Client Perspectives and Case Studies

Ted Doyle, VP, Fraud Analytics Client and Industry Innovation, OptumInsight

"The right way to play the fraud-control game is to rely on **people** and to equip them with the very best technical **tools** available. If our major health insurers make the mistake of trusting systems to play the fraud-control game for them, we all lose. Fraud perpetrators run rings around such defenses."

License to Steal: Why Fraud Plagues America's Health Care System,
Malcolm Sparrow, Westview Press 1996, p. 140

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Perspective – What are the numbers?

$2.5T	Amount the U.S. spent on health care in 2009[1]
$200B	Estimated amount lost to fraud[2]
$124M	Estimated amount paid for fraudulent claims submitted by Top 10 Most Wanted fraudsters[3]
903	Number of new health care fraud prosecutions initiated in the first 8 months of 2011 (85% increase over FY 2010)[4]
$17.3M	ROI for every $2M spent on fraud recovery[5]
50x >street value	Medical identity vs. financial identity[6]

[1]NHE Fact. Sheet https://www.cms.gov/NationalHealthExpendData/25_NHE_Fact_Sheet.asp#TopOfPage
[2]October 2009 Thompson Reuters Report. http://www.reuters.com/article/2009/10/26/us-usa-healthcare-waste-idUS TRE59POL320091026.
[3]NHCAA. http://www.nhcaa.org/eweb/StartPage.aspx
[4]Coalition Against Insurance Fraud. http://www.insurancefraud.org/healthinsurance.htm
[5]Ibid
[6] McKay, Jim. "Identity Theft Steals Millions from Government Health Programs." Government Technology. Feb. 13, 2008. Available online at www.govtech.com.

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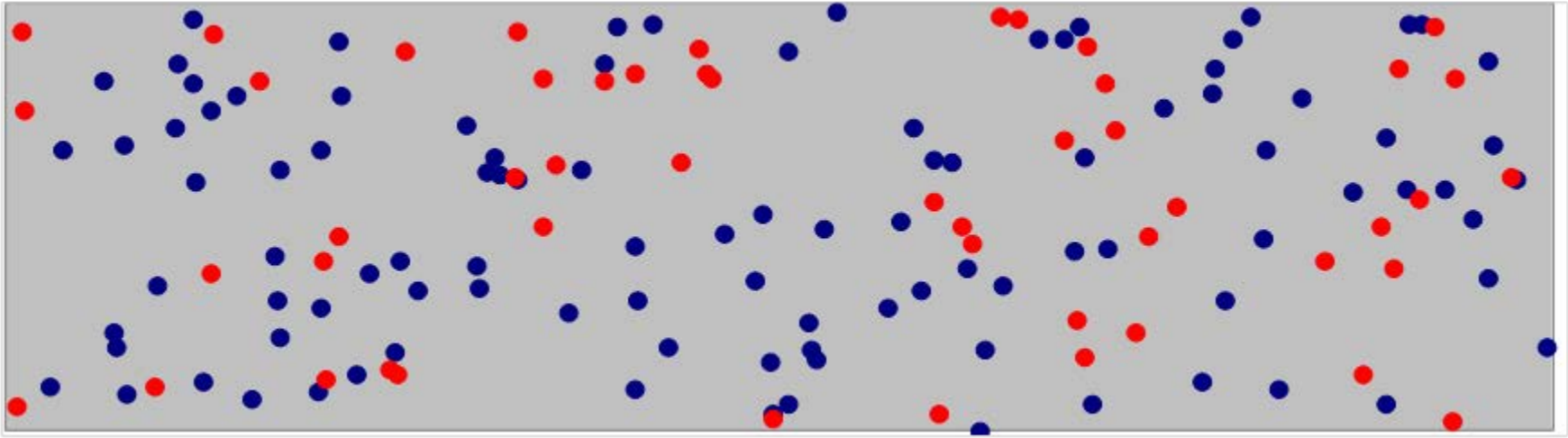
The Challenge of Improper Claim Detection



- This space represents the universe of claims
- Manual clinical review is impossible for entire space
- Goal: Stop as many reds (improper) for review as possible while keeping the number of blues (proper) identified to a minimum

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Refresh - Advanced Analytics are Required

Using hybrid analytics for fraud detection

Enterprise Data	For known patterns	For unknown patterns	For complex patterns	For unstructured data	For associative linking
	Rules Rules to surface known fraud behaviors **Examples**: • Inaccurate eligibility information • Unlicensed or Suspended Provider • Daily provider billing exceeds possible • CPT up-coding • Value of charges for procedure exceeds threshold	**Anomaly Detection** Algorithms to surface unusual (out-of-band) behaviors **Examples:** • Abnormal service volume compared to similar providers • Ratio of $ / procedure exceed norm • # patients from outside surrounding area exceeds norm	**Predictive Models** Identify attributes of known fraud behavior **Examples:** • Like patterns of claims as confirmed known fraud • Provider behavior similar to known fraud cases • Like provider/ network growth rate (velocity)	**Text Mining** Leverage unstructured data elements in analytics **Examples**: • Claim/call center notes high-lighting key fraud risks (e.g., policy questions) • Static data elements (e.g., address) used for linking suspicious activity • Integration of rich case file information	**Network Analysis** Associative discovery thru automated link analysis **Examples:** • Provider/claimant associated to known fraud • Linked members with like suspicious behaviors • Suspicious referrals to linked providers • Collusive network of providers & referrals

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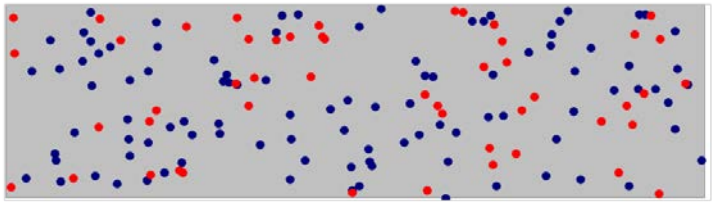
Pre-Pay Fraud and Abuse Detection Methods

Provider Flags – a list of known providers with issues is compiled and all or a subset of claims are stopped for review

Challenger Analytics – outlier analysis & soft rules create dynamic provider flagging

Observable

Patterns



Inference

Aberrant Billing Pattern (ABP) Algorithms – clinical expertise crystallized into coding logic, patterns are identified at the claim level

Predictive Model – detecting more advanced improper billing patterns using interactions among many variables

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Health Care Fraud by Dead MDs

Dead Doctors Used to Scam Government Money

- http://hsgac.senate.gov/public/_files/OPENINGSTMTCarlLevin7908.pdf
- Senate Hearing Viewable at: http://hsgac.senate.gov/public/index.cfm?FuseAction=Hearings.Hearing&Hearing_id=eb856347-01f1-4b55-826e-a9bf5247072c
- Fraudulent providers submitted claims based on “orders” from some doctors who were **dead for 10 years or more**
- From 2000 to 2007, Medicare **paid between $60M & $93M** for claims where the “ordering” or prescribing doctor had been **dead for at least 12 months**

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Billing for Members not Seen or Deceased

- Aug. 2011 - Physician indicted on charges that he committed more than $100,000 in health care fraud by billing for patients not seen — or who were dead
  - 27 counts of health care fraud, punishable by up to 10 years in prison
  - three counts of mail fraud, punishable by a maximum of 20 years
  - one count of aggravated identity theft, punishable by a mandatory two years
- Allegedly billed for office visits during times when patients were not present, out of town and hospitalized, at times when defendant was outside the US States, and at times when office was closed
- Court records allege that more than $100,000 was fraudulently billed

http://www.mysanantonio.com/news/local_news/article/S-A-doctor-indicted-in-healthcare-fraud-case-1697720.php#ixzz1UTzJOPdH

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Billing for the Deceased

Health Care Fraud by Dead MDs

- Detection Method
  - Matching: member and provider info to death master file
  - Anomaly Detection: address aberrant behavior for suspect providers in relation to peers provider profile and member profile
  - Rules then to address established behavior of billing for “deceased scenario”

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Fraudulent Billing for “Ordered Services”

- Independent Diagnostic Testing Facilities (Labs)
- Clinical Testing Laboratories; Durable Medical Equipment
- Home Health Services; Hospice Services

Equals

- Tests & Equipment Not Really Ordered and Likely NOT Performed
- Tests For Which A Clinical Relationship Does NOT Exist

Detection

- Anomaly Detection: Algorithms to surface unusual behaviors
  - Abnormal service volume compared to similar providers
  - Ratio of dollars to procedure exceed norm
- Network Analysis: Associative discovery thru automated link analysis
  - Provider/claimant associated to known fraud
  - Linked members with like suspicious behaviors
  - Suspicious referrals to linked providers
  - Collusive network of providers & referrals

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Anorectal Manometry

March 2010: California Medical Clinic Owner Convicted in $3.4M Fraud Scheme

- Clinic owner found guilty of 22 counts of health care fraud and six counts of money laundering for a scheme that billed more than $3.2 million in only one month for medical services that were not provided
- Charges related to approximately 6,000 health insurance claims for more than 800 patients supposedly treated at clinic, USA Independent Medical Corp
- No patients received medical services, and no doctors provided any medical services
- USA Independent billed for services such as echocardiography, office evaluations, ultrasounds, electromyography studies of the anal or urethral sphincter, and Anorectal Manometry.
- Recently sentenced to 5 years in state prison & financial restitution
- Medicare paid over $30 Million for suspected fraud related to ARM (CPT: 90911, 91010, 91122, 43236)

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Anorectal Manometry
Detection Method & Lessons Learned

- How does fraud or “over-utilization” like the ARM Occur?
- How can it be prevented?
- How can it be detected?

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Anorectal Manometry – Detection Advanced Analytics are Required

For unknown patterns

Anomaly Detection
Algorithms to surface unusual (out-of-band) behaviors

Examples:
- Abnormal service volume compared to similar providers
- Ratio of $ / procedure exceed norm
- # patients from outside surrounding area exceeds norm

For complex patterns

Predictive Models
Identify attributes of known fraud behavior

Examples:
- Like patterns of claims as confirmed known fraud
- Provider behavior similar to known fraud cases
- Like provider/ network growth rate (velocity)

For associative linking

Network Analysis
Associative discovery thru automated link analysis

Examples:
- Provider/claimant associated to known fraud
- Linked members with like suspicious behaviors
- Suspicious referrals to linked providers
- Collusive network of providers & referrals

Hybrid Approach
Applies combination of multiple approaches at entity and network levels

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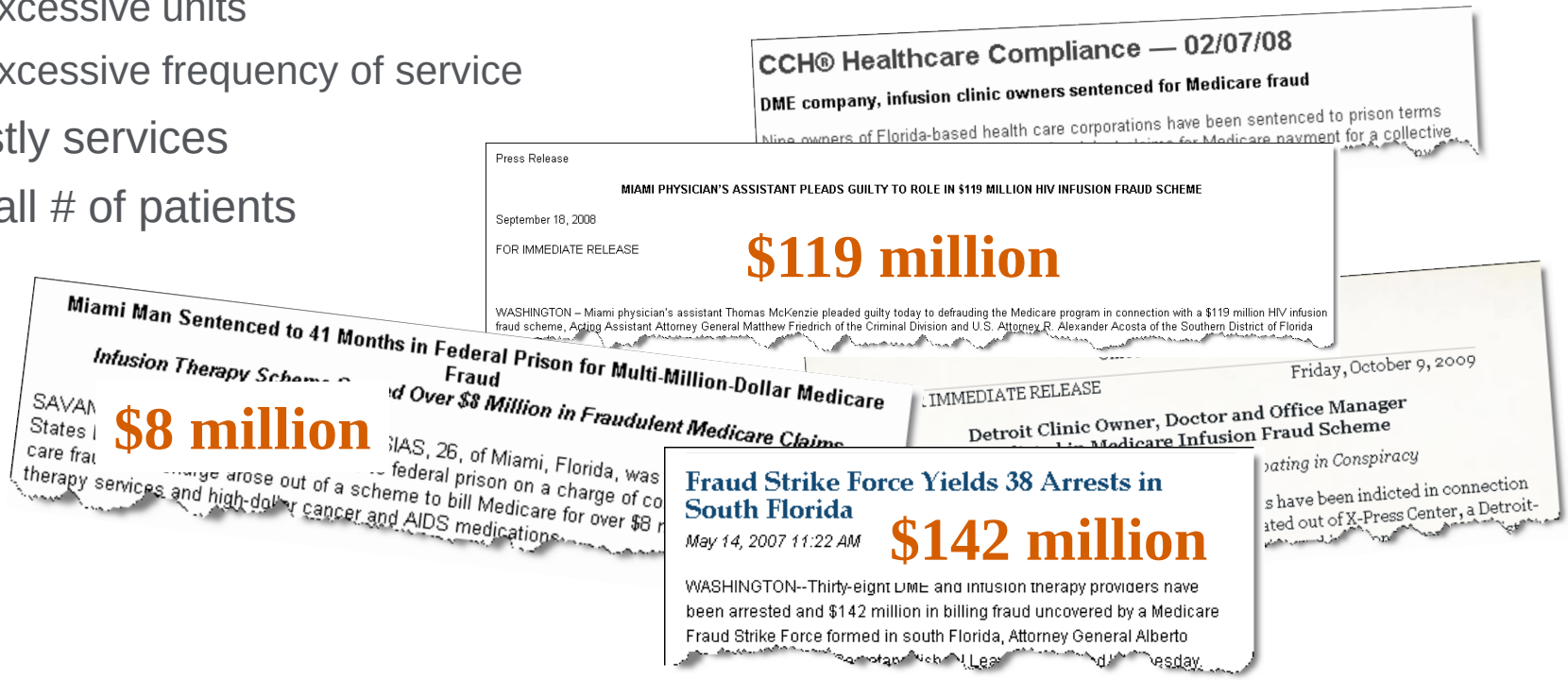
Infusion Therapy

- Scheme: Over-utilization of Infusion Therapy Drug (ITD) codes
  - Excessive units
  - Excessive frequency of service
- Costly services
- Small # of patients



Infusion Therapy

- Scheme targets vulnerable populations
  - Lower income/high unemployment
  - HIV diagnoses
  - Fraudsters buy member IDs
    - From other fraudulent providers (list sharing)
    - From patients themselves – offer kickbacks
      - Cash
      - Prescriptions, drugs, appliances, food
- Providers enlist physician complicity or bill using their provider number without doctor knowing
  - Often older physicians
  - Pay kickbacks for referrals
- Providers enroll with Plan to get new provider number

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Infusion Therapy: Detection Approaches

- Scheme involved billing excessive units and frequency of costly drugs and billing for a small # of patients with only a few E&M codes being billed (patients not really being seen by the treating docs
- Indications that fraudulent providers were buying member IDs
- Retrospective detection involved looking for paid claims with a pattern of utilization of infusion therapy codes with a high number of units (high dosage), variety of Infusion Therapy Drug (ITD) codes billed, small number of patients, and high reimbursement rate due to high frequency of service delivery for these codes
- Patterns of the same diagnosis codes were detected
- Patterns of drugs billed daily that should not be administer daily from a clinical perspective or medically appropriate perspective

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Infusion Therapy: Detection Approaches

Detection

- Predictive Scoring Model (PSM)
- Peer Grouping
- Provider Profiling
- Link Analysis
- Static Code Analysis
- Prospective Rules

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Mirzoyan-Terdjanian “Family”– Organized Crime

73 Members and Associates of Organized Crime Enterprise, Others Indicted for Health Care Fraud Crimes Involving More Than $163 Million

- The international organized crime enterprise known as the Mirzoyan-Terdjanian, fleeced the health care system through a wide-range of money making criminal fraud schemes. The members and associates located throughout the United States and in Armenia, perpetrated a large-scale, nationwide Medicare scam that fraudulently billed Medicare for more than $100 million of unnecessary medical treatments using a series of phantom clinics
- Seventy-three defendants, including a number of alleged members and associates of an Armenian-American organized crime enterprise, were charged in indictments across five states with various health care fraud-related crimes involving more than $163 million in fraudulent billing
  - Defendants operated at least 118 different phony clinics in 25 states

Source: Dept. of Justice. http://www.justice.gov/opa/pr/2010/October/10-dag-1140.html
http://en.wikipedia.org/wiki/2010_Medicaid_fraud

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Social Network Analysis Makes Collusion Visible

- Optimal Social Network Analysis (SNA) identifies relationship clusters leveraging “big data” and advanced linking to reveal the relationships that organized criminal networks try so hard to keep hidden, enabling the effective investigation and termination of insidious and costly fraud rings
- SNA which leverages the right data and analytics can reveal
  - Patient relationships with known perpetrators of health care fraud
  - Links between recipients, businesses, and assets, as well as relatives and associates
  - Links between licensed and non-licensed providers
  - Suspect relationships of employees, suppliers, and partners with patients and providers

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NATION NOW

$375-million Medicare fraud: Dallas doctor accused in record case

Comments 103 Share 577 +1 15

By Richard A. Serrano
February 28, 2012 | 9:00 a.m.

Washington— Federal law enforcement officials announced what they called the largest healthcare

Health care fraud: Not a faceless crime any longer

ASSOCIATED PRESS

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WASHINGTON — Health care fraud once was a faceless crime. Now it has a mug shot, even a smile.

Medicare and Medicaid scams cost taxpayers more than $60 billion a year, but bank holdups are more likely to get greater attention.

The government wants the public's help in trying to catch more than 170 fugitives wanted for fraud, so it's

L.A. NOW

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Former church pastor sentenced in Medicare fraud scheme

February 28, 2012 | 11:43 am

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The Detroit News

Metro and State Wayne County

Home News Sports Business Autos Entertainment Lifestyle Opinion Photo

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MARCH 16, 2012 AT 7:07 PM

3 plead guilty in Livonia Medicare fraud case

BY THE DETROIT NEWS COMMENTS

Livonia— The owners of three Livonia clinics pleaded guilty this week in a $5.4 million Medicare fraud scene, federal officials said.

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JUSTICE NEWS

Department of Justice

Office of Public Affairs

FOR IMMEDIATE RELEASE Friday, March 16, 2012

Miami-Area Resident Pleads Guilty to Participating in $200 Million Medicare Fraud Scheme

WASHINGTON – A Miami-area resident pleaded guilty yesterday for his role in a fraud scheme that resulted in the submission of more than $200 million in fraudulent claims to Medicare, announced the Department of Justice, the FBI and the Department of Health and Human Services (HHS).

ONGOING COVERAGE

Health Care Reform

Health Care Reform News and Articles

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Vickie Rhea Yearwood, an Oklahoma City mental health counselor, is accused of Medicaid fraud for second time

An Oklahoma grand jury has indicted an Oklahoma City mental health counselor who already is on probation for Medicaid fraud. Vickie Rhea Yearwood has agreed to make restitution, officials said.

By Nolan Clay | Published: April 6, 2012

An Oklahoma City mental health counselor is accused of cheating taxpayers out of $34,000 while already on probation for Medicaid fraud.

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Identification of “Unlikely” Claims Multiple Methods

Predictive Models & Analytical Targets

- Codes that can be used to bypass conventional claims edits
- Provider’s historical prevalence of up-coding
- Hours of work
- Changes in provider behavior particularly involving increasing of claims filed such as:
  - Likelihood that certain claims should have been grouped
  - Scores based on multiple factors

Dimensional Modeling Anomalies Flag Claim as High Risk for “Overpayment”

- Unlikely or infrequent relationships
  - Between diagnosis and procedures within a claim
  - Between procedures from different claims for the same patient

Peer Comparison Approach

- Outlier within specialty/region for performing high cost procedures based on synthetic (data-driven) specialty groupings
- Outlier for ordering certain tests or treatment

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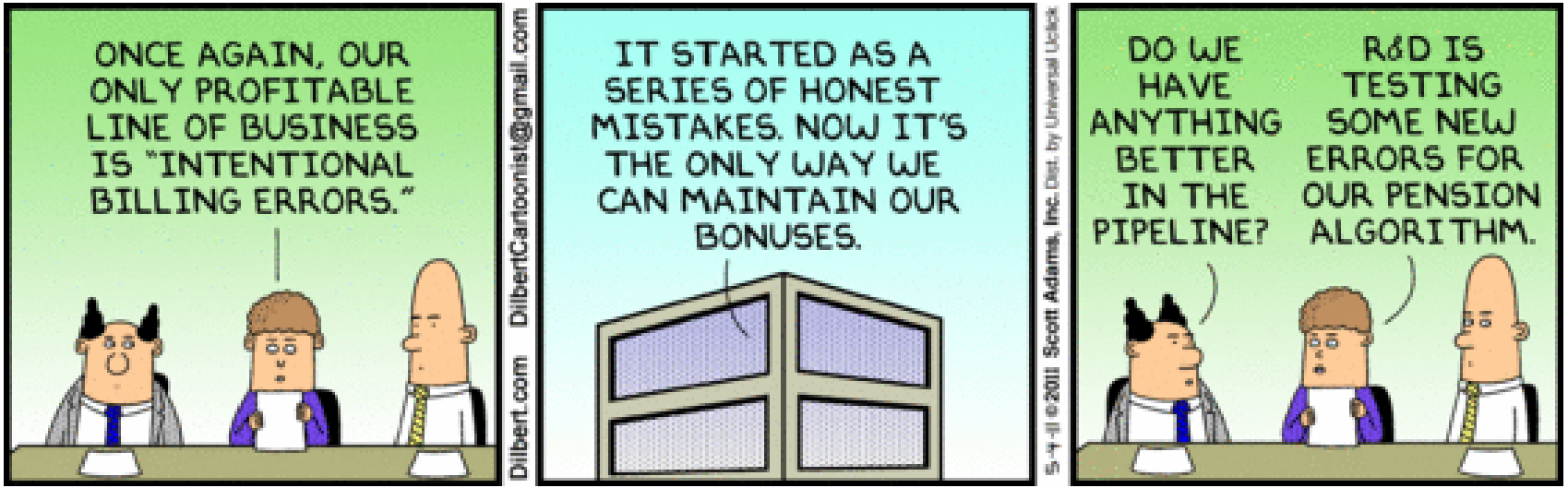
Fraudsters Use Advanced Techniques

Advanced Analytics are an Absolute



Dilbert Cartoon May 2011 http://dilbert.com/strips/comic/2011-05-04/

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In Summary

- **Hybrid Analytical Approach** could have found all "headline makers" sooner, and captured multiple parties involved.
- Public Sector has the **same challenges** as the private sector.
- As **identity theft and collusion** become more prevalent in health care, the analytical methods necessary to spot them need to become more advanced.
- Time is money – let your investigators work on the highest probability, highest ROI cases first – **efficiency** gains.
- It is important to use ALL the data available in a singular view.

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Thank you

Advanced Analytics in Fighting Health Care Fraud

Julie Malida, SAS Institute Inc.
Ted Doyle, OptumInsight, UnitedHealth Group

May 10, 2012

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Making Headlines

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Men sentenced in Medicare fraud case

Thursday April 7, 2011, Police News, Longview Texas

- 2 men pled guilty, sentenced to Federal Prison, $1.7M restitution.
- 500 Texas and Louisiana Medicare Beneficiaries Targeted, several other co-conspirators involved.
- Spanned August 2005 –April 2008, DME fraud.
- Marketing $5,000-$7,000 per “ortho kit” (braces, wraps, supports) not prescribed by physician, not ordered by Beneficiaries.
- Physician signatures forged, false claims submitted, identity theft, deceased beneficiaries.

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Illinois Man indicted in $20M Medicare Fraud

March 7, 2012, My SuburbanLife.com, Berwyn Illinois

- John Gabriel, Jr. (no medical training) owned two health care companies in Chicago and Oak Forest, Illinois, submitted $44M in Medicare charges since 2006.
- Indicted on 69 different charges, 11 defendants named in the case, including 4 nurses, 2 doctors.
- Used patient information to file claims with Medicare for treatments that were unnecessary or never provided.
- 43 counts of health care fraud, 11 counts of money laundering, 4 counts of income tax evasion.
- Federal Government seeking $20M in restitution.

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Largest Medicare Fraud Scheme Ever

February 2011, Department of Justice

- More Than **$225 Million in False Billing**
- Doctors, Nurses, Health Care Company Owners and Executives Among the **111 Defendants Charged**; Law Enforcement Execute 16 Search Warrants
- 9 charged in Houston for $8 million in fraudulent Medicare claims for physical therapy, durable medical equipment, home health care, and chiropractor services.
- 5 charged in Los Angeles for a scheme to defraud Medicare of > $28 million by submitting false claims for DME & home health care.
- Eleven charged in Chicago for conspiracies to defraud Medicare of $6 million related to false billing for home health care, diagnostic testing, and prescription drugs.
- DOJ Press release: “today’s operation is the largest-ever federal health care fraud takedown”.

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Houston Chronicle, February 8, 2012

- Hospital administrator at Riverside General Hospital charged in $116M Medicare mental health scam.
- Kickbacks were paid to patient recruiters to refer to 1 of 6 clinics.
- Kickbacks were also paid to owners of homes for elderly/disabled.
- Paid patients with cigarettes, food, coupons to entice therapy.
- “Doctor” steering the care was not licensed to practice medicine in Texas.

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April 26, 2011

- Eight residents of greater New Orleans arrested – part of organized crime ring.
- $12M in fraudulent Medicare/Medicaid claims.
- 10 different clinics submitted diagnostic service claims for services not rendered or not medically necessary.
- Marketers and recruiters located, paid kickbacks to, and transported patients to and from clinics.
- Patients were given prescriptions for pain meds in return for undergoing unnecessary tests.

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Richmond Times-Dispatch

March 21, 2012

- A Virginia pastor faces 45 years in prison for alleged health care fraud that cost Medicaid system $1.5M. Now, he moved to NC.
- Co-conspirator, the “recruiter” faces 5 years in prison and $250,000 fine.
- He paid $545,000 in kickbacks over 2 years to the “recruiter”.
- Richmond, VA saw a 236% increase in the number of Intensive In-home Therapy services providers between 2006 and 2010.
- This same pastor was also a motivational speaker and “apostolic overseer” to 30 churches. His website says he “advises marketplace leaders how to use kingdom principles to sustain their businesses”.

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What do they all have in common?

- Could have been spotted earlier with appropriate advanced analytics (each spanned years)
- Collusion (multiple parties)
- Crossing borders
- Outlier billing behavior

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The Financial Damage

- A Lucrative Endeavor:
  - As much as $800B lost to Fraud, Waste and Abuse annually in the U.S. alone
  - $70B (NHCAA) to $260B (GAO) is estimated to be true fraud.
  - Medicare and Medicaid alone lose over $70B annually to true fraud.
  - Losses are 100 times the credit card industry, but the spend to fight fraud is one tenth as much.
- Global Problem – losses due to health care fraud:
  - 3-10% in U.S.
  - 6% in European Union
  - 2-10% in Canada ($360M to $1.8B annually)
  - Other nations establishing anti-fraud agencies: Australia, South Africa
- “Professional” Fraud is on the rise:
  - Organized Crime
  - Collusion
  - Crossing Borders

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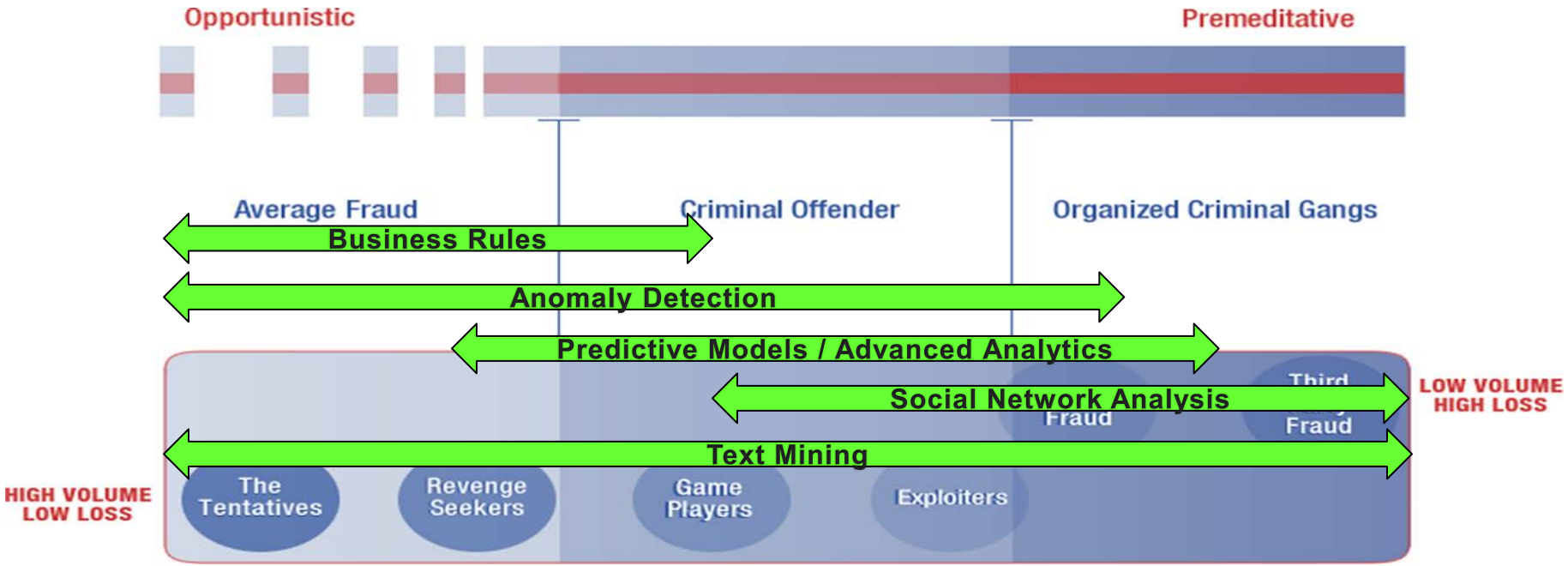
Solution: A Hybrid Approach



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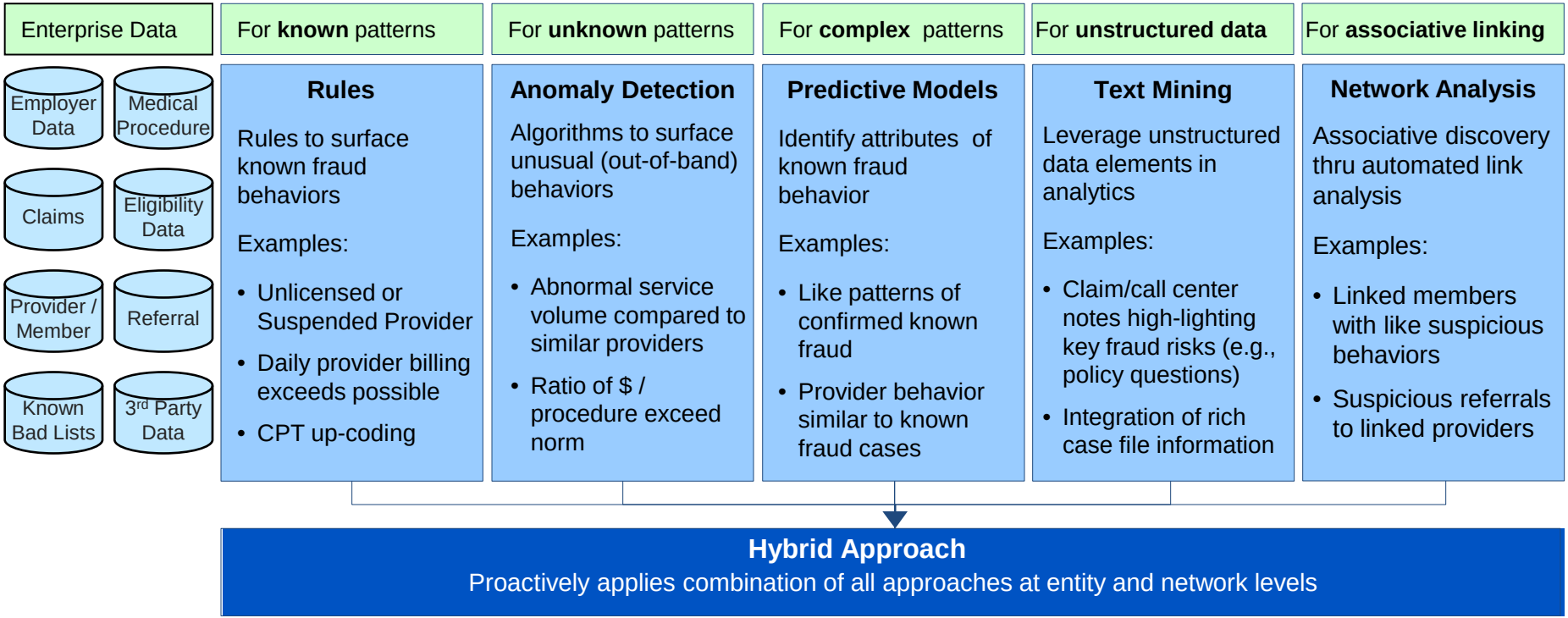
Advanced Analytics are Required

Using hybrid analytics for fraud detection



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