

Value Added

February 2020

Welcome to this quarter's issue of *Value Added*.

The Center for Value-Based Care Research (CVCR) conducts novel research on interventions that improve value in healthcare by increasing quality and/or decreasing costs. With a mission of making quality healthcare possible for all Americans by conducting research to identify value in healthcare, CVCR seeks to deliver the right care, at the right time, to the right patients, at lower costs.

In this issue, we report on two of our recent research initiatives. Drs. Aditi Patel, Anita Misra-Hebert, and Elizabeth Pfoh observe attitudes of high versus low antibiotic prescribers by interviewing and surveying over 100 primary care physicians from 16 Cleveland Clinic practice sites. Dr. Katie Martinez continues ongoing work in understanding the role that shared decision making has in mammography screening practices after the age of 40. We hope you enjoy this quarter's highlighted news!

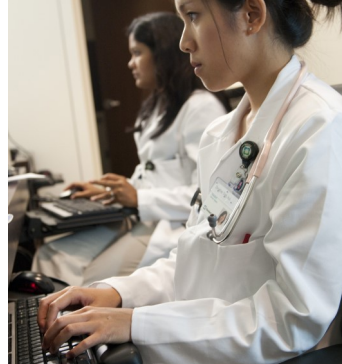
Featured Publication

[The effect of starting protein-sparing modified fast on weight change over 5 years.](#)

Elizabeth Pfoh PhD MPH, Gilbert Lowenthal MD MBA, Laura Jeffers RD LD, et al.

Journal of General Internal Medicine

Featured Study: Attitudes of Antibiotic Prescribers in the Management of URTIs



[Attitudes of high versus low prescribers in the management of upper respiratory tract infections: a mixed methods study.](#)

Aditi Patel MD, Elizabeth Pfoh PhD MPH, Anita Misra-Hebert MD MPH, et al.

Journal of General Internal Medicine

A unique study offers insight into why physicians over-prescribe antibiotics

In this study, Dr. Patel used mixed methods to understand why physicians prescribe unnecessary antibiotics for upper respiratory infections (URTIs). Dr. Patel first interviewed physicians who prescribe antibiotics more or less frequently than most, to understand their approach to antibiotic decision making. She found that physicians, in deciding whether to prescribe an antibiotic, consider both clinical and nonclinical factors. Clinical factors included patient characteristics and the duration and severity of their symptoms. Non-clinical factors, which were often just as important, included patient expectations and preferences, concern for patient satisfaction, the physician-patient relationship, and time pressure.

Comparing high versus low prescribers

The team described differences in perceptions among the high prescribers and low prescribers. Physicians often identified similar themes in the process of evaluation [e.g. clinical factors, nonclinical factors, clinician perception of adverse effects, perceived practice patterns] however, would go on to describe differences in their perception of those themes. High prescribers, for example, noted their general impression of a patient "looking sick" as a factor to decision making whereas low prescribers required specific physical findings such as rales on an exam. Both groups believed in evidence-based guidelines, but high prescribers focused on guidelines for sinusitis and pharyngitis, which recommend antibiotics, while low prescribers cited evidence that antibiotics are not helpful for URTIs, which are mostly bronchitis and viral infections. High prescribers noted that time pressure and patient expectations make them more likely to prescribe an antibiotic, while low prescribers found ways to meet patient expectations without prescribing antibiotics and said that time pressure does not impact their decision making. While these descriptive interviews were interesting, they represented only a small sample of physicians and were not conclusive. The team then created discrete questions based on the interviews and administered them in survey form to a much larger sample of physicians.

Connecting survey data to prescribing rates

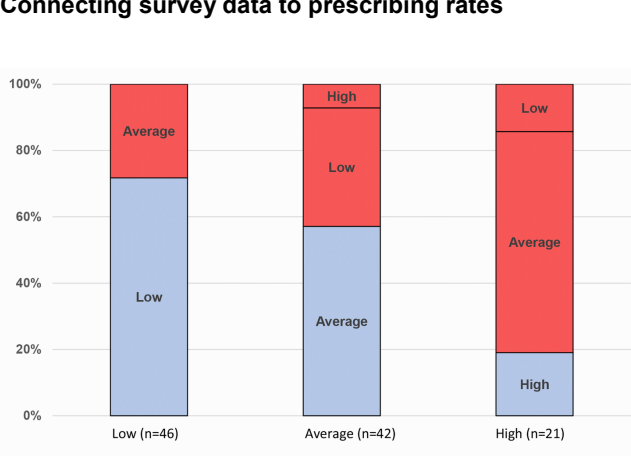


Figure. The self-perception of antibiotic prescribing status relative to peers. Actual prescribing rates in relation to the group mean are shown on the x-axis.

was the fact that high-prescribing physicians were generally unaware of their outlier status in comparison to their peers. While low prescribers often knew they were low prescribers, high prescribers most often thought they were average, and some even thought they were lower than their peers (Figure).

Next steps

In general, antibiotic prescribing for viral respiratory infections continues to be a problem in primary care. Decreasing patient demand and prescribing rates of antibiotics could be addressed by educating and raising awareness of adverse effects of overprescribing, such as antibiotic resistance and damage to the microbiome. On the other hand, some of the factors associated with patient satisfaction are more difficult to address, as a prescription for an antibiotic has been found to be a strong correlative with satisfaction of an encounter. Since high prescribing physicians are responsible for most of the prescriptions, targeting them may have the greatest impact on overall prescribing. Letting physicians know how they compare to their peers would be a great way to start.

One hundred and nine physicians completed the survey. The authors then compared their responses to specific questions with their observed prescribing rates recorded in the electronic health record. The comparison identified two clinical factors (duration and severity of symptoms) that were associated with higher rates of prescribing, as well as three non-clinical factors (not worrying about patient satisfaction, concern for antibiotic side effects, and desire to practice evidence based medicine) that were associated with lower prescribing rates. Perhaps most interesting

Ongoing work: Are physicians engaging in shared decision making?

What prompted your interest in SDM for mammography?

Mammography has been a topic of considerable debate among clinicians, professional societies and policy makers. The key point of contention is whether the potential benefits of mammography outweigh the risks in average risk women aged 40-49 years. While the benefit is detection of a true cancer, the chance of this is much lower than the risk of a woman needing additional imaging or biopsies for a false positive finding. Mammography can also result in women being treated for cancers that never posed a risk to their health. Importantly, the point of early detection of breast cancer has been to reduce the incidence of metastatic disease. Yet, despite the initiation of widespread screening in the 1980s, rate of metastatic disease has remained static. Because of this, in 2009 the U.S. Preventive Services Task Force changed their recommendation regarding mammography in younger average risk women, recommending against annual screening and in favor of shared decision making (SDM). This is a collaborative decision making process wherein the physician and patient review the potential benefits and risks of screening, and integrate the patient's values and preferences in making a decision to pursue mammography or not.

Are physicians prepared to engage women in SDM?

In order for physicians to engage patients in SDM for mammography, they need to first believe that SDM is the right thing to do, and they also need to have accurate knowledge of risks and benefits of screening so they can convey this information to patients. In 2015 we assessed this. We found while most physicians agreed that SDM was the right thing to do, the majority had suboptimal knowledge of mammography risks and benefits. Thus, even if they wanted to engage patients in SDM for mammography, most physicians we surveyed wouldn't be able to educate patients about screening in order for the patient to make an informed decision. This made us even more interested in evaluating physician use of SDM for mammography.

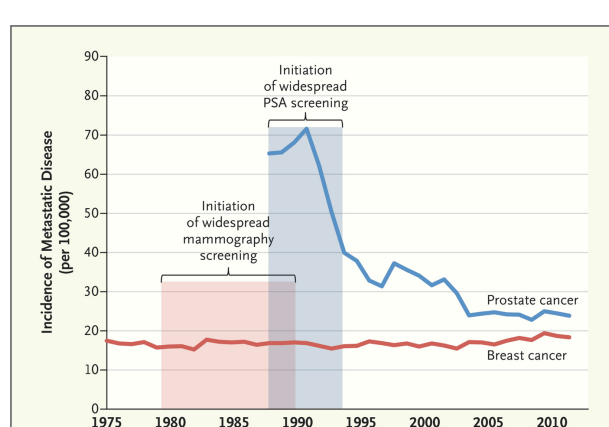


Figure 1. Incidence of metastatic disease in breast versus prostate cancer according to when universal screening programs started.

What's the purpose of your current study?

Studies assessing whether physicians are engaging patients in SDM for mammography have looked at this at the population level, finding that the overall mammography rate for younger women has not changed over time. However, to date no study had assessed how individual physicians changed their screening practices following the 2009 guideline

What did you find? What are the next steps?

We found that the single predictor of whether a woman received a mammogram after 2009 was her physician's pre-2009 mammography screening rate. This suggests that these physicians did not change their screening practices after 2009, and are not engaging patients in SDM. We also looked at screening rates among physicians who were newly practicing after 2009 and found they had lower overall screening rates than physicians who had been practicing since before the guideline change. Female physicians did screen at a higher rate than male physicians in both time periods, but they were no less responsive to the guideline change. Physicians practicing prior to the guideline change should be the targets of interventions aimed at increasing use of shared decision making, as it appears to be the case that old screening habits might be hard to break. Designing such an intervention will be the purpose of our future work!

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Look out for publications and presentations from Dr. Martinez related to this project in the future.

RECENT PUBLICATIONS

[Trends in pioglitazone use among US adults with type 2 diabetes and suspected nonalcoholic fatty liver disease.](#) Le, P., Chaitoff, A., Rothberg, M.B., McCullough, A., Alkhouiri, N. Expert Opinion on Investigational Drugs.

[Development and validation of a test for competence in evidence-based medicine.](#) Patten, R., Raska, P., Lee, N. et al. Journal of General Internal Medicine.

[Emergency contraception: Links between providers' counseling choices, prescribing behaviors, and sociopolitical context.](#) Wagner, B.G., Cleland, K., Batur, P., Wu, J., Rothberg, M.B. Social Science and Medicine.

[Blood cultures versus respiratory cultures: 2 different views of pneumonia.](#) Haessler, S., Lindenaier, P.K., K.A., Zilberberg, M.D., Imrey, P.B. et al. Clinical Infectious Diseases.

[Pneumococcal urinary antigen testing in US hospitals: A missed opportunity for antimicrobial stewardship.](#) Schimmel, J.J., Haessler, S., Imrey, P.B., Lindenaier, P.K. et al, Clinical Infectious Diseases.

[Monitoring the effectiveness of daily cleaning practices in an intensive care unit \(ICU\) setting using an adenosine triphosphate \(ATP\) bioluminescence assay.](#) Deshpande, A., Dunn, A.N., Fox, J. et al. American Journal of Infection Control.

[Multidrug-resistant organisms on patients hands in an ICU setting.](#) Dunn, A., Donskey, C., Gordon, S., & Deshpande, A. Infection Control and Hospital Epidemiology.

[Association of the functional medicine model of care with patient-reported health-related quality-of-life outcomes.](#) Beidelschies M., Alejandro-Rodriguez M, Ji X, Lapin B, Hanaway P, Rothberg M.B. JAMA Network Open.

[Management of urinary tract infections in direct to consumer telemedicine.](#) Rastogi, R., Martinez, K.A., Gupta, N. et al. Journal of General Internal Medicine.