

Accurate Coding: Why It's Crucial to Accountable Care

September's newsletter highlighted new research on the scale and implications of poor coding. Humedica's research, based on a data set of over 4 million patients, found that nearly 40% of patients with major chronic conditions were uncoded. In addition, uncoded patients used much less ambulatory care but more acute care than coded patients. Uncoded diabetes patients, for example, saw primary care physicians 73% less often but had 45% more inpatient visits and 30% more emergency department (ED) visits. After being coded, outpatient utilization increased nearly threefold and high rates of clinical improvement were seen.

The research highlighted how coding can help 'right size' utilization and improve patient outcomes. But questions remained. Why do uncoded patients use more acute care? Are they inherently sicker patients? After coding, who tends to improve the most? Patients that

were more or less at-risk? And what is the relationship between utilization and clinical improvement in newly coded patients? To gain insight into these questions, Humedica's research team analyzed the patient population by their level of risk.

Uncoded patients are relatively poorly controlled, many with comorbidities

Our analysis focused on conditions that are responsive to ambulatory care interventions, specifically diabetes, hypertension and dyslipidemia. At baseline, uncoded patients with these conditions tend to be relatively sick. Forty-three percent have evidence of two or more major chronic conditions. In addition, many of these patients are poorly controlled.

A scoring system was developed to estimate each patient's risk level at baseline. For each condition, relevant clinical measures and their respective risk thresholds were defined. For each patient, risk level was calculated based on how many clinical measures relevant to him or her were at risk. Patients defined as "very high risk" had more than 75% of their relevant clinical measures at risk. "High risk"

patients had between 50 and 75% of relevant measures at risk. "Moderate risk" patients had between 25 and 50% at risk.

Measure	At Risk
A1C	>9
LDL	>130
BP	SYS >140 & DIAS >90
HDL	<40
TRIG	>=200

Figure 1: Risk thresholds by clinical measure

Based on this methodology, 36% of uncoded patients were at-risk. Eleven percent of them fell into the highest risk category versus only 6% of coded patients. This means a significant number of uncoded patients are relatively complex. They have high risk of future problems and need higher levels of care. See Figure 2.

However, despite relatively high levels of risk, uncoded patients with diabetes, hypertension and/or dyslipidemia utilize much less ambulatory care than coded patients (p-value <.0001). Their rate of primary care utilization is 42% lower. Their rate of ED and

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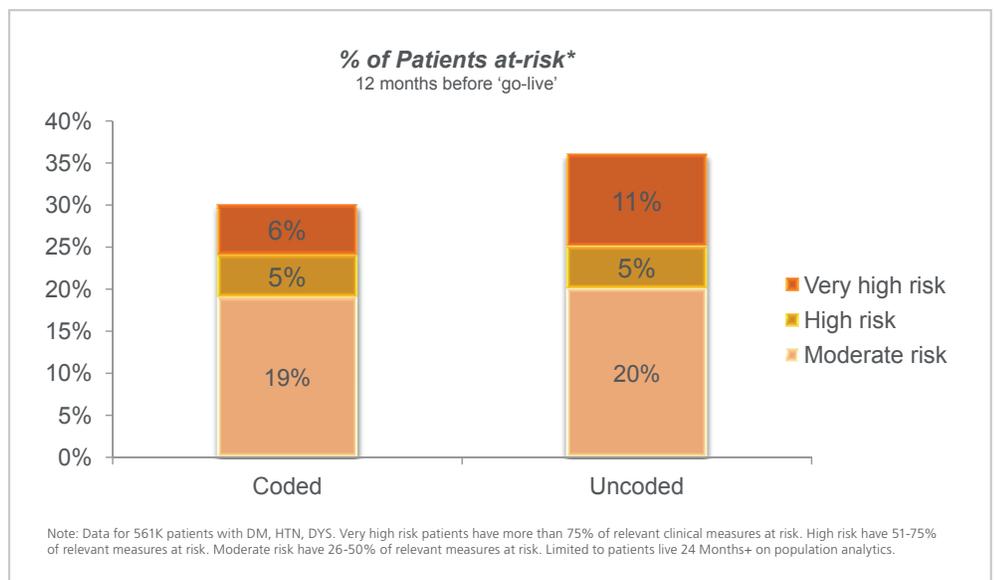


Figure 2: Uncoded patients tend to be more at-risk

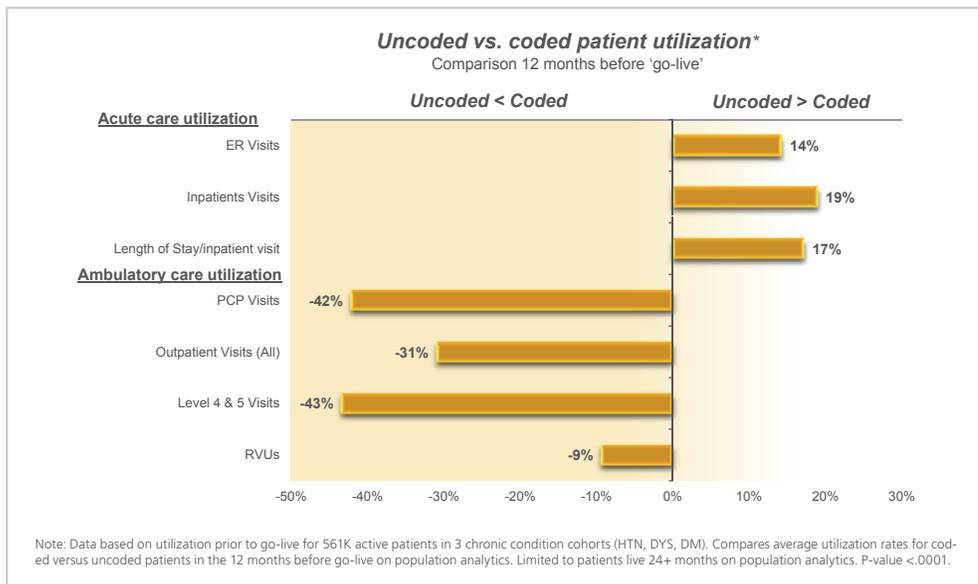


Figure 3: Uncoded patients use less ambulatory care, more acute care

inpatient utilization is 14% and 19% higher respectively. This pattern makes sense given more uncoded patients are at-risk. Hence, a significant opportunity exists for practices to identify uncoded patients and engage them with more proactive, ambulatory care in order to reduce the amount of reactive, acute care. See Figure 3.

After coding, highest improvement in highest risk groups

While it is clear that uncoded patients are relatively high-risk, and they access less ambulatory care, the question is then what happens after they get coded? Newly coded patients showed significantly higher rates of clinical improvement. Forty-seven percent of newly coded diabetes patients improved on at least

one clinical measure versus only 24% of those that remained uncoded (p-value < .0001). This difference was also statistically significant for hypertension and dyslipidemia patients. In addition, newly coded patients exhibited higher levels of clinical improvement on A1c, blood pressure and LDL. See Figure 4.

There is also a link between degree of improvement and how well controlled patients were to begin with. After coding, those who improved the most were those who had the most room for improvement. Sixty-two percent of patients in the group that improved the most ("high clinical improvement") were at-risk at baseline. This classification requires improvement on 2 or more relevant clinical measures within 24 months. In contrast, only

42% of those with moderate clinical improvement were at-risk, and only 34% of those who worsened were at-risk. This means better coding helps identify high-risk patients and enable significant clinical impact quickly. See Figure 5.

Improvement linked to successful 'right sizing' of care

Among the newly coded, those who improved the most were those whose utilization increased the most. Newly coded patients who improved on 2 or more relevant clinical measures increased their rate of outpatient use by 0.9 visits per year on average. In contrast, those who experienced the most clinical decline increased outpatient use by only 0.2 visits.

Hence, those who saw the highest levels of improvement were those who both had the most room for improvement, and whose utilization rose to meet their higher level of medical need. This has strong implications for accountable care. If practices can identify high-risk patients, shift their care to ambulatory settings, and 'right size' their care successfully, clinical outcomes will improve.

Clinical analytics helps reduce the rate of uncoded patients

Optum One Population Analytics (formerly Humedica MinedShare) enables practices to easily find uncoded patients by quickly displaying chronic condition populations based on clinical and coded evidence. Earlier analysis

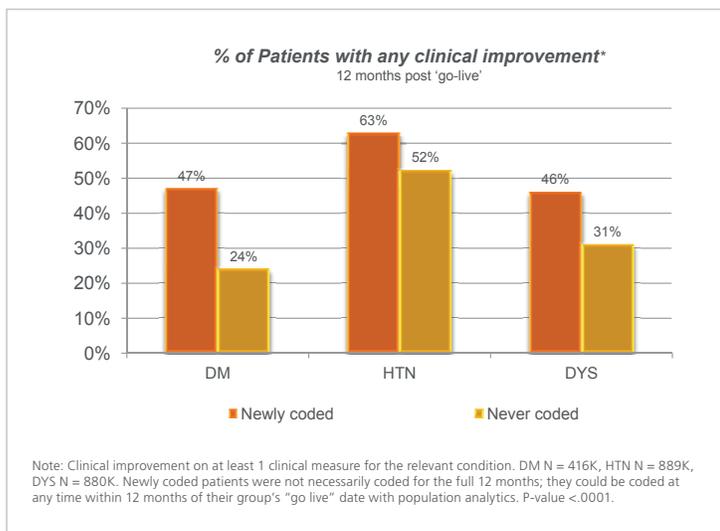


Figure 4: Coding enables high rates of clinical improvement

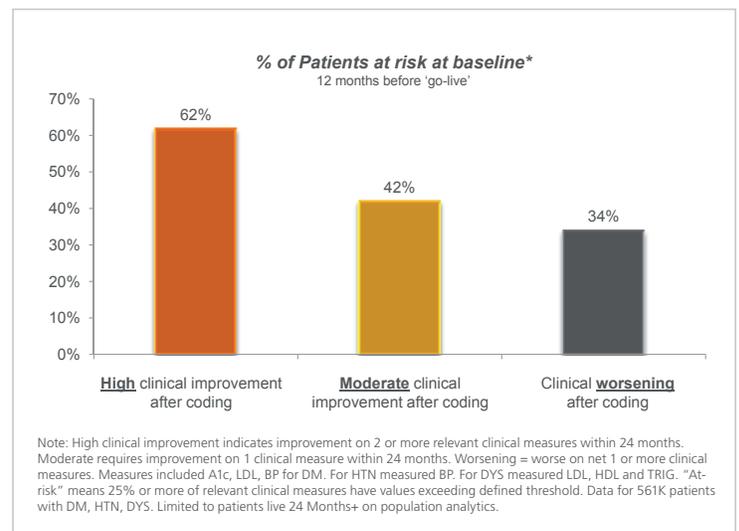


Figure 5: After coding, highest improvement in highest risk groups

indicated that 37% of patients with a major chronic condition were uncoded at baseline. On average, this decreased by 14 percentage points over 24 months for practices live with population analytics. For a practice with 500K patients, this means moving from 83K to 50K uncoded patients, a decrease of nearly 40%. See Figure 6.

How better coding supports accountable care

A robust analytics platform that brings together clinical and claims data makes it easy for practices to find uncoded patients. This, of course, enables practices to improve fee-for-service revenue in the short term by delivering appropriate chronic disease care to those at greatest risk. However, as this analysis has shown, the impact of better coding goes well beyond revenue capture. Coding improvement helps providers prepare for accountable care. Better coding identifies patients that are often high-risk and helps ensure they receive the higher levels of care they need. This will eventually rebalance care in favor of ambulatory over acute settings, leading to better outcomes and lower costs

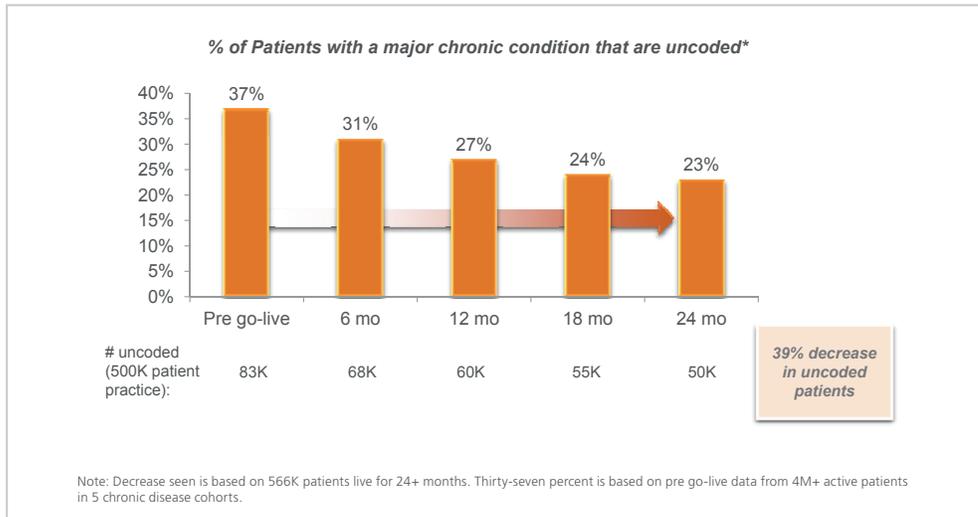


Figure 6: High rates of coding improvement can be made quickly

Holston Medical Group: Staying Ahead of the Cost Curve

Holston Medical Group (HMG), headquartered in Kingsport, Tennessee, realized that in the changing world of healthcare, organizations will need to “stay ahead of the cost curve” in order to succeed. The problem arises in identifying where the curve is, understanding what it means, identifying the changes that must take place, deploying the resources to make the change, and continually measuring to see if the change is succeeding. This amounts to a fundamental change how things work within a care organization.

A key first step in this change is knowing your population. HMG uses Optum One Population Analytics (formerly Humedica MinedShare) to leverage the clinical data from their EMR to define their population: demographic characteristics; prevalence of chronic conditions; breakout by payer and type of coverage (e.g., fee-for-service, professional fees at risk, or global capitation with shared savings). Complete and consistent diagnosis coding is essential for accurate risk stratification. Population Analytics identifies patients with clinical evidence of a chronic condition who have no diagnosis on a claim or their problem list. Diagnosis coding is also important for accurate payment for Medicare Advantage patients and accurate baseline risk adjustment for the Medicare Shared Savings Program. Population Analytics also identifies patients who had a code for a chronic condition in the past but are not coded during the current year.

Population stratification drives targeted outreach

By understanding their population, HMG was able to design outreach programs and tailor workflows to better meet the needs of their patients and to improve coding in the same process. Outreach programs needed to be local, simple and consistent, high risk patients need to be addressed repeatedly with a higher level of care, and chronic conditions of hypertension, diabetes and COPD needed a more dedicated focus and plan of action. Through targeted outreach, HMG also worked to change patient behavior where the hospital is not the first step in medical care.

HMG developed a workflow utilizing annual wellness visits as a way to bring in patients, increase face to face time between patients and provider, identify gaps in care, and improved coding. These efforts reduced hospital admits and increases in level 3 patient visits and overall increase in HCC score.

A new model for high-risk patients

Going beyond these efforts, HMG is focusing their attention on their high-risk patients, improving patient-centered quality and further reducing hospital admissions. Concerned about post-hospital syndrome (a concept proposed by cardiologist Harlan Krumholz, MD, in the Jan. 10, 2013, *New England Journal of Medicine*), the HMG team designed a clinic that allows patients to be taken care of in an outpatient setting. Patient care and convenience are at the core of their design.

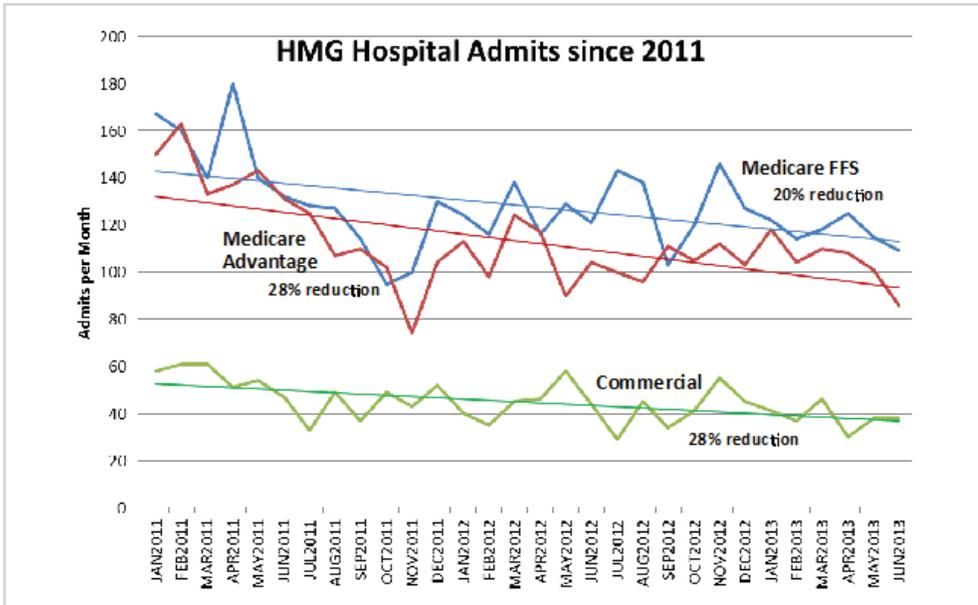
Opened in spring 2013, HMG’s Extensivist Clinic offers a non-traditional ambulatory setting for patients who need a level of care between the level 5 E&M visit and an inpatient admission. The program offers HMG’s primary care physicians an option for acutely ill patients other than the ED, where they typically are admitted. Staffed with hospitalists and ICU- or ED-trained nurses, the clinic has resources equivalent to a general medical floor. Patients are referred to the Extensivist Clinic, and their care begins with a three-way conversation among the referring physician, the clinic’s physician and nurse.

Treatment is very intense and focused, with many patients staying upwards of 8 to 10 hours.

Before the clinic closes, patients are evaluated to determine whether they are able to go home, or whether they need to be admitted directly to the hospital. Patients sent home overnight may have a home health visit during the night and have the option to return the next day for continued follow-up. One in five patients will ultimately be admitted to the hospital, but the process is much smoother than a typical admission. According to Dr. Neglia, lead physician for the Extensivist Clinic, *“Admitting a patient is like a hospital-to-hospital transfer. I call the transfer coordinator of our hospital, I admit the patient to myself, I put the orders in before the patient arrives, and then one of my partners who is at the hospital will tuck the patient in.”*

Early success with Extensivist Clinic

This new model of care has been successful in gaining patient acceptance, with some patients traveling more than 35 minutes to avoid being admitted to a closer hospital. The effect on admissions and readmissions will continue to be analyzed as more data becomes available, but the cost savings for the first quarter of operation were just under \$2 million, reflecting 190 prevented admissions. There are challenges in reimbursement, however, as the Extensivist Clinic is only able to bill for a level 5 E&M visit. For patients who are part of risk contracts, the money saved avoiding an admission or observation stay helps to offset clinic costs.



Beyond the Electronic Medical Record

An impressive 94% of U.S. hospitals have some level of electronic medical record (EMR) installed and adoption by family physicians is estimated to be about 80%. This first step in harnessing health care data electronically is no doubt a crucial move towards more effective care. And yet the EMR was built as a transactional database to document and bill for care, not to proactively manage or engage patients.

As the transition from fee-for-service to fee-for-value continues to evolve the need for better data, actionable insights and proactive patient management has amplified. Equally important is an informational system that can handle disparate sources of data, often including a variety of EMRs, and provide the all the data in one platform for use at the point of care.

Using data and lessons learned to improve health

The AMGA Collaboratives provide the opportunity for AMGA members to share

lessons learned, as well as discuss challenges and successes. During recent Collaboratives, providers have shared how they have used data and population analytics for practice redesign, patient centered medical home initiatives, population health management and improving the overall understanding of their patient populations.

One of the challenges to using data however has been the fact that it is often found in silos in a number of disparate systems, making it difficult to connect and leverage the information across the continuum of care. Add to this the fact that providers' time is limited between patient care and administrative duties and it becomes apparent that there needs to be a better, more streamlined solution.

An intelligent health platform

In February 2014, Humedica, now an Optum company, launches Optum One, a platform that recognizes providers' need for an integrated solution. The intelligent health platform is powered by the most comprehensive longitudinal and largest data set of EMR and clinical data, and also pulls in socio-demographic and care management data resulting in both retrospective and prospective views of patient populations. The platform is designed to support a growing set of integrated analytics and population management applications on a single infrastructure.

The Optum Population Analytics app (legacy Humedica MinedShare) sits at the core of the platform and provides a rich patient-centered longitudinal view of patient populations. Providers are able to identify their sickest patients and track success on ACO measures. The Risk Analytics app leverages Optum's industry leading capabilities in actuarial and risk oriented contracts to provide analysis of risk, cost and leakage. The Patient Engagement app identifies patients in need of care and outreach and allows care coordinators to close gaps in care and report on performance measures. The Care Coordination app is fully enabled with a library of assessments, care plans and best practices, allowing clinical staff to provide a full range of care management services and the ability to track care plans.

To learn more about Optum One, come see a demo at HIMSS14 (Booth 5665) or schedule a demo at DemoOptumOne@humedica.com.

SOURCE:

Electronic Medical Records Adoption Model, HIMSS Analytics, accessed 30 January 2014.
<http://www.himssanalytics.org/emram/emram.aspx>.

Imam M. Xierali, et al, "Factors Influencing Family Physician Adoption of Electronic Health Records (EHRs)," Journal of the American Board of Family Medicine, July-August 2013 vol. 26 no. 4, 388-393.

Data-Driven Educational Opportunities to Offer Your Clinicians



As part of the shared learning opportunities available through the AMGA's Anceta Collaborative, member organizations can leverage the existing Humedica data infrastructure to provide clinicians with turnkey, data-enhanced, continuing medical education (CME) solutions and part IV ABIM Maintenance of Certification (MOC).

The educational content, developed by leading academic medical institutions, is provided alongside personalized performance dashboards, pre-populated by Humedica. Adult learning principles suggest that allowing physicians to review their own data to identify areas for improvement, providing them with practice-based education and resources to support those needs, and then allowing them to review their performance after the education helps facilitate improved patient care.

In 2013, eight member organizations offered these programs to over 500 providers. Each educational program is available for clinicians online and includes case-based patient simulations and other learning tools designed to improve physician performance relative to quality measures and evidence-based standards of care. Dr. Richard Gendron from Holston Medical Group commented on the advantage of the 2013 vaccines program in which Holston participated, stating *"This program is directly aligned with our group's strategic initiatives around immunizations, and we have group and physician financial incentives to improve our rates, so delivering the education in this way has been a highly synergistic opportunity."*

In 2014, we will be offering three new programs to our members, with a focus on Hepatitis C, Adolescent Immunizations, and Diabetes. The clinical focus for each program is highlighted below:

Hepatitis C: The CDC released new guidelines in October, 2012 recommending that all patients born from 1945-1965 be screened for HCV. In addition to providing clinical evidence in support of new guidelines, this program will prepare primary care clinicians to co-manage the care of diagnosed patients along side specialists.

Adolescent Immunizations: This program will address the latest Advisory Committee on Immunization Practices (ACIP) guidelines with a focus on reducing preventable illnesses such as Meningococcal Disease, pertussis (whooping cough), human papilloma virus and related diseases such as cervical cancer. Activities will describe barriers to effective care, and discuss strategies to improve immunization rates for children ages 11 - 17.

Diabetes: Treatment of Type 2 Diabetes is inherently complex, made more so by the recent introduction of new drug classes as well as the many, varied treatment guidelines. After completing this program, physicians will be better able to explain the mechanisms of action for new therapies, discuss the debate regarding treatment algorithms, and more effectively manage patients to improve glycemic control.

For more information on how to offer these programs to your clinicians, please contact Cindy Shekailo at ANCETA (cshekailo@amga.org)

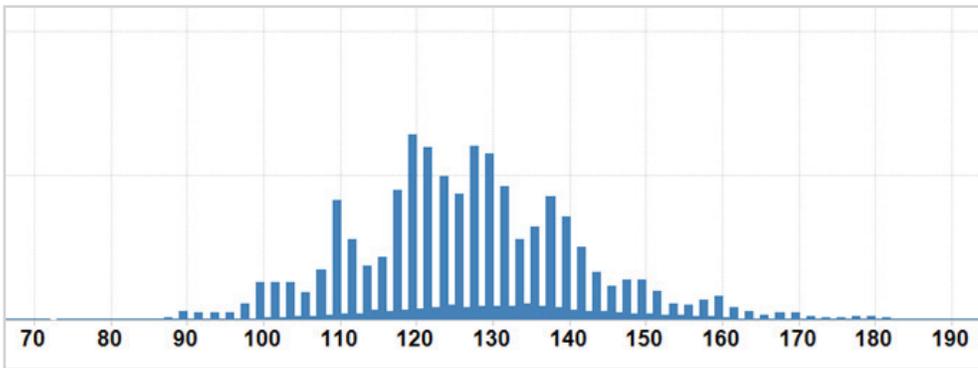
Analytics Insights: Snapshot Hypertension

Precision and Rounding in Blood Pressure Measurement

Accurate, precise blood pressure measurement is fundamental to managing hypertension. In fact, it's Plank 1 in AMGF's national hypertension campaign, *Measure Up/Pressure Down*. We can use clinical data from AMGA member medical groups participating in the Anceta collaborative to learn how BP is being measured and recorded in practice. These data are from the Optum One Population Analytics (formerly Humedica MinedShare) platform.

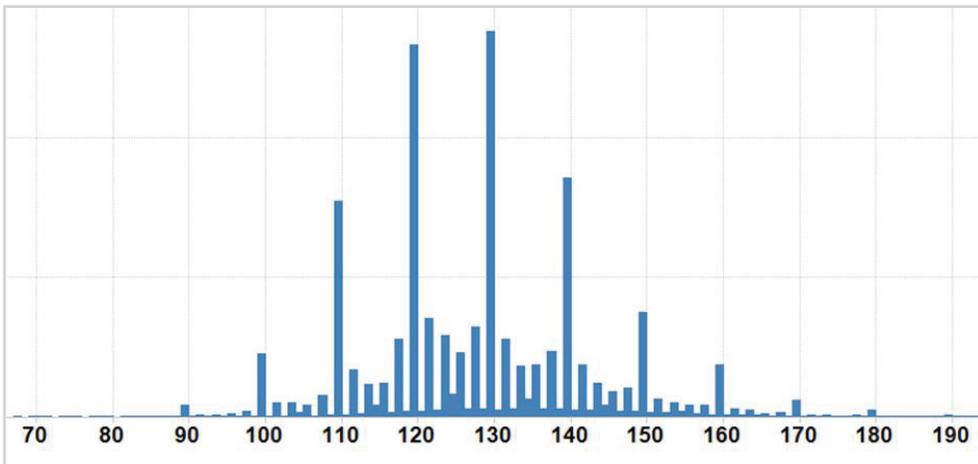
Blood pressure is a physiologic phenomenon, so if we display the blood pressures of a large cohort of patients, we would expect a relatively smooth distribution. It wouldn't necessarily be a symmetric "bell curve," but if BP is being recorded accurately and precisely, it should be smooth. In many medical groups, that's what we see.

Here's a distribution of the last systolic BP recorded for 163,000 patients, age 18–85, with a diagnosis of essential hypertension (on an insurance claim and/or their problem list), across three medical groups:



Blood pressures taken manually are typically recorded to the nearest 2 mm Hg. We see a few odd numbers here, but some of them may come from clinics using automated sphygmomanometers.

In other medical groups, blood pressures are being recorded with far less precision, apparently often rounded to a multiple of 5 or 10 mm Hg. Here are the last systolic BP values recorded for 70,000 patients with essential hypertension, across two other medical groups:



In these groups, more than half the recorded BP values are a multiple of 10 mm Hg! With this lack of precision, it can be difficult to track improvement in controlling hypertension over time. It's true that for relatively low blood pressures—below 115 mm Hg systolic, say—an approximate

value will suffice for clinical decision-making. But the practice of imprecise measurement and recording persists, even within the range where it's critical to track response to therapy.

Assuming BP values are measured accurately but rounded to the nearest 10 mm Hg, a reduction of 2 mm Hg could be seen as a reduction of 10 mm Hg, e.g., 146 (rounded to 150) to 144 (rounded to 140). At the same time, a reduction of 8 mm Hg could be seen as no change, e.g., 164 (rounded to 160) to 156 (also rounded to 160). These distributions represent the extremes that we see in the data. But some rounding is seen in most medical groups.

Overall, for 1.5 million patients with essential hypertension across 23 groups, 34% of recorded blood pressure readings are a multiple of 10 mm Hg, compared to the 10% we would expect if all pressures were recorded to the nearest 1 mm Hg, or 20% if recorded to the nearest 2 mm Hg. We know that training and monitoring can be effective, since we see very smooth distributions of BP values in some practice sites within organizations where other sites are consistently rounding.

Clearly, there's an opportunity for improvement in Plank 1 of the hypertension campaign. If you haven't seen the excellent webinar by Sharon Pascal of Cleveland Clinic on blood pressure measurement, go to www.measureuppressuredown.com, click on "Find Tools and Resources," then select "Webinars for Providers," and scroll down to Plank 1.

UPCOMING EVENTS

- **HIMSS14**

February 23-27, Orlando

Tuesday February 25th

Dr. Michael Sills, Baylor Quality

Alliance and AG Breitenstein, Chief Product Officer, Optum Analytics will be presenting Predictive Analytics Helps Reduce Future Health Costs.

- **Anceta Spring Learning**

Collaborative

March 12-14, 2014

The Ballantyne Hotel

Charlotte, NC

For more information, please contact Cindy Shekailo.

- **AMGA Annual Conference**

April 3-5, 2014

Gaylord Texan

Grapevine, Texas

- **Optum Healthcare Forum and Anceta Fall Collaborative**

August 18-21

Chicago, IL



1 Prince Street
Alexandria, VA 22314-3318
703-838-0033
www.amga.org



1380 Soldiers Field Road
Boston, MA 02135
617-475-3800
www.humedica.com
info@humedica.com