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INTEGRA MED ANALYTICS LLC

UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA – WESTERN DIVISION

UNITED STATES OF AMERICA,
ex rel. INTEGRA MED ANALYTICS
LLC,

Plaintiff,

v.

PROVIDENCE HEALTH SERVICES,
et al.,

Defendants.

CASE NO. 2:17-cv-01694-PSG-SS

SECOND AMENDED COMPLAINT
[REDACTED]

DEMAND FOR JURY TRIAL

Assigned to the Hon. Philip S. Gutierrez

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1 This is an action brought by Plaintiff/Relator Integra Med Analytics LLC
2 (“**Relator**”) on behalf of the United States of America pursuant to the Federal False
3 Claims Act, 31 U.S.C. § 3729, et seq. (the “**False Claims Act**”). In support thereof,
4 Relator alleges as follows:

5 **I. INTRODUCTION**

6 1. Through a proprietary analysis of all claims submitted to Medicare
7 nationwide since 2011, Relator uncovered that Providence Health & Services and its
8 affiliated hospitals (collectively, “**Providence**” or the “**Providence Defendants**”)
9 routinely used unwarranted Major Complication and Comorbidity secondary codes,
10 which falsely inflated claims submitted to Medicare. A multi-faceted investigation
11 of the business practices of Providence and its consultant, J.A. Thomas and
12 Associates LLC (“**JATA**”)—which included interviewing former employees,
13 reviewing training and marketing materials, and extensive econometric analysis—
14 confirmed that Providence’s false Medicare claims were not only intentional, but
15 were part of a systematic effort to boost its Medicare revenue. Relator now brings
16 this action to recover over \$188.1 million paid by the United States as a result of
17 Providence’s fraud.

18 2. Providence is one of the nation’s largest health systems, operating 34
19 hospitals and 600 clinics across five states. Providence operates a number of
20 wholly-owned and/or controlled entities, including the defendant facilities. Of
21 Providence’s \$14.4 billion in revenue in 2015, approximately \$6.2 billion came
22 from Medicare reimbursements.

23 3. To establish amounts billed to Medicare for patient services, systems
24 like Providence must properly code such services according to preapproved
25 standards, which Providence purported to monitor and audit through its “One
26 Revenue Cycle” department. Providence also purported to engage JATA to help
27 support the system’s compliance with clinical documentation management. In
28 reality, documentary evidence uncovered by Relator and interviews with former

1 employees confirm that Providence and JATA worked seamlessly to create a culture
2 throughout Providence that promoted increasing Medicare billing without regard for
3 accuracy. Providence and JATA's efforts ranged from pushing doctors to make
4 unwarranted diagnoses, to using leading queries to change doctors' original
5 diagnoses. Even JATA's proprietary software was designed to manipulate
6 diagnoses to maximize Medicare revenue.

7 4. In addition to identifying the Defendants' false claims through its
8 proprietary analysis—and then confirming its findings through exhaustive
9 investigation—Relator also performed extensive econometric analysis designed to
10 eliminate conceivable innocent explanations. Thus, for instance, Relator's analysis
11 rules out the possibility that the Defendants' inflated Medicare billings arise from an
12 issue with the treating doctors or the type of patient that Providence treats.
13 Moreover, to be conservative, only the most extreme, statistically significant cases
14 of upcoding have been identified by the Relator as fraudulent.

15 5. In short, Relator has determined that Providence, with the
16 encouragement of JATA, has submitted more than \$188.1 million in false claims for
17 Medicare reimbursement over the past seven years.

18 **II. JURISDICTION AND VENUE**

19 6. This Court has subject matter jurisdiction over this action pursuant to
20 31 U.S.C. § 3732(a) and 28 U.S.C. § 1331.

21 7. This Court has personal jurisdiction over the named Defendants
22 because, inter alia, the Defendants transacted business in this District; reside in this
23 District; engaged in wrongdoing in this District; and/or caused the submission of
24 false or fraudulent claims in this District. Further, 31 U.S.C. § 3732(a) provides for
25 nationwide service of process.

26 8. Venue is proper in this District under 31 U.S.C. § 3732(a) and 28
27 U.S.C. § 1391(b) and (c). During the relevant time period, a substantial portion of
28 the events complained of that gave rise to Plaintiff's claims occurred in this District

1 in violation of 31 U.S.C. § 3729 and § 3730.

2 9. There has been no public disclosure of the allegations herein. To the
3 extent that there has been a public disclosure unknown to Relator, Relator is an
4 “original source” under 31 U.S.C. § 3730(e)(4). Relator has direct and independent
5 knowledge of the information on which the allegations are based and voluntarily
6 provided the information to the Government before filing this *qui tam* action based
7 on that information. *See* 31 U.S.C. § 3730(e)(4).

8 **III. PARTIES**

9 10. Relator Integra Med Analytics LLC is a Texas limited liability
10 company with its principal place of business in Austin, Texas.

11 11. Relator is an associated company of Integra Research Group LLC,
12 which specializes in using statistical analysis to uncover and prove fraud. Integra
13 Research Group LLC’s sister company, Integra REC LLC, has extensive experience
14 using statistical analysis to detect and prove fraud, specifically in mortgage-backed
15 securities and other financial markets. Integra REC LLC has successfully initiated
16 numerous cases under the False Claims Act.

17 12. Defendant Providence Health & Services is a Washington non-profit
18 corporation with its registered agent in California listed as Business Filings Inc., at
19 818 W. 7th Street, Suite 930, Los Angeles, CA 90017.

20 13. Defendant Providence Health System – Southern California, is a
21 California non-profit corporation with its registered agent listed as Business Filings
22 Inc., at 818 W. 7th Street, Suite 930, Los Angeles, CA 90017.

23 14. Defendant Providence Health & Services – Washington, is a
24 Washington non-profit corporation with its registered agent in California listed as
25 Business Filings Inc., at 818 W. 7th Street, Suite 930, Los Angeles, CA 90017.

26 15. Defendant Providence Health & Services – Oregon, is an Oregon non-
27 profit corporation with its registered agent in California listed as Business Filings
28 Inc., at 818 W. 7th Street, Suite 930, Los Angeles, CA 90017.

1 16. Defendant Providence Saint John's Health Center, is a California
2 nonprofit corporation with its registered agent listed as Business Filings Inc., at 818
3 W. 7th Street, Suite 930, Los Angeles, CA 90017.

4 17. Defendant Providence Health & Services – Montana, is a Montana non-
5 profit corporation with its registered agent listed as Business Filings Inc., at 3011
6 American Way, Missoula, MT 59808.

7 18. Defendant Swedish Health Services, is a Washington non-profit
8 corporation with its registered agent listed as Business Filings Inc., at 505 Union
9 Ave. SE, Suite 120, Olympia, WA 98501.

10 19. Defendant Swedish Edmonds, is a Washington non-profit corporation
11 with its registered agent listed as Business Filings Inc., at 505 Union Ave. SE, Suite
12 120, Olympia, WA 98501.

13 20. Defendant J.A. Thomas and Associates, Inc. is a Georgia corporation
14 with its principal office address listed as 1 Wayside Road, Burlington, MA 01803,
15 and its registered agent listed as CT Corporation System, 289 South Culver Street,
16 Lawrenceville, GA 30046.

17 **IV. SUBSTANTIVE ALLEGATIONS**

18 **A. Overview of Medicare Reimbursement and Upcoding**

19 21. Medicare makes payments to hospitals on a per-discharge basis, *i.e.*,
20 one payment for each inpatient hospital stay. The payment is designed to cover the
21 average cost of resources needed to treat each patient's needs. To account for the
22 patient's needs, Medicare assigns each discharge to a diagnosis related group (a
23 "**DRG**"), which groups patients with similar clinical problems that are expected to
24 require similar amounts of hospital resources.¹ The DRG is the single most
25 impactful factor in determining the average payment for a claim, which can be
26

27 ¹ See Medpac, *Hospital Acute Inpatient Services Payment System Payment Basics*,
28 Oct. 2014.

1 further adjusted by hospital-specific factors such as market conditions in the
2 hospital's city, indirect medical education payments, and disproportionate share
3 payments.

4 22. The DRG is primarily determined by three types of codes from a
5 Medicare claim: the principal diagnosis code, surgical procedure codes, and
6 secondary diagnosis codes. The principal diagnosis code is defined as the
7 "condition established after study to be chiefly responsible for occasioning the
8 admission of the patient to the hospital for care."² Surgical procedure codes
9 represent surgical procedures performed in an operating room setting at the hospital.
10 Secondary diagnoses represent "all conditions that coexist at the time of admission,
11 that develop subsequently, or that affect the treatment received and/or the length of
12 stay."³

13 23. There are more than 330 base DRGs, and each base DRG can have up
14 to three severity levels: (i) without Complication or Major Complication, (ii) with
15 Complication, and (iii) with Major Complication.⁴ The secondary diagnoses on the
16 claim determine the severity level of a DRG. The Centers for Medicare and
17 Medicaid Services (the "CMS") publishes a list of codes each year that, when added
18 to a claim, result in the claim being considered a Complication or Comorbidity (a
19 "CC") or Major Complication or Comorbidity (an "MCC"). Adding a CC
20 secondary code to a claim can increase the value of the claim from anywhere
21 between approximately \$1,000 and \$10,000. Adding an MCC secondary code can
22 increase the value \$1,000 to \$25,000. Hospitals are thus incentivized to add
23

24 ² See Centers for Disease Control, *ICD-9-CM Official Guidelines for Coding and*
25 *Reporting*, Oct. 1, 2011, at 88.

26 ³ See *id.* at 91.

27 ⁴ See Medpac, *Hospital Acute Inpatient Services Payment System Payment Basics*,
28 Oct. 2014.

unwarranted secondary diagnosis codes to Medicare reimbursement claims.

B. In Consultation with JATA, Providence Pushed Its Coders, CDI Specialists, and Doctors to Apply Unnecessary CCs and MCCs

24. Like most hospital groups, Providence has a clinical documentation improvement (“CDI”) program to bridge potential gaps between Medicare’s coding standards and commonly used clinical language. Providence engaged JATA to help with these efforts. Since its formation in 1991, JATA has been a leading provider of CDI consulting services. JATA purports to help hospitals “ensure the accuracy of clinical documentation reflecting the appropriate severity of illness.” In reality, Relator’s investigation uncovered that JATA’s work was primarily designed to ramp up its clients’ Medicare revenue without regard for accuracy. Indeed, JATA guaranteed an increase in its clients’ Case Mix Index (“CMI”), which is influenced by a hospital’s CC and MCC rates.

Guaranteed to increase CMI

See how we're helping hospitals achieve a 4-8% increase in their Case Mix Index through better documentation.

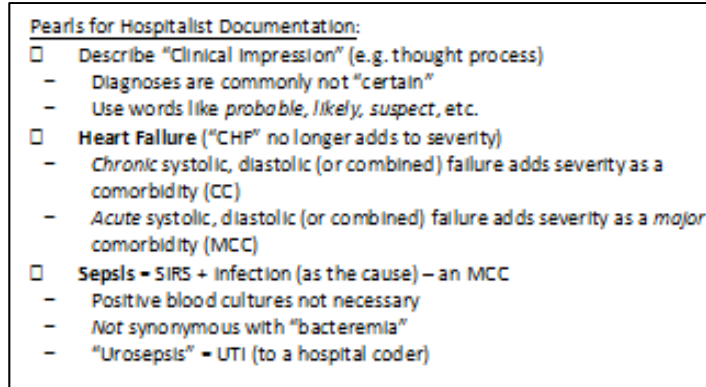
[Learn More ▶](#)

25. JATA also engaged in revenue sharing arrangements with its hospital clients. In its sales pitch to one hospital, JATA “guaranteed return on investment if [the hospital] followed [JATA’s] process.” While this could be seen as a risk sharing mechanism, such an arrangement effectively meant that JATA would be compensated through helping hospitals to increase Medicare revenue by increasing the coding of MCCs.

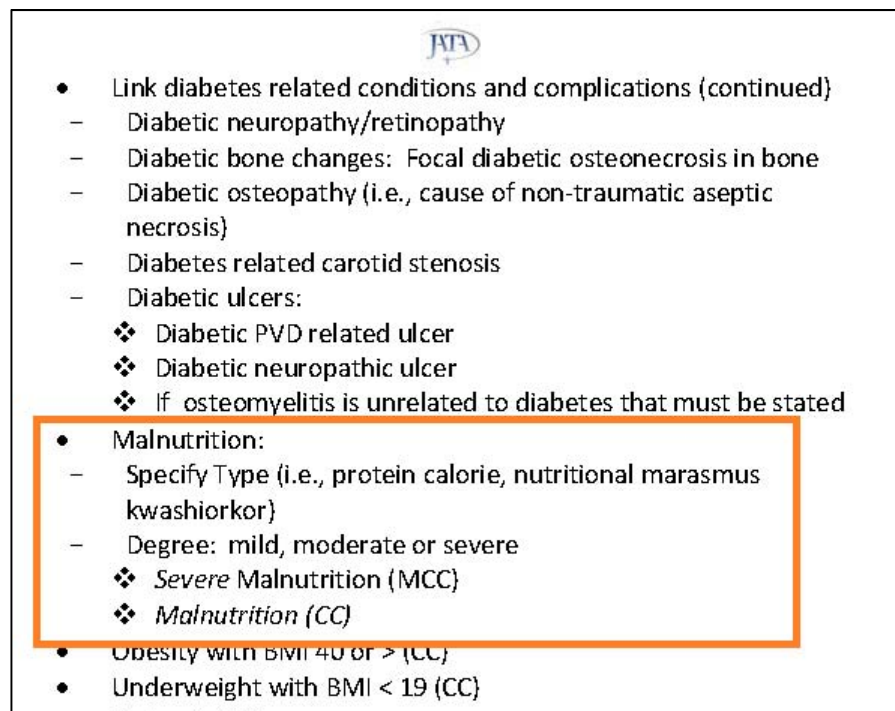
1. Providence, aided by JATA, trained doctors to upcode MCCs

26. JATA’s efforts to inflate Providence’s Medicare revenue touched on all aspects of Providence’s CDI program, beginning with a doctor’s initial

documentation of treatment. Relator uncovered that Providence gave its doctors “Documentation Tips,” prepared by JATA, that aggressively pushed the use of specific language conducive to coding for secondary CCs and MCCs, which JATA referred to as “pearls for hospitalist documentation”:



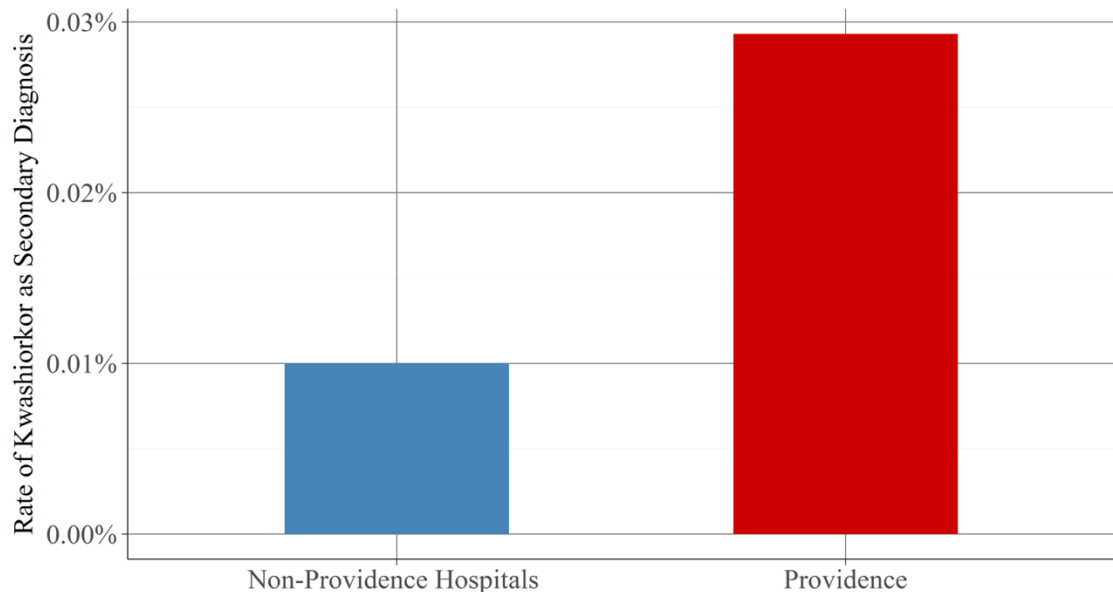
27. These Documentation Tips often bore no relation to the clinical realities facing Providence doctors. For example, in one Documentation Tip for patients suffering from malnutrition, Providence encouraged doctors to specify the type of malnutrition. In doing so, Providence highlighted a severe protein-energy malnutrition called kwashiorkor.



28. However, kwashiorkor is a disease that “affects children living in tropical and subtropical parts of the world during periods of famine or insufficient food supply [and] *is not typically found in the United States.*”⁵ Not surprisingly, according to Relator’s analysis of Medicare billing nationwide, Providence’s rate of reimbursement for Kwashiorkor is about three times the national average across all hospitals.

Figure 1. Rate of Kwashiorkor for Providence Versus Other Hospitals.

This figure shows the rate at which Providence codes Kwashiorkor versus the rate at which other hospitals code Kwashiorkor.



29. The doctor tip sheets created by JATA and disseminated to Providence doctors also reveal how doctors were trained to document specific diagnoses identified by Relator for excessive use—encephalopathy, acute respiratory failure and severe malnutrition—in order to get an MCC. For example, while encephalopathy was noted as an MCC, other related diagnoses were discouraged because they were “not even a CC.”

⁵ Office of the Inspector General, U.S. Department of Health & Human Services, *OIG Work Plan 2017* at 7 (2017), available at <https://goo.gl/BsJPYz>.

- 
- ARnF(AKI) with ATN (acute tubular necrosis) remains an MCC
 - **Chronic Kidney Disease (CKD)** – *must* identify stage
 - Stage 4 (GFR<30) and stage 5 (GFR<15) = CC
 - Chronic Renal Insufficiency (CRI) = *low severity*
 - **Noncompliance with dialysis**
 - Document if CHF present in addition to just “fluid overload”
 - Document “non-cardiogenic pulmonary edema” if appropriate
 - List specific reason for emergent/urgent HD, e.g. fluid overload/CHF, acidemia, etc.
 - **Kidney Transplants**
 - Remember to identify both chronic kidney disease (CKD) and acute renal failure/AKI s/p transplant
 - Specifically identify “transplant rejection” if present, even if presumed
 - **Acute Respiratory Failure** – an MCC
 - Clinical diagnosis, no need for ETT/mechanical ventilation
 - Respiratory distress = *low severity*
 - Pulmonary insufficiency (except post-op) = *low severity*
 - **Encephalopathy** – an MCC
 - “Encephalopathy due to profound azotemia”
 - “Delirium” is not a CC unless specified as a certain type. Altered MS is a *symptom* – not even a CC
 - **Severe Malnutrition (MCC)**
 - Malnutrition or cachexia = CC
 - Emaciation is also an MCC

30. Similarly, acute respiratory failure was highlighted as “an MCC,” yet respiratory distress was also de-emphasized since it yielded “little credit.” With respect to severe malnutrition, the tip sheet for surgeons instructs doctors: “Document severe malnutrition—it not only adds severity as an MCC, it will likely prolong the post-op course thereby aligning the illness severity with length of stay.”

Pearls for CV Surgical Documentation

- Describe Your “Clinical Impression” of diagnosis/etiology
 - You can use words like probable, likely, suspect, etc.
- Document “Acute respiratory failure” or “Post-op pulmonary insufficiency” (both MCCs) rather than “Failure to wean” or “Unable to wean” in the post-op period
 - Also describe any underlying lung disease that contributes, e.g. “chronic respiratory failure due to COPD”
- Document all procedures performed as well as causative underlying illnesses
 - “ICD placement *and* cardiac catheterization w/principle diagnosis ~~acute systolic heart failure~~”
- Document *severe malnutrition* – it not only adds severity as an MCC, it will likely prolong the post-op course thereby aligning the illness severity with length of stay
 - ~~Congestive Heart Failure “CHF” no longer adds to severity~~
 - Chronic systolic, diastolic or combined heart failure adds severity via a minor co morbidity (CC)

31. JATA’s own staff directly trained Providence doctors to code MCCs. In 2015, a JATA Regional Director created a video training Providence surgeons and anesthesiologists on how to manage the transition from ICD-9 codes to ICD-10 codes. When covering the diagnoses related to cholelithiasis, which has 40 possible ICD-10 codes, the video instructed Providence that only the code resulting in an MCC is the “appropriate” diagnosis. Referring to this MCC, the Regional Director instructs, “This is the way we describe conditions anyways, pretty much, and this is the only one that is going to get you a major comorbidity, by the way. So as long as we describe things in this way we are going to arrive at the most appropriate diagnostic code over here out of the 40 different possibilities.”

2. With the Assistance of JATA, Providence Pressured Doctors to Uptime MCC Using Leading Queries

32. JATA also influenced Providence’s coding process in order to boost the system’s “capture” of CCs and MCCs. Hospitals are not allowed to apply a CC or MCC unless it is sufficiently documented in the patient’s medical files. Providence CDI specialists thus sent “queries” to doctors designed to push them to change their initial assessments in ways that would justify a coding of a CC or MCC.

1 33. Relator uncovered that Providence CDI staff used non-compliant
2 leading queries⁶ to direct doctors to a document specific diagnoses, such as severe
3 malnutrition, one of the MCCs identified by Relator for excessive use. The CDI
4 staff either queried doctors verbally or issued queries through EPIC (their electronic
5 health record system) which in turn gave doctors a choice to agree, disagree or skip
6 the query.

7 34. The use of leading queries at Providence is consistent with JATA's
8 practices at other hospital systems. Despite branding its services as CDMP—or
9 "*Compliant* Documentation Management Program [emphasis added]" —JATA
10 promoted non-compliant leading queries to its clients. A former staff at JATA
11 hospital recalls CDI querying for MCCs such as sepsis even when "there weren't
12 enough indicators to query the physician," and JATA promoted issuing queries
13 based on MCC rates and financial impact rather than documenting accurately.

14 35. Not only did JATA coach hospitals to issue leading queries, but it also
15 unscrupulously tried to convince hospitals that they should not be concerned about
16 leading queries, citing two specious reasons.

17 36. First, JATA made a point to hire nurses into CDI roles and argued that
18 nurses did not have to be concerned with leading queries because they were not
19 coders. In a discussion on the topic of leading queries in a CDI member forum, the
20 CDI manager at CoxHealth overseeing JATA's CDMP program was concerned
21

22 ⁶ The fraudulent practice of issuing leading queries has been targeted in at least two
23 False Claims Act settlements by the United States Department of Justice, including
24 Good Samaritan Hospital where its employees "used leading questions so that the
25 physician would answer that the patient was malnourished" and Johns Hopkins
26 Bayview Medical Center where its employees "advised treating doctors to include"
27 MCC "secondary diagnosis such as malnutrition or respiratory failure." Moreover,
28 the American Health Information Management Association (AHIMA) provides
guidelines for CDIs to issue Medicare-compliant queries, explicitly prohibiting
CDIs from issuing a leading query, defined as one which "directs a provider to a
specific diagnosis or procedure."

1 about JATA's views on leading queries: "[JATA] informed my CDI team that since
2 we are all RN's and part of the clinical team we do not have to be as concerned
3 about leading clarifications as a coder would...I am having a hard time accepting
4 this because all the literature I have researched has said to give multiple choice
5 options and never give just one diagnosis option as that would be considered leading
6 the provider." In another CDI forum discussion on leading queries, a CDI notes that
7 "[JATA] allows their CDS [clinical documentation specialists] more leeway" by
8 providing a different standard for nurses than coders. However, CDI nurses are not
9 clinicians, but are instead focused on documenting care for the purposes of medical
10 coding. As another CDI specialist points out, "As a nurse speaking to a physician
11 [asking about a specific diagnosis] would be considered appropriate communication,
12 but as a CDI Specialist speaking to a physician, it is considered inappropriate to
13 'lead' that way." Indeed, in one of the U.S. Department of Justice's enforcement
14 actions against a hospital for upcoding, the CDI was even a physician, but
15 nonetheless culpable of advising treating physicians using leading queries.

16 37. Second, JATA unscrupulously justifies leading queries by convincing
17 hospitals that it is doctors, not CDIs, who are entirely responsible for
18 documentation. In one instance discussed in the CDI member forum, a CDI was
19 evaluating JATA CDI software and noticed that the JATA software presented a new
20 diagnosis that generated leading queries. When she raised this issue to JATA,
21 JATA responded that "[doctors] are responsible for their response and we are not
22 responsible regardless of the query."

23 38. JATA's argument that only doctors, not CDIs, are responsible for
24 documentation is particularly troubling when considering how they trained CDI and
25 doctors. JATA-trained CDI exerted pressure on doctors to document for higher
26 severity to the point of acquiescence. For instance, a former coder at JATA facility
27 recalls doctors being tired of being constantly queried to the point that the doctors
28 would just ask what they should right down, as opposed to using their clinical

1 judgement to document accurately; there were “doctors that will just say whatever
2 you ask him to say just to get you off his back.” Furthermore, JATA’s Regional
3 Director taught Providence doctors that the only way to avoid being queried by a
4 CDI would be to document an MCC. This pressure to code MCCs would
5 sometimes result in the creation of contradictory medical records. According to a
6 former Providence CDI staffer, it was not uncommon for doctors to initially
7 document delirium, but after being queried they hastily added encephalopathy to the
8 bottom of the chart.

9 39. In sum, JATA advised CDIs to issue leading queries to doctors who
10 were responsible for the medical record. Knowing doctors wanted to avoid being
11 queried, JATA advised doctors they could avoid queries by documenting an MCC.
12 This fraudulent scheme resulted in the excessive coding of MCCs identified by
13 Relator through its proprietary statistical analysis.

14 **3. JATA Gave Providence Tips on How to Avoid Audits of**
15 **Their Upcoding**

16 40. All the while promoting leading queries and the excessive coding of
17 MCCs, JATA also coached hospitals to avoid being audited. For example, in a
18 presentation to CDI personnel at an industry event, Mario Perez, Director of Clinical
19 Consulting at JATA, advised hospitals to avoid single CC or single MCC
20 diagnoses—one of the metrics tracked in the PEPPER report issued by CMS to
21 support hospitals’ compliance activities—since that was a target identified by
22 Medicare auditors as being at high risk of improper payment.

RAC Target: DRGs Designated as CC or MCC With Only One Secondary Diagnosis



- RACs identified improper payments due to the coding of DRGs with complications or comorbidities (CC) or major complications or comorbidities (MCC) with *only one* MCC or CC
- Examples of these include:
 - MS-DRG 329, major small and large bowel with MCC
 - MS-DRG 330, major small and large bowel with CC
 - MS-DRG 331, major small and large bowel w/o cc/MCC
 - Documentation does not support code assigned
 - For example: 285.1 as single CC

4. Providence and JATA Incentivized Staff to Upcode MCCs

41. To increase the coding of MCCs, Providence gave CDI and doctors financial incentives for successful queries, and it made clear to doctors and staff that it closely tracked their responsiveness. For instance, a monthly newsletter at one Providence hospital posted “Physician Agree Rates” and thanked medical and surgical staff for responding to queries. It also provided CDI specialists with what the hospital deemed as that month’s “Top 5 Queries,” as well as the “Most Effective Query” measured by how much that query helped the hospital’s bottom line. Frequently among the “Top 5 Queries” were the three MCCs identified by Relator for excessive use—encephalopathy, respiratory failure and malnutrition. CDI staff thus had the incentive to query doctors to document these diagnoses since CDI performance is measured by the financial impact of their queries.

CPDI Report: April			
	Concurrent / Retrospective	April's Top 5 Queries:	Most Effective Query:
Total Reviews:	334/573	1. Anemia	Sepsis
Total Queries:	44/3	2. CHF	
Response Rate:	95%/67%	3. Documentation Clarification	Impact of most effective query:
Physician Agree Rate:	69%/50%	4. Sepsis	Revenue: \$14,816
		5. Malnutrition	Case mix: 0.0064
Total Case Mix Index for Medicare and Managed Medicare: 1.5288			
Thank you to the medical and surgical staff for taking the time to respond to these queries. Please contact Melanie Westerinen, CPDI Program Supervisor, at 425.640.4378 with any questions.			

42. Providence measured its CDI specialists by their CC and MCC capture rates, thus giving them an incentive to upcode. Notably, JATA's software tracked the net effect of both positive and negative queries. If a coder or CDI specialist issued a negative query—*i.e.*, a query that reduced the severity of a DRG—JATA's software reduced the net effect of that coder's queries. Thus, Defendants not only incentivized upcoding, but disincentivized coders from sending negative queries. This helped to create a one-way ratchet for Medicare billing—and helped JATA deliver on its guaranteed increase of Providence's CMI.

43. Relator's investigation also revealed evidence that Providence tied doctor salaries to the extent to which they responded to CDI queries. A former Providence CDI specialist recalls that doctors employed by Providence would have their performance and salary negatively impacted if they did not respond to queries.

5. JATA's software promoted upcoding MCCs

44. Providence used JATA's proprietary software to help design queries. Using JATA's software, the moment a CDI specialist entered the patient's principal diagnosis, the CDI specialist was told immediately if a CC or MCC would impact the severity level of the DRG. The software then gave the user suggestions of possible CCs and MCCs along with associated signs and symptoms.

45. JATA clinical documentation software has a reputation for generating outsized additional revenue. In a CDI discussion forum, a CDI manager recounted how her new VP of Finance used JATA in the past and wanted her department to

1 switch to JATA. Despite having a “mature CDI program” that had been developed
2 by 5 different CDI consultants over a span of 12 years, the new VP of Finance
3 wanted to implement JATA believing they would “recoup beaucoup dollars in the
4 process.”

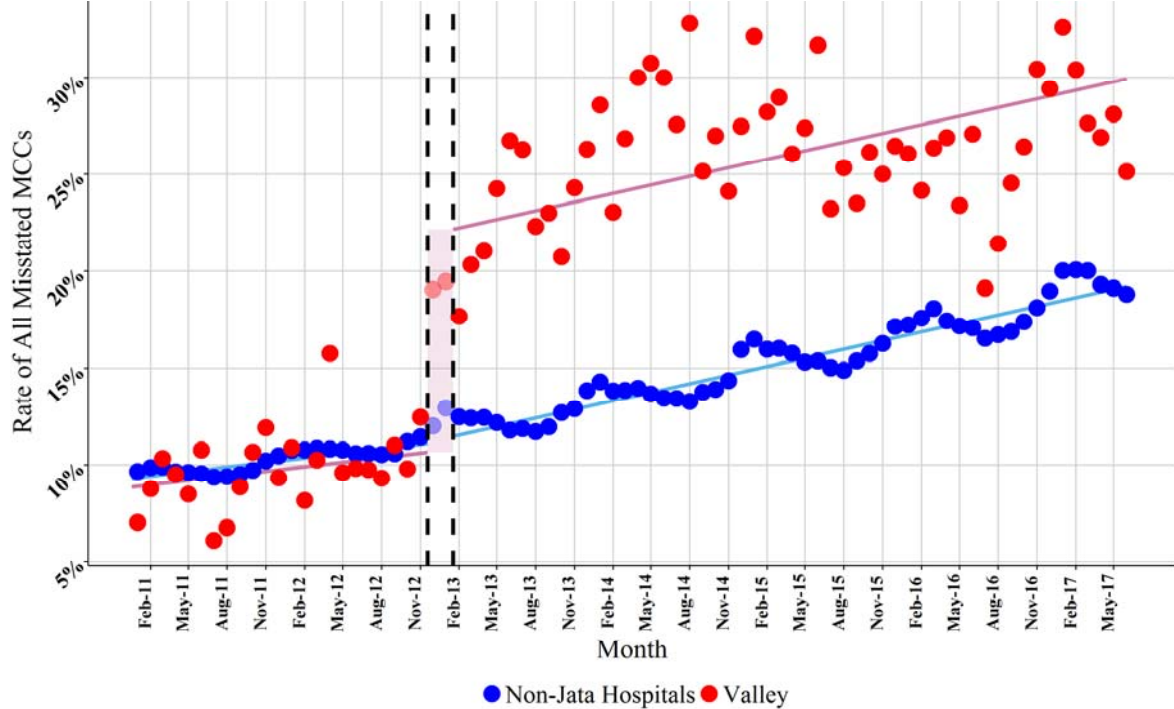
5 46. The effectiveness of JATA’s software in increasing revenue is driven
6 by issuing its own leading queries. JATA documents show how its software will
7 even directly prompt doctors to code specific high revenue diagnoses—e.g., hepatic
8 encephalopathy—even though CDIs are precluded from telling doctors how to
9 document care since those are considered as leading queries.

10 **6. JATA’s upcoding strategies extend beyond Providence**

11 47. Finally, JATA’s role in encouraging and enabling Providence to code
12 CCs and MCCs excessively was not an isolated occurrence but rather a deliberate
13 systematic strategy. Through its multifaceted investigation, Relator uncovered that
14 JATA also provided significant encouragement, training and software to assist many
15 other hospitals to submit false and inflated claims to Medicare.

16 48. Relator’s statistical analysis shows how JATA systematically
17 influenced other hospital systems to upcode MCCs, and confirms that when a
18 system switches to JATA as its CDI consultant, its usage of encephalopathy,
19 respiratory failure, and severe malnutrition (the exact same codes which Providence
20 uses to upcode) jumps significantly. This confirms statistically that JATA plays a
21 significant role in the upcoding and validates Relator’s investigation related to
22 JATA’s direct involvement in enabling hospitals to upcode. The result of this
23 statistical analysis is demonstrated in Figure 2 below. The use of encephalopathy,
24 respiratory failure, and severe malnutrition at Valley Medical Center in Renton,
25 Washington, more than doubled after they started using JATA.

Figure 2: Rate of Encephalopathy, Respiratory Failure, and Severe Malnutrition at Valley Medical Center Jumps Significantly After They Start Using JATA



C. Relator's Methodology

49. Relator uncovered Providence and JATA's fraud by employing unique algorithms and statistical processes to analyze inpatient claims data for short term acute care hospitals from 2011 through June 2017,⁷ obtained from the CMS. These proprietary methods have allowed Relator to identify with specificity the false claims made by Providence (with the help of JATA) to fraudulently inflate revenue on Medicare claims. Relator's analysis focused on identifying certain secondary diagnoses codes—MCCs—that were fraudulently added by Providence to Medicare claims to increase reimbursements.

50. Relator first formed groupings corresponding to 312 specific principal diagnosis codes. To control for the patient's principal diagnosis, Relator used these groupings as comparative "bins." Within each bin, Relator compared the usage rate

⁷ Only claims through the second quarter of 2017 were analyzed by Relator. Claims after June 30, 2017, have not yet been made available to Relator.

1 of specific MCCs at hospitals in the Providence system to usage rates in other acute
2 care inpatient hospitals. In addition, to ensure that only the truly fraudulent claims
3 were analyzed, Relator excluded any claims for which adding an MCC did not
4 increase the value.⁸ Similarly, Relator excluded any claims involving patients who
5 died in the course of their treatment, as these claims tend to involve patients that are
6 sicker and have higher rates of MCCs.

7 51. Given that some natural variation in usage rates among hospitals is
8 expected, Relator used two filters to further ensure that it identified truly abnormal
9 usage. First, only instances where MCCs were used more than twice the national
10 rate or were used at a rate three percentage points higher than in the other hospitals
11 were considered false claims. Second, Relator validated the results of its analysis by
12 determining the statistical significance of each fraudulent pattern used by
13 Providence. Relator only flagged claim groupings where there was less than a one-
14 thousandth percent chance of Relator's findings being due to chance. Under this
15 approach, Relator identified 271 combinations of principal diagnosis codes and
16 Misstated MCCs in which Providence excessively upcodes. Relator included only
17 the principal diagnosis code groups that were used excessively by Providence.

18 52. For example, Providence and other hospitals have a large number of
19 claims involving a Fracture of the Neck of the Femur (hip). Relator has found that
20 among Providence's more than 11,000 claims involving a femoral neck fracture,
21 1,429 had had an accompanying secondary MCC of encephalopathy,⁹ representing
22 12.34 percent of their femoral neck fracture claims. The other non-Providence
23 hospitals, used by Relator for benchmarking, had more than 1,100,000 femoral neck
24

25 ⁸ Some diagnosis related groups do not have an MCC severity level, and as such,
26 adding an MCC does not increase the reimbursement amount.

27 ⁹ See section IV.D.1(a) for a description of encephalopathy and the relevant codes
28 that are included.

1 fracture claims, but only 4.46 percent of those claims reported encephalopathy as an
2 MCC. In other words, Providence coded encephalopathy on these claims at a rate
3 that is 2.77 times higher than comparable hospitals—and profited nearly \$7,500
4 each time it did so.

5 53. While Relator’s precise benchmarking of medical billing is unique,
6 experts have developed and applied similar benchmarks in financial return
7 literature.¹⁰ Benchmarking has the advantage of allowing for very specific and
8 comparative groupings. This avoids imposing specific linearity on the data, which
9 in turn gives Relator’s methodology more statistical power and precision.

10 54. To further validate its conclusions and control for other explanations,
11 Relator ran a bin-based fixed effect linear regression model. Separate regressions
12 were run for claims under each principal diagnosis bin and Relator included
13 variables to control for patient characteristics such as age, gender, and race, as well
14 as county demographic factors such as the unemployment rate, median income, and
15 urban-rural differences. Additionally, variables for the length of stay and discharge
16 status were included to control for the patient’s health and overall claim severity.
17 Relator also tested for the potential impact that doctors, individual patients, and the
18 hospital’s region could have on MCC rates. Even when considering all of these
19 factors, Providence’s MCC usage rate is significantly higher than at other hospitals.

20
21
22
23
24 ¹⁰ See the widely-used methodology developed by Kent Daniel, Mark Grinblatt,
25 Sheridan Titman, Russ Wermers, *Measuring Mutual Fund Performance with*
26 *Characteristic-Based Benchmarks*, The Journal of Finance, vol. 52(3) (1997), at
27 1035–1058. This methodology is first applied to measuring hedge-fund
28 performance by John M. Griffin and Jin Xu, *How Smart Are the Smart Guys? A*
Unique View from Hedge Fund Stock Holdings, Review of Financial Studies, Vol.
22.7 (2009), at 2531–2570.

1 **D. Defendants' False Claims**

2 **1. The False Claims Made by Providence in Consultation with**
3 **JATA**

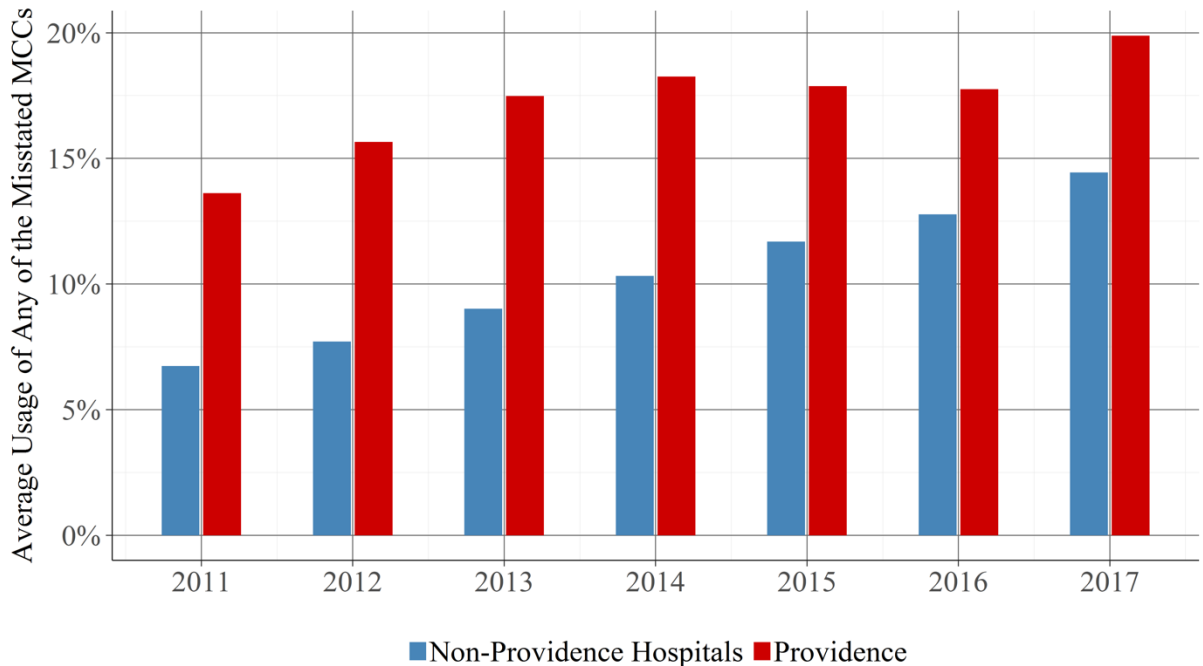
4 55. Relator has determined that Providence, in consultation with JATA,
5 primarily used three categories of secondary MCC codes to increase the value of its
6 claims: encephalopathy (including toxic encephalopathy), respiratory failure (which
7 also includes pulmonary insufficiency), and severe malnutrition (collectively, the
8 “**Misstated MCCs**”). These will each be discussed in more detail in the following
9 sections.

10 56. As illustrated in Figure 3, Providence used the Misstated MCCs at a
11 significantly higher rate than other hospitals. Specifically, non-Providence hospitals
12 used one of these three codes on approximately 10.05 percent of claims from 2011
13 through June 2017, while Providence hospitals used one of these three codes on
14 17.05 percent of such claims—or 1.7 times the rate at other hospitals.

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Figure 3. Rate of Misstated MCC Upcoding by Year for Providence Versus Other Hospitals.

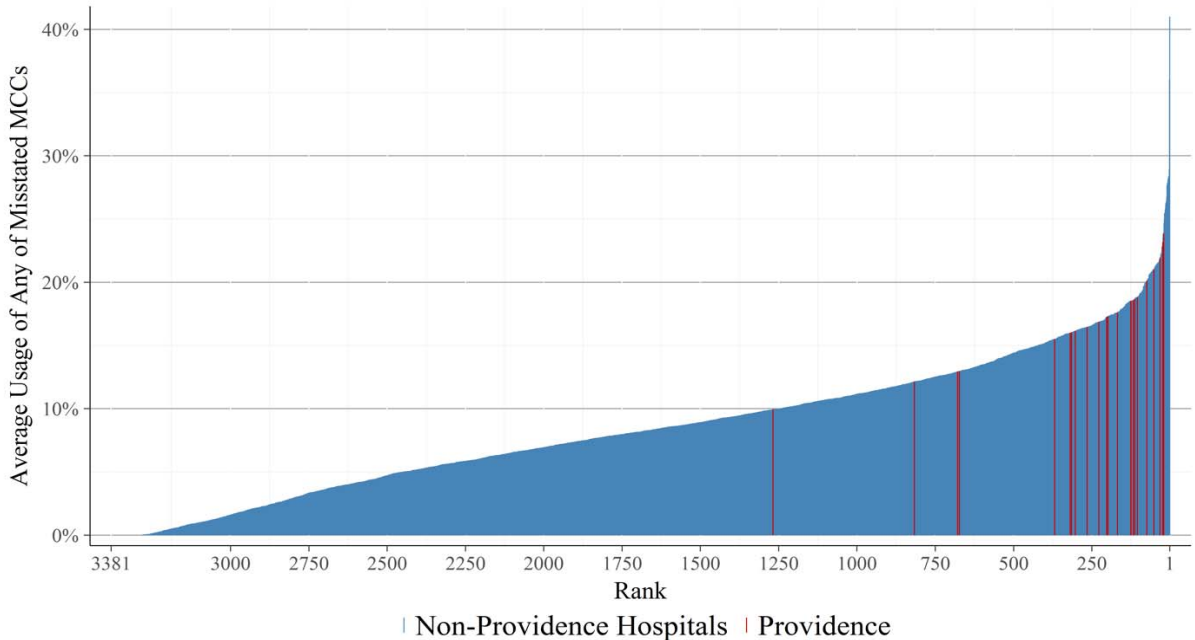
This figure shows the rate at which Providence is using one of the Misstated MCCs relative to other hospitals over time. This analysis is based on the principal diagnosis codes listed in each section for the specific fraudulent patterns.



57. The following figure shows just how drastic some of these patterns are when individual hospitals are analyzed and demonstrate how widespread this abuse is at nearly all the Providence hospitals. As shown in Figure 4, Providence has 14 of the top 250 hospitals (out of more than 3,000 hospitals) based on the rate of Misstated MCCs. If this distribution were random, the statistical probability of one system having 14 of the top 250 hospitals is less than 1 in 100 million.

Figure 4. Rate of Misstated MCC by Hospital.

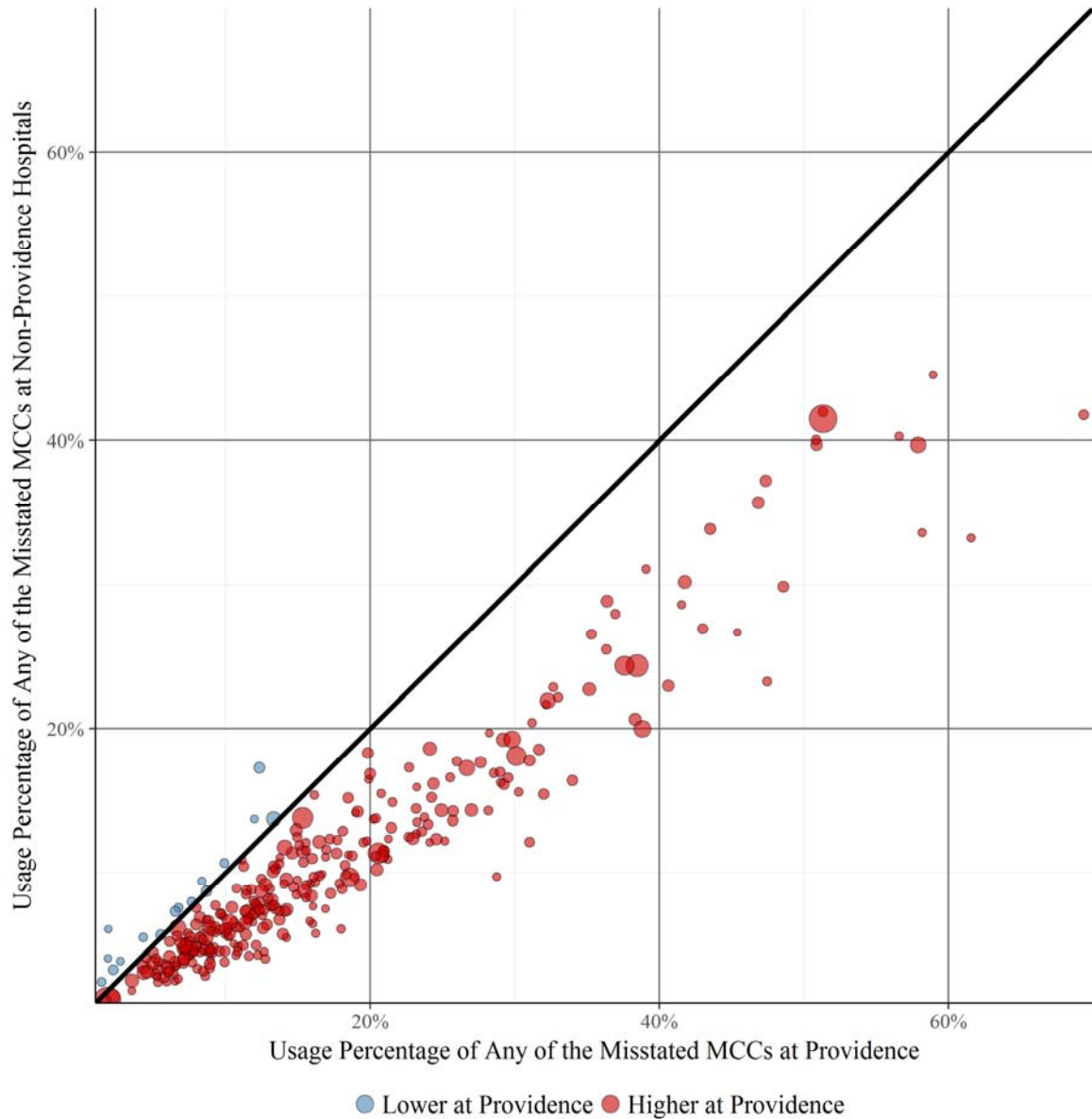
The following figure plots 3,358 hospitals with at least 100 claims in the relevant principal diagnosis code categories. The hospitals are plotted along the x-axis in order of percentage of Misstated MCC usage. Providence has 14 of the top 250 hospitals. The Providence hospitals are in red, while non-Providence hospitals are in blue.



58. Figure 5 below shows that Providence used a higher rate of Misstated MCC codes not just in the principal diagnosis categories analyzed by Relator in this complaint, but across a large variety of principal diagnosis codes. Specifically, Figure 5 shows a dot for each principal diagnosis category, with the rate of Misstated MCC at Providence on the x-axis and the rate of Misstated MCC at other non-Providence hospitals on the y-axis. Dots to the right of the 45-degree line indicate a higher rate of Misstated MCCs at Providence within that principal diagnosis category than at other non-Providence hospitals. As the figure shows, Providence has higher rates of Misstated MCCs across 296 of 312 (94.87%) principal diagnosis categories. This demonstrates that the extent to which Providence excessively upcoded on the categories identified by Relator was not offset by a relative downcoding for other principal diagnosis categories as Providence consistently upcodes relative to other hospitals across a large variety of principal diagnosis codes.

Figure 5. Rate of Misstated MCCs by Principal Diagnosis Code at Providence Versus Other Hospitals.

For the 312 principal diagnoses with at least 100 claims at Providence (each represented by a dot), this figure compares the rate of Misstated MCCs at Providence versus non-Providence hospitals. Red dots to the right of the 45-degree line indicate Providence is coding the Misstated MCCs higher than average.



(a) Encephalopathy

59. The first Misstated MCC fraudulently used by Providence to make false claims is encephalopathy. The codes included with encephalopathy are listed in Table 1. Encephalopathy is a term for brain disease or damage to the brain where the brain is regarded as “altered in its structure or function.” The telltale symptom is

an altered mental state, but altered mental state alone is insufficient for diagnosing encephalopathy. Encephalopathy can be acute or chronic, so the related signs and symptoms can be varied as well. This condition commonly manifests as confusion, agitation, or lethargy, but may include aphasia (altered speech), ataxia (altered gait) and memory loss.

Table 1. List of Encephalopathy ICD-9 and ICD-10 Diagnosis Codes.

ICD-9 Diagnosis Code	Description
34830	Encephalopathy, unspecified
34831	Metabolic encephalopathy
34839	Other encephalopathy
34982	Toxic encephalopathy
ICD-10 Diagnosis Code	Description
G92	Toxic encephalopathy
G9340	Encephalopathy, unspecified
G9341	Metabolic encephalopathy
G9349	Other encephalopathy
I6783	Posterior reversible encephalopathy syndrome

60. The most common causes of encephalopathy are liver damage, cerebral anoxia (severe lack of oxygen to the brain) or kidney failure. Because the causes are extremely varied, no single lab test can prove the presence of encephalopathy. Therefore, in diagnosing the condition, a medical practitioner must keep multiple considerations in mind. The challenge is to properly identify the root cause of the symptoms observed and eliminate unlikely causes based on objective signs.

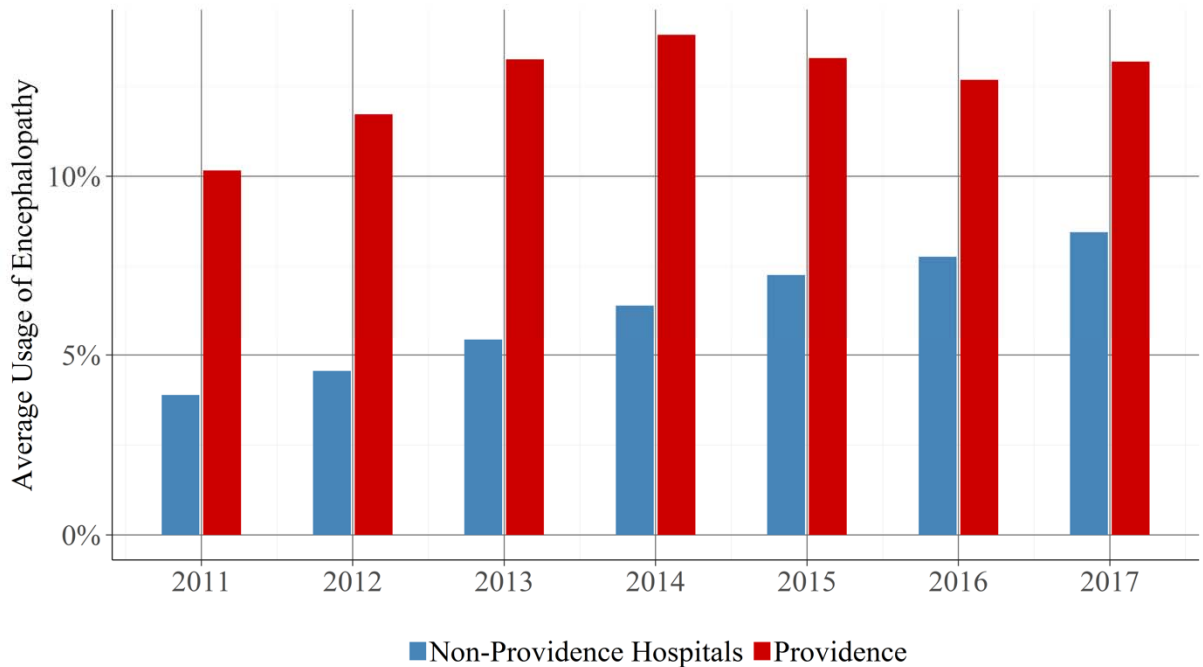
61. Encephalopathy is distinguishable from conditions that have similar symptoms. In elderly hospital patients, for instance, temporary instances of lethargy, agitation and confusion are commonly observed, often right after an intense surgery or as the result of a urinary tract infection. These same signs can be observed in patients as “sundowning” or “late-day confusion” in the late afternoon or evening, but these effects are temporary and are actually related to chronic dementia, not encephalopathy.

62. Between 2011 and June 2017, Providence was 2.07 times more likely to code encephalopathy than other hospitals. During this period, Providence coded

encephalopathy on 12.57 percent of all its claims, compared to 6.07 percent of claims at other hospitals. Providence's usage of encephalopathy over time, relative to the nationwide average, is shown in Figure 6.

Figure 6. Rate of Encephalopathy by Year for Providence Versus Other Hospitals.

This figure shows the rate of encephalopathy at Providence and at other hospitals from 2011 through June 2017, when added to the relevant principal diagnosis codes listed in Table 2.



(i) Specific Patterns of Fraud with Encephalopathy

63. Table 2 provides a list of the principal diagnosis codes used by Providence to upcode with encephalopathy. Relator identified 215 principal diagnosis codes in conjunction with which Providence coded encephalopathy at a rate at least two times and/or three percentage points higher than the nationwide average. Relator has included only patterns that were statistically significant at the 99.9% level, meaning it is virtually impossible the patterns are due to chance.

Table 2. Patterns Used by Providence to Upcode with Encephalopathy.

The following table lists the principal diagnosis categories in which Providence excessively upcodes with encephalopathy. 12 principal diagnosis categories with fewer than 11 fraudulent claims at Providence have been omitted from the table.

Principal Diagnosis	% with MCC in Other Hospitals	% with MCC in Providence	Providence Rate Relative to Nationwide Average	Num. of Fraud Claims at Providence
Unspecified Septicemia	19.07%	30.29%	159%	4,088
Urinary Tract Infection; Site Not Specified	18.08%	36.83%	204%	1,597
Occlusion of Cerebral Arteries	8.42%	18.09%	215%	1,464
Acute Renal Failure	12.29%	23.36%	190%	1,429
Pneumonia; Organism Unspecified	5.54%	13.06%	236%	974
Congestive Heart Failure; Nonhypertensive	3.28%	7.91%	242%	939
Fracture of Neck of Femur (hip)	4.46%	12.34%	277%	913
Aspiration Pneumonitis; Food/vomitus	13.93%	28.18%	202%	814
Infection and Inflammation-- internal Prosthetic Device; Implant; and Graft	10.57%	19.53%	185%	579
Intracranial Hemorrhage	14.07%	29.84%	212%	468
Epilepsy	14.98%	31.56%	211%	399
E. Coli Septicemia	18.55%	30.87%	166%	398
Other Intracranial Injury	8.30%	19.93%	240%	373
Hyposmolality	11.44%	23.58%	206%	343
Diabetes with Other Manifestations	8.17%	17.40%	213%	284
Other Gram Negative Septicemia	19.19%	32.82%	171%	283
Poisoning by Other Medications and Drugs	19.67%	41.10%	209%	272
Staphylococcal Septicemia	20.71%	34.94%	169%	265
Substance-related Disorders	19.28%	31.23%	162%	245
Intestinal Infection	4.10%	9.68%	236%	238
Osteoarthritis; Localized	0.56%	1.22%	220%	214
Poisoning by Psychotropic Agents	26.54%	57.21%	216%	202
Pathological Fracture	4.01%	11.97%	298%	192
Malfunction of Device; Implant; and Graft	2.02%	4.82%	239%	191
Other Endocrine Disorders	13.68%	26.78%	196%	189
Hypovolemia	6.32%	13.86%	219%	182
Obstructive Chronic Bronchitis	1.60%	3.74%	233%	180
Hypertensive Heart and/or Renal Disease	4.43%	7.46%	169%	172
Convulsions	12.33%	28.96%	235%	170
Cystitis and Urethritis	13.88%	30.85%	222%	169
Atrial Fibrillation	1.61%	3.38%	210%	168
Streptococcal Septicemia	18.06%	30.34%	168%	168
Cellulitis and Abscess of Leg	2.50%	5.61%	224%	161
Influenza	6.32%	15.08%	239%	159
Hemorrhage of Gastrointestinal Tract	2.77%	6.48%	234%	158
Diabetes with Ketoacidosis or Uncontrolled Diabetes	8.81%	17.36%	197%	155

Principal Diagnosis	% with MCC in Other Hospitals	% with MCC in Providence	Providence Rate Relative to Nationwide Average	Num. of Fraud Claims at Providence
Fracture of Vertebral Column without Mention of Spinal Cord Injury	4.03%	10.32%	256%	153
Secondary Malignancy of Brain/spine	10.08%	21.88%	217%	135
Other Connective Tissue Disease	4.68%	10.43%	223%	135
Postoperative Infection	4.09%	8.22%	201%	134
Alcohol-related Disorders	6.86%	10.90%	159%	127
Hemorrhage from Gastrointestinal Ulcer	2.96%	6.74%	228%	117
Other Intestinal Obstruction	1.50%	3.67%	245%	113
Cancer of Bronchus; Lung	2.84%	6.26%	220%	112
Other Fluid and Electrolyte Disorders	8.35%	18.55%	222%	111
Pulmonary Heart Disease	2.41%	4.95%	206%	101
Acute Pancreatitis	2.14%	5.63%	263%	99
Infections of Kidney	4.82%	11.71%	243%	96
Other and Unspecified Gastrointestinal Disorders	2.01%	5.02%	249%	91
Other Fracture of Lower Limb	3.35%	9.21%	275%	88
Fracture of Pelvis	2.81%	7.74%	275%	82
Congestive Heart Failure	1.71%	4.92%	288%	80
Other Nervous System Symptoms and Disorders	3.08%	8.41%	273%	79
Cancer of Brain and Nervous System	9.78%	21.01%	215%	75
Non-Hodgkin's Lymphoma	6.32%	14.57%	231%	75
Delirium Dementia and Amnestic and Other Cognitive Disorders	14.98%	27.17%	181%	74
Other and Unspecified Hereditary and Degenerative Nervous Conditions	8.05%	13.95%	173%	73
Disorders of Mineral Metabolism	12.55%	24.83%	198%	73
Cancer of Colon	2.20%	5.26%	239%	72
Other Injuries and Conditions Due to External Causes	6.10%	13.76%	226%	71
Fracture of Ankle	2.56%	7.47%	292%	70
Fracture of Humerus	3.24%	8.22%	254%	65
Other Peripheral and Visceral Atherosclerosis	2.44%	6.16%	252%	65
Other Cardiac Dysrhythmias	2.44%	5.64%	231%	65
Infective Arthritis and Osteomyelitis (except That Caused by Tb or STD)	3.36%	7.42%	221%	62
Diverticulitis	1.36%	3.09%	227%	59
Peritoneal or Intestinal Adhesions	2.42%	4.85%	200%	59
Other Bacterial Pneumonia	7.13%	10.59%	149%	57
Intervertebral Disc Disorders	1.45%	2.94%	203%	57
Other Specified Septicemia	16.60%	26.52%	160%	57
Other and Unspecified Viral Infection	7.59%	16.46%	217%	56
Spinal Stenosis; Lumbar Region	1.66%	3.38%	203%	56

Principal Diagnosis	% with MCC in Other Hospitals	% with MCC in Providence	Providence Rate Relative to Nationwide Average	Num. of Fraud Claims at Providence
Gangrene	4.75%	10.45%	220%	56
Encephalitis (except That Caused by Tb or STD)	25.33%	55.49%	219%	55
Other Aneurysm	3.79%	8.62%	228%	54
Other Venous Embolism and Thrombosis	1.60%	4.05%	253%	54
Pleurisy; Pleural Effusion	2.42%	5.92%	245%	53
Liver Abscess and Sequelae of Chronic Liver Disease	6.26%	9.84%	157%	53
Atherosclerosis of Arteries of Extremities	1.55%	3.63%	234%	52
Hypotension	4.81%	12.48%	260%	51
Cancer of Pancreas	2.68%	7.75%	289%	50
Calculus of Bile Duct	1.82%	4.35%	239%	49
Melena	1.96%	5.11%	260%	49
Fracture of Ribs; Closed	2.89%	8.45%	292%	49
Noninfectious Gastroenteritis	1.66%	5.22%	315%	48
Crushing Injury or Internal Injury	3.56%	10.35%	291%	48
Sinoatrial Node Dysfunction	2.41%	4.84%	201%	48
Hyperpotassemia	4.57%	8.26%	181%	47
Superficial Injury; Contusion	2.78%	8.42%	303%	46
Suicide and Intentional Self- inflicted Injury	26.39%	44.19%	167%	46
Chronic Rheumatic Disease of the Heart Valves	3.31%	7.35%	222%	46
Other Pneumonia	3.92%	10.22%	261%	45
Diabetes with Circulatory Manifestations	3.86%	8.70%	225%	44
Late Effects of Cerebrovascular Disease	10.25%	24.50%	239%	43
Secondary Malignancy of Bone	4.42%	10.85%	246%	42
Osteoarthritis; Generalized and Unspecified	0.65%	1.67%	256%	41
Other and Unspecified Metabolic; Nutritional; and Endocrine Disorders	5.72%	14.14%	247%	40
Other Disorders of Stomach and Duodenum	1.84%	4.25%	230%	40
Acute Posthemorrhagic Anemia	2.70%	6.72%	249%	40
Other Diseases of the Nervous System and Sense Organs	7.84%	14.67%	187%	38
Cholelithiasis with Acute Cholecystitis	1.81%	3.64%	201%	38
Diseases of White Blood Cells	2.63%	6.46%	246%	36
Hemorrhage or Hematoma Complicating A Procedure	1.49%	4.00%	268%	36
Diverticulosis	1.34%	2.84%	213%	34
Other Biliary Tract Disease	2.14%	5.88%	275%	34
Other Bone Disease and Musculoskeletal Deformities	1.57%	4.08%	259%	33
Complications of Transplants and Reattached Limbs	2.33%	6.46%	278%	33

Principal Diagnosis	% with MCC in Other Hospitals	% with MCC in Providence	Providence Rate Relative to Nationwide Average	Num. of Fraud Claims at Providence
Cancer of Liver and Intrahepatic Bile Duct	3.91%	11.11%	285%	32
Malaise and Fatigue	2.98%	8.46%	284%	32
Concussion	6.85%	24.31%	355%	32
Other Mycoses	11.55%	19.54%	169%	31
Anemia; Unspecified	1.66%	5.47%	331%	31
Disorders of the Peripheral Nervous System	2.82%	7.21%	256%	30
Neoplasms of Unspecified Nature or Uncertain Behavior	2.84%	6.25%	220%	30
Empyema and Pneumothorax	2.86%	7.32%	256%	30
Other Non-Traumatic Joint Disorders	1.77%	5.28%	297%	30
Other Diseases of the Respiratory System	2.23%	9.24%	415%	30
Other Esophageal Disorders	1.64%	3.70%	226%	30
Other Cellulitis and Abscess	2.04%	4.92%	241%	29
Essential Hypertension	2.23%	6.97%	313%	29
Fracture of Tibia and Fibula	2.59%	5.98%	231%	28
Decubitus Ulcer	4.21%	9.09%	216%	27
Constipation	1.82%	5.44%	299%	27
Gout and Other Crystal Arthropathies	2.53%	9.61%	380%	27
Multiple Myeloma	9.31%	17.30%	186%	27
Other and Ill-defined Cerebrovascular Disease	5.78%	10.11%	175%	27
Cholecystitis without Cholelithiasis	2.23%	5.12%	229%	27
Cancer of Stomach	2.25%	7.60%	338%	26
Other Hypertensive Complications	4.80%	9.94%	207%	26
Other and Unspecified Liver Disorders	6.56%	12.71%	194%	26
Hematemesis	3.17%	8.11%	255%	26
Hematuria	1.80%	7.80%	434%	25
Cancer of Head and Neck	2.29%	9.91%	433%	25
Leukemias	4.15%	8.79%	212%	25
Cardiac Arrest and Ventricular Fibrillation	8.42%	16.50%	196%	25
Cellulitis and Abscess of Arm	2.12%	4.85%	229%	25
Herpes Zoster Infection	7.39%	16.36%	221%	25
Fracture of Radius and Ulna	2.25%	5.87%	260%	25
Cellulitis and Abscess of Foot	1.88%	6.34%	337%	25
Urinary Complications	6.98%	16.29%	233%	25
Benign Neoplasm of Cerebral Meninges	7.42%	12.61%	170%	24
Chronic Obstructive Asthma with Acute Exacerbation	0.86%	2.65%	307%	24
Atrial Flutter	1.11%	2.74%	247%	23
Other Injury and Poisoning	3.28%	15.85%	484%	23
Respiratory Failure	14.70%	24.36%	166%	23

Principal Diagnosis	% with MCC in Other Hospitals	% with MCC in Providence	Providence Rate Relative to Nationwide Average	Num. of Fraud Claims at Providence
Acute Upper Respiratory Infections of Multiple or Unspecified Sites	3.27%	13.36%	409%	22
Cancer of Bladder	2.71%	5.74%	212%	22
Diabetes with Renal Manifestations	6.63%	14.83%	224%	22
Other Cns Infection and Poliomyelitis	13.11%	23.76%	181%	22
Other Endocrine; Nutritional; and Metabolic Diseases and Immunity Disorders	3.52%	11.40%	324%	21
Abdominal Aortic Aneurysm; without Rupture	1.23%	2.63%	213%	21
Paralytic Ileus	2.63%	5.43%	207%	21
Hepatitis	4.55%	8.08%	178%	21
Other and Unspecified Circulatory Disease	3.46%	7.72%	223%	20
Other Diseases of the Circulatory System	1.94%	5.02%	259%	20
Multiple Sclerosis	3.27%	9.84%	301%	20
Other Specified Anemia	1.99%	6.04%	304%	19
Esophagitis	1.72%	5.11%	297%	19
Chronic Kidney Disease	6.74%	12.39%	184%	19
Cancer of Rectum and Anus	1.99%	4.10%	206%	19
Incisional Hernia with Obstruction/gangrene	1.59%	4.27%	269%	19
Calculus of Ureter	1.22%	3.09%	253%	19
Peritonitis and Intestinal Abscess	3.42%	6.94%	203%	18
Other and Unspecified Lower Respiratory Disease	1.78%	4.48%	252%	18
Poisoning by Nonmedicinal Substances	14.16%	30.56%	216%	18
Abdominal Pain	0.91%	2.17%	239%	17
Inflammatory Conditions of Male Genital Organs	2.53%	9.16%	362%	17
Shock	19.47%	34.82%	179%	17
Secondary Malignancy of Liver	3.87%	7.35%	190%	17
Arterial Embolism and Thrombosis of Lower Extremity Artery	3.23%	6.27%	194%	16
Other Back Pain and Disorders	1.46%	2.92%	200%	16
Hemorrhage of Rectum and Anus	1.76%	5.21%	295%	16
Cancer of Other GI Organs; Peritoneum	2.28%	5.12%	224%	16
Cirrhosis of Liver without Mention of Alcohol	4.51%	7.91%	175%	15
Migraine	2.30%	7.56%	329%	15
Cancer of Ovary	1.58%	3.92%	248%	15
Allergic Reactions	2.74%	8.37%	306%	15
Other Infectious and Parasitic Diseases	6.47%	12.95%	200%	14

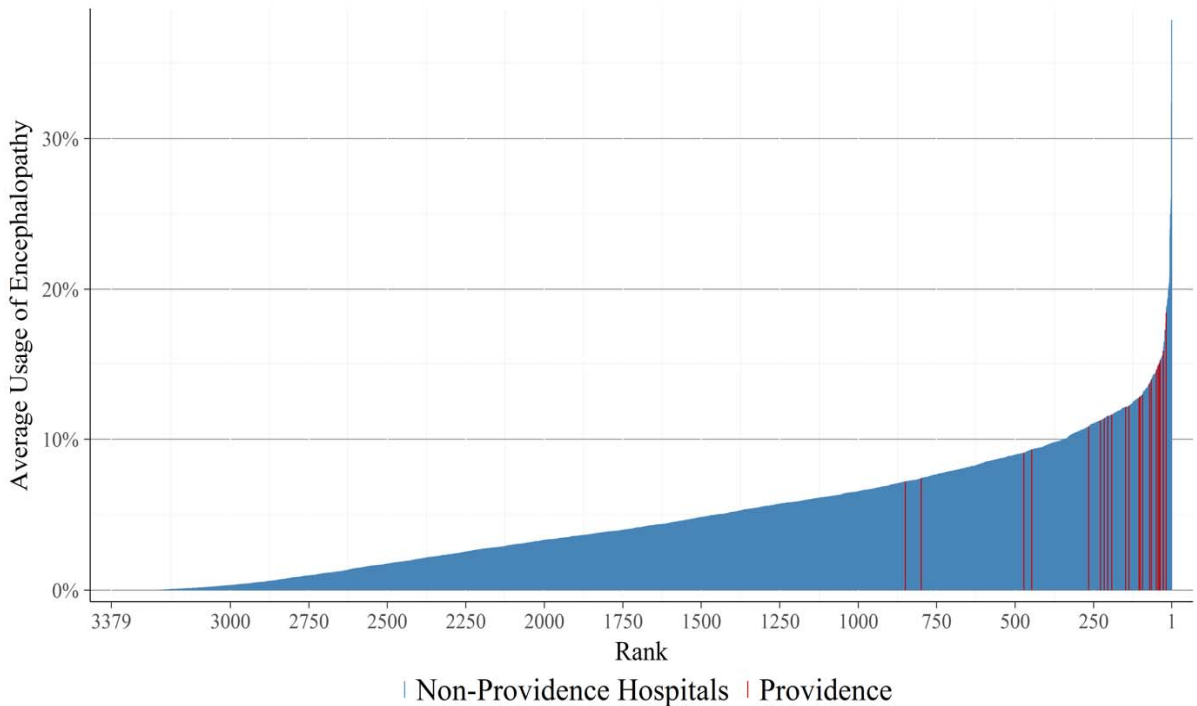
Principal Diagnosis	% with MCC in Other Hospitals	% with MCC in Providence	Providence Rate Relative to Nationwide Average	Num. of Fraud Claims at Providence
Cholelithiasis with Other Cholecystitis	1.35%	3.63%	268%	14
Cardiac Complications	2.73%	8.33%	305%	14
Unspecified Gastritis and Gastroduodenitis	1.91%	4.55%	238%	14
Unstable Angina (intermediate Coronary Syndrome)	1.20%	2.45%	205%	14
Inguinal Hernia with Obstruction or Gangrene	2.20%	4.84%	220%	14
Cellulitis and Abscess of Hand	1.49%	4.88%	327%	13
Obesity	0.71%	3.15%	447%	13
Open Wounds of Extremities	1.71%	7.59%	443%	13
Lumbago	2.43%	6.83%	280%	13
Diseases of Mouth; Excluding Dental	3.45%	8.82%	256%	13
Other Arterial Embolism and Thrombosis	2.52%	5.84%	232%	13
Cancer of Kidney and Renal Pelvis	4.01%	15.18%	378%	13
Coma; Stupor; and Brain Damage	7.54%	14.88%	197%	12
Open Wounds of Head; Neck; and Trunk	2.88%	9.09%	316%	12
Other and Unspecified Genitourinary Symptoms	3.88%	12.00%	309%	12
Backache; Unspecified	2.53%	10.13%	401%	12
Gastric Ulcer	2.33%	6.29%	270%	12
Other Upper Respiratory Disease	1.63%	4.35%	266%	12
Dysphagia	3.20%	7.78%	243%	12
Rheumatoid Arthritis and Related Disease	1.64%	5.82%	355%	11
Other Diseases of the Blood and Blood-forming Organs	2.73%	8.17%	299%	11
Calculus of Kidney	1.23%	4.19%	342%	11
Other Diseases of the Genitourinary System	2.50%	6.07%	243%	11
Cellulitis and Abscess of Fingers and Toes	1.45%	4.72%	326%	11
Other Diseases of Veins and Lymphatics	1.51%	4.65%	308%	11

64. The following figure shows just how drastic some of these patterns are when individual hospitals are analyzed, and starkly demonstrate Providence's widespread abuse. As shown in Figure 7, Providence hospitals are consistently among those with the highest rates of encephalopathy. In fact, Providence has 18 of the top 250 hospitals in the country (out of more than 3,000 total hospitals) based on

rate of encephalopathy. If this distribution were random, the statistical probability of having 18 of the top 250 hospitals is less than 1 in 100 million.

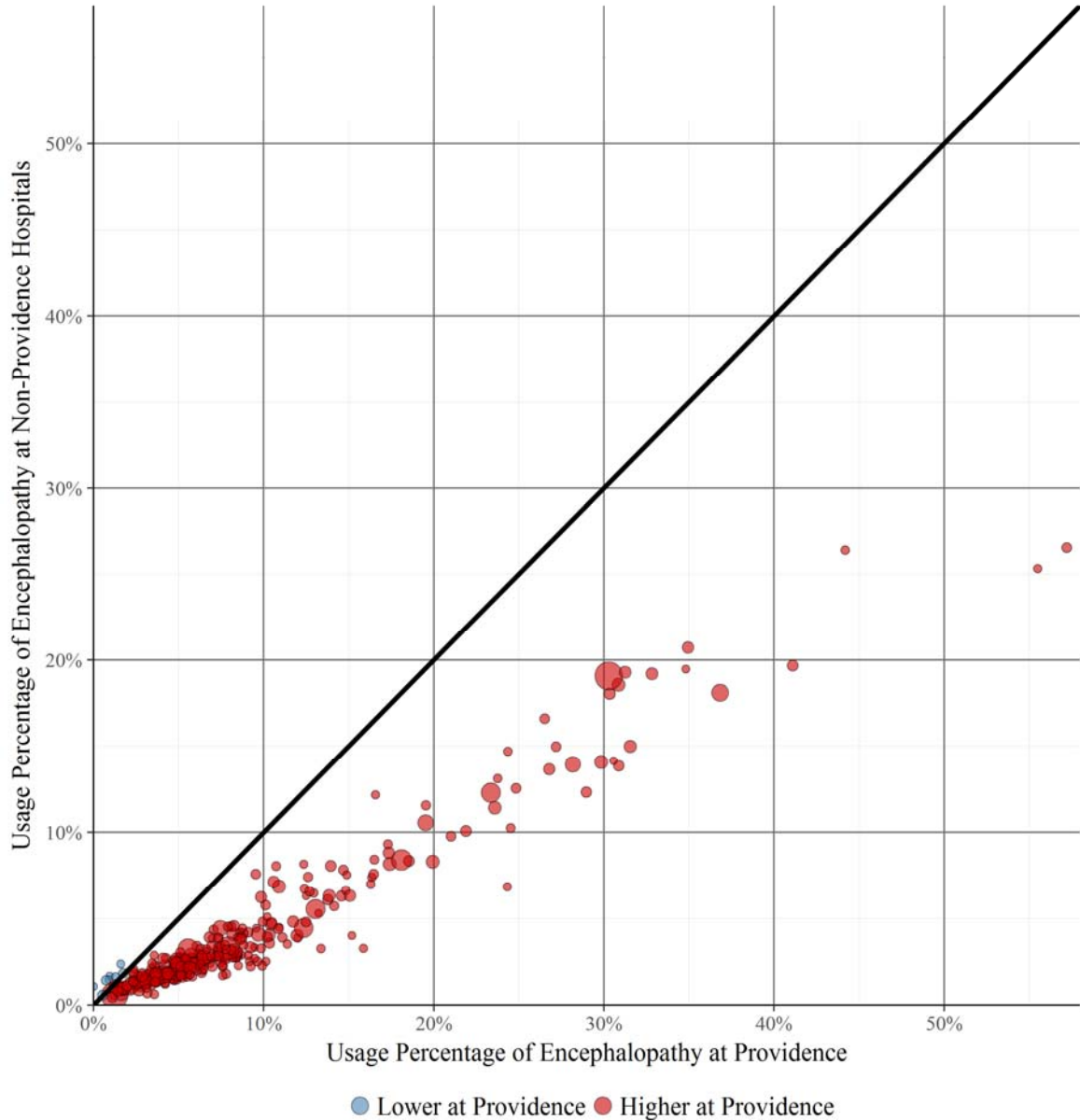
Figure 7. Rate of Encephalopathy by Hospital.

The following figure plots 3,356 hospitals with at least 100 claims in the relevant principal diagnosis codes listed in Table 2. The hospitals are plotted along the x-axis in order of percentage of encephalopathy usage.



65. Figure 8 below shows that Providence not only used a higher rate of encephalopathy in the few categories listed above, but also across a large variety of principal diagnosis codes. The red dots to the right of the 45-degree line indicate higher rates of encephalopathy at Providence versus the nationwide average. This figure shows that Providence has a higher rate of encephalopathy for 304 out of 312 (97.44%) principal diagnosis categories. In other words, the extent to which Providence excessively upcoded encephalopathy on the categories listed in Table 2 above was not offset by relative downcoding in other principal diagnosis categories.

Figure 8. Rate of Encephalopathy by Principal Diagnosis Code at Providence Versus Other Hospitals. For the 312 principal diagnoses with at least 100 claims at Providence (each represented by a dot), this figure compares the rate of encephalopathy at Providence versus non-Providence hospitals. Red dots to the right of the 45-degree line indicate Providence is coding encephalopathy at a rate higher than the nationwide average.



(ii) Specific False Claims with Encephalopathy

66. The Relator has identified many specific false Medicare claims submitted by Providence involving encephalopathy. The following table includes 50 examples.

[illegible]

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(b) Respiratory Failure

SECOND AMENDED COMPLAINT

failure”), and the second type demonstrates both hypoxemia and hypercapnia (“ventilatory failure”). Respiratory failure can be acute and life-threatening, or chronic and manageable with modifications.

Table 4. List of Respiratory Failure ICD-9 and ICD-10 Diagnosis Codes.

ICD-9	
Diagnosis Code	Description
5184	Acute edema of lung, unspecified
5185	Pulmonary insufficiency following trauma and surgery
51851	Acute respiratory failure following trauma and surgery
51852	Other pulmonary insufficiency not elsewhere classified following trauma/surgery
51853	Acute and chronic respiratory failure following trauma and surgery
51881	Acute respiratory failure
51884	Acute and chronic respiratory failure
ICD-10	
Diagnosis Code	Description
J810	Acute pulmonary edema
J951	Acute pulmonary insufficiency following thoracic surgery
J952	Acute pulmonary insufficiency following nonthoracic surgery
J953	Chronic pulmonary insufficiency following surgery
J95821	Acute postprocedural respiratory failure
J95822	Acute and chronic postprocedural respiratory failure
J9600	Acute respiratory failure, unspecified whether with hypoxia or hypercapnia
J9601	Acute respiratory failure with hypoxia
J9602	Acute respiratory failure with hypercapnia
J9620	Acute and chronic respiratory failure, unspecified whether with hypoxia or hypercapnia
J9621	Acute and chronic respiratory failure with hypoxia
J9622	Acute and chronic respiratory failure with hypercapnia
J9690	Respiratory failure, unspecified, unspecified whether with hypoxia or hypercapnia
J9691	Respiratory failure, unspecified with hypoxia
J9692	Respiratory failure, unspecified with hypercapnia

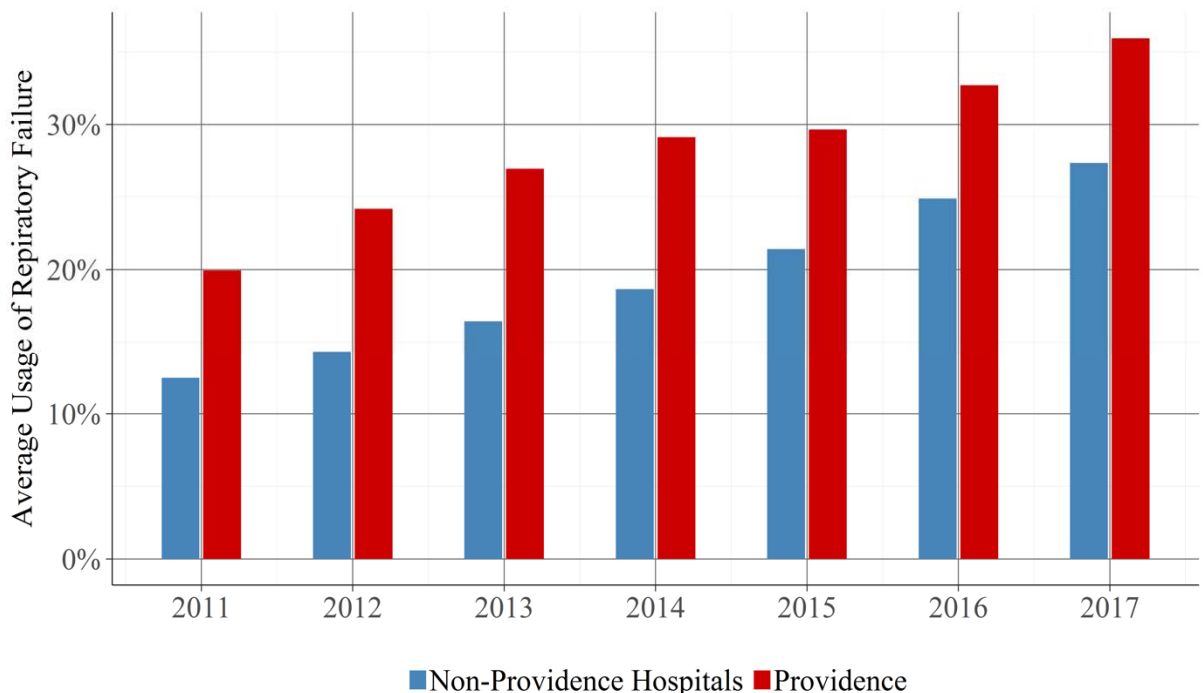
68. The possible root causes are myriad, and may include poor circulation, neuromuscular disease, chronic bronchitis, COPD, obesity or drug use, an obstructing object, or an injury to the brain or spinal cord. The signs and symptoms are bluish skin, shortness of breath, labored breathing and feeling unable to get enough air. The patient may also become very sleepy, lose consciousness, be confused, or have arrhythmia. After listening to the patient’s heartbeat and lungs, a pulse oximetry test, an arterial blood gas test from a blood draw, and a chest x-ray can together help determine a proper diagnosis.

69. Respiratory failure is distinguishable from conditions that have similar symptoms. Elderly patients, for example, frequently breathe shallowly during sleep. Chronic conditions such as structural and neuromuscular issues can lead to slow decline in breathing quality. Also, elderly patients who have recently undergone surgery may experience symptoms that are similar to those of respiratory failure. Though they may necessitate mechanical oxygenation assistance, it is unlikely that these conditions are sufficient for an acute respiratory failure diagnosis.

70. As shown in Figure 9, Providence coded at a significantly higher rate of respiratory failure than other hospitals. From 2011 through June 2017, across the relevant codes, Providence coded respiratory failure at 1.49 times the rate at other hospitals, using it on 27.91 percent of claims, versus 18.72 percent at other hospitals.

Figure 9. Rate of Respiratory Failure by Year for Providence Versus Other Hospitals.

This figure shows the rate of respiratory failure at Providence and at other hospitals from 2011 through June 2017, when added to the suspicious principal diagnosis codes listed in Table 5 below.



(i) Specific Patterns of Fraud with Respiratory Failure

71. The following table provides a list of the principal diagnosis codes used by Providence to upcode with respiratory failure. Relator identified 28 principal diagnosis codes in conjunction with which Providence coded respiratory failure at a rate at least two times and/or three percentage points higher than the nationwide average. Only patterns that were statistically significant at the 99.9% level, meaning virtually impossible to be due to chance, are included.

Table 5. Patterns Used by Providence to Upcode with Respiratory Failure.

The following table lists the principal diagnosis categories in which Providence excessively upcodes with respiratory failure. One principal diagnosis category with fewer than 11 fraudulent claims at Providence has been omitted from the table.

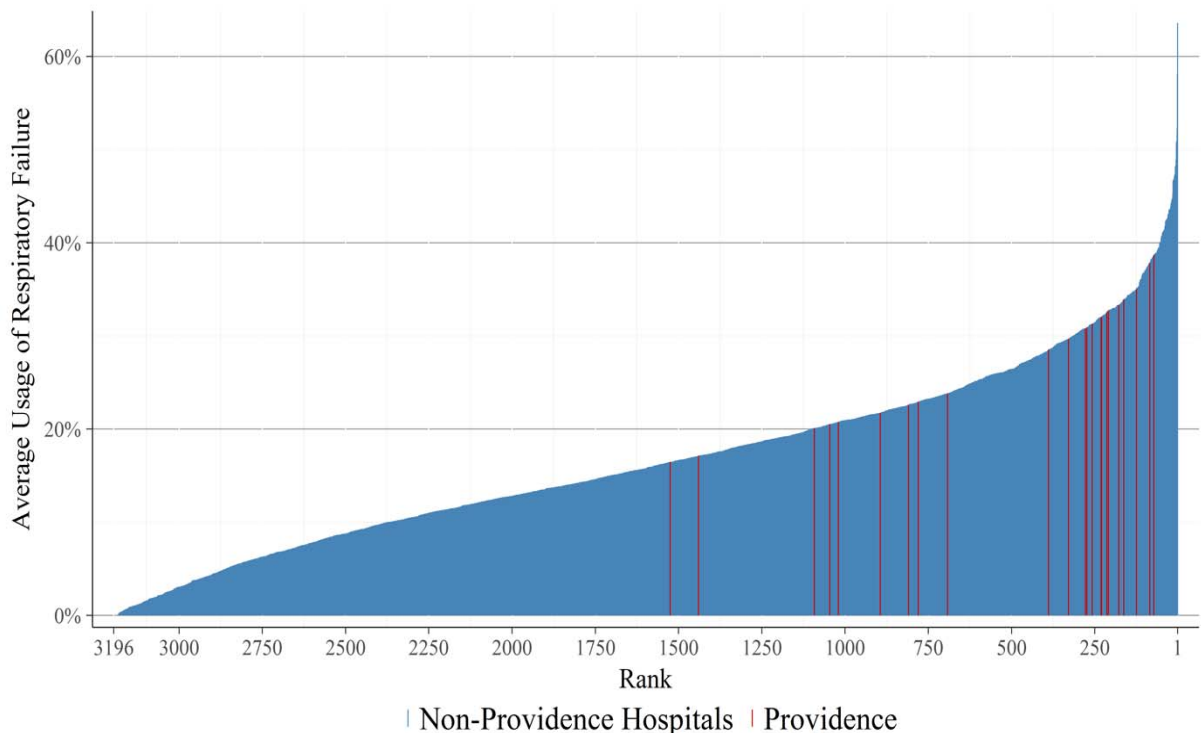
Principal Diagnosis	% with MCC in Other Hospitals	% with MCC in Providence	Providence Rate Relative to Other Hospitals	Num. of Fraud Claims at Providence
Congestive Heart Failure; Nonhypertensive	21.89%	33.53%	153%	2,358
Pneumonia; Organism Unspecified	18.91%	26.45%	140%	976
Obstructive Chronic Bronchitis	17.71%	26.14%	148%	709
Aspiration Pneumonitis; Food/vomitus	27.15%	36.33%	134%	524
Hypertensive Heart and/or Renal Disease	18.22%	26.50%	145%	469
Pulmonary Heart Disease	16.72%	25.10%	150%	331
Congestive Heart Failure	10.84%	18.91%	174%	200
Influenza	17.54%	28.23%	161%	194
Chronic Obstructive Asthma with Acute Exacerbation	11.56%	22.06%	191%	139
Other Bacterial Pneumonia	30.74%	38.93%	127%	136
Pleurisy; Pleural Effusion	14.06%	20.99%	149%	105
Other Pneumonia	22.35%	34.31%	154%	85
Epilepsy	7.69%	10.89%	142%	77
Other and Unspecified Viral Infection	4.34%	15.98%	369%	74
Other and Unspecified Lower Respiratory Disease	23.61%	32.74%	139%	61
Staphylococcal Septicemia	21.80%	25.01%	115%	60
Cancer of Head and Neck	14.22%	29.43%	207%	51
Fracture of Ribs; Closed	5.68%	10.62%	187%	43
Postinflammatory Pulmonary Fibrosis	26.57%	35.53%	134%	38
Non-Hodgkin's Lymphoma	6.83%	10.41%	152%	33
Crushing Injury or Internal Injury	11.85%	16.45%	139%	32
Other Chronic Pulmonary Disease	12.16%	24.52%	202%	32
Lung Disease Due to External Agents	30.75%	53.19%	173%	32
Cardiac Arrest and Ventricular Fibrillation	37.95%	47.25%	124%	29

Principal Diagnosis	% with MCC in Other Hospitals	% with MCC in Providence	Providence Rate Relative to Other Hospitals	Num. of Fraud Claims at Providence
Leukemias	7.52%	12.45%	166%	27
Allergic Reactions	8.81%	14.83%	168%	16
Other Infectious and Parasitic Diseases	6.80%	13.84%	203%	16

72. Figure 10 shows the extent of the fraud at Providence hospitals. The figure shows the rate of respiratory failure for claims in the above principal diagnosis categories. Providence had 9 of the top 250 hospitals based on respiratory failure usage rate for the above principal diagnosis categories. The probability of Providence randomly having 9 of its hospitals in the top 250 hospitals is less than 1 in 30 thousand.

Figure 10. Rate of Respiratory Failure by Hospital.

The following figure plots every Provider with at least 100 claims in the above principal diagnosis code categories. 3,173 hospitals had at least 100 claims with the relevant principal diagnosis codes listed in Table 5. The hospitals are plotted along the x-axis in order of percentage of respiratory failure usage. The Providence hospitals are in red, while other hospitals are in blue.

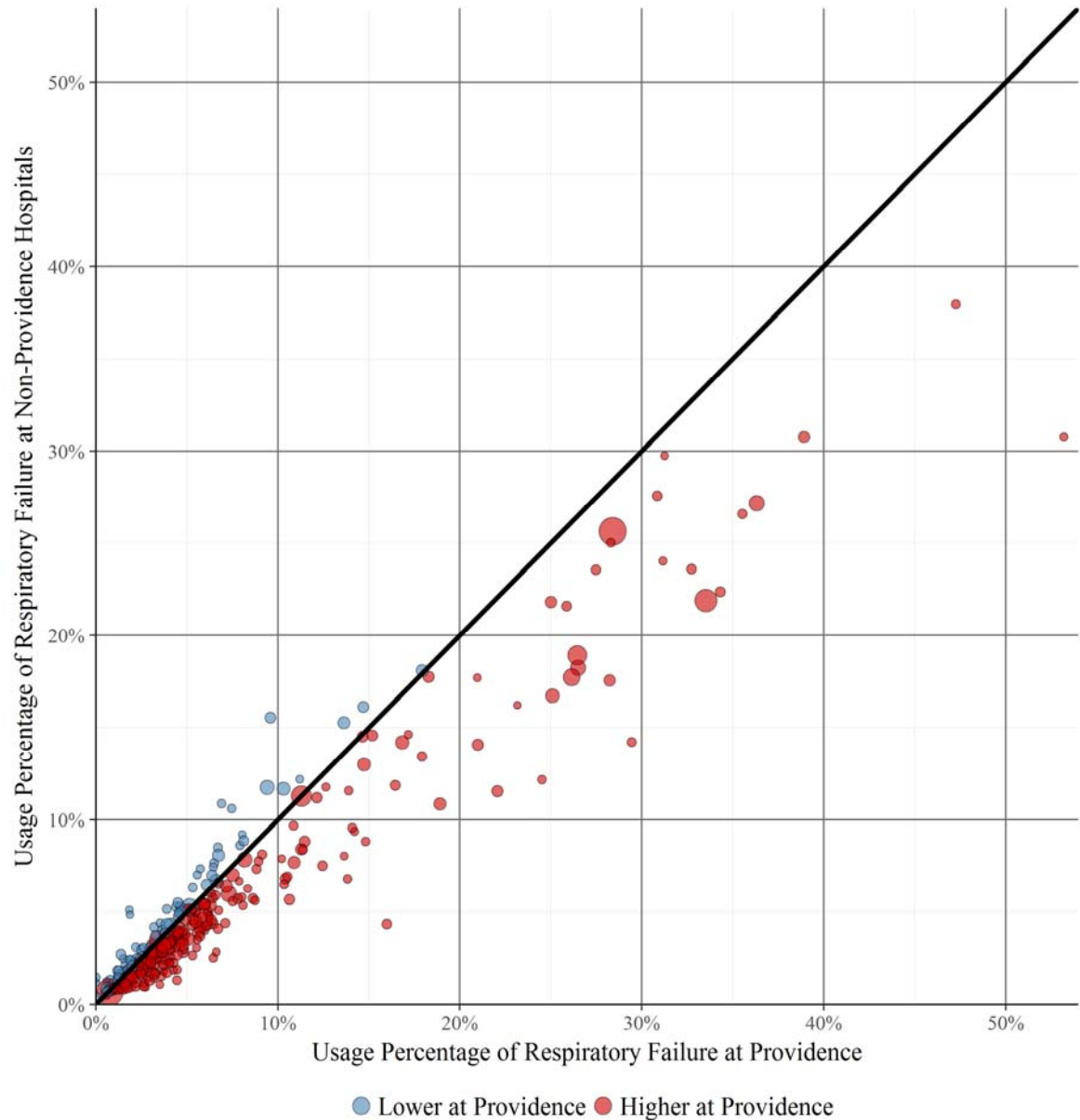


1 73. Figure 11 below shows that Providence used a higher rate of respiratory
2 failure not just in the few categories listed above, but across a large variety of
3 principal diagnosis codes. The red dots to the right of the 45-degree line indicate
4 higher rates of respiratory failure at Providence versus the nationwide average. This
5 figure shows that Providence has a higher rate of respiratory failure for 230 out of
6 312 (73.72%) principal diagnosis categories. In other words, the extent to which
7 Providence excessively upcoded respiratory failure on the categories listed in Table
8 5 above was not offset by relative downcoding in other principal diagnosis
9 categories.

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Figure 11. Rate of Respiratory Failure by Principal Diagnosis Code at Providence Versus Other Hospitals.

For the 312 principal diagnoses with at least 100 claims at Providence (each represented by a dot), this figure compares the rate of respiratory failure at Providence versus non-Providence hospitals. Red dots to the right of the 45-degree line indicate Providence is coding respiratory failure at a rate higher than the nationwide average.



(ii) Specific False Claims with Respiratory Failure

74. The Relator has identified many specific false Medicare claims submitted by Providence involving respiratory failure. The following table includes 50 examples.

[illegible]

394151.1

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[illegible]

Beneficiary ID / Claim ID	Hospital	Discharge Date	Age/ Gender/ Race	Principal Diagnosis	MCC False Claim	DRG w/ False Claim	False Claim Amount
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
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(c) Severe Malnutrition

75. The final Misstated MCC that Providence used to commit fraud at a higher rate was severe malnutrition. There are three malnutrition codes, listed in Table 7, that are considered MCCs. Severe malnutrition in the elderly is a disorder of extreme lack of nutrition involving the highest level of protein-energy malnutrition and protein-calorie malnutrition. Another rare form, Kwashiorkor malnutrition, is common in Sub-Saharan Africa, and is unlikely to be present in the elderly in the United States. Nutritional marasmus is caused by insufficient nutrients and is most common in children. In the elderly, malnourishment can manifest for a variety of reasons including anorexia, dehydration and malabsorption.

Table 7. List of Severe Malnutrition ICD-9 and ICD-10 Diagnosis Codes.

ICD-9 Diagnosis Code	Description
260	Kwashiorkor
261	Nutritional Marasmus
262	Other Severe Protein-Calorie Malnutrition
ICD-10 Diagnosis Code	Description
E40	Kwashiorkor
E41	Nutritional marasmus
E42	Marasmic kwashiorkor
E43	Unspecified severe protein-calorie malnutrition

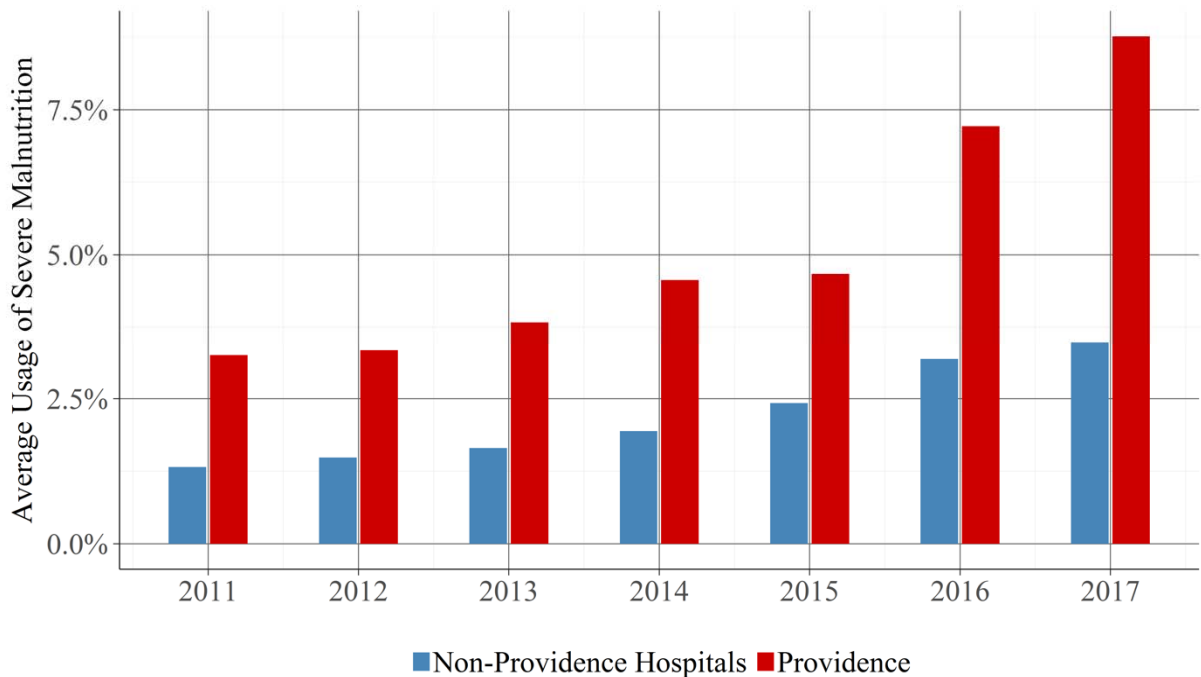
76. Patients may initially present malnutrition signs to a healthcare provider, but the patient may simply be underweight (and may not need to be coded as malnutrition at all), or the condition may not be severe. If so, other codes are available for malnutrition of a moderate degree (ICD-9 code 2630) and other protein-calorie malnutrition (ICD-9 code 2638). Kwashiorkor malnutrition has been over diagnosed in the past and is now usually contra-indicated in American elderly.¹¹ Additionally, interventions for malnutrition can often be used that supply calories and ameliorate the issue at a low cost, alleviating the need for tremendous resources associated with MCC codes. Furthermore, certain emergency measures are now considered overused and often unhelpful.

77. As shown in Figure 12, Providence coded a significantly higher rate of severe malnutrition than other hospitals. From 2011 through June 2017, hospitals nationwide used severe malnutrition on 2.11 percent of claims, while Providence used it on 4.87 percent of claims—or 2.30 times as often.

¹¹ California Watch, *Prime Healthcare Reports Outsized Rates of Unusual Conditions*, available at <https://goo.gl/k4gmgs>; Dep't of Health and Human Servs., *Rex Hospital Incorrectly Billed Medicare Inpatient Claims with Kwashiorkor*, available at <https://goo.gl/omTYij>; HCPro, *News: OIG Fines Another Facility for Inappropriate Kwashiorkor Claims*, available at <https://goo.gl/9nrAdU>.

Figure 12. Rate of Severe Malnutrition by Year for Providence Versus Other Hospitals.

This figure shows the rate of severe malnutrition at Providence and at other hospitals from 2011 through June 2017, when added to the suspicious principal diagnosis codes listed in Table 8 below.



(i) Specific Patterns of Fraud with Severe Malnutrition

78. The following table provides a list of the principal diagnosis codes used by Providence to upcode with severe malnutrition. Relator identified 28 principal diagnosis codes in conjunction with which Providence coded severe malnutrition at a rate at least two times and/or at three percentage points higher than the nationwide average. Only patterns that were statistically significant at the 99.9% level, meaning virtually impossible to be due to chance, are included.

Table 8. Patterns Used by Providence to Upcode with Severe Malnutrition.

The following table lists the principal diagnosis categories in which Providence excessively upcodes with severe malnutrition. 2 principal diagnosis categories with fewer than 11 fraudulent claims at Providence have been omitted from the table.

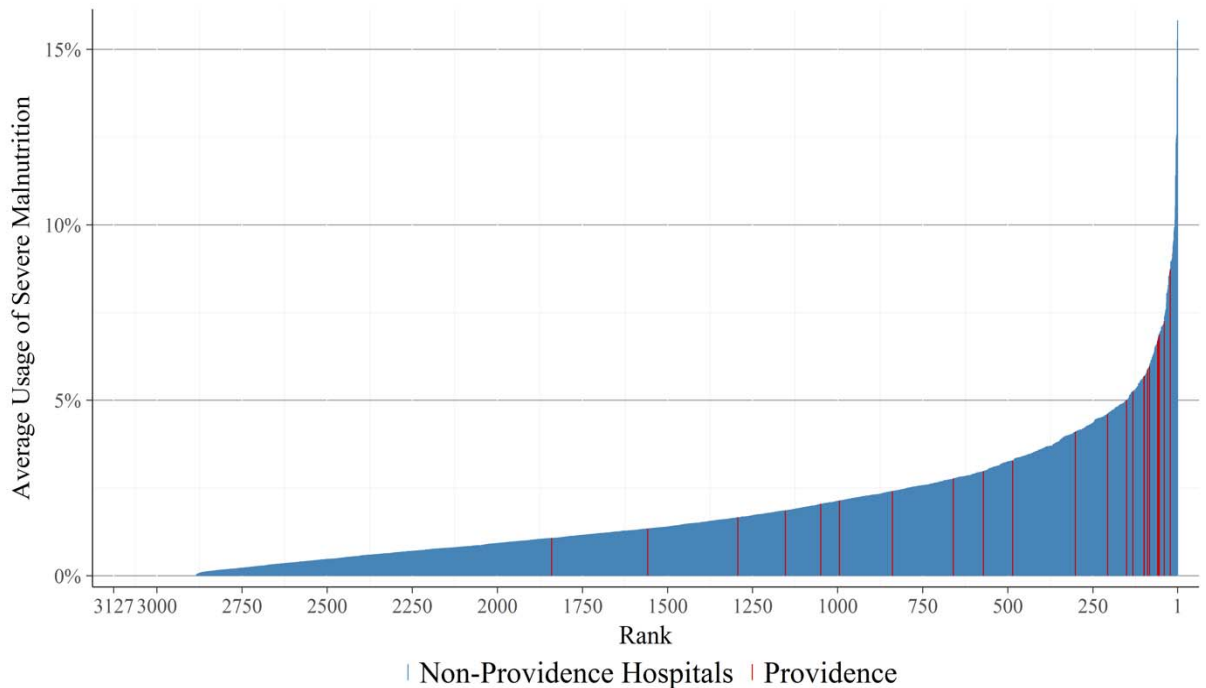
Principal Diagnosis Code	% with MCC Code in Other Hospitals	% with MCC Code at Providence	Providence Rate Relative to Other Hospitals	Num. of Fraud Claims at Providence
Obstructive Chronic Bronchitis	0.96%	2.19%	228%	103
Other Secondary Malignancy	6.76%	11.71%	173%	81
Hypovolemia	3.57%	6.77%	189%	77

Principal Diagnosis Code	% with MCC Code in Other Hospitals	% with MCC Code at Providence	Providence Rate Relative to Other Hospitals	Num. of Fraud Claims at Providence
Cancer of Pancreas	7.98%	14.98%	188%	69
Other Disorders of Stomach and Duodenum	3.80%	6.98%	184%	52
Chemotherapy	1.64%	3.77%	230%	50
Other Nervous System Symptoms and Disorders	2.02%	5.25%	259%	48
Cancer of Stomach	9.28%	16.43%	177%	35
Non-Hodgkin's Lymphoma	5.20%	8.98%	173%	35
Diabetes with Ketoacidosis or Uncontrolled Diabetes	1.43%	3.21%	225%	32
Aplastic Anemia	4.30%	9.71%	226%	31
Epilepsy	1.05%	2.33%	222%	31
Nausea and Vomiting	2.67%	6.51%	244%	30
Hypopotassemia	4.21%	10.35%	246%	26
Abdominal Pain	1.26%	3.04%	242%	25
Cancer of Head and Neck	9.75%	16.82%	173%	24
Empyema and Pneumothorax	5.70%	9.12%	160%	23
Paralytic Ileus	3.21%	6.24%	194%	22
Secondary Malignancy of Liver	6.19%	10.50%	170%	21
Influenza	1.05%	2.09%	200%	19
Noninfectious Gastroenteritis	1.35%	2.72%	202%	19
Poisoning by Other Medications and Drugs	1.21%	2.52%	208%	17
Diabetes with Neurological Manifestations	1.27%	2.60%	205%	15
Constipation	1.90%	3.85%	202%	15
Duodenal Ulcer	4.60%	10.37%	225%	14
Iron Deficiency Anemia	1.49%	3.28%	220%	13

79. The following figure shows just how drastic some of these patterns are when individual hospitals are analyzed, and demonstrate Providence's widespread abuse. As shown in Figure 13, Providence hospitals are consistently among the highest based on rate of severe malnutrition. Specifically, Providence had 12 of the top 250 hospitals with the highest rate of severe malnutrition. The probability of this occurring due to random chance is less than 1 in 25 million.

Figure 13. Rate of Severe Malnutrition by Hospital.

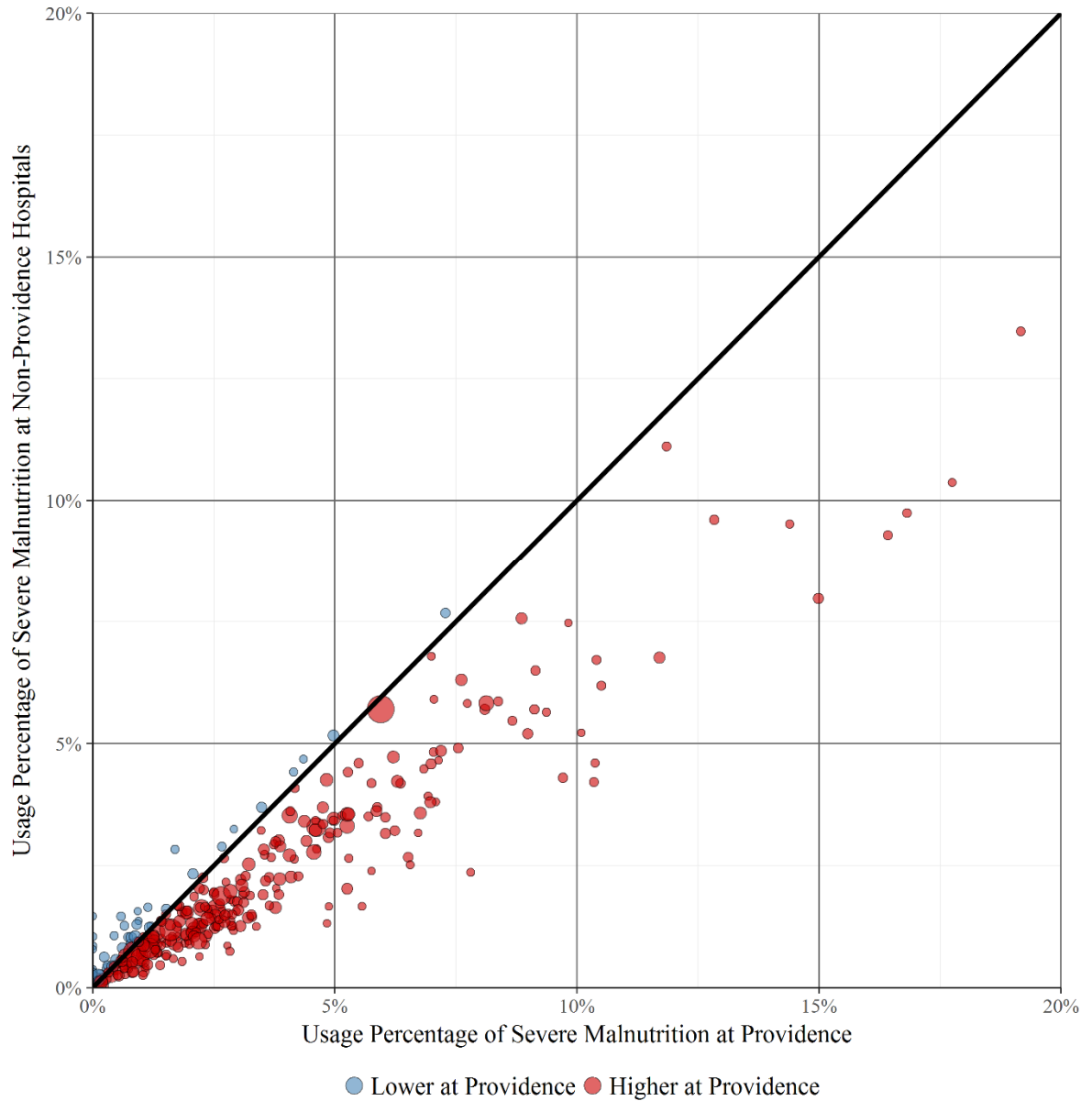
The following figure plots every Provider with at least 100 claims in the above principal diagnosis code categories. 3,104 hospitals had at least 100 claims for the relevant patterns listed in Table 8. The hospitals are plotted along the x-axis in order of highest percentage of severe malnutrition usage.



80. Figure 14 below shows that Providence used a higher rate of severe malnutrition not just in the few categories listed above, but across a large variety of principal diagnosis codes. The red dots to the right of the 45-degree line indicate higher rates of encephalopathy at Providence versus the nationwide average. This figure shows that Providence has a higher rate of encephalopathy for 267 out of 312 (85.58%) principal diagnosis categories. In other words, the extent to which Providence excessively upcoded encephalopathy on the categories listed in Table 8 above was not offset by relative downcoding in other principal diagnosis categories.

Figure 14. Rate of Severe Malnutrition by Principal Diagnosis Code at Providence Versus Other Hospitals.

For the 312 principal diagnoses with at least 100 claims at Providence (each represented by a dot), this figure compares the rate of severe malnutrition at Providence versus non-Providence hospitals. Red dots to the right of the 45-degree line indicate Providence is coding severe malnutrition at a rate higher than the nationwide average.

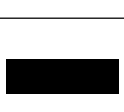
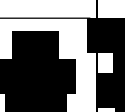
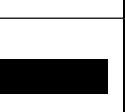
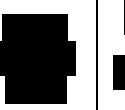
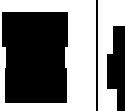
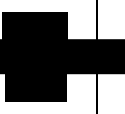
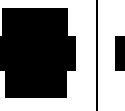
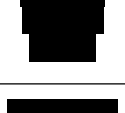
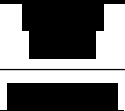
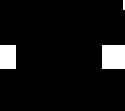
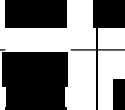
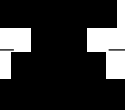


(ii) Specific False Claims with Severe Malnutrition

81. The Relator has identified many specific false Medicare claims submitted by Providence involving severe malnutrition. The following table includes 25 examples.

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2. Alternative Hypotheses for Excessive Rates of Misstated MCCs Do Not Stand and Confirm that Providence Fraudulently Billed Medicare

SECOND AMENDED COMPLAINT

1 Relator analyzed a subset of claims where Providence and other hospitals shared
2 common patients. Finally, Relator analyzed the upcoding rate for Providence and
3 other hospitals in the same metropolitan statistical area (“MSA”) to determine
4 whether the excessive rates of Misstated MCCs is due to regional differences. As
5 discussed further below, these analyses prove that the excessive rates of Misstated
6 MCCs can be directly attributed to the Defendants’ fraudulent activity as opposed to
7 external factors, indicating that the fraud was known by the system and was
8 intentional.

9 (a) **Patient Characteristics and Demographics Do Not**
10 **Explain the Excessive Rates of Misstated MCCs at**
11 **Providence**

12 83. The Relator developed a proprietary linear regression model to control
13 for the possibility that there are certain patient characteristics which might indicate a
14 higher likelihood a patient would have a MCC, allowing Relator to isolate and
15 calculate the specific impact Defendants had on the abuse of a Misstated MCC code
16 after controlling for other characteristics. These characteristics include basic patient
17 characteristics, such as the age, gender, and race, as well as characteristics relating
18 to the patient’s inpatient stay, including principal diagnosis, length of stay, and
19 discharge status. Relator also used county-level demographic data, such as
20 unemployment rate, percent of population without a high school diploma, median
21 income, and the rural-urban continuum codes from the Department of Agriculture as
22 control variables.¹² These county demographic variables provided Relator with a
23 proxy for the income levels, education levels, and access to care available to each
24 patient. Regression analysis is well established and has been used to pinpoint actors
25

26 _____
27 ¹² The Rural-Urban Continuum Codes measure whether each county is in a metro
28 or non-metro area and reflect the overall size of the metropolitan area.

1 behind misreporting in financial and economic contexts.¹³ Relator's regression
2 analysis analyzed millions of claims and thousands of possible fraudulent patterns to
3 calculate the total fraud committed by Providence with the assistance of JATA.

4 84. In this section, Relator employs three different regression analysis
5 methodologies, each of which demonstrate how Defendant billed for the Misstated
6 MCCs at fraudulently excessive rates. First, Relator uses a principal diagnosis bin-
7 based fixed effect linear regression model to calculate the excessive Misstated
8 MCCs in each principal diagnosis category. Second, Relator runs a fixed effect
9 linear regression across all claims. Third, Relator calculates the residual for each
10 system and hospital to determine the unexplained rate of Misstated MCCs across all
11 systems and then across all hospitals.

12 (i) **Principal Diagnosis Bin-Based Fixed Effect**
13 **Linear Regression**

14 85. First, Relator continued with the principal diagnosis bin approach by
15 running separate regressions for each principal diagnosis category. This approach
16 provides a number of benefits. First, it allows for non-linear relationships so that the
17 effect of each of the control variables can vary between principal diagnosis codes.
18 For example, the impact length of stay has on the likelihood of an MCC might vary
19 from one principal diagnosis code to another. Second, it allows for the specific
20 quantification of the defendants' impact on MCC rates for claims within each
21 principal diagnosis category.

22 86. Lastly, Relator included a fixed effect control variable for Providence
23 to the regression model, which represents the incremental amount of Misstated
24

25 ¹³ Tomasz Piskorski, Amit Seru, and James Witkin, *Asset Quality*
26 *Misrepresentation by Financial Intermediaries: Evidence from the RMBS Market*,
27 *The Journal of Finance*, Vol. 70.6 (2015), at 2635–2678; Griffin, John M., and
28 Gonzalo Maturana, *Who Facilitated Misreporting in Securitized Loans?*, *Review*
of Financial Studies, Vol. 29.2 (2016), at 384–419.

MCCs at Providence beyond what could be explained by other variables. Equation 1 shows the fixed effect linear regression model used by Relator.

Equation 1. Relator's Fixed Effect Linear Regression Model.

The following equation presents the fixed effect linear regression model used by Relator. The variable of interest is β_1 , which is the coefficient for Providence. Panel A provides the equation, and Panel B explains the variables included in the model. The i refers to a specific claim and j refers to the potential options for the categorical variables.

Panel A: Fixed Effect Regression Model

$$\begin{aligned} MCC_i = & \beta_0 + \beta_1.Providence_i + \sum_{j=2}^6 \beta_{2j}.Age_{ij} + \sum_{j=2}^7 \beta_{3j}.Race_{ij} + \beta_4.Male_i + \beta_5.log LOS_i \\ & + \sum_{j=2}^3 \beta_{6j}.Discharge_{ij} + \sum_{j=2}^4 \beta_{7j}.Season_{ij} + \sum_{j=2}^9 \beta_{8j}.RUCC_{ij} + \beta_9.Pov_i + \beta_{10}.Unemp_i \\ & + \beta_{11}.Income_i + \varepsilon_i \end{aligned}$$

Panel B: Explanation of Regression Variables

Variable	Description
β_0	Intercept
MCC_i	Whether the claim included a MCC
$Providence_i$	Whether the patient was treated at Providence
Age_{ij}	Patient's age on the claim (6 age groups)
$Race_{ij}$	Patient's race on the claim (7 race categories)
$Male_i$	Patient's gender
LOS_i	The patient's log length of stay at the hospital for claim i
$Discharge_i$	The patient's discharge status
$Season_{ij}$	Season control variable for the claim (Winter, Spring, Summer, Fall)
$RUCC_{ij}$	Patient's rural urban continuum code based on the county
Pov_i	County poverty rate in 2014
$Unemp_i$	County unemployment rate in 2014
$Income_i$	County log median income in 2014
ε_i	Error term

87. By controlling for these characteristics, the regression model allowed Relator to isolate the impact that being treated at a Providence hospital would have on a patient's expected likelihood of being diagnosed with one of the Misstated MCCs. For example, given two patients with fracture of neck of femur, with the same age and gender, from the same county, admitted during the same season, and with the same length of stay, the patient treated at Providence would be 208.57% times more likely to be diagnosed with encephalopathy. Figure 15 shows the results

1 of each regression run for each principal diagnosis bin.

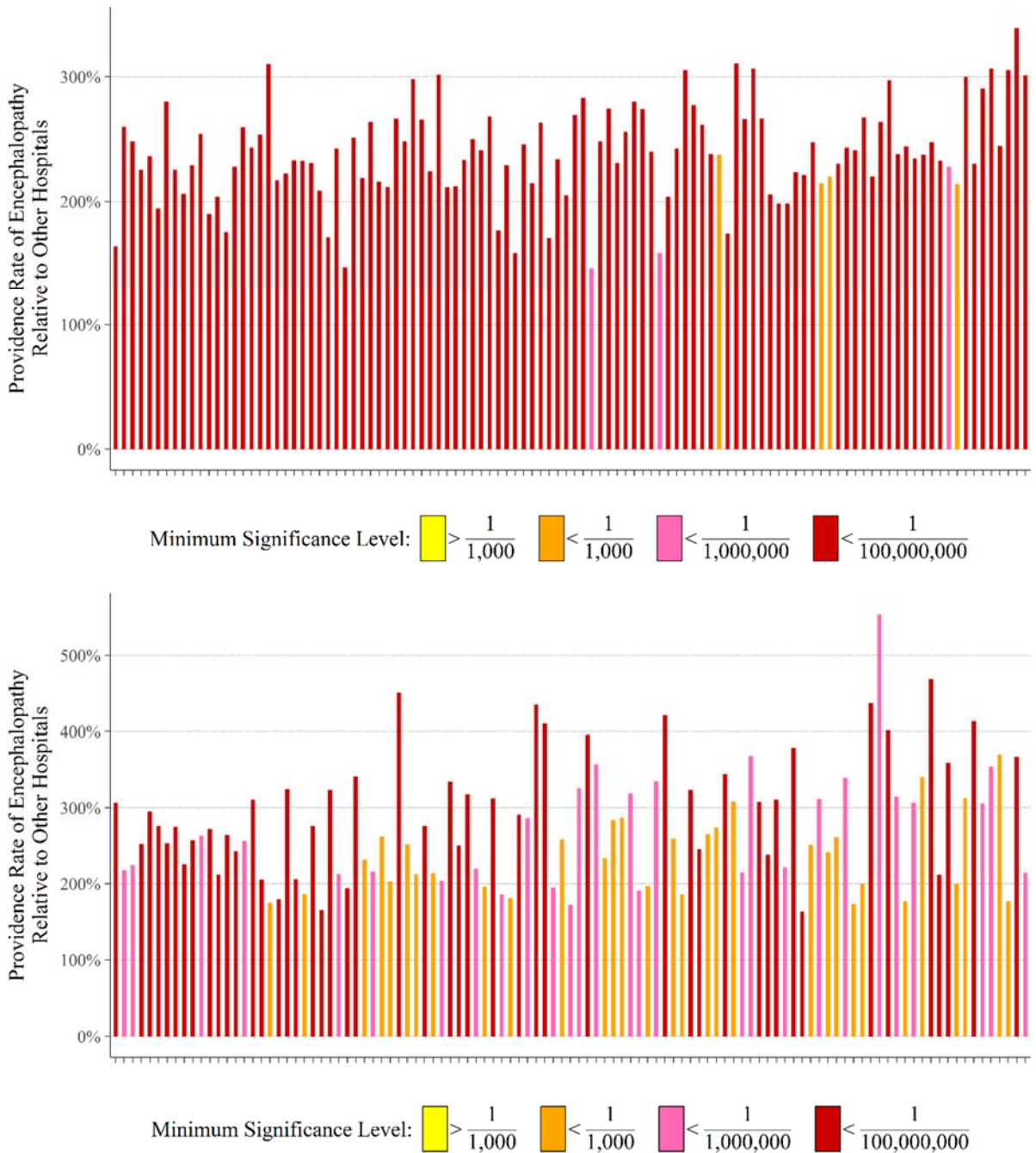
2 88. The results for encephalopathy are shown in Panel A. Each bar
3 represents the marginal effect of Providence on the MCC rate relative to other
4 hospitals within each principal diagnosis bin. As can be seen in Panel A for
5 encephalopathy, the coefficients for each principle diagnosis bin are all above 100%
6 which indicates that encephalopathy rates are higher at Providence, even after
7 controlling for other characteristics. Statistical significance of a coefficient that is
8 less than one in a thousand is in orange, while if the rate is even more rare at one in
9 a million or less it is in pink, and if the probability that the coefficient could happen
10 by chance is even lower at less than one in a hundred million then the bar is in red.
11 As can be seen in Panel A of the Figure 15, 69.3% of the bars have a probability of
12 being due to chance of less than 1 in 100 million. Notably, none of the 215 patterns
13 have a significance level less than 1 in 1 thousand.

14 89. Respiratory failure is shown in Panel B, and severe malnutrition is
15 shown in Panel C. For respiratory failure, 64.3% of the 28 patterns are significant at
16 less than 1 in 100 million, and all but 1 have a significance of at least 1 in 1
17 thousand.¹⁴ For severe malnutrition, 46.4% of the 28 patterns are significant at less
18 than 1 in 100 million, and all 28 are significant at less than 1 in 1,000. There are
19 fewer bars for respiratory failure and severe malnutrition because there are fewer
20 relevant patterns in which Providence's coding of Misstated MCCs was deemed
21 excessive. This evidence demonstrates the excessive coding of Misstated MCCs at
22 Providence, even after controlling for other characteristics.

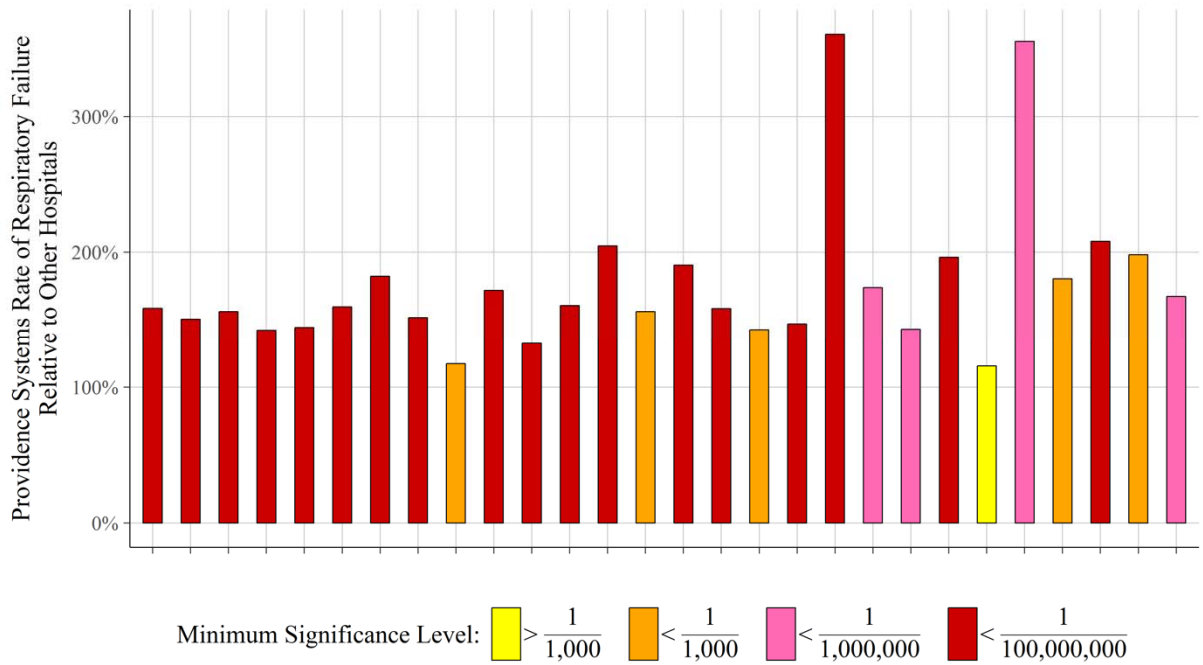
23
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26
27 ¹⁴ Even the principal diagnosis code that was not statistically significant at less than
28 1 in 1,000 was still significant at a 95% confidence level.

Figure 15. Regression-Adjusted Usage of Encephalopathy, Respiratory Failure, and Severe Malnutrition at Providence Relative to Non-Providence Hospitals for Each Principle Diagnosis Bin. Relator used principal diagnosis bin-based fixed effect linear regressions to analyze approximately 48.5 million claims at Providence and other hospitals. The results for each principal diagnosis bin are presented in the following figure. The vertical lines represent Providence's marginal effect on the rate of Misstated MCCs relative to the rate at other hospitals nationwide, where values above 100% indicate excessive MCC upcoding. The statistical significance is denoted by the coloring described in the legend. All but 1 pattern was statistically significant (for respiratory failure) at less than 1% chance the difference is random, and most were significant at a probability of less than 1 in 100 million.

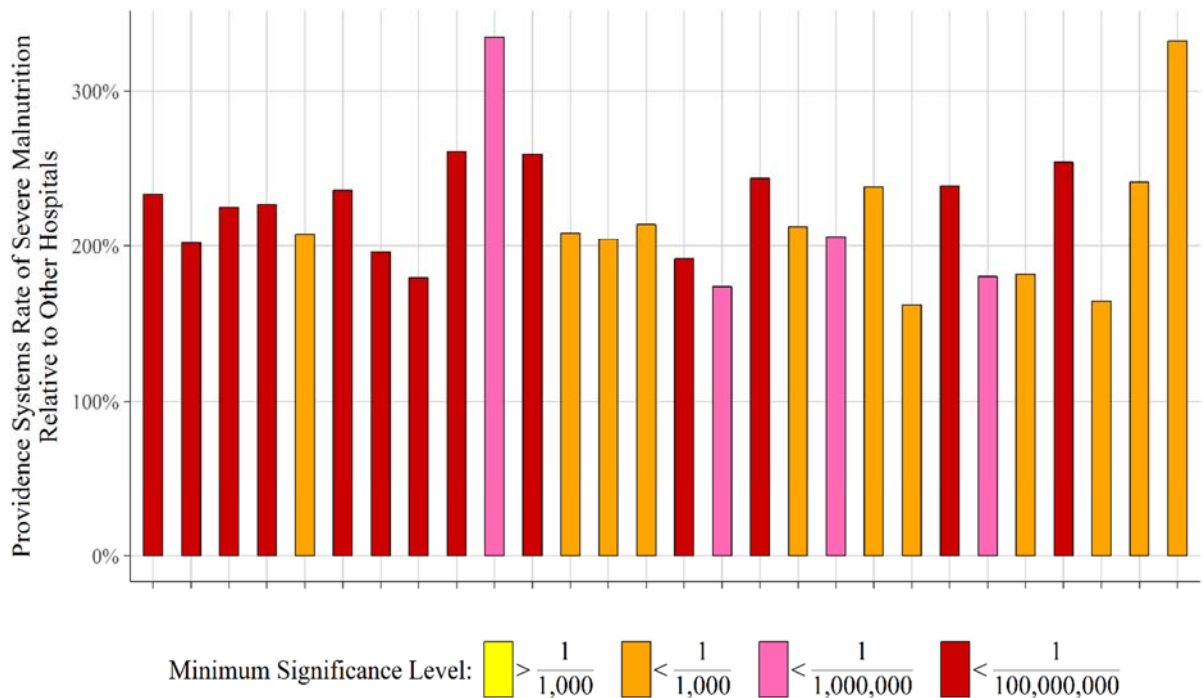
Panel A: Encephalopathy Regression Results by Principal Diagnosis Bin



Panel B: Respiratory Failure Regression Results by Principal Diagnosis Bin



Panel C: Severe Malnutrition Regression Results by Principal Diagnosis Bin



(ii) Aggregate Fixed Effect Regression Model

90. Second, Relator also ran a regression to calculate the cumulative effect of Providence's rate of Misstated MCCs across all claims in the relevant patterns. The same regression described in Equation 1 is used for this analysis, except Relator

1 runs one regression for all of the principal diagnosis codes in each MCC and adds a
2 control variable for the inpatient principal diagnosis category. This length of stay
3 variable is interacted with the principal diagnosis code to account for variation in the
4 expected length of stay given a principal diagnosis code.

5 91. As shown in Table 10, after controlling for other factors, the
6 Providence coefficient for the Misstated MCCs is 0.0808. This means that 8.08
7 percent of Providence claims are coded with one of the Misstated MCCs when they
8 would not have been coded as such at another hospital. Given the baseline usage
9 rate of the Misstated MCCs at other hospitals is 10.05 percent, Providence's
10 calculated rate of Misstated MCCs is 18.13 percent. In other words, Providence's
11 usage rate of the Misstated MCCs is 180.40% that of other hospitals, even after
12 controlling for patient, medical and demographic characteristics. This result is
13 statistically significant with more than 99.9999 percent confidence—*i.e.*, almost
14 certainly not random.

15 92. Not surprisingly, the individual coefficients for encephalopathy,
16 respiratory failure, and severe malnutrition are also large in magnitude.
17 Providence's usage rate for encephalopathy was 208.57% of the rate at other
18 hospitals, respiratory failure was 154.68%, and severe malnutrition was 223.92%.¹⁵

19
20
21
22
23 ¹⁵ For robustness analysis, Relator also considered the possibility that certain
24 surgical procedure codes or admission sources (such as being admitted from the
25 emergency room) might explain the higher rates of Misstated MCCs at Providence.
26 Relator ran the fixed-effect regression analysis while also including controls for
27 surgical procedures and admission source. With these coefficients, Providence's rate
28 of Misstated MCCs were 179.01% relative to other non-Providence hospitals.
Similarly, Providence's usage rate for encephalopathy was 207.43% of the rate at
other hospitals, respiratory failure was 149.83%, and severe malnutrition was
217.80%.

Table 10. Results of Fixed Effect Linear Regression Model.

Relator used the fixed effect linear regression discussed in Equation 1, except instead of running individual regressions for each principal diagnosis bin, Relator ran one regression for each Misstated MCC and included a control variable for the individual principal diagnosis categories. Relator analyzed approximately 48.5 million claims at Providence and other hospitals. The results are presented in the following table. The coefficient is listed first, and the p-value is in parenthesis, which represents the statistical significance of the coefficient. A lower p-value means the result is more statistically significant. Coefficients were not included for categorical variables. The Providence coefficient is added to the rate at other hospitals to get the expected Providence rate of excessive Misstated MCCs after including controls.

	Any of the MCCs	Encephalopathy	Respiratory Failure	Severe Malnutrition
Poverty Rate	-0.0014 (<0.0001)	-0.0009 (<0.0001)	-0.0029 (<0.0001)	0.0003 (<0.0001)
Unemployment Rate	-0.0001 (0.0926)	0.0006 (<0.0001)	-0.0026 (<0.0001)	-0.0006 (<0.0001)
Log (Median Income)	-0.0493 (<0.0001)	-0.029 (<0.0001)	-0.1042 (<0.0001)	-0.0016 (0.0027)
No High School Diploma Rate	-0.0007 (<0.0001)	-0.0004 (<0.0001)	-0.0017 (<0.0001)	-0.0003 (<0.0001)
Intercept	0.4855 (0.0597)	0.2906 (0.1648)	1.263 (0.0008)	-0.0378 (0.7892)
Principal Diagnosis	Yes	Yes	Yes	Yes
Principal Diagnosis X Log(LOS ¹⁶)	Yes	Yes	Yes	Yes
Season Control Variables	Yes	Yes	Yes	Yes
Age Control Variables	Yes	Yes	Yes	Yes
Sex Control Variables	Yes	Yes	Yes	Yes
Race Control Variables	Yes	Yes	Yes	Yes
Discharge Status Control	Yes	Yes	Yes	Yes
Principal Diagnosis Category	Yes	Yes	Yes	Yes
RUCC Control	Yes	Yes	Yes	Yes
Providence Coefficient	0.0808 (<0.0001)	0.0659 (<0.0001)	0.1017 (<0.0001)	0.0259 (<0.0001)
Nationwide Average	10.05%	6.07%	18.60%	2.09%
Providence Rate	18.13%	12.66%	28.77%	4.68%
Providence Rate Relative to Other Hospitals	180.40%	208.57%	154.68%	223.92%

(iii) System and Hospital Residuals for Misstated MCCs

93. Third, another regression method to analyze Providence's coding of

¹⁶ LOS stands for length of stay.

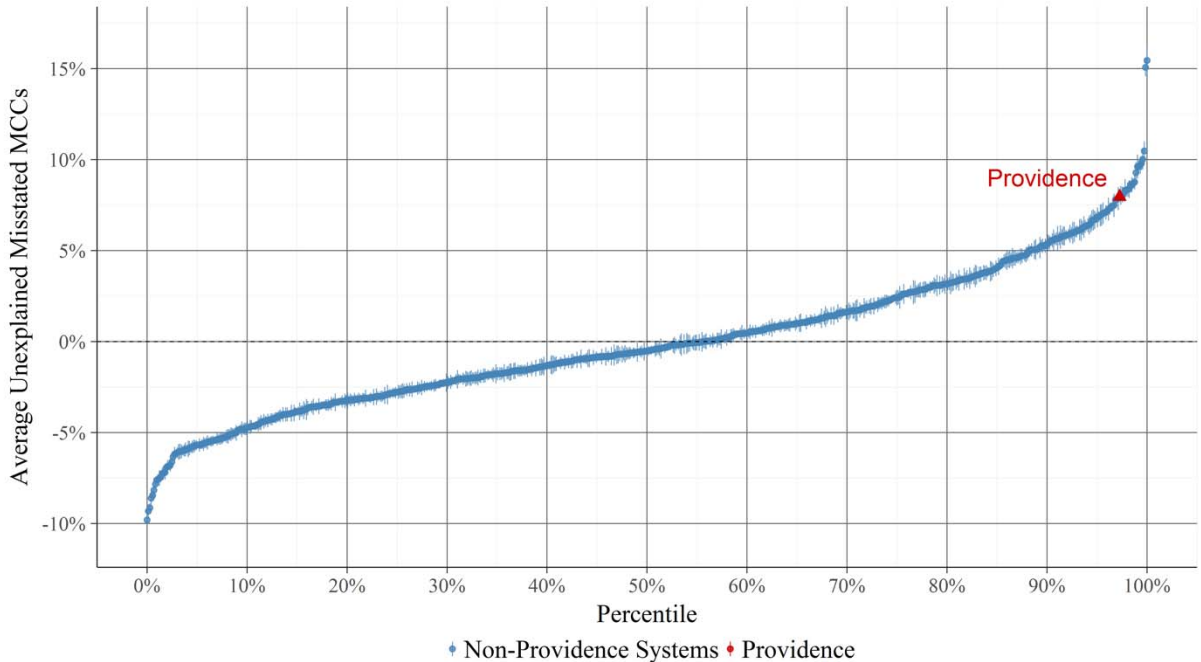
1 Misstated MCCs is to calculate the unexplained rate of Misstated MCCs. To
2 calculate this, Relator ran the regression without the fixed effect control variable for
3 Providence and calculated the probability each claim would have one of the
4 Misstated MCCs. For each hospital system and for each individual hospital, the
5 average difference between the predicted probability (or rate) of Misstated MCCs is
6 compared to the actual rate of Misstated MCCs, which is referred to as a residual.
7 The difference between these two values represents the rate of Misstated MCCs that
8 is caused by each hospital system, after controlling for the other characteristics
9 previously described.

10 94. Panel A of Figure 16 shows the average residual for rate of Misstated
11 MCCs for each hospital system, with Providence plotted in red. Providence's
12 average unexplained rate of Misstated MCCs by this measure is 7.97%, making it
13 21st highest out of 729 hospital systems with at least 10,000 claims in the relevant
14 patterns. Panel B of Figure 16 shows the average residual of each individual
15 hospital, with Providence plotted in red. The average residual of the Providence
16 hospitals ranges from 2.20% to 15.95%, and 20 of 23 Providence hospitals are in the
17 top 90th percentile of hospitals.

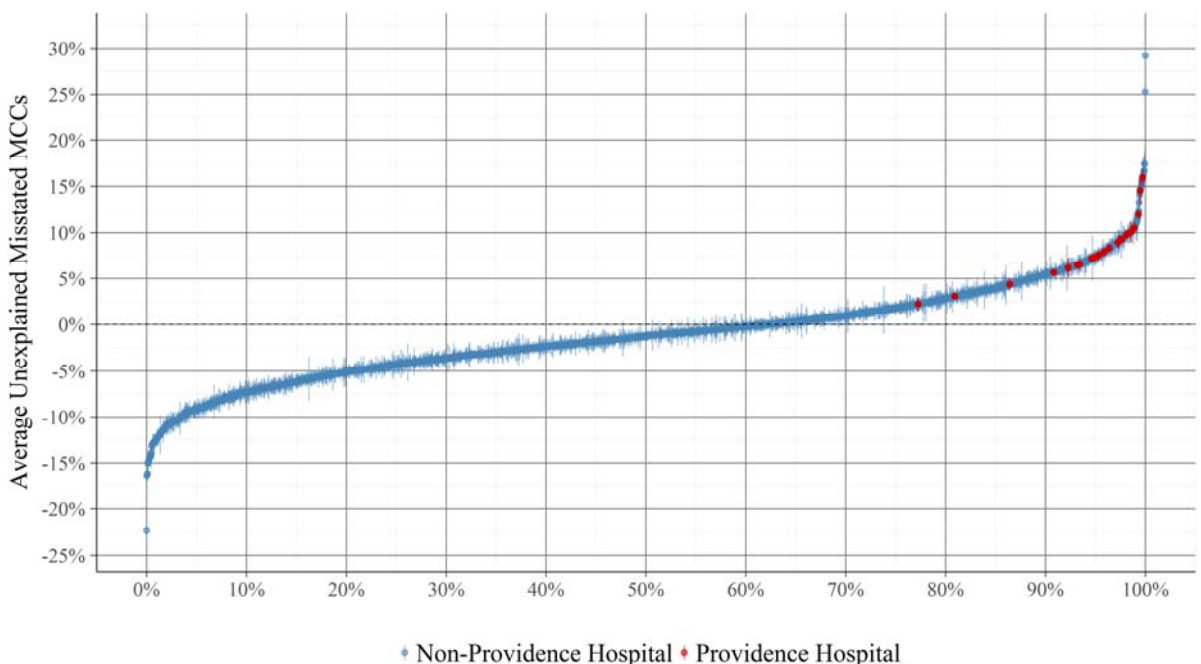
Figure 16. Average Unexplained Misstated MCC Rate for Each Hospital System and Individual Hospital.

The following figure plots the results of the regression from Equation 1, except one regression was run for all principal diagnosis bins, the control variable for principal diagnosis code was added to the regression, and the Providence fixed effect variable was removed. All other variables included are the same. The graph in Panel A is based on 729 hospital systems with at least 10,000 claims from 2011 through June 2017. The graph in Panel B is based on 3240 hospitals with at least 500 claims during the same time period. The small vertical lines off of the points represent the confidence interval for each system's unexplained use of Misstated MCCs.

Panel A: Average Residual of Any of the Misstated MCCs for Hospital Systems



Panel B: Average Residual of Any of the Misstated MCCs for Individual Hospitals



1 95. Taken together, Relator’s regression analysis shows that the excessive
2 rates of Misstated MCCs was not due to unique patient demographic or health
3 characteristics but were specifically caused by the Defendants’ practices.

4 (b) **Providence’s Merger with St. Joseph Health**
5 **Demonstrates that Providence Management Causes the**
6 **Excessive MCC Rates**

7 96. Additionally, Providence’s responsibility for the fraudulent conduct can
8 be proven using causal methods, which are often used in economics, finance and
9 other applications to assess the extent to which an effect can be identified to be
10 caused, and not merely associated with, other explanatory variables.¹⁷ A common
11 causal econometric methodology is the use of discontinuity analysis, which can be
12 applied when there is a sudden change in the effect that one wishes to examine.¹⁸ A
13 discontinuity analysis is able to determine whether there is a statistically significant
14 sudden increase in the rate of a Misstated MCC due to an additional explanatory
15 variable, such as a change in ownership or management of a hospital. One common
16 causal econometric methodology that can be used to prove Providence’s fraudulent
17 conduct is known as a Regression of Discontinuity Design (RDD), which can be
18 applied to examine a sudden change in an effect in order to infer a causal
19 relationship.¹⁹ In this case, Providence’s causal influence on the rate of coding
20

21 ¹⁷ “The notion of ceteris paribus—that is, holding all other (relevant) factors fixed—
22 is at the crux of establishing a causal relationship,” Jeffrey Wooldrige,
23 “Econometric Analysis of Cross Section and Panel Data” at 3, The MIT Press,
second edition, 2010.

24 ¹⁸ See Angrist, J.D. and Pischke, J.S., “Mostly Harmless Econometrics: An
25 Empiricist’s Companion” at 251–253, Princeton University Press, 2009.

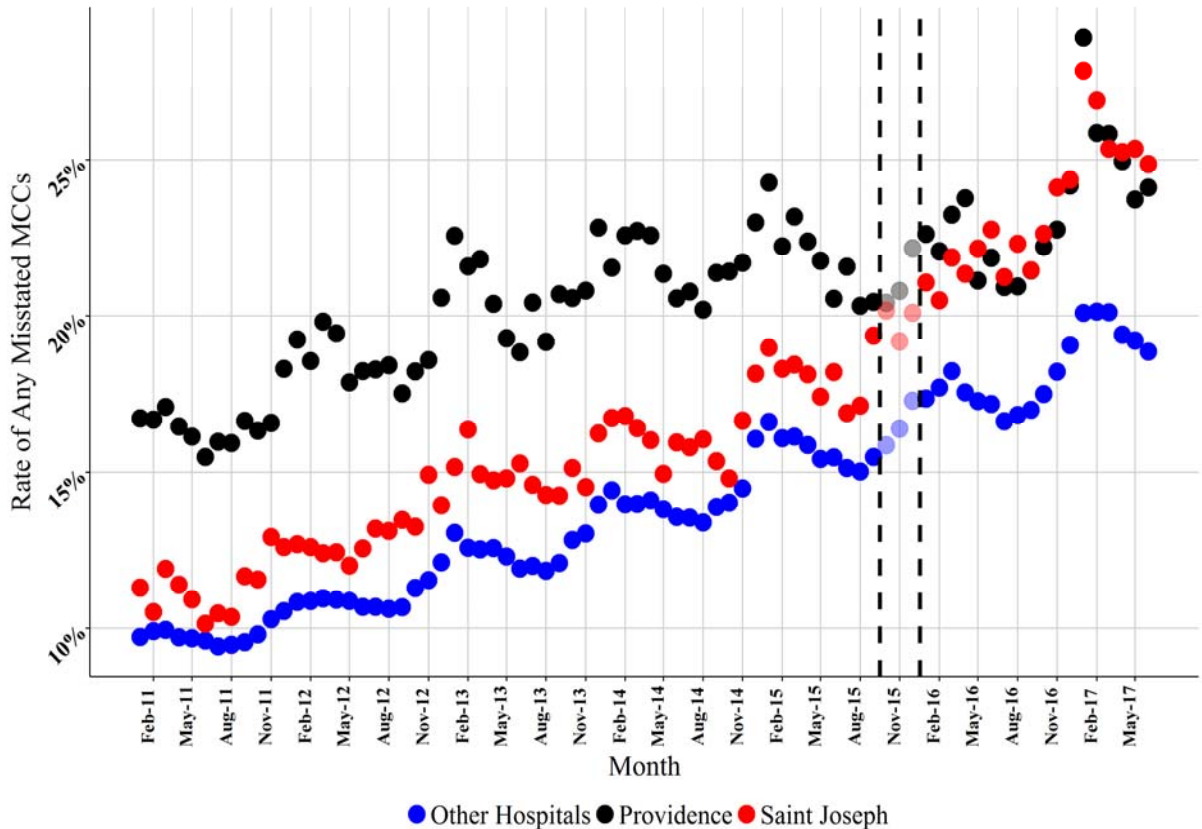
26 ¹⁹ “CITS... produce[s] causally valid inferences about program impacts.” M.
27 Somers, P. Zhu, R. Jacob, H. Bloom, *The Validity and Precision of the Comparative*
28 *Interrupted Time Series Design and the Difference-in-Difference Design in*
Educational Evaluation, MDRC Working Paper on Research Methodology, 2013.

1 Misstated MCCs can be estimated by comparing a hospital's average coding rate
2 before it was acquired by Providence to the rate after it was acquired by Providence.
3 97. Providence entered into its first agreement to merge with St. Joseph
4 Health ("St. Joseph") on September 30, 2015, and the merger was closed on January
5 1, 2016. Upon completion of the merger, the governance structure of both hospital
6 systems changed as they were brought under one unified board of directors. Relator
7 analyzed the rate of Misstated MCCs before the merger and after its close to
8 calculate the impact Providence has on the rate of Misstated MCCs at St. Joseph.
9 As shown in Figure 17, St. Joseph's rate of Misstated MCCs was lower than
10 Providence and slightly above the nation-wide average before the merger.
11 However, shortly after the merger was closed, the rate of Misstated MCCs jumps up
12 and is consistent with the rate at Providence hospitals.

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Figure 17. Rate of Misstated MCC Coding by Month for Providence, St. Joseph, and Other Hospitals. This figure shows the rate at which St. Joseph, Providence, and other hospitals are using one of the three Misstated MCCs over time. St. Joseph is in red, Providence is in black, and other hospitals are in blue dots. The dashed line on the left is the date at which the first contract was signed and the dashed line on the right is when the agreement went into effect. St. Joseph's rate of the three Misstated MCCs begins to increase when the contract is signed with Providence and eventually has a similar usage rate after the agreement takes effect.

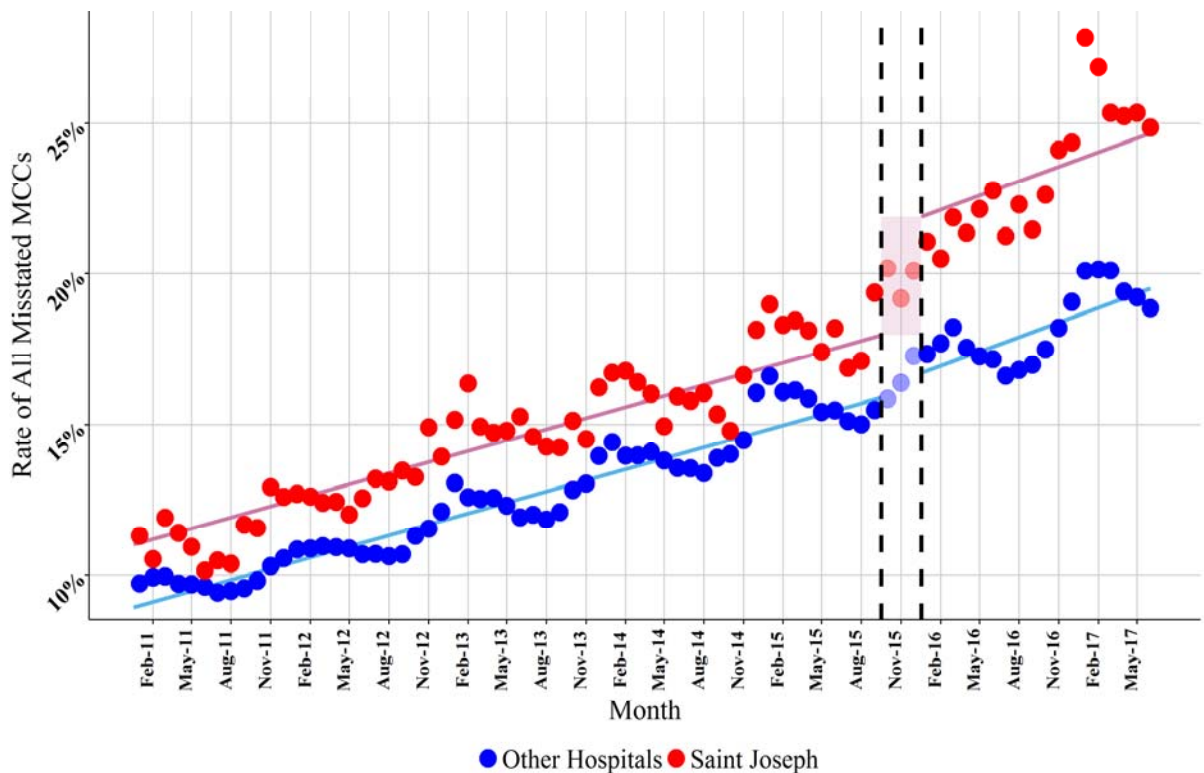


98. Relator conducted further analysis to show that the change in the rate of Misstated MCCs was caused by the merger as opposed to other factors, such as changing patient health and demographics, by using Regression of Discontinuity Design (RDD). The red line in Figure 18 shows the results of the RDD analysis. Here, Relator can quantify the jump that occurred immediately upon the merger. Specifically, Relator calculates that the rate of Misstated MCCs jumped 3.92% as a result of the merger. This calculation is based on the RDD formula shown in Equation 2 below, which allowed Relator to compare the differences in coding behavior at St. Joseph before and after the merger with Providence, *relative to the rate of Misstated MCCs nationwide*. The advantage of this approach is that it

allows Relator to identify and quantify not only the short-term effect of management change on the immediate increase in coding misstated codes but also the long-term effect in the post-contract trend of upcoding. This result was statistically significant with a probability the jump is due to random chance being less than 1 in 100 million.

Figure 18. RDD of Misstated MCCs for Providence's Merger with St. Joseph.

This figure shows the rate at which St. Joseph and other hospitals are using one of the three Misstated MCCs over time. St. Joseph is in red and other hospitals are in blue dots. The dashed line on the left is the date at which the first contract was signed and the dashed line on the right is when the agreement went into effect. St. Joseph's rate of the three Misstated MCCs begins to increase when the contract is signed with Providence and is higher than the nationwide average after the agreement takes effect.



99. The increase in the rate of Misstated MCCs at St. Joseph upon merger with Providence raises further questions. Namely, is it possible the increase in Misstated MCCs is due to other less fraudulent factors? For example, is it possible St. Joseph simply started taking on sicker patients that are more likely to have these Misstated MCCs? Relator considered these possible explanations by re-running the RDD described above, but by controlling for a variety of patient characteristics

1 which might explain the jump in Misstated MCCs. Specifically, Relator controlled
2 for all of the characteristics discussed in Equation 1. This analysis allowed Relator
3 to isolate the marginal increase in the coding of Misstated MCCs that can be
4 attributed directly to the merger, beyond what might be explained by changes in the
5 underlying patient population. After controlling for potential alternative
6 explanations, Relator calculated that the merger led to a 3.99% increase in the rate
7 of Misstated MCCs coded on claims at St. Joseph. This result is highly significant
8 as the probability the increase is due to random chance is less than 1 in 100 million.

9 100. Relator's calculation is based on the RDD formula shown in Equation 2
10 below, which allowed Relator to compare the differences in coding behavior at St.
11 Joseph before and after the merger with Providence, relative to the rate of Misstated
12 MCCs nationwide. The advantage of this approach is that it allows Relator to
13 identify and quantify not only the short-term effect of management change on the
14 immediate increase in coding misstated codes but also the long-term effect in the
15 post-contract trend of excessive rates of Misstated MCCs.

16
17 **Equation 2. Relator's Regression of Discontinuity Design Model.**

18 The following equation presents the RDD model used by relator. The aggregate short-run and long-run
19 effect of management change on the level of upcoding at St. Joseph is estimated through the variable
20 $\beta_{St.Joseph}$. This represents the jump in the rate of Misstated MCC upcoding while assuming that the coding
21 rate will continue to increase at the same rate as the nation-wide average (as represented by the slope of the
22 lines in Figure 18). The variable $\beta_{St.Joseph}$ represents the controls listed in Equation 1. When used without
23 controls, the outcome variable MCC_{it} represents the monthly average MCC rate at St. Joseph in month t .
When run with controls, the outcome variable MCC_{it} represents the binary value for existence or non-
existence of MCC in a specific claim i at St. Joseph in month t .

$$MCC_t = \beta_0 + \beta_{St.Joseph} \cdot Contract_t + (\hat{\beta}_{Bench}^{Pre}) \cdot (t - t_c) + (\hat{\beta}_{Bench}^{Post} - \hat{\beta}_{Bench}^{Pre}) \cdot Contract_t \cdot (t - t_c) + \beta_{Controls} + \varepsilon_t$$

24 (c) **Attending Physicians are not Responsible for the**
25 **Excessively High Rates of Misstated MCCs**

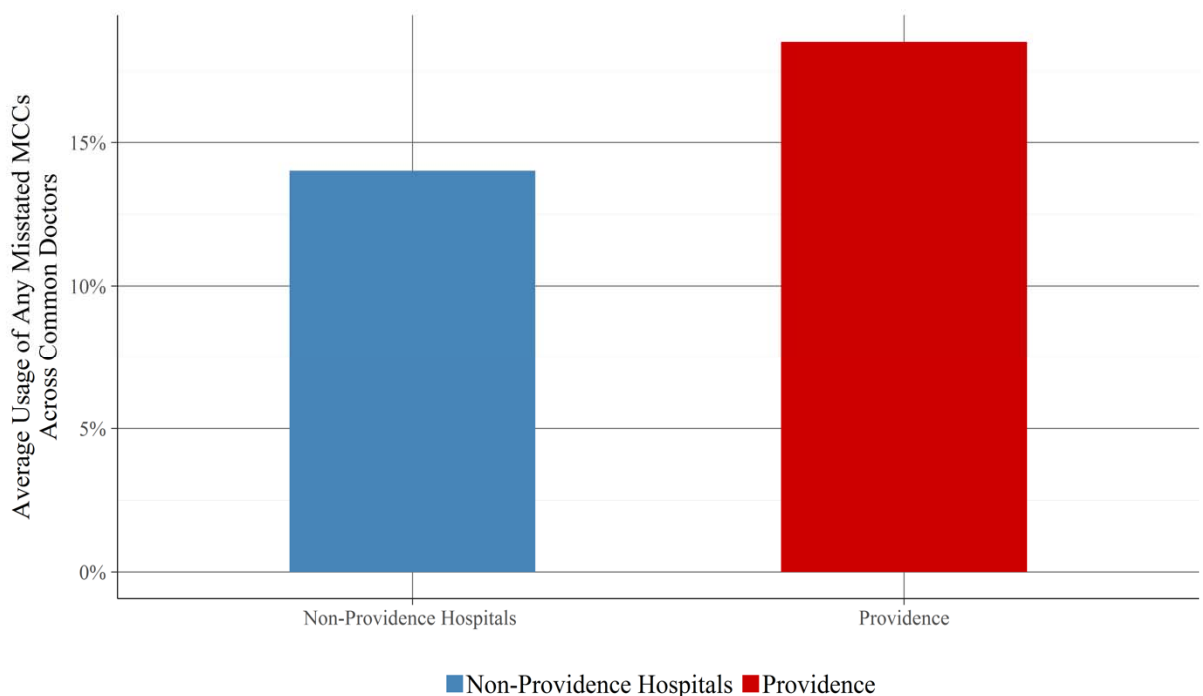
26 101. Relator also considered whether the excessively high rates of Misstated
27 MCCs could be caused by the preferences or treatment decisions of physicians who
28 work with patients at Providence hospitals, as opposed to some system-wide

1 decision or corporate directive. Could it be that the physicians who attended to
2 Providence's patients were more disposed to identifying encephalopathy, respiratory
3 failure, and severe malnutrition than other physicians? To address this question,
4 Relator analyzed a subset of claims involving doctors that treated patients at both
5 Providence and other hospitals.

6 102. As shown in Figure 19, when considering only claims for doctors with
7 at least 10 claims at both Providence and other hospitals, the use of encephalopathy,
8 respiratory failure, and malnutrition was still significantly higher at Providence.
9 Between 2011 and 2017, doctors used one of the Misstated MCCs on 18.51 percent
10 of claims while treating patients at Providence, but on only 14.02 percent of claims
11 when treating patients at other hospitals.

12
13 **Figure 19. Rate of Any of The Misstated MCCs at Providence Relative to Other Hospitals for Claims with Common Doctors.**

14 The following figure includes any claims for common doctors between Providence and another hospital
15 from 2011 through 2017. Even with doctors that work at both hospitals, Providence used one of the
16 Misstated MCCs on 18.51 percent of claims, while those same doctors only use one of the Misstated MCCs
17 on 14.02 percent of claims while at other hospitals. The analysis is based on 1,010 doctors with 10 claims at
18 Providence and 10 claims at a non-Providence hospital. In total these doctors had more than 126,000 claims
19 at Providence and more than 202,000 claims at other hospitals.

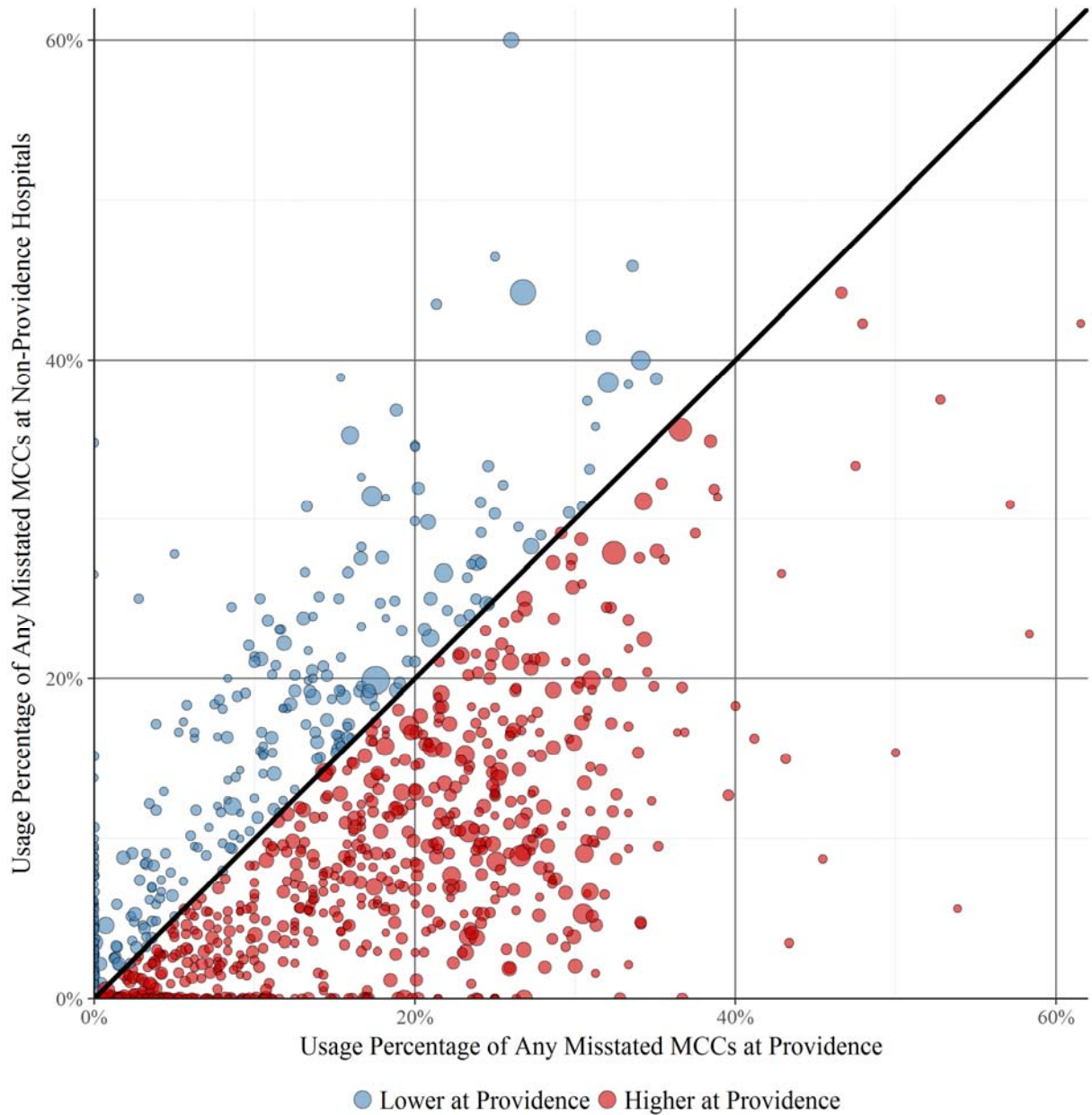


1 103. Figure 20 shows that this tendency to have higher rates of Misstated
2 MCCs at Providence is not limited to a few doctors but is systemic. In the following
3 figure, doctors with the same rate of Misstated MCCs at Providence and other
4 hospitals would be clustered along the 45-degree line, whereas doctors with higher
5 rates of Misstated MCCs at Providence would be to the right of the 45-degree line.
6 As shown in Figure 20, 696 out of 1,010 doctors (or 68.9 percent) had a higher
7 coding rate of the Misstated MCCs at Providence than at other hospitals.

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Figure 20. Rate of Any of the Misstated MCCs for Common Doctors at Providence Versus Other Hospitals.

The following figure compares the rate of Misstated MCCs for common doctors at Providence versus other hospitals. In the graph, the red circles to the right of the 45-degree line represent doctors who have higher upcoding at Providence and the blue circles represent doctors who have higher upcoding at other non-Providence hospitals. Only doctors with at least 11 claims at Providence and 11 claims at a non-Providence hospital are represented in this figure.

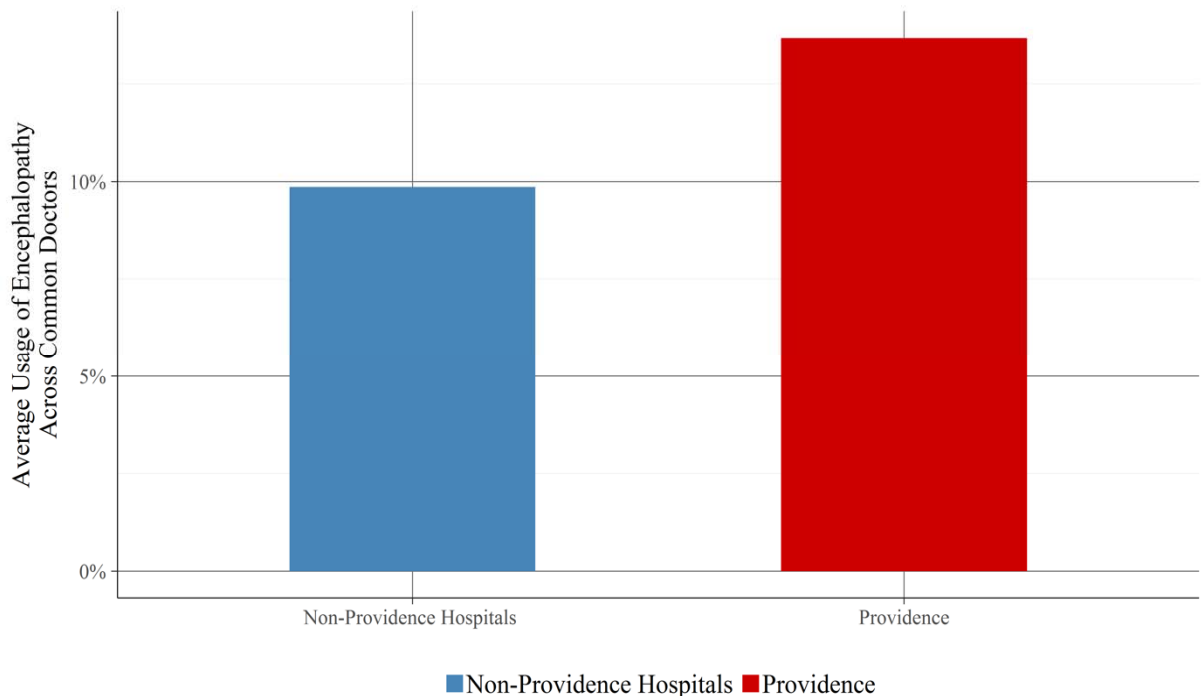


104. This result still holds when looking just at the individual Misstated MCCs. For doctors that serve at both Providence and other hospitals, the rate of encephalopathy at Providence was 13.68 percent, while the rate of encephalopathy

at other hospitals was 9.86 percent, as demonstrated in Figure 21 below. This suggests that a doctor was 138.7% as likely to diagnosis a patient with encephalopathy when treating the patient at Providence than when the same doctor was treating a patient at another hospital.²⁰

Figure 21. Rate of Encephalopathy at Providence Relative to Other Hospitals for Claims with Common Doctors.

The following figure includes any claims for doctors with at least 10 claims at Providence and 10 claims at a non-Providence hospital from 2011 through June 2017. Even with doctors that work at both hospitals, Providence had an encephalopathy rate of 13.68 percent, while those same doctors only use encephalopathy on 9.86 percent of claims while at other hospitals. The analysis is based on 964 doctors with 10 claims at Providence and 10 claims at a non-Providence hospital. In total these doctors had more than 122,000 claims at Providence and more than 196,000 claims at other hospitals.

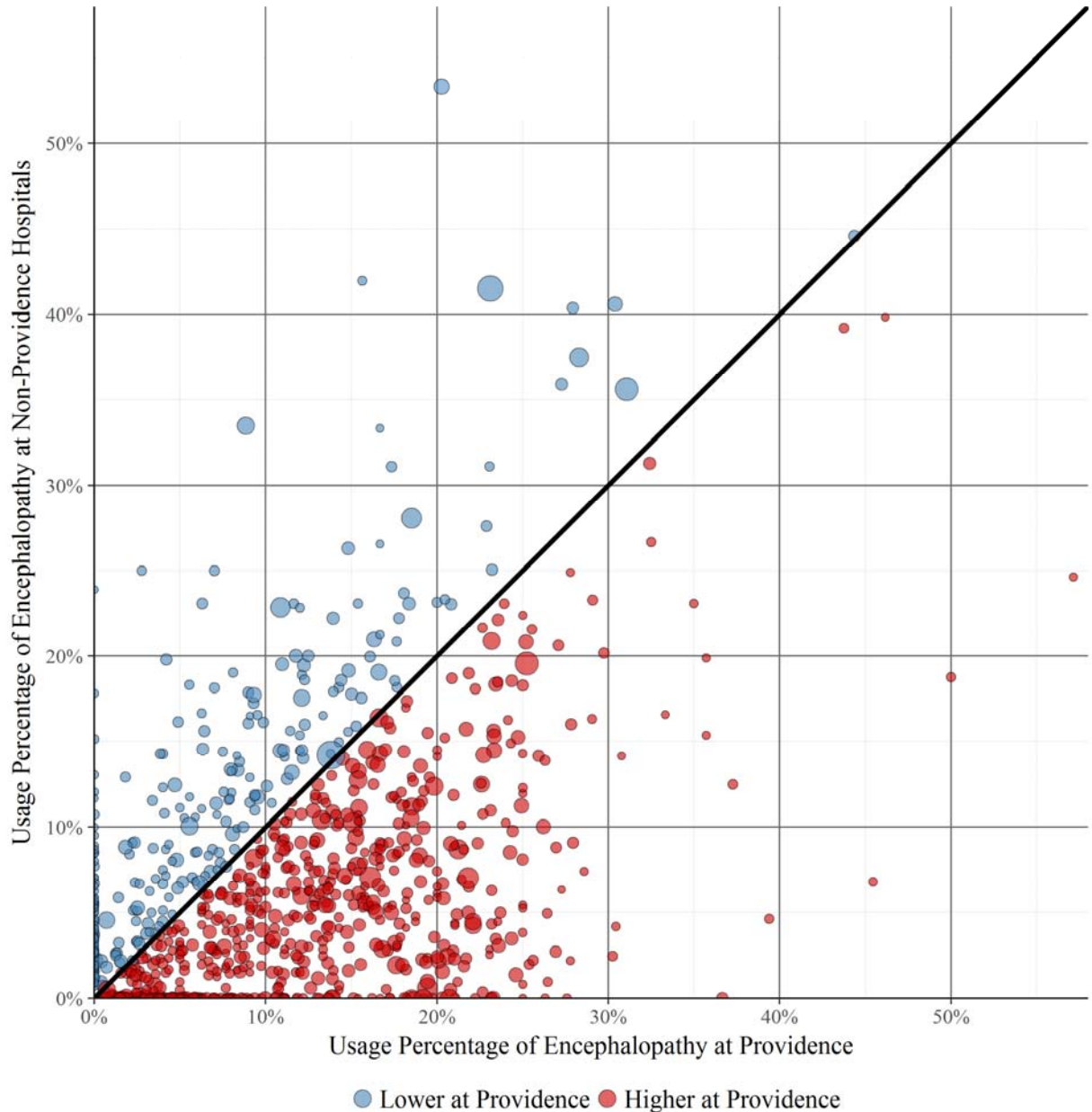


105. Figure 22 shows that a significant number of doctors had higher rates of encephalopathy when they worked at Providence than at other hospitals. Specifically, it shows that 669 doctors out of 964 doctors considered (or 69.4 percent) used a higher rate at Providence.

²⁰ This general trend still holds when looking at any doctor that has at least one claim at Providence and one claim at a non-Providence hospital. Specifically, the rate of encephalopathy is 12.59% at Providence and 9.39% at other hospitals.

Figure 22. Rate of Encephalopathy for Common Doctors at Providence Versus Other Hospitals.

The following figure compares the rate of encephalopathy for common doctors at Providence versus other hospitals. In the graph, the red circles to the right of the 45-degree line represent doctors who have higher upcoding of encephalopathy at Providence and the blue circles represent doctors who have higher upcoding at other non-Providence hospitals. Only doctors with at least 11 claims at Providence and 11 claims at a non-Providence hospital are represented in this figure.

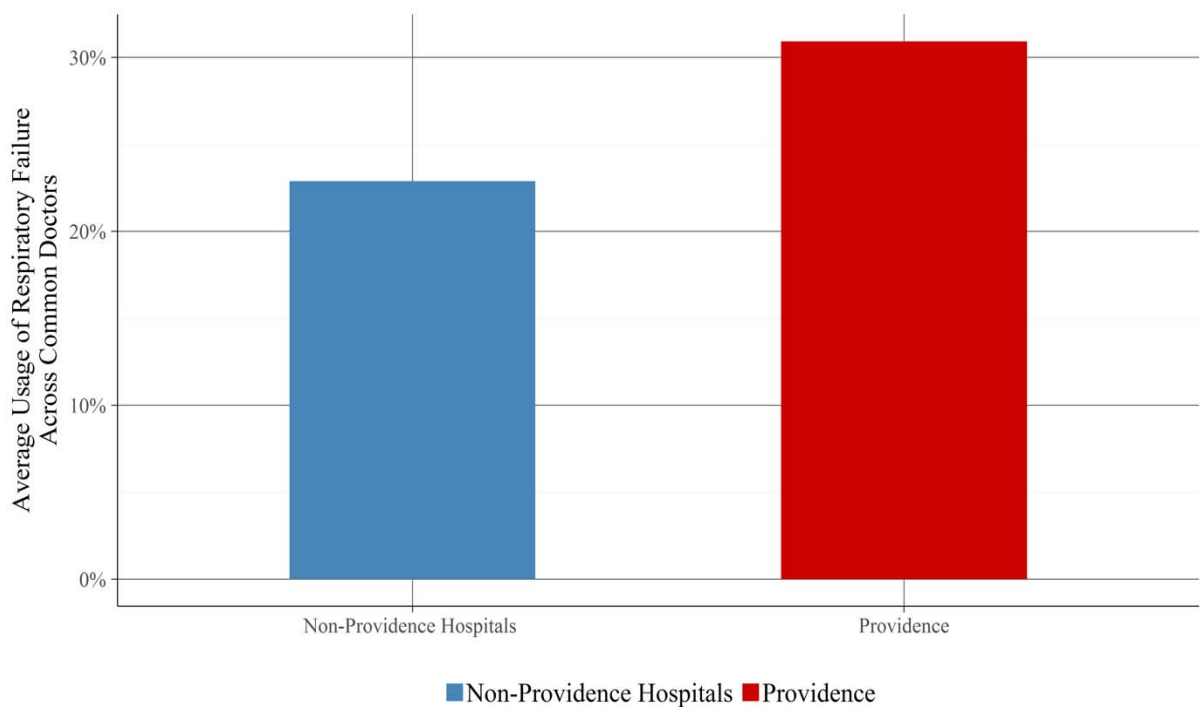


106. For doctors that serve at both hospitals, the rate of respiratory failure at Providence was 30.92 percent, while the rate of respiratory failure at other hospitals was 22.88 percent, as demonstrated in Figure 23 below. This suggests that a doctor was 135.1% as likely to diagnosis a patient with respiratory failure when treating the

patient at Providence than when the same doctor was treating a patient at a non-Providence hospital.²¹

Figure 23. Rate of Respiratory Failure at Providence Relative to Other Hospitals for Claims with Common Doctors.

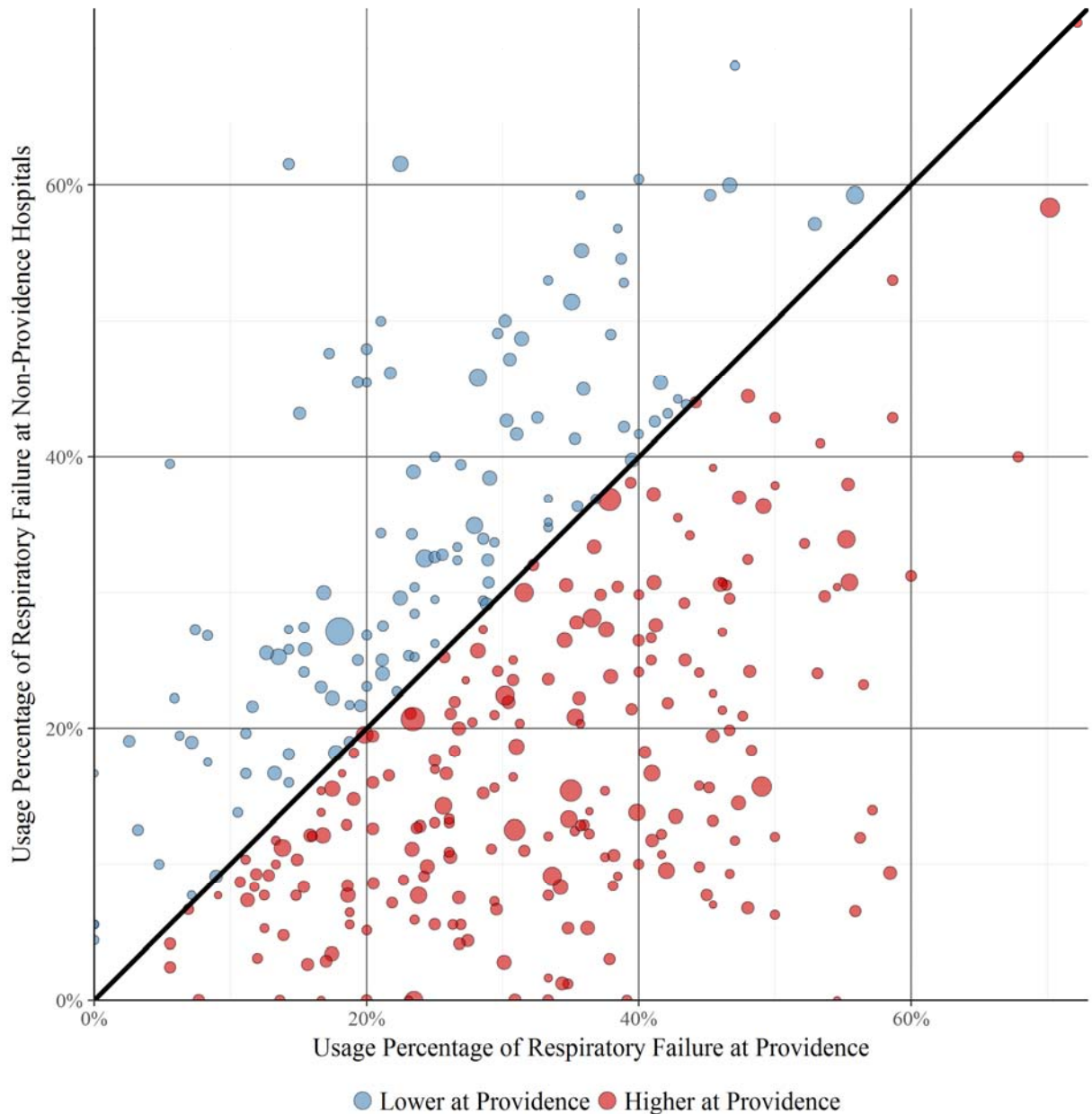
The following figure includes any claims for doctors with at least 10 claims at Providence and 10 claims at a non-Providence hospital from 2011 through June 2017. Even with doctors that work at both hospitals, Providence had a respiratory failure rate of 30.92 percent, while those same doctors only use respiratory failure on 22.88 percent of claims while at other hospitals. The analysis is based on 357 doctors with 10 claims at Providence and 10 claims at a non-Providence hospital. In total these doctors had more than 18,000 claims at Providence and more than 28,000 claims at other hospitals.



107. Figure 24 shows that a significant number of doctors had higher rates of respiratory failure when they worked at Providence than at other hospitals. Specifically, the figure shows that 232 doctors out of 357 doctors considered (or 65.0 percent) used a higher rate at Providence.

²¹ This general trend still holds when looking at any doctor that has at least one claim at Providence and one claim at a non-Providence hospital. Specifically, the rate of respiratory failure is 29.62% at Providence and 22.39% at other hospitals.

Figure 24. Rate of Respiratory Failure for Common Doctors at Providence Versus Other Hospitals.
The following figure compares the rate of respiratory failure for common doctors at Providence versus other hospitals. In the graph, the red circles to the right of the 45-degree line represent doctors who have higher upcoding of respiratory failure at Providence and the blue circles represent doctors who have higher upcoding at other non-Providence hospitals. Only doctors with at least 11 claims at Providence and 11 claims at a non-Providence hospital are represented in this figure.

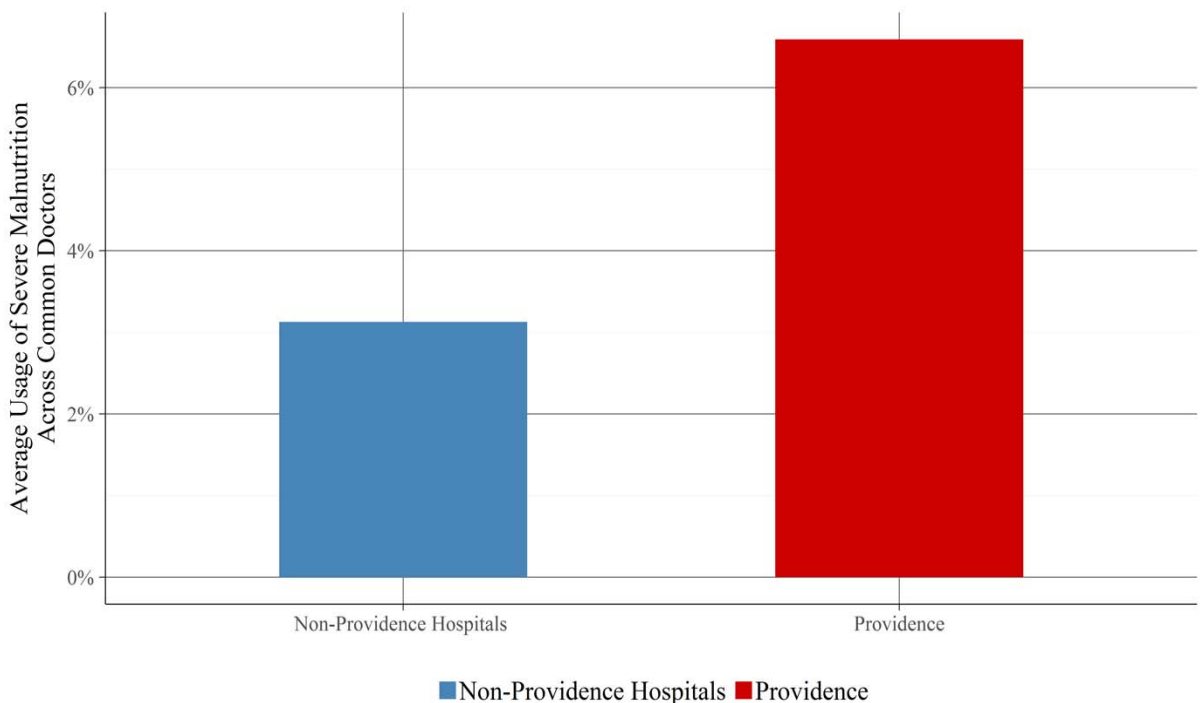


108. For doctors that serve at both hospitals, the rate of severe malnutrition at Providence was 6.59 percent, while the rate of severe malnutrition at other hospitals was 3.13 percent, as demonstrated in Figure 25 below. This indicates that a doctor was 210.5% as likely to diagnosis a patient with severe malnutrition when

treating the patient at Providence than when the same doctor was treating a patient at a non-Providence hospital.²²

Figure 25. Rate of Severe Malnutrition at Providence Relative to Other Hospitals for Claims with Common Doctors.

The following figure includes any claims for doctors with at least 10 claims at Providence and 10 claims at a non-Providence hospital from 2011 through June 2017. Even with doctors that work at both hospitals, Providence had a severe malnutrition rate of 6.59 percent, while those same doctors only use severe malnutrition on 3.13 percent of claims while at other hospitals. The analysis is based on 155 doctors with 10 claims at Providence and 10 claims at a non-Providence hospital. In total these doctors had 5,751 claims at Providence and 7,708 claims at other hospitals.

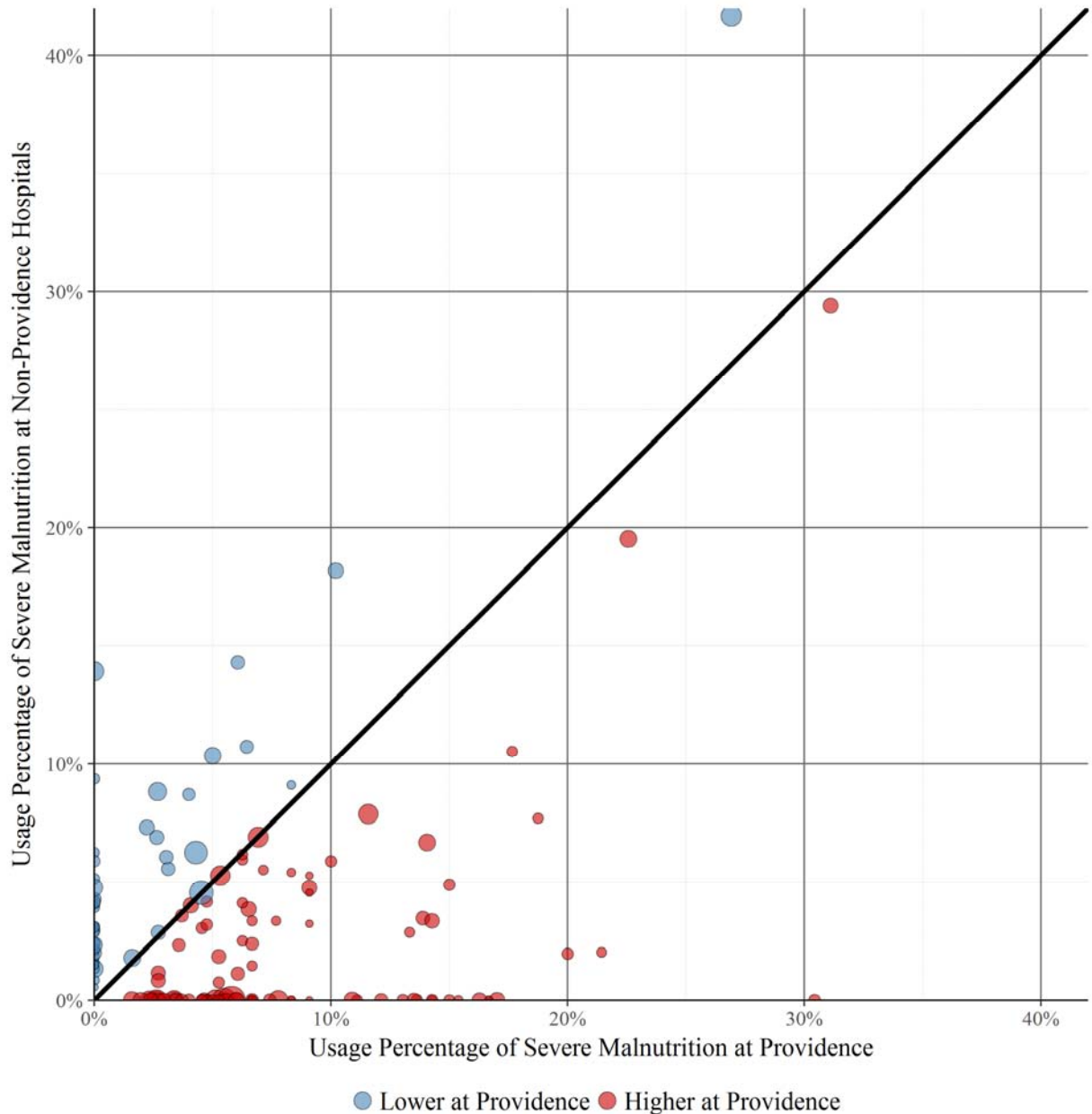


109. Figure 26 shows that a significant number of doctors had higher rates of severe malnutrition when they worked at Providence than at other hospitals. For example, the Figure shows that 107 doctors out of 155 doctors considered (or 69.0 percent) used a higher rate at Providence.

²² This general trend still holds when looking at any doctor that has at least one claim at Providence and one claim at a non-Providence hospital. Specifically, the rate of severe malnutrition is 6.86% at Providence and 3.76% at other hospitals.

Figure 26. Rate of Severe Malnutrition for Common Doctors at Providence Versus Other Hospitals.

The following figure compares the rate of severe malnutrition for common doctors at Providence versus other hospitals. In the graph, the red circles to the right of the 45-degree line represent doctors who have higher upcoding of severe malnutrition at Providence and the blue circles represent doctors who have higher upcoding at other non-Providence hospitals. Only doctors with at least 11 claims at Providence and 11 claims at a non-Providence hospital are represented in this figure.



110. Relator identified the specific doctors that had higher rates of encephalopathy at Providence relative to other hospitals. Table 11 below lists the ten doctors with the largest disparity in encephalopathy upcoding when they worked at Providence compared to when they worked at other hospitals. Each of these

doctors coded encephalopathy at a rate at least two times higher when at Providence.²³

Table 11. Doctors with the Most Excessive Rates of Encephalopathy at Providence Versus Other Hospitals.

This table shows the difference in encephalopathy usage for the ten doctors with the highest difference in encephalopathy usage at Providence versus other hospitals. The first seven digits of the physician ID have been hidden by Relator, so the specific physician will not be identifiable directly from this complaint. Only doctors with at least 11 claims at Providence and 11 claims at a non-Providence hospital are represented in this table.

Physician ID	Percent of Claims w/ Encephalopathy at Providence	Percent of Claims w/ Encephalopathy at Other Hospitals	Difference in Percent	Providence Rate Relative to Other Hospitals	P-Value
XXXXXXXX716	45.45%	6.80%	38.66%	669%	<0.0001
XXXXXXXX841	36.67%	0.00%	36.67%	Infinity	<0.0001
XXXXXXXX331	39.39%	4.62%	34.77%	852%	<0.0001
XXXXXXXX865	57.14%	24.63%	32.51%	232%	0.0094
XXXXXXXX338	50.00%	18.75%	31.25%	267%	<0.0001
XXXXXXXX970	30.23%	2.46%	27.77%	1,229%	<0.0001
XXXXXXXX412	27.59%	0.00%	27.59%	Infinity	<0.0001
XXXXXXXX210	26.32%	0.00%	26.32%	Infinity	<0.0001
XXXXXXXX764	30.43%	4.17%	26.27%	730%	<0.0001
XXXXXXXX536	27.78%	2.20%	25.58%	1,264%	<0.0001

111. Relator also re-ran the regression analysis for the subset of claims that have at least 10 claims by a doctor at Providence and a non-Providence hospital.²⁴ Relator used the same controls from the regression described in section 0.IV.D.2(a) above, along with a control for the doctor that treated the patient. This allows Relator to quantify the marginal impact a patient being treated at Providence has on

²³ Relator only included the results for encephalopathy because it has the most claims among the Misstated MCCs, providing the most thorough comparison.

²⁴ More than 326,000 claims for Encephalopathy and more than 333,000 claims for Misstated MCC were included in this regression. Encephalopathy was the only specific Misstated MCC in which Relator ran the regression because it had the largest number of claims.

1 a patient being diagnosed with a Misstated MCC, beyond what can be explained by
2 patient characteristics, demographic characteristics, as well as the individual doctor.
3 As shown in Table 12, Providence's rate of any MCC, after these controls, was
4 135.87 percent of the rate at other hospitals, and Providence's encephalopathy rate
5 was 138.86 percent of the rate at other hospitals.²⁵

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23 ²⁵ Relator also considered whether the behavior of these doctors is due to their
24 tendency to provide certain procedures at certain hospitals. To do this, Relator also
25 added control variables for the procedure codes and the admission status to identify
26 admissions as from the emergency room, elective, or urgent. For any Misstated
27 MCC and for Encephalopathy, the coefficients were 0.0479 and 0.0374 respectively.
28 In other words, Providence's rate of Misstated MCC was 134.71 percent of other
hospitals, and rate of encephalopathy was 138.76 percent of other hospitals among
claims with common doctors.

Table 12. Fixed Effect Regression Results After Controlling for Attending Physician.

Relator used a linear regression to analyze approximately 333,000 claims with common doctors at Providence and other hospitals. The results are presented in the following table. The coefficient is listed first, and the p-value is in parenthesis, which represents the statistical significance of the coefficient. A lower p-value means the result is more statistically significant. Coefficients were not included for categorical variables. Results were only included

	Any Misstated MCC	Encephalopathy
Poverty Rate	-0.0019 (<0.0001)	-0.0006 (0.0554)
Unemployment Rate	0.0035 (<0.0001)	0.0034 (<0.0001)
Log (Median Income)	-0.0419 (<0.0001)	-0.0178 (0.0094)
No High School Diploma Rate	0.0004 (0.0079)	0.0005 (0.0003)
Intercept	0.4019 (<0.0001)	0.1163 (0.1612)
Principal Diagnosis	Yes	Yes
Principal Diagnosis X Log (LOS ²⁶)	Yes	Yes
Season Control Variables	Yes	Yes
Age Control Variables	Yes	Yes
Sex Control Variables	Yes	Yes
Race Control Variables	Yes	Yes
Discharge Status Group Controls	Yes	Yes
Principal Diagnosis Category Controls	Yes	Yes
RUCC Control	Yes	Yes
Doctor Control Variables	Yes	Yes
Providence Dummy Variable	0.0495 (<0.0001)	0.0375 (<0.0001)
Nationwide Average	13.80%	9.65%
Providence Rate	18.75%	13.40%
Providence Relative Effect	135.87%	138.86%

112. This analysis shows that the fraudulent upcoding was not caused by tendencies of certain doctors that treat patients at Providence but was instead caused by coding practices that were implemented specifically at Providence with the assistance of JATA.

²⁶ LOS stands for length of stay.

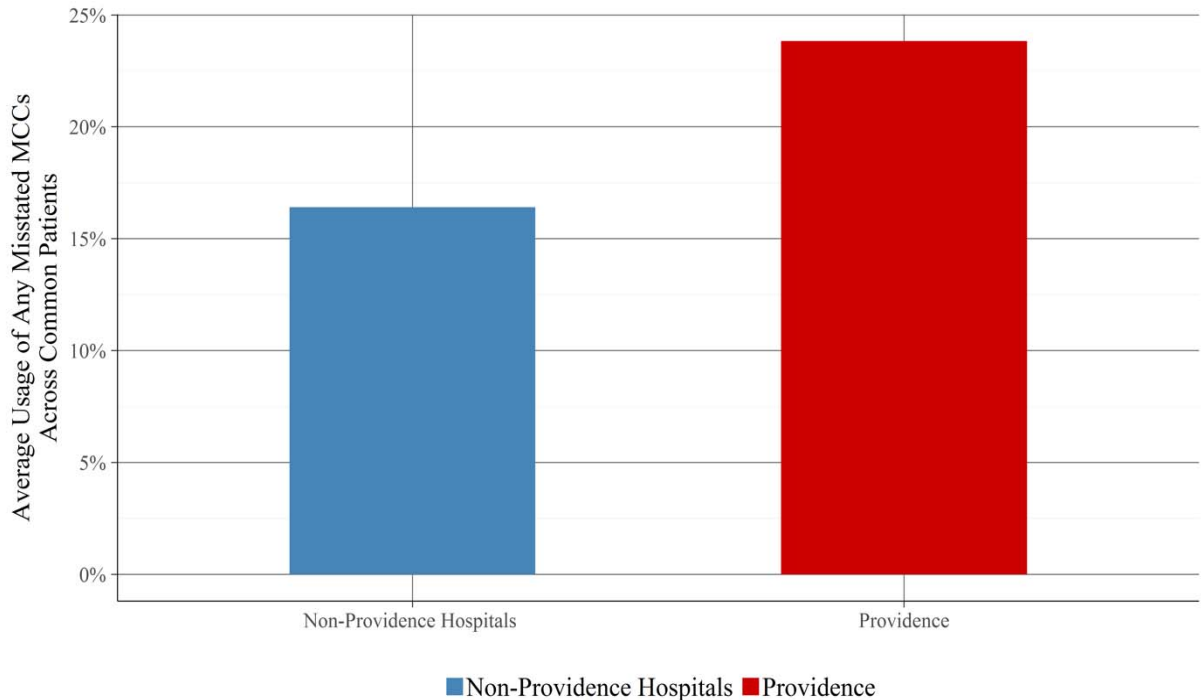
(d) **Unique Characteristics of Providence's Patients Do Not Account for the Excessively High Rates of Misstated MCCs**

113. Relator also considered whether it might be something else about Providence patients that would justify the higher rates of MCCs. Although Relator already considered a variety of patient characteristics in the fixed effect linear regression model, Relator also analyzed the subset of patients that attended both Providence and at least one other hospital between 2011 and 2017, and then compared the rate of the MCC codes used when these patients were treated at Providence versus when treated at other hospitals.

114. As shown in Figure 27, when only analyzing patients that have at least 5 claims at both Providence and other hospitals, the use of encephalopathy, respiratory failure, and malnutrition was still significantly higher at Providence. Between 2011 and 2017, patients were diagnosed with one of the Misstated MCCs on 23.83 percent of claims while being at Providence, but on only 16.41 percent of claims at other hospitals. A patient being treated at Providence was coded with the Misstated MCCs at a rate that was 145.22% the rate at other non-Providence hospitals.

Figure 27. Rate of Any of The Misstated MCCs at Providence Relative to Other Hospitals for Claims with Common Patients.

The following figure includes any claims for common patients between Providence and a non-Providence hospital from 2011 through June 2017. Even with patients at both hospitals, Providence used one of the Misstated MCCs on 23.83 percent of claims, while those same patients only have one of the Misstated MCCs on 16.41 percent of claims while at other hospitals. The analysis is based on 850 patients with 5 claims at Providence and 5 claims at a non-Providence hospital. In total these patients had 7,078 claims at Providence and 8,536 claims at other hospitals.



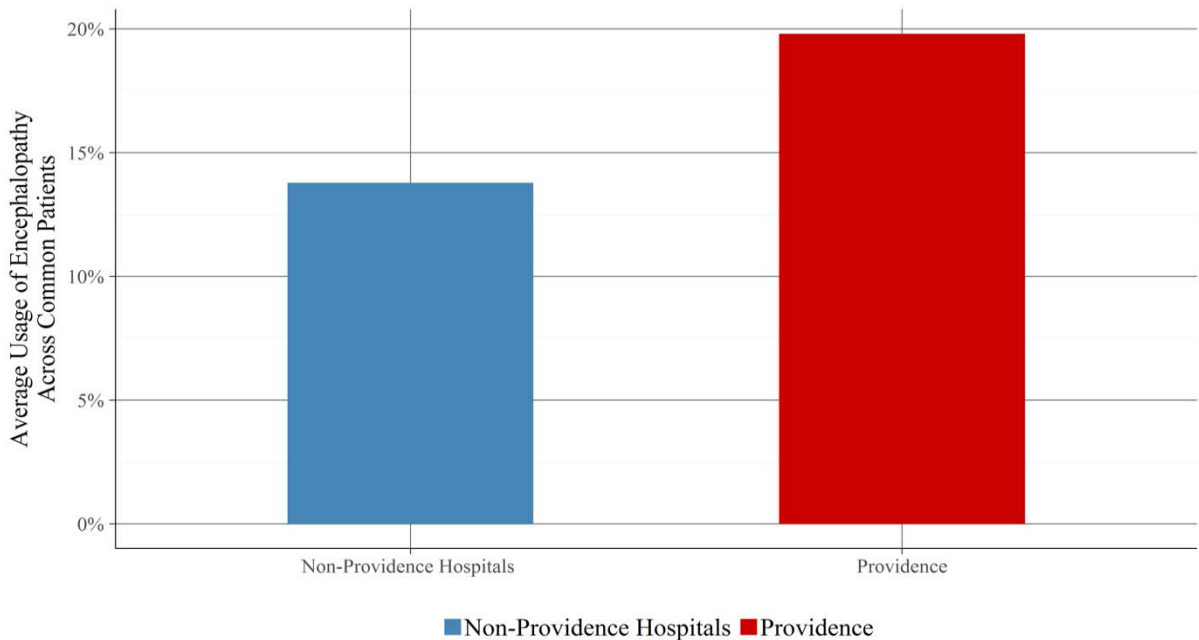
115. For patients that were treated at both hospitals, the rate of encephalopathy at Providence was 19.81 percent, while the rate of encephalopathy at other hospitals was 13.79 percent, as demonstrated in Figure 28 below. This suggests that a patient was 143.7% as likely to be diagnosed with encephalopathy when being treated at Providence than when the same patient was treated at a non-Providence hospital.^{27, 28}

²⁷ This general trend still holds when looking at any patient that has at least one claim at Providence and one claim at a non-Providence hospital. Specifically, the rate of encephalopathy is 34.95% at Providence and 22.87% at other hospitals.

²⁸ These results were not presented for respiratory failure and severe malnutrition due to the small number of common patients available for analysis.

Figure 28. Rate of Encephalopathy at Providence Relative to Other Hospitals for Claims with Common Patients.

The following figure includes any claims for patients with at least 5 claims at Providence and 5 claims at a non-Providence hospital from 2011 through June 2017. Even with patients at both hospitals, Providence had an encephalopathy rate of 19.81 percent, while those same patients only have encephalopathy on 13.79 percent of claims while at other hospitals. The analysis is based on 671 patients with 5 claims at Providence and 5 claims at a non-Providence hospital. In total these patients had 5,584 claims at Providence and 6,615 claims at other hospitals.



116. As this analysis shows, even when looking at the same patient, Providence has significantly higher rates of Misstated MCCs than other hospitals. This shows that the upcoding behavior cannot be attributable to patient differences.

(e) Regional Factors do not Explain Why Providence Has Higher Rates of MCCs

117. Relator also considered whether the high rates of MCC upcoding at Providence hospitals might be due to the region in which Providence's hospitals are located. Although Relator has already controlled for a variety of county demographic factors through the regression, Relator now compares the rate of Misstated MCCs between Providence and other hospitals within each MSA.²⁹

118. As shown in Table 13, Providence had a significantly higher rate of

²⁹ Relator only included MSAs in which there were at least 2 comparison hospitals.

Misstated MCCs in each MSA. As shown in Table 14, Providence had a higher rate of encephalopathy than other hospitals in each MSA, with some having encephalopathy rates that are nearly twice as high as the rate at other hospitals in the same MSA.

119. Table 15 shows the rate of respiratory failure was higher for Providence hospitals in all but one MSA. Table 16 shows that Providence had a higher rate of severe malnutrition in all but one MSA, with Providence hospitals in the Spokane-Spokane Valley MSA coding severe malnutrition at more than four times the rate as other hospitals in the MSA.

Table 13. Rate of Misstated MCCs at Providence Versus Other Hospitals in the Same MSA.

This table compares the rate of Misstated MCCs in the suspicious patterns for the hospitals in Providence and other hospitals within the same geographic region.

MSA	Providence MCC Rate	Nationwide MCC Rate	Providence Rate Relative to Other Hospitals	Probability
Los Angeles-Long Beach-Anaheim, CA	17.11%	12.68%	135%	<0.0001
Medford, OR	16.04%	12.18%	132%	<0.0001
Portland-Vancouver-Hillsboro, OR-WA	17.07%	13.21%	129%	<0.0001
Seattle-Tacoma-Bellevue, WA	16.59%	11.84%	140%	<0.0001
Spokane-Spokane Valley, WA	18.63%	10.91%	171%	<0.0001

Table 14. Rate of Encephalopathy at Providence Versus Other Hospitals in the Same MSA.

This table compares the encephalopathy rate of the suspicious patterns for the hospitals in Providence and other hospitals within the same geographic region.

MSA	Providence Encephalopathy Rate	Nationwide Encephalopathy Rate	Providence Rate Relative to Other Hospitals	Probability
Los Angeles-Long Beach-Anaheim, CA	12.38%	9.56%	130%	<0.0001
Medford, OR	11.65%	9.32%	125%	<0.0001
Portland-Vancouver-Hillsboro, OR-WA	13.12%	8.77%	150%	<0.0001
Seattle-Tacoma-Bellevue, WA	13.03%	7.73%	169%	<0.0001
Spokane-Spokane Valley, WA	13.64%	6.99%	195%	<0.0001

Table 15. Rate of Respiratory Failure at Providence Versus Other Hospitals in the Same MSA.

This table compares the respiratory failure rate of the suspicious patterns for the Providence hospitals and other hospitals within the same geographic region.

MSA	Providence Respiratory Failure Rate	Nationwide Respiratory Failure Rate	Providence Rate Relative to Other Hospitals	Probability
Los Angeles-Long Beach-Anaheim, CA	26.53%	17.06%	156%	<0.0001
Medford, OR	23.82%	16.10%	148%	<0.0001

MSA	Providence Respiratory Failure Rate	Nationwide Respiratory Failure Rate	Providence Rate Relative to Other Hospitals	Probability
Portland-Vancouver-Hillsboro, OR-WA	24.51%	25.36%	97%	0.9766
Seattle-Tacoma-Bellevue, WA	27.21%	23.25%	117%	<0.0001
Spokane-Spokane Valley, WA	33.01%	18.88%	175%	<0.0001

Table 16. Rate of Severe Malnutrition at Providence Versus Other Hospitals in the Same MSA.

This table compares the severe malnutrition rate of the suspicious patterns for the Providence hospitals other hospitals within the same geographic region.

MSA	Providence Malnutrition Rate	Nationwide Malnutrition Rate	Providence Rate Relative to Other Hospitals	P-value
Los Angeles-Long Beach- Anaheim, CA	4.29%	2.31%	186%	<0.0001
Medford, OR	2.15%	3.33%	64%	0.9954
Portland-Vancouver-Hillsboro, OR-WA	5.57%	3.49%	160%	<0.0001
Seattle-Tacoma-Bellevue, WA	3.54%	2.11%	168%	<0.0001
Spokane-Spokane Valley, WA	7.75%	1.89%	409%	<0.0001

120. Based on this regional analysis, Relator has shown that the fraudulent upcoding cannot be attributed to geographic factors unique to Providence.

(f) Summary of What Caused Excessively High Rates of Misstated MCCs at Providence

121. Relator has considered a number of potential explanations above to determine what phenomenon or which actor could be responsible for the excessively high rates of MCC upcoding at Providence. The high rates of the Misstated MCCs are highly significant across 226 principal diagnosis categories and 23 Providence hospitals, indicating the excessive rates are not driven by particular patient medical characteristics nor unique to only a few Providence hospitals. Relator eliminated the possibility that the excessive Misstated MCCs might be justified by or due to patient or demographic characteristics, attending physician preferences, or regional differences. Based on this, Relator has demonstrated that the only plausible explanation as to the cause of the excessive rates of Misstated MCCs is that Providence, in consultation with JATA, has implemented practices to maximize the amount of revenue it can receive from Medicare by fraudulently upcoding, i.e., adding unsubstantiated MCC secondary diagnosis codes to its claims.

3. Economic Damages

122. Relator employed a robust and conservative methodology to quantify the economic damages caused by the Defendants' fraudulent coding Encephalopathy, Respiratory Failure, and Severe Malnutrition. Relator has limited this complaint to only the most extreme cases—*i.e.*, where Providence used a Misstated MCC code at two times the rate of comparable hospitals or at least three percentage points of its entire patient population higher than other hospitals. Additionally, only principal diagnosis bins where the excessive MCC usage rate was statistically significant at a 99.9% rate—or almost certainly not random—were considered fraudulent. The following describes Relator's methodology for aggregating the total dollar value of the fraud committed by Providence.

123. Relator employs a principal diagnosis bin-based regression methodology for calculating damages. For each principal diagnosis bin, Relator re-ran its fixed effect linear regression model discussed in Equation 1 but changed the dependent variable to represent the additional revenue due to upcoding. For each claim, Relator calculated the difference in the DRG weight between claims with Misstated MCCs and claims without Misstated MCCs.³⁰ Relator then multiplied this difference in weights by the average base rate from 2011 through 2017, which was \$6,417.57.³¹ Within the regression for each principal diagnosis bin, the fixed

³⁰ For claims that could have been a complication or without complication, Relator took a weighted average of DRG weights for the two DRGs and weighted by Providence's historical distribution of severity levels. Approximately 16.3% of claims were without complication and 83.7% of claims were with complication. If Providence also upcodes using CC secondary diagnoses, the damage calculation would be even more conservative.

³¹ The labor portion of the base rate was further adjusted by the average wage index among Providence hospitals from 2011 through 2017, and the capital portion was adjusted by the geographic adjustment factor over the same time period, to get a more accurate calculation of additional revenue.

effect for Providence represents the additional revenue Providence receives for the Misstated MCCs after controlling for possible differences in patient, regional, and claim characteristics. Relator further only attributed damages for the regression results that were statistically significant at a 99.9% level, meaning there is a less in 1 in 1,000 chance the additional revenue received is due to random chance.

124. Based on this bin-based regression, Relator's analysis shows that Providence received an additional \$188.1 million in false claims across all principal diagnosis categories due to fraudulent MCC upcoding. Table 17 demonstrates the additional revenue Providence received for false claims across each of the Misstated MCCs.

Table 17. Damages by Specific Misstated MCCs.

Secondary MCC	Dollar Value of Fraud
Encephalopathy	\$153,556,713
Respiratory Failure	\$29,012,041
Severe Malnutrition	\$5,519,441
Total	\$188,088,196

125. Relator's bin-based regression methodology represents a conservative approach for a variety of reasons. First, Relator only included principal diagnosis bins where Providence used the Misstated MCC code at two times the rate of comparable hospitals or at least three percentage points of the entire patient population higher. A lower threshold could have been used and would result in higher damages. Additionally, Relator only considered claim groupings where there was less than a one-in-a-thousand chance that the difference in major complication rate at Providence versus other hospitals was due to random causes.

126. Second, Relator's damage calculation is based on comparing Providence to all other inpatient hospitals. To the extent other hospitals are engaging in the same fraudulent activity, it would make Providence's actions seem

1 relatively normal and would thus lead to a lower damage estimate.³² Indeed it is
2 overly conservative to compare Providence's fraudulent behavior to other hospitals
3 also engaging in the same fraudulent activity; therefore Relator also undertook a
4 different methodology to identify hospital systems based on the amount of
5 fraudulent activity they have among all of their claims. If Relator were to remove
6 from comparison the top third of hospital systems identified to have excessively
7 billed Medicare and re-run the bin-based regression analysis, damages would total
8 \$237.5 million.

9 127. Relator's consideration of other possible explanations, such as claim
10 characteristics, patient characteristics, and doctor practices, demonstrates that the
11 excessive coding of Misstated MCCs is due to system-wide practices in place at
12 Providence, with the assistance of JATA. Additionally, the extremely high levels of
13 statistical significance of the analyses across a variety of comparative settings
14 indicate a nearly impossible probability that the practices are due to random chance.
15 Relator's damages estimate of \$188.1 million due to Providence's fraudulent
16 upcoding is conservative and the estimate is robust when controlling for a variety of
17 factors.

18 128. Through its proprietary research and analysis, Relator also uncovered
19 that JATA's encouragement and enabling of hospitals to code at excessive rates of
20 the Misstated MCCs extends beyond Providence hospitals. While the full extent of
21 JATA's fraudulent activity is likely much larger, Relator estimates that JATA
22 assisted other hospitals to submit falsely inflated claims to Medicare of at least
23 \$337.0 million.

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27 ³² As an example, the comparison set of hospitals includes Prime Healthcare
28 Services, Inc., which is currently being sued by the US Department of Justice under
the False Claims Act. See <https://goo.gl/rZcES9>.

CAUSES OF ACTION

COUNT ONE

**Violation of the False Claims Act arising from
falsifying patient diagnoses, complications, and comorbidities
(Against All Defendants)**

129. Relator repeats and realleges each and every allegation contained above as if fully set forth herein.

130. As described above, Defendants have submitted and/or caused to be submitted false or fraudulent claims to Medicare by falsifying material information concerning patient diagnoses, complications, and comorbidities; and by failing to report and return overpayments from Medicare.

131. Defendants, by the conduct set forth herein, have violated:

- a. 31 U.S.C. § 3729(a)(1)(A) by knowingly presenting, or causing to be presented, false or fraudulent claims for payment or approval; and/or
- b. 31 U.S.C. § 3729(a)(1)(B) by knowingly making, using or causing to be made or used, a false record or statement material to a false or fraudulent claim; and/or
- c. 31 U.S.C. § 3729(a)(1)(G) by knowingly making, using, or causing to be made or used, a false record or statement material to an obligation to pay or transit money or property to the government, or knowingly concealing or knowingly and improperly avoiding or decreasing an obligation to pay or transmit money or property to the government.

132. Through use of Defendant JATA's services as described above, the Providence Defendants also conspired with JATA to defraud the federal government, in violation of 31 U.S.C. § 3729(a)(1)(C), by knowingly and systematically falsifying claims allowed or paid by the government.

1 133. The United States has suffered and continues to suffer damages as a
2 direct proximate result of Defendants' false or fraudulent claims.

3 **COUNT TWO**

4 **Violations of the Federal False Claims Act arising from the Defendants'**
5 **violations of the Anti-Kickback Statute**
6 **(Against All Defendants)**

7 134. Relator repeats and realleges each and every allegation contained above
8 as if fully set forth herein.

9 135. By offering JATA financial incentives for upcoding and making all or
10 some of JATA's compensation contingent on increases in Providence's Medicare
11 revenue, Providence provided JATA with incentives to arrange for or recommend
12 services for which payment may be made in whole or in part under Medicare, in
13 violation of the 42 U.S.C. § 1320a-7b(b) (the "**Anti-Kickback Statute**").

14 136. Defendant JATA's consulting engagement with Providence is not
15 protected under the existing "safe harbor" provisions of the Anti-Kickback Statute.

16 137. As a material prerequisite to any recovery or reimbursement from
17 Medicare, the Providence Defendants expressly or impliedly certified their
18 compliance with the Anti-Kickback Statute.

19 138. The Providence Defendants violated the False Claims Act by
20 submitting Medicare claims knowing or recklessly disregarding that the Providence
21 Defendants were ineligible for reimbursement on such claims because of their
22 violations of the Anti-Kickback Statute.

23 139. Defendant JATA violated the False Claims Act by causing Medicare
24 claims to be submitted by the Providence Defendants even though JATA knew or
25 recklessly disregarded that the Providence Defendants were ineligible for the
26 payments demanded because of their violations of the Anti-Kickback Statute.

27 140. Each Medicare claim submitted by the Providence Defendants that was
28 arranged or recommended by JATA is false and material because it is tainted by the

1 Defendants' violations of the Anti-Kickback Statute.

2 141. Defendants conspired to defraud the federal government by getting
3 claims tainted by the Defendants' kickback scheme allowed or paid by the
4 government in violation of the False Claims Act.

5 142. The United States has suffered and continues to suffer damages as a
6 direct proximate result of Defendants' violations of the Anti-Kickback Statute and
7 resulting violations of the False Claims Act.

8 **PRAYER FOR RELIEF**

9 WHEREFORE, Relator prays for relief and judgment, as follows:

- 10 (a) Defendants pay an amount equal to three times the amount of damages
11 the United States has suffered because of Defendants' actions, plus a
12 civil penalty against Defendants of not less than \$10,957 and not more
13 than \$21,916 for each violation of 31 U.S.C. § 3729;
- 14 (b) Relator be awarded the maximum amount allowed pursuant to 31
15 U.S.C. § 3729(d);
- 16 (c) Relator be awarded all costs of this action, including attorneys' fees,
17 expenses, and costs pursuant to 31 U.S.C. § 3730(d); and
- 18 (d) Relator and the United States be granted all such other relief as the
19 Court deems just and proper.

20 **JURY TRIAL DEMANDED**

21 Relator hereby demands a trial by jury.
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1 DATED: August 7, 2018

Respectfully submitted,

2
3 By: /s/ Jason H. Tokoro

4 Jason H. Tokoro
MILLER BARONDESS, LLP

5 P. Jason Collins
6 Jeremy H. Wells
REID COLLINS & TSAI LLP

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8 Attorneys for Plaintiff/Relator
INTEGRA MED ANALYTICS LLC

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