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Harnessing Artificial Intelligence to Combat Fraud, Waste, and Abuse in Healthcare

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Abstract: ***Fraud, Waste, and Abuse (FWA) present critical challenges across industries, leading to significant financial and reputational damage. Artificial Intelligence (AI) offers a sophisticated approach to mitigating these issues by enhancing the detection and prevention of FWA. Using machine learning algorithms, AI can process and analyze large volumes of data to uncover hidden patterns and detect irregularities indicative of FWA activities. These systems improve over time, adapting to new fraud tactics and reducing false positive rates. AI enables real-time monitoring and automated anomaly detection, providing organizations with immediate alerts on suspicious activities. With the integration of Natural Language Processing (NLP), AI can also scrutinize unstructured data sources, such as emails and documents, to identify fraudulent communications. Combining AI with existing FWA management systems enhances their efficacy, offering a comprehensive defense strategy that incorporates both technology and human insight. The implementation of AI-driven solutions results in more efficient resource utilization, better compliance with regulatory standards, and a stronger overall defense against FWA. By embracing AI, organizations can significantly reduce the incidence of FWA, leading to increased transparency, accountability, and operational integrity. Healthcare Fraud, Waste, and Abuse (FWA) costs are out of control. The National Health Care Anti-Fraud Association estimates that healthcare fraud costs the US approximately $68 billion each year. Further, the Centers for Medicare and Medicaid Services (CMS) reported that improper payments made by Medicare and Medicaid accounted for $31.46 billion in 2022. Other payers and industry organizations estimate the healthcare FWA cost to be more than $200 billion per year.***

Keywords: Health care Fraud Detection, Waste and Abuse Prevention, AI in Fraud Prevention, Machine Learning for FWA, Anomaly Detection, Real-Time Monitoring, NLP in Fraud Detection, Healthcare Fraud Costs, Enhanced FWA, Management, Data Analysis in FWA

1. Introduction

As healthcare organizations aim to reduce costs while improving care affordability and access, effectively combating fraud, waste, and abuse (FWA) is crucial. Traditional efforts to identify and prevent FWA have often been insufficient. However, emerging tools powered by artificial intelligence (AI) offer promising solutions to streamline authorization systems, enhance access to evidence-based care, and proactively prevent FWA-related losses. Below, we examine how AI tools can strengthen an organization's anti-FWA strategy and discuss how to implement these tools responsibly with human oversight. An effective anti-FWA program is built on five critical pillars:

- **Prevention**: Proactively address FWA by implementing regular training, conducting routine audits, monitoring data, and establishing clear policies and procedures.
- **Detection**: Use data analytics and cross-verification strategies to identify and highlight instances of FWA.
- **Investigation**: Delve into detected FWA cases through audits, reviews, interviews, and interrogations. Collaborate with law enforcement and ensure protections for whistleblowers.
- **Reporting**: Inform the appropriate authorities through designated channels, including state agencies, local law enforcement, and the Office of Inspector General.
- **Mitigation**: Address FWA incidents to prevent recurrence using strategies such as fraud risk assessments, updated policies, training and awareness programs, and internal controls.

Traditionally, FWA prevention relied on training, education, documented policies, and routine monitoring. While these methods have been successful in identifying FWA, they have been less effective in preventing associated losses. Payors often depend on claims data analytics to spot outliers over a specific look-back period, resulting in prolonged monitoring before credible allegations of FWA can be made against providers or members. Consequently, fraudulent, wasteful, or abusive patterns may persist for extended periods, increasing healthcare costs in the process.

2. Current Landscape of FWA in healthcare

The absence of effective detection mechanisms in the healthcare industry has emboldened fraudulent actors. According to the Centers for Medicare and Medicaid Services (CMS), common fraudulent or abusive practices leading to improper Medicare and Medicaid payments include:

- **Insufficient Medical Necessity:** Claims are submitted despite services not being medically necessary or not meeting coverage guidelines.
- **Upcoding:** Providers bill for more complex or expensive services than those provided.
- **Duplicate Billing:** Providers might submit multiple claims for the same service, either intentionally or unintentionally, leading to overpayment.
- **Fraudulent Claims:** False claims are submitted for services that were either not provided or unnecessary.

Current claims editing technologies are limited in scope, unable to detect much of the fraud and excessive billing activities.

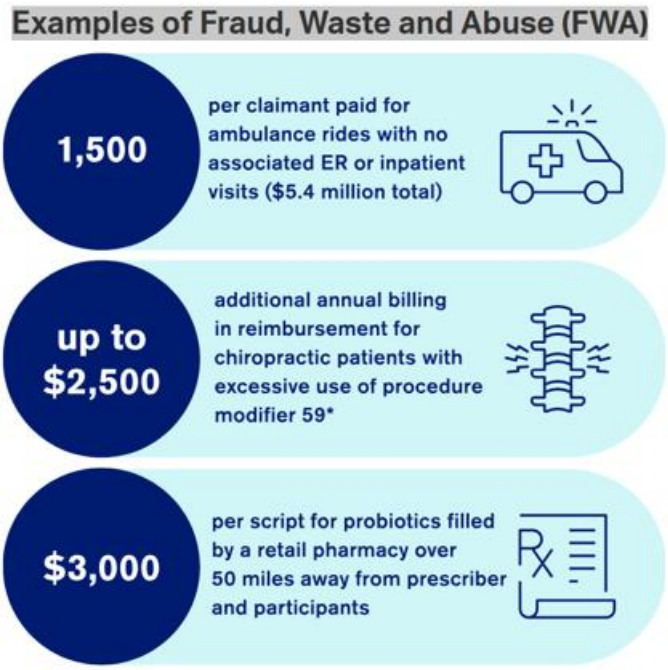
Most rely on static, rules-based systems that can only identify what they are programmed to see, missing dynamic provider behaviors, outliers, or patterns indicative of excessive billing.

Compounding the FWA issue is the state of many healthcare insurance payers: they deal with inaccurate provider data, rely on outdated systems with suboptimal rules-based engines for FWA detection, and are burdened by labor-intensive post-payment audits and recovery efforts.

In addition to malicious actions, common non-malicious reasons for improper Medicare and Medicaid payments include:

- **Insufficient Documentation:** Providers may fail to submit adequate documentation to support billed services, complicating claim evaluation.
- **Billing Errors:** Errors may occur in billing codes, quantities, dates, or other data elements, affecting claim payment.
- **Administrative Errors:** Claims may be denied due to administrative issues, such as incorrect beneficiary information or incomplete forms.

These factors, combined with deliberate fraudulent actions, perpetuate a "pay-and-chase" approach to recovering improperly paid claims. This approach costs payer's tens of millions of dollars annually and contributes to dissatisfaction among members, providers, and employees.



3. Conventional Fraud Detection Methods

Current fraud detection methods used by payers are often ineffective, time-consuming, and costly. Besides relying on rules-based engines that overlook FWA behaviors, common practices for detecting fraud include:

- **Manual Claim Reviews:** Payers manually review claims submitted by providers for accuracy and completeness, including medical records to verify that services were provided and medically necessary.
- **Peer Reviews/Audits:** Payers hire third parties and independent medical experts to assess claims for appropriateness.
- **Provider Credential Verification:** Payers verify that providers are properly licensed and ensure the accuracy of provider data.
- **Patient Identification Verification:** Payers confirm patient identities and verify that services were genuinely received.

Beyond the costs of auditing, identifying, and verifying FWA activities, there's the financial burden of recovering improperly paid claims. According to Transparency Market Research, the healthcare claims audit and recovery market in the US was approximately $1.36 billion in 2019 and is projected to grow to $3.1 billion by 2027. This figure excludes the internal recovery costs incurred by healthcare payers.

There's also a human cost to FWA, impacting even those who use the claims system correctly. Patients often experience payment and processing delays for legitimate claims due to the time invested in addressing fraudulent claims.

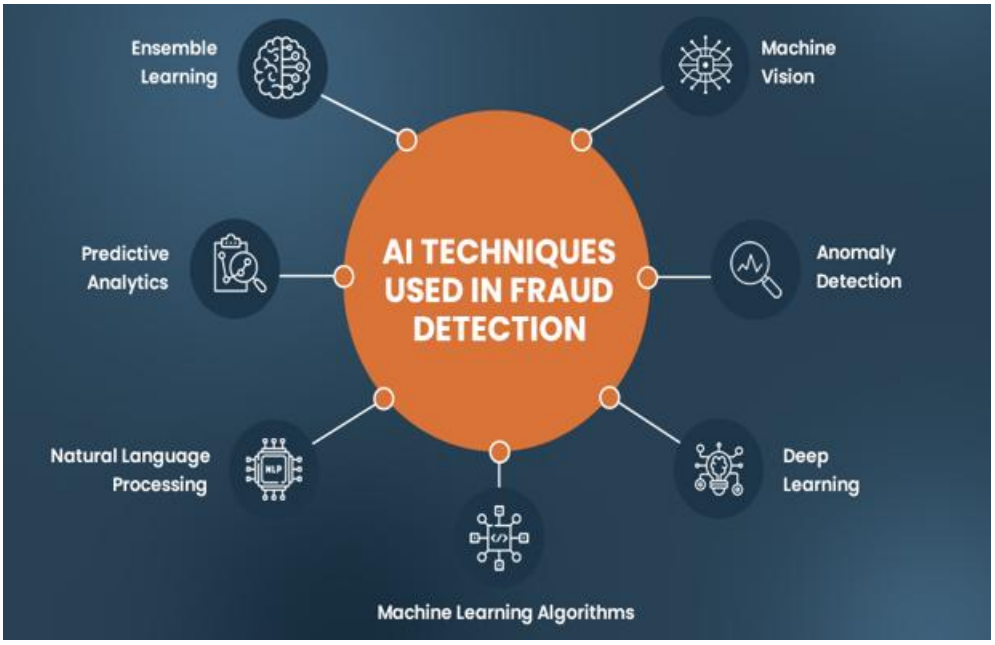
This situation leads to patient frustration and erodes trust in their healthcare providers. Moreover, fraudulent claims can drive up healthcare costs, resulting in higher premiums and out-of-pocket expenses for members, thereby increasing financial stress, dissatisfaction, and customer attrition.

The current approach to tackling FWA needs a complete overhaul. Relying on labor-intensive and costly audits to recover claims that should never have been paid is ineffective. Instead, progressive companies are shifting towards pre-payment data analysis. By analyzing claims data upfront, they can identify inconsistencies, patterns, and anomalies before payments are made, effectively preventing FWA from occurring in the first place. Solutions such as AI-based predictive algorithms are being deployed to flag claims that don't meet specific criteria or guidelines and to identify provider behavioral anomalies before claims are paid.

Additionally, Natural Language Processing (NLP) can analyze unstructured data, such as medical records, notes, and other clinical documents, to detect fraudulent activities and assist in claim validation. Robotic Process Automation (RPA) can automate the correction of obvious data errors and streamline the process of identifying claims that need further review, including sending notifications to relevant parties and flagging potentially fraudulent claims for investigation.

Finally, companies can leverage predictive analytics to forecast the likelihood of fraud, waste, or abuse based on historical data and past patterns. This approach helps identify high-risk areas and prioritize investigative efforts. Examples of the supervised methods that have been applied to health care fraud and abuse detection include in (Shin, Park, Lee, & Jhee, 2012; Liou, Tang, & Chen, 2008; William & Huang, 1997).

4. Leveraging AI to Enhance Your Anti-FWA Strategy



Recent advancements in AI have significantly enhanced all five pillars of an anti-FWA program. By leveraging AI and improving interoperability between disparate prior authorization and claims payment systems, healthcare plans can identify FWA more swiftly than ever before. AI employs advanced algorithms and real-time data analysis to detect unusual patterns and anomalies that warrant further investigation, potentially stopping fraudulent activities before they occur. For instance, if a provider consistently bills for statistically unusual services compared to peers, it can trigger an alert far quicker than traditional reactive claims data mining, allowing investigations to commence sooner. This proactive approach not only detects issues but also helps prevent losses.

AI also significantly improves FWA investigations and reporting in other ways. By rapidly analyzing large datasets, it reduces the time investigators spend on manual data analysis. AI's high accuracy in completing analytical tasks diminishes human error in reporting. Furthermore, AI facilitates better collaboration between departments and organizations by integrating data from various sources, providing a holistic view that enhances the investigation process, and ensuring all relevant information is considered. Through such comprehensive investigations, payors can more effectively address the root causes and reduce the likelihood of recurrence.

Additionally, AI plays a crucial role in mitigating FWA after it occurs by optimizing key processes during the investigation and reporting phases. It aids in fund recovery by identifying the most effective strategies, prioritizing cases based on recovery success likelihood, and suggesting optimal approaches for each. AI can propose policy, procedure, and control adjustments based on past incidents to mitigate future risks. By recognizing common FWA patterns and tactics, AI assists in developing targeted staff training programs, educating employees on the latest schemes and prevention techniques to further reduce the probability of future incidents.

5. Enhancing AI Strategies with Human Oversight

While AI excels at data analysis and pattern recognition, complex decision-making often requires human judgment. It is crucial to implement AI with human involvement and oversight to ensure safe and effective outcomes. Humans can interpret context, consider nuances, and assess ethical implications that AI might overlook. AI can flag potential FWA cases, but determining the appropriate actions and interpreting these results often necessitates human expertise. For instance, human investigators are needed to evaluate flagged cases and confirm if they truly represent FWA. Despite AI's ability to learn and adapt, human intuition and innovative thinking remain invaluable. AI is a powerful tool for enhancing FWA prevention and detection, but it works best in partnership with human expertise. The combination of AI's analytical prowess and human judgment creates a robust system for tackling FWA effectively.

6. Conclusion

AI is revolutionizing the fight against fraud, waste, and abuse. By leveraging AI's capabilities, the healthcare industry can detect and prevent FWA more quickly and efficiently than ever. More importantly, AI enables organizations to anticipate FWA before it occurs, shifting anti-FWA programs from a reactive to a proactive approach. Implementing advanced AI solutions for FWA detection yields significant benefits and often leads to a rapid return on investment (ROI). These advantages include:

- 2 to 10 times greater detection capability compared to traditional rules-based claim editing systems
- A reduction of more than 60% in the person-hours required for claims auditing
- Over a 70% increase in audit accuracy and speed
- More than a 40% decrease in recovery time

Implementing AI-based FWA solutions is essential for achieving intelligent operations within the healthcare sector. Intelligent automation can significantly cut FWA costs, boost accuracy, and reduce dependency on third-party, retrospective audits to support recovery efforts. By providing more accurate, prescriptive, and predictive results, AI fosters a more efficient healthcare ecosystem with less waste, increased knowledge, and, most importantly, enhanced patient care. The "pay-and-chase" era is over. It's time for proactive detection and protection.

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