Department of Health & Human Services

Centers for Medicare & Medicaid Services

Report to Congress
Fraud Prevention System
Third Implementation Year

July 2015

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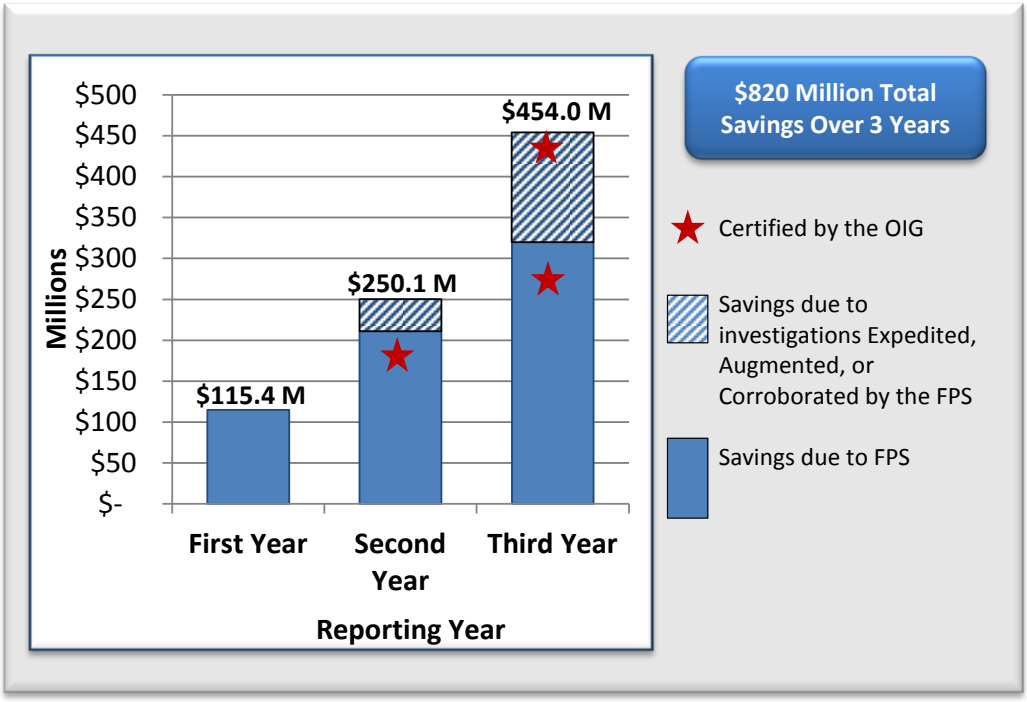
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Executive Summary

The Department of Health and Human Services (HHS) and its Centers for Medicare & Medicaid Services (CMS) are in the third year of implementing sophisticated predictive analytics technology to prevent and detect fraud, waste, and abuse in the Medicare Fee-for-Service (FFS) program. Using the anti-fraud authorities provided in the Affordable Care Act (P.L. 111-148 and P.L. 111-152) and the Small Business Jobs Act (SBJA) of 2010 (P.L. 111-240), the Agency is protecting taxpayer dollars while protecting beneficiary access to necessary health care services and reducing the burden on legitimate providers and suppliers.

Since CMS implemented the technology in June 2011, **the FPS has identified or prevented $820 million in inappropriate payments** by identification of new leads or contribution to existing investigations (see graphic below). During the third year (defined in statute as January 2014 – December 2014), the FPS identified or prevented $454 million in inappropriate payments through actions taken due to the FPS or through investigations expedited, augmented, or corroborated by the FPS. Total savings were 80% higher than the savings from the previous implementation year, with a nearly 10:1 return on investment (ROI).



The SBJA requires that the HHS Office of the Inspector General (OIG) certify the savings and costs of the FPS. CMS achieved certification in the second and third year of the program. For the first time in the history of federal health care programs, the OIG certified a methodology to calculate cost avoidance due to removing a provider from the program. This is a critical achievement as moving towards prevention requires a clear measurement of the future costs avoided.

During the third implementation year, CMS also achieved the following:

- CMS took administrative actions on 1,093 providers based on FPS information. Actions included revocation of billing privileges, implementation of local auto-denial and prepayment review edits[1], referrals to law enforcement, requests for the return of overpayments, and suspension of payments. CMS took administrative action on an additional 18,113 providers through national auto-denial edits implemented directly through the FPS.
- CMS expanded the FPS to directly reject claims that are not payable under Medicare policy through FPS Edits. CMS added five FPS Edits during the third implementation year, saving more than $6 million. For example, FPS uses its unique ability to look across the hospital and physician billing systems to reject inappropriate billing for professional observation care for patients receiving certain inpatient or outpatient care. CMS expects the savings related to FPS Edits to increase as the capability continues to expand.
- CMS had a positive sentinel effect on deterring and reducing fraudulent behavior across the provider population resulting from the FPS and the increased risk of detection. A sentinel effect occurs when providers improve their billing behavior or come into compliance because the oversight exists. Since this type of behavior change is difficult to measure and attribute to the specific oversight, no dollar value can be assessed at this time to account for sentinel effect savings.
- CMS anticipates additional savings that CMS is not yet able to measure will likely be realized. For example, information on providers dually enrolled in Medicare and Medicaid in certain states are shared with the states through the Medicare-Medicaid Data Match program (Medi-Medi). Savings are not yet captured for actions subsequently taken by the state. Other Medicare savings are not yet captured, including savings from providers that voluntarily withdraw from the program after the start of a targeted investigation.

The SBJA added a new requirement for the third implementation year report. The SBJA required CMS to analyze and report on the cost-effectiveness and feasibility of expanding the use of predictive analytics technologies to Medicaid and CHIP, the effect, if any, the application of predictive analytic technologies to claims under Medicaid and CHIP would have on states; and recommendations regarding the extent to which technical assistance may be necessary to expand the application of predictive analytics technologies to claims under Medicaid and CHIP and the type of such assistance.

After extensive analysis and discussion with states, CMS has determined that it is not feasible at this time to systematically expand predictive analytics technology to all Medicaid and CHIP claims, and it may not be cost effective for all states to adopt predictive analytics individually. However, there are opportunities to transfer

[1] These provider specific edits are implemented by local Medicare Administrative Contractors at the request of CMS program integrity contractors

techniques learned through CMS's experience with the implementation of FPS and assist states with identifying program integrity risks using predictive analytics technologies in protecting their Medicaid and CHIP programs from fraud, waste, and abuse. Findings from the evaluation are described in the box below.

Findings

- *It is not feasible at this time to systematically expand predictive analytics technology to all Medicaid and CHIP claims, and it may not be cost effective for states to adopt predictive analytics individually. However, there are opportunities to transfer techniques and assist states with identifying program integrity risks using predictive analytics technologies in protecting their Medicaid and CHIP programs from fraud, waste, and abuse.*
- *It is cost-effective and feasible for CMS to apply the FPS to post-payment FFS Medicaid and CHIP claims through the FPS and the new strategy for investigating and auditing Medicaid and CHIP issues. This capability will become more feasible as states improve the data transmitted to CMS through the Transformed Medicaid Information System (T-MSIS) effort..*
- *CMS should continue to provide technical assistance to assist states interested in applying predictive analytics technology to achieve "readiness" for implementation.*
- *CMS and states implementing predictive analytics technology should collaborate and share best practices and lessons learned.*

The primary focus of the FPS during the first two implementation years was identifying providers with the most egregious behavior for investigation by the ZPICs. During the third implementation year, CMS tested new and innovative ways to leverage the FPS technology and best practices to support additional fraud, waste, and abuse activities. In future years, CMS will continue to expand the FPS and the transfer of knowledge related to predictive analytics technology. For example, CMS will expand FPS edits to deny or reject more improper payments and CMS will provide technical assistance to states that decide to implement predictive analytics technology.

Future of the Successful FPS Tool

- *Expand and improve models to identify bad actors more quickly and more effectively*
- *Deny or reject claims that are not supported by Medicare policy*
- *Identify leads for early intervention by the Medicare Administrative Contractors*
- *Stop claims to allow for medical review by the Recovery Audit Contractors prior to payment*
- *Provide technical assistance to states implementing predictive analytics*
- *Coordinate with the CMS Program Integrity Board to make sure the highest priority vulnerabilities in the Medicare program are addressed*
- *Share lessons learned and best practices with federal, state, and private partners*

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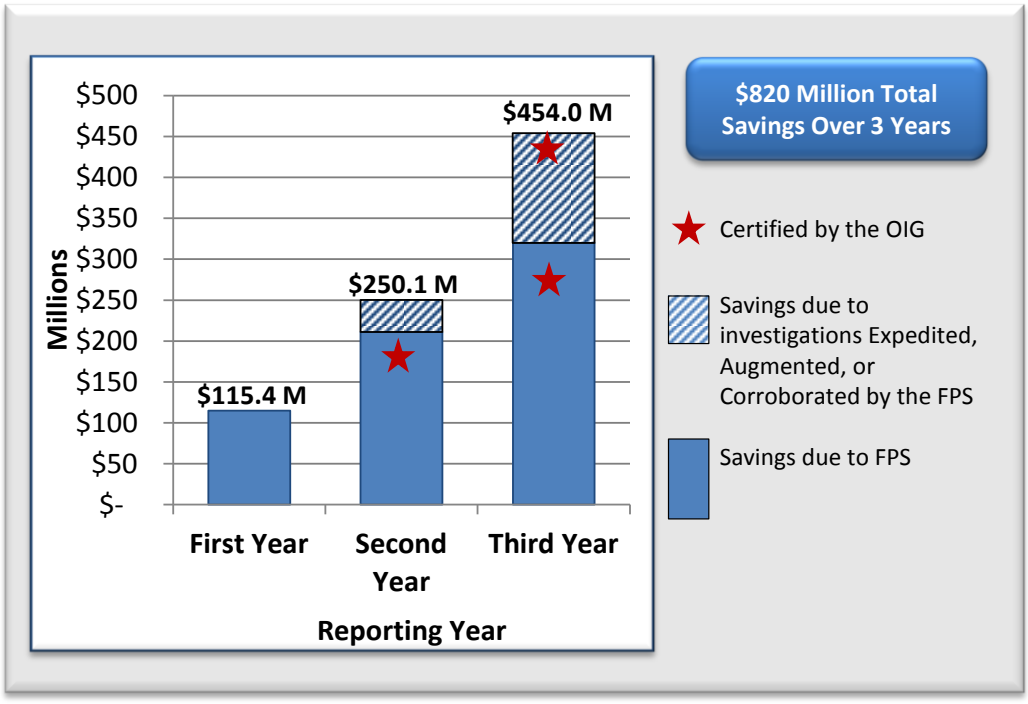
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1. Introduction

The Department of Health and Human Services (HHS) and its Centers for Medicare & Medicaid Services (CMS) are in the third year of implementing sophisticated predictive analytics technology to prevent and detect fraud, waste, and abuse in the Medicare Fee-for-Service (FFS) program. Using the anti-fraud authorities provided in the Affordable Care Act[2] and the Small Business Jobs Act (SBJA) of 2010,[3] the Agency is protecting taxpayer dollars while protecting beneficiary access to necessary health care services and reducing the burden on legitimate providers and suppliers.[4]

The Fraud Prevention System (FPS), implemented in 2011 per the SBJA, identified or prevented $454.0 million in inappropriate payments during Calendar Year 2014 through actions taken due to the FPS or through investigations expedited, augmented, or corroborated by the FPS. Total savings were 80% higher than the previous implementation year, with a nearly 10:1 return on investment (ROI).[5] **Over the first three years of implementation, FPS identified or prevented $820 million in inappropriate payments (Figure 1).**

Figure 1 – Savings and Cost Trend for the FPS



[2] P.L. 111-148 and P.L. 111-152

[3] P.L. 111-240

[4] For ease of reference, the term "provider(s)" will be used throughout this report to encompass both providers and suppliers enrolled in the Medicare fee-for-service program and, when applicable, the Medicaid and CHIP programs.

[5] The actual ROI is 9.7:1 based on $454 million in inappropriate payments identified or prevented using resources at a cost of $46.99 million.

During the third year of the FPS, defined by the SBJA as January 1, 2014 through December 31, 2014, CMS also realized the following accomplishments:

- CMS took administrative actions on 1,093 providers based on FPS information. Actions included revocation of billing privileges, implementation of local auto-denial and pre-payment review edits[6], referrals to law enforcement, requests for the return of overpayments, and suspension of payments.[7] CMS took administrative action on an additional 18,113 providers through national auto-denial edits implemented directly through the FPS.
- CMS achieved certification of the FPS-related savings and ROI calculation by the HHS Office of Inspector General (OIG) for the third implementation year. The SBJA requires this certification.
- The SBJA also required CMS to evaluate the feasibility of expanding predictive analytics technology to Medicaid and the Children's Health Insurance Program (CHIP). Following an evaluation, CMS determined that it is not feasible, at this time, to systematically expand predictive analytics to all states due to policy differences between programs, program structure, information technology readiness, staff resources, data availability, and cost.

  Despite the challenges of systematically applying predictive analytics nationally to Medicaid and CHIP claims, there is opportunity to support expansion in the coming years. CMS will work with the states that are in the process of applying predictive analytics to provide technical assistance and partner on model development and best practices. Additionally, as the new Transformed Medicaid Statistical Information System (T-MSIS) data become available, CMS will leverage the post-payment Medicaid and CHIP data to strengthen models in the FPS. CMS will also partner with the states through the new Unified Program Integrity Contractors (UPIC) strategy[8] to share results and take swift corrective action.
- The savings calculated and certified by the OIG are only part of the total impact of the FPS. The FPS has a positive sentinel effect on deterring and reducing fraudulent behavior across the provider population resulting from the FPS and the increased risk of detection. . A sentinel effect occurs when providers improve their billing behavior or come into compliance because the oversight exists. Since this type of behavior change is difficult to measure and attribute to the specific oversight, no dollar value can be assessed to account for sentinel effect savings. In addition, information on providers dually enrolled in Medicare and Medicaid in certain states are shared with the states through the Medicare-Medicaid Data Match program (Medi-Medi). Savings are not yet captured for actions subsequently taken by the state. Other Medicare savings are not yet captured,

[6] These local edits are implemented by local Medicare Administrative Contractors at the request of CMS program integrity contractors

[7] Information about each of these administrative actions can be found in Section 2.

[8] Information about the Unified Program Integrity Contractor strategy can be found in Section 3.

including savings from providers that voluntarily withdraw from the program after the start of a targeted investigation.

- CMS continues to be a Center for Excellence in applying predictive analytics for program integrity purposes and measuring outcomes. CMS will continue to provide a forum for information exchange between Federal, State, and private partners.
- CMS improved its business processes as recommended by the HHS-OIG.[9] The recommendations required technical direction to program integrity contractors defining the attribution of savings to an action resulting from FPS and maintaining documentation to support these savings resulting from FPS involved intervention. Consequently, contractors submitted better data to support the calculation of savings.
- CMS expanded the FPS to directly reject claims that are not payable under Medicare policy through FPS Edits. CMS added five FPS Edits during the third implementation year, saving more than $6 million. For example, FPS uses its unique ability to look across the hospital and physician billing systems to reject inappropriate billing for professional observation care for patients receiving certain inpatient or outpatient care. CMS expects the savings related to FPS Edits to increase as the capability continues to expand.
- In future years of the program, CMS will continue to expand the capabilities and use of the FPS. CMS will evaluate the effectiveness of the Accelerated Provider Intervention Pilot and, if successful, expand the pilot to additional contractors. CMS will also increase the number of vulnerabilities addressed with FPS Edits. CMS will implement the next generation of the FPS technology and include a new capability to hold certain claims pending the results of medical review.

This section of the report summarizes the SBJA reporting requirements, describes the FPS in terms of the technology and the business process supporting the technology, describes changes to the program during the third year, and clarifies the role of the FPS in CMS' overall program integrity activity. This section also summarizes the FPS activity in the third year. Section 2 provides the savings, costs and ROI for the FPS. Section 2 also provides examples of leads identified in the FPS and clarifies the system's impact on beneficiaries and providers. Section 3 addresses the expansion of predictive analytics technology to the Medicaid and CHIP programs; exploring the feasibility of such an initiative and the impact it would have on states, commonwealths, and territories. Section 4 summarizes the plans for the FPS, including new activity that is expected to substantially increase savings and promote cost effectiveness in future years.

[9] *Report to Congress, Fraud Prevention System, Second Implementation Year, June 2014* (http://www.stopmedicarefraud.gov/fraud-rtc06242014.pdf)

1.1. Small Business Jobs Act Reporting Requirement for the Fraud Prevention System

The SBJA requires the Secretary of HHS to submit a report for each of the first three years of FPS implementation. This third implementation year report complies with the third-year reporting requirements outlined in the SBJA. The SBJA also requires the HHS-OIG to certify the savings, costs, and ROI of the FPS. Information regarding the savings, costs, and ROI is presented in Section 2. The HHS-OIG's certification report is presented in Appendix A.

The SBJA requires that the report include an analysis of expanding predictive analytics technology to Medicaid and CHIP. Specifically:

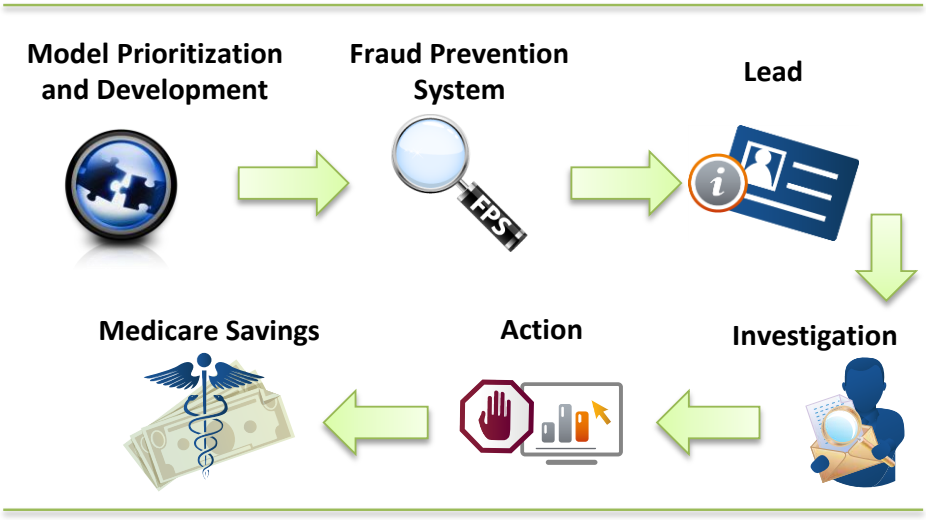
- An analysis of the cost-effectiveness and feasibility and of expanding the use of predictive analytics technologies to Medicaid and CHIP;
- An analysis of the effect, if any, the application of predictive analytics technologies to claims under Medicaid and CHIP would have on states and the commonwealths and territories; and
- Recommendations regarding the extent to which technical assistance may be necessary to expand the application of predictive analytics technologies to claims under Medicaid and CHIP, and the type of any such assistance.

The methodology for conducting the evaluation is found in Section 1.3. The results of the analysis are found in Section 3.

1.2. Overview of the Fraud Prevention System

The FPS meets the requirements in the SBJA to provide a comprehensive view of Medicare FFS provider and beneficiary activities in order to identify and analyze provider networks, billing patterns and beneficiary utilization patterns, and detect patterns that represent a high risk of fraudulent activity (Figure 2). The FPS is fully integrated with the Medicare FFS claims processing system and also uses other data sources, including compromised beneficiary Medicare identification numbers and complaints that are made through the 1-800-MEDICARE call center.

Figure 2 – Overview of the Program Integrity Process

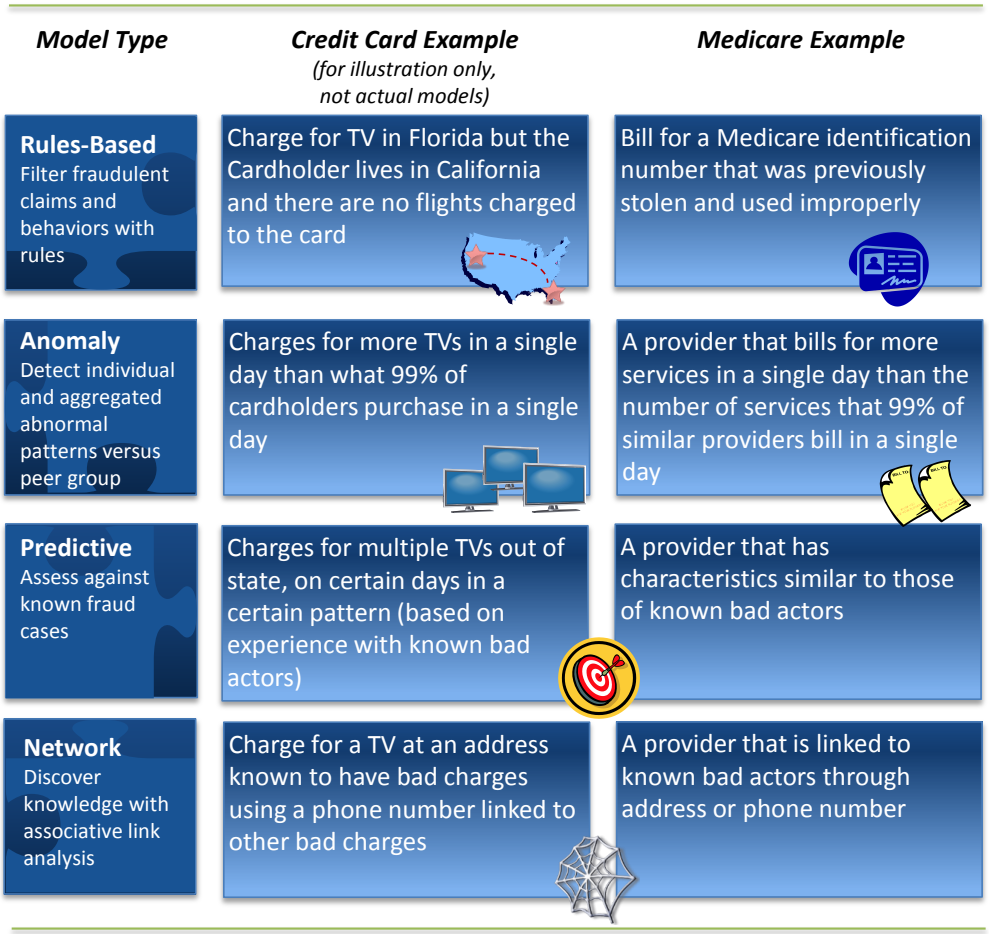


The FPS technology is one part of the process of identifying providers for investigation and taking action to protect the Medicare Trust Funds and the Treasury. Activities critical to FPS include the identification and prioritization of models for use in the FPS as well as investigating the leads that are generated by the technology based on the models. FPS' success is dependent on a coordinated business process that includes stakeholder collaboration and activity at each step of the process.

Model Prioritization and Development

CMS designed the FPS to accommodate a variety of model types that address multiple vulnerabilities and schemes. The four types of models are rules-based, anomaly, predictive, and network analysis. Figure 3 summarizes the model types and provides examples of how these types of models could be used to address specific vulnerabilities. FPS models build on one another in a continuum of sophistication, and CMS has the ability to update and evolve the models from one type to another as CMS collects more information and insights from the FPS and key stakeholders.

Figure 3 – Model Examples



CMS assembled an expert, multidisciplinary team to provide effective oversight and input to the FPS. These social science analysts are economists, statisticians, and programmers who research fraud, waste, and abuse indicators to uncover current and emerging fraud schemes and improper payments. These experts perform business and statistical analyses of Medicare claims and other data (including previous FPS results), allowing the rapid development of new FPS models. Analysts lead multidisciplinary teams that include policy experts, clinicians, field investigators, and data analysts to develop and test models. These teams leverage the CMS Command Center, a collaboration center for program integrity activity, to explore and refine models. Bringing together teams with a variety of skill sets is a best practice in model development – ensuring that the FPS models yield solid, actionable leads.

CMS uses a governance process to ensure that scarce resources for model development and deployment are focused on the highest priority vulnerabilities. The Center for Program Integrity (CPI) Governance Council (consisting of senior level management within the component) meets regularly to discuss vulnerabilities and schemes, review data analysis, and align and prioritize the development and deployment of operational initiatives designed to prevent and

deter fraud, waste, and abuse. The CPI Governance Council reviews the FPS activities in the context of the entire spectrum of program integrity initiatives to promote efficiency in CMS' efforts to combat fraud, waste, and abuse and preserve taxpayer dollars. This unified command approach focuses CPI's efforts consistent with CMS and HHS strategic goals.

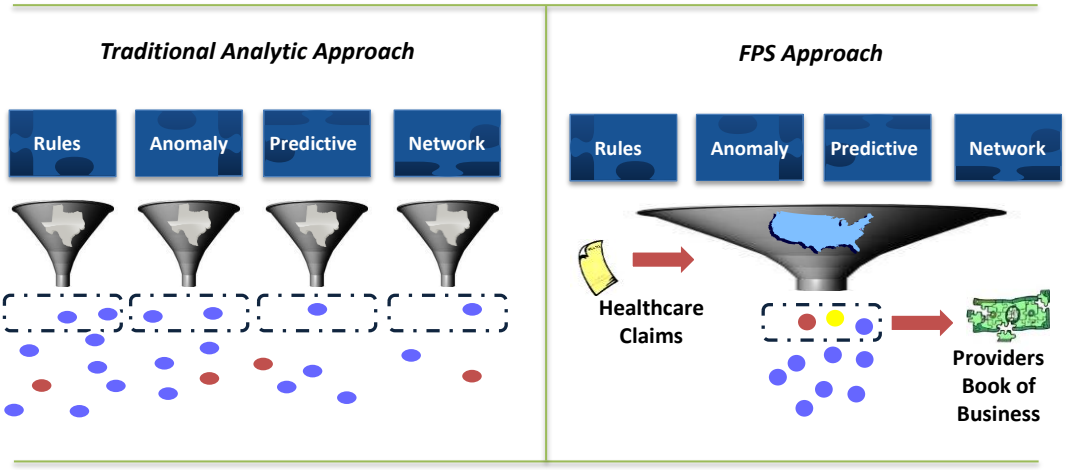
FPS Technology

The FPS screens all Medicare Part A and Part B claims prior to payment, running each claim against multiple models as mandated by the SBJA. FPS also uses external data, including the Compromised Numbers Checklist, the Fraud Investigation Database, and complaints from the 1-800-MEDICARE call line. Alerts are created as each model identifies claims and other data that suggest aberrant billing. The alerts are consolidated by provider and the FPS adds background information to provide context to the alerts. Leads are then prioritized by potential fraud risk in the system, and Zone Program Integrity Contractors (ZPICs)[10] investigate those within the highest risk tier for fraud.

The technology is different from the traditional approach to program integrity analytics because all models run simultaneously and continuously on a national basis, creating a systematic feedback loop that supports model improvements. CMS and its contractors have always leveraged analytics to identify leads for investigation. Previously, each model was run separately on a schedule (e.g., every month or quarter) on claims in a specific region and the contractor worked some of the leads generated. As shown in Figure 4, the previous approach could allow bad actors to remain under the radar (the red dots). With the new approach, all models are running concurrently, pushing providers that exhibit multiple aberrant billing behaviors and relationships to the top of the ZPICs' workload.

[10] For the purposes of this report, references to Zone Program Integrity Contractors include legacy Program Safeguard Contractors.

Figure 4 – Comparison of Traditional and FPS Approach



The FPS analyzes large amounts of billing information prior to payment to identify suspicious patterns. A key resource that supports the FPS in analyzing nationwide claims and building models is the Integrated Data Repository (IDR), an existing and continuously expanding repository of nationwide Medicare claims data. CMS established the IDR in 2006 to provide a comprehensive view of data, including claims, beneficiary data, and Part D drug information. The IDR is currently populated with more than eight years of historical Medicare Part A and Part B claims at three stages (i.e., when the claim is received, when the payment determination is made, and when the payment is made) as well as Part D data. Through business intelligence tools, the IDR enables ZPICs and FPS modeling contractors to work effectively, without incurring the expense of building another claims database for analytics. The IDR can also be accessed through the One Program Integrity (One PI) Portal, a centralized, web-based portal that allows in-house CMS specialists, supporting contractors, and law enforcement to leverage sophisticated tools and methodologies to analyze program integrity data. One PI provides investigators access to information critical to their work.

Working FPS Leads

The primary users of the FPS results currently are the ZPICs. Once the FPS identifies suspect behavior or billing activity, the ZPICs use the FPS leads to perform specific program integrity functions for the Medicare FFS program. The FPS generates a prioritized list of leads for ZPICs to review and investigate and compiles details regarding a provider's behavior in a consolidated view. This enables the ZPICs to target their resources on suspect claims and providers and take administrative action when warranted. ZPICs investigate the leads through boots-on-the-ground activities such as site visits, beneficiary interviews, and medical record review. Based on the findings, ZPICs may receive CMS approval to implement appropriate administrative actions, such as pre-payment review, revocation, or payment suspension. When warranted, ZPICs also refer cases to law enforcement.

FPS is a critical source of new leads for the ZPICs because of its unique ability to quickly and continuously monitor billing patterns. Another important source of leads is the beneficiary. CMS values the information received by beneficiaries who call 1-800-MEDICARE to report suspicious behavior. For investigations opened through other sources, including complaints, FPS provides new information that often expedites, augments, and/or corroborates the investigation. In some cases, FPS adds value that substantially impacts the ability to take action.

1.3. Third Implementation Year Enhancements

In the third implementation year, CMS refined and improved the FPS to maximize program integrity efficiency across the Agency. CMS added new models to the FPS, continued in the Accelerated Provider Intervention Pilot to test the value of leveraging the information in the FPS to support medical review for Medicare Administrative Contractors (MACs), and addressed new vulnerabilities by rejecting claims that are not payable under Medicare policy and addressed the recommendations made by the HHS-OIG. CMS also evaluated the expansion of predictive analytics technology to Medicaid and CHIP.

New and Refined Models

The value of the FPS is the successful identification of leads based on a combination of models and model types. At the end of the third implementation year, the FPS had 87 models running, of which 10 were predictive. Predictive models are issue or service area focused. One predictive model includes many indicators, each of which could be put into the technology as single models. A single predictive model is often as effective as multiple non-predictive models. CMS is also planning 24 new models for release early in 2016.

Accelerated Provider Intervention Pilot

During the second FPS implementation year, CMS initiated a pilot project with one MAC[11] to determine whether providers identified in the FPS and not currently in the ZPIC workload were submitting a high number of claims for likely improper payments and, therefore, appropriate targets for a medical review and education intervention. The first phase of the pilot was completed during the second implementation year with positive results. More information about the pilot is available in the second year report.

MACs conduct medical reviews on claims to ensure that payment is made only for services that meet all Medicare coverage, coding, and medical necessity requirements. Medical review activities are directed toward areas of

[11] The MAC implementing the pilot and providing the feedback data is National Government Services (NGS)).

questionable billing practices as indicated by data analysis, Comprehensive Error Rate Testing (CERT), HHS-OIG and Government Accountability Office (GAO) findings, and vulnerabilities identified by the Recovery Audit Contractors. Many of the focus areas that are part of the MACs' medical review strategy are already targeted by existing models in the FPS.

MAC Intervention Example

The FPS flagged a chiropractor for billing in a pattern that is inconsistent with Medicare policy. The MAC contacted the provider by mail and telephone to discuss the Medicare policy and the provider's billing trends.

The provider changed their billing, with annual savings of around $14,500. The intervention cost was less than $4,000, leading to an ROI of $4.3 to $1. The FPS continues to monitor the provider and will automatically create an alert should the improper billing resume.

During the third implementation year, CMS extended the pilot to target additional types of improper payments. Twenty five providers were chosen for the two-phase intervention implemented by the MAC with the goal of quick action. First, the MAC contacted individual providers to discuss their billing data. If the provider did not have a satisfactory explanation for their atypical billing pattern or did not change their billing, the provider's claims were placed on pre-payment review. Pre-payment review involves collection of information and clinical review of medical records prior to payment being made but after the service is rendered.

Ten of the twenty-five providers immediately corrected their billing after the first phone call. Another five providers corrected their billing within two months of the phone call. The remaining providers corrected their billing between two and seven months after receiving the initial phone call.

Of the 25 providers contacted, the MAC put 7 on pre-payment review. Since the pre-payment review was initiated, four of these providers were removed from the pre-payment review due to improvements in their billing patterns. In many situations, the providers cited billing mistakes and misinterpretation of the policy.

During the second phase of the pilot, the MAC was given read access to the FPS, allowing them to track targeted providers in real time to determine more quickly whether an intervention was working or not. CMS then further expanded the pilot to provide the MAC with the ability to add notes. This has helped the ZPICs and MACs better coordinate and provide a more complete history of interventions taken with providers while using FPS.

The MAC cited the speed with which the billing behavior was changed and the low cost of the intervention as positive outcomes of the pilot. The time-to-action

was reduced due to the FPS flagging claims in real time and the MAC discussing recently submitted claims and real time billing patterns with the providers. The cost of the intervention was low because there were no additional costs for the analysis (the FPS is in place and includes models consistent with MAC medical review focus areas). Additionally, several providers changed behaviors based on a conversation rather than the traditional approach of reviewing medical records first. At less than $350 for providers that changed their behavior after the first education phone call, the cost is less than a traditional medical review for those providers.

FPS iEdits

CMS expanded the capabilities of the FPS to deny or reject claims based on the results of the proof of concept completed during the second implementation year. During the proof of concept, CMS confirmed that the FPS could successfully integrate with several legacy claims processing systems. This validated the capabilities of FPS to transmit a rejection to the claims processing systems to automatically prevent payment without the need for human intervention. CMS then worked with partners to identify similar vulnerabilities that could be addressed through FPS edits. Five new FPS edits were implemented during the third implementation year. Simultaneously, the business process to implement the FPS edits was continually improved.

Addressed HHS-OIG Recommendations

The HHS-OIG made two recommendations as part of its certification of the savings and costs for the second implementation year: provide contractors written guidance on determining attribution, and require contractors to maintain documentation of attribution. CMS issued a Technical Direction Letter to the ZPICs in June 2014 that gave written instructions on how to determine when savings from an administrative action should be attributed to the FPS and how to maintain documentation to support how a FPS lead contributes to an administrative action. Issuing the written guidance completes implementation of the HHS-OIG recommendations.

Feasibility of Expanding of the Use of Predictive Analytics Technology to Medicaid and CHIP

CMS completed an evaluation to assess the feasibility of expanding predictive analytics technology to Medicaid and CHIP. CMS conducted focus groups and in-depth interviews with ten states that have sophisticated data analytics programs and widely considered to be “early adopters” of predictive analytics technology. CMS also developed a questionnaire covering a broad range of topics related to overall state program integrity efforts, including predictive analytics, and received responses from the 50 states and Puerto Rico. CMS considered its experience implementing predictive analytics and feedback from courses

presented at the Medicaid Integrity Institute (MII). The results of the evaluation are presented in Section 3.

2. Fraud Prevention System Outcomes

The *identified savings* associated with prevention and detection actions due to, or contributed to by, FPS in calendar year 2014 was $454 million, more than 80% higher than the amount identified during the second implementation year of the program. This yielded a nearly $10 to $1 ROI. The majority of the savings was due to new leads or issues identified by the FPS. Another portion of the savings was related to investigations triggered by other sources, such as a beneficiary complaint, where FPS contributed additional information that expedited, augmented, or corroborated findings of the investigations.

In addition to identified savings, this report includes a calculation of *adjusted savings*, introduced in the second year report, which addresses HHS-OIG recommendations to meet the standards of an HHS-OIG financial audit following the first implementation year.[12] The adjusted savings attempts to estimate, from the total identified savings, the portion of dollars that CMS has already returned or, from an auditing perspective, is likely to return, to the Medicare Trust Funds or the Treasury in the future.

Ultimately, CMS gauges the success of the FPS by how much and how fast it helps CMS detect payments that may be abusive or fraudulent. Accordingly, the best measure of FPS is how much potential abuse or fraud it uncovers – not just how much CMS recovers. Of course, it is important to track the amounts of actual recoveries that FPS or any of our program integrity activity returns to the Medicare Trust Funds or the Treasury, and this report details our efforts to do so.

HHS-OIG determined that the methodology and calculation of identified savings, adjusted savings, and program costs for the third implementation year are reasonable and certified the related CMS ROI calculations (See Appendix A).

2.1. Measuring the Value of the FPS

CMS' program integrity efforts, including FPS, target all causes of improper payments, not just those that are easy to recover. Any bias towards focusing on easily recoverable amounts could skew program integrity efforts away from stopping some of the most egregious fraud. This is because money is notoriously difficult to recover from serious fraudsters, many of whom are not operating legitimate businesses, and who often take steps to move and conceal the Medicare dollars they obtain. For example, FPS-identified providers may operate a completely false storefront with no actual patients and offshore ill-gotten gains beyond the jurisdiction of United States law. Other FPS-identified providers may have some percentage of legitimate business but engage in upcoding (a practice whereby a similar, but more highly reimbursed service than

[12] Centers for Medicare & Medicaid Services, "Report to Congress, Fraud Prevention System, First Implementation Year." See http://www.stopmedicarefraud.gov/fraud-rtc12142012.pdf.

actually performed is billed). An over-focus on adjusted savings, which estimates actual and projected recoveries, could create incentives for CMS and its program integrity contractors to focus on the latter type of fraud more than the former. This is an undesirable result given both types of fraud have no place in the Medicare program.

The majority of health care providers enrolled in Medicare are honest, reliable business partners. Sometimes these providers make mistakes and an improper payment situation occurs. The FPS is not designed to flag transactions from this sort of provider. Rather, the FPS is geared towards discovering egregiously improper patterns of billing—often amounting to fraud. Historically, the "pay-and-chase" scenario involving these dishonest providers is much more difficult than recovering monies from fundamentally honest, longstanding businesses billing Medicare that may have made mistakes or common errors.

The true financial impact of the FPS, however, is much harder to measure: once CMS uses the information from an FPS lead to impose a payment-stopping administrative action against a dishonest provider (such as revoking billing privileges), the benefit to the U.S. taxpayer is not limited to monies recovered, but also includes any future improper billings by that provider that were prevented. These kinds of future costs avoided are difficult to estimate with certainty, and for this reason are not usually systematically measured or audited in either the public or private sectors.

There are also other hard-to-quantify benefits of the FPS activity, such as the sentinel effect it creates (discussed in more detail below), and the collaborative environment it has fostered between CMS and law enforcement, between CMS and its program integrity contractors, and between the program integrity contractors themselves. CMS will make decisions regarding the management of FPS, including internal evaluations of the merit of continuing or expanding FPS, primarily on the identified savings number, which has more than doubled from the second year report to Congress.

2.2. Additional Savings Not Yet Measured

FPS results in savings that are not yet measured, including sentinel effects, Medicaid savings, and voluntary provider withdrawals. FPS has a positive sentinel effect on deterring and reducing fraudulent behavior across the provider population resulting from the FPS and the increased risk of detection. For example:

- CMS puts a provider on prepayment review for potential upcoding. Upon receiving the prepayment review notice, the provider immediately changes their billing behavior and begins billing appropriate codes
- CMS revokes a Home Health Agency (HHA), and there was one or more providers referring beneficiaries to this HHA even though the

beneficiaries did not qualify for home care. When CMS revokes the HHA, the referring providers may sense a greater scrutiny of their actions, and they reduce the number of unqualified beneficiaries they refer to other HHAs. Alternatively, if the referring providers are revoked, the HHA might alter its behavior as well.

Because this type of behavior change is difficult to measure, no dollar value can be assessed to account for sentinel effect savings. However, CMS will continue to monitor for changes in billing and enrollment as indicators of potential sentinel effect.

Aside from the challenges in trying to measure sentinel effect, it is especially difficult to isolate the sentinel effect attributable solely to the FPS given the scope and breadth of CMS' fraud prevention efforts since 2011. Although CMS is not currently estimating the dollar-value savings of the sentinel effect, the FPS is a significant part of fraud-fighting efforts that likely deters some who might consider attempting to defraud Medicare. CMS will continue to evaluate the efficacy and accuracy of estimating sentinel effect for the future.

Medicaid programs are partnered with CMS in several states to combat fraud, waste, and abuse through the Medi-Medi program. ZPICs are the contractors that operate the Medi-Medi program and leverage information in the FPS on providers enrolled in both Medicare and Medicaid to support joint investigations. Investigations initiated or supported through the FPS that are shared with states have likely resulted in administrative actions. In addition, states are required to terminate providers from their Medicaid program that are revoked from Medicare for cause. CMS does not yet track and calculate the savings Medicaid achieves through FPS information.

CMS observes voluntary changes in behavior that appear to be due to the FPS and resulting investigation. For example, providers have voluntarily withdrawn from Medicare after the start of a targeted investigation by our program integrity contractors. CMS does not include the savings from a provider voluntarily leaving the program; however, it is likely that CMS oversight influenced the decision.

FPS alters behavior leading to voluntary termination

An investigation was opened predicated on an FPS alert related to ambulance transports. The contractor quickly requested medical records from the ambulance company for review prior to payment. The result of the review was a high denial rate and documentation issues. Therefore, the pre-payment review was extended to all codes. Within a few months, the provider stopped billing after 244 of 257 claims reviewed were denied (a savings of $169,791.00). The provider chose to voluntarily terminate from the program.

The savings from the provider leaving the Medicare program are currently not captured in the savings.

2.3. Activity

The fundamental activities related to the FPS are lead generation to initiate or support investigations and implementation of administrative actions. The administrative actions generate savings, which are summarized in Section 2.4.

Summary of Lead Generation

During the third implementation year, the FPS models generated 612 leads that were included in the ZPIC workload. The leads resulted in 276 new investigations and augmented information for 336 existing investigations (See Table 1). During this period, the ZPICs also continued to work leads that were opened during the first and second implementation years.

Table 1 - Summary of New FPS Leads Worked by Contractors in Year 3

Leads (Providers)	Number of Leads
Total Number of Leads	**612**
Leads Resulting in a New Investigation	276
Leads Supporting Existing Investigations	336

Source: Fraud Prevention System. This table summarizes the new leads that entered the contractors' workload during the Third Implementation Year. The ZPICs also continued to work leads that were opened during the first and second implementation years.

Administrative Actions

CMS takes appropriate administrative action based on FPS leads and through FPS edits. FPS edits occur automatically through the system and do not require human intervention. FPS leads are investigated by CMS, and, based on the information in the FPS and the results of the investigation, appropriate administrative action is implemented. Table 2 summarizes the administrative actions, most of which we were preventative, such as revoking a provider's billing privilege or automatically denying payments, that were taken based on FPS.

Table 2 - Administrative Actions Resulting in Measurable Savings

Action	Definition
Revocation	Termination of a provider's billing privileges.
Pre-payment Review	An edit that prevents processing of claims pending medical review.
Local Auto-Denial Edit	An edit that prevents payment for non-covered, incorrectly coded, or inappropriately billed services. Local edits are those implemented by the MAC in their local claims processing system at the request of the ZPIC to address specific issues or vulnerabilities as the result of an investigation.
Payment Suspension	Provider-specific action that temporarily suspends Medicare payments pending investigation of credible allegations of fraud or based on reliable evidence of overpayment.
FPS Edit	An edit that prevents payment for non-covered, incorrectly coded, or inappropriately billed services. These edits are implemented in the FPS.
Overpayment Determination	Medicare payments received by a provider determined to be in excess of amounts due and payable and for which a request is submitted to the MAC for collection.
Law Enforcement Referral	Cases of suspected fraud referred to the HHS-OIG Office of Investigations.

Providers Subject to Administrative Action

Based on FPS leads, CMS took administrative action against **1,093** providers[13] after conducting an investigation (Table 3). The providers were subject to at least one administrative action based on FPS leads (note that many providers were subject to multiple administrative actions).

In many cases, multiple administrative actions are implemented. For example, a provider identified by the FPS was placed on payment suspension and then referred to law enforcement as a result of the investigation. Based on FPS edits, CMS rejected at least one claim for 18,113 providers, preventing improper payments from being made.

FPS Leads to Multiple Actions

A provider was identified in the FPS based on billing patterns for office visits and a predictive model related to certain podiatry services. A review of medical records prior to payment and found that the submitted documentation appeared to be cloned. CMS put the provider on payments suspension and referred the provider to law enforcement.

[13] The number of providers is defined as number of unique (that is, unduplicated) National Provider Identifiers (NPIs).

Table 3 - Summary of Activity Taken Based on FPS Leads

Action	Number of Providers Second Year	Number of Providers Third Year
Providers with an Administrative Action Based on FPS Leads	**938**	**1,093**
Providers with Pre-payment Review Denials	423	487
Providers with Denials from Local Auto-Denial Edits	254	162
Providers on Payment Suspension	35*	82**
Providers with Overpayments Referred to the MAC for Recovery	235	363
Providers Referred to Law Enforcement	75	97
Providers Revoked	48	69
Providers with an Administrative Action Based on FPS Leads	**N/A**	**18,113**

Source: CMS Detailed Data submitted by ZPICs pursuant to Technical Direction Letter. Data were not captured by provider during the first implementation year; therefore, only a comparison between the second and third implementation years is available. Providers are defined as unduplicated National Provider Identifiers (NPIs) in each category and contractor for total time period.

* These 35 providers were on active payment suspension as of the last day of the reporting period. An additional 20 providers were on payment suspension during the reporting period but were terminated from payment suspension prior to the end of the reporting period.

**These 82 providers were on active payment suspension as of the last day of the reporting period. An additional 46 providers were on payment suspension during the reporting period but were terminated from payment suspension prior to the end of the reporting period.

2.4. Savings

The FPS helped identify or prevent $454.0 million in inappropriate payments during calendar year 2014 through actions taken due to FPS or through investigations expedited, augmented, or corroborated by the FPS. The majority of the savings were due to new leads or issues identified by the FPS. Another portion of the savings were related to investigations launched by other valuable sources, such as a beneficiary complaint, where FPS added information to expedite, augment, or corroborate the determination of inappropriate payments. **These identified savings were more than 80% higher than the identified savings from the previous year, with a nearly 10:1 ROI.**

CMS improved its savings measurement this year to address the challenge of attribution. FPS savings now include both savings that are fully attributable administrative actions and contributory administrative actions. Fully attributable FPS administrative actions can be shown to have been achieved due, at least in part, to information provided by one or more FPS models. For example, a social network model alerts on a Home Health Agency that is billing for beneficiaries

who had previously been linked to other, currently revoked HHAs. The associated priority level is high enough in the workload that a new investigation is initiated. During the course of the investigation, the HHA is placed on payment suspension and subsequently revoked.

Contributory FPS administrative actions were investigations in which there were multiple sources of information that all contributed to the savings outcome where FPS clearly played a role. For example, information, perhaps a beneficiary complaint against a provider, is further strengthened by an alert in the FPS and forms the basis to expand the complaint into a full-fledged investigation. Subsequent administrative action is taken based on this investigation, expedited by the FPS.

While CMS believes that the ability of the FPS to corroborate, augment, and expedite cases is of great value to any investigation, there is a significant challenge to measuring the impact using the standards of a financial audit. Investigations are fluid and dynamic, and investigators need to work the case using all available information. If we require our investigators to attribute the role of each piece of information in their decision making, it would severely disrupt the actual work of combatting fraud. It would be extremely time consuming, subjective, and highly disruptive for the investigator to attribute a portion of a case back to a single source.

Savings Measures Based on Administrative Actions

The SBJA states that the third implementation year report:

> *specifies the actual and projected savings to the Medicare fee-for-service program as a result of the use of predictive analytics technologies, including estimates of the amounts of such savings with respect to both improper payments recovered and improper payments avoided.*[14]

There are seven administrative actions that result in measurable savings. A new measure, "Amount Directly Rejected by FPS Edits," was added this year as FPS edits were added in the third implementation year. Based on these administrative actions, CMS defined outcome measures that calculate the benefit of taking the action. Table 4 summarizes the seven outcome measures and whether they meet the definition of actual or projected savings in the SBJA.

[14] SBJA Section 4241(e)(1)(B)(i)

Table 4 – Alignment of FPS Outcome Measures with Actual and Projected Savings

Measure	Actual Savings (Avoidance)	Projected Savings (Recovery)	Projected Savings (Avoidance)
Amount Denied Based on Pre-payment Review	✓		
Amount Denied by Local Auto-Denial Edits	✓		
Amount of Payments Suspended Expected to Offset Medicare Overpayments	✓		
Amount Directly Rejected by FPS Edits	✓		
Costs Avoided By Revoking Billing Privileges*			✓
Amount of Overpayments Expected to be Recovered		✓	
Amount Expected to be Recovered based on Law Enforcement Referrals		✓	

Cost avoidance is calculated in terms of estimated savings after a full revocation of a provider or supplier becomes effective. A full revocation is measured at the Tax Identification Number (TIN) level, and means that there must be no approved enrollments, at least one revoked enrollment, and no open Provider Transaction Access Numbers (PTANs). In addition, as a proxy for the appeals process, only providers and suppliers with revocations that were in place for a minimum of 90 days are included in the analysis. The savings value is estimated based on a methodology using a provider or supplier's prior 12 month billing period to project costs as if providers continued their existing billing patterns or behavior. CPI uses a weighted moving average to compute projected savings over a 1 – 3 year time period. The time period varies for each provider or supplier, depending on the length of time that provider or supplier is barred from re-enrolling in Medicare. Additionally, CPI computes an adjusted projection that attempts to account for the percentage of a revoked provider's Medicare billings that can be expected to be taken over by other providers following revocation.

Savings from Improved Identification of Fraud, Waste and Abuse

The FPS identifies leads that are investigated by the ZPICs for potential fraud, waste, and abuse. These investigations include traditional "boots-on-the-ground" activities, such as onsite visits to the provider, interviews with beneficiaries, and review of medical documentation. Based on the results of all information collected, the ZPICs take appropriate administrative action in compliance with regulations guiding those actions. These administrative actions result in actual or projected savings. In the third year, the FPS identified or prevented $454.0 million through administrative actions taken due to the FPS or through investigations corroborated, augmented, or expedited by information in the FPS (Table 5). The savings in the third implementation year are more than 80% higher than the savings from the second implementation year.

Table 5 - Identified Savings from First to Third Year

	Measure	First Year $ (Millions)	Second Year $ (Millions)	Third Year $ (Millions)	Total $ (Millions)
Actual	Amount Denied by Pre-payment Edits	11.5	18.4	24.0	**53.99**
	Amount Denied by Local Auto-Denial Edits[1]	4.7	1.6	1.5	**7.8**
	Amount Directly Rejected by FPS Edits	0	0	6.0	**6.0**
	Payment Suspensions	1.6	3.0[2]	9.9	**14.5**
Projected	Cost Avoidance from Revoking Provider Billing Privileges	13.9	92.1	135.6	**241.6**
	Amount of Overpayments Referred for Recovery	4.4	46.3	134.8	**185.5**
	Value of Law Enforcement Referrals	68.2	88.7	142.2	**299.1**
	Cost Avoidance due to Changes in Behavior	11.1	N/A[3]	N/A[3]	**11.1**
	Total	**115.4**	**250.1[4]**	**454.0**	**819.5**

Sources: The First Year data were published in the "Report to Congress – Fraud Prevention System – First Implementation Year" in December 2012, covering the time period July 2011 – June 2012. The Second Year data were published in the "Report to Congress – Fraud Prevention System – Second Implementation Year" in June 2014, covering the time period October 2012 – September 2013. Amounts may not add exactly due to rounding.

Notes: The Small Business Jobs Act of 2010 (P.L. 111-240) defines the first implementation year as July 1, 2011 through June 30, 2012 and the second implementation year as October 1, 2012 through September 30, 2013. The purpose of this table is to provide trending information based on identified savings.

[1] The auto-denial edits referenced in this table are those edits that the ZPICs request the MACs to implement based on information in the FPS. Claim denials based on these edits are not directly through the FPS

[2] This is the dollar amount in escrow in the last month of the reporting period. 282 providers were on active payment suspension as of the last day of the reporting period. The dollar amount excludes amounts that were in escrow during the year but the payment suspension was terminated prior to the end of the reporting period. These dollars are included in the overpayment measure.

[3] In the first implementation year, a set of national edits were put in place for certain providers. The providers subject to the edit stopped billing; therefore, cost avoidance was calculated. This is not relevant to the third implementation year.

[4] $210.7M was the total identified savings certified in the Year 2 FPS Report to Congress. However, there was an additional $39.4M that CMS attributed to the FPS because the FPS contributed to the investigation. We have included that $39.4M in table 5, bringing the Year 2 total to $250.1M.

Of total FPS savings**,** $320 million is due to the FPS identifying the lead or significantly causing the action to be taken. The remaining $134 million is due to FPS adding information to an existing investigation. These administrative actions were the result of investigations in which there were multiple sources of information that all contributed to the savings outcome where FPS clearly played a role. In the following example, the FPS identified the lead for the contractor based on a predictive model. Based upon in new information in the FPS and the subsequent investigation, CMS revoked the provider's Medicare billing privileges and referred the issue to law enforcement. The revocation of billing privileges has a monetary benefit in terms of halting direct billing from the providers.

Billing ambulance transports for non-medically necessary services

The FPS identified an ambulance provider for questionable trips allegedly made to a hospital. During the three years prior to the FPS alert, the provider was paid more than $1.5 million for transporting more than 4,500 beneficiaries. A review of medical records found significant denials for insufficient or lack of documentation. The entire amount paid to the provider (more than $1.5 million) is at risk.

The current license has been voluntarily surrendered and the provider was referred to law enforcement. CMS also revoked the provider from Medicare.

The increase in savings from the second to the third implementation year (summarized in Table 5) resulted from strong collaboration and increasing maturity of the analytics. CMS partners with the ZPICs and law enforcement in model development and many of the investigations opened due to the models developed in the second year are yielding strong results. Also, CMS found that the ZPICs are working more leads from the FPS than are directed because of the value of the leads.

Adjustment Factors

To meet both the requirements of the SBJA and the HHS-OIG's certification, defined as a financial audit, CMS developed adjustment factors and their proportionate impact on recoveries to produce a conservative estimate of actual savings. In order to adhere to the audit standards applied to the savings measurement effort, CMS took very conservative approaches to estimating savings. Several of the HHS-OIG's recommendations require the alignment of multiple data systems to allow tracking of administrative actions from source to conclusion; these systems changes have been initiated. Once the changes are made, CMS will report actual savings. In the meantime, CMS is applying conservative adjustment factors developed based on experience in the time period prior to FPS implementation to estimate savings. CMS recognizes that adjustment factors have inherent limitations because they are estimates based on historic data obtained for purposes other than measurement.

The six adjustment factors used in the FPS savings calculations are listed in Table 6. Appendix B provides more detailed information about the adjustment factors. The details regarding the assumptions and calculations used to estimate these adjustment factors applied to the identified savings are available in the second year implementation year report.[15]

[15] Report to Congress, Fraud Prevention System, Second Implementation Year, June 2014. http://www.stopmedicarefraud.gov/fraud-rtc06242014.pdf

Table 6 - FPS Adjustment Factors

Adjustment Factor	Percentage Applied	
Cost Avoidance Adjustment Factor [1]	Part B ..... 86.2% HHA 45.2%	Hospice ..... 23.5% DME 87.7%
Paid Amount Adjustment Factor [2]	Part B Individual.....37% Part B Organization....75% DME 51%	Outpatient..... 47% Hospice ..... 63% Home Health . 100%
Appeals Adjustment Factor [3]	93.3%	
Payment Suspension Adjustment Factor [4]	96.3%	
Overpayment Adjustment Factor [5]	Zone 1 .....14% Zone 2 .....18.5% Zone 3 .....18.5% Zone 4 .....17%	Zone 5 ..... 19% Zone 7 ..... 9% DME PSC ..... 40% PSCs..... 22%
Law Enforcement Adjustment Factor [6]	5.9%	
FPS Edit auto-rejection adjustment factor [7]	67%	

1. The source of data is the Integrated Data Repository. Berenson-Eggers Type of Service (BETOS) categories are used to analyze Medicare costs to identify similar services. All Healthcare Common Procedure Coding System (HCPCS) procedure codes are assigned to a BETOS category. BETOS codes are clinical categories. There are seven high-level BETOS categories: Evaluation and Management, Procedures, Imaging, Tests, Durable Medical Equipment, Other, Exceptions/Unclassified

2. The source of data is the Integrated Data Repository. Ratio calculated using claims in calendar year 2012. Part A is immaterial because there were no savings related to Part A (non-home health) services.

3. The adjustment factor was calculated by averaging the "Percentage of Change in Error Rate" for FY 2009 (7.7%) and FY 2010 (5.7%) in Appendix A of OIG Report A-01-11-00504.

4. The source of data is the Fraud Investigation Database (amount in escrow prior to termination and amount of overpayment referred for recovery). Ratio calculated using suspensions terminated from July 2009 to June 2012.

5. The sources of data are CMSARTS (field A9) and monthly reports provided by the Medicare Administrative Contractors (MACs) to the ZPICs that document overpayment recoveries. The time period is July 2011 through June 2012. The amounts include all ZPIC/PSC providers on overpayment recovery and are not limited to those overpayment recoveries that are FPS specific.

6. The sources of information include the GAO Report GAO-12-820, HHS-OIG's IRIS system (accepted cases where the original source was a ZPIC/PSC there were closed by the HHS-OIG Office of Investigations) and the Fraud Investigation Database (estimated value of referral). The time period is July 2009 to June 2012.

7. The FPS Edit auto-rejection adjustment factor value used in Year 3 is 67% (66.6%). However, this adjustment factor is not calculated in the same way as the others. Specifically, it does not rely on historical data to approximate an expected amount returned or prevented. Instead, to adjust the identified amount of auto-rejection edits, each rejected claim line is monitored for resubmission. If a provider resubmits a similar claim line after a rejection and that claim line is paid, then the identified savings is reduced by the actual amount paid by CMS. In this way, there is no traditional "adjustment factor" for auto-rejections, but rather the 67% value represents the reduction to the identified amount for payments made on the Year 3 rejected claim lines.

Adjusted Savings

While the identified savings amount represents the amount of fraud, waste, and abuse the FPS identified, the adjustment factors apply a reduction to represent the inherent challenges, both in process and resource constraints, of successfully recovering payments and preventing fraudulent schemes from quickly migrating. Based on the conservative adjustments, CMS estimates that $133 million of identified savings is the portion of dollars that CMS has already returned or, from an auditing perspective, is likely to return to the Medicare Trust Funds or the Treasury in the future (Table 7).

Table 7 - Adjusted Savings

	Measure	Third Year $ (Millions)
Actual	Amount Denied Based on Pre-payment Review [a]	14.2
	Amount Denied by Auto-Denial Edits [a]	1.1
	Amount Directly Rejected by FPS Edits	4.0
	Amount of Payments Suspended Expected to Offset Future Medicare Overpayments [b]	9.5
Projected	Amount of Overpayments Expected to be Recovered [c]	20.8
	Amount Expected to be Recovered based on Law Enforcement Referrals [d]	8.44
	Cost Avoidance due to Changes in Behavior [e]	N/A
	Costs Avoided By Revoking Billing Privileges [f]	75.2
	Total	**133.2**

Notes: The measures listed in this table are defined in the Fraud Prevention System Return on Investment Methodology in the third year report. The savings for the third implementation year are the unadjusted savings (Table 5) adjusted based on the Fraud Prevention System Return on Investment Methodology. The time period covered is January 2014 – December 2014.

a. The unadjusted savings that were submitted by the contractors as billed amounts were multiplied by an adjustment factor of 37% to 100% depending on the service type to estimate paid amounts. The estimated paid amount was then multiplied by an adjustment factor of 93.3% to estimate paid amounts after appeals.

b. The unadjusted amount in payment suspension accounts at the end of the reporting period was multiplied by 96.3% to estimate the amount that will be recovered to offset future overpayments.

c. The portion of unadjusted overpayments referred to the MAC for recovery was multiplied by 9% to 40% depending on the contractor to estimate actual recoveries.

d. The unadjusted law enforcement referral value was multiplied by 5.9% to estimate the expected court ordered recoveries.

e. In the first implementation year, a set of national edits were put in place for certain providers. The providers subject to the edit stopped billing; therefore, cost avoidance was calculated. This is not relevant to the third implementation year.

f. The unadjusted cost avoidance value was multiplied by 45.2% for home health agencies, 86.2% for Part B providers, 87.7% for DME suppliers, and 23.5% for hospice providers to estimate shifting of similar services from revoked providers to existing providers. During the third implementation year, CMS sent a one-time set of providers identified by the FPS to the NSVC to conduct site visits. Five providers were subsequently revoked, and the resulting adjusted savings value of $ 0.8M is included in this cost avoidance number.

2.5. Return on Investment

The SBJA requires that ROI be calculated for the FPS as the actual and projected savings compared to the costs expended to achieve these savings.

Actual and Projected Savings

As detailed above in Section 2.3, FPS benefits and savings included in the ROI calculation result from taking administrative action based on FPS leads or rejecting claims directly through FPS edits. As discussed, savings are calculated in two categories: actual savings and projected savings. The total savings attributed to the FPS analytics technology in the third implementation year are an estimated $454.00 million identified savings and $133.22 million adjusted savings (Table 8).

Table 8 - Summary of Estimated FPS Savings

Savings	Actual Savings $ (Millions)	Projected Savings $ (Millions)	Total Savings $ (Millions)
Identified	41.4	412.6	**454.0**
Adjusted	28.8	104.4	**133.2**

Costs

Costs incurred in the third year of FPS implementation fall into three primary categories; FPS contractor costs, FPS-related CMS management costs, and ZPIC costs incurred in investigating and acting upon FPS-generated leads.

- **FPS contractor costs**
  Contract costs for the Development Contractor and the Modeling Contractor cover the period from January 1, 2014 to December 31, 2014. Costs included in the calculation are amounts paid during the year.
- **CMS management costs**
  Management costs cover CMS staff supporting the FPS during its first implementation year. These costs include the estimated salaries and benefits for 15.25 full-time equivalents (FTE) at $131,673 per FTE, along with an associated overhead factor of 15 percent representing office expenses, training, travel, and other expenditures, for a total of $151,424 per FTE. The total CMS management costs are an estimated $2.3 million, or $151,424 each times 15.25 FTEs.
- **Investigation costs**
  A portion of the ZPIC costs is included since a portion of their time is

spent acting upon FPS leads.[16] These costs are estimated by calculating the percentage of total ZPIC-identified savings resulting from FPS leads and multiplying that percentage by their total investigator costs.[17] The MACs' workload of processing FPS-generated edits and revocations is fairly minimal and part of their existing workload. It is considered immaterial and therefore not included in the costs.

Total costs associated with the FPS in the second implementation year are an estimated $47 million, as shown in Table 9.

Table 9 - Estimated FPS Costs

Category	$ (Millions)
FPS Contractor Costs	
Development Contractor Costs	18.9
Modeling Contractor Costs	4.1
CMS Management Costs	
Salaries (Government FTE) with Benefits and Other Indirect Costs, Including Training and Travel	2.3
Investigation Costs	21.6
Total Estimated Costs	**$46.9**

ROI Calculation

The identified savings associated with these prevention and detection actions due to FPS was $454 million, more than 80% higher than the amount identified during the second year of the program. This resulted in almost a $10 to $1 ROI.

In terms of decisions regarding the management of FPS, including internal evaluations of the merit of continuing or expanding FPS, CMS will continue to focus primarily on the full value of identified savings. Based on the positive growth of the program (savings increased 80% over the second implementation year) and the success of the FPS in identifying bad actors quickly, CMS will continue initiatives to maintain, improve, and expand the FPS in future years.

[16] The investigation costs also include $14,099 for site visits that the NSVC conducted. Because the NSVC has a firm fixed price contract, all costs are calculated at the site visit level and are fully burdened. This amount includes the number of NSVC site visits conducted based on FPS-generated leads multiplied by the cost of each site visit.

[17] The category "Investigation Costs" is an estimate of FPS-related investigative costs for ZPICs. This includes both the direct and indirect costs of investigations.

2.6. Impact on Medicare Beneficiaries and Providers

CMS is committed to ensuring that Medicare beneficiaries receive quality health care services and to reducing fraud, waste, and abuse to protect taxpayer dollars. CMS is also committed to reducing administrative and compliance burdens on legitimate providers. The FPS governance process ensures that the system's predictive models and other sophisticated analytics minimize the impact on beneficiaries and legitimate providers and do not adversely affect the quality of health care.

Fraud's Negative Impact on Beneficiaries

CMS revoked 69 providers from Medicare and referred 97 providers to law enforcement for potential investigation for criminal activity. These efforts to prevent fraud have a positive impact on beneficiaries. Reducing fraud, waste, and abuse contributes to ensuring that beneficiaries have access to quality health care. Fraud can inflict real harm on Medicare patients. When providers render unnecessary or substandard care, Medicare beneficiaries do not receive the quality health care they deserve. When providers prescribe dangerous drugs without thorough examinations or medical necessity, Medicare beneficiaries are at risk. When providers perform medically unnecessary diagnostic tests, treatments, procedures, or surgeries, Medicare beneficiaries suffer real, tangible harm. While not all cases of fraud cause direct harm to beneficiaries, when harm occurs, there are direct human costs.

Beneficiaries prove invaluable to combatting fraud and abuse

A provider was identified in FPS due to a pattern of billing an excessive number of procedures. Analysis of the claims FPS identified showed that the provider billed for the same set of diagnostic codes regardless of diagnosis for a majority of patients. Beneficiary interviews were conducted and some beneficiaries claimed to have never seen the provider and others claimed that not all the tests were necessary or not conducted at all. The provider's Medicare billing privileges were revoked.

Medical identity theft cases illustrate how the FPS safeguards Medicare beneficiaries from the potential harm. When providers steal a beneficiary's identity and bill for items or services never received, the beneficiary may later have difficulty accessing needed and legitimate care. The FPS directly addresses one form of medical identity theft by monitoring billing patterns for Medicare identification numbers known to be compromised. Combined with other indicators of potential fraud, providers are identified for further investigation and action.

Preventing Burden on Providers

CMS is committed to ensuring that fraud prevention efforts do not place unnecessary administrative and compliance burdens on legitimate providers nor interfere with their business operations. The FPS functions within the congressionally mandated Medicare payment window of 14 to 30 days, preventing payment delays to legitimate providers. The contractors also close investigations when there is no evidence of improper payments. If the data and information gathered do not support an administrative action, the provider is no longer under review. The contractor may refer the provider to another contractor for education, if doing so may be beneficial to the provider.

3. Exploring Predictive Analytics in Medicaid and CHIP

Medicaid and the Children's Health Insurance Program (CHIP) are federal-state partnerships that provide health coverage to low-income children and adults.[18] States and the Centers for Medicare & Medicaid Services (CMS) share responsibility for operating Medicaid and CHIP programs consistent with titles XIX and XXI of the Social Security Act and its implementing regulations.

CMS provides states with interpretive guidance to use in applying statutory and regulatory requirements, technical assistance including tools and data, federal match for their expenditures, and other resources. States fund their share of the program, and, within federal and state guidelines, operate their individual programs, including setting rates, paying claims, enrolling providers and beneficiaries, contracting with plans, and claiming expenditures. States have considerable discretion in the manner in which they operate their programs, but should always employ that flexibility in ways that enhance care, promote overall program effectiveness and efficiency and safeguard dollars expended, whether originating from federal or state sources. Together, the federal and state governments share accountability for the integrity of the total investment of dollars in the Medicaid and CHIP programs and the extent to which that investment produces value for beneficiaries and taxpayers.[19]

3.1. Findings

The SBJA required CMS to analyze and report on the cost-effectiveness and feasibility of expanding the use of predictive analytics technologies to Medicaid and CHIP: the effect, if any, the application of predictive analytic technologies to claims under Medicaid and CHIP would have on states; and recommendations regarding the extent to which technical assistance may be necessary to expand the application of predictive analytics technologies to claims under Medicaid and CHIP and the type of such assistance.

There are two ways in which predictive analytics technologies could be applied to Medicaid and CHIP claims. First, the states could implement such technology directly in their claims processing systems. This would be similar to how CMS implemented the FPS, but done by each state at the state level. Second, CMS could leverage the FPS and input Medicaid and CHIP claims to the system. Both models were examined as part of this evaluation.

CMS worked with states and stakeholders to explore the implementation of predictive analytics technologies in Medicaid and CHIP directly by the states. Our analysis for the expansion of predictive analytics technologies to Medicaid and CHIP was informed by reviewing the Medicare experience with FPS, lessons learned through the experience of those states that are using predictive analytics, administering a questionnaire to states,

[18] For more information about each program please see www.Medicaid.gov.

[19] Please see State Medicaid Director (SMD) Letter #13-003.

and discussing predictive analytics technologies with states in several forums (e.g. Medicaid Integrity Institute and Fraud, Waste, and Abuse Technical Advisory Groups).[20]

After extensive analysis and discussion with states, and as explained in more detail below, CMS has determined that it is not feasible at this time to systematically expand predictive analytics technology to all Medicaid and CHIP claims, and it may not be cost effective for all states to adopt predictive analytics individually. However, there are opportunities to transfer techniques learned through our experience with the implementation of FPS and assist states with identifying program integrity risks using predictive analytics technologies in protecting their Medicaid and CHIP programs from fraud, waste, and abuse. Several state Medicaid programs are already in the process of incorporating predictive analytics into their program integrity efforts.

For Medicare, CMS fulfilled the requirements of the SBJA through the implementation of FPS. For Medicaid, and CHIP, CMS is taking a two-pronged approach. CMS will work with the states to provide technical assistance and partner on model development and best practices. Additionally, as the new T-MSIS data become available, CMS will leverage the post-payment Medicaid and CHIP data to strengthen models in the FPS. CMS will also partner with the states through the new Unified Program Integrity Contractors (UPIC) strategy[21] to share results and take swift corrective action. As discussed in greater detail below, it is cost-effective and feasible for CMS to apply FPS to Medicaid and CHIP claims post-payment as more robust T-MSIS data become available. Additionally, there is tremendous opportunity for CMS and states to partner in the implementation of predictive analytics technology at the state level as feasible.

CMS will continue to provide technical assistance to states as they consider their readiness for such technology. CMS will collaborate with states that are prepared to invest in predictive analytics technology and to share best practices and lessons learned. There are states moving forward with implementing predictive analytics technology at the state level. Some others have challenges, including legacy systems, lack in readiness, and capacity and/or resources limitations, and may not benefit from implementing predictive analytics technologies at the state level at this time. States may also be reluctant in that the cost-effectiveness of the implementation predictive analytics technology at the state level has not yet been fully demonstrated.

[20] Chapter 1 gives a summary of the methodology for conducting the evaluation

[21] Information about the Unified Program Integrity Contractor strategy can be found in Section 3.3.

Findings

1. *It is not feasible at this time to systematically expand predictive analytics technology to all Medicaid and CHIP claims, and it may not be cost effective for states to adopt predictive analytics individually. However, there are opportunities to transfer techniques and assist states with identifying program integrity risks using predictive analytics technologies in protecting their Medicaid and CHIP programs from fraud, waste, and abuse.*
2. *It is cost-effective and feasible for CMS to apply the FPS to post-payment FFS Medicaid and CHIP claims through the FPS and the new strategy for investigating and auditing Medicaid and CHIP issues. This capability will become more feasible as states improve the data transmitted to CMS through the Transformed Medicaid Information System (T-MSIS) effort..*
3. *CMS should continue to provide technical assistance to assist states interested in applying predictive analytics technology to achieve "readiness" for implementation.*
4. *CMS and states implementing predictive analytics technology should collaborate and share best practices and lessons learned.*

3.2. Current Environment

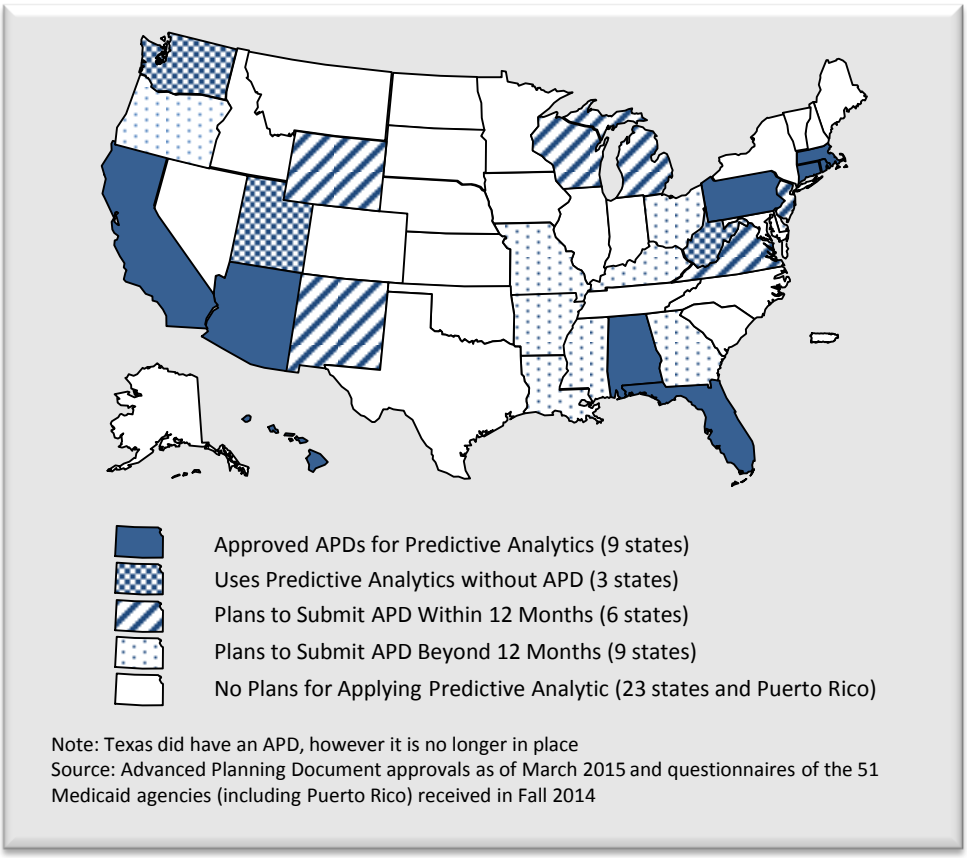
States vary in applying predictive analytics technology to Medicaid and CHIP claims. Some states have received approval from CMS to obtain enhanced federal matching funds to integrate predictive analytics technology with states' Medicaid Management Information Systems (MMIS) based on the statutory authority in §1903(a)(3). Other states have no imminent plans for implementing predictive analytics technology. States can request approval to improve their information technology systems by implementing predictive analytics by submitting an Advanced Planning Document (APD). The APD notifies CMS of their intent and establishes the budgetary requirements needed to implement the IT improvements. . CMS uses the APD to make a determination whether to approve enhanced federal matching funding (90 percent) to support the investment.

Nine states are in the process of implementing predictive analytics in their Medicaid FFS programs, having been approved to fund the technology through the enhanced federal matching funds (Figure 5).[22] For example, Massachusetts

[22] Texas recently terminated the predictive analytics contract established subsequent to CMS' approval of its APD.

has implemented a system that streams Medicaid FFS claims similar to the FPS, and Michigan has implemented a predictive analytics system that focuses on denying potentially fraudulent claims.[23] An additional three states have implemented predictive analytics technology without federal funding. Six states are in the planning stages and may submit an application for enhanced federal financial participation in the next twelve months. The remaining states either have a long timeline for implementing predictive analytics (more than 12 months) or are not currently pursuing predictive analytics.

Figure 5 – Stages of States' Implementation of Predictive Analytics Technology



Note: Texas did have an APD, however it is no longer in place
Source: Advanced Planning Document approvals as of March 2015 and questionnaires of the 51 Medicaid agencies (including Puerto Rico) received in Fall 2014

[23] It is CMS' understanding that Michigan intends to submit an APD specifically for the purpose of procuring predictive analytics technology in the near future. However, in 2012, Michigan submitted an APD regarding ICD-10 that referenced predictive analytics technologies.

Massachusetts

Predictive Analytics Efforts

Massachusetts' new predictive analytics system went live in May, 2013, and has achieved early success in identifying alerts on improper claims prior to the claims being paid. Massachusetts has focused on providers' billing patterns, and this has enabled the state to more quickly identify and address changes in provider behavior.

Michigan

Predictive Analytics Efforts

Ensuring access to all potential data sources within the state is a key need in developing a new predictive analytics system. Michigan emphasized this need when implementing its new predictive analytics system in February 2013. The system streams Medicaid Fee-For-Service claims in "real-time" similar to the FPS.

3.3. Cost-Effectiveness and Feasibility

The evaluation of the cost-effectiveness and feasibility of expanding predictive analytics technology to Medicaid and CHIP resulted in three key findings. First, it is cost-effective and feasible for CMS to apply FPS to post-payment Medicaid and CHIP claims and enrollment data. Second, the cost-effectiveness of the implementation of predictive analytics technology at the state level has not yet been fully demonstrated. Third, it is not feasible to systematically expand predictive analytics technology to all Medicaid and CHIP claims, and it may not be cost effective for all states to adopt predictive analytics individually.

Therefore CMS will work to integrate the post payment T-MSIS data into FPS and build and test models in coordination with the Unified Program Integrity Contractors (UPIC) strategy.

CMS will continue to provide technical assistance to states that are considering predictive analytics technology. For those states that are implementing predictive analytics technology, there are opportunities for technical assistance and partnership. Section 3.5 describes technical assistance recommendations in detail.

Cost and Value of State Implementation

The cost of implementing and operating predictive analytics technology includes the investment of resources for three major parts—information technology, government staff, and investigation/audit—as defined by CMS and certified by the OIG for the FPS work. Several states are already in the process of incorporating predictive analytics into their program integrity efforts.

The enhanced federal matching funds to support state implementation of predictive analytics technology are only available for the investment in information technology that is integrated with the state's MMIS, not for staffing costs or investigation/audit costs. Based on FPS experience, additional costs to support staff resources and investigation/audit systems would need to be covered by state funding matched with the standard federal administrative match rate (approximately 50 percent on average). If states are unable to bear the cost of staff resources needed to support predictive analytics and to take action on the results from the predictive analytics, the return on investment and other benefits from predictive analytics technology may not be fully realized.

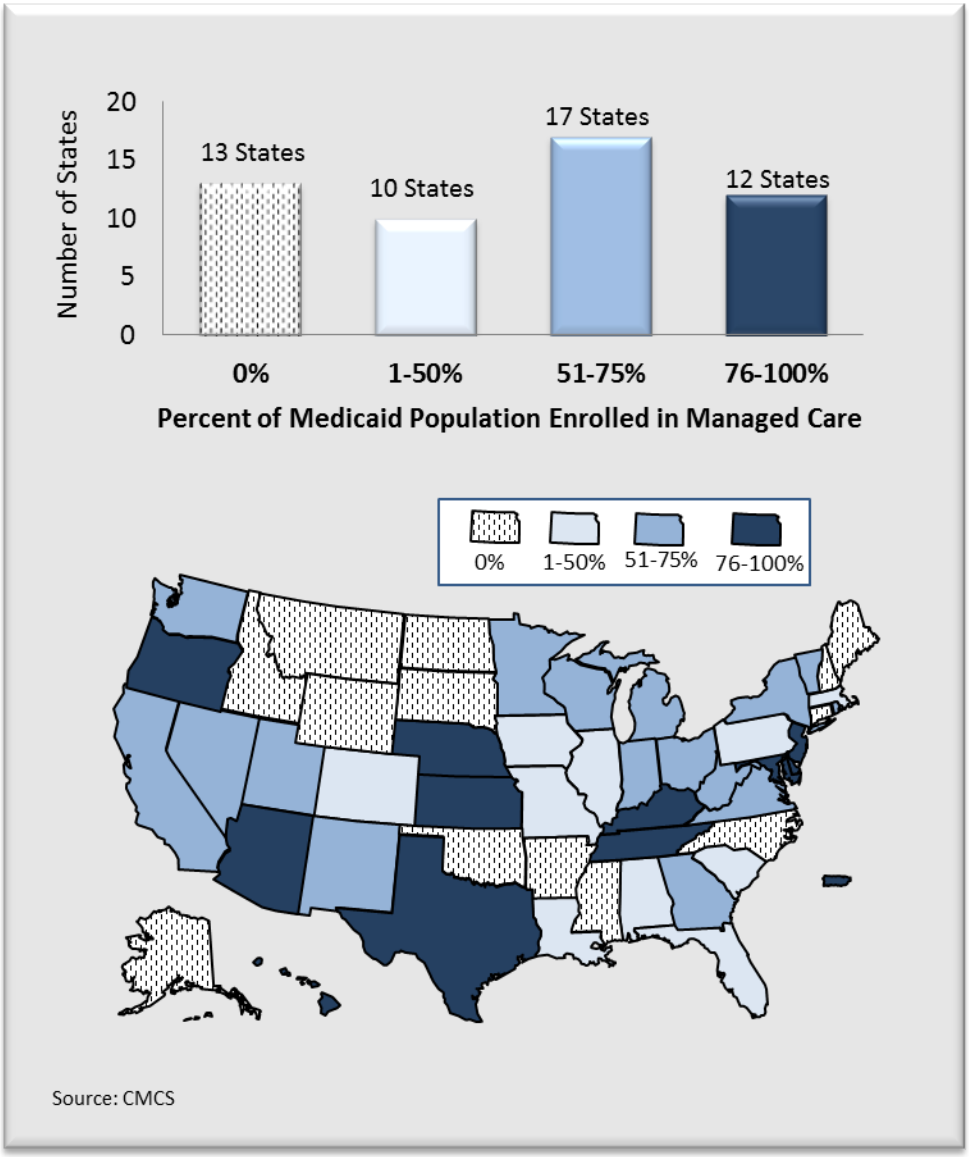
More importantly, the majority of the costs of the Medicare FPS represent the fixed costs of systems, hardware, and software development as compared to the smaller component of variable costs for staffing and development of leads and sources of overpayments. Consequently, if the Medicare FPS experience holds true in Medicaid, the larger amount of fixed costs represents those elements that are necessary to implement any predictive analytics system and they represent costs that are inflexible with respect to scalability at the individual state level. Essentially, the predictive analytics infrastructure will cost roughly the same for any state, regardless of the size of its Medicaid program, so investing in predictive analytics technology may not result in a positive return on investment for all states.

The value of predictive analytics technology in Medicare FFS is proven through the increasing FPS ROI, which is certified by the OIG. It follows that applying similar technology to Medicaid FFS claims may result in similar savings. However, though there are nine states with approved enhanced funding to implement predictive analytics technology, most are still in early implementation. The value of applying the technology to FFS claims at the state level has not yet been fully demonstrated

Managed Care Penetration

Predictive analytics technology has proven successful in Medicare FFS, but CMS has not evaluated the effectiveness and feasibility of applying the technology to managed care encounters. Nationally, 60 percent of Medicaid beneficiaries are enrolled in a managed care organization (MCO). There are 12 states that have more than three-quarters of their population enrolled in managed care (Figure 6). Added to this demographic disparity among the states is the difference in the managed care enrollees in the Medicaid program when compared to the enrollees in Medicare Advantage Plans (Medicare Part C). This dynamic complicates any decision regarding the application of predictive analytics to Medicaid because it is not always possible to apply lessons learned in applying predictive analytics in the fee for service context to managed care contexts.

Figure 6 – Medicaid Managed Care Penetration



CMS is not aware whether any state has tested the use of predictive analytics in the managed care environment, where payment by the state is made on a capitated, as opposed to a FFS basis. Additionally, few states have MCO contracts that contain clauses requiring the return of overpayments to the state or CMS that are the result of fraud and abuse.[24] Furthermore, CMS is not aware of efforts to expand the technology in managed care by states that have a significant managed care penetration. CMS will continue to monitor this situation to inform future efforts to apply predictive analytics technology in the managed care environment.

[24] Questionnaires of the 51 Medicaid agencies (including Puerto Rico) received in Fall 2014

Feasibility of State Implementation – State Readiness

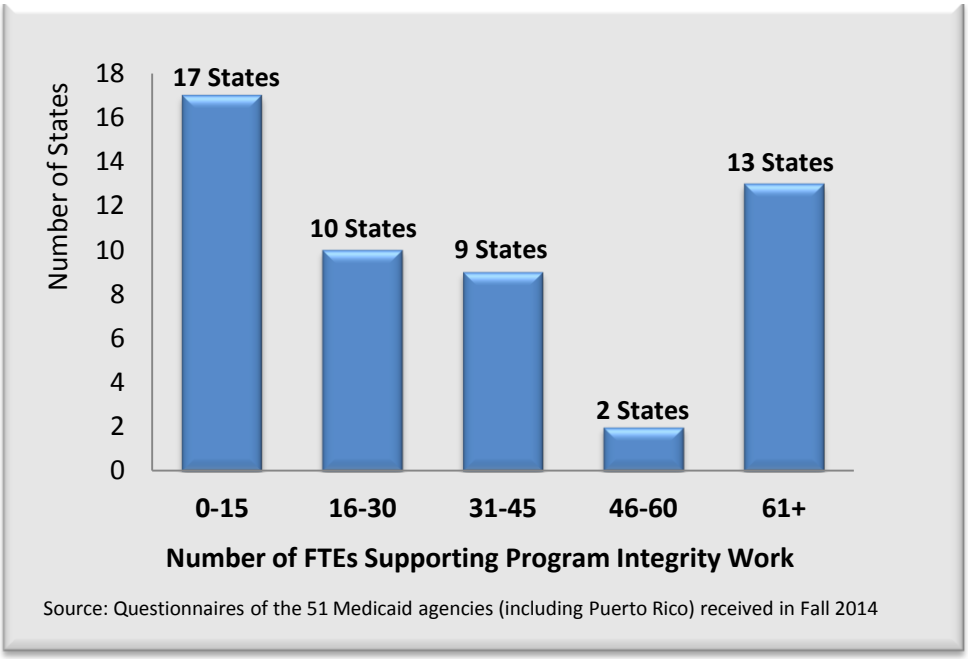
Certain elements should be in place before a program invests in predictive analytics technology in order to support success. The elements listed below were identified by both CMS and the states that are in the early stages of implementation. As indicated by the elements summarized below, states vary in their level of preparedness for implementing predictive analytics technology.

- **Modernized MMIS** – It is important for states to have information technology systems capable of efficiently integrating predictive analytics technology. Eighteen states implemented their MMIS systems before 2009, and have not installed major updates in the past several years. It is unlikely that these systems are technologically adequate to support predictive analytics technology. Another 11 states have recently updated their systems, but nevertheless still employ, at least in part, technology from before 2000.
- **Clear Plan for the System and Support** – States are more likely to achieve success in implementation of predictive analytics if they develop a system that is well-tailored to the particular state's Medicaid program and flexible enough to changes in health care, and the nature of health care fraud, waste, and abuse. In light of this, it is critical that states develop an accurate estimate of the total costs of the system and a clear picture of the overall support and commitment to the needed expenditures during the initial set-up as well as to support both ongoing implementation and inevitable system adaptations.
- **Internal Staff Resources** – Some states do not have the staff resources to research, procure, and implement predictive analytics technology. As noted previously, 15.25 full-time equivalent (FTE) federal staff members support the FPS. There are 17 states that have 15 or fewer staff dedicated to all of their collective program integrity activities (Figure 7).

Analytics Environment and Resources – CMS developed an analytics environment to research and test models prior to promoting them to the operational, streaming environment. Building sophisticated models requires understanding past billing patterns and relationships to predict future behavior. Therefore, the analytics environment, strong internal data analysts, and contractor analytics resources are essential to the program. Several states may have challenges with the maturity of their MMIS, as discussed above. In addition, analytics resources are scarce in some states. The majority of states (35 states) have five or fewer internal data analysts to support all of their program integrity work.[25] In addition Figure 7 – Medicaid Program Integrity Staff Resources

[25] Questionnaires of the 51 Medicaid agencies (including Puerto Rico) received in Fall 2014

Figure 7 – Medicaid Program Integrity Staff Resources



Source: Questionnaires of the 51 Medicaid agencies (including Puerto Rico) received in Fall 2014

to internal staff needed to run the FPS, other staff are needed to pursue fraud, waste, and abuse uncovered by predictive analytics.

- **Business Processes –** It is essential to have a clear, feasible business process for incorporating field intelligence, policy knowledge, and clinical expertise (or other expertise relevant to the industry) into the development of predictive or other sophisticated algorithms. Collaboration with other federal agencies implementing predictive analytics confirmed that this type of engagement is critical to make sure the results of the technology are actionable. We do not have information on the status of states' efforts to implement this element. CMS works collaboratively with the states during the application for enhanced federal matching funds to ensure this type of engagement is in place and to share best practices.
- **Executive and Enterprise Commitment and Governance –** Having the commitment of executive leadership and enterprise governance are also elements that support a successful predictive analytics program. States define this as executive, administrative, and political support within the state. Effective analytics and intervention target the highest priority vulnerabilities in the program. The authority and resources to investigate or audit a lead and then take appropriate action are often in a different structural component within the organization than the information technology or analytics authority and resources. Therefore, successful collaboration across the enterprise is necessary. There are nine states that have submitted advanced planning documents to receive enhanced federal funding for predictive analytics technology that have been

approved. CMS encourages states engaged in and pursuing a predictive analytics program to create a governance structure to help make certain that there is an enterprise commitment; collaboration; and a clear understanding of the effort, resource investment, and its value.

- **Outcome Measures –** Methodologically sound outcome measures (including accepted cost avoidance methodologies) and accurate, consistent data to support measurement are requirements of a successful program. As states move towards prevention of improper payments, being able to measure the success of preventing fraudulent and abusive billing from occurring is essential. Fifteen states indicated that ROI is measured for program integrity activities. With regard to cost avoidance (defined here as the future costs avoided as a result of removing a provider from the program), it appears that no states measure cost avoidance specific to program integrity analytics. However, 19 states indicated having a cost avoidance methodology for all program integrity activities. Many states requested assistance with regard to measuring ROI. CMS developed cost avoidance methodologies and shared them with the states during MII sessions.

Feasibility of CMS Implementation

It is cost-effective and feasible for CMS to apply the FPS to post-payment FFS Medicaid and CHIP claims through the FPS as more robust T-MSIS data become available. The information technology infrastructure of the FPS is such that the cost of receiving additional claims from Medicaid and CHIP is relatively low. In addition, the experience of the Medicare-Medicaid Data Match Program (Medi-Medi) demonstrates value in matching data between programs and applying analytics to identify potentially bad actors.

CMS is working with the states on the T-MSIS data. Once completed, T-MSIS will afford CMS with more timely access to a robust repository of state Medicaid and CHIP program data. Additionally, T-MSIS will ensure the uniform capture of data elements across states, thereby increasing the validity and reliability of CMS' analytics results.

The SBJA requires Medicare FFS analytics technology to identify improper claims for reimbursement and to prevent the payment of such claims. State Medicaid and CHIP programs are accountable for paying FFS claims. States operate their own individual payment systems or have contractor arrangements to pay their claims for them. The cost for states to provide pre-payment claims data to CMS would be very expensive and add burden to state Medicaid and CHIP programs. States report that providing continuous pre-payment data would be virtually impossible.

States also noted that Medicaid and CHIP policy and coverage differs from state to state, challenging the application of effective multi-state algorithms. CMS

would need to focus algorithms on one state at a time, thus increasing the resources necessary to learn each state's program, develop state-specific algorithms, and apply and audit the findings. It would be a significant shift in Medicaid and CHIP policy for CMS to make claims payment decisions and could not occur without statutory changes to the Medicaid and CHIP programs at the federal and state levels.

The infrastructure for the FPS and the One PI analytics environment are already in place and were optimized to include new data sources as they become available. The T-MSIS data will be available to FPS and One PI through the Integrated Data Repository. The marginal cost of researching and adding new models that leverage this data source is low, given the CMS and ZPIC analytics resources and existing infrastructure.

States that participate in the Medi-Medi Program can participate in the development of models that support their priorities. The states would have access to the FPS results through the relevant ZPIC that is responsible for the Medi-Medi Program. The FPS results could result in audits and/or investigations conducted by ZPICs in collaboration with states participating in the program.

The ability to share results and work collaboratively with the states to address program integrity issues for dually enrolled providers will be strengthened through CMS' evolving Unified Program Integrity Contractor (UPIC) strategy. The UPIC strategy restructures and consolidates the current Medicare and Medicaid program integrity audit and investigation work. The UPIC concept consolidates the work of CMS' Medicaid Integrity Contractors and the ZPICs, including their Medi-Medi work. The overarching goal of the UPIC is to integrate these program integrity functions by implementing a contracting strategy that rationalizes our relationships with providers, leverages existing resources, and enhances our cooperative efforts with partners.

3.4. Effect on States

Implementing predictive analytics technology at the state level has the potential for a positive impact in certain states in terms of increasing savings, increasing ROI for program integrity, and reducing provider burden based on the experience in Medicare. However, given the challenges stated above and the relatively brief experience with predictive analytics at the state level, it is too early to definitively conclude that all states will benefit from implementing the technology. The success depends on whether the elements for effective implementation (described in section 3.2) are in place.

Some states raised the concern that predictive analytics could impact prompt payment. CMS has not found that to be a concern in the Medicare program. The

SBJA provides for waiver authority in Medicaid and CHIP for the purpose of implementing predictive analytics.[26]

3.5. Technical Assistance

There are two types of technical assistance that CMS can provide states in their consideration and implementation of predictive analytics technology: (1) general technical assistance to all states and (2) targeted partnerships with early adopters.

CMS Plans to Continue to Provide General Technical Assistance

CMS will continue to provide general technical assistance to all states related to predictive analytics technology. Examples of technical assistance provided in 2014 include:

- CMS facilitated MII sessions, including a symposium on data analytics and specific training on fundamentals of auditing, and specialized skills and techniques in Medicaid fraud detection.
- In September 2014, CMS released the Data Analytic Capabilities Assessment for Medicaid Program Integrity toolkit, which is available on CMS' website.[27] The toolkit was developed in conjunction with 12 states through a workgroup session held at the MII.[28] This workgroup continues to meet regularly.
- In May 2014, CMS held a State Strategy Mission focused on methods for improving CMS' work with the states in Medicaid and CHIP.
- CMS participated in a Fraud, Waste, and Abuse Technical Advisory Group (TAG) call with states to discuss our approach to calculating the ROI of FPS activities. Per state feedback, CMS will continue to supplement this initial high-level overview with more specific guidance.

Throughout 2015, CMS plans to provide the following technical assistance:

- MII sessions on best practices related to program integrity approaches in managed care, updates on advances and changes in program integrity related technology, and updates on changes in relevant laws and regulations at the Federal and State levels.
- Additional guidance on preparing Advanced Planning Documents (APD) to request enhanced federal matching funds for the purposes of implementing predictive analytics technology

[26] 42 USC 1320a-7(m)(g)

[27] The toolkit is available at http://www.cms.gov/Medicare-Medicaid-Coordination/Fraud-Prevention/FraudAbuseforProfs/MedicaidGuidance.html.

[28] Ibid. For a list of the workgroup members, see page 21 of the toolkit.

CMS Will Partner with States Implementing Predictive Analytics Technology

CMS will partner with states that are prepared to implement predictive analytics technology to provide technical assistance and also collaborate on best practices and lessons learned. While CMS has substantial information to share on what we have learned through our experience, there are also opportunities for CMS to learn from the states as they consider innovative approaches to the work. The following examples illustrate how the partnership will evolve in the future:

- CMS will consider developing a "users group" of states with APDs for predictive analytics. The group would meet regularly to share lessons learned and troubleshoot challenges. States implementing predictive analytics have independently shared key points that should be considered by other states. This information will be packaged through the users group and shared with other states.
- CMS will continue to provide direct technical assistance during the application process for enhanced federal matching funds for predictive analytics. Through early discussions, CMS will provide feedback about how to implement the program and measure success.
- CMS will work with states to consider sharing models. CMS and states see value in sharing information that would help guide CMS and the states in selecting data areas and relationships to explore. However, there is concern as to whether algorithms could be adopted in light of the program differences. Additionally, concerns have been raised about the need to adequately protect the content of CMS and state-developed algorithms to ensure they do not become accessible to those with nefarious intent. For example, many states raised concerns about whether the provisions of other states' open records laws, and even the Federal Freedom of Information Act, could adequately protect algorithm content. If protections are not in place, algorithms that identify potential fraud could be inappropriately released and used by bad actors to avoid detection.

4. Beyond the Third Year: Expanding Improper Payment Monitoring and System Efficiencies

The primary focus of the FPS during the first three implementation years was identifying providers with the most egregious behavior for investigation by the ZPICs. During the third implementation year, CMS tested new and innovative ways to leverage the FPS technology and best practices to support additional fraud, waste, and abuse activities. In future years, CMS will continue to expand the FPS and the transfer of knowledge related to predictive analytics technology.

Future of the Successful FPS Tool

- *Expand and improve models to identify bad actors more quickly and more effectively*
- *Deny or reject claims that are not supported by Medicare policy*
- *Identify leads for early intervention by the Medicare Administrative Contractors*
- *Stop claims to allow for medical review by the Recovery Audit Contractors prior to payment*
- *Provide technical assistance to states implementing predictive analytics*
- *Coordinate with the CMS Program Integrity Board to make sure the highest priority vulnerabilities in the Medicare program are addressed*
- *Share lessons learned and best practices with federal, state, and private partners*

4.1. Expand and Improve FPS Models to More Quickly and More Effectively Identify Fraud, Waste, and Abuse

FPS is a dynamic, constantly evolving tool that evaluates past and current patterns of detected fraud and abuse and seeks to refine its models to better identify future trends of fraud and abuse. By definition, predictive analytics implies an attempt to anticipate future occurrences of behaviors based on known past performance. FPS is a tool that employs the science of predictive analytics to more quickly and effectively identify fraud, waste, and abuse in the Medicare FFS program. As improvements are made to FPS modeling and its algorithms, CMS will use this technology to shorten the time between the incidence of fraud, waste, and abuse and its eventual detection. The goal is to develop a tool that is more anticipatory in its design to support a more robust proactive and preventative approach to reducing and eliminating fraud, waste, and abuse.

CMS will implement FPS 2.0 as part of ongoing efforts to improve the system. A high priority of the improved system will be to reduce the “time to market” for models and edits. By moving from model development to production more

quickly, the preventative benefits of the models and edits can be realized earlier and savings will increase. CMS will continue the ongoing model evaluation process and will add new models and edits that support the identification of improper payments for either automatic denial or rejection or for medical review. Models that are not yielding quality outcomes will be revised or retired.

4.2. Leveraging FPS Technology to Reject or Deny Claims

FPS has the capability to stop payment of certain improper and non-payable claims by communicating a denial or rejection message to the claims payment system. For example, previous FPS edits furnished a proof of concept to test that the FPS could successfully integrate with several legacy claims processing systems. This validated the capabilities of FPS to prevent payment without the need for human intervention.

CMS also identified ways that FPS edits could be used to address vulnerabilities in other systematic edits. CMS found that FPS could do a more sophisticated data analysis on claims that were coded in ways to evade the single line editing capabilities of other systems. Several billing scenarios fit the same pattern and could be grouped into a "family" of edits with similar data analysis language (coding). This led to the creation of the iEdit template within the FPS. The iEdit framework has been built to lower costs, shorten the implementation timeline, and effectuate edits. The iEdit template is in its first iteration, and we are working with numerous stakeholders to identify vulnerabilities that could be addressed through FPS editing.

CMS is developing new edits for implementation in 2015 for Part A and Durable Medical Equipment (DME). The DME edit will check the patient's claims history in one system to determine eligibility for payment of a DME item in another system. We will implement two FPS edits that accumulate services over a rolling time period (for example, five services allowed in a rolling one year time frame, or one service allowed every month), and denies payment for services exceeding those limits. This type of edit cannot be accomplished by examining one incoming claim at a time. The FPS system is uniquely able to accomplish this data analysis necessary to implement the edits.

Finally, through collaboration with our stakeholders, CMS developed a process to identify opportunities for the FPS to standardize editing across all MACs for certain billing scenarios. For example, if multiple MACs have similar Local Coverage Determinations (LCDs), the FPS can be utilized to implement a single edit on a nationwide basis, in lieu of having each MAC implement a local edit. The first such edit is planned for implementation in 2015.

4.3. Expand Accelerated Provider Intervention Project

CMS will explore expanding the Accelerated Provider Intervention Project by expanding access to the FPS for additional MACs. By focusing on Part B providers, the pilot has demonstrated that rapid identification of likely improper billing through the FPS, quick intervention, continuous monitoring, and MAC/ZPIC coordination has a significant potential for Medicare savings. A future step is to expand FPS access to a MAC that processes home health and hospice providers and a DME MAC to determine if the pilot design needs further refinement.

CMS will also build on the success of the collaboration and coordination by identifying new models to support medical review. In the future, new models will be implemented to specifically identify providers for MAC review, rather than for investigation by the ZPICs. By implementing these new models and expanding our collaboration with the MACs, the benefit of the FPS extends beyond fraud and abuse and into the important area of preventing improper payments.

4.4. Leverage FPS for RAC Pre-payment Reviews

CMS is evaluating the feasibility of incorporating the ability to suspend claims for review by the RAC as part of the transition to FPS 2.0. The FPS contractor would work with the RAC to establish pre-payment editing rules, workflows and coordination activities to allow RACs time and access to review claims during the processing lifecycle. As part of this process, once the RAC has made the determination as to whether or not to pay the claim, the RAC would update the claim appropriately. The FPS would receive the feedback and supply the appropriate information back to the shared systems for adjudication.

4.5. Incorporating Part C and Part D Data in FPS

CMS is developing ways to leverage data from the Part C and Part D program to strengthen FPS models that identify Medicare FFS providers with behaviors that require intervention. Since the FPS combines information by FFS provider, the information from Part C and Part D will not change the focus on the provider, but will be used to develop new risk factors. For example, CMS will include in the FPS a model that monitors for high-risk prescribers as one of the criteria for elevated risk. By incorporating the analysis of high-risk prescribers into the FPS, CMS will be better able to investigate and take swift action on bad actors in a coordinated way. As Part C data become available, CMS will consider ways to leverage those data as well.

4.6. Provide Technical Assistance to States in Their Efforts to Expand Predictive Analytics to Medicaid and CHIP

Opportunities such as general technical assistance to all states and targeted partnerships with early adopters of predictive analytics exist to collaborate with the states to reduce fraud, waste, and abuse. CMS will provide technical assistance to states in the area of predictive analytics, both for those states considering predictive analytics technology and those states that are early adopters.

CMS will offer technical assistance to the states through MII training activities, including a symposium on data analytics and specific training on the fundamentals of auditing, and specialized skills and techniques in Medicaid Fraud detection. CMS will also leverage the Fraud, Waste, and Abuse TAG to discuss emerging trends and predictive analytics. The TAG is a forum for state program integrity leaders to discuss critical topics with CMS.

4.7. Coordinate with the CMS Program Integrity Board to Address the Highest Priority Vulnerabilities

During 2014, CMS launched the CMS Program Integrity Board (PI Board) to prioritize vulnerabilities and determine strategic direction. The Board identifies and prioritizes improper, wasteful, abusive, and potentially fraudulent payment vulnerabilities in the Agency's programs and directs corrective actions to combat each of the high priority vulnerabilities. The PI Board meets monthly and includes senior leadership from 16 CMS components, including CPI, the Office of Financial Management (OFM), the Center for Medicare (CM), and the Center for Medicaid and CHIP Services (CMCS).

The FPS supports the PI Board in two specific ways. First, the FPS provides valuable analytics to inform leadership about emerging and migrating fraud, waste, and abuse. Second, the FPS is an intervention tool that will be leveraged to address vulnerabilities that are prioritized by the PI Board.

4.8. Leader in Applying Predictive Analytics Technology

CMS has emerged as a leader in using predictive analytics technology to target program integrity resources and measuring the outcomes of a prevention program. Many federal agency partners and private health care organizations are in various stages of leveraging similar technology to more accurately identify program integrity vulnerabilities and target scarce resources for investigating or auditing payments. These partners and organizations have met with CMS to gain a better understanding of the agency's experience with FPS.

CMS will convene a workgroup of federal agency partners that are in various stages of implementing predictive analytics technologies. CMS has previously

met with federal partners from the Social Security Administration, the Department of Education Office of Inspector General, the US Postal Service Office of Inspector General, the Department of Agriculture, the General Services Administration, and the Treasury's Do Not Pay Business Center. This year, we will be adding the Department of Labor and the Department of Homeland Security to our workgroup. Through these collaborations, staff has a forum to share best practices, identify challenges and potential solutions, discuss information technology infrastructure ideas, collaborate on business processes critical for supporting the technology, and share knowledge for measuring the success of a prevention program.

CMS explored comparisons of the FPS's value to the value attributable to other technologies used to prevent and detect fraud, waste, or abuse. Applying predictive analytics remains a new, innovative way for federal agencies to move program integrity towards prevention. Therefore, direct comparisons with similar technology are difficult to identify. As similar programs mature, CMS will compare the success of the FPS with other technologies being used in the federal space.

Appendix A. Inspector General of the Department of Health & Human Services: Certification of the *Report to Congress: Fraud Prevention System – Third Implementation Year*

Appendix B. SBJA Section 4241.

Use of Predictive Modeling and Other Analytics Technologies to Identify and Prevent Waste, Fraud, and Abuse in the Medicare Fee-for-Service Program (P.L. 111-240 §4241(b); 42 U.S.C. §1320a-7m(b))

SEC. 4241 [42 U.S.C. 1320a-7m]. Use of Predictive Modeling and Other Analytics Technologies to Identify and Prevent Waste, Fraud, and Abuse in the Medicare Fee-for-Service Program.

(a) Use in the Medicare Fee-for-Service Program. The Secretary shall use predictive modeling and other analytics technologies (in this section referred to as "predictive analytics technologies") to identify improper claims for reimbursement and to prevent the payment of such claims under the Medicare fee-for-service program.

(b) Predictive Analytics Technologies Requirements. The predictive analytics technologies used by the Secretary shall—

(1) capture Medicare provider and Medicare beneficiary activities across the Medicare fee-for-service program to provide a comprehensive view across all providers, beneficiaries, and geographies within such program in order to—

(A) identify and analyze Medicare provider networks, provider billing patterns, and beneficiary utilization patterns; and

(B) identify and detect any such patterns and networks that represent a high risk of fraudulent activity;

(2) be integrated into the existing Medicare fee-for-service program claims flow with minimal effort and maximum efficiency;

(3) be able to—

(A) analyze large data sets for unusual or suspicious patterns or anomalies or contain other factors that are linked to the occurrence of waste, fraud, or abuse;

(B) undertake such analysis before payment is made; and

(C) prioritize such identified transactions for additional review before payment is made in terms of the likelihood of potential waste, fraud, and abuse to more efficiently utilize investigative resources;

(4) capture outcome information on adjudicated claims for reimbursement to allow for refinement and enhancement of the predictive analytics technologies on the basis of such outcome information, including post-payment information about the eventual status of a claim; and

(5) prevent the payment of claims for reimbursement that have been identified as potentially wasteful, fraudulent, or abusive until such time as the claims have been verified as valid.

(c) Implementation Requirements.

(1) Request for Proposals. Not later than January 1, 2011, the Secretary shall issue a request for proposals to carry out this section during the first year of implementation. To the extent the Secretary determines appropriate—

(A) the initial request for proposals may include subsequent implementation years; and

(B) the Secretary may issue additional requests for proposals with respect to subsequent implementation years.

(2) First Implementation Year. The initial request for proposals issued under paragraph (1) shall require the contractors selected to commence using predictive analytics technologies on July 1, 2011, in the 10 States identified by the Secretary as having the highest risk of waste, fraud, or abuse in the Medicare fee-for-service program.

(3) Second Implementation Year. Based on the results of the report and recommendation required under subsection (e)(1)(B), the Secretary shall expand the use of predictive analytics technologies on October 1, 2012, to apply to an additional 10 States identified by the Secretary as having the highest risk of waste, fraud, or abuse in the Medicare fee-for-service program, after the States identified under paragraph (2).

(4) Third Implementation Year. Based on the results of the report and recommendation required under subsection (e)(2), the Secretary shall expand the use of predictive analytics technologies on January 1, 2014, to apply to the Medicare fee-for-service program in any State not identified under paragraph (2) or (3) and the commonwealths and territories.

(5) Fourth Implementation Year. Based on the results of the report and recommendation required under subsection (e)(3), the Secretary shall expand the use of predictive analytics technologies, beginning April 1, 2015, to apply to Medicaid and CHIP. To the extent the Secretary determines appropriate, such expansion may be made on a phased-in basis.

(6) Option for Refinement and Evaluation. If, with respect to the first, second, or third implementation year, the Inspector General of the Department of Health and Human Services certifies as part of the report required under subsection (e) for that year no or only nominal actual savings to the Medicare fee-for-service program, the Secretary may impose a moratorium, not to exceed 12 months, on the expansion of the

use of predictive analytics technologies under this section for the succeeding year in order to refine the use of predictive analytics technologies to achieve more than nominal savings before further expansion. If a moratorium is imposed in accordance with this paragraph, the implementation dates applicable for the succeeding year or years shall be adjusted to reflect the length of the moratorium period.

(d) Contractor Selection, Qualifications, and Data Access Requirements.

(1) Selection.

(A) In General. The Secretary shall select contractors to carry out this section using competitive procedures as provided for in the Federal Acquisition Regulation.

(B) Number of Contractors. The Secretary shall select at least 2 contractors to carry out this section with respect to any year.

(2) Qualifications.

(A) In General. The Secretary shall enter into a contract under this section with an entity only if the entity—

(i) has leadership and staff who—

(I) have the appropriate clinical knowledge of, and experience with, the payment rules and regulations under the Medicare fee-for-service program; and

(II) have direct management experience and proficiency utilizing predictive analytics technologies necessary to carry out the requirements under subsection (b); or

(ii) has a contract, or will enter into a contract, with another entity that has leadership and staff meeting the criteria described in clause (i).

(B) Conflict of Interest. The Secretary may only enter into a contract under this section with an entity to the extent that the entity complies with such conflict of interest standards as are generally applicable to Federal acquisition and procurement.

(3) Data Access. The Secretary shall provide entities with a contract under this section with appropriate access to data necessary for the entity to use predictive analytics technologies in accordance with the contract.

(e) Reporting Requirements.

(1) First Implementation Year Report. Not later than 3 months after the completion of the first implementation year under this section, the

Secretary shall submit to the appropriate committees of Congress and make available to the public a report that includes the following:

(A) A description of the implementation of the use of predictive analytics technologies during the year.

(B) A certification of the Inspector General of the Department of Health and Human Services that—

(i) specifies the actual and projected savings to the Medicare fee-for-service program as a result of the use of predictive analytics technologies, including estimates of the amounts of such savings with respect to both improper payments recovered and improper payments avoided;

(ii) the actual and projected savings to the Medicare fee-for-service program as a result of such use of predictive analytics technologies relative to the ROI for the use of such technologies and in comparison to other strategies or technologies used to prevent and detect fraud, waste, and abuse in the Medicare fee-for-service program; and

(iii) includes recommendations regarding—

(I) whether the Secretary should continue to use predictive analytics technologies;

(II) whether the use of such technologies should be expanded in accordance with the requirements of subsection (c); and

(III) any modifications or refinements that should be made to increase the amount of actual or projected savings or mitigate any adverse impact on Medicare beneficiaries or providers.

(C) An analysis of the extent to which the use of predictive analytics technologies successfully prevented and detected waste, fraud, or abuse in the Medicare fee-for-service program.

(D) A review of whether the predictive analytics technologies affected access to, or the quality of, items and services furnished to Medicare beneficiaries.

(E) A review of what effect, if any, the use of predictive analytics technologies had on Medicare providers.

(F) Any other items determined appropriate by the Secretary.

(2) Second Year Implementation Report. Not later than 3 months after the completion of the second implementation year under this section, the Secretary shall submit to the appropriate committees of Congress and make available to the public a report that includes, with respect to such year, the items required under paragraph (1) as well as

any other additional items determined appropriate by the Secretary with respect to the report for such year.

(3) Third Year Implementation Report. Not later than 3 months after the completion of the third implementation year under this section, the Secretary shall submit to the appropriate committees of Congress, and make available to the public, a report that includes with respect to such year, the items required under paragraph (1), as well as any other additional items determined appropriate by the Secretary with respect to the report for such year, and the following:

(A) An analysis of the cost-effectiveness and feasibility of expanding the use of predictive analytics technologies to Medicaid and CHIP.

(B) An analysis of the effect, if any, the application of predictive analytics technologies to claims under Medicaid and CHIP would have on States and the commonwealths and territories.

(C) Recommendations regarding the extent to which technical assistance may be necessary to expand the application of predictive analytics technologies to claims under Medicaid and CHIP, and the type of any such assistance.

(f) Independent Evaluation and Report.

(1) Evaluation. Upon completion of the first year in which predictive analytics technologies are used with respect to claims under Medicaid and CHIP, the Secretary shall, by grant, contract, or interagency agreement, conduct an independent evaluation of the use of predictive analytics technologies under the Medicare fee-for-service program and Medicaid and CHIP. The evaluation shall include an analysis with respect to each such program of the items required for the third year implementation report under subsection (e)(3).

(2) Report. Not later than 18 months after the evaluation required under paragraph (1) is initiated, the Secretary shall submit a report to Congress on the evaluation that shall include the results of the evaluation, the Secretary's response to such results and, to the extent the Secretary determines appropriate, recommendations for legislation or administrative actions.

(g) Waiver Authority. The Secretary may waive such provisions of titles XI, XVIII, XIX, and XXI of the Social Security Act, including applicable prompt payment requirements under titles XVIII and XIX of such Act, as the Secretary determines to be appropriate to carry out this section.

(h) Funding.

(1) Appropriation. Out of any funds in the Treasury not otherwise appropriated, there is appropriated to the Secretary to carry out this

section, $100,000,000 for the period beginning January 1, 2011, to remain available until expended.

(A) Independent Evaluation. The Secretary shall reserve not more than 5 percent of the funds appropriated under paragraph (1) for purposes of conducting the independent evaluation required under subsection (f).

(B) Application to Medicaid and CHIP. The Secretary shall reserve such portion of the funds appropriated under paragraph (1) as the Secretary determines appropriate for purposes of providing assistance to States for administrative expenses in the event of the expansion of predictive analytics technologies to claims under Medicaid and CHIP.

(i) Definitions. In this section:

(1) Commonwealths and Territories. The term "commonwealth and territories" includes the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, and any other territory or possession of the United States in which the Medicare fee-for-service program, Medicaid, or CHIP operates.

(2) CHIP. The term "CHIP" means the Children's Health Insurance Program established under title XXI of the Social Security Act (42 U.S.C. 1397aa et seq.).

(3) Medicaid. The term "Medicaid" means the program to provide grants to States for medical assistance programs established under title XIX of the Social Security Act (42 U.S.C. 1396 et seq.).

(4) Medicare Beneficiary. The term "Medicare beneficiary" means an individual enrolled in the Medicare fee-for-service program.

(5) Medicare Fee-for-Service Program. The term "Medicare fee-for-service program" means the original Medicare fee-for- service program under parts A and B of title XVIII of the Social Security Act (42 U.S.C. 1395 et seq.).

(6) Medicare Provider. The term "Medicare provider" means a provider of services (as defined in subsection (u) of section 1861 of the Social Security Act (42 U.S.C. 1395x)) and a supplier (as defined in subsection (d) of such section).

(7) Secretary. The term "Secretary" means the Secretary of Health and Human Services, acting through the Administrator of the Centers for Medicare & Medicaid Services.

(8) State. The term "State" means each of the 50 States and the District of Columbia.

Appendix C. Adjustment Factors

Application	Calculation	Percentage
The **Paid Amount Adjustment Factor** is applied to billed amounts for claims denied due to automatic edits and pre-payment review to estimate savings.	Ratio of paid amount and billed amount	Part B Individual: ..... 37% Part B Organization: ..... 75% DME: ..... 51% Outpatient: ..... 47% Hospice: ..... 63% Home Health: 100%
Note: The source of data is the Integrated Data Repository. Ratio calculated using claims in calendar year 2012. Part A is immaterial because there were no savings related to Part A (non-home health) services.		

Application	Calculation	Percentage
The **Appeals Adjustment Factor** is applied to the billed amounts for claims denied due to automatic edits and pre-payment review to estimate the impact of successful appeals on the savings.	Average percentage reduction in error rate due to claim payment denials overturned due to appeal	93.3%
Note: The adjustment factor was calculated by averaging the "Percentage of Change in Error Rate" for FY 2009 (7.7%) and FY 2010 (5.7%) in Appendix A of OIG Report A-01-11-00504.		

Application	Calculation	Percentage
The **Payment Suspension Adjustment Factor** is applied to amounts in escrow for providers on payment suspension on the last day of the reporting period to estimate the amount that will be used to offset overpayments referred to the MAC for recovery.	The ratio of the total amount of payments in escrow used to offset overpayments referred for recovery and the total amount in escrow prior to the payment suspension terminations.	96.3%
Notes: The source of data is the Fraud Investigation Database (amount in escrow prior to termination and amount of overpayment referred for recovery). Ratio calculated using suspensions terminated from July 2009 to June 2012.		

Application	Calculation	Percentage
The **Overpayment Adjustment Factor** is applied to overpayment amounts referred to the MAC for recovery to estimate the amount expected to be collected.	The ratio of the total amount of overpayments recovered by the MAC to the total amount of overpayments referred to the MAC for recovery; calculated separately for each contractor.	Zone 1:..... 14% Zone 2:..... 18.5% Zone 3:..... 18.5% Zone 4:..... 17% Zone 5:..... 19% Zone 7:..... 9% PSCs*: ..... 22% 40%
Note: The sources of data are CMSARTS (field A9) and monthly reports provided by the Medicare Administrative Contractors (MACs) to the ZPICs that document overpayment recoveries. The time period is July 2011 through June 2012. The amounts include all ZPIC/PSC providers on overpayment recovery and are not limited to those overpayment recoveries that are FPS specific. * The three Program Safeguard Contractors in Zone 6 have an adjustment factor of 40%. The Program Safeguard Contractor focused only on durable medical equipment issues has an adjustment factor of 22%.		

Application	Calculation	Percentage
The **Law Enforcement Adjustment Factor** is applied to the value of law enforcement referrals to estimate the expected savings.	The ratio of court ordered restitutions, judgments, fines, and settlements and the original amount at risk identified by the ZPIC	5.9%
The sources of information include the GAO Report GAO-12-820, HHS-OIG's IRIS system (accepted cases where the original source was a ZPIC/PSC there were closed by the HHS-OIG Office of Investigations) and the Fraud Investigation Database (estimated value of referral). The time period is July 2009 to June 2012.		

Application	Calculation	Percentage
The **Cost Avoidance Adjustment Factor** is applied to the value of costs avoided to estimate the portion of claims by a revoked provider that will continue to be billed by enrolled provider, using this as a proxy for legitimate claims	The ratio of billing for beneficiaries prior to revocation and billing for the same beneficiaries for similar services with different providers after revocation	Part B: 86.2% HHA: 45.2% Hospice: 23.5% DME: 87.7%

Application	Calculation	Percentage
Note: The source of data is the Integrated Data Repository. BETOS categories are used to analyze Medicare costs to identify similar services. All Healthcare Common Procedure Coding System (HCPCS) procedure codes are assigned to a BETOS category. BETOS codes are clinical categories. There are seven high-level BETOS categories: Evaluation and Management, Procedures, Imaging, Tests, Durable Medical Equipment, Other, Exceptions/Unclassified		

Appendix D. Acronyms

Acronym	Meaning
APD	Advanced Planning Document
BETOS	Berenson-Eggers Type of Service
CD	Compact Disc
CERT	Comprehensive Error Rate Testing
CHIP	Children's Health Insurance Program
CM	Center for Medicare
CMCS	Center for Medicaid and CHIP Services
CMS	Centers for Medicare & Medicaid Services
CMSARTS	CMS Analysis, Reporting, and Tracking System
CPI	Center for Program Integrity
DME	Durable Medical Equipment
FFS	Fee-for-Service
FTE	Full-Time Equivalent
GAO	Government Accountability Office
HCPCS	Healthcare Common Procedure Coding System
HHA	Home Health Agency
HHS	Department of Health and Human Services
IDR	Integrated Data Repository
IRIS	Investigative Reporting and Information System (An OIG system)
LCD	Local Coverage Determination
MAC	Medicare Administrative Contractor
MCO	Managed Care Organization
Medi-Medi	Medicare-Medicaid Data Match Program
MII	Medicaid Integrity Institute
MMIS	Medicaid Management Information Systems
NPI	National Provider Identifier
NSVC	National Site Visit Contractor
OEOCR	Office of Equal Employment Opportunity & Civil Rights
OFM	Office of Financial Management
OIG	Office of the Inspector General
One PI	One Program Integrity
PSC	Program Safeguard Contractor

Acronym	Meaning
PTAN	Provider Transaction Access Number
RAC	Recovery Audit Contractor
ROI	Return on Investment
SBJA	Small Business Jobs Act of 2010
TAG	Technical Advisory Group
TDD	Telecommunication Device for the Deaf
TIN	Tax Identification Number
T-MSIS	Transformed Medicaid Statistical Information System
TTY	Teletypewriter or Text Telephone
UPIC	Unified Program Integrity Contractors
ZPIC	Zone Program Integrity Contractor