Detecting and Preventing Fraud, Waste and Abuse:
Using Analytics to Help Improve Revenue and Services
Government Areas for Fraud and Improper Payments Review

- Tax & Revenue
- Medicaid and Medicare
- Food & Nutrition Programs
- Improper Payments
- Unemployment Insurance
- Worker’s Compensation

Statewide Fraud Analysis System
Improper Payments = Intentional Fraud or Unintentional errors
- usually referred to as ‘Fraud, Abuse and Waste’

- Eligibility for Benefits: healthcare, insurance, Medicare (65+), Medicaid (low income), social programs (TANF, Food assistance, Child Care, Housing, etc.)
- Healthcare insurance claims: Service or equipment by provider or subscriber
- Medicaid (low income health): Service or equipment by provider or beneficiary
- Taxes: Income tax, Personal Property Tax, Real Estate Tax, Employment Tax, Cigarette or Liquor taxes, other taxes
- Intra-Government: Agency/Department Personnel credit cards, Contracting, Procurement
- Finance: banking, credit card, identity fraud
ANALYTICS is the new ‘holy grail’

Analytics augments existing personnel and programs to optimize results

– Personnel productivity and job satisfaction
– Overlays existing applications and programs
– Provides improved ‘leads’ for review and investigations
– Helps to prioritize cases for investigation
– Can be implemented with minimal or no disruption applications and programs
– Federal programs encourage and fund analytics for program improvement and to target fraud and waste (HHS, DOJ, others)
Fraud and Waste detection components

- Identity resolution
- Industry specific solutions, software, tools
- Department specific algorithms
- Rules-based decision analysis
- Patterns and trends analysis
- Text Analytics
- Advanced Case Management
- Predictive modeling and Predictive analytics
- Geographic Information Systems (GIS) Geospatial mapping
- Research analysts, fraud identification and recovery specialists
- Collections Optimization
A Few Healthcare Examples: How Advanced Analytics Targets Fraud, Errors and Improper Activity

<table>
<thead>
<tr>
<th>Outlier Detection</th>
<th>Data Mining &amp; Clustering</th>
<th>Predictive Models</th>
</tr>
</thead>
<tbody>
<tr>
<td>Which providers are behaving differently than others (in a suspicious way)?</td>
<td>What are patterns of non-compliant (and criminal) behavior that I don’t know about?</td>
<td>Which providers are likely to behave “badly” in the future?</td>
</tr>
<tr>
<td>How “good” or “bad” is a provider behaving, relative to other providers?</td>
<td>If I catch a “bad” provider, how can I find out who else is behaving like that?</td>
<td>What are the indicators that a provider’s behavior is getting “better” over time? “Worse” over time?</td>
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<td>What is “normal” behavior?</td>
<td>Are there groups of providers who behave the same way?</td>
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Adding Analytics helps to detect fraud, waste and abuse

Traditional Approach

1. Receive Tips
2. Identify the Allegations
3. Analyze the Claims
4. Build the Case
5. Recommend Next Steps

- People-intensive
- Time-consuming
- Fraught with errors
- Overwhelming

Focus areas for consideration are discussed

Analysis techniques are used to:
- Identify who is who and who knows who
- Determine who is behaving differently and how

Technology Based Approach

Investigators conduct further investigation

Reports are reviewed and actions planned

Analysis Modules and Business Logic Processor are used to classify cases:
- Priority Investigation
- Investigate
- Review
- No Action
Predictive Analytics Solution Concept

**Screen Claims**
- Score
- Select

**Not Selected**
- Pay Claims

**Selected**
- Review Claims
- Adjudication Results

**Test and Refine Screening Rules**
- Score
- Select
- Simulate

**Probability Sampling**
- Identify New Types of Fraud, Waste, and Abuse

**Develop Screening Rules**
- Predictive Modeling
- Identity/Relationship Resolution
- Profile Analysis

**Predictors**
- Claim Data
- Provider Data
- Beneficiary Data
- Complaints
- 3rd Party
- Etc.

**Outcomes**
- From Prior Investigations
- From Predictive Analytics
  - Claims Screening - Pilot Tests
  - Probability Samples

**Integrated Predictive Analytics Data**
The Analytics Toolkit: Solutions, Software, Techniques and Tools

Data from internal systems
Limited external data
Manually working lists
Reliant on IT

Scorecard & Matching

Data Warehouse & Query Tools

Integrated Case Management

Compliance Data Mining

Predictive Compliance

More scientific data driven approach to case selection
Scoring, ranking, and classifying taxpayers based on behavior
Discovering new patterns of non-compliance
Interactive access to and analysis of data
Auditor-oriented tools independent of IT

Automated Case Creation (desk and field)
Link to data warehouse
Reliant on IT

Case selection at time of processing
Predict fraud based on historical behavior
Early detection of deviant non-compliant trend
Strong voluntary compliance effect
Independent of IT

Internal & External (limited) sources
Comprehensive external data
Single View of Taxpayer
Some automation of workflow
Reliant on IT

Comprehensive external data
Single View of Taxpayer
Some automation of workflow
Reliant on IT
## Actual Results for Government Agencies

<table>
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<tr>
<th>Client</th>
<th>Program</th>
<th>Dollar value of claims identified for investigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Government</td>
<td>Medicaid</td>
<td>$140 million</td>
</tr>
<tr>
<td>State Revenue Agency</td>
<td>Tax/Revenue</td>
<td>$1.2 billion (over 6 years)</td>
</tr>
<tr>
<td>State Social Services Agency</td>
<td>Food &amp; Nutrition</td>
<td>$2 million (annually)</td>
</tr>
<tr>
<td>Federal Government Agency</td>
<td>Improper Payments to Vendors</td>
<td>$13 million</td>
</tr>
</tbody>
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Where to Start? It depends…

- Shortfall in tax revenue due to underpayments or non-payments
- Health care claims or Medicaid/Medicare payment shortfalls or challenges
- Cross - state employment and residence: benefits and payments may be fraudulent
- Government personnel credit cards – improper use
- Government procurement: contracts – little or no oversight
- Social program eligibility – are the people needing the help getting the help?
- Personnel shortfall – inspectors and auditors
- Building permits not linked to tax assessor for up-to-date tax assessments
QUESTIONS and ANSWERS ?