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When a Health Plan Knows How You Shop

By NATASHA SINGER JUNE 28, 2014

There may be a link between your Internet use and how often you end up in the emergency room.

At least that's one of the curious connections to emerge from a health care analysis project at the insurance division of the University of Pittsburgh Medical Center.

U.P.M.C. is a \$12 billion nonprofit enterprise that owns hospitals in western Pennsylvania as well as a health insurance plan with about 2.4 million members. It is at the forefront of an emerging field called predictive health analytics, intended to improve patients' health care outcomes and contain costs. But patients themselves are often unaware of the kinds of intimate details about their households that insurers and hospitals may use to try to sway their treatment decisions.

The Pittsburgh health plan, for instance, has developed prediction models that analyze data like patient claims, prescriptions and census records to determine which members are likely to use the most emergency and urgent care, which can be expensive. Data sets of past health care consumption are fairly standard tools for predicting future use of health services.

But the insurer recently bolstered its forecasting models with details on members' household incomes, education levels, marital status, race or ethnicity, number of children at home, number of cars and so on. One of the sources for the consumer data U.P.M.C. used was Acxiom, a marketing analytics company that obtains consumers' information from both public records and private sources.

With the addition of these household details, the insurer turned up a few

unexpected correlations: Mail-order shoppers and Internet users, for example, were likelier than some other members to use more emergency services.

Of course, buying furniture through, say, the Ikea catalog is unlikely to send you to the emergency-room. But it could be a proxy for other factors that do have a bearing on whether you seek urgent care, says Pamela Peele, the chief analytics officer for the U.P.M.C. insurance services division. A hypothetical patient might be a catalog shopper, for instance, because he or she is homebound or doesn't have access to transportation.

“It brings me another layer of vision, of view, that helps me figure out better prediction models and allocate our clinical resources,” Dr. Peele said during a recent interview. She added: “If you are going to decrease the costs and improve the quality of care, you have to do something different.”

The U.P.M.C. health plan has not yet acted on the correlations it found in the household data. But it already segments its members into different “market baskets,” based on analysis of more traditional data sets. Then it assigns care coordinators to certain members flagged as high risk because they have chronic conditions that aren't being properly treated. The goal, Dr. Peele said, is for the insurer to steer those patients to primary care physicians or specialists who can provide care that is more coordinated, more consistent and less costly than sporadic emergency-room visits. The system might pinpoint, for example, high-risk asthma patients who have not yet been prescribed inhalers — and try to manage their care before they end up in emergency rooms with asthma attacks.

The very idea of using consumer data-mining and marketing segmentation on patients troubles some technology and health law experts. Their concern is that such practices could ultimately result in the inequitable provision of medical care.

“This intensive, intrusive kind of data analytics that leads to differential treatment of customers, even if we are fine with it in the business context, needs to be disclosed in the medical context,” says Frank Pasquale, a professor in health care regulation at the Seton Hall University School of Law.

Analyzing details about household attributes and habits of individual consumers is a longstanding practice in retailing, travel and finance. Credit card

marketers, for instance, may analyze consumers' buying patterns and financial wherewithal to decide whether to pitch them elite-level special-privilege cards.

Now two factors are converging to speed the adoption of these techniques in medicine.

We live in a sharing society. While older generations may still prefer to keep their health status separate from their shopping and social circles, digital natives are now publicly swapping minutiae about their medical conditions on patient sites and social networks. And fitness-tracking devices that personalize messages for users, based on their workouts and sleep routines, are proliferating.

Second, the new health care law encourages hospitals and medical groups to contain costs for certain patient populations. To do that, providers are turning to more sophisticated analytics.

In the vanguard are insurers like U.P.M.C., along with specialized marketing companies. Predilytics, a health care analytics company in Burlington, Mass., taps into socioeconomic, demographic and consumer purchasing data for health insurers seeking to identify those highest-risk members who could benefit most from medical intervention.

After an East Coast insurer asked for an analysis of hospitalization trends among its members, Predilytics discovered that patients who couldn't get timely appointments with their primary care doctors or who lacked transportation were more likely to end up in the hospital. That kind of finding explains why analytics companies may include household car ownership and other consumer data in their health care prediction models.

"What we are really doing is looking at multifactorial data and systemic issues that are getting in between individuals and their ability to maintain the highest health status," explains Chris Coloian, the president of Predilytics.

Some specialized health care marketing companies are tapping into specifics on individual consumers to help hospitals identify their most profitable patients and encourage them to seek more medical care.

MedSeek, a software and analytics company in Birmingham, Ala., offers services intended to help hospitals "virtually influence" the behavior of current and would-be patients. According to MedSeek.com, the company offers a "21st-

century tool kit” that can refine health care marketing pitches based on sex, age, race, income, risk assessment, culture, religious beliefs and family status. One client, Trinity Health System in Michigan, used MedSeek’s services “to scientifically identify well-insured prospects,” among others, and encourage them to schedule screening tests and doctor visits, a company case study said.

In a blog post this month, Bill Andrae, MedSeek’s vice president for client strategy, described other techniques for influencing well-insured patients. Hospitals could send birthday messages “to all high-value men and women,” he wrote, or notify “profitable individuals 18 and above” about special round-the-clock health care call-in lines staffed by nurses, and encourage those revenue-generating patients to schedule medical tests or appointments.

After I sent questions by email, MedSeek removed the blog post. The company did not respond to the questions themselves.

Hospitals have long tried to appeal to moneyed patients by offering them specially furnished floors or private rooms. But specifically targeting profitable patients and trying to channel them into moneymaking medical procedures is different, health experts say, because it could be problematic for them — and perhaps more so for so-called low-value patients.

The pitches might encourage the worried well to have unnecessary screening tests, for instance, potentially putting them at risk for false alarms and unneeded biopsies. And by devoting so much attention to pulling in low-risk or well-insured patients, health providers could end up overlooking — or not having timely appointments available for — ailing, poorly insured patients.

“Is the larger mission to improve public health, or to make insurers and hospitals more profitable?” asks Anita L. Allen, a privacy law expert and the vice provost for faculty at the University of Pennsylvania. “I think we should be careful of running gung-ho into an area of health care analytics that may disadvantage deserving patients.”

In a more-data-the-merrier culture, patients may ultimately be unable to choose whether their health insurers know they prefer organic foods, hunt big game or own a dog. If health insurers mistakenly peg certain people as dog owners, patients probably won’t find that out, either. (Acxiom, one of the sources

for the household information U.P.M.C. used in its prediction models, has publicly acknowledged that its details about consumers can be out of date or just plain wrong.)

Perhaps health insurers and hospitals that use consumer data to steer patients into different treatment tracks should be required to make public their predictive findings and prove that they are plausible and equitable, suggests Professor Pasquale at Seton Hall.

“It would be great if these programs do work,” he says. “But they are kind of untested right now.”

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