



A Revolution in Physician Targeting

In-source analytics-driven intelligence to go beyond decile-based targeting



Executive summary

Most pharmaceutical companies focus their sales and marketing activities on the top-decile prescribing physicians for a given therapeutic area, based on purchased data. Others are experimenting with newer data sets, such as managed care and patient-level data – and grappling with integration issues that make it difficult to gain a true 360-degree view of physicians and their prescribing practices. Others pay premium fees to outside consultancies to periodically crunch the numbers and generate physician target lists for them.

All these strategies have their benefits, limitations and constraints, but in the halcyon days of blockbuster drugs, unchallenged patent protections and huge sales forces, it didn't really matter.

It matters now. It is the right time to make sales and marketing decisions based on deeper analytic insights – using predictive modeling – and, with accessible software, to bring those capabilities in-house. Organizations that take control over their own physician targeting get more timely insights, targeting decisions aligned with business issues, and real competitive advantage.

The approach has delivered proven results:

- One company identified targets that prescribed 460,000 more scripts than the top-decile targets, representing a 7 percent lift and a market value of \$27 million over four months.
- In a hold-out study for a second company, the analytically derived target population delivered 3.9 million scripts compared to 3.3 million over six months, a 19 percent lift over the results achieved by the traditional focus on high-decile targets.
- A third company discovered that results for the launch phase of its new product in a new market could have been 37 percent higher if an analytically detailed target list had been used.

Results such as these call for marketers to re-examine the way physician targeting is done and to own this differentiating intelligence. The technology and channels for a revolutionary new approach are available now.

■ Numerous organizations have struggled through the process of selecting tool after tool to gain access to new data sources as limitations in the previously chosen tools became apparent.

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Foreword: If you ain't scared, you ain't innovating

Geoff Frew

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For years the pharmaceutical industry has been data-rich, but not information-rich. While the money rolled in, few people cared about this inefficiency. Company success was sustained by hammering away at the doctor/rep model in a traditional way. The thinking was: the more reps, the more promotion, leading to more sales success.

But the marketplace has changed and is changing, not only universally, but state by state and territory by territory. The one-eyed doctor/rep model will not sustain yesterday's levels of success – and just as important, neither will yesterday's marketing behaviors.

The industry's marketers and their marketing departments will welcome the thoughts contained in this white paper, because it points a way to be smarter, to convert the ever-growing data mountains into actionable intelligence.

But it also heralds change. Changes in sales and marketing behaviors. Changes in your sales and marketing departments. Changes to you.

It's scary, isn't it? But if you ain't scared, you ain't innovating!

Evolutionary times call for revolutionary thinking

Consider the pharmaceutical industry as a hypothetical MBA case study. The mission is noble: develop and market the world's life-changing and life-saving drug therapies. The stats have been impressive too: upward of \$1 billion invested to bring a single new drug to market, worldwide spending of \$643 billion on its products in 2006 (half of that in the US alone), a sales force of more than 100,000 professionals in the early 2000s (one rep for every nine doctors in 2005), prescriptions up 61 percent in the last decade, and 17 percent return on revenue in 2004.

It is no wonder the industry has been satisfied to use simple and unsophisticated means of marketing its products to physicians. It has been easy enough; just target those who have prescribed a lot of a particular product or its counterparts in the past. Inundate those high-prescribing physicians with your promotional message, hoping to be heard above the competition. Until recently, the model has worked well enough.

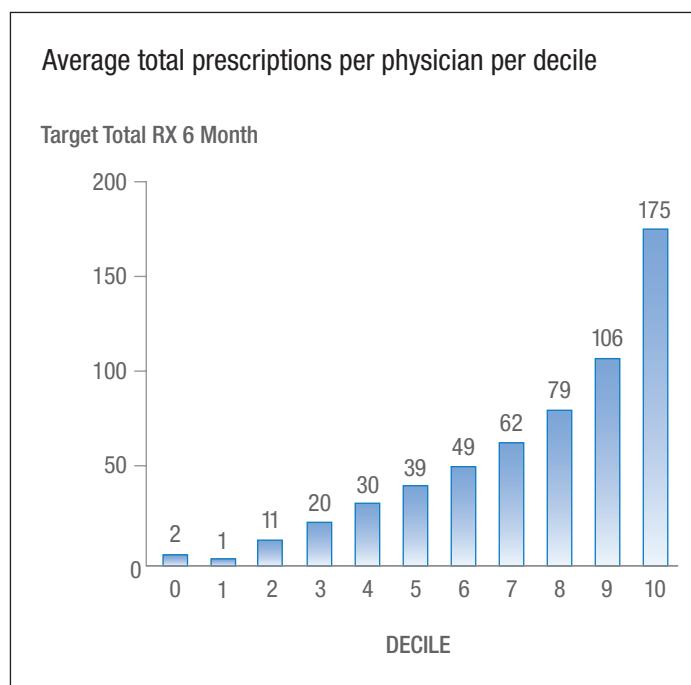
But the world is changing, and not for the better. As you well know, the industry is facing trends that will only continue to erode profitability if the marketing model does not change. Increasing exposure to generics, shrinking sales forces, leaner margins, new regulatory and payor pressures, less access to physicians – these issues are compelling the industry to change its business model and re-examine the way it targets physicians for promotion.

On top of that, data access is becoming more restricted. Several states have enacted measures to prevent life sciences companies from knowing exactly which physicians prescribed their drugs or competing products. Generally available market data already offers no competitive advantage – everybody has access to the same data – but soon it will also offer even less granular information.

Why traditional methods of physician targeting are not enough

Historically, physician targeting has been done by assessing the number of total prescriptions and new prescriptions each physician wrote per week – data purchased from information vendors. The physicians are then “deciled” into 10 groups based on their writing patterns. Higher-decile groups – those that have prescribed highly in the past – are then targeted for more promotional calls.

In traditional targeting, physicians have been deciled into 10 groups based on their writing patterns. Higher deciles are targeted for more intensive sales and marketing activity.



The traditional strategy sounds logical enough – and it is culturally ingrained in most organizations – but there are several problems with it:

- It assumes that future prescribing potential will be consistent with past trends, without regard for other influences and changing conditions. For example, the lower-decile prescriber (who receives fewer sales calls) might have more capacity to develop a new vendor relationship.
- It does not ask the important “what if” questions. Is there greater potential elsewhere? Is the scenario changing over time? Are there lower-decile prescribers who represent strong potential value? Which ones? How do we best reach them?
- It does not account for the collective past promotional activity that may have created the top decile. Could it be that the top decile received 10 times the promotional activity as the second tier?
- It is often trusted as the holy grail. The quality of the target list is rarely measured and validated through a continuous, iterative improvement process. Each time a target list is generated, it contains just as many false positives and false negatives as the time before. It can be awkward and cumbersome to terminate an unfruitful sales relationship, so it is important to get the list right the first time.
- It offers no real competitive advantage. Most companies with a competing product in the same therapeutic area target the same physicians based on lists from the same or similar data sources. As a result, no company generates any proprietary insight, and high-decile physicians get saturated with unwelcome sales calls.

The changing industry climate calls for more progressive thinking – a new way to attain greater insight about which physicians represent the most promising targets, while reducing costs and turnaround.

Pharmaceutical companies recognize the need to adapt

Market research sponsored by SAS through *Pharmaceutical Executive* in January 2009 revealed that pharmaceutical executives expressed the following concerns about their physician targeting plans and capabilities:

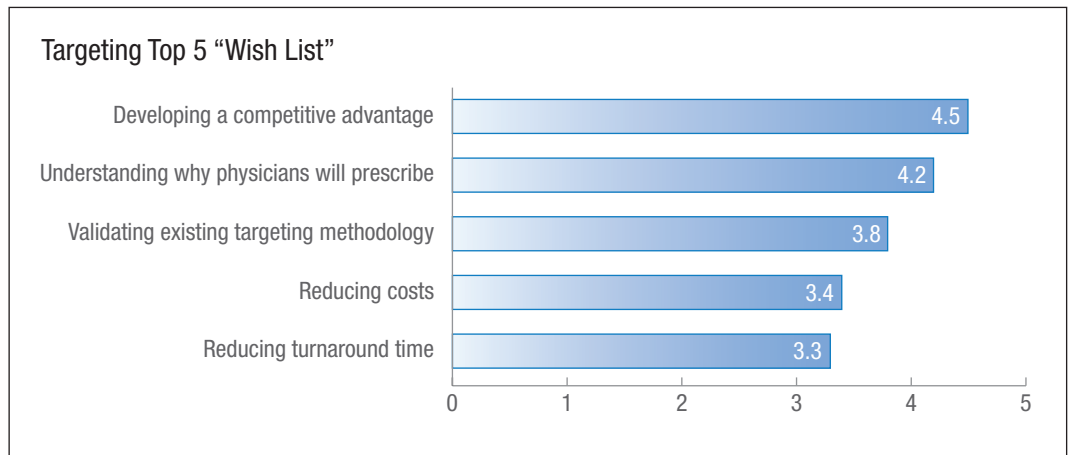
- **Thoroughness:** Targeting plan data is not thorough enough. It does not include all of the various sources that would be most useful for targeting planning.
- **Accuracy:** Targeting plan data is inaccurate or outdated. Some targeting data is functionally of limited value because it is overshadowed by these factors.
- **Consistency:** There is internal inconsistency in approaching the targeting plan. Different departments with the authority to affect the plan disagree on how best to establish it.

■ Chasing high-volume past prescribers within a therapeutic area has proven to be a suboptimal strategy. It always was, but in the halcyon days of blockbuster drugs, unchallenged patent protection and huge sales forces, it did not really matter. *It matters now.*

- **Execution:** The targeting plan is not smoothly executed. Those responsible for implementing it do not do so in the manner in which the planners intended.
- **Measurement:** Targeting outcomes cannot be measured precisely. As a result, the effects of call plan revisions cannot be adequately assessed.

Top-decile targeting was still the de facto standard across most of the commercial pharmaceutical organizations included in the study. Respondents all expressed a desire to improve physician targeting – and named that as a top-five sales/marketing priority, along with: developing competitive advantage, understanding why physicians prescribed, validating existing targeting methodology, and reducing costs and turnaround time.

On a scale of 1-5, where 5 was “very important,” respondents identified top reasons for wanting to improve physician targeting practices.



■ Even today, targeting practices are largely based on univariate analysis: Who are the top-decile prescribers? To be more effective with smaller sales forces requires the use of predictive analytics with multiple data sets and multivariate analysis to better explain prescribing potential.

What would you discover if you went beyond the top decile?

If you really want to identify the most promising targets, it is not enough to know that a physician had been a high prescriber in the past. You also need more meaningful information, such as:

- How profitable were previous sales calls? Did you have to invest excessive resources in sales visits and promotions to earn the sale?
- How effective was the sales call – did the physician start to prescribe for new patients or to switch from competitor products?
- What are the physician's prescribing patterns across other therapeutic areas – the “prescribing DNA” – and what influence does this have on the future prescribing potential of your drug?
- Does the physician influence other physicians or simply refill prescriptions for patients referred from others?
- What is the impact of managed care and health plan data on the prescribing potential of the physician?
- What is the chance that your message will be heard? Is this highly targeted physician so bombarded with sales calls that the “signal-to-noise” ratio is very poor?
- How readily does the physician adopt new drugs in place of older, established treatments?
- Do patterns in the data indicate that a physician is going to leave our brand in favor of a competitor?
- What is the potential long-term value of a sales call to a given physician?
- Where will we get the best return on our sampling investment?
- Was the sales call synergized by other promotions, such as journal ads, television ads or pharmaceutical-sponsored speaker events?

■ Predictive modeling or “data mining” is the process of exploring massive amounts of data from various data sources – customer relationship management systems, sales systems, managed care information, patient-level data and so on – to predict trends based on a multitude of factors, not just on prior prescribing behavior.

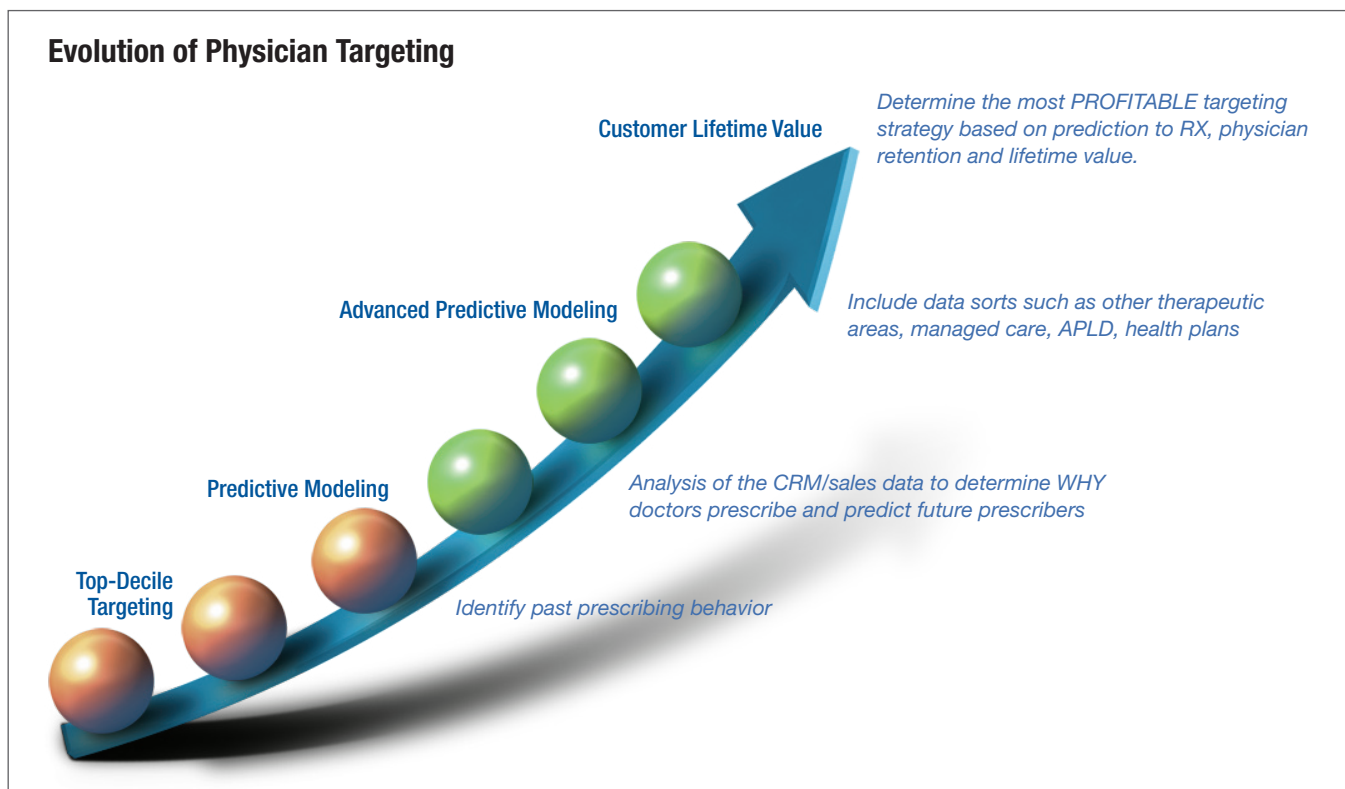
Differentiate and compete on predictive analytics

Traditional targeting reports will not answer these questions. In contrast, predictive analytics reveal why physicians have prescribed in the past, to predict future prescribing in holistic context, not just “if they did this in the past, then they’ll surely do this in the future.”

This is more than the sort-and-filter, rank-and-report functions that many people think of as “analytics.” This is predictive modeling or “data mining,” the process of exploring massive amounts of data from various data sources to predict trends based on a multitude of factors, not just on prior prescribing behavior.

Predictive modeling has been widely embraced in other industries to segment target markets, predict and mitigate fraud and risk, identify optimal allocations of resources and more. It is the right time for the life sciences industry to catch up with retail, financial services, telecom and other industries in applying predictive analytics for competitive advantage.

The greater the intelligence about the target market, the higher the potential business value.



■ At a time when many organizations are outsourcing their analytical applications to consultancies, the most progressive companies are recognizing the value of customizing and controlling their own business intelligence.

Take control of your physician targeting

With the vast quantity of data available to manufacturers – generated both internally and externally – it may seem advantageous to outsource analytics due to the complexity of managing the data sources. Some pharmaceutical companies spend large sums of money to have consultants crunch the numbers, but typically all you get back – four or five weeks later – is a call plan, a loose explanation for the selection, and the knowledge that the same syndicated data and analysis methodology are available to your competitors.

Target lists do not reflect insights from internal experts closest to the business issues. And since the plan is based on data that is now several months old, valuable opportunities may have passed.

Now those companies are discovering in growing numbers that the targeting process can be performed in-house. Those who take control of their own analytics-driven physician targeting can create competitive advantage in a number of ways. They are able to:

- Apply advanced analytics, such as predictive modeling, to the syndicated data to better understand the outcomes and synergies of promotional activities.
- Have full understanding and control over the methodologies used to perform targeting.
- Accelerate the time to results, and use this reactive speed to gain the edge over competitors.
- Feed the results of marketing activities back into analytical models to support continuous improvement and better-quality target lists with each iteration.
- Generate private data sets based on surveys or actual transactions with physicians that can enrich the analysis and lead to more focused marketing.

Case studies prove that when a pharmaceutical company takes control of these activities, it can generate as much as a 26 percent lift in prescribing potential. Furthermore, the target list that created these results remains your intellectual property – a competitive differentiator. Ultimately you rely less on consultants, save time and money, and give marketers the ability to act on better information, ahead of the competition.

If your organization does not have the in-house expertise to establish and maintain this capability at first, there are good intermediate options. For instance, you can:

- **Get the service as a hosted solution.** You provide the data and collaborate on the predictive framework; the application host maintains the models and the secure infrastructure, runs the jobs and gives your people hands-on access to the insights through Web-based portals. For organizations with limited IT resources, a hosted solution provides rapid results with minimum upfront investment.
- **Incrementally develop your in-house capabilities.** You could engage technology consultants to help implement the components and data framework, customize the solution as needed, and provide training and support to your people. As your organization develops its in-house expertise, it can assume full control on your schedule. This approach works quite well if you have a pre-integrated solution with user-friendly interfaces.

Functions of an effective in-house or hosted physician targeting system

Aggregate data from multiple sources.

The system should be able to aggregate information from virtually any source, such as data from prescriptions, salesforce automation, customer relationship management (CRM) systems, current targeting systems, anonymous patient records, physician profiles, managed care and health plans, etc. The range of data sources can be expanded in stages as the solution proves its value and other resources become available.

For example, you would probably want to draw on salesforce records from your CRM systems, coupled with purchased market data for primary and related therapeutic areas, merged with known data for your products, physicians and payors – to build a 360-degree view of physicians and truly understand the influences on their prescribing habits.

Transform that data into predictive insight.

Through predictive models and data mining, you can:

- Identify the historical factors that maximized promotional returns in the past.
- Use that knowledge to understand why physicians prescribe your products or respond to certain messages and promotions.
- Predict future patterns.

■ Integrate prescription, CRM, physician, patient, managed care or health plan data – plus any other data source that could provide insight into a future targeting strategy.

For example, you could correlate de-identified prescriber/ZIP code-level data with other data points, such as call/detail/sample, to match to physician data sets of prescribing activity.

Far beyond traditional deciling, you can target based on profitability, influence, loyalty, lifetime value and other values derived from multiple inputs. You can identify future probabilities that account for many factors, not just what happened in the past.

The ultimate goal is to identify not just the high-prescribing physicians, but the ones most valuable to the business – the ones who respond to your promotions with loyalty and without consuming a lot of resources. The rules and attributes that mark those high-value physicians can be coded into predictive models that accurately identify physicians who will become high-value prescribers in the future.

Put intelligence in the hands of those who need it.

You should not have to be a statistical guru to optimize target lists for desired outcomes, investigate alternatives, and create or fine-tune models. The right solution would offer an easy-to-use graphical interface for quickly implementing prebuilt models, customizing your own, and generating automatic or custom visualizations of the data. You need to be able to deliver intelligence into the hands of sales representatives in a form they can use – and are willing to use.

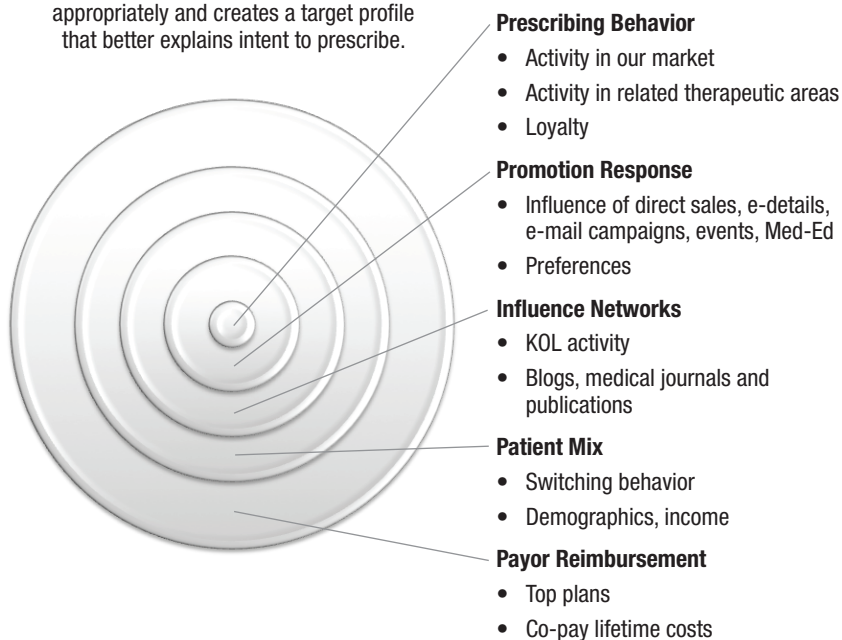
Predictive modeling seeks to identify the physicians who are likely to switch to your brand, be loyal to it and prescribe it often – after a minimum number of promotional contacts.

The predictive analytics difference in pharma
 Why predictive analytics enable more effective targeting

Current techniques
 are non-integrated “islands of data”
 and can’t accurately identify
 highest value physicians.



Predictive analytics
 consider all factors, weights them
 appropriately and creates a target profile
 that better explains intent to prescribe.



Analytics-driven physician targeting in action

Sample case studies have proven the value of predictive modeling for improving lift and delivering rapid return on investment.

Case study 1: More accurate targeting in a highly competitive therapeutic area

Scenario. Due to increasing competition in the therapeutic area, the client company needed to identify a physician population that would have higher prescribing potential, compared to the target lists generated by their current top-decile approach.

Solution. Working with an eight-month set of CRM and sales data, SAS® used predictive modeling to determine the historical rules and characteristics of the target population and the promotional mix that maximized return. In a hold-out test, the performance of the SAS generated target list was then compared against the top-decile target list for a four-month period.

Results. The SAS identified targets had prescribed 460,000 more scripts than the top-decile targets, representing a 7 percent lift and a market value of \$27 million over four months. Moreover, this target list was unique to this company, not shared across the industry.

Case study 2: Re-examining target accuracy for a heavily promoted product

Scenario. The product was widely promoted to physicians and consumers, heavily advertised in print and television media, and enjoyed reasonable market success. But could sales be even stronger if physician targeting had looked beyond the top decile?

Solution. Working with seven months of CRM and sales data, SAS used industry-specific predictive models to determine the patterns and attributes of high-value, low-cost prescribers – and ultimately to identify untapped sources of value among all deciles, not just the previously identified top decile.

Results. In a hold-out study of the historical data, SAS analysis showed that the company was not targeting 26 percent of its top prescribers, who prescribed an average of 77 scripts per physician – the same as their top-decile prescribers. Those newly identified doctors wrote 630,000 additional prescriptions in the six-month period, compared to the targeted doctors, representing a 19 percent lift. What kind of results could they achieve if these physicians were also targeted for promotional activity?

Case study 3: Re-targeting a launch product in a highly specialized therapeutic area

Scenario. A pharmaceutical company launching a new specialized therapeutic agent in a new market discovered a serious disconnect in its traditional targeting process due to the lack of historical data. Pharmacy data revealed that 66 percent of prescribers in the first three weeks post-launch were not in the top decile of prescribers for a related therapeutic area that had been used for targeting. Obviously other factors were at play for the previously unidentified high-value prospects.

Solution. SAS built a predictive model based on behavioral data – predicting future prescribing behavior based on historical observations in many markets. The modeling process used a Gini decision tree model, a neural network based on the decision tree-selected variables, and a stepwise regression analysis.

Through this process, SAS identified influential factors other than high prescription volume in a single therapeutic area. For instance, the new target profile selected prescribers who were high-decile in prescriptions for two other moderately related markets and low-decile in prescriptions for two unrelated markets with a tendency to be early adopters. By including the decile of unrelated markets, the model was able to deselect relatively poor targets from the target list.

Results. The response to detailing in this newly identified market segment was 27 percent higher than simply targeting high-decile prescribers in the therapeutic area used for initial targeting. “What-if” scenario models suggested that if the marketing/sales activities that were presently delivered to lower-value targets were channelled into this new segment, results for the launch phase would have been 37 percent higher.

Closing thoughts

Customer relationship management (CRM) has undergone a dramatic evolution in the last few decades. In the 1990s, CRM focused largely on automating operational tasks, usually with proprietary databases and standalone systems. Second-generation CRM systems took a more holistic, cross-functional focus, using open systems that started to integrate functions. Third-generation CRM systems introduced analytics and dashboards to create even better information from multiple data sources.

We are now on the verge of the next major evolution in CRM for pharmas – applying predictive analytics to transform multiple data sets into unique and forward-looking customer intelligence. This is not just about creating segments based on past behavior – traditional top-decile targeting – but about understanding the full context of the physician’s relationship and potential behaviors with respect to patients, therapies, your brand and your competition.

When you capitalize on predictive analytics – synthesizing your own proprietary data alongside purchased market data – you create intelligence that is not available to your competitors. You see beyond sales volumes into the real “why” behind prescribing patterns. You understand physicians’ behavior as a continuum, not just as a snapshot in time. And you get these insights in time to act on changing market conditions or opportunities.

Case studies have proven that analytics-driven targeting produces a significantly higher prescribing potential compared with targeting top-decile prescribers alone – and that high-value targets can be found among your non-target populations.

Bringing physician targeting in-house with predictive modeling ensures that you have the power to create differentiated and more effective target lists – and more important, that this intelligence is yours alone.

From SAS, the leader in business analytics

Market research sponsored by SAS through *Pharmaceutical Executive* in January 2009 revealed that pharmaceutical executives were intent on improving their physician targeting plans and capabilities. Most ranked it as a top-five marketing priority. This research validated the case for SAS to package the solution so pharmaceutical organizations could bring this important capability in-house or to have the intelligence delivered on demand.

With SAS® for Physician Targeting, customers are finding that they can optimize and refine physician target lists themselves, with intuitive point-and-click interfaces and no programming. Pharmaceutical marketers can now take control of their targeting strategy – their own proprietary intelligence – without relying on outside consultants.

SAS for Physician Targeting uses a broad range of predictive modeling techniques to enable you to:

- Understand the rules and characteristics surrounding why physicians have prescribed in the past.
- Apply those rules to predict who will be the best prescribers of the future.
- Target physicians based on potential profitability and highest lifetime value per sales call.
- Identify the physicians most likely to remain loyal to and recommend your brand.
- Continually validate, monitor, measure and improve the targeting strategy.

The results have been demonstrated using clients' own data. In hold-out studies, equivalent subsets of historical data were used to generate target lists – one using traditional top-decile targeting, and the other using multivariate analysis with predictive modeling. The prescriptions associated with either target list were then compared. In case after case, predictive modeling delivered a significant lift over top-decile targeting.

As the solution matures in the organization, it can be continually enhanced with knowledge gleaned from prior promotions, additional data sources, and integration with other applications, such as Web analytics, campaign management and marketing optimization, to create a cohesive, coordinated, enterprisewide view.

SAS is the leader in business analytics software and services, and the largest independent vendor in the business intelligence market. Through innovative solutions delivered within an integrated framework, SAS helps customers at more than 45,000 sites improve performance and deliver value by making better decisions faster. Since 1976, SAS has been giving customers around the world THE POWER TO KNOW®.

Content providers

Patrick Homer

Patrick Homer joined SAS as Life Sciences Sales and Marketing Practice Principal after nearly 20 years in the commercial field of the pharmaceutical industry. At SAS, Homer is responsible for developing commercial strategy and introducing predictive analytics into the sales and marketing divisions of pharmaceutical organizations.

Before joining SAS, he was a business development director at Innovex Limited, the commercial division of Quintiles, providing outsourced salesforce solutions and salesforce effectiveness initiatives to the pharmaceutical and healthcare industries. Homer has also worked as a national sales manager, building and running sales teams for Johnson & Johnson and Schering-Plough. He holds a master's degree in business administration with majors in strategy and marketing from University College of Cardiff Business School and a bachelor's degree in microbiology from University College of Swansea.

Craig Nestel

Craig Nestel joined SAS as Business Solutions Manager. Before joining SAS, Nestel was a senior member in the Commercial Data Management Group at Sepracor Inc. In this capacity, he was instrumental in driving and implementing Sepracor's enterprise business intelligence platform, including the "in-sourcing" of most mission-critical commercial operation functions, such as salesforce optimization, prescriber and hospital profiling and targeting, competitive intelligence, incentive compensation and ad hoc analysis for a field sales force of more than 2,000 reps and managers.

Before Sepracor, Nestel held a variety of senior positions with “Big 5” global consultancies – Deloitte, Bearing Point (KPMG) and PricewaterhouseCoopers, where he was a managing director. Nestel has more than 15 years of sales operations consulting experience in the life sciences industry and has advised several of the world’s largest pharmaceutical companies, including Johnson & Johnson, Pfizer and Sanofi-Aventis, both domestically and abroad.

Mark Weadon

Mark Weadon is the Industry Marketing Manager for Life Sciences at SAS. In this role, he is responsible for product marketing for the life sciences industry on a global basis. Prior to SAS, Weadon implemented pharmaceutical industry IT solutions for more than 13 years at GlaxoSmithKline, where he last served as a Senior Manager of Information Technology.

Weadon’s experience includes implementation and support of critical business systems such as ERP, salesforce automation (SFA), clinical data management systems (CDMS) and various additional R&D applications. In addition, Weadon held positions of increasing responsibility at global giants Cisco Systems and General Electric. Weadon holds an MBA from Elon University and a BA from Duke University.

Daniel J. Feldman, PhD

Daniel J. Feldman, PhD, is employed at Bristol-Myers Squibb Company supporting market research initiatives for the oncology franchise. He was also the 2008-2009 President and 2009-2010 Vice President of the Pharmaceutical Management Science Association (PMSA). Previously, since 2003, he was employed at Novartis Pharmaceuticals and Forest Laboratories in management science for neuroscience and ophthalmology, including several product launches. In addition to experience working for manufacturers, he has been employed as an analytic consultant for NDCHealth (now Wolters Kluwer Health) and as an independent agent with his own consulting company, Colligation LLC. He is a licensed clinical neuropsychologist practicing in Manhattan and consulting on clinical, nonpharmacological research grants primarily funded by the NIH at New York Presbyterian-Columbia and Mount Sinai hospitals.

Feldman began his pharmaceutical career in 1992 working on a grant funded by Marion Merrell Dow in Research and Development. He also served as clinical coordinator for NIH-funded and other studies of surgical procedures, in addition to working as a President’s Club sales representative for Humana. From his numerous and varied appointments in healthcare, he has published and presented multiple scientific papers, and gives lectures in health marketing science at Rutgers Business School in Newark, NJ. Feldman obtained his PhD in clinical neuropsychology in 1998 from the University of Cincinnati.

Note: The views expressed herein do not reflect the views of Bristol-Myers Squibb or its affiliates, but only of its independent author.



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