

Revenue Cycle Management Basics for Anesthesiologists

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Introduction

Revenue cycle management (RCM), including coding and claims submission, is a significant function within any healthcare organization or practice, and has given birth to an entire industry. A brief review of the history of billing and insurance over the past 50 years, along with the development of various methods to control costs, is useful to understand our current state.

Concerns about upcoding and other attempts to game the system are discussed, along with changing demographics of patient populations, payer bias, EHR integration, and legal pitfalls.

Clinical documentation integrity teams as well as professional coding teams play a large role, particularly in electronic health record (EHR) templates and other tools designed to facilitate RCM.

Numerous False Claim Act actions have been taken or are in progress. The media is looking at bias from payers (both contracts and research), and various quality measurements appear to not be valid.

It's all about that data... *An ever increasing amount of data is created as we continue to specify, systemize, and specialize. Understanding how we got here, and where we are likely to be going, is an important part of what physicians, and particularly clinical informaticians, need to know.*

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A Brief History of Payment for Medical Services

A long time ago, in a land far far away... through most of US history, until the 1960s, payment for a physician's services was very unstructured. There was some sense of a "sliding scale" adjusted by the physician based on what the patient could pay, and some cost-shifting such that more well-off patients were subsidizing care for less well-off patients.¹

The California Medical Association (CMA) first created the Relative Value Guide (RVG), in conjunction with the California Society of Anesthesiologists (CSA) in the 1950s. Other specialty and state associations followed a similar path in the 1960s. The Federal Trade Commission (FTC) began challenging these RVGs, alleging conspiracy to fix prices in violation of the Sherman Antitrust Act. Although most of the RVGs were retracted due to these challenges, they led to the American Medical Association's (AMA) development of the Current Procedural Terminology (CPT) in 1966.²

In 1965, President Lyndon Johnson signed into law the bill that led to Medicare and Medicaid.³ At that time, there was no specific structure to the payments, or fee schedule. However, federal regulation prohibited physicians from waiving the portion payable by Medicare patients "lest patients be encouraged to overuse Medicare."^{1,4}

Facing concerns about rising physician fees and increasing Medicare Part B reimbursements, in 1972 Congress mandated an additional fee limit be included in the calculation of "reasonable" charges as opposed to the "prevailing" charge. This is often called the Medical Economic Index, which is released annually, and is based on the full calendar year prior to the prior fiscal year (so data is from 18-30 months prior to the updated MEI).⁵

In the first decade of Medicare (1966-1976), hospital costs increased by nearly 350%, against a consumer price index increase of 89%.⁶ Congress mandated the creation of a prospective payment system (PPS) in 1982 specifically to control costs.^{7,8} The mechanism chosen to do this was use of a flat-fee hospital payment based on the Diagnosis Related Group (DRG).

DRGs were originally created as a research project to define and measure a hospital's case mix, segmenting clinically similar groups of patients by their hospital resource requirements. The underlying assumption of the research was that the amount of hospital resources consumed was a function of the length of stay (LOS). Patients are categorized into one of 25 major diagnostic categories (MDC), then further divided based on variables strongly associated with resource consumption (e.g., surgical or medical treatment strategy, patient age, presence of co-morbidity), and then further down a decision tree to one of the 518 current categories.

So while "...efficient hospitals are rewarded for their efficiency and inefficient hospitals have an incentive to become more efficient,"⁷ not everything can be accounted for as simply as that. In addition to the diagnosis itself, cost variation includes hospital size, locale (urban vs rural), local wage index, and teaching or not. This still only explains about 72% of the variation in costs.^{6,9}

DRGs capture the complexity of disease, but do not capture the severity of disease. "They are a crude, gigantic set of averages forcing standardization of care without an adjustment for severity within a diagnosis."⁶ While intended to be very homogeneous, there is a growing body of research that finds heterogeneity within a single DRG.¹⁰⁻¹³

The Evolution of Billing into Revenue Cycle Management (RCM)

During the 1970s, insurance plans (payers) started shifting from indemnity plans (where the patient pays the bill, and the insurance reimburses the patient) to direct payment plans (where the insurance company pays the provider directly). As this occurred, we also saw a continued transition to for-profit insurance plans such as Aetna or Cigna. Even Blue Cross/Blue Shield shifted from a non-profit to a for-profit company.¹⁴

As payers created more and more complex payment plans (PPOs, EPOs, IPAs, etc.), all having different payment rules, it became far more crucial to collect accurate insurance information before a bill was sent. It's estimated that nearly 40% of rejected claims are rejected because of incorrect insurance information.¹⁵

Thus, the revenue cycle shifted from starting after the patient had been seen to starting at the time the patient made their appointment, and the first step became getting accurate demographic and insurance information. Specialties at particular risk of inaccurate information include the hospital-based groups (anesthesiology, emergency medicine, hospitalists, pathology, radiology) who bill independently, as they rely on the hospital to collect the information for them.

The current steps in both inpatient and outpatient RCM now generally include:

- Claims preparation:
 - patient registration
 - patient eligibility
- Claims submission:
 - charge entry (“superbill”)
 - coding
 - claims transmission
- Claims management:
 - payment posting
 - denial management
- A/R management:
 - patient collections
 - A/R follow-up
- Reporting:
 - analytics overall
 - MU/registry reporting

^{16, 17}

Solo and small physician groups struggled to keep up with ever changing rules, as did smaller and independent hospitals, and an ever-increasing amount of time was required for billing. The need for timely follow-up and attention to denials became critical for most practices. In 2014, Becker's reported that 90% of solo/small physician practices had plans to outsource most or all of their medical billing services by 2016.¹⁸ There is an expected growth of \$27B in RCM software sales between 2021 and 2025.¹⁹

Professional billing teams, whether a part of the organization or a separate organization, became necessary to have enough expertise to accurately and efficiently code, justify the needed investment in training and in software, and develop enough economy of scale to offset the cost of doing business. Professional billing software became necessary for electronic claim submission as well as tracking and reminder functions to ensure timely processing by both the provider and the payer.

Organizations undergo lifecycle changes, just as products do. Failure to adapt to current billing procedures are consistent with an organization in decline, and without attention, the organization will fail.

Documentation, Upcoding and DRG Creep

Coding relies on documentation. Billing relies on coding. Both are now considered big business. According to Dr. Prem Reddy, CEO of Prime Healthcare, “It’s a game, and you can’t play if you don’t know the rules.”²⁰

The 1995 revision of the CMS guidelines created extremely concrete items that are more easily documented than before.²¹ DRGs continue to require specific documentation for adequate assignment. Items on the problem list may count towards the number of clinical systems assessed to meet E&M documentation requirements, which are in turn used to document a Comorbidity/Complication (CC) or Major Comorbidity/Complication (MCC) for the hospital DRG.

An electronic health record may facilitate documentation and coding. Rules may be built into the notes to ensure that specific information is required before a chart may be closed. Phrases may be programmed in as macros that meet the requirements for coding. Pop-ups or drop-down lists may ask you to provide additional detail for a problem or diagnosis.

Modern charts usually include a Problem List, which has all of the current and historical issues (co-morbidities) that a patient may have. Items on the problem list identify one or more comorbidities, which may lead to use of different billing codes. For example, the DRGs for chest pain/angina and for acute coronary syndrome pay the same amount - unless there is an MCC, in which case the payment nearly doubles.²²

“Documentation and coding of visits affects medical practices in many ways. If improperly done, they can be a dangerously weak link in medical practice. If *aggressively* and proactively managed, however, they reduce audit risk, reduce the risk of malpractice suits, and enable effective management of revenue and expenses.” [emphasis added]²³

Accuracy in coding is important for multiple reasons, not just for billing and revenue. It impacts statistical databases, clinical preparedness, budgeting, and overall planning.²⁴

Errors in coding and billing may occur, with wide ranges reported.^{15,25-27} Professional coders will list every possible condition that is documented in the chart. This may lead to error in several ways. A “rule-out” item may be classified as a diagnosis when in fact the disease was ruled out. A pre-existing infection or contaminated wound with anticipated infection may be coded as a hospital acquired infection. A planned post-op ICU stay may be coded as a complication. Not only may this have an impact on billing accuracy, but it may also needlessly flag a chart for quality review, or may lead to detailed changes in workflow and policy that were based on erroneous information.

The concept of upcoding and DRG creep are not new. The first article about upcoding was a letter to the editor of the New England Journal of Medicine from Simborg in 1981. In this letter, Simborg points out that the order in which the diagnoses are listed makes a difference in the reimbursement, and that changing the order to increase the reimbursement is unethical. He goes on to say:

“It would certainly be profitable for a hospital to invest in more sophisticated data-processing and discharge-abstracting systems. In the ensuing technologic arms race between the regulators and the regulated, it may be difficult to distinguish the disease from the cure.”²⁸

Hospitals are not the only ones who may try to game the system. Medicare claimed the difference between what they would have paid under the old system vs what they actually paid with the new DRG system as a budget savings under the Balanced Budget Act of 1985, even though DRGs were fully implemented by that time.⁶

Most physicians have no education in billing or coding. When we were in training, for the most part, which diagnosis we marked on a superbill was not considered to really make a difference. But it does. Hospital claims are generally coded by professional staff, and outpatient claims may be coded by the physician or professional staff.

In the nearly 40 years since DRGs were first implemented, our patients have changed. We now have a “pandemic of cumulative chronic diseases”²⁹ that constitute the leading cause of death worldwide. Sometimes termed “polyopathy,” it changes the nature of disease and certainly the nature of coding. The most common chronic

condition is multimorbidity.³⁰ There is currently no code in ICD-10 for this situation, which means that it cannot be easily tracked or studied.^{29,31} Existing comorbidity indices have been limited in scope, and are focused on mortality risk. More recent review of administrative data has evaluated 81 different ICD-9 codes to provide a better picture of health-related quality of life and use this for broader research on the burden of multimorbidity.³¹

Studies have found that most of the increase in case mix reflects both more complex cases (about 2/3), and more accurate narrative descriptions and coding.^{6,32,33} In addition, many fail to realize or acknowledge that admission patterns have changed significantly over the past 30 years. Hospitalized patients truly are sicker than they used to be — because those who are not as sick are being cared for in outpatient settings. Those changes have a larger impact on case mix index than documentation and coding practices.³⁴

Sjoding et al evaluated coding for pneumonia or coding for sepsis and/or respiratory failure and/or acute organ dysfunction. They found that including sepsis/respiratory failure/acute organ dysfunction improved the actual vs expected mortality rate, and the readmission rate.³⁵ However, at the same time, quality initiatives, such as the Surviving Sepsis campaign, were initiated, leading to increased recognition of sepsis and severe sepsis, and thus coding for the diagnosis.^{36,37} Similarly confounding issues arise because the criteria for diagnosing hypertension or diabetes (two of the most common chronic diagnoses) have changed during many of these study windows. The 2017 Hypertension Clinical Practice Guidelines, for example notes that it leads to “a substantial increase in the prevalence of hypertension.”^{38,39}

By the mid-2000s, nearly 80% of all patients had a CC which goes along with the prevalence of poly pathology as noted above. In part because of this, for fiscal year 2008, CMS changed the code set to “MS-DRG” which revised the allowable CC list and dropped the number of patients with a CC/MCC by half, to 40%.³⁴ There is some potential for inaccuracies related to the conversion from ICD-9 to ICD-10, where some ICD-9 diagnoses may map to one or more ICD-10 codes.⁴⁰

Business Models, Mergers & Acquisitions, and Legal Issues

Although much has been made about the difference between non-profit and for-profit healthcare systems, there is really little difference when it comes to the RCM process. Both will work to optimize the process, streamline coding, and attempt to minimize the time between the patient care and the payment. The major difference has been the ability to invest capital into the process, which has traditionally been easier in for-profit systems.

The use of the EHR makes it much easier to collect the data for RCM usage. Even before this, larger organizations were better able to implement Clinical Documentation Integrity (CDI) teams as part of the evolution of Medical Records into Health Information Management.²⁴ Until the push for implementation of EHRs as part of 2009's HITECH Act, only the larger and for-profit (or very well endowed academic) organizations were able to make the capital investment. Current CDI efforts, however, have reached a maturity level so that continued improvements in case mix are near a plateau.³⁴

The continued run of mergers and acquisitions generally contributes to efficiencies in RCM. It's not, however, as simple as just having the new facility switch to the parent facility's system. Each facility should start by stabilizing their current processes, then standardizing their processes, and finally consolidating the process. It is important to remember that this, like almost every other aspect of business, is a process, not an endgame. Consolidation should lead to streamlined patient experience (and thus improved patient satisfaction), greater nimbleness in responding to external pressures, and an overall reduction in costs.⁴¹ Continued merger and acquisition activity also has potential for negative impact, particularly with concerns that both horizontal and vertical provider consolidation raises prices, and that payer consolidation lowers payments (although does not necessarily decrease premiums). The Federal Trade Commission (FTC) has cited several constraints in their ability to review and enforce anti-trust laws, particularly on non-profit hospitals.⁴²

The otolaryngology department at Henry Ford Health System noted that general coding teams, responsible for a wide range of specialties, tend to have more variability in the coding process, leading to submission of inconsistent or incorrect claims. They implemented a specialty-specific team for their service line, which included training sessions with coders and practitioners together, fostering better understanding of the process for both sides. Although they saw no significant change in the dollars collected, every other metric improved, particularly days to completion of coding, and days in A/R, which dropped by 50%.⁴³

Optimizing the RCM for a facility or health system is not without risks, however. There are legal precedents and ongoing lawsuits about billing and antitrust issues in California and other states.

A class-action lawsuit was filed against Sutter Health by the UFCW & Employers Benefit Trust (UEBT) and the Attorney General of California in 2014. The anticompetitive practices identified in the lawsuit included Sutter's expanding their market power in Northern California, and then using that power to negotiate significantly higher healthcare prices than would have been charged in a more competitive market. Sutter denies the claims and has pointed to data showing that it actually charged less for inpatient care compared to other hospitals in the region (including Kaiser Permanente, Dignity, and Adventist). Nevertheless, a \$575M antitrust settlement has been approved.^{44,45}

Sutter's issues have continued. The Department of Justice announced a \$90M settlement under the False Claims Act for care provided to Medicare Part C (Medicare Advantage). The government alleged that Sutter Health, including both hospitals and affiliated clinics, submitted unsupported diagnosis codes for certain patient encounters, and that once they were aware of the error, failed to take sufficient corrective action.⁴⁶

Prime Healthcare, along with their founder and CEO, Dr. Prem Reddy, agreed to pay \$65M to settle allegations that 14 of their hospitals knowingly submitted false claims by admitting patients who required less costly outpatient care, and by billing for more expensive patient diagnoses. This settlement was issued in 2018, for patient care that occurred between 2006-2013. The statement by the Department of Justice specifically mentions including complications and comorbidities as part of upcoding practices. Prime Healthcare, along with Dr. Reddy and Dr.

Siva Arunasalam, settled with the DOJ in 2021 for another alleged violation of the False Claims Act as well as illegal kickbacks paid to Dr. Arunasalam. In addition, Prime and Dr. Reddy have entered into a new Corporate Integrity Agreement with the HHS-OIG.^{47,48}

Stanford Healthcare is currently in the midst of a lawsuit by the Department of Justice for alleged fraud, in excess of \$468M. Of note, the complaint alleges that the scheme began in about 2008 when the “newly implemented ‘EPIC’ electronic medical record system came into use.” (quotes in original) The case is currently before the Ninth Circuit District Court.^{49,50}

Future Directions/Conclusions

The RCM process continues to evolve, as providers and payers alike play the game. New rules from CMS appear annually. Healthcare continues to shift towards Value Based Purchasing instead of Fee For Service or even DRGs.

One of the most significant changes in recent years was the passage of the No Surprises Act.⁵¹⁻⁵³ Part of the Consolidated Appropriations Act of 2021, part 1 of the interim regulations were posted July 1, 2021, and they take effect September 13, 2021. Key components include

- insurance plans disclosing the Qualifying Payment Amount (QPA) and the methodology by which it was calculated with the provider/facility,
- notice and consent which includes a good faith estimate of the amount that a provider may charge the patient, even if they intend to bill the plan or coverage directly.

Recent reports in the popular press have been shaking the business of healthcare. UnitedHealthcare strongly influenced the report written by Yale researchers about out of network billing, which in turn strongly influenced Congress. Questions about the integrity of the research have not been answered.⁵⁴ Early evaluation of the Merit-Based Incentive Payment System (MIPS) scores showed limited evidence that a better score was associated with lower rates of hospital complications, and noted that “the main problem with MIPS may not be whether the incentives are large enough to influence physician behavior but rather whether the MIPS quality score is scientifically valid and measures physicians’ contribution to outcomes.”^{55,56} And The New York Times reported on hospital and insurer prices, noting that sometimes “insured patients are getting prices that are higher than they would if they pretended to have no coverage at all.”⁵⁷

The modern history of healthcare has seen a variety of attempts to control rising costs, with increasing demands by insurance payers and government agencies for specification, systemization, and specialization. This has in turn increased the amount of data to be analyzed, which leads again to systems and agencies with their own biases and agendas. Since data gathered by these systems will be used to justify system changes,, gaming the system changes the rules of the game.

How does this relate to Informatics? *It’s all about that data...*

References List

1. Hall MA, Schneider CE. Learning from the Legal History of Billing for Medical Fees. J Gen Intern Med. 2008 Aug;23(8):1257–60.
2. Pauker KY. A History of RBRVS as a Perspective on P4P — Part I. CSA Bulletin. 2006;(Spring):7.
3. History | CMS [Internet]. [cited 2021 Jul 31]. Available from: <https://www.cms.gov/About-CMS/Agency-Information/History>
4. Hall MA. Making Sense of Referral Fee Statutes. Journal of Health Politics, Policy and Law. 1988 Aug 1;13(4):623–33.
5. Dutton BL, McMenamin P. The Medicare Economic Index: Its Background and Beginnings. Health Care Financ Rev. 1981 Sep;3(1):137–40.

6. Chilingierian J. Origins of DRGs in the United States: A technical, political and cultural story. *The Globalization of Managerial Innovation in Health Care*. 2008 Jan 1;4–33.
7. Medicare Hospital Prospective Payment System [Internet]. OIG; 2001 Aug [cited 2021 Aug 25]. Report No.: OEI-09-00-00200. Available from: <https://oig.hhs.gov/oei/reports/oei-09-00-00200.pdf>
8. Cacace M, Schmid A. The role of diagnosis related groups (DRGs) in healthcare system convergence. *BMC Health Services Research*. 2009 Nov 5;9(1):A5.
9. Pettengill J, Vertrees J. Reliability and Validity in Hospital Case-Mix Measurement. *Health Care Financ Rev*. 1982 Dec;4(2):101–28.
10. Donaldson C, Magnussen J. DRGs: The road to hospital efficiency. *Health Policy*. 1992 May;21(1):47–64.
11. Quantin C, Sauleau E, Bolard P, Mousson C, Kerkri M, Lecomte PB, et al. Modeling of High-cost Patient Distribution within Renal Failure Diagnosis Related Group. *Journal of Clinical Epidemiology*. 1999 Mar;52(3):251–8.
12. Shankar-Hari M, Harrison D, Rowan K. Differences in Impact of Definitional Elements on Mortality Precludes International Comparisons of Sepsis Epidemiology. *Crit Care Med*. 2016 Dec;44(12):2223–30.
13. Kempker JA, Martin GS. Does Sepsis Case Mix Heterogeneity Prevent Outcome Comparisons? *Critical Care Medicine*. 2016 Dec;44(12):2288–9.
14. Rosenthal E. How health insurance changed from protecting patients to seeking profit [Internet]. *Stanford Medicine*. [cited 2021 Aug 13]. Available from: <http://stanmed.stanford.edu/2017spring/how-health-insurance-changed-from-protecting-patients-to-seeking-profit.html>
15. Lundeen JM, Souba WW, Hollenbeak CS. Sources of Error in Delayed Payment of Physician Claims. *Family Medicine*. 2003 May;35(5):355–9.
16. Cutting Edge | Medical Billing - Healthcare Analytics [Internet]. [cited 2021 Aug 28]. Available from: <https://cuttingedgehca.com/>
17. Revenue Cycle Management - Medical Practice Partners [Internet]. *Medical Practice Partners*. [cited 2021 Aug 28]. Available from: <https://www.medicalpracticepartners.com/>
18. 90% of Solo, Small Physician Practices Plan to Outsource Medical Billing [Internet]. [cited 2021 Aug 15]. Available from: https://www.beckersasc.com/asc-coding-billing-and-collections/90-of-solo-small-physician-practices-plan-to-outsource-medical-billing.html?oly_enc_id=1683B3235756H4V
19. Technavio. \$ 27.43 Billion Growth in Global Healthcare Revenue Cycle Management (RCM) Software Market 2021-2025 | Featuring 3M Co., Allscripts Healthcare Solutions Inc., and Change Healthcare Inc. among others | Technavio [Internet]. [cited 2021 Jul 28]. Available from: <https://www.prnewswire.com/news-releases/-27-43-billion-growth-in-global-healthcare-revenue-cycle-management-rcm-software-market-2021-2025--featuring-3m-co-allscripts-healthcare-solutions-inc-and-change-healthcare-inc-among-others--technavio-301256263.html>
20. Reddy P. Special General Medical Staff Meeting. 2014 Dec 2; O'Connor Hospital, San Jose, CA.
21. CMS. 1995 Documentation Guidelines for Evaluation and Management Services [Internet]. 1995. Available from: <https://www.cms.gov/outreach-and-education/medicare-learning-network-mln/mlnedwebguide/downloads/95docguidelines.pdf>
22. Acute Coronary Syndrome DRG Payments [Internet]. *Administrative Consultant Service*; Available from: https://www.acsteam.net/sites/acs3/uploads/documents/newsletters/ACSFY17_updated.pdf
23. Gorke J. Physician Documentation And Coding: The Third Rail? [Internet]. *Forbes*. 2019 [cited 2021 Aug 15]. Available from: <https://www.forbes.com/sites/jeffgorke/2019/10/24/physician-documentation-and-coding-the-third-rail/>
24. Russo R. Documentation and Data Improvement Fundamentals. *Documentation and Data Improvement Fundamentals / AHIMA, American Health Information Management Association* [Internet]. 2004 Oct 15 [cited 2021 Aug 15]; Available from: <http://library.ahima.org/doc?oid=60174>
25. Grant KB. You Might Want to Get a Second Opinion Before Paying That Medical Bill [Internet]. *NBC News*. [cited 2021 Aug 31]. Available from: <https://www.nbcnews.com/business/consumer/it-s-time-get-second-opinion-paying-medical-bill-n545626>
26. OIG. Improper Payments for Evaluation and Management Services Cost Medicare Billions in 2010 (OEI-04-10-00181; 05/14). 2014 May;(OEI-04-10-00181):44.
27. Pollitz K, Jan 20 DMP, 2021. Claims Denials and Appeals in ACA Marketplace Plans [Internet]. *KFF*. 2021 [cited 2021 Aug 31]. Available from: <https://www.kff.org/private-insurance/issue-brief/claims-denials-and-appeals-in-aca-marketplace-plans/>
28. Simborg D. DRG Creep: a new hospital-acquired disease. *New England Journal of Medicine*. 1981 Jun 25; 304(26):1602-1604.
29. Román P, Ruiz-Cantero A. Polypathology, an emerging phenomenon and a challenge for healthcare systems. *Revista Clínica Española (English Edition)*. 2017 May;217(4):229–37.
30. Tinetti ME, Fried TR, Boyd CM. Designing Health Care for the Most Common Chronic Condition—Multimorbidity. *JAMA*. 2012 Jun 20;307(23):2493–4.
31. Wei MY, Luster JE, Chan C-L, Min L. Comprehensive review of ICD-9 code accuracies to measure multimorbidity in administrative data. *BMC Health Services Research*. 2020 Jun 1;20(1):489.

32. Carter GM, Newhouse JP, Relles DA. How Much Change in the Case Mix Index is DRG Creep? [Internet]. Rand; 1990 Apr. Available from: <https://www.rand.org/content/dam/rand/pubs/reports/2007/R3826.pdf>
33. Steinwald B, Dummit LA. Hospital Case-Mix Change: Sicker Patients Or Drg Creep? Health Affairs. 1989 Jan 1;8(2):35–47.
34. Ericson C. Is Case Mix Index Still a Relevant Key Performance Indicator? | Journal Of AHIMA [Internet]. 2021 [cited 2021 Aug 29]. Available from: <https://journal.ahima.org/is-case-mix-index-still-a-relevant-key-performance-indicator/>
35. Sjoding MW, Iwashyna TJ, Dimick JB, Cooke CR. Gaming Hospital-Level Pneumonia 30-Day Mortality and Readmission Measures by Legitimate Changes to Diagnostic Coding*. Critical Care Medicine. 2015 May;43(5):989–95.
36. Surviving Sepsis Campaign (SSC) | SCCM [Internet]. [cited 2021 Aug 29]. Available from: <https://www.sccm.org/SurvivingSepsisCampaign/Home>
37. Slade E, Tamber PS, Vincent J-L. The Surviving Sepsis Campaign: raising awareness to reduce mortality. Crit Care. 2003 Jan 8;7(1):1.
38. Blood Pressure Toolkit | American Heart Association [Internet]. [cited 2021 Aug 31]. Available from:
39. Diagnosis | ADA [Internet]. [cited 2021 Aug 31]. Available from: <https://www.diabetes.org/a1c/diagnosis>
40. Liang F-W, Wang L-Y, Liu L-Y, Li CY, Lu T-H. Physician code creep after the initiation of outpatient volume control program and implications for appropriate ICD-10-CM coding. BMC Health Services Research. 2020 Feb 19;20(1):127.
41. Parris R, Schoenvogel M. The Art of Putting It Together [Internet]. Huron Healthcare (Huron Consulting Group); Available from: http://www.huronconsultinggroup.com/~media/Resource%20Media%20Content/Healthcare/151566%20Print%20Healthcare_WP_RC_ConsolidationStandardization_Final
42. Schwartz K, Lopez E, 2020. What We Know About Provider Consolidation [Internet]. KFF. 2020 [cited 2021 Aug 31]. Available from: <https://www.kff.org/health-costs/issue-brief/what-we-know-about-provider-consolidation/>
43. Plawewski AM, Singer MC, Peterson EL, Yaremchuk KL. Impact of a specialty trained billing team on an academic otolaryngology practice. American Journal of Otolaryngology. 2020 Sep;41.
44. LaPointe J. Judge Approves Sutter Health's \$575M Antitrust Settlement [Internet]. RevCycleIntelligence. 2021 [cited 2021 Aug 31]. Available from: <https://revcycleintelligence.com/news/judge-approves-sutter-healths-575m-antitrust-settlement>
45. UFCW v. Sutter Health - Home [Internet]. [cited 2021 Aug 31]. Available from: <https://www.sutterhealthlawsuit.com/>
46. US Department of Justice. Sutter Health and Affiliates to Pay \$90 Million to Settle False Claims Act Allegations of Mischarging the Medicare Advantage Program [Internet]. 2021 [cited 2021 Aug 31]. Available from: <https://www.justice.gov/opa/pr/sutter-health-and-affiliates-pay-90-million-settle-false-claims-act-allegations-mischarging>
47. US Department of Justice. Prime Healthcare Services and CEO to Pay \$65 Million to Settle False Claims Act Allegations [Internet]. 2018 [cited 2021 Aug 29]. Available from: <https://www.justice.gov/opa/pr/prime-healthcare-services-and-ceo-pay-65-million-settle-false-claims-act-allegations>
48. US Department of Justice. Prime Healthcare Services and Two Doctors Agree to Pay \$37.5 Million to Settle Allegations of Kickbacks, Billing for a Suspended Doctor, and False Claims for Implantable Medical Hardware [Internet]. 2021 [cited 2021 Aug 10]. Available from: <https://www.justice.gov/opa/pr/prime-healthcare-services-and-two-doctors-agree-pay-375-million-settle-allegations-kickbacks>
49. Juarez G. Non-Profit Taxpayers Against Fraud Urges the Federal Court to Rule Against Stanford Hospital for \$468 Million Alleged Healthcare Billing Fraud [Internet]. PR.com. [cited 2021 Aug 9]. Available from: <https://www.pr.com/press-release/838884>
50. United States v. Stanford Healthcare Billing Department. United States District Court, Northern District of California. Case 17-CV-08726-DSF-AFM.
51. Pallone F. Text - H.R.3630 - 116th Congress (2019-2020): No Surprises Act [Internet]. 2019 [cited 2021 Aug 31]. Available from: <https://www.congress.gov/bill/116th-congress/house-bill/3630/text>
52. HHS Announces Rule to Protect Consumers from Surprise Medical Bills | CMS [Internet]. [cited 2021 Aug 31]. Available from: <https://www.cms.gov/newsroom/press-releases/hhs-announces-rule-protect-consumers-surprise-medical-bills>
53. AMA summary of the interim final rule of the No Surprises Act [Internet]. American Medical Association. [cited 2021 Aug 31]. Available from: <https://www.ama-assn.org/delivering-care/patient-support-advocacy/ama-summary-interim-final-rule-no-surprises-act>
54. Adams R. UnitedHealthcare Guided Yale's Groundbreaking Surprise Billing Study [Internet]. The Intercept. 2021 [cited 2021 Aug 15]. Available from: <https://theintercept.com/2021/08/10/unitedhealthcare-yale-surprise-billing-study/>
55. "Damning assessment" finds few ties between physicians' MIPS scores and stronger surgical outcomes [Internet]. FierceHealthcare. [cited 2021 Aug 9]. Available from:

<https://www.fiercehealthcare.com/practices/damning-assessment-finds-few-ties-between-physicians-mips-scores-and-stronger-surgical>

56. Glance LG, Thirukumaran CP, Feng C, Lustik SJ, Dick AW. Association Between the Physician Quality Score in the Merit-Based Incentive Payment System and Hospital Performance in Hospital Compare in the First Year of the Program. JAMA Network Open. 2021 Aug 3;4(8):e2118449–e2118449.
57. Kliff S, Katz J, Taylor R. Hospitals and Insurers Didn't Want You to See These Prices. Here's Why. The New York Times [Internet]. 2021 Aug 22 [cited 2021 Aug 25]; Available from: <https://www.nytimes.com/interactive/2021/08/22/upshot/hospital-prices.html>