a lot of people felt that it was okay to submit inaccurate or untruthful claims. However, more and more people are realizing that fraudulent claims only end up hurting the patient, as it raises everyone's premiums, in the end.	Acknowledge past "bad" behavior given it was the social norm and then inform people that the norms are changing to more positive behavior.

Next Steps

Three key considerations should be decided upon before moving forward with testing.

1. Does the clinic have a certain "fraud type?"

   Evaluate if the clinic being tested has a dominant fraud type. Messaging recommendations based on a clinic's fraud type can be found in the Considerations section of Intervention Implementation.

2. How can RIMAC verify that the medical auditor read the message?

   In order to assess whether these interventions worked to reduce the number of fraudulent claims, RIMAC should verify which medical auditors received and read the claims form message. The verification option selected should be feasible and align with both RIMAC's business practice and the Peruvian culture.

3. When should the intervention be implemented and when should RIMAC assess the results?

   Are there factors that impact the number of claims forms that RIMAC receives at a given period? If so, these factors should be accounted for when implementing the A/B tests. RIMAC will also need to determine when to measure the potential treatment effect as

both the magnitude of the effect as well as length of time it persists will help determine if any of the messages should be rolled out to clinics more broadly.

Introduction

The Cornell Law Department (2020) defines insurance fraud as any intentional act by the policyholder to obtain improper payment from an insurance company. The scale and consequences of insurance fraud are significant and cost the industry billions of dollars (Leder-Luis, 2019). According to Atlas Magazine (2017), a global insurance publication, roughly 54% of insurers think fraud is their biggest threat. Fraud occurs across the lifespan of the contract, from underwriting the insurance policy through the notification of the claim. Consequently, the effort invested to counter fraud has become essential for insurers.

Peruvian insurance companies face additional challenges in order to address fraudulent behavior. Peru has been one of the fastest growing countries in Latin America, but despite this tremendous economic success many Peruvians distrust large corporations in their country. Therefore, when someone has an opportunity to take advantage of "big business", they take advantage of this opportunity.

Problem Statement

RIMAC wants to reduce the number of fraudulent claims they receive, specifically in healthcare. This is particularly challenging because in Peruvian culture cheating and dishonesty are often viewed as being "street smart."

Challenges

RIMAC faces the following challenges when trying to combat fraudulent claims:

1. The cultural acceptance of fraud - there is a shared feeling that everyone cheats a little.
2. There is not a reliable method for RIMAC to assess fraud accurately. RIMAC receives so many small claims forms each year that it would require significant resources to determine if they are accurate or not.
3. RIMAC only has the bandwidth to audit a small percentage of claims forms. While they check forms regularly from hospitals, there is a lack of review in claims that originate from private clinics.
4. Neither RIMAC nor the government punishes fraudulent actions in any meaningful way.

Research

Our research included reviewing the claims forms process that RIMAC uses and also covered insurance fraud, fraud prevention, and dishonesty. In addition, we conducted original research regarding why medical auditors commit fraud against RIMAC.

First, it is important to understand how claims forms are processed. Medical auditors who work at clinics and hospitals are highly educated and have an extensive background in medicine. Some auditors even split their time between auditing claims and serving as physicians. In addition, the claim submission must be completed methodically. Forms are sent one at a time. As a result of auditors' expertise and the claims forms process, it is highly unlikely that ignorance can explain any inaccurate coding or inflated charges made. It is reasonable to expect that auditors know

when information submitted on the claims forms is true or false and they choose to allow fabricated information to be submitted. Medical auditors have the power to reduce fraud but do not do so. Instead, they perpetuate fraudulent claims behavior.

It is also clear that medical auditors are aware of RIMAC's inability to verify a vast majority of claims forms, particularly those coming from private clinics. Auditors take particular care evaluating hospital claims forms and reject suspected fraudulent claims due to RIMAC's ability to check the accuracy for all of these forms. This behavior does not take place in private clinic settings given RIMAC's inability to verify the accuracy of all of the forms. Medical auditors serve a key role in the claims forms process and they do not always follow the protocol set out by RIMAC. Fortunately, identifying them as a key stakeholder at a healthcare clinic presents an opportunity to target them, modify how they think about submitting claims, and help to alleviate RIMAC's problem with fraud.

Academic and industry studies show that people tend to commit fraud when they

1. Can rationalize their behavior
2. See an opportunity to commit fraud
3. See a need to commit fraud

These three pillars create the "fraud triangle." If one of these pillars is removed, the incidence of fraud should decline. In our claims messaging intervention ideas, we produce treatments that take on each of these three components. In addition, it is critical to design interventions with a specific audience in mind. Finally, messages that are simple and focused are most likely to be effective.

An academic literature review of fraud prevention and of honest and dishonest behavior provides important lessons to be learned. Generally speaking, honesty can be encouraged when it is easy to be accurate and truthful in that specific circumstance compared to lying. When people have a sense that their behavior is being monitored, or that they are likely to get caught, they are less likely to cheat. People also act dishonestly when their identity is anonymous, if they perceive their situation to be unfair, or if they believe that other people are also acting this way.

Our interventions seek to change how medical auditors view their role. We want auditors to feel less anonymous and more connected to RIMAC so that they may have increased ownership of their role in this process rather than choose to dismiss fraud as unimportant and inconsequential. We may need to question their empirical expectations (i.e. what they think other auditors do) so we can reframe their actions in a new context. Furthermore, by placing the responsibility to reject fraudulent claims forms on the auditors, we reduce the likelihood of ethical free riding (i.e. allowing the bad behavior of others while preserving a positive self-image).

In addition, we suspect that there are psychological barriers that keep auditors from behaving honestly. They include:

1. **Loss aversion** - People feel pain from a loss more than pleasure from a gain. Clinics are willing to submit fraudulent claims because they don't want to lose money.

2. **Lack of sanctions** - Neither the Peruvian government nor RIMAC regularly enforces punishment for dishonest behavior. Therefore, the dishonest behavior persists.
3. **Reputational rewards** - Doctors and medical auditors work in the clinic. They gain status with their peers for submitting fraudulent claims.
4. **Present bias** - A bias in which gains that can be achieved now are prioritized compared to gains that can be achieved in the future. People who file fraudulent claims focus on the financial gain in the present instead of thinking about the cost of that fraudulent claim in the future.
5. **Stereotyping** - There is an over-generalized belief that insurance companies are so big that they can afford to incur the cost of fraudulent claims. Insurance companies are viewed as Goliath whereas patients and clinics are viewed as David in comparison.

These insights informed our original research. Interviews with Peruvian citizens, including a Peruvian doctor, confirmed our initial understanding of Peruvian views on dishonesty. These interviews, however, were anecdotal and we wanted to gather qualitative research from a wider swath of people. In order to determine what motivates auditors to behave as they do, we created scenarios, also known as vignettes, and had people respond to them. Fictional vignettes are useful because people do not feel judged personally by them, and therefore are free to respond truthfully. In this vein, vignettes are best written in third person form so that respondents can react dispassionately to them, judging and assessing someone else's behavior, rather than their own. We published these scenarios on MTurk, an Amazon platform where people can answer surveys for money. One vignette described a situation in which an auditor changes a diagnosis code to something that will be approved by insurance, even though the code does not match the exam the doctor conducted. The other scenario described an auditor submitting a claim for four exams, even though only two exams were conducted. Each scenario listed 12 possible explanations for the behaviors and respondents were asked to select the three most likely reasons for the behaviors.

Originally, the goal was to survey Peruvians only, but unfortunately we could not get any survey participants from Peru to respond. We then opened up the survey to other Latin American countries where attitudes are considered to be similar. The 80 responses we received do not display a scientifically rigorous method, but nevertheless produced notable qualitative insights. In the first scenario, the top three answers were much more common than the other nine choices. The top three responses, in order, for why an auditor might change the diagnosis code were:

1. Insurance can pay for it.
2. You don't want to have the clinic lose money.
3. The clinic cannot help people if insurance does not pay them.

The results explain that people view insurance as an entity that can bear extra costs. Respondents operate in a loss frame and perceive not submitting a false report as a loss since they have to pay money for the exams. Lastly, there is a perception that altering codes helps patients.

The second scenario describes a more brazen act of fraud, as the auditor simply invents claims out of thin air. The top responses for this were also dominant, particularly the top response. The most popular explanation of the behavior is that the auditor wants to: "increase the profits of the clinic." Next, people believed that the auditor will be considered smart if they take advantage of the system. Finally, there was a tie for the third most popular answer, between people again stating that "Insurance can pay it" and "You don't want to have the clinic lose money." In this particularly dishonest situation, people believe that the dishonest action helps their clinic make money and can earn medical auditors reputational rewards as a result.

We recommend that RIMAC use different intervention messages based on the clinic's fraud type. A clinic that is suspected of changing diagnosis codes is best suited to receive a message that undercuts the notion that RIMAC can pay for everything and that removes auditors from thinking in a loss frame. In contrast, clinics that are suspected of fabricating claims in order to achieve gains should be given messages that focus on deterrence. Pointing to changing norms could also erode their confidence in reputational rewards.

Literature Review

Behavioral Economics & Fraud Prevention

Behavioral economics has been applied in a variety of ways to decrease the rate of fraudulent claim filing, as it helps insurers understand why the behavior takes place. Depending on the situation, group behavioral norms, endowment effect, and/or mental accounting could be at play.

Behavioral economics can also help shape intervention ideas. Examples include changing the choice architecture, or framing the effects of fraud on other consumers rather than the insurance company (i.e. less money in the pool to provide payouts) (Guo, et al., 2018). In addition, research suggests there are three key principles for increasing the accuracy of applicant disclosures: Make it easier to be accurate, easier to be truthful, and harder to lie (RGA, 2017). These can be accomplished through a variety of strategies: using simple language, prompting memory by listing possible answers, assuming the behavior exists (e.g., "When did you last…"), and by increasing the applicant's sense that answers are being monitored (sentinel effect), to name just a few.

Honesty & Dishonesty

People are more likely to commit dishonest acts if there is a degree of anonymity for them. Making it clear that everyone is eligible for an audit can act as a deterrent for dishonest individuals (Behavioural Insights Team, 2012).

Also, if people feel that they are in an unfair situation, they might make fraudulent claims or exaggerate the claims they make. Tennyson (1997) found that insureds who consider their premium to be too high are more likely to consider fraud to be acceptable. Miyazaki (2008) finds that the deductible size negatively influences perceptions of the ethicality and fairness of the insurance arrangement and therefore increases the acceptability of claim build-up (Bieberstein, 2017). Designing a contract with large deductibles can therefore increase the amount of insurance fraud. Furthermore, an Equifax-YouGov study found that consumers under age 35 are more likely to stretch the truth at the application and claim stages, and yet do not consider this behavior fraudulent (RGA, 2017).

It's also important to recognize that honest people are often willing to engage in "ethical free riding" (Gross et al., 2018). This is when they are personally honest, but seek dishonest partners whose behavior gives them benefits. This way, individuals can receive rewards without harming their own self-image. Illuminating this collaborative corruption may push back against this behavior.

However, it is important to point out that policing fraud may result in a catch-22, in that trust is diminished between the insurer and consumer (Tennyson, 2008). This was supported in the lab as well (Solda et al., 2017).

Ultimately, when normative expectations (i.e. what we believe others think we ought to do) and empirical expectations (i.e. what we expect others to do) clash, decisions are influenced more by empirical expectations than normative ones (Bicchieri & Xiao, 2007). In other words, if people think we should not cheat, but we think that others would cheat in this same situation, then we become more likely to cheat in that scenario ourselves, even if we believe our actions would not be met with approval.

Additionally, Carlson et al. (2018) discovered that when people perceive their own actions as selfish, they want to minimize guilt and preserve their own positive self-image. This leads them to remember their past actions as being fairer than they really were. This is another roadblock to regular, ethical behavior (Carlson et al., 2018).

Other Methodologies for Preventing Fraud

There are methodologies unrelated to behavioral economic interventions that can reduce or change behavior. Perhaps unsurprisingly, strategies such as fostering a zero-tolerance culture for fraud and providing anti-fraud training to employees and agents can be an effective means to identify fraud both before or after it comes on the books, to mitigate its potential impact (RGA, 2017). Dishonesty increases when there are low or ambiguous risks and consequences of getting caught (Behavioural Insights Team, 2012). As such, increased frequency of investigation and

prosecution could serve as a deterrent (RGA, 2017). In addition, a whistleblower program in the United States, enabled by the False Claims Act, has saved the government an estimated $18 billion dollars over a five year period by providing an opportunity for whistleblowers within healthcare clinics to receive financial compensation after lawsuit settlements (Leder-Luis, 2019).

Proposed Interventions

We proposed three intervention ideas for RIMAC's consideration with the intent that RIMAC would select one of the intervention ideas to be developed more fully as the final project deliverable.

The first intervention suggested was a randomized control trial (RCT) assessing claims messaging. Due to the resources required to verify the accuracy of claims, the goal of this intervention would be to reduce the overall number of claims submitted from clinics. This option would experiment with various nudges that take Peruvian culture into account.

The second intervention proposed was a verification system. This intervention would create a mechanism for RIMAC to learn from clinicians, providers, and patients what exams took place, thus addressing the resource constraint RIMAC faces for verifying the accuracy of claims forms.

The third intervention suggested was "humanizing" RIMAC's marketing materials. We proposed running A/B tests of content design on RIMAC's website. The goal of these changes would be to combat the perception that RIMAC was a big company that could afford fraudulent claims.

Criteria and Approach

Option 1: Messaging regarding fraudulent claims

Deliverable:

A "playbook" with the messaging language and considerations for how to run and analyze an RCT

Advantages:

This intervention is low cost and easy for RIMAC to implement. Of all the insurance RIMAC provides, it incurs the most cost from healthcare insurance fraud, specifically from providers rather than individuals. Therefore, RIMAC could see reduced costs of healthcare insurance fraud at a relatively low cost in terms of resources required and time invested.

Further, this intervention allows RIMAC to test the impact of claims messaging on behavior by measuring the number of claims forms submitted by a clinic (our dependent variable) before and after the messaging was implemented. An RCT allows RIMAC to determine which, if any,

messages would be most effective before investing additional time and resources to rollout the messages more broadly.

Disadvantages:

The Penn group would not have enough time to run the RCT and analyze the data. The RIMAC behavioral science team would need to own the implementation and analysis of the RCT and provide further recommendations internally based on the results.

Option 2: Verification System

Deliverable:

Design of a program that aims to increase opportunity for patients or clinical workers to either verify exams conducted and/or flag potential fraudulent activities

Advantages:

At present, RIMAC does not have the capacity to verify if every claims form submitted is accurate. This intervention would flag probable fraudulent or abusive claims allowing RIMAC to focus its investigations on a smaller subset of claims.

Disadvantages:

This intervention is inspired by whistleblower laws in the United States, which allows healthcare workers to file lawsuits with protections under the law. Given the different social norms and laws compared to the United States, it could be difficult to successfully implement this intervention in Peru at a private insurance company. In addition, this intervention requires significant buy-in from within RIMAC, which might not be feasible.

Option 3: "Humanize" Marketing Materials

Deliverable:

Proposed updates for marketing materials

Advantages:

One advantage to this intervention is that it would include A/B testing so RIMAC would have data about whether the updates to the marketing material worked before rolling them out more broadly. In addition, the RIMAC Behavioral Science team would advise internally without having to own the project.

Disadvantages:

This intervention involves multiple departments, such as the marketing and information technology (IT), to buy into the project.

Recommended Intervention

Both the RIMAC Behavioral Science and Penn teams preferred the claims forms messaging intervention given it would be cost-effective and relatively simple for RIMAC to implement. It also offered the best way to apply relevant behavioral science literature and past research.

The other two interventions had merit, but were handicapped by their scope as well as the time and resources required by RIMAC to implement the interventions. During the final presentation, RIMAC expressed additional interest in the second intervention idea. A link to a more detailed summary of this intervention can be found here.

Scope and Final Deliverable

With Option 1 selected, the final deliverable is a "playbook" with claims forms messaging options based on behavioral science and considerations for implementation. The goal of the deliverable is that RIMAC take this information and run an experiment to test the messages' effectiveness.

Upon further discussions with Ms. Mariafernanda Valdez (RIMAC Behavioral Science team), the scope of the Option 1 shifted slightly from a playbook for running an RCT to conducting A/B tests, which compares the control to the treatment. One specific healthcare clinic in Lima was identified for conducting the A/B tests. This new approach was more feasible for RIMAC as it could focus on clinics that have a high number of fraudulent claims. In addition, RIMAC would be able to compare the number of claims forms submitted for this clinic during the treatment period to the number of claims forms submitted during a different time period.

Intended Audience

This intervention is designed for one stakeholder at the healthcare clinic, the medical auditor. The medical auditor has medical expertise and can either confirm or deny the claims made by clinicians. Healthcare clinics employ medical auditors who then send approved claims forms to RIMAC. The medical auditor is the last line of defense before the claim reaches RIMAC for approval (see behavior map). The medical auditor has the ability to stop fraudulent claims, thereby preventing clinics from receiving undeserved insurance payments.

Delivery Mechanism

We recommend that the claims forms message be included in a letter specifically addressed to the medical auditor at the clinic. It is an easy to implement and low-cost delivery option that does not change any current processes that RIMAC has.

Alternatively, the messages could be included on a form that RIMAC could require medical auditors to include with their submission of actual claims forms. This additional form could carry the different messaging interventions that medical auditors would see just prior to filling out claims forms. Medical auditors have to return the form, which increases the likelihood that the medical auditors read the claims form message.

The delivery mechanism that we have proposed is a suggestion, however, and might need to be refined or altered as RIMAC conducts the A/B tests.

Messaging Interventions

The interventions below are ranked in terms of feasibility, beginning with the easiest to implement. The first three message options (salience, deterrence + injunctive/descriptive norms, and trending norms) require the least amount of work from RIMAC in order to implement them in an A/B test. The fourth message option (familiarity) requires RIMAC to gather testimonials or pictures to include with the message. The fifth message option requires RIMAC to add a signature line to a new form that the auditor views before filling out the claims form.

Salience

Inaccurate forms cost your patients money. *Inaccurate claims require RIMAC to deploy more resources, resulting in higher premiums for your patients and more time spent filling out forms.*

Inaccurate forms cost your patients money.

Salient messages provide a clear message that underlines the problems associated with the current behavior. As part of our research into behavioral drivers, we found that it is likely that medical auditors are affected by present bias. Present bias is the idea that people tend to place preference on short-term benefits and choose them despite long-term costs associated with that behavior. Medical auditors are likely considering the current benefits to their actions (saving a clinic money) over the longer-term ramifications that come with filling out forms in a fraudulent manner (RIMAC incurs higher costs and charges higher premiums in the future).

Inaccurate claims require RIMAC to deploy more resources, resulting in higher premiums for your patients and more time spent filling out forms.

This type of messaging also addresses the fact that by choosing to submit more inaccurate or untruthful claims, the medical auditor has to spend more time filling out forms that come back as fraudulent. By addressing both the financial and time factors in this messaging intervention, medical auditors may become more aware of their actions and change their behavior.

A limitation to this option is that these issues may seem unimportant or dismissable to medical auditors. It may not be enough to change their behavior.

Deterrence + Injunctive/Descriptive Norms

RIMAC is committing itself to verifying an increasing number of claims forms in an effort to reduce the number of fraudulent forms being sent. Please be aware that your clinic has more claims bounced back than comparable clinics in Lima.

RIMAC is committing itself to verifying an increasing number of claims forms in an effort to reduce the number of fraudulent forms being sent.

There is significant literature on the use of deterrence in reducing fraudulent insurance claims. Deterrence messaging communicates that the targeted audience is under more scrutiny, and therefore discourages inappropriate actions.

Please be aware that your clinic has more claims bounced back than comparable clinics in Lima.

Injunctive norms are statements about perceptions regarding what is approved or disapproved of. In a word, it is about what "ought" to happen. The injunctive norm in this message is "more claims bounced back." It informs the medical auditor that he is not doing what he ought to be doing because if he were then he would not have so many claims bounced back.

Descriptive norms are information regarding how people actually behave, or what "is" occurring. The descriptive norm in this message is the comparison to similar clinics in Lima.

Combining these two norms makes participants aware of two key details: what their peers are doing and what they themselves should be doing. Including this information in a message would seek to change medical auditors' perceptions about what they should be doing and dispel the notion that the majority of their peers are submitting many fraudulent claims.

RIMAC should not lie when sending this message. As a result, if this message is implemented at multiple clinics, it should only be sent to the clinics with the most claims forms bounced back from RIMAC. In addition, RIMAC could strengthen the descriptive norm by citing information on the percentage of clinics that have fewer claims bounced back. This additional information, however, would require more work by RIMAC in order to implement the message.

This type of message is limited by the fact that the use of descriptive and injunctive norms have been shown to work in specific contexts such as towel usage in hotel rooms (Bohner et. al., 2014) and electric utility consumption (Schultz et. al., 2007). It is not known if this type of message would be effective for RIMAC's context.

Trending Norms

In the past, a lot of people felt that it was okay to submit inaccurate or untruthful claims. However, more people are realizing that fraudulent claims only end up hurting the patient, as it raises everyone's premiums, in the end.

According to Mortensen et al. (2019), when commendable actions are rare, how they are presented is very important. For example, if a solar panel salesperson says that 15 percent of people have solar panels on their homes and that this is good for the environment, the statement also communicates that 85% of homes do not have solar panels. Therefore, buying solar panels puts you outside of the mainstream, which is problematic because people prefer to fit in. However, if this salesperson can say that ten years ago 5% of people had panels, and five years ago 10% of people had panels, and now 15% of people have panels, then buying solar panels is now framed as an increasing trend, which is much more appealing to a potential buyer.

Trending norms give people permission to change going forward. They say that people behaved one way in the past, but now they are behaving in another way moving forward. When people hear this type of statement, they do not feel judged or scolded about their past behavior. By sending this message, RIMAC is acknowledging that people misbehaved in the past and are now changing their behavior.

This message is softer than the deterrence + injunctive/descriptive norms message so it might be better received by some parties. However, a limitation of this treatment is that it describes a state of affairs that medical auditors might find hard to believe.

Familiarity

Hi! My name is {name}. I receive the claims forms that you submit to RIMAC. If you ever have any questions, I would love to help! I can be reached at:

Phone: {phone number}

Email: {email}

RIMAC is here to support our community. We are your neighbors and we want to help everyone live a healthy life.

This treatment is designed to humanize RIMAC. There are two ways to accomplish this goal. RIMAC puts a personal face on itself – literally. In this case, a message can be sent to medical auditors showing the name and face of a RIMAC representative. Research shows that dishonesty is higher between strangers than between people you know (Bicchieri et al., 2002). This treatment seeks to make the relationship between RIMAC and medical auditors more personal in

the hopes of boosting honest behavior. The photo included above is a stock photo that is being used as a placeholder. In the actual message, RIMAC should use a photo of the actual RIMAC representative as part of the message.

Alternatively, RIMAC could obtain a testimonial from a customer. Ideally, this individual could provide positive anecdotes, such as how RIMAC works hard to give good health coverage for a reasonable price. Illustrating a positive connection between RIMAC and its customers communicates that a positive relationship is possible. This concept is known as providing social proof, which gives medical auditors evidence that RIMAC is worthy of respect and trust.

This treatment requires more work from RIMAC in order to implement. The first option requires RIMAC to gain permission to use a RIMAC representative's likeness. The second option requires RIMAC to find an actual testimonial and gain permission to use it. If RIMAC is to pursue these strategies, it is important to behave ethically and to not pressure people into participating.

Commitment Device

I commit to filling out these claim forms accurately.

There are conflicting findings about the impact of commitment devices on honesty. Some research promotes the benefits of having people pledge to fill out forms honestly before they do so (Shu et al., 2012). However, a massive study in Guatemala did not find honesty priming to be impactful (Kettle et al., 2017). It is unknown whether a commitment device could work in the context of medical auditors filling out claims forms. In theory, a pledge will get medical auditors to think about their actions more carefully. Thus, it may be worthwhile to see if a commitment device reduces fraudulent activity in this particular context.

In order to implement this message, RIMAC must create an additional form that the medical auditor must sign. The form should provide a space for medical auditors to sign or initial that they agree to this statement,before sending the form back to RIMAC. Given the conflicting findings and additional work required by RIMAC, this intervention is ranked last of the five messaging options.

Intervention Implementation

Measurement Plan

It is not feasible for RIMAC to dedicate time and resources in order to investigate whether each claim submitted is fraudulent or not given the quantity of claims it receives. In order to measure the potential impact of interventions, we propose using the overall number of claims as a proxy dependent variable.

Given that there could be confounding variables that impact the number of claims submitted each month, we suggest running a regression analysis to compare month over month historical claims data from clinics. By running this regression, RIMAC can determine if there are any seasonal trends that need to be controlled for. RIMAC needs to know if during the intervention the increase or decrease in submitted claims is due to the messaging intervention or attributable to seasonality. It is also helpful to note any historical outliers, especially if there was a known cause (i.e. a natural disaster or an event that caused a surge in medical attention).

RIMAC can also test if the mean difference between the number of overall claims before and after intervention is significant. Performing this type of test will demonstrate whether the intervention led to statistically significant results or whether the results were due to random chance.

This statistical analysis could be conducted by performing several one sample t-tests using any programming platform. More specifically, we suggest using the models of baseline Ordinary Least Squares (OLS) regressions, build a regression function including variables such as city names, and monthly fraudulent claim data. We then suggest using the Hausman-Taylor estimation approach as this regression function includes both time-varying and time-invariant variables. This regression addresses the endogeneity of these variables so that we can have a more precise estimation of the effects of the variables.

Considerations

Our recommended intervention plan comes with five different messaging options, all of which our group believes could be effective in reducing the number of fraudulent claims that RIMAC receives from healthcare clinics. There are, however, additional considerations for RIMAC to consider before implementing any of the messages at one of their clinics.

1. **Does the specific clinic have a fraud "type?"**

   This question is important for RIMAC to investigate before utilizing any of the messages. Certain clinics may be prone to certain types of fraud such as changing the diagnosis code or submitting claims with more exams than were actually done. If there is a type of fraud that a clinic is more likely to commit, then certain messages may work better for those specific types of fraud.

Clinic's Fraud	Suggested Intervention	Rationale

Type		
Changing Diagnosis Codes	Salience	Dispels the notion that RIMAC can afford to pay for it Makes it clear that their patients will bear the brunt of these costs in the future
Dishonesty About Quantity of Exams	Deterrence + Injunctive/Descriptive Norms	Could reduce medical auditors' confidence about the reputational rewards they might perceive they receive from their behavior.
	Trending Norms	
Either	Familiarity	Both of these interventions are more general approaches to addressing dishonesty.
	Commitment Device	

2. **How can RIMAC verify that the medical auditor read the message?**

   In order to assess whether these interventions worked to reduce the number of fraudulent claims, RIMAC should verify which medical auditors received and read the claims form message. There are a number of ways this could be accomplished. For example, a RIMAC representative could call or email the medical auditor to inquire about the letter. A quick survey could be sent to the medical auditor to verify if they read and understood the message.

   The verification option selected should be feasible and align with both RIMAC's business practice and the Peruvian culture.

3. **When should the intervention be implemented and when should RIMAC assess the results?**

   Are there differences in the number of claims received during summer, autumn, winter, and spring that could introduce a confounding variable? Do more patients visit the clinic at the beginning, middle, or end of the month?

   Once the letter is sent to the medical auditor, how much time should RIMAC measure the potential treatment effect? A week, three weeks, a month, three months, six months, etc.? For example, perhaps there is a treatment effect initially then the effect of the

intervention tapers off. These types of questions in addition to what is feasible for RIMAC should inform at what time points RIMAC compares the number of claims forms submitted by medical auditors compared to the control period.

Conclusion

Healthcare insurance fraud is a costly problem for RIMAC. As a result, it wants to reduce the number of fraudulent claims it receives in this sector. This goal is particularly challenging because in Peruvian culture cheating and dishonesty are often viewed as being "street smart." Further, RIMAC faces a number of additional behavioral drivers - loss aversion, lack of sanctions, reputational rewards, present bias, and stereotyping.

Medical auditors at clinics serve a key role in the claims forms process. Messaging that uses behavioral science insights could be a cost-effective, simple intervention that reduces the rate of fraudulent claims. Messages could make the impact of behavior more clear, draw on social norms, humanize RIMAC, etc. In order to assess messages' impacts at a clinic, A/B tests and regression analyses should be conducted. If a message(s) reduces the rate of fraud in an A/B test, RIMAC could then consider rolling it out more broadly to additional clinics.

Works Cited

Atlas Magazine (2017, May). Insurance fraud detection and cost to industry. Retrieved from https://www.atlas-mag.net/en/article/insurance-fraud-detection-and-cost-to-industry

Behavioural Insights Team (2012). Applying Behavioural Insights to Reduce Fraud, Error, and Debt. Retrieved from: http://38r8om2xjhhl25mw24492dir.wpengine.netdna-cdn.com/wp-content/uploads/2015/07/BIT_FraudErrorDebt_accessible.pdf

Bicchieri, C, Duffy, J. & Tolle, G. (2002), Trust among strangers. *Philosophy of Science.* doi: 10.2139/ssrn.304344

Bicchieri, C., & Xiao, E. (2007). Do the Right Thing: But Only If Others Do So. *SSRN Electronic Journal*. doi: 10.2139/ssrn.1009851

Bieberstein, F. V., & Schiller, J. (2017). Contract design and insurance fraud: an experimental investigation. *Review of Managerial Science*, *12*(3), 711–736. doi: 10.1007/s11846-017-0228-1

Bohner, G., & Schlüter, L. E. (2014). A Room with a Viewpoint Revisited: Descriptive Norms and Hotel Guests Towel Reuse Behavior. *PLoS ONE*, *9*(8). doi: 10.1371/journal.pone.0104086

Carlson, R. W., Marechal, M., Oud, B., Fehr, E., & Crockett, M. (2018). Motivated misremembering: Selfish decisions are more generous in hindsight. doi: 10.31234/osf.io/7ck25

Cornell Law School (2020), Insurance Fraud. Retrieved from https://www.law.cornell.edu/wex/insurance_fraud

Eye on Fraud: Current State. (n.d.). Retrieved from https://rgare.com/docs/default-source/brochure/fraud_whitepaper_v6.pdf?sfvrsn=9f642f0f_0

FBI (2020). Insurance Fraud. Retrieved from https://www.fbi.gov/stats-services/publications/insurance-fraud

Gross, J., Leib, M., Offerman, T., & Shalvi, S. (2018). Ethical Free Riding: When Honest People Find Dishonest Partners. *Psychological Science*, *29*(12), 1956–1968. doi: 10.1177/0956797618796480

Guo, J., Puttaiah, M. H., & Weiss, A. (2018, November 16). Behavioural economics: shaping optimal decision making, including fraud prevention. Retrieved from https://www.swissre.com/institute/research/sigma-research/economic-insights-behavioural-economics.html

Kettle, S., Hernandez, M., Sanders, M., Hauser, O., & Ruda, S. (2017). Failure to CAPTCHA Attention: Null Results from an Honesty Priming Experiment in Guatemala. *Behavioral Sciences*, *7*(4), 28. doi: 10.3390/bs7020028

Leder-Luis, J. (2019). Whistleblowers, the False Claims Act, and the Behavior of Healthcare Providers. *MIT Economics*. Retrieved from http://economics.mit.edu/files/18187

Lee, C. M., Geisner, I.M., Lewis, M. A., Neighbors, C., & Larimer, M. E. 2007). Social Motives and the Interaction Between Descriptive and Injunctive Norms in College Student Drinking. *Journal of Studies on Alcohol and Drugs*, 68(5), 714-721. doi:10.15288/jsad.2007.68.714

Miyazaki, A. D. (2008). Perceived Ethicality of Insurance Claim Fraud: Do Higher Deductibles Lead to Lower Ethical Standards? *Journal of Business Ethics*, *87*(4), 589–598. doi: 10.1007/s10551-008-9960-4

Mortensen, C. R., Neel, R., Cialdini, R. B., Jaeger, C. M., Jacobson, R. P., & Ringel, M. M. (2019). Trending Norms: A Lever for Encouraging Behaviors Performed by the Minority. *Social Psychological and Personality Science*, *10*(2), 201–210. doi: 10.1177/1948550617734615

RGA (2017). Global Claims Fraud Survey. https://www.rgare.com/docs/default-source/knowledge-center-articles/rga-2017-global-claims-fraud-survey-white-paper---final.pdf?sfvrsn=601a588_0

Schultz et. al. (2007) The Constructive, Destructive, and Reconstructive Power of Social Norms https://www.jsmf.org/meetings/2008/july/social%20norms%20Cialdini.pdf

Shu, L. L., Mazar, N., Gino, F., Ariely, D., & Bazerman, M. H. (2012). Signing at the beginning makes ethics salient and decreases dishonest self-reports in comparison to signing at the end. *Proceedings of the National Academy of Sciences*, *109*(38), 15197–15200. doi: 10.1073/pnas.1209746109

Solda, A., & Villeval, M. C. (2017). Exclusion and Reintegration in a Social Dilemma. *SSRN Electronic Journal*. doi: 10.2139/ssrn.3029952

Tennyson, S. (1997). Economic institutions and individual ethics: A study of consumer attitudes toward insurance fraud. *Journal of Economic Behavior & Organization*, *32*(2), 247–265. doi: 10.1016/s0167-2681(96)00904-3

Tennyson, S. (2008). Moral, Social, and Economic Dimensions of Insurance Claims Fraud. *Social Research*, *75*(4), 1–24. Retrieved from https://www.jstor.org/stable/40972112?seq=1

The World Bank in Peru (2019). Retrieved from https://www.worldbank.org/en/country/peru/overview

Appendices

Appendix A: Additional Background Information

Figure 1: Claims Process Behavior Map

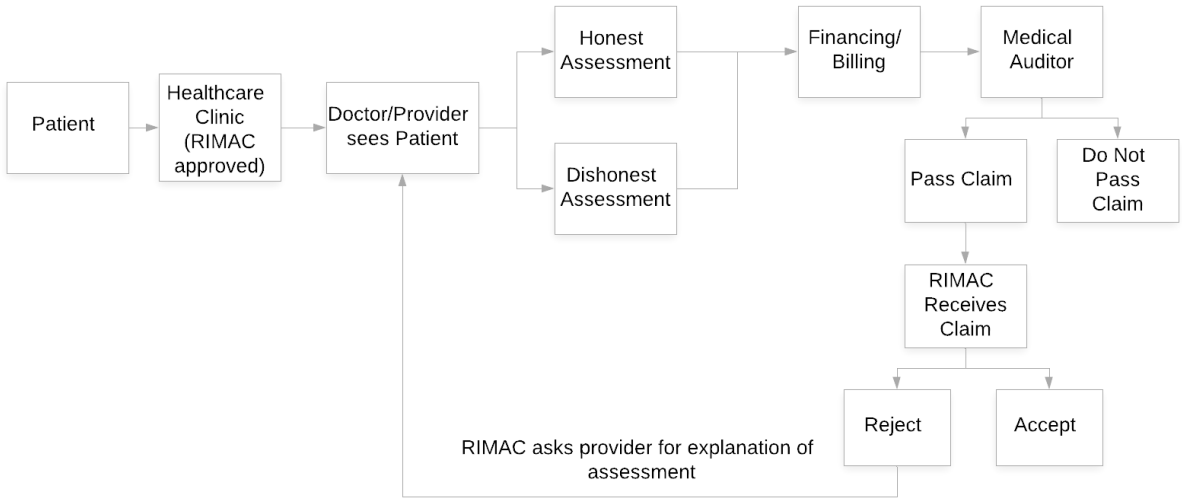
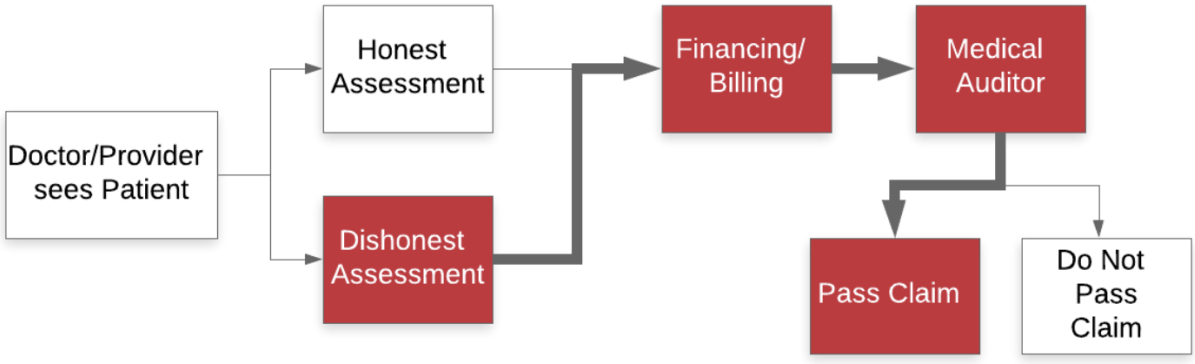


Figure 2: Behavior Path from Dishonest Behavior to Fraudulent Claim



Transcript of interview of RIMAC auditor

1. What is your background? How long have you been an auditor?
    a. She studied medicine in Peru. 8-10 years in medicine. Graduated in 2008, and as soon as she graduated she did a course in medical auditing. After finishing this course, she started working in Pacifico (?), another insurance company in Peru

for a year and half. Then she came to RIMAC 10 years ago. Worked on other insurance products before moving into the health space.

2. What training did you have to complete in order to become an auditor?
    a. You have to have a career in medicine and the class in medical auditing.
3. Could a medical doctor also be a medical auditor as well?
    a. Yes, there are some auditors that work 50% as actual physicians and 50% in administrative roles such as medical auditing.
4. When do you fill out the forms to send to RIMAC or another insurance company? Does each form have its own deadline? Or is there a general end of month deadline?
    a. The process is like this, the provider or clinic sends a physical file which has the billing amount and the medical information. Then another sheet, "Sitets", which has the signature of the patient to confirm that they were attended for that clinic. The benefit, the category which the attention (appointment) falls such as emergency or surgery etc. She also has the medical diagnosis and the signature of the doctor. These four things come to RIMAC as physical copies. Then RIMAC has a system, VPM, which scans the documents to digital forms. Then there is a program that gives the current skill to the diagnosis, if this regarding small children then it gets skilled for a doctor who is a pediatrician. If it's a brain injury then it goes to a medical auditor who is skilled in neuroscience. If she has certain skills in an area then she receives that area from this program and she evaluates these claims. When this evaluation starts, she starts with the signature of the doctor claim form, if she sees something weird she sends that to the executive within RIMAC. Then the executive sends that back to the clinic, essentially notifying them that the claim has not passed. The deadline is usually monthly, but their decision is based on the different attentions (appointment) and their respective deadlines.
5. Do you submit claims one at a time or as a group?
    a. They submit the claims one at a time. The process demands is not so automatic.
6. Do you submit claims online or by using paper forms?

   a. Online, they use the VPM program that gives them the claims according to their skills.

7. Do doctors/clinicians give you the forms personally or are they submitted through an online portal or by some other method?
   a. VPM
8. What are the common errors you see?
   a. The most common error that they see is a difference in the medical fees (refers to amount that they charge for a service; one doctor could charge you $1k for an appointment, another $500 - not OK to have a wide disparity). Another issue is in pharmacy costs, which goes over the scope of this project. Also, related to what we talked about last time, the categorization of the attention (appointment) that is given. The type of claim that the insurance does not cover, the code gets switched to another diagnosis from the physician so that it automatically gets passed through the system
9. How does an auditor know if the information on the claims form is accurate?
   a. Mainly experience. And from comparison with other providers and clinics that they have worked for.
10. Are there instances when you or other auditors question the accuracy of the claims? If so, when does this happen? What steps are taken?
   a. That's answered in 3. After they have received the claims, they have an observation which they send to the executive who doubles check it as well. After this double check occurs, it gets sent back to the provider.
11. If a form is filled out dishonestly, are you able to reject it so that it doesn't get sent to the insurance company? If so, how do you go about doing that?
   a. Doesn't apply to her because she is within RIMAC. I did ask her, why does she think other medical auditors within a clinic do that. She told me that there are a small amount of medical auditors within a clinic. And there are a lot of claims that they need to process so they don't have a lot of time to get them through their system so that they can pass. They should evaluate all the claims and there are two types of attentions (appointment): private and hospitals. Medical auditors in

clinics tend to focus on the hospital ones because they know that all these ones will be checked by RIMAC (100%). They take their time to evaluate these claims. ON the other hand, there are other claims such as ones where they go in and out of the clinic and don't stay for a significant period of time, and they know that there are so many of these claims they know that not all of these claims are checked. This is where most of the overuse or overinsurance occurs. The medical auditor let us know that the other auditors know that these claims are not going to be checked and that there is a system that there is a claim that they know the insurance does not cover and it doesn't pass, then they try to pass it again and it does pass. They know that it will eventually pass because the process is mainly chance through this system. Another thing that she told us is that another reason for the dishonest behavior, is that the clinic may not have a good filter at the start of the attention (appointment) being given. Because they didn't have it, then once the claim is going to be passed through the insurance company and then they have to bounce it back to the patient which means they may lose their patient and therefore money brought in. The patient then could leave and go to another clinic. So what they do is they replace the code of the actual examination with another code to make the claim pass to keep the patient at their clinic.

Appendix B: MTurk Study & Results

Background

An Mturk study was conducted to identify possible reasons for dishonesty within a typical medical clinic and its insurance company. The vignettes were originally written in English and then translated by a native speaker to Spanish. The results corroborated our literature review and prior interviews. The responses illuminated that there was a strong sense of helping the common person even at the expense of being dishonest with a corporation.

Diagnosis Vignette - Spanish

Imagine que alguien trabaja en una clínica/hospital y su trabajo es enviar las solicitudes de los pacientes a las compañías de seguro para que aprueben el pago.

En dicha clínica/hospital, el trabajador se da cuenta que un Doctor realizó un examen que no es cubierto por el seguro dado el diagnóstico del paciente. Sin embargo, decide cambiar el código del diagnóstico a uno que sí pueda ser aprobado por el seguro, aun sabiendo que no es lo correcto.

Por qué cree que el trabajador/a hace esto? Seleccione al menos las tres razones más probables:

- Quería aumentar las ganancias de la clínica
- Piensan que serán considerados inteligentes si aprovechan el sistema
- Es lo correcto de hacer
- La clínica no puede ayudar a la gente si el seguro no le paga
- Por que no lo haria? Es poco probable que sea castigado por eso
- El seguro puede pagarlo
- Sus colegas esperan que haga eso para que el seguro le pague a la clínica
- La clínica puede quebrar si el seguro no le paga
- Los trabajadores de otras clínicas hacen lo mismo
- Lo hizo para que lo demás pensaran que es inteligente
- No hay razón para no hacerlo
- No quiere hacer que la clínica pierda dinero
- Otras razones:

Extra Exams Vignette - Spanish

Imagine que alguien trabaja en una clínica/hospital y su trabajo es enviar las solicitudes de los pacientes a las compañías de seguro para que aprueben el pago.

En esta clínica, le están cobrando al seguro por cuatro exámenes, aun cuando el Doctor solamente hizo dos exámenes.

Por qué cree que el trabajador/a hace esto? Seleccione las tres opciones que crea que son más posibles:

- Quería aumentar las ganancias de la clínica

- Piensan que serán considerados inteligentes si aprovechan el sistema
- Es lo correcto de hacer
- La clínica no puede ayudar a la gente si el seguro no le paga
- Por que no lo haria? Es poco probable que sea castigado por eso
- El seguro puede pagarlo
- Sus colegas esperan que haga eso para que el seguro le pague a la clínica
- La clínica puede quebrar si el seguro no le paga
- Los trabajadores de otras clínicas hacen lo mismo
- Lo hizo para que lo demás pensaran que es inteligente
- No hay razón para no hacerlo
- No quiere hacer que la clínica pierda dinero
- Otras razones:

Diagnosis Vignette - English

Imagine that someone works for a health clinic. Their job is to send claims to insurance companies for approval.

At this clinic, they see that a doctor does an exam that is not covered by insurance, given the patient's diagnosis. They decide to change the diagnosis code to something that will be approved by insurance, even though it isn't truthful.

Why do they do this? Please select at least three most likely reasons.

- They want to make money for the clinic.
- They think they will be considered smart if they take advantage of the system
- It's the right thing to do.
- If the clinic doesn't get paid by insurance, it can't help people.
- They are not likely to be punished. Why wouldn't they do this?
- The insurance company can afford to pay.
- Their coworkers expect them to do what needs to be done so that the clinic gets paid.
- If the clinic doesn't get paid by insurance, it might go out of business.
- People at other clinics do the same thing.
- They do this so that people will think they are smart.
- There's no reason not to do this.
- They don't want to lose money for the clinic.

Extra Exams Vignette - English

Imagine that someone works for a health clinic. Their job is to send claims to insurance companies for approval.

At this clinic, they bill the insurance company for four exams, even though the doctor only did two.

Why do they do this? Please select the three most likely reasons.

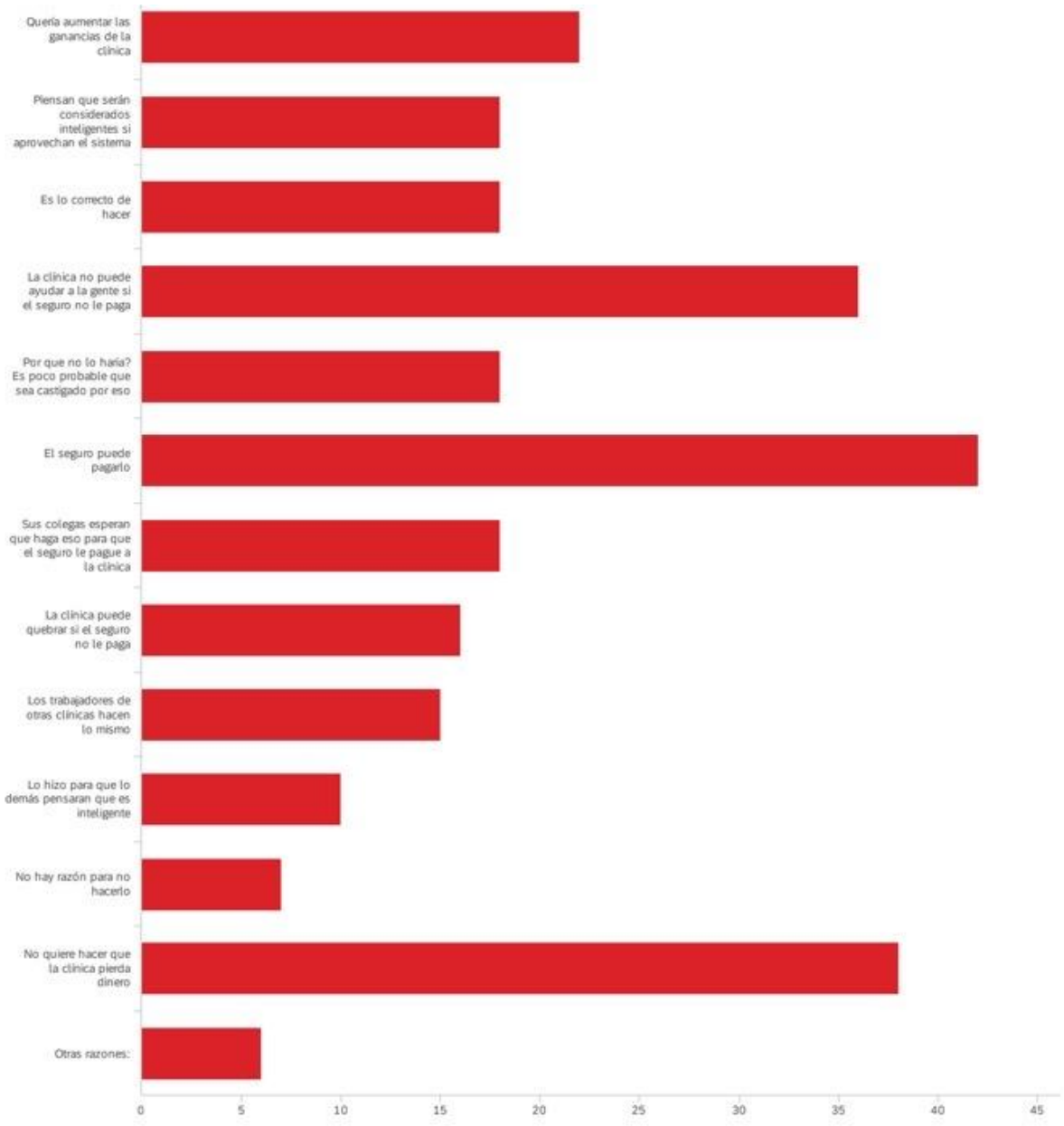
- They want to make money for the clinic.
- They think they will be considered smart if they take advantage of the system
- It's the right thing to do.
- The clinic needs to get paid by insurance, so that it can help people.
- It is unlikely that someone would be punished for doing this, so why wouldn't they do it?
- The insurance company can afford to pay.
- Their coworkers expect them to do this so that the clinic gets paid.
- If the clinic doesn't get paid by insurance, it might go out of business.
- People at other clinics do the same thing.
- People will think they are smart if they charge for extra exams.
- There's no reason not to charge for extra exams.
- They don't want to lose money for the clinic.

Results: Diagnosis Vignette

The three most common responses, starting with the most common were:

1. Insurance can pay it
2. You don't want to have the clinic lose money
3. Clinic cannot help people if insurance does not pay them

Diagnosis Code Responses

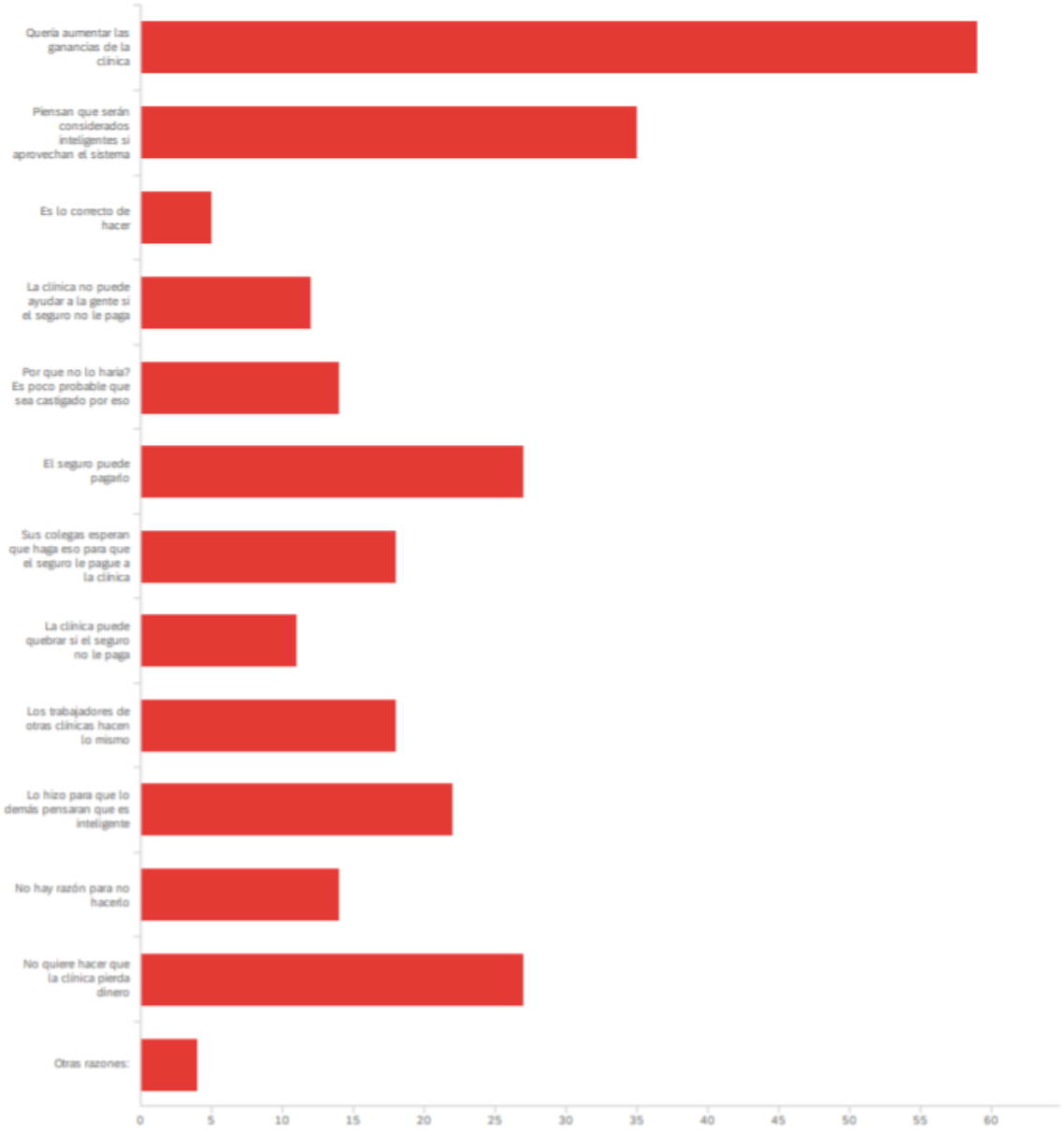


Results: Extra Exams Vignette

The three most common responses, starting with the most common were:

1. Wanted to increase the profits of the clinic
2. They think will be considered smart if they take advantage of the system
3. Insurance can pay it + You don't want to have the clinic lose money (These two responses tied with the same number of selections.)

Extra Exams Responses



Appendix C: Elaboration of Intervention Idea 2 - Verification System

Background

In 1986, the United States enacted the False Claims Act (FCA) which allowed whistleblowers who came to the federal government to reclaim over-billed money for the government and receive a percentage of those returned funds. There is therefore a strong financial incentive for these individuals to come forward with information. Furthermore, individuals participate in litigation efforts on behalf of the federal government without government approval or in some cases, receiving any support from the government to conduct the case. The FCA is frequently used to combat fraud in healthcare and has recovered tens of billions of dollars since its inception. In 2018 alone, whistleblowers recovered nearly $2 billion in healthcare lawsuits under the FCA. Whistleblowers were compensated $266 million from these lawsuits making it highly incentivized for them. While the FCA has been instrumental in providing settlements, some have proposed that these settlements are due to defendants not wanting to continue with the trial due to high discovery costs and reputational harms.

With all this in mind, the deterrence effect on the healthcare industry has been substantial. In the paper, "Whistleblowers, The False Claims Act, and the Behavior of Healthcare Providers", the author details exactly how effective the FCA has been in not only reclaiming money lost by the healthcare industry due to false claims, but also by the effect of deterrence. In this paper, the author identifies two types of deterrence, direct and ex-ante, which can be measured using data on whistleblower cases combined with data on Medicare claims during the same time period.

To measure direct deterrence effects of these whistleblower cases, the author uses a synthetic control methodology to compare the estimated difference in the cases with whistleblowing and without whistleblowing. Then taking the spending on the treated types of medical care compared to those of a similar, yet untreated types of care, the difference between the spending on care provides the measure of direct deterrence. The results of this comparison find that direct deterrence is highly effective. On average, the direct deterrence is roughly 6.7 times the case settlement value. Further, the collective total whistleblower compensation during this time period, $4.29 billion, is far outweighed by the deterrence effects of just the few largest cases, $18 billion in the first 5 years after the cases were filed. The author also notes that these direct deterrence numbers do not take into account the ex-ante deterrence on fraud that is not committed by providers who face increased litigation risk.

The author also takes a look at the effects of whistleblowing on provider's and their care decision-making. Using a case study of a specific healthcare procedure, the author models the effect of this procedure on patient death between two groups of patients, from before and after the lawsuits in this area. Taking the treatment effects of the procedure for each patient allows the

author to measure how beneficial the treatment is for the patient. After whistleblowing, there was an overall positive effect on patient care as there was better targeting of the procedures. The results indicated that for those patients that the procedure increased mortality, they were 7% less likely to be treated. For patients that the procedure decreased mortality, they were 7% more likely to be treated. These results indicated that, for this specific procedure, whistleblowing had positive effects on how care was delivered since the incentives in the decision process were changed even with reduced spending.

Other papers included in this research indicate similar findings such as that hospitals that were prosecuted under the FCA are less likely to have broad measures of overbilling thereafter (Heese, 2018).

How it is behaviorally informed

This methodology of using deterrence strategies comes from more traditional economic ideology. However, the use of punishment has a long history in psychology and related studies. While the act of punishment may not be as strong as other strategies such as positive reinforcement to encourage a behavior, the use of punishment in this case, would have larger deterrence effects in the future as indicated by the results of the study on economic effects due to the FCA.

Reducing the incident of crimes in a given country or city, has been looked at through the use of deterrence strategies. Similar to the results found through the economic analysis of deterrence there have been successful measures of deterrence by identifying those who have committed a crime, and making it aware that it is not the norm. This was part of the strategy used in the messaging interventions that were recommended in our group proposal. Similarly, this situation may invoke pluralistic ignorance, wherein many of the individuals involved don't approve of fraudulent or abusive claims but they go along with it because they wrongly assume that everyone else accepts it. Using a deterrence strategy to identify those who commit these fraudulent acts most, would seek to break this pluralistic ignorance.

What it could look like

Installing a verification system similar to the whistleblower program adopted by the United States legal system within a private insurance company is an extremely large task to undertake. There are some points that can be taken from the U.S. program, which could be applied at a firm such as RIMAC. Providing an anonymous avenue or platform through which healthcare clinic workers (physicians, medical auditors, nurses) or patients, to verify the exams that took place or didn't take place. This would then help to identify those in the clinic that are repeatedly making false claims. This verification process would be incentivized and anonymous as to prevent any retribution from the clinic's side.

Why it might not work

Ultimately, this intervention idea was not picked as it would require RIMAC to invest many more resources than the original scope of our project asked for. Based on the results from the U.S. program, using whistleblowers to identify healthcare fraud does have deterrence effects in reducing fraud. However, since the U.S. program offers protections for these whistleblowers under the government, it is likely to work more effectively under these conditions. Under a private insurance firm such as RIMAC, there is likely to be less incentive for whistleblowers to come forward since they are not reaping the benefits from a legal decision. Under a legal framework, whistleblowers have rights guaranteed by the government however under a private organization this is unlikely and individuals are aware of this making cooperation less likely.

Sources

Heese, J., The Role of Overbilling in Hospitals' Earnings Management Decisions," European Accounting Review, 2018, 27.

Leder-Luis, J. (2019). Whistleblowers, the False Claims Act, and the Behavior of Healthcare Providers. MIT Economics. Retrieved from http://economics.mit.edu/files/18187