

## The Problem

Since the 1990s there has been a dramatic increase in prescription drug abuse in the U.S. Non-medical use of prescription drugs is now the nation's second leading cause of accidental death [1]. A study of commercially insured beneficiaries in the U.S. found that mean per-capita annual direct health care costs from 1998 to 2002 were nearly \$16,000 for abusers of prescription and nonprescription opioids compared with approximately \$1,800 for non-abusers.

This epidemic has led to increased regulatory scrutiny at both the federal and state level. Today, forty states have operational prescription drug monitoring programs (PDMP or PMP). Of the remaining 10 states eight are in the process of operationalizing a PMP while two have PMP legislation pending. PMPs, however, employ a *patient-centric* model for combatting the problem, with a primary goal being to identify and treat persons addicted to prescription drugs [2]. Most have been unsuccessful [3]. Only three focus on prescribers and proactively provide education about prescription drug abuse.

## Our Solution

SafeUseNow<sup>SM</sup> is a novel, *prescriber-centric* solution to combating prescription drug abuse. Using multiple sources of data, advanced analytics, and a *patent pending risk identification model* our solution enables managed care organizations to identify network providers whose prescribing behaviors may contribute to prescription drug abuse.

Because prescribers are the primary source of prescription drugs, efforts to reduce prescription drug abuse must begin with them, and must accomplish three objectives:

1. **Identify** those whose prescribing behaviors may contribute to prescription drug abuse, and stratify them by risk severity;
2. **Engage** prescribers in an educational program designed to improve appropriate prescription drug prescribing; and
3. **Monitor** prescribing patterns to detect changes in behavior and measure the effectiveness of the intervention program.

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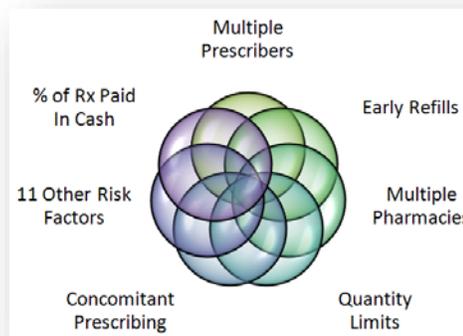
## Identify

The **PSI Score**<sup>TM</sup> model uses prescriber-level and anonymous patient-level data to estimate *prescription drug abuse risk* for individual prescribers. The model was originally developed to estimate OxyContin<sup>®</sup> abuse risk for 500,000 prescribers in the U.S., and is highly accurate having correctly classified 83% of known problem prescribers in a multi-year validation trial [4].

The **PSI Score**<sup>TM</sup> is a holistic measure of individual prescriber risk within a managed care network. This multi-dimensional measure assimilates three categories of risk:

1. Individual prescriber behavior;
2. Behavior of patient(s) being treated by that prescriber; and
3. Behavior of other prescribers treating the same patients.

The **PSI Score™** is also a hierarchical risk measure. It is calculated using a weighted combination of multiple *risk factors*. Scores for an entire provider network are computed monthly using automated data updates. By aggregating scores for sub-populations of prescribers, demographic and geographic trends can be identified. Individual and aggregate trend data can be used to analyze changes in prescribing behavior over time.



Ranking and stratifying prescribers by **PSI Score™** and its component risk factors enables the delivery of intervention services tailored to each prescriber’s risk factors and risk severity. Moreover, the program flags and prioritizes prescribers whose **PSI Score™** indicates a rapid trend toward increased risk, enabling managed care organizations to match intervention services to the inherent risk in their provider network.

### Engage

Our prescriber intervention services are designed to effectively engage and educate prescribers about risk-class appropriate strategies to minimize prescription drug abuse and promote best practices for appropriate prescribing and patient safety.

Using Social Learning theory [5,6] as a framework for customizing interactions with prescribers based on their level of motivation versus resistance, our intervention program optimizes responsiveness and behavior change among the largest possible number of prescribers. The program uses multiple communication channels (e.g., letter, email, telephone coaching, and academic detail) to allow prescribers to choose their preferred method to establish ongoing 2-way communication with the program. Soliciting continuous feedback from prescribers, the program tailors messages to address prescriber’s risk behaviors as well as their motivation versus resistance to engage in the intervention and adopt recommended best practices. Live coaching from licensed pharmacists is used to present individualized risk factors. Learning modules related to each risk factor present guidelines regarding best practices, such as showing prescribers how to conduct assessments, create patient



agreements, and manage difficult patient interactions to reduce risk of addiction and diversion.

The frequency and intensity of the intervention services is tailored to risk severity so that one-on-one encounters are reserved for the high risk population while low-cost encounter channels can be deployed to the low risk population to save resources. Experimental design methodology can be employed to pursue maximum impact across the MCO network.

When the **PSI Score™** model identifies a prescriber as potentially engaging in multiple risk behaviors, a prioritization algorithm determines the appropriate sequence to bring each behavior to the prescriber's attention to maximize engagement and rapidly reduce any risk the prescriber's behavior may pose to patients.

To promote engagement and adoption, the program offers prescriber services through clinical pharmacists and a secure Web portal. One service, for example, enables prescribers to review a list of patients who were recently prescribed a controlled drug or a relevant concomitant drug by another prescriber in the past 30 days, or who received prescriptions from multiple pharmacies, and to lock those patients into receiving future prescriptions from only one prescriber and one pharmacy.



## Monitor

The program measures behavior change over time so that the effectiveness of the intervention services can be improved. It also identifies prescribers who are unresponsive to the program or refuse to engage in the program, so that they can then be triaged to other risk management functions within the MCO.

## Pilot Program Achieves Clinical and Statistical Significance

Principled Strategies recently completed a 3-year pilot program with Horizon Blue Cross Blue Shield of New Jersey. The program engaged 1,200 healthcare practitioners who treat over 55,000 members in Horizon’s managed care network in an educational intervention program. A 12-month post-intervention outcomes study [7-21] of the impact of the pilot program is compelling.

Prescription cost savings were computed on the basis of direct drug costs. Patient medical costs were assigned proportionally to prescribers based on patient Morphine Equivalent Daily Dose (MEDD).

Cost Savings	Annual Savings
Pharmacy	\$2.6M
Medical	\$8.7M
Total	\$11.3M
Per-participant Per-month	\$17.12

## To Learn More

For more information about SafeUseNow<sup>SM</sup> and its validated results please contact:

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## About SafeUseNow<sup>SM</sup>

Principled Strategies, creator of the SafeUseNow<sup>SM</sup> program, leverages the power of predictive analytics, optimization, and risk analysis to create innovative, customized solutions designed to mitigate risk. Principled Strategies specializes in strategy, advanced analytics, and economics, and is based north of San Diego in the seaside community of Encinitas, CA.

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