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by Leon Goldman, MD

Ignore at your peril what others know about your organization

» Health care transparency is increasingly making more physician information publicly accessible.

» The Physician Payment Sunshine Act will force over 1,500 companies to disclose in 2013.

» Regulators, media, and the public are already using this data.

» Data mining creates a strategic information asset.

» Comprehensive risk management must combine internal and external data analysis.

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We should no longer be surprised to learn that information about us resides in many databases and that this information is being used by businesses, government, and others to learn more about our behavior, our buying practices, and our preferences for the purpose of their making better decisions about how to interact more effectively with us. In regard to health care providers, there has been a wealth of information for years in the non-public realm held by payers, manufacturers, health departments, and others.

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Payers were able to look at health care practices of providers via administrative data and other tracking tools. Manufacturers, through various sources, were able to look at prescribing behavior and purchasing practices. Although such data would clearly be useful to compliance programs and many others, it was proprietary and difficult to get to, if available at all.

More recently, data about physicians and other providers has become increasingly public and available as the call for more transparency in health care gains momentum. These data are growing, and more and more people are using them to learn about the relationships of physicians and other providers with industry. The focus of this article is to look at the evolution of this data, who is using it, and why it is important that health care providers, senior leadership, and compliance programs are able to mine the data and discover what others will know—or already know—about them.

Sunshine laws

Sunshine laws can be defined as: "U.S. federal and state laws requiring regulatory authorities' meetings, decisions, and records to be made available to the public."[1] These laws began appearing in the 1970s, and today there are laws governing public access to government records in all 50 states. This set the stage for the public wanting access to available information that might impact their lives and the decisions they make.

Over the past decade or so, there has been increasing information and discussion about

the power of physician–industry interactions on prescribing and medical decision-making.[2] Depending on one's perspective, these relationships can have either good or bad effects on the behavior of health care providers. Both the public and legislators have expressed their concern for the potential negative impact these relationships have had on patient care and patient care costs.[3]

One result of this has been a number of state laws covering physician-industry interactions; Vermont[4] and Massachusetts[5] are examples. Most of these laws also contain provisions requiring the disclosure to the state of any payments made by these companies to health care providers and for the state to post the information publicly. Further, the available data has increased as a result of a significant number of settlement agreements between both pharmaceutical and medical device manufacturers and the federal government. One common provision of these agreements has been to require the companies to post payments on a public web site so that anyone can search them and see who is being paid, how much, and for what.

Additionally, there has been a push on the federal level to have a national public database of industry payments to health care providers. This first began in 2007 when U.S. Senators Chuck Grassley (R-IA) and Herb Kohl (D-WI) introduced a bill at the national level. It was not acted upon, and a second attempt to have a national "Sunshine law" was attempted in 2009. The goal of a national database was finally realized when it became part of the Patient Protection and Affordable Care Act (PPACA) passed in 2010. With this provision of the PPACA, a national database is scheduled to be available by March of 2013.[6] This database will contain extensive information about all kinds of financial relationships including, but not limited to, travel, consulting fees, honoraria, research funding or grants, education or conference funding, stocks or stock options, ownership or investment interest, and royalties or licenses.[7] This will be an extensive database that could easily be mined by anyone interested; one such interested party is likely to be the Office of the Inspector General of Health and Human Services (OIG).

Public databases

The number of public databases that report on health care providers is growing. Many have appeared as a result of the Corporate Integrity Agreements (CIAs) between the federal government and pharmaceutical companies and medical device manufacturers. As part of the CIAs, these companies have been required to publish payments to providers on their websites and to allow the public access to the information. It is tedious to go through these lists, but some groups, such as ProPublica *(http://projects.propublica.org/docdollars)* have done so and have begun publishing the information in aggregate as a searchable website. In addition, through the Sunshine laws, other information is being gathered and made more easily available to the public. Sites (such as clinicaltrials.gov) allow individuals to search on what clinical trials a provider might be involved in or what trials a company is sponsoring, another rich database from which to draw information. There are also databases maintained by state boards of registration in medicine that contain a rich source of disciplinary information.

No matter where you look, databases are proliferating and the more they become public, the more they will be mined. But while many of these databases are individually searchable, it is tedious to gather all the information about a single individual manually. Although each bit of data may be interesting, it is not particularly useful information on which to base a decision.

Data mining

Data mining is part of a larger growing field of knowledge discovery in databases (KDD),[8] which is the process of analyzing data to discover patterns, create models, and make predictions. It is increasingly used in all fields, because it allows for better analysis and use of data as information from which decisions and predictions can be made. Data mining is increasingly used in health care to make business decisions, plan strategy, and monitor provider performance. The Centers for Medicare & Medicaid Services (CMS), through contractors such as the Zone Program Integrity Contractors (ZPICs), uses such processes to identify behaviors that suggest fraud and abuse might be occurring, and then CMS focuses resources for a more in depth investigation. It is not the intent of this article to look at the various algorithms or software available for such analyses. Suffice it to say that this is a growing field and, with rapidly expanding publicly available databases, it is likely that more and more parties will be mining the data, looking for patterns and models that might predict behavior or identify problems that need to be addressed. KDD is an important concept for compliance programs to utilize as part of their risk assessment processes. Given the limited resources of most departments and programs, KDD allows them to better focus their resources in areas that most need compliance help or may represent the greatest risk.

Most of the publicly available databases resulting from CIAs and state laws are created independently and without any standardized structure that considers what it will take to get the data out. When you then gather these multiple databases and try to extract the data, whether done manually or via automated processes, it quickly becomes apparent that a lot of work will be needed to remove duplicate entries, to merge different records that refer to a single individual, and to generally "clean" the database and remove ambiguities (or to "disambiguate" the data). For example, if one is gathering data on Dr. John J. Smith, how do you deal with records for a John Smith, a J.J. Smith and a John J. Smith? Are they actually one individual, two, or three? Similarly, how are payments treated? Are entries listed under "speaking" actually payments for a Speakers Bureau or an honorarium for speaking at a national meeting, or a mixture of both? Does it matter?

Although it is not the purpose of this article, nor is there space enough to deal with the intricacies of disambiguation of databases, it is important to realize that the process requires significant effort and needs to be done before useful information can be extracted across multiple databases. Without expending the effort, the result is a lot of data, but little useful information.

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What it means

As already noted previously, public databases are growing for a number of reasons, and organizations are starting to stitch the data together to develop new insights. By collecting the data from large numbers of these databases and using more sophisticated tools, one can begin to develop benchmarks and models. With these models, one can begin to identify correlations and clusters that point to relationships that warrant closer analysis. In a nice summary about the potential impact of the Physician Payment Sunshine Act, Tracy E.

Miller points out the potential that database mining has for federal prosecutors.[9] As she so aptly notes, it is important for compliance programs to take a proactive approach to this looming threat—not only through policy development, but also through a program of active mining of these databases, asking questions, and developing models to focus on potential problem areas. As the saying goes: "Forewarned is forearmed."

Consider what one might learn by analyzing and correlating data about financial relationships with provider prescribing data. Or, correlating financial relationships with purchasing practices at a hospital. Wouldn't a compliance officer or conflicts officer, or even a CEO like to know that their institution's physicians are at, above, or below the national average per physician payment by industry for consulting? This information cannot be evaluated in a vacuum. Industry interaction has many positive effects and some physicians, by virtue of their expertise, should be collaborating with life science companies to drive innovation. However, the days of remaining ignorant to such relationships has passed. Table 1 (below) shows examples of how data mining across multiple databases can be used to extract national averages against which an organization can measure itself and identify potential high-risk areas to investigate more thoroughly.

Table 1:
National Averages for Physician-Industry Interactions

Assessment Characteristic	Traditional (Regulatory) Assessment
% of physicians interacting with industry	28%
Interactions per physician	2.7
Total amount per physician	$6,350
Average amount per interaction	$2,340
Follow-up requirements	Ensure corrective actions are taken to address identified deficiencies

Provided by Kyruus, Inc. From data for 2009, 2010, and 2011

As a former compliance officer, I would have welcomed such information to benchmark the physician staff of my organization. In addition, for an institution with NIH research funding, such tools allow for better knowledge of relationships that might trigger identifying a conflict of interest and verifying individual disclosures, which can be inaccurate.[10]

Conclusion

With the proliferation of public databases and aggressive data mining of the information by public advocacy groups, news media, and the government, it becomes increasingly important for compliance programs to also mine existing data. The data can provide a useful risk assessment tool for compliance officers and can focus investigative efforts to maximize the use of scarce personnel resources. Using the information, the Compliance office and the organization can partner with its physician staff on a transparency effort that will strengthen relationships with patients, the community, and regulators.

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