Mental Health Fraud and Abuse:

Predicting Behavioral Patterns of Mental Health Providers and Coding

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National Government Services

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Disease Management – The Transition

Fraud	Abuse
Intentional misrepresentation to gain a benefit	Unsound business practice that results in undue remuneration

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Fun Facts

~$2.9 Trillion

Total health care spent

5th largest economy - ahead of the UK and France

~$239 Billion

Mental health spend

$272 Billion

Total FA best guess

Approximately 11% of total spend

$35 Billion

Mental health FA best guess

Approximately 13% of mental health spend

Fun Facts

If we can decrease mental health FA by 1% - Savings of:

~$4.2 Billion

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Historical Trends in Mental Health

Overutilization of mental health services

Billing for care and services that are provided by an unauthorized, unqualified, or unlicensed person

Diagnosis does not correspond to treatment rendered

Breach of the terms and conditions of participation agreements, or a failure to comply with requirements of certification, or failure to comply with the provisions of the claim form

Historical Trends in Mental Health

- "Canned Notes"

- Double billing

- Excessive use of CPT or H Codes

- Billing for services not rendered

- Billing for excessive recipients per workday

- Excessive billing beyond a 24 hour period

- Altered signatures on documentation

Challenges in Fighting Mental Health FWA

Why do it?

- Numbers game – billions of claims processed everyday
  - Mental health is a small percentage

- "Pay and chase" dominates the healthcare system

- Prevention and detection is highly resource intensive

- Minimized risk – soft penalties
  - This is changing slowly

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What Can We Do? – Traditional Modeling

Data matching and rule generation

Finds patterns in procedure codes, dates, costs, etc. assigns groups and weights then applies basic statistics to generate a risk score

Predictive Statistics

Same as above only with higher level analysis to predict trends and risk scores – typically in-house solution using regression, clusters, density

Both strive for the same outcome – find causality, relationships and patterns between explanatory and dependent variables to predict future behavior

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Does it Work?

Every health care insurer invests aggressively to pursue FA and have done so for decades yet it is still rampant

Remember the waste statistics:

$272 Billion

Despite all of our years of experience and resources we are still missing the mark – Why?

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Ask the Experts

"The future is already here – it's just not evenly distributed yet."

William Gibson

"Prediction is very difficult, especially about the future"

Niels Bohr

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"The Best Predictor of Future Behavior is Past Behavior"

Shout Out – Who said this?

Mark Twain – "…no occurrence is sole and solitary, but is merely a repetition of a thing which has happened before…"

Karl Marx? – 1799 attributes it to Hegel

Machiavelli? – (1469 – 1527) variation on the theme

Cicero – (106 – 43 BCE) variation on the theme

When did it enter the realm of scientific certitude?

- Theory of planned behavior developed by Icek Ajzen in 1985 to strengthen the theory of reasoned action

  - Useful but lacks real-world effectiveness

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So Why is it Failing?

Rational Behavior

▪Assumes behaviors evolve in a "normal", "rational" way and that the models interpretation of "best interest" can be applied universally

▪Set rules will be followed

Environments will remain fairly static

▪The health care environment is about as fluid as can be

▪Codes for payment change often

Slow to change

▪Depending on your model there could be a significant lag between a behavior change or emergence and its ability to be predicted

▪By the time you catch up behavior may have already changed

Relies on large historical data sets

Can be "shocked" into disarray – 2008 crash

But it's still a valuable tool – needs to be repurposed

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Turning Modeling on Its Head – Predicting the Present

- Are we predicting the future or reporting the past?

- Real time versus retrospective as first line of defense

- Present events shape future actions

- As events change reactions adjust fluidly – proactive and agile response versus reactive response

- Requires a paradigm shift from reporting the past to adapting to the present

- Allows a glimpse into the mind of the fraudster

- Google is doing it so it must be good

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Neural Networks

This is not new but may be new to us

We can "train" networks to predict and create real time models

These models can change and adapt as new information is received

Real Time Modeling

The "neuro-fuzzy system"

- Combines the human reasoning ability of fuzzy logic with the learning and connectionist structure of a neural networks

- Traditional predictive analytics fits into this

Within the present data predictive analysis is applied, but not to the future but for similar occurrences

Claim trends occurring now can be identified as quickly as the data is received

This makes for targeted analysis of trending claims

- We can focus on what is occurring now instead of trying to predict what might occur in the future

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Getting Back to Mental Health

- More people are trying to do it

- Sophistication of the schemes are increasing

- It's international

- More people are utilizing it as a benefit

- It's still a relatively smaller data set

- But…..It's weaknesses can also be its strength

- Because it is still relatively small we can better observe changes

- …And, because it's relatively small we have a better chance of responding rapidly

What to Do

Apply known rules and behaviors as our baseline

Develop trend reporting

▪Watch lists for "hot" codes

▪Watch lists for "hot" providers

▪Watch for relationships

  ▪ "Hot" providers using "hot codes"

▪Known rule violations – treatment outliers, divergence from standards of practice

▪The Model

Case Study

Analysis of claims paid

2010 – 2012	25,000 Random procedure codes
$1 - $25k Excluded	$100K+ Excluded

18,237 Remainder

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Results

Claim Dollars	Model RSQ	N	Captured
$25,000 - $40,000	0.837	9,390	7,859
$40,000 - $60,000	0.8565	3,045	2,608
$60,000 - $80,000	0.8901	4,625	4,117
$80,000 - $100,000	0.9124	1,267	1,156
		18,327	
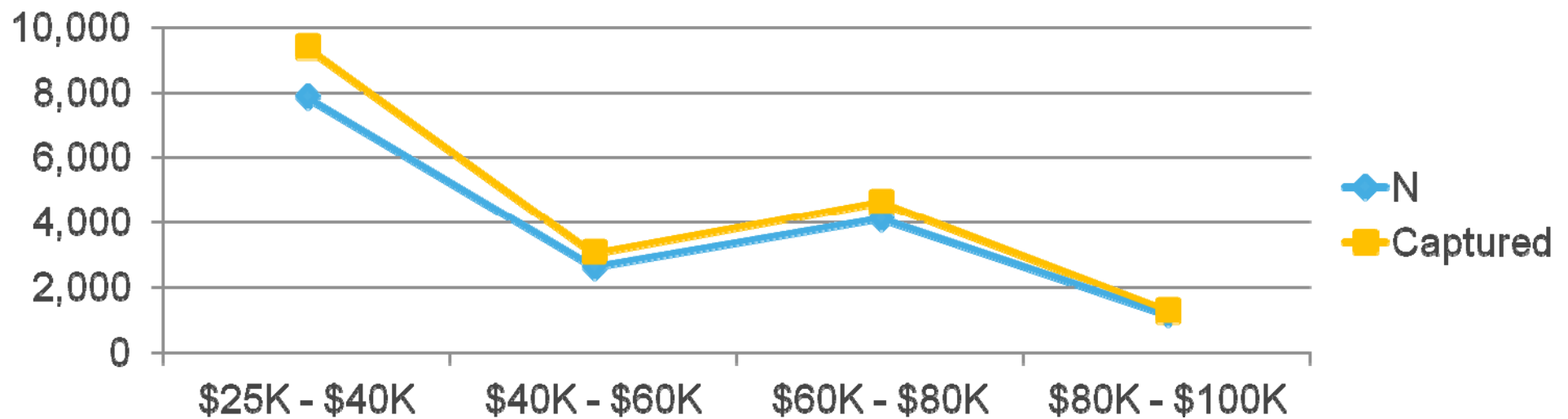
Reduce Time to 6 Months of Data
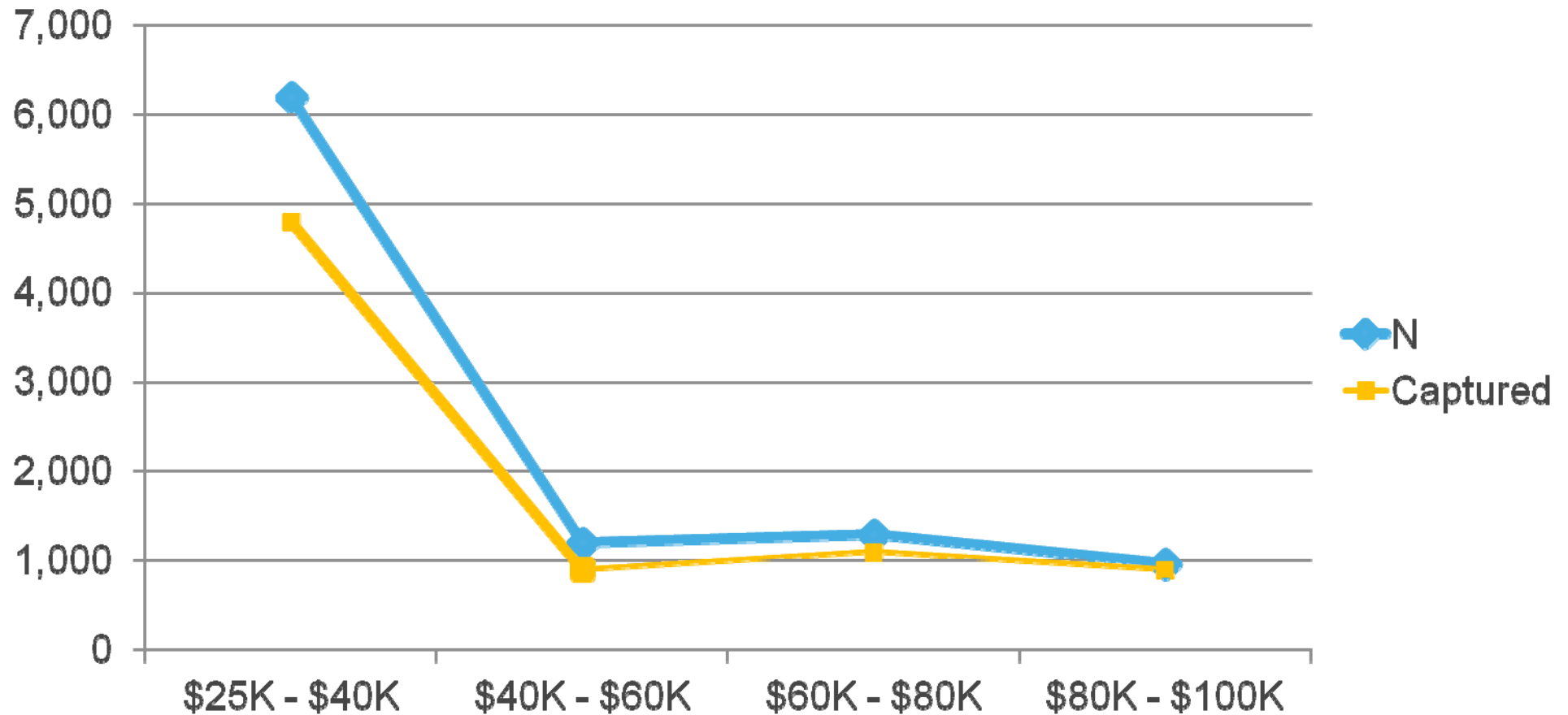
Conclusions

Traditional predictive modeling tools are remain the Gold Standard for health care insurer risk management

These tools, while effective, lack the power to fully penetrate the fraud and abuse environment

Neural networking and machine learning can greatly enhance predictive modeling and add a more "intelligent" solution

Paradigm shift is needed from just trying to predict the future but to predict the now with real-time and continuous analytics reporting – trend reporting and response

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Questions??

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