



Technical Paper: Effectiveness of WC Fee Schedules A Closer Look

Executive Summary

This study continues work on Workers Compensation (WC)¹ medical fee schedules. The study uses experience from Group Health coverage (GH) as a natural measure to assess the effectiveness of WC fee schedules.² The fee schedule promulgated by Medicare provides another useful comparison.

Our previous studies have found that utilization is the main reason WC pays more than GH to treat comparable injuries. While the main emphasis in this study is prices WC pays for medical services, the study looks at both utilization and price.

Some of the main results are:

- For comparable injuries, when WC pays higher prices than GH for specific services, those services tend to be used more often in WC than in GH
- The proportion of WC medical cost that is subject to physician fee schedules is declining by about one percentage point per year
- The Medicare fee schedule is very useful as a starting point for the design of WC medical fee schedules, but has notable shortcomings for WC, including too little emphasis on return to function and too little sensitivity to cost differences among states
- Particularly in specialty areas such as surgery and radiology, fee schedules can result in WC reimbursement rates that are especially high compared with GH
- While fee schedules tend to concentrate reimbursements at the maximum allowable rate, there are many payments that are either greater than or less than the maximum allowable rate
- Reimbursement for care that physicians provide at hospitals and other facilities is more likely to exceed the fee schedule than care provided in their offices. This is partly because the fee schedule need not always apply when facilities bill for these services.
- A higher proportion of reimbursements are at or below the fee schedule when WC medical services are provided through a network as opposed to when they are not.

While the main thrust of the study is use of WC and GH medical experience to investigate the effectiveness of WC medical fee schedules, the study also discusses:

- The design, implementation, and maintenance of WC medical fee schedules
- The competing requirements to ensure access to medical care while controlling utilization of medical services
- The challenges posed by a rapidly changing environment in the delivery of medical care, including a growing use of hospital staff and ambulatory surgical centers

¹ Appendix B provides a list of acronyms.

² Group Health data used in this study was provided by Medstat, a Thomson Reuters company. WC data is sample data provided by carriers.

A series of charts compares WC and GH experience to reveal some of the inner workings of fee schedules, illustrating that different medical procedures can have very different reimbursement patterns. The study examines the relationship between utilization and price and concludes that, in order to better control the cost of care provided by hospitals and other outpatient care facilities, fee schedules must incorporate more bundling of services.

How Fee Schedules Are Introduced, Regulated, and Maintained

WC fee medical schedules specify maximum allowable reimbursement (MAR) amounts for medical procedures covered under WC insurance. Most apply on a statewide basis, although some states have schedules that differ by geographic region within the state.

States employ a variety of approaches to constructing and maintaining WC fee schedules. Some specify their medical fee schedule in their statutes as percentages of Medicare (MC) but the majority of states give authority to an agency such as the Department of Labor or Workers Compensation Commission. These agencies then typically rely on an advisory committee or hire an outside consultant to draft a proposed medical fee schedule. In some cases, the statutes provide specific direction regarding the basis of the fee schedule, such as basing it on Medicare or on costs prevailing in the community. In other cases, the development and updating of the fee schedule is left completely to the state agency.

Once a draft medical fee schedule has been proposed, it is customary to hold hearings throughout the state to solicit comments from the public. Among the concerns often raised are:

- Will access to care be compromised if fees are too low?
- With WC claimants requiring more paperwork, will administration for the medical provider be more costly?
- Will rural areas have a limited number of certain types of specialists?
- Is the data used to establish a fee schedule sufficiently reliable for that purpose?
- Does the proposed medical fee schedule meet the standards set by regulation or statute?

Once consideration of the public input is complete, the state agency will finalize the new medical fee schedule.

The 2004 California WC reform is particularly noteworthy in this regard. That reform introduced treatment protocols and significant reductions to reimbursement rates for medical services. The study “Access to Medical Treatment in the California Workers’ Compensation System, 2006,” conducted by UCLA Center for Health Policy Research for the California Department of Industrial Relations, did not find evidence of access problems for most injured workers in California, nor did the study find large numbers of physicians to be limiting or giving up their WC practices.³ The California experience does not appear to substantiate the access-to-care concerns mentioned above.

This study affirms earlier findings that for the 21 NCCI fee schedule states considered in the study, WC reimbursement levels are consistently above those of GH for surgery and for radiology and are at or very near the GH level for physical medicine, for general medicine, and for evaluation and management. Moreover, both WC and GH reimbursement rates are higher than those for Medicare. Since GH essentially defines the marketplace for medical care and since care is presumptively available under Medicare,⁴ this too argues against WC fee schedules’ compromising access to care.

Promulgating a WC medical fee schedule represents a major commitment for the administrative body of a state WC system. There is considerable variation in the approaches states take to do this. Some state legislatures have very detailed rules with reference to particular data sources and time frames, while others delegate the task to committees of doctors or other professionals with special expertise in this area. Beyond the technical and administrative challenges to maintaining a WC fee schedule, associations of medical specialists and employer groups align into opposing interest groups, inevitably bringing politics into the equation.

There are two approaches to setting WC fee schedules—based on what medical services do cost or on what services should cost. The first relates the scheduled amounts with usual and customary charges. This approach entails periodic data collection and analysis. The second approach looks instead at the cost of delivering medical care. Here the standard source is Medicare. Medicare reimbursements are predicated on a formula that seeks to quantify a geographically specific delivery cost for each CPT procedure. Earlier studies have found that the most effective WC fee schedules (i.e., those with

³ The “Access to Medical Treatment in the California Workers’ Compensation System, 2006” study by Gerald F. Kominski, Pourat, Dylan H. Roby, and Meghan E. Cameronat can be found at healthpolicy.ucla.edu.

⁴ Of course, Medicare and Medicaid play unique roles with regard to access to care issues, but there are procedures for which the Medicare rate is problematically low (for example, the case of emergency room visits, which is considered below).

the smallest cost increase over GH) use the second approach to set maximum allowable reimbursements (MARs) at a modest, if any, markup over Medicare.⁵

Med Fee Issues—Coverage and Trends in Medical Practice

Shrinking Application of Physician Fee Schedules

WC physician fee schedules⁶ have been in place for over seventy years (Florida, for example, introduced a schedule in 1938). Over the past three decades, medical benefits have grown faster than indemnity, and WC physician fee schedules have become a standard way to control WC medical costs. In addition, most states do have cost controls for prescription drugs used in WC,⁷ and some have medical fee schedules that apply to hospitals and other facilities to some degree. But, for most NCCI states, the bulk of medical costs subject to fee schedules are physician fees and prescription drugs.

This study investigates conventional WC medical fee schedules that focus on physician reimbursement rates, itemized using the current procedural terminology (CPT) coding of professional medical procedures. All but a few states use a CPT-based WC medical fee schedule. After CPT codes for doctors, the National Drug Code (NDC) for prescription drugs is the next most tractable classification scheme for regulating medical costs. Many states have developed reimbursement rules for WC prescription coverage and some have developed specific WC prescription plans.⁷ However, facilities, and hospitals in particular, pose technical difficulties to the development of fee schedules from simple price lists.

Medicare requires facilities to assign Diagnosis Related Groups (DRGs) to inpatient care and Ambulatory Payment Classifications (APCs) to outpatient surgery. Unlike the physician fee schedules, DRGs and APCs limit the volume of services being reimbursed, since payment is for treatment of a medical condition rather than by individual medical procedure. DRGs and APCs are meant to control utilization directly rather than indirectly through price incentives. Some states are attempting to follow Medicare and to expand their WC medical fee schedules to cover facility charges.

A greater use of hospital staff—as in Europe—is a trend for healthcare in the US that will almost certainly prove relevant to WC and WC fee schedules. There are two primary reasons that converge to make this happen:

- Hospitals have been caught between attending physicians (critical care specialists in particular) on one hand, with a financial incentive to keep patients hospitalized, and, on the other hand, by DRG reimbursements that discourage longer stays in hospitals. Putting hospital staff on salary helps the hospital reverse those incentives.
- A growing number of physicians, especially those in primary care, are finding that the time spent seeing patients in their offices is more profitable than that spent following patients in the hospital. More and more physicians, therefore, prefer to hand off their hospitalized patients to the care of hospital staff.

The growing use of hospital staff has implications for WC. In some cases, this will result in more services being billed by facilities. This may circumvent CPT fee schedules geared toward private practice doctors. Hospital bills, for example, pose particular problems for fee schedules. WC insurers often prefer to negotiate them as a percentage of the total amount charged; consequently, even if such a bill is itemized with CPT-coded items, reimbursement will not fall subject to a fee schedule. There are other cases where schedules exempt hospitals and other facilities.

Another issue relates to the choice of physician as it may be specified in the WC statute. WC provider networks may need to recruit hospital staff and some statutory language may need to be rewritten in order to maintain legislative intent.

The growing use of free-standing ambulatory surgical centers (ASCs) for outpatient surgeries is another major trend in medical care whose impact on WC medical costs is expected to grow.

⁵ For example, refer to Exhibit 5 of “Making WC Fee Schedules More Effective,” NCCI 2007.

⁶ “Physician fee schedule” is the common name for fee schedules that list maximum allowable reimbursements for services for which there is a CPT code. In some cases, a professional other than a physician might provide the service.

⁷ NCCI has produced a series of studies on prescription drug costs in WC. In addition to cost trends, the studies discuss other topics such as criticisms of the use of the Average Wholesale Price in state prescription drug fee schedules. See the “Workers Compensation Prescription Drug Study” and its updates, including the 2008 edition, available at ncci.com.

Medical inflation has also contributed to the reduction in the portion of WC medical costs that are subject to physician fee schedules. Several forces combine to drive this:

- When medical costs are increasing, there will be a lag before experience can support revising a fee schedule upward, if and when a schedule is updated
- An effective fee schedule will then hold its prices more constant than other medical costs
- As a result, the cost for treatments under the schedule will not grow as fast as those outside the fee schedule
- Over the past decade, medical costs overall have seen significant inflation, while physician reimbursements have remained comparatively flat

The net result of this is that physician reimbursement is a shrinking portion of total medical cost, and particularly so in WC. Figure 1 shows a decline in the percentage of WC medical costs that fall under physician fee schedules in NCCI states. Florida is a large NCCI state whose fee schedule underwent a substantial upward revision in 2004, meant specifically to increase applicability. When the exceptional but influential state of Florida is removed, the recent past has witnessed a drop of more than a point per year in the percentage of medical costs subject to the traditional physician fee schedule.

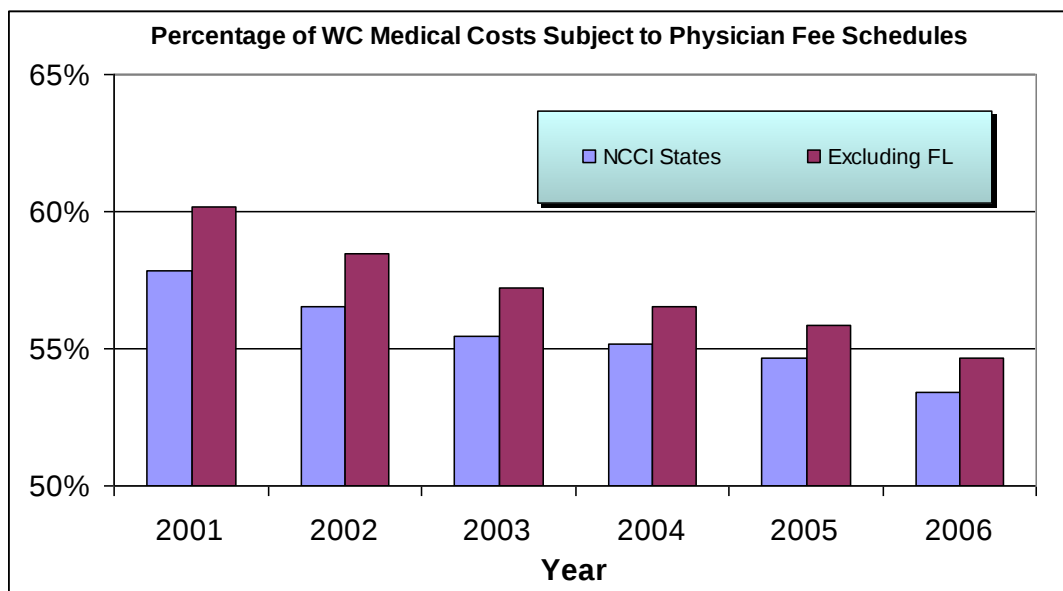


Figure 1: Percentage of WC Medical Costs Subject to Physician Fee Schedules

Under typical conditions, such cost proportions are very stable statistics and a persistent drop of one percentage point a year is a striking result and a key finding. It underscores that conventional physician fee schedules need to adapt if they are to continue as the mainstay of WC medical cost containment.

Growing Role of Medicare

The trend in both GH and WC is an increasing reliance on Medicare reimbursement rates as the benchmark. This is likely to be irreversible given US population demographics and the growing role that Medicare plays in the healthcare marketplace. WC claimants have very different demographics, medical conditions, and priorities than retirees. It would be a mistake to blindly rely on Medicare rates as perfect measures of resources appropriate to treat work-related injuries. The next section provides examples that illustrate how the Medicare formula is too insensitive to state differences and can yield rates that are out of touch with both WC and GH experience.

Overall Comparison of WC and GH

This study is a continuation of previous research on Workers Compensation (WC) medical fee schedules.⁸ This study again uses GH experience to benchmark WC costs and Medicare reimbursement schedules to benchmark WC fee schedules.⁹

⁸ "Making Workers Compensation Medical Fee Schedules More Effective," "Workers Compensation vs. Group Health: A Comparison of Utilization" and "What Can Workers Compensation Learn from Group Medical Insurance?" These are available at ncci.com.

⁹ The benchmarks to Medicare are from WCRI's 2006 edition of "Benchmarks for Designing WC Medical Fee Schedules."

The methodology is modified from our previous studies to encompass more medical conditions over longer treatment windows. Cost differences between WC and GH are again itemized into price and utilization components.

Utilization and Price by State

Prior NCCI studies have determined that higher utilization is the dominant force making WC more expensive to treat and, while the price component tracks with fee schedule benchmarks, utilization does not. In Figure 2, WC fee schedules are compared to Medicare (horizontal axis) while WC price and utilization are compared to GH (vertical axis). For example, the rightmost square indicates that the state with the highest (on average) WC medical fee schedule has MARs that average about 215% of Medicare reimbursements and that the average actual WC medical reimbursement for that state is about 160% of its average GH reimbursement. The diamond directly above that square indicates that WC utilization for that state is more than double that for GH (about 220% of GH).

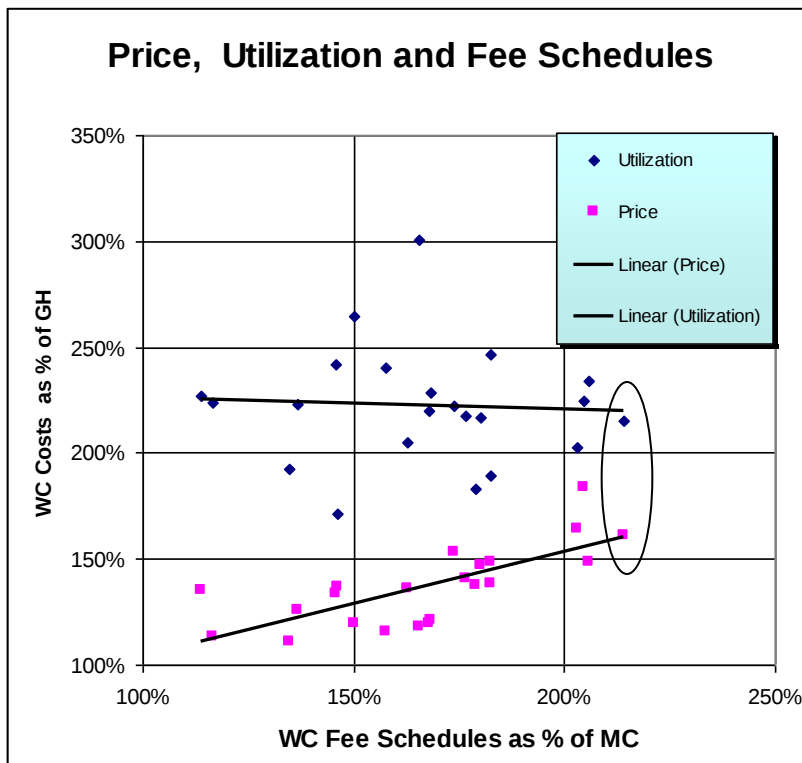


Figure 2: WC Price and Utilization Differentials (% GH) vs. Amount Allowed by WC Fee Schedule (% Medicare)

While Figure 2 is based on the more recent, broader data used in this study, it also reaffirms and serves as a good summary of prior findings:

- For each of the 21 NCCI states considered, both WC utilization and WC price were greater than GH
- The utilization component is always above the price, indicating that higher utilization accounts for more than price in explaining why WC costs more than GH to treat comparable medical conditions
- The price points show a definite tendency to increase with the ratio to Medicare, as illustrated by an upward trend line from left to right
- WC utilization of medical services, benchmarked against GH, does not correlate with the state fee schedule ratio to Medicare, as evidenced by the scattered pattern and flat trend of the utilization points.

Prior studies did not find relationships between utilization and medical fee schedules.

This comparison between states does not mean that, within a state, a decrease in the fee schedule will not increase utilization. This latter phenomenon has been observed in studies of Medicare.¹⁰

In theory, the relationship between WC fee schedules and utilization can be problematic. If a fee schedule sets a price too low, medical providers may seek to make the difference up in volume. On the other hand, setting the price too high may produce a financial incentive for doctors to overutilize the procedure. The application of a fee schedule adds administrative costs to insurers. And because medical bill reviewers typically charge by the transaction, this may provide an incentive to keep the volume of services high rather than promote products to police overutilization.

Utilization and Price for Specific Injuries

In order to compare treatment patterns, it is necessary to group together individual medical procedures into episodes of care. The MedStat Episode Grouper (MEG) software developed by the healthcare division of Thomson Reuters is used for this. Line item detail from both WC and GH medical bills is run through the same MEG routine. This groups the experience into episodes of care identified with the medical condition being treated. This study looked at the treatment of 50 medical conditions common to treating work-related injuries. Some are listed in Table 1; a complete list can be found in Appendix A:

Conjunctivitis, bacterial
Bursitis
Fracture dislocation or sprain: wrist or hand or fingers
Herniated intervertebral disc
Injury, knee, ligamentous
Injury, open wound, or blunt trauma: lower extremity
Carpal tunnel syndrome
Headache
Injury: spine and spinal cord
Depression
Infections of skin and subcutaneous tissue
Burns
Toxic effects of nonmedicinal agents

Table 1: Some of the Medical Conditions Considered in the Study

By gearing the investigation to medical conditions supported by MEG, this study is able to consider more medical conditions than previous studies as well as longer durations of care. A key new finding emerged from this approach: there is a strong correlation between the price and utilization components of WC over GH *when data is grouped by the medical condition being treated* (rather than, say, by state). The scatter plot in Figure 3 shows the overall pattern. Each of the dots in Figure 3 corresponds to one of the 50 medical conditions, which have been grouped into five broad categories.

¹⁰For example, the study “Physician Volume and Intensity Response” by the Centers for Medicare and Medicaid Services found a statistically significant relationship between price reductions for physicians’ services covered by Medicare and increases in their volume and intensity. This is available at [cms.hhs.gov](https://www.cms.hhs.gov).

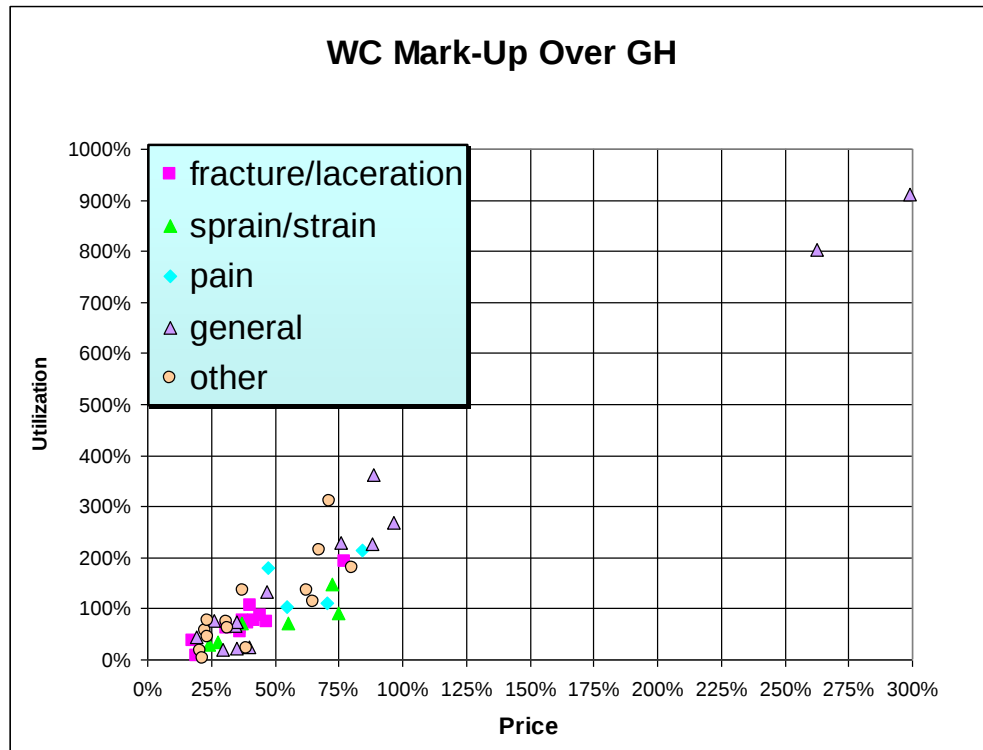


Figure 3: Price vs. Utilization of WC Over GH Grouped by Medical Condition

While this correlation between price and utilization markup does not necessarily imply any causal connections, there are some plausible relationships:

- Higher reimbursements are a financial incentive to medical providers to perform more procedures on WC claimants
- WC insurers are more willing to pay premium prices for the care most necessary to effect return-to-work
- The more frequently used procedures are more likely to be lobbied for higher fee schedule reimbursement

Fee schedules do not dictate utilization levels, and the experience indicates that the higher utilization of WC care is driven more by medical condition than by price. However, because higher price differentials apply to conditions with the greater utilization markup, bringing WC reimbursements closer to market price will (all else being equal) necessarily help to reduce the cost of overutilization.

Previous sections have pointed out the shrinking application of physician fee schedules and how utilization dominates price in pushing WC costs above GH. Combined, these make a strong case for new approaches to design effective WC fee schedules. This section emphasizes the importance of taking into account the medical condition being treated when seeking to control utilization.

DRGs and APCs are designed to cover faculty-based care and they are based on the medical condition more so than on any particular medical procedure. This argues for using “all-inclusive, up front” billing schemes like the DRG and APC to address both the shrinking coverage issue as well as overutilization.

A Look at Schedules at Work

This section looks at how fee schedules operate in practice. There is considerable variation in how maximum allowable reimbursements (MARs) are applied. There are many ways that reimbursement may exceed the fee schedule MAR. Some of the more important ones are:

- *Bill review-cost thresholds:* Bill review services often charge a flat rate per transaction combined with a percentage of savings from charged amounts. It is, therefore, not always cost-effective to process smaller claims. An example may be a claim where the medical cost consists of one emergency room visit.

- *Facility vs. physician coverage:* Fee schedules specifically target professional services, whereas facilities, particularly hospitals but more and more freestanding ambulatory surgical centers (ASCs), often use coding schemes different from the CPT coding used in the fee schedule. And even when CPT coding is used, the corresponding charges may include facility fees not anticipated in a fee schedule for professional services. For example, emergency room visits billed by hospitals may include room fees and charges for other technical services.
- *Relationship to usual and customary charges (UCR):* If the fee schedule is out of step with the market price, then the prevailing practice may come to simply ignore the schedule.
- *Negotiated fees:* Negotiated fees are often allowed to deviate from the schedule and will likely be higher when an insurer needs to provide a specialized service (e.g., neurosurgery) for which there are few providers.
- *Defaulting to a percentage of the charged amount:* Many schedules default to a percentage of the charged amount when a bill does not conform to the CPT coding scheme. A common example is a bill for medical commodities when the supplier is not a physician. Also, insurers often prefer to negotiate a discount from charges on complex bills, such as for hospital stays.

Two types of charts illustrate the application of WC fee schedules to specific CPT procedures performed in 2006. One type shows variations by state as captured by the median reimbursement by state.¹¹ The other type shows the entire distribution of reimbursements pooled among the states. Appendix C includes a number of analogous state-specific graphs that show reimbursement distributions for specific states and CPT procedures.

All these charts are determined from transactional “line item” billings coded with the applicable CPT. Typically, each transaction reflects one specific medical procedure, but sometimes will reflect multiple applications of the procedure. A line item billing for multiple applications of a procedure is most common in physical therapy, but even there they account for only a small minority. Multiple applications are, therefore, less a concern for the median reimbursement figures in the first kind of chart. They become more important when interpreting the distribution charts, whose added detail reveals their presence. For additional perspective, both sets of charts include Medicare rates and WC fee schedule MARs, bearing in mind that these two amounts are meant to apply to a single application of the procedure.

Three high-volume procedures are used to illustrate some of the ways that a fee schedule influences medical costs, with additional examples included at the end of this section. The first represents the case of a higher cost surgical procedure to treat carpal tunnel syndrome (CTS). The second is a comparatively low-cost high-volume physical therapy procedure. The third is a more special case, an emergency room visit, selected to illustrate how facility fees complicate the application of physician fee schedules.

Figure 4 examines CTS surgery (CPT 64721) and compares the state WC and GH median prices with fee schedule MAR and Medicare reimbursement for surgeries. The states are ordered according to increasing MAR. The chart shows a median WC reimbursement that tracks closely with the MAR and consistently exceeds that for GH. Observe that the Medicare rates vary little by state and are consistently below the observed median reimbursements for either WC or GH.

¹¹ While the CPT procedures in this section are among the more frequent, some still yielded very thin data in Nevada and Vermont. Those two states do not appear in the charts in this section.

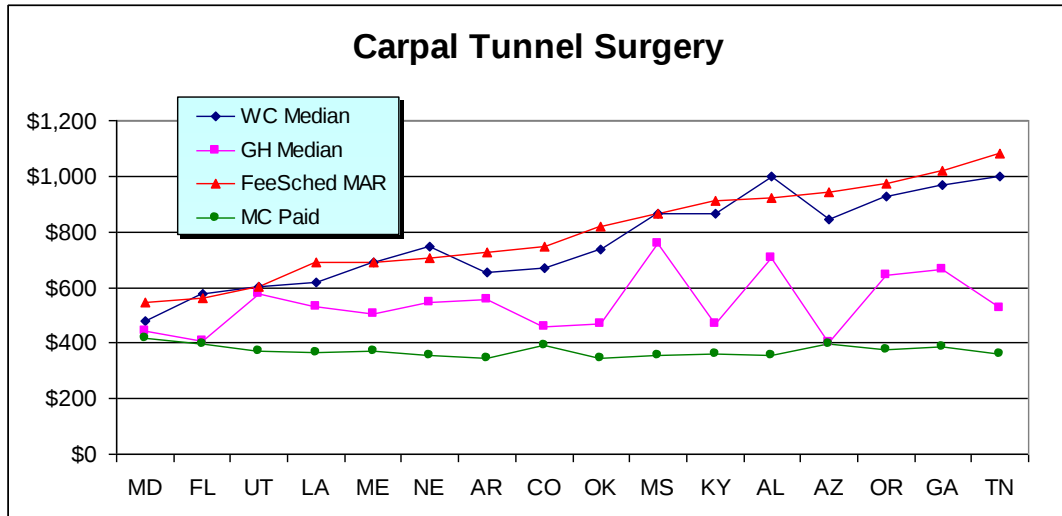


Figure 4: Surgery Example—Comparison of Median 2006 State Reimbursements for CPT Code 64721: Neuroplasty and/or Transposition; Median Nerve at Carpal Tunnel

Figure 5 charts the full distributions of reimbursements for CTS surgery for all states combined. In order to achieve a fair picture of how the various state fee schedules work, reimbursement amounts are converted to a percentage of the MAR and charted along the horizontal axis (this was not necessary for the state-specific charts in Appendix C where the horizontal axis is measured in dollars).

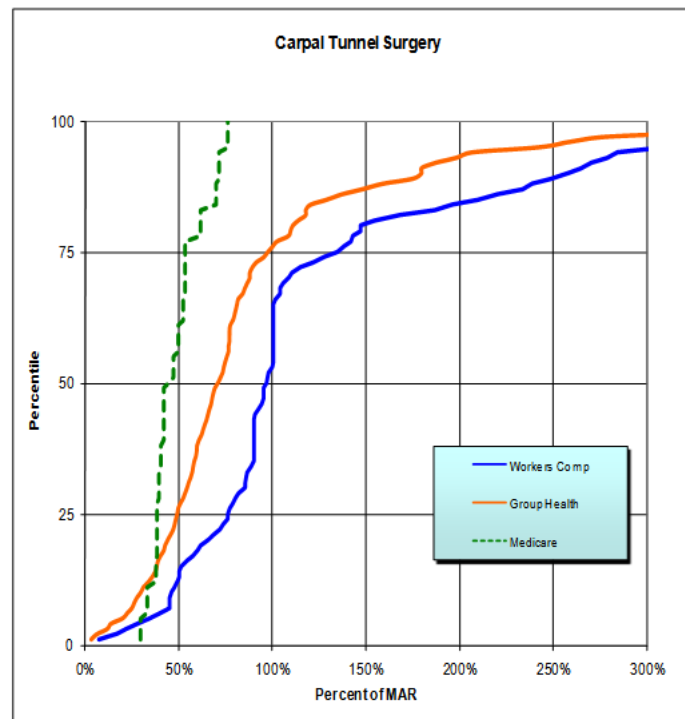


Figure 5: Surgery Example—Distributions of WC and GH Reimbursements for CPT Code 64721: Neuroplasty and/or Transposition; Median Nerve at Carpal Tunnel

Here's how to read the "cumulative distribution function" chart of Figure 5:

- The GH curve passes near the point with Percent of MAR equal to 50% (marked by a vertical line) and Percentile equal to 25 (marked by a horizontal line). This means that approximately one-fourth (25%) of GH reimbursements are at or below one-half (50%) of the applicable state MAR.
- The WC curve passes just to the left of the point with Percent of MAR equal to 100% and Percentile equal to 50. This means that approximately one-half (50%) of WC reimbursements are below the MAR (100%), i.e., the median WC reimbursement is just below the MAR
- Vertical segments of the graph result when many reimbursements are at the same amount. The vertical segment of the WC curve above 100% of MAR (starting at about the 50th percentile and going up to around the 70th percentile) means that about one-fifth (20% = 70% – 50%) of WC reimbursements for CTS surgery were reimbursed at the applicable state MAR (= 100%).
- The WC curve is consistently to the right of GH because WC reimbursement relative to MAR is higher than GH for every percentile.

While the WC and GH curves plot distributions of thousands of payments, the Medicare curve only reflects one value per state. Figure 4 showed little variation from \$400 in the Medicare reimbursement by state, while Figure 5 shows how that \$400 varies from 30% to 75% of the MAR. Figure 5 also shows that the Medicare median (50th percentile) is about half the MAR. WC fee schedules generally set the MAR above Medicare and, for surgeries, often set it still higher so as to be above the market rate. Figure 5 illustrates this for CTS surgery, with three-fourths of GH reimbursements below the applicable MAR. Only half of WC reimbursements are below the MAR. (In the state-specific charts of Appendix C, Medicare and MAR are fixed dollar amounts represented by vertical lines.)

WC and GH have as much as 25% and 30% of payments for CTS surgery exceeding the MAR, respectively. A likely explanation for this is that many of the surgeries are done at a hospital or ASC whose billings include facility charges not anticipated in the MAR. The chart shows that the MAR limitation puts only a small dent in the WC curve, as shown by the vertical segment along the WC curve above the MAR at 100%. This illustrates a scenario with MAR set above market and fee schedules ineffective at limiting WC reimbursements.

A different picture is shown in Figure 6, which charts median reimbursements by state for CPT 97110, the most commonly billed physical medicine procedure. While Medicare still lies at the bottom and WC again tracks with MAR, the GH median is often above the MAR. Figures 4 and 6 provide an illustration of how WC fee schedules tend to be more generous for surgery than for physical therapy.

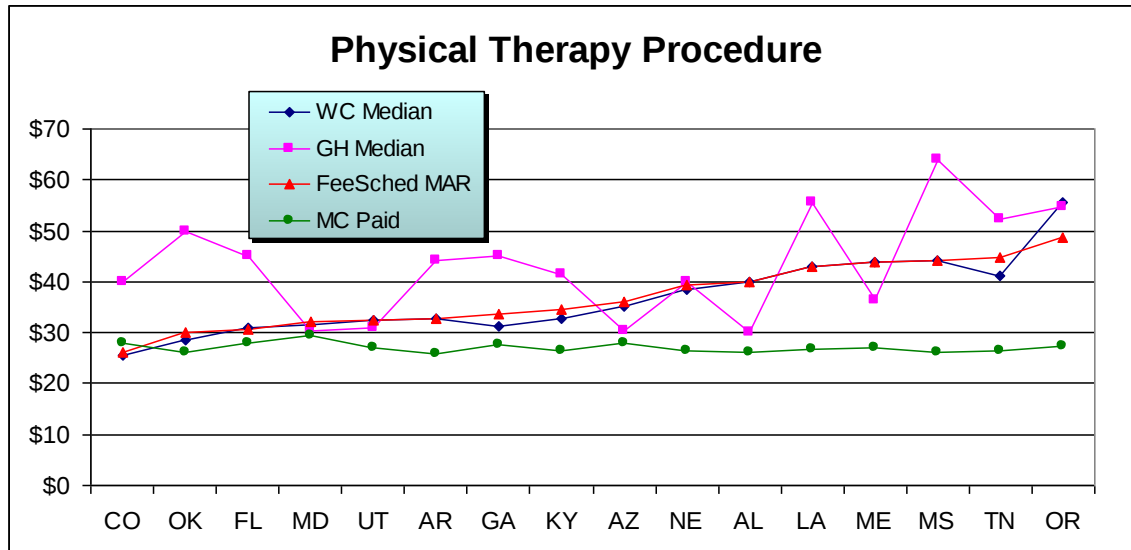


Figure 6: Physical Therapy Example—Comparison of Median 2006 State Reimbursements for CPT Code 97110: Application of a Modality to One or More Areas; Hot or Cold Packs

Figure 7 charts the distribution of reimbursements for CPT Code 97110 and reveals a wealth of information, including:

- About a fifth of WC reimbursements are at the MAR and about half are nearby in the 75%–100% of MAR range
- About 30% of WC payments exceed the MAR
- The MAR for this procedure is typically above the Medicare rate, although the Medicare rate for one state slightly exceeds the WC MAR (one state represents about 5%)
- The corner of the WC curve at 200% of MAR suggests that some reimbursements in excess of the MAR are for two applications of the physical therapy treatment¹²
- Above the 50th percentile, the WC curve is pulled back toward the MAR and to the left of the GH curve, resulting in lower WC amounts for the upper half of reimbursements
- The WC curve lies somewhat more to the left of the GH curve than to the right and so the overall WC reimbursement level for Code 97110 is below that of GH

This is a very different picture than what Figure 5 showed for CTS surgery.

¹² When there happens to be a heavy concentration at a particular price, say at the MAR = 100%, then corners at multiples like 200% or 300% suggest that there are multiple applications being charged for. When there is not a clear concentration at a particular price, this will not apply. In general, it is problematic to remove multiple applications because it requires guesswork from modal values. Instead, we prefer to display the distribution function because it reveals them to the extent they can be observed from the data, enabling us to take them into consideration, as appropriate, when drawing inferences.

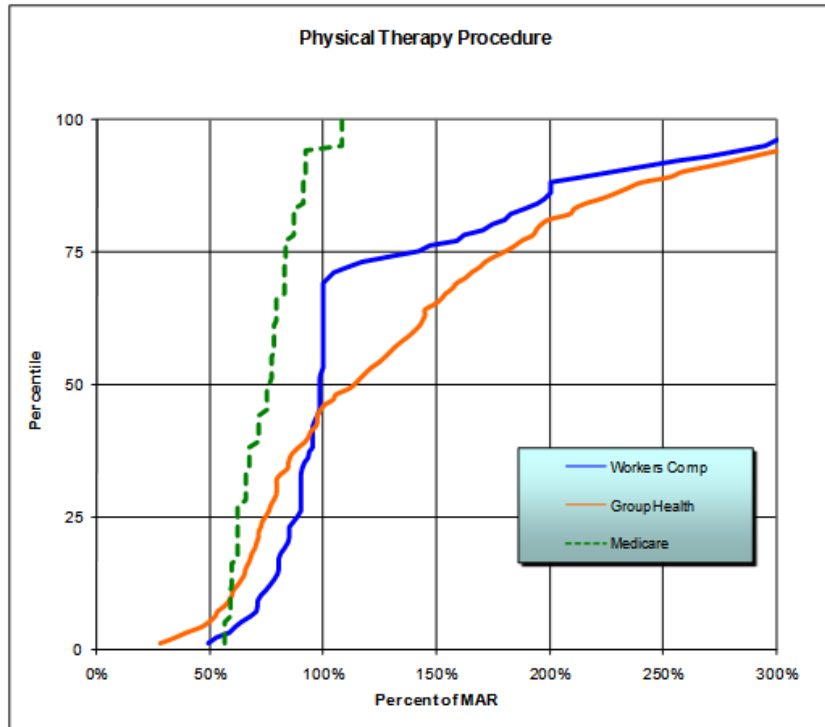


Figure 7: Physical Medicine Example—Distributions of WC and GH Reimbursements for CPT Code 97110: Therapeutic Procedure, One or More Areas, Each 15 Minutes; Therapeutic Exercises to Develop Strength and Endurance, Range of Motion, and Flexibility

Yet another pattern emerges with the state median reimbursements for emergency room visits (CPT 99282), shown in Figure 8. Medicare is positioned as usual beneath the others and shows little state variation. Here, however, the MAR also lies below the observed median reimbursements for both WC and GH. The WC median equals the MAR for Arkansas, Nebraska, and Oklahoma but lies above it for the other states.

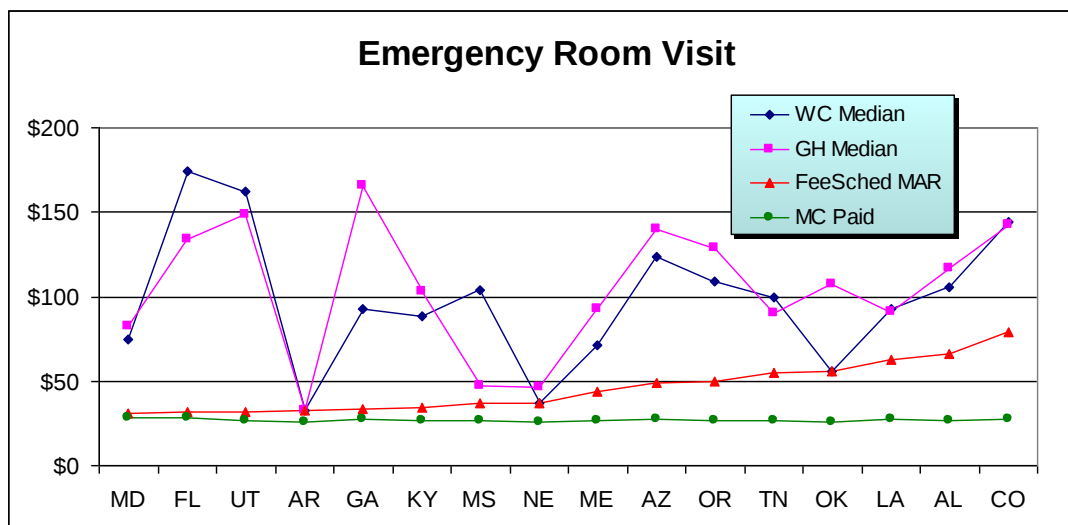


Figure 8: Evaluation and Management Example—Comparison of Median 2006 State Reimbursements for CPT Code 99282: Emergency Department Visit for the Evaluation and Management of a Patient

Figure 8 illustrates a couple of important points regarding fee schedules:

- They can fail to control facility charges
- They may fail to work if set too far below market levels (represented here by the GH median reimbursement)

CPT 99282 illustrates how hospital billings are not always a good fit to fee schedules. In addition to professional fees contemplated by CPT fee schedules, hospitals may include additional charges for technical and facility support services. This is illustrated in Figure 9, which shows the median WC charges for CPT 99282 according to whether they are billed by a hospital or a physician.

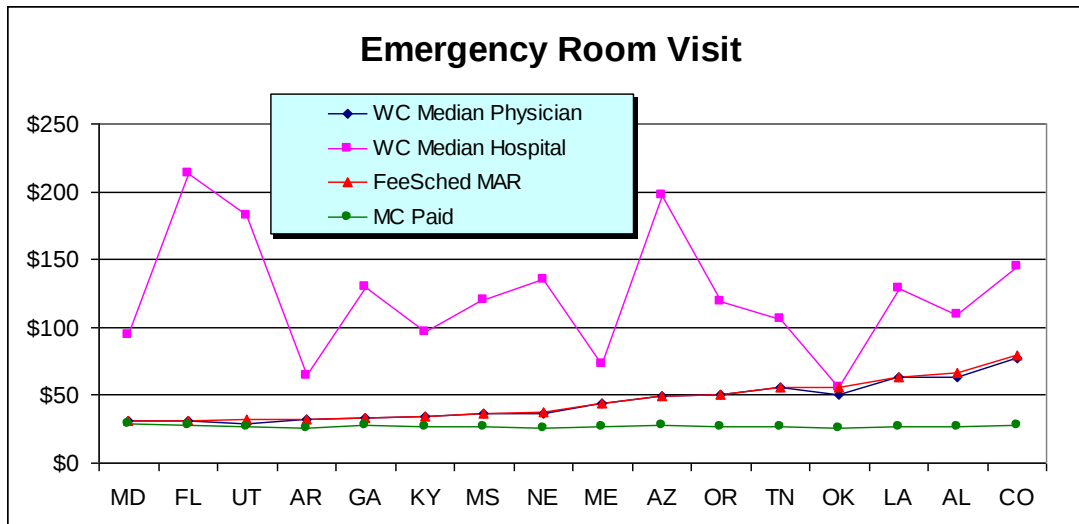


Figure 9: Evaluation and Management Example—Comparison of Median 2006 State Reimbursements Itemized by Physicians and Hospitals for CPT Code 99282

The influence of facility charges on the reimbursement experience for CPT 99282 becomes apparent by comparing those billed by a physician, with an overall average of \$57, to those billed by a hospital, where the average paid is more than double at over \$144. Nearly three-fourths of ER visits are billed by hospitals and, consequently, for many states, facility fees bring those payments well above the MAR. The median physician reimbursements conform very closely to the fee schedules, whereas hospital reimbursements, for states other than Oklahoma, are well above the MAR. This supports the view that fee schedules need to be adapted or expanded to better cover facility-based care.

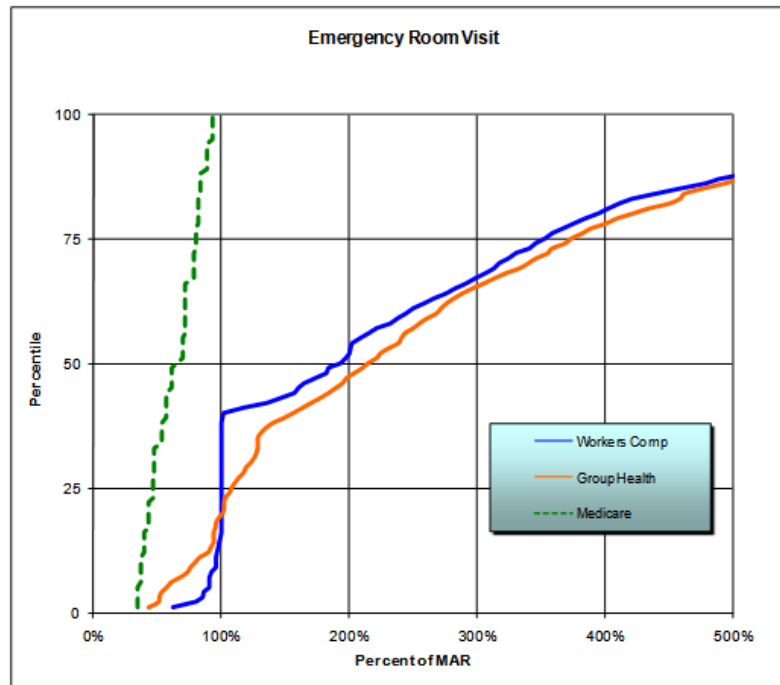


Figure 10: Evaluation and Management Example—Distributions of WC and GH Reimbursements for CPT Code 99282: Emergency Department Visit for the Evaluation and Management of a Patient

Figure 10 plots the distributions of reimbursements for CPT Code 99282:

- Again, the chart shows Medicare reimbursement to be well below market
- While about 25% of WC payments are at the MAR, about 60% exceed it
- Approximately three-quarters of GH reimbursement exceeds the WC MAR
- The WC curve is pulled left back to the MAR enough so that the overall WC reimbursement level is somewhat below that for GH

Figure 9 indicates that the main reason for the high proportion of both WC and GH reimbursements above the MAR is that hospital bills include facility charges. Another contributing factor may be the unrealistically low Medicare rates for this procedure, as many fee schedules are based on Medicare rates.

The next three charts show state median reimbursements for some additional procedures. As above, they compare WC and GH median prices with fee schedule MAR and Medicare reimbursement for services performed in 2006.

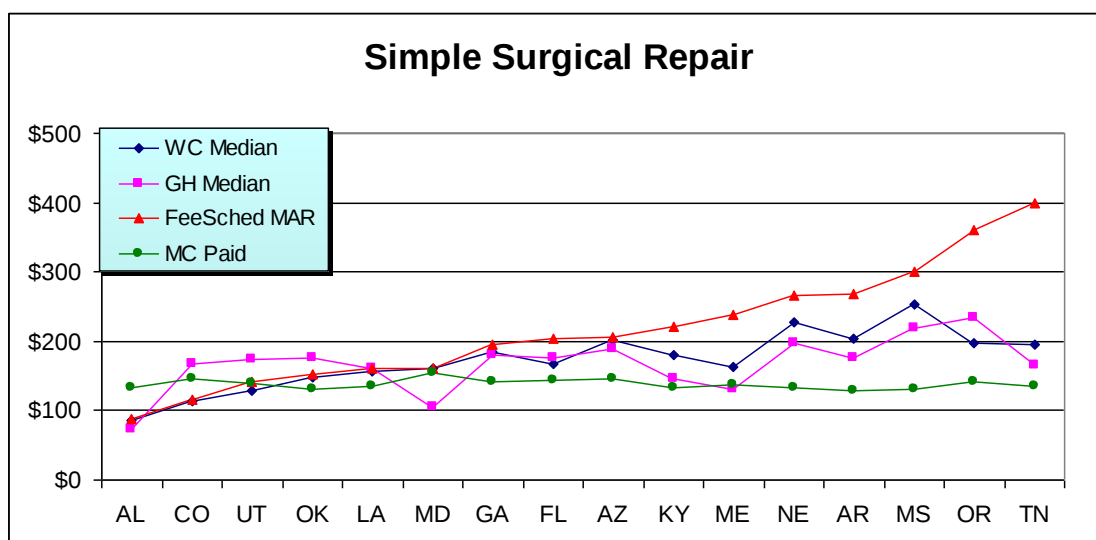


Figure 11: Surgery Example—Comparison of Median 2006 State Reimbursements for CPT Code 12001: Simple Repair of Superficial Wound

Figure 11 shows the pattern for Code 12001, which identifies a straightforward surgical repair. Observe that Medicare reimbursement again varies little by state, which contrasts with the considerable variation in the MAR. For over half of the states shown, WC and GH median reimbursements both lie above Medicare and below the MAR. For Oregon and Tennessee, the MAR is well above either the WC or GH median reimbursement. For states with a MAR below \$200, the WC median is very near the MAR. For states with a MAR above \$200, however, WC is nearer to GH. This chart shows how insensitive Medicare is to price variation by state and illustrates how setting a MAR too high above market can make the schedule irrelevant.

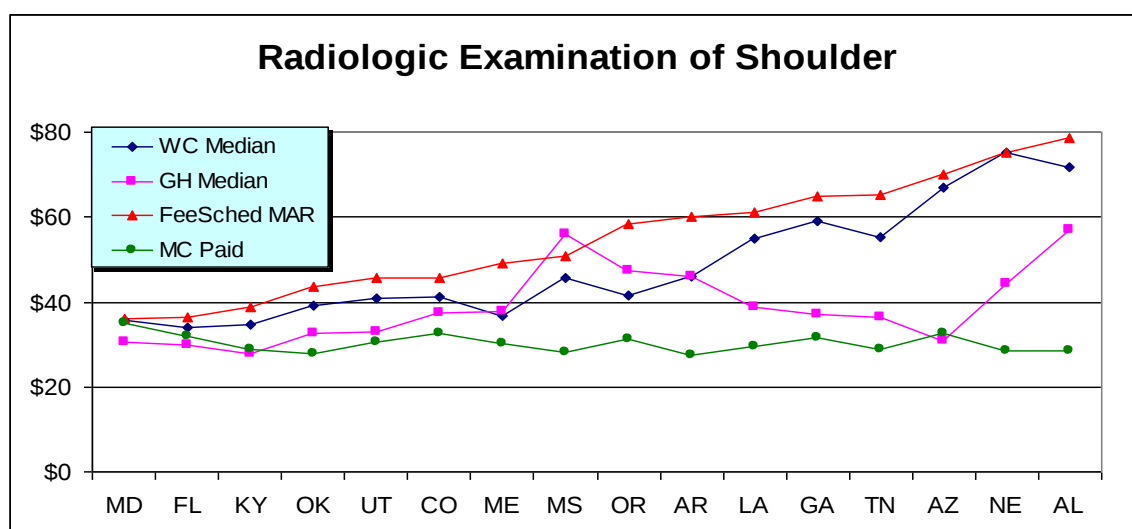


Figure 12: Radiology Example—Comparison of Median 2006 State Reimbursements for CPT Code 73030: Radiologic Examination, Shoulder Complete, Minimum of Two Views

The chart for a shoulder X-ray (CPT 7030) in Figure 12 follows the familiar pattern of Medicare lying beneath the others and showing little variation by state. The MAR shows the greatest range—more than doubling—from below \$40 to nearly \$80. Also, the WC median tracks with that for the MAR and is usually greater than that for GH. States setting the MAR below \$50 also show GH median reimbursements below \$40. States with a MAR above \$60 also have a median WC reimbursement that is well above GH. It is typical for radiology MARs to be above GH and to be set well above Medicare.

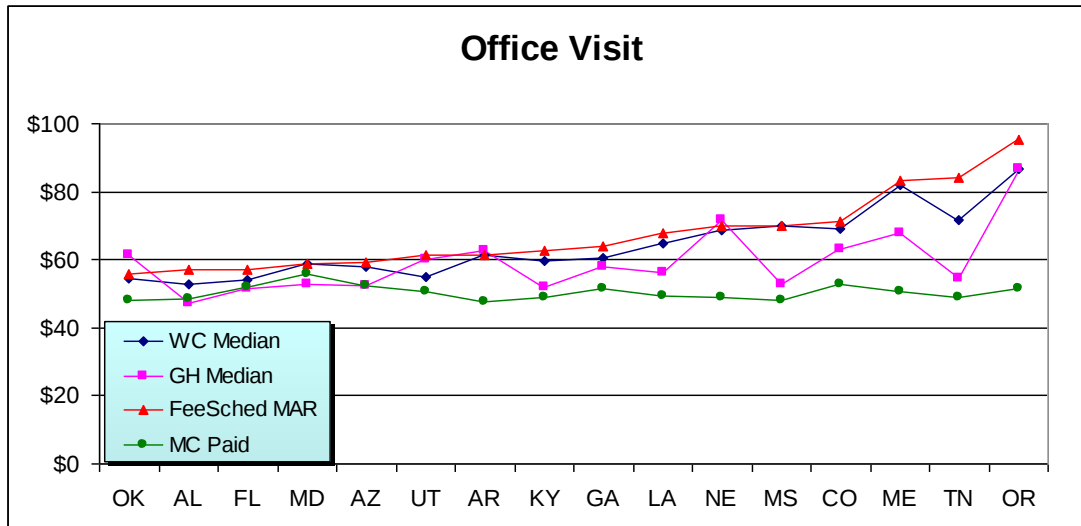


Figure 13: Evaluation and Management Example—Comparison of Median 2006 State reimbursements for CPT Code 99213: Office or Other Outpatient Visit for the Evaluation and Management of an Established Patient

The chart for office visits (CPT 99213) in Figure 13 again shows Medicare lying beneath the others and showing little variation by state. Again, the MAR shows the greatest variation. And again, the WC median tracks closely with the MAR and typically exceeds the median GH reimbursement.

The final three figures of this section chart the distributions of reimbursements for some more procedures.

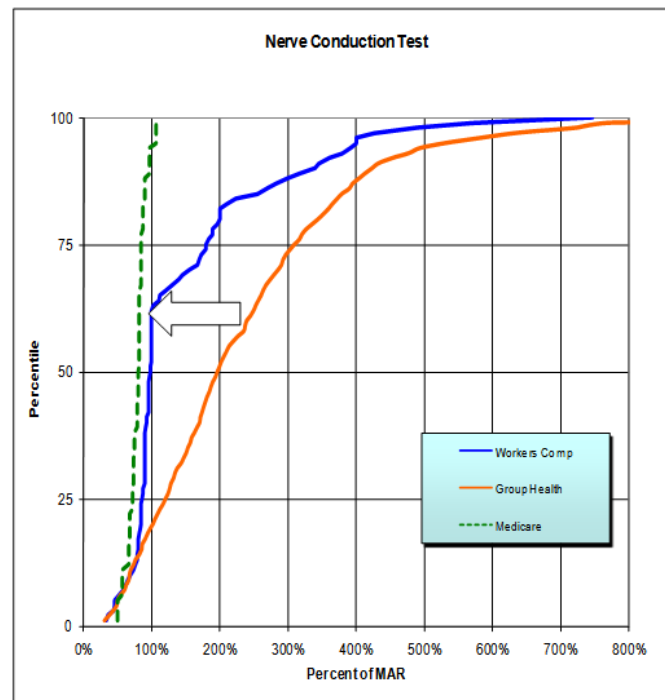


Figure 14: General Medicine Example—Distributions of WC and GH Reimbursements for CPT Code 95900: Nerve Conduction, Amplitude and Latency/Velocity Study, Each Nerve; Motor, Without F-Wave Study

Figure 14 shows the combined state reimbursement distributions for CPT Code 95900, which identifies a nerve conduction test:

- While steep, the curve for the normalized Medicare in Figure 14 shows some variation by state, ranging from 50% to 110% of the applicable state MAR
- No more than 5% of GH or WC reimbursements are at or below the Medicare rate
- Fee schedules generally are set below market for this procedure, as evidenced by only 20% of GH payments being below the 100% MAR
- Although four-fifths of GH payments exceed the WC MAR, about half of WC payments lie between Medicare and the MAR

The arrow in Figure 14 points out how imposing a fee schedule effectively “grabs” the GH curve and “pulls it back” to the left toward the MAR. The fee schedule brings the WC curve to the left of the GH curve, and the area¹³ between the curves measures a reduction in the reimbursement for WC below GH. The small corners on the WC curve at 200% and 400% suggest that, while multiple applications are present, they only account for a small proportion of the WC reimbursements above the MAR. It is likely that facility charges increase a significant portion of WC and GH reimbursements for CPT Code 95900 to well above Medicare and MAR.

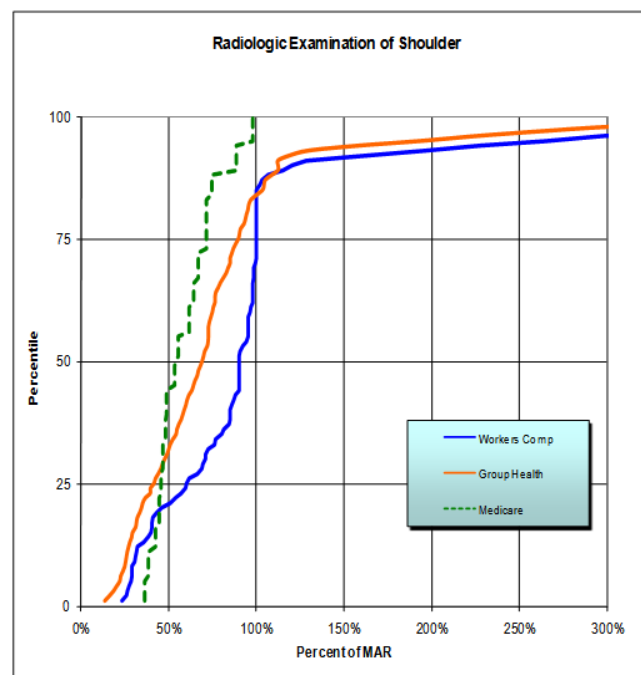


Figure 15: Radiology Example—Distributions of WC and GH Reimbursements for CPT Code 73030: Radiologic Examination, Shoulder Complete, Minimum of Two Views

CPT Code 73030 is for shoulder X-rays whose payment distribution patterns are graphed in Figure 15. Reminiscent of CTS surgery, only about 10% of WC charges are at the MAR; the MAR is above Medicare, whose median is only about half the MAR. The GH curve has no concentration points, and the WC MAR is set high enough to put 85% of GH reimbursements below it. WC also has about 15% of its payments exceeding the MAR. The MAR draws the WC curve to the left around the 75th percentile, back to where it touches the GH curve. For the middle half of payments (between the 25th and 75th percentiles), the pattern suggests that an above-market MAR attracts the WC curve and brings it to the right of the GH curve, making WC more costly. As with CTS surgery, radiology Code 73030 illustrates the case of a high MAR and a fee schedule that fails to bring WC payments down to the market level.

¹³ Because price is measured horizontally and quantity of procedures is measured vertically, cost (equals price times quantity) corresponds to area.

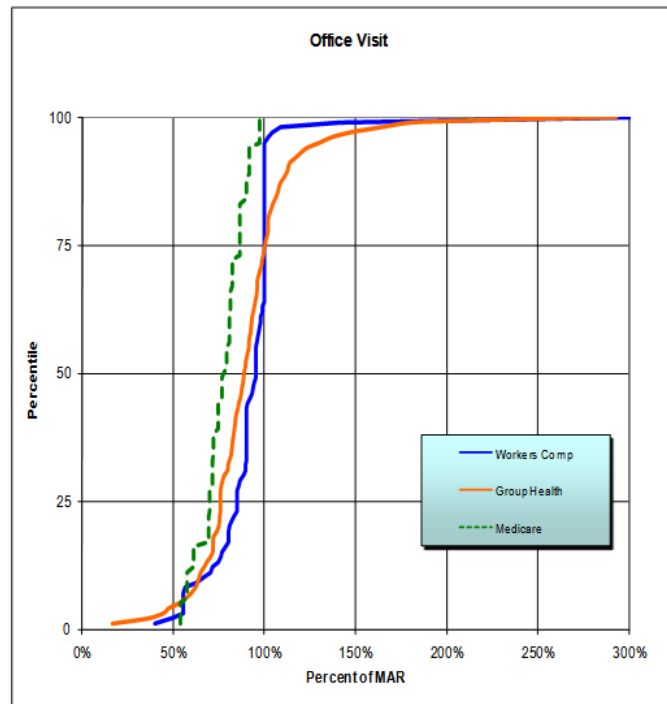


Figure 16: Evaluation and Management Example—Distributions of WC and GH Reimbursements for CPT Code 99212: Office or Other Outpatient Visit for the Evaluation and Management of an Established Patient

CPT Code 99212 is for an office visit, placing it among the most commonly billed procedures for both WC and GH. Figure 16 shows that the GH curve is nicely “S-shaped” with no concentration points and with one-fourth of reimbursements exceeding the WC MAR. Only about 5% of WC payments exceed the MAR and about 30% are at the MAR. Medicare rates lie below either WC or GH but are comparatively near the MAR. Consequently, the WC curve lies between Medicare and GH above the 75th percentile, and GH lies between Medicare and WC below it. Considering the areas between the WC and GH curves suggests that the two offset one another and that overall WC and GH reimbursement levels are about the same for office visits.

Conspicuous throughout Figures 4–16 is the consistent placement of Medicare reimbursements well below those of WC, GH, and MAR. WC state median reimbursements are typically above those for GH and are never far below. Also, the WC reimbursement curve reflects a lower than GH reimbursement (i.e., lies to the left) only at the higher percentile levels of reimbursement. So, using either Medicare or GH as benchmark, there is no indication that WC fee schedules should restrict access to care. Indeed, the evidence, particularly WC’s markedly higher than GH utilization levels, implies quite the opposite.

The procedures looked at in this section only hint at the myriad ways that fee schedules impact costs for a particular procedure. While Appendix C provides many more examples, still other patterns occur. This argues for the need to gain a handle on costs at a more aggregated level. What the study shows regarding the correlation of utilization and price suggests grouping by medical condition.

Schedules and Provider Networks

An earlier study on WC medical fee schedules suggested that the use of provider networks can improve the effectiveness of fee schedules.¹⁴ Reliance on the gatekeeper concept, as initially introduced to control overutilization, has largely disappeared in favor of more direct approaches. Attempts to directly relate WC utilization with the use of provider networks are inconclusive with no consistent pattern. There is some limited evidence that the use of networks reduces the use of office visits and especially emergency room visits. On the other hand, there is some evidence, again perhaps rather weak, that networks promote higher usage of some specialty care—such as radiological and surgical procedures in the treatment of CTS. Of course, higher utilization of medical services may result in a faster return to function and can be a good WC investment.

While the relationship with utilization presents a mixed picture, taking a closer look at the payment distributions reveals a synergy between fee schedules and provider networks. Similar in form to the cumulative distribution charts of the previous section, Figures 17–19 chart WC reimbursements in and out of provider networks. Here, “in network” includes any provider network, including both HMOs and PPOs. Appendix C also includes some state charts showing how provider networks may serve to reinforce fee schedules.

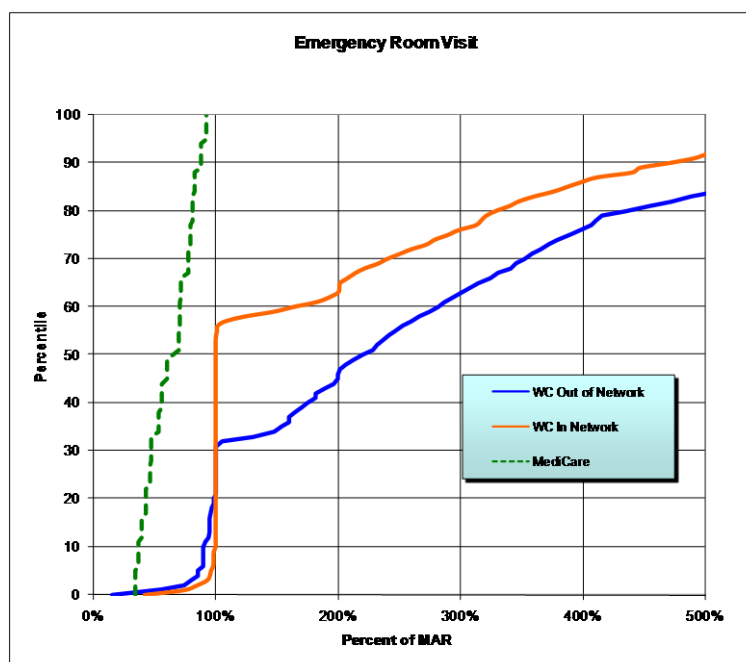


Figure 17: Evaluation and Management Example—Distributions of WC Reimbursements In and Out of Network for CPT Code 99282: Emergency Department Visit for the Evaluation and Management of a Patient

It is instructive to continue to look at the emergency room visit Code 99282 whose WC reimbursements are itemized as being in or out of network in Figure 17. The main point is how much more concentrated the in network experience is as compared with out of network. In network has 45% of reimbursements at the MAR compared with only a little over 10% for out of network payments. Both in and out of network experience appear to include multiple applications, as illustrated by the small corners at 200%. This indicates how networks serve to extend the range of the fee schedule into the key area of facility services. This, in turn, reveals an important way that the use networks may reinforce the effectiveness of fee schedules. The areas between the in and out of network curves show that WC networks, by increasing the applicability of the fee schedule, reduce the reimbursement for emergency room visits.

¹⁴ Refer to Exhibit 12 and the accompanying discussion in “Making WC Fee Schedules More Effective,” NCCI 2007.

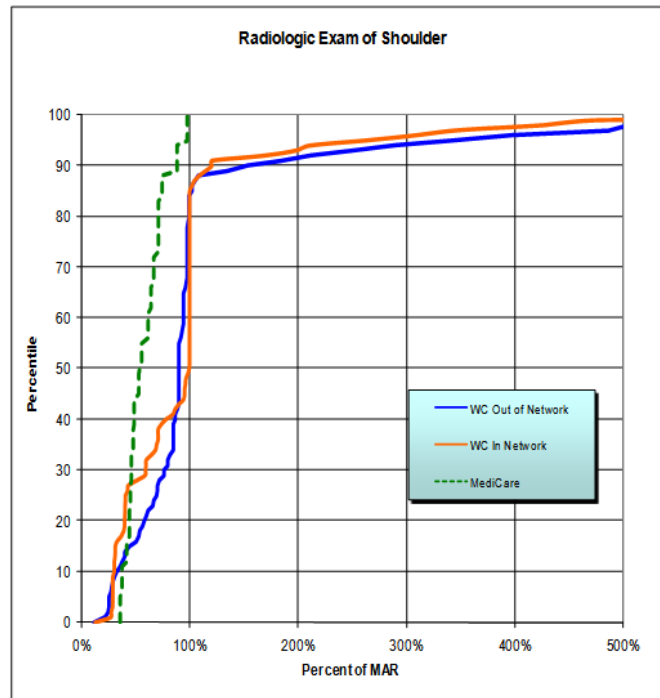


Figure 18: Radiology Example—Distributions of WC Reimbursements in and out of Network for CPT Code 73030: Radiologic Examination, Shoulder Complete, Minimum of Two Views

Figure 18 returns to CPT Code 73030 for shoulder X-ray. Recall from Figure 15 that 85% of reimbursements fall at or below the MAR. So this chart illustrates how networks might achieve savings when the fee schedule is set high. Around the 30th percentile, the experience suggests that the negotiated network reimbursement achieves some savings. Over the 40th to 85th percentile range, however, the chart reveals a propensity for network prices to simply mirror the higher fee schedule MAR and erode some of those savings. This suggests that insurers should not simply assume the MAR is acceptable when negotiating with medical providers. This holds especially true for many radiology and surgery codes for which high state conversion factors have assigned MARs well above market reimbursement rates.

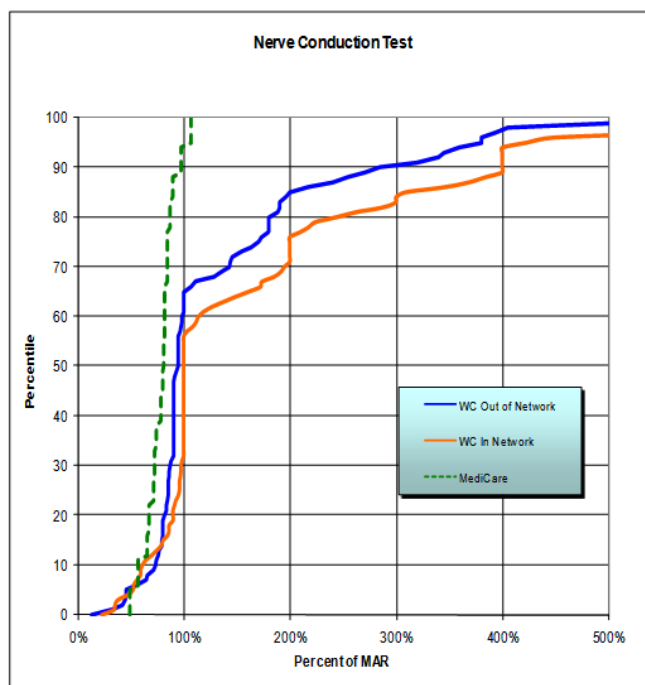


Figure 19: General Medicine Example—Distributions of WC Reimbursements In and Out of Network for CPT Code 95900: Nerve Conduction, Amplitude and Latency/Velocity Study, Each Nerve; Motor, without F-Wave Study

Figure 19 returns to CPT Code 95900 for a nerve conduction test. Observe first how the more homogeneous in network experience is again more concentrated at the MAR and, moreover, how its steps at 200%, 300%, and 400% show that much of the excess of MAR reimbursement is accounted for by the application of multiple conduction tests. Recall from Figure 14 that this code illustrated the atypical case when GH reimbursement consistently exceeds that for both WC and Medicare. While the in and out of network reimbursements are fairly close, the in network rate is consistently higher. If a WC fee schedule (often geared close to Medicare) sets reimbursement well below market, this chart shows how provider networks can act as a corrective, predicated perhaps on the view that adequate reimbursement of useful care is a good investment.

Conclusion

As illustrated above, WC generally pays more for given medical services than Group Health, and both pay substantially more than Medicare. This suggests that, at least for the most part, WC medical fee schedules do not restrict access to care. On the contrary, the markedly higher utilization levels in WC over Group Health strongly suggest that medical providers are satisfied with WC payments.

To stay viable, WC medical fee schedules need to adapt and expand. Facilities, especially hospitals and ambulatory surgical centers, cannot be ignored simply because their billings are not amenable to being compared with a price list. The use of provider networks helps control WC medical costs and some states are promulgating fee schedules for hospitals.

The key to bringing facility charges under control might lie in bundling procedures. The two most familiar approaches for bundling procedures are being promoted within Medicare—setting reimbursement amounts by Diagnosis Related Group (DRG) or by Ambulatory Patient Classification (APC). The California reforms of 2003 and 2004 provide an alternative approach using treatment protocols. Both bundling and protocols constrain utilization, which is the main driver of higher WC medical costs.

WC fee schedules confront two critical challenges: to reverse a shrinking influence and to control utilization. Progress is possible on both fronts by broadening the scope of fee schedules from a traditional focus on individual procedures towards limiting reimbursements by medical condition.

APPENDIX A

Medical Conditions Considered in the Analysis

Code	Description
90	Other ear, nose, and throat disorders
93	Conjunctivitis, bacterial
101	Foreign body: orbit
107	Injury or laceration: eyelids, periocular area, cornea, or conjunctiva
129	Other eye disorders
152	Hernia, external
179	Other gastrointestinal or abdominal symptoms
340	Other disorders of male genital system
341	Bursitis
342	Dislocation: elbow
354	Fracture: radius, lower end
355	Fracture: tibia
357	Fracture or sprain: ankle
358	Fracture, dislocation, or sprain: facial bones
359	Fracture, dislocation, or sprain: foot
360	Fracture, dislocation, or sprain: hip or pelvis
361	Fracture, dislocation, or sprain: humerus (head) or shoulder
362	Fracture, dislocation, or sprain: wrist or hand or fingers
364	Hallux deformities
365	Herniated intervertebral disc
367	Injury, chest wall
368	Injury, knee, ligamentous
369	Injury knee, semilunar cartilages
370	Injury, open wound, or blunt trauma: lower extremity
371	Injury, open wound, or blunt trauma: upper extremity
374	Osteoarthritis
387	Injury: other and ill-defined musculoskeletal sites
389	Other arthropathies, bone and joint disorders
390	Other disorders of connective tissue
391	Other spinal and back disorders
393	Carpal tunnel syndrome
402	Headache
404	Injury: craniocerebral
405	Injury: spine and spinal cord
418	Other peripheral nerve disorders
426	Complications of surgical and medical care
430	Encounter for preventive health services
432	Encounter related to other treatment
433	Factors influencing health status
437	Other general signs, symptoms, and conditions
478	Depression
526	Other disorders of respiratory system
529	Other respiratory symptoms
535	Infections of skin and subcutaneous tissue
545	Other inflammations and infections of skin and subcutaneous tissue
549	Burns
551	Injury, open wound, or blunt trauma: abdomen or trunk
554	Toxic effects of nonmedicinal agents
555	Effects of environment and other external causes
556	Injury: other

APPENDIX B

Glossary of Acronyms

APC: Ambulatory Payment Classification

ASC: Ambulatory Surgical Center

CPT: Current Procedural Terminology—coding scheme for medical procedures

CTS: Carpal Tunnel Syndrome

DRG: Diagnosis Related Group

GH: Group Health

MAR: Maximum Allowable Reimbursement

MC: MediCare

MEG: MedStat Episode Grouper

NDC: National Drug Code

RBRVS: Resource-Based Relative Value Scale—used to assign a fair relative cost among charges for medical services; most common is that used by Medicare

RVS: Relative Value Scale—assigns a fair relative cost among charges for medical services; most common is that used by Medicare

UCR: Usual, Customary, and Reasonable—refers to reimbursement levels geared toward what is commonly charged or paid

WC: Workers Compensation

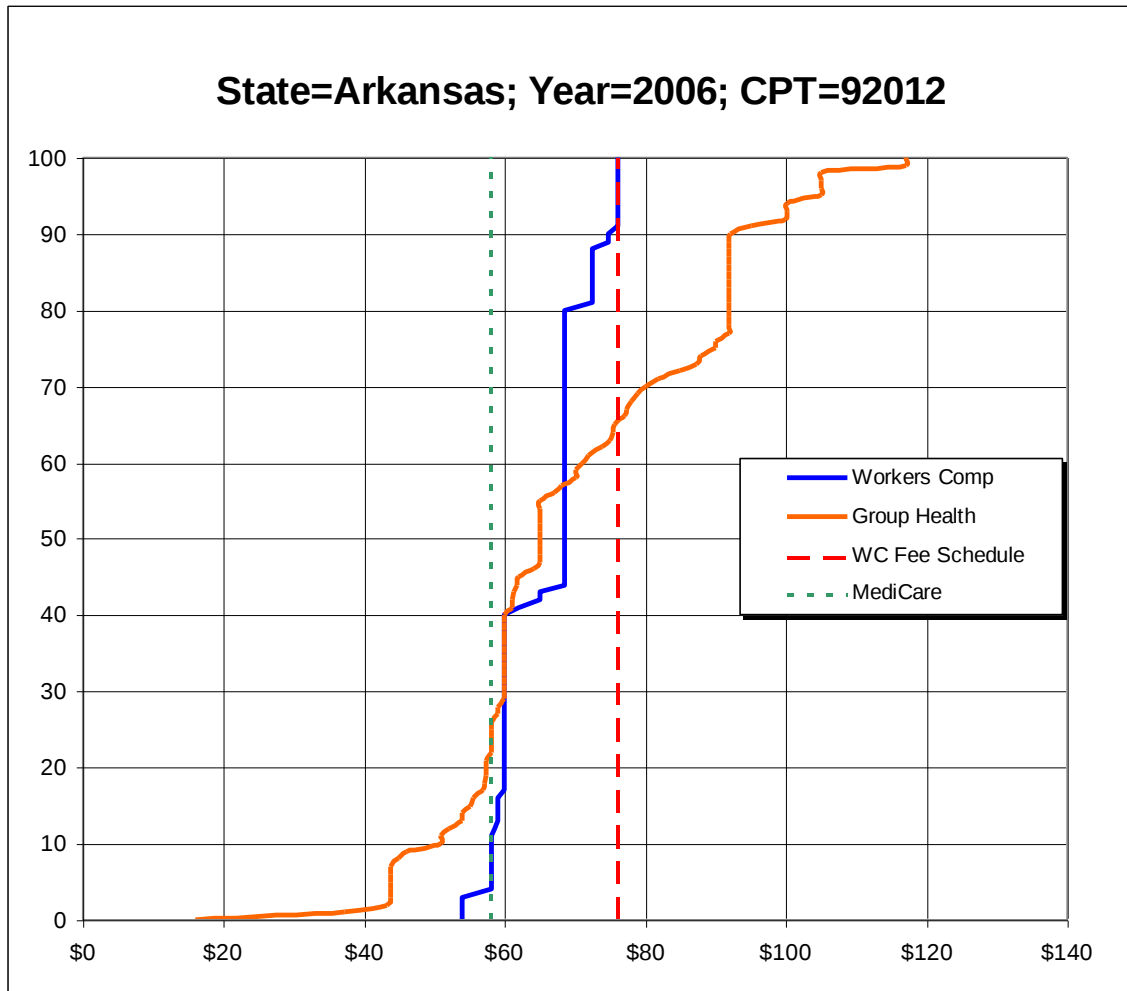
WCRI: Workers Compensation Research Institute—research organization headquartered in Cambridge, MA, dedicated to producing studies about public policy issues involving workers compensation systems

APPENDIX C

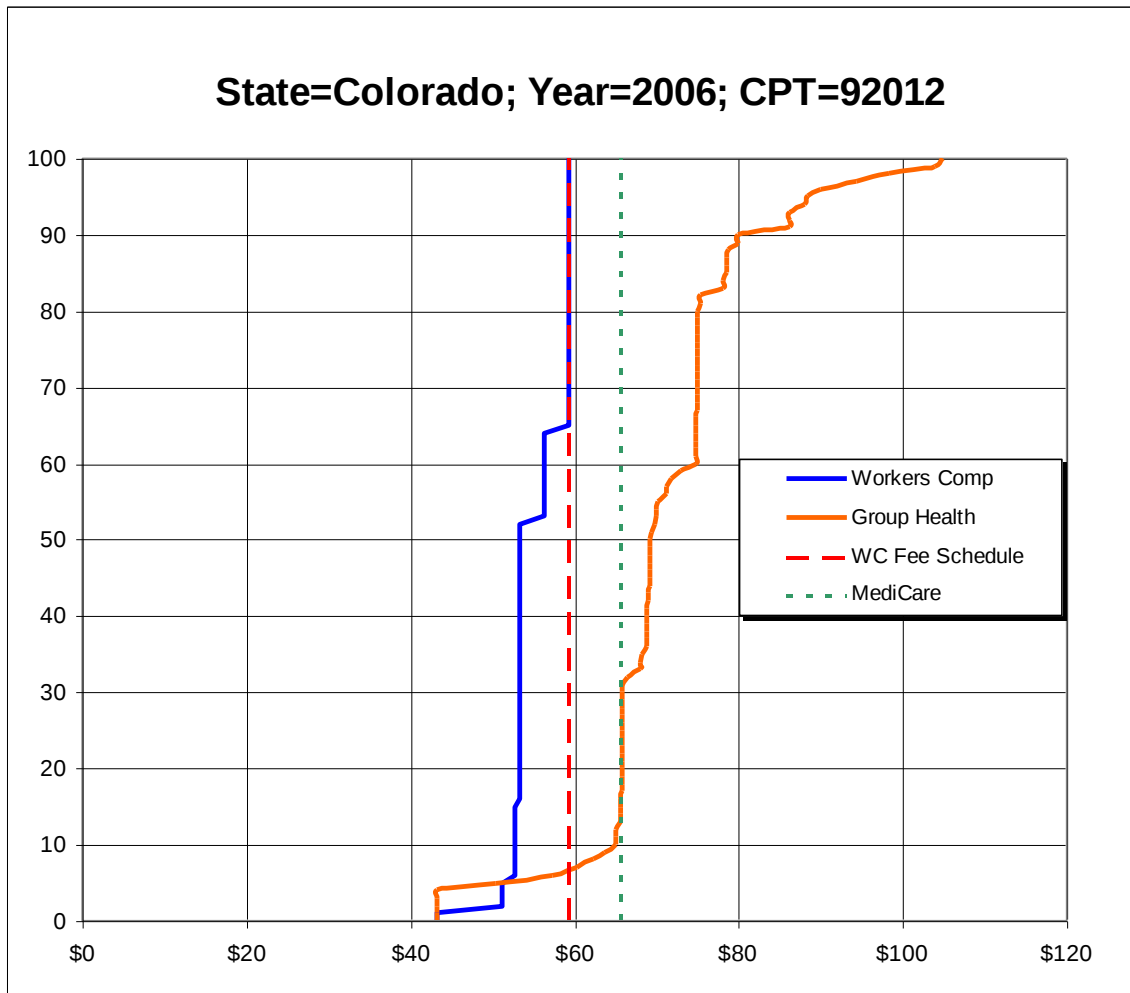
How State Fee Schedules Work in Practice

This Appendix contains charts of reimbursement distributions similar to those in the paper. They are based on reimbursement on services done in 2006 and are specific by state. Accordingly, the horizontal axis measures dollar amounts, and both the Medicare and MAR are fixed amounts depicted as vertical lines.

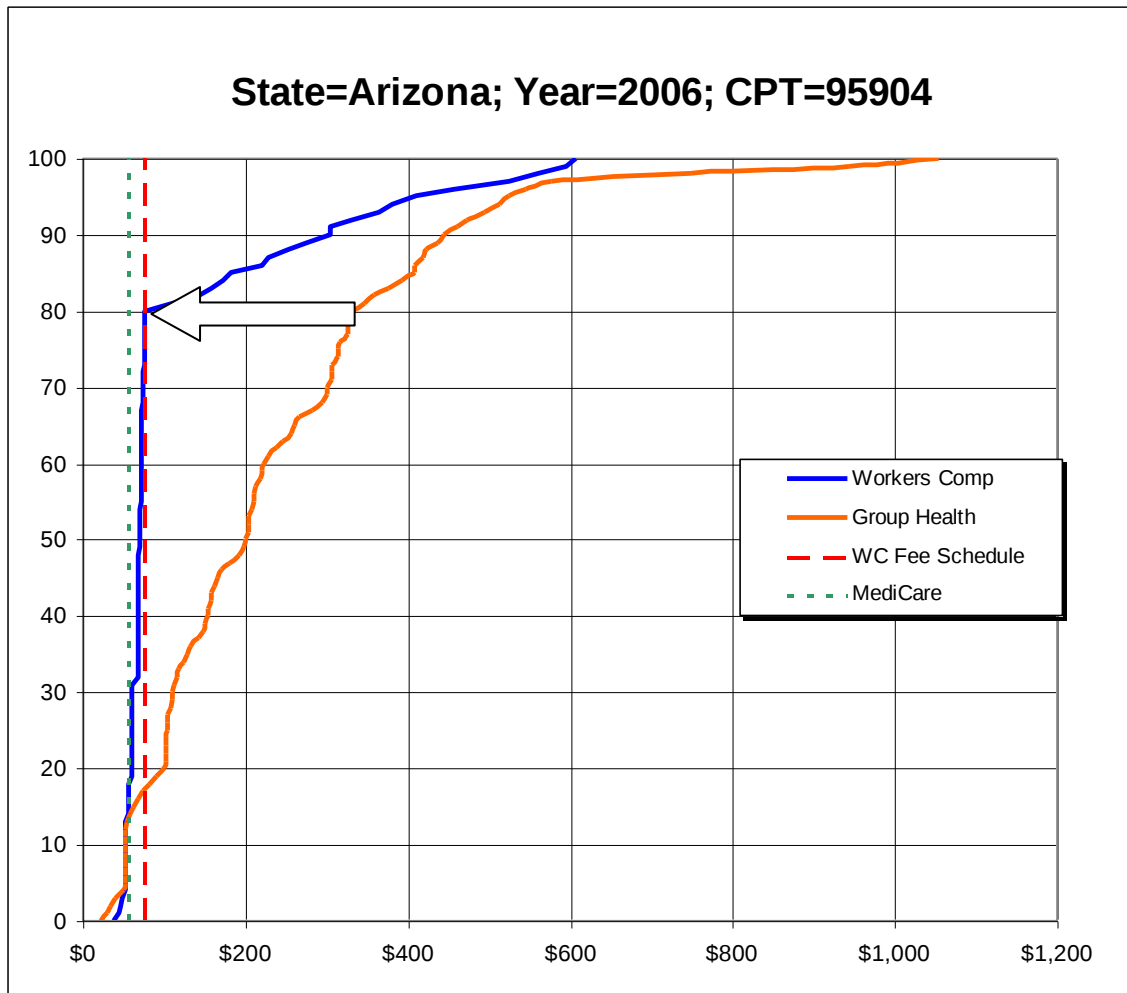
State-Specific Examples Comparing WC and GH Distributions of Reimbursement by CPT Code



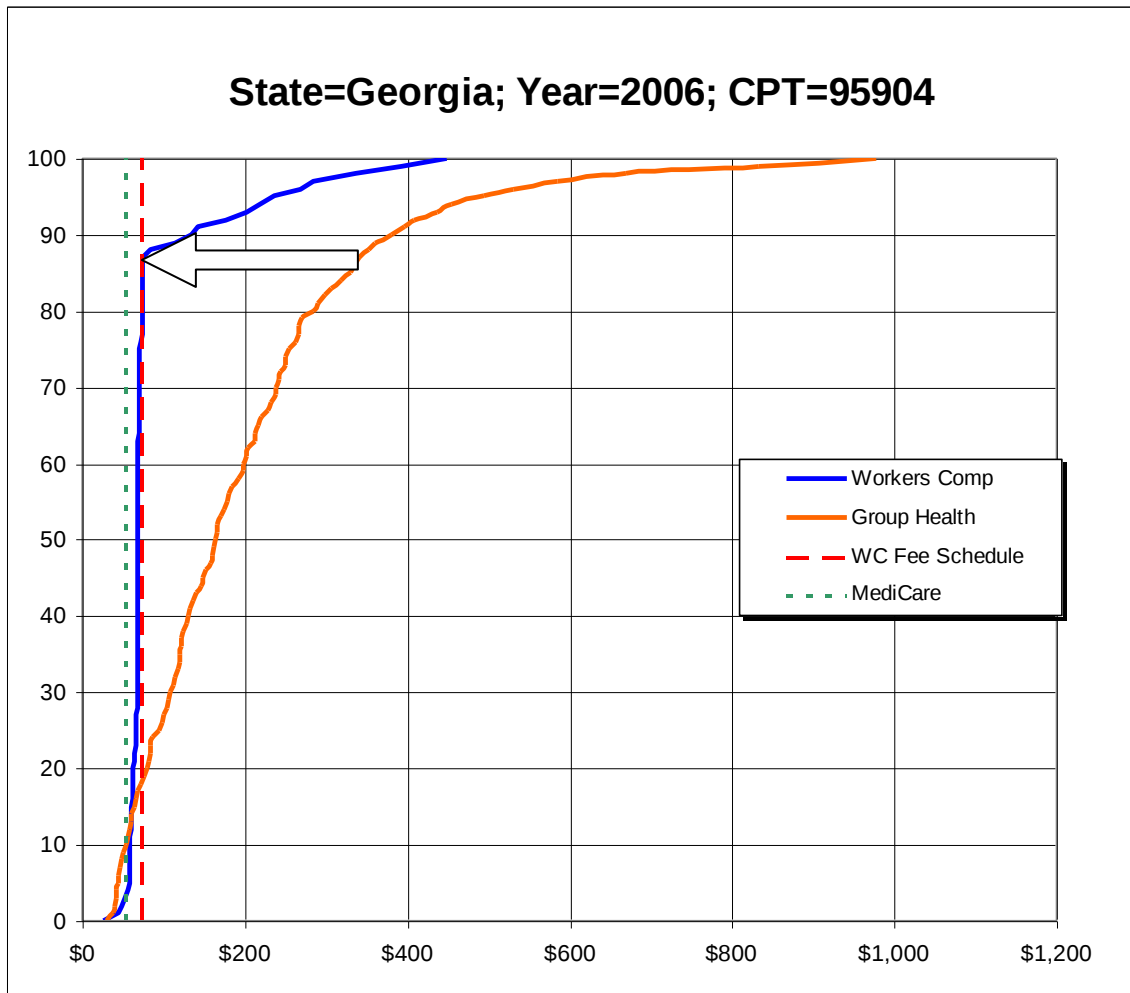
CPT 92012 identifies an ophthalmologic examination. For Arkansas in 2006, CPT 92012 presents a pattern very much like what might be expected. Medicare, at \$58.16 lies well below the MAR at \$76.16. The GH curve is fairly “S-shaped,” having about one-fourth of the payments (20th to 45th percentile) near Medicare at around \$60. About 30% of GH payments exceed \$80 and are above the MAR. WC payments are all either at or below the MAR, being clustered at \$60 and \$70 and with about the top 10% of WC payments just at the MAR value.



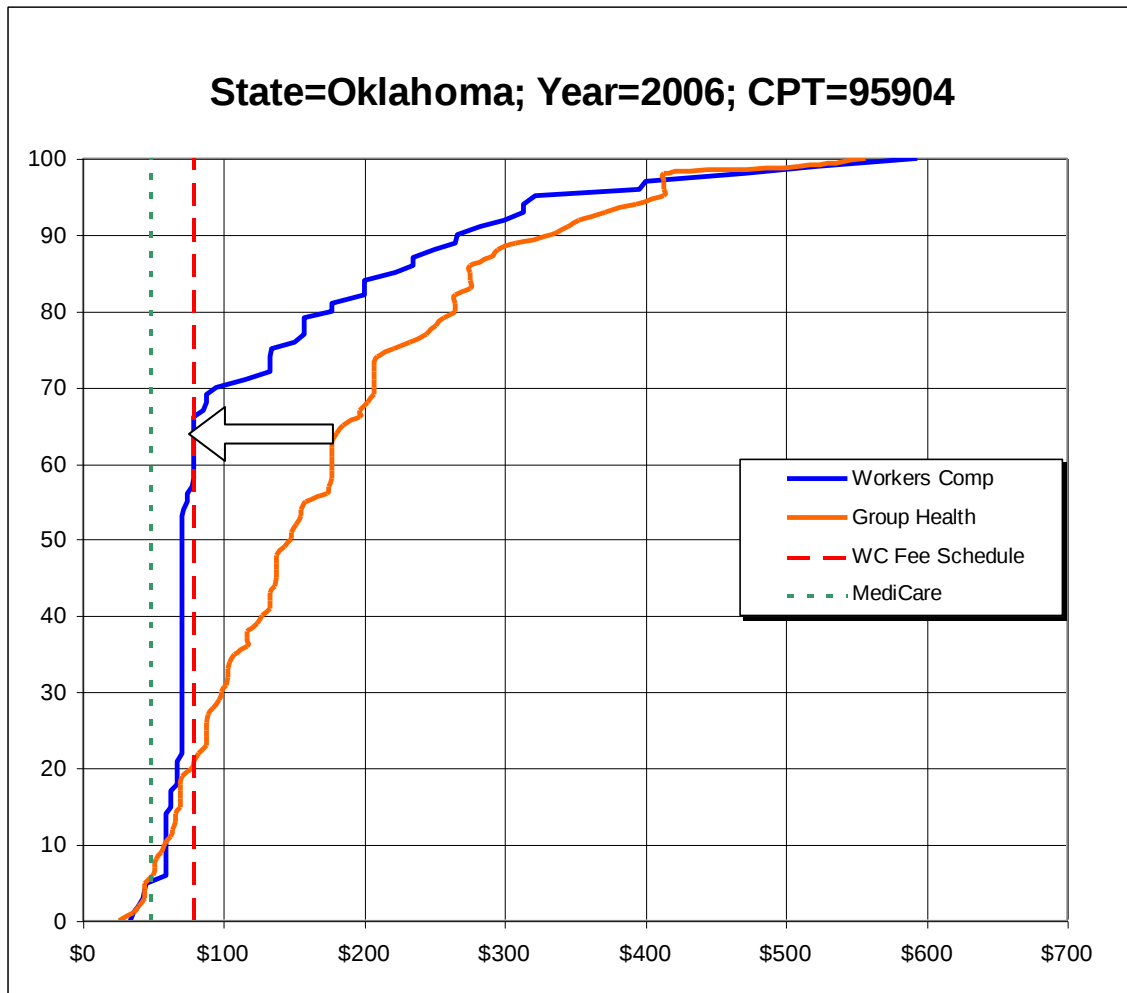
For Colorado in 2006, Medicare reimbursement at \$65.68 exceeded the MAR of \$59.28 for CPT 92012. The GH curve is nicely S-shaped, having about 70% of payments above Medicare. WC payments are all at or below the MAR, being clustered at around \$53 and again at the MAR, and with about a third of WC payments concentrated at the MAR value.



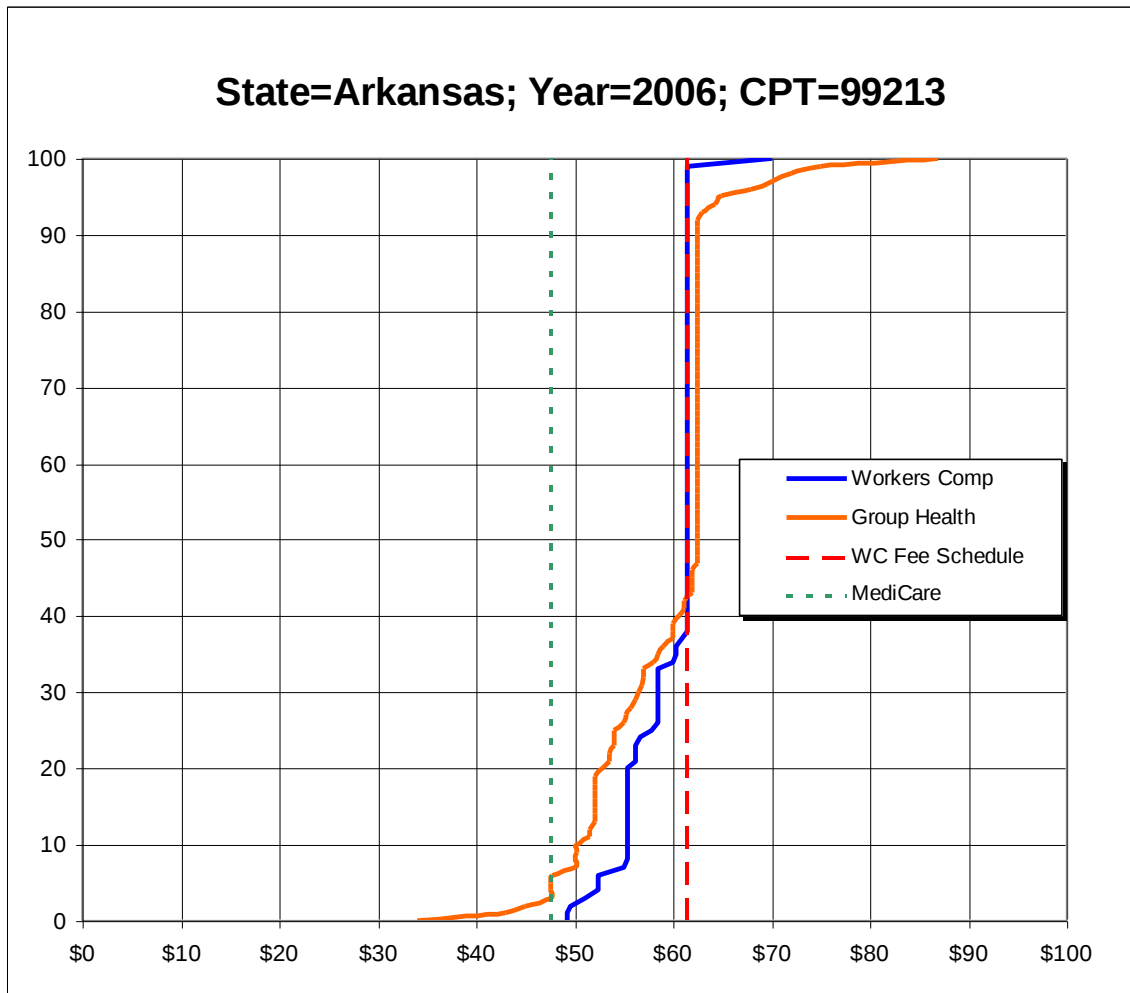
CPT Code 95904 identifies a nerve conduction test. The payment pattern for this procedure illustrates what can happen when Medicare sets its rates below GH market value and WC fee schedules follow suit. Considering Arizona in 2006, we see that no more than 15% of GH reimbursements are at or below the \$55.48 Medicare rate, and 80% of GH payments exceed the WC MAR, set at \$76. For WC, however, about three-fourths of payments are confined between Medicare and the MAR. The arrow is meant to illustrate how imposing a fee schedule in effect “grabs” the GH curve and “pulls it back” to the left of the MAR, resulting in the WC curve being further to the left of the GH curve, and the area between measuring an implied reduction in the reimbursement for WC.



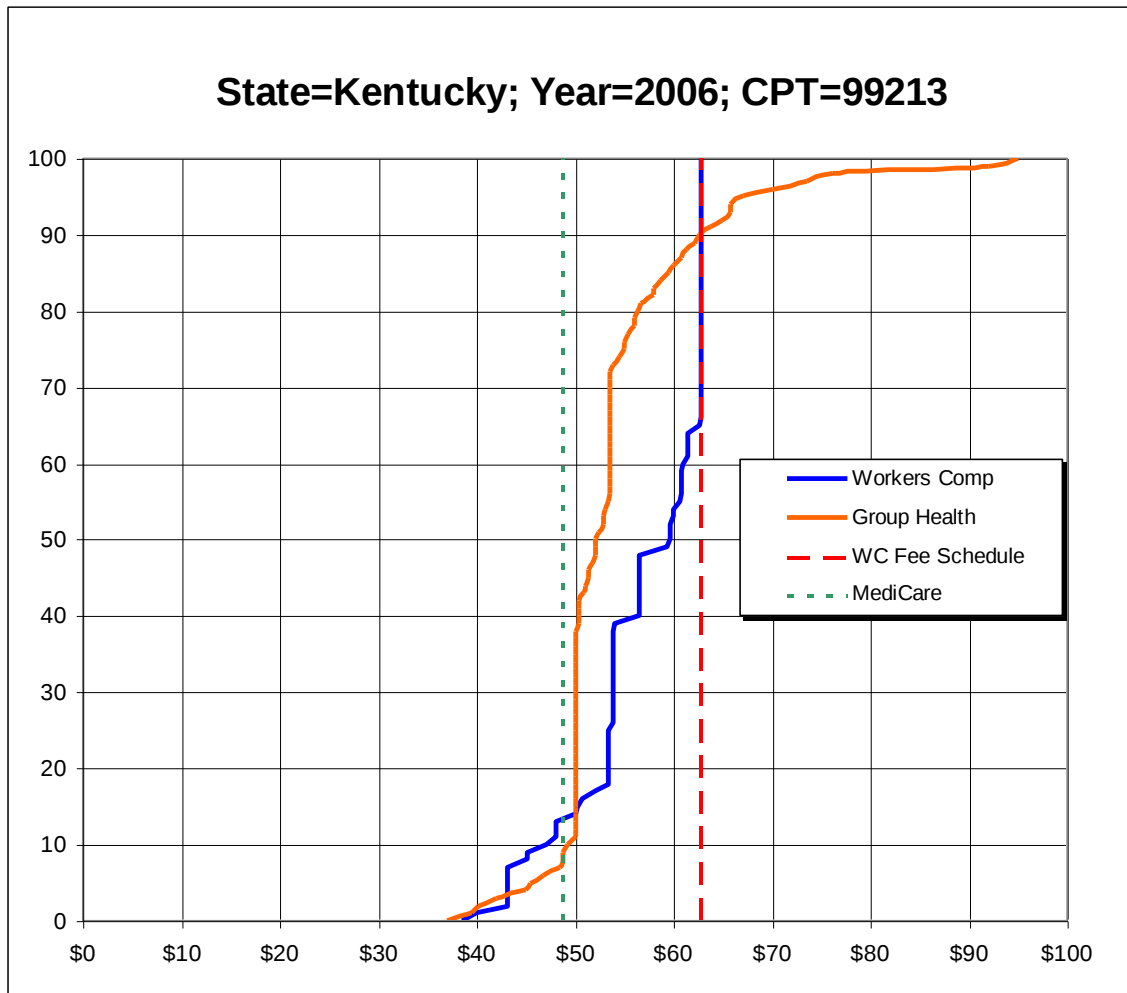
We observe a similar pattern for Code 95904 in Georgia. Here, a smaller percentage of WC payments exceed the MAR but the vertical segment is still significant, representing about 12% of WC payments. As observed for Arizona, about 15% of GH payments lie at or below Medicare, with 80% exceeding the MAR. Here, the S-shaped GH curve for Georgia shows little, if any, concentration at the Medicare value.



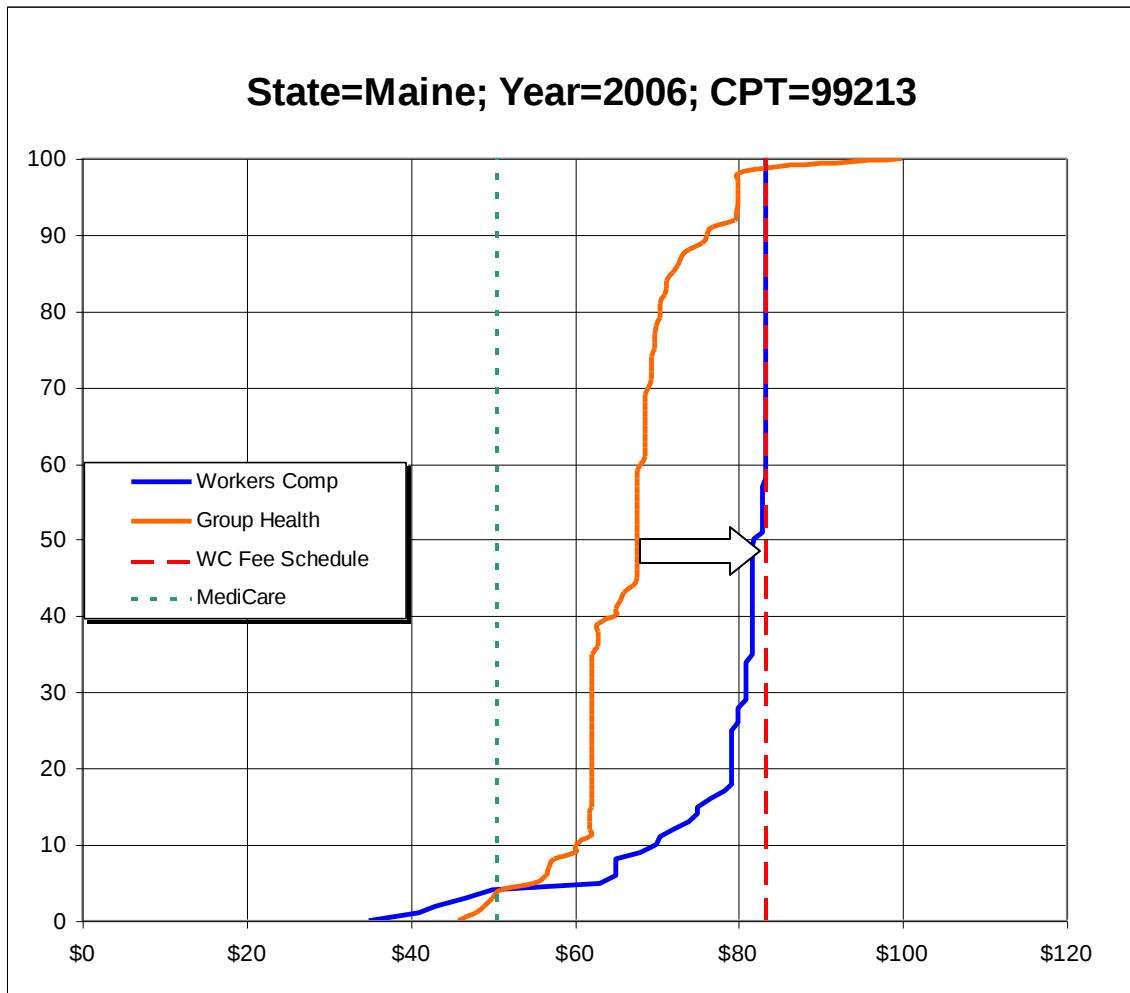
Oklahoma provides another example of a pattern becoming common for Code 95904. Here, a larger percentage of WC payments, about 30%, exceed the MAR. Only about 10% of GH payments lie at or below Medicare in Oklahoma. As in Georgia and Arizona, we again see that about 80% of GH payments exceed the MAR. Although the “pull back” on WC reimbursement back to the MAR limitation occurs at different percentages (in the three selected states ranging from the 70th to 90th percentile), the effect is a similar distortion from the more smooth “market solution” illustrated by the GH curve. The fact that the Medicare rate is so far below the GH market for Code 95904 puts the GH curve comparatively more to the right and makes the implied reduction in WC reimbursement more dramatic.



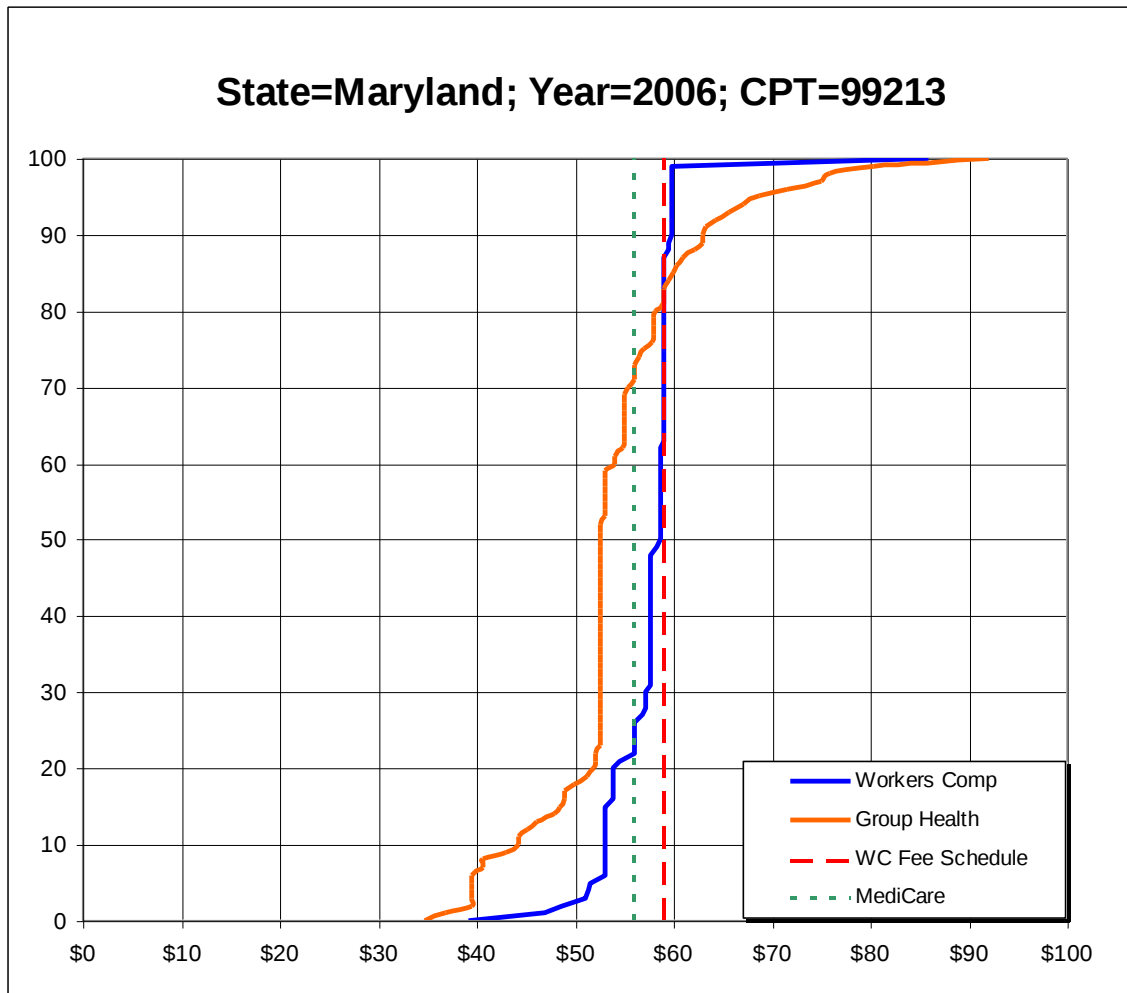
CPT Code 99213 identifies an outpatient office visit for an established patient and is among the most common procedures in both WC and GH. Reimbursement patterns for this and similar outpatient office visits are quite similar among the states and over time. We select a few to give an idea of the pattern. A key factor to look at is the relationship between the Medicare rate and the market rate, represented here by the GH median payment. Arkansas in 2006 illustrates the case when Medicare, at \$47.62 per visit, is below almost all of both WC and GH. WC is heavily concentrated at the MAR of \$61.55 with about 60% of payments at that amount. It is interesting that the GH is also very concentrated at about \$62, and that the S-shaped GH curve for Arkansas is narrow due to that concentration near the WC MAR, with less than 10% of its payments exceeding it. We interpret this to mean that the conversion factor for evaluation and management services effectively limits WC reimbursement for office visit Code 99213 to be at par with the market rate, at about 30% above Medicare ($62/48 = 1.29$).



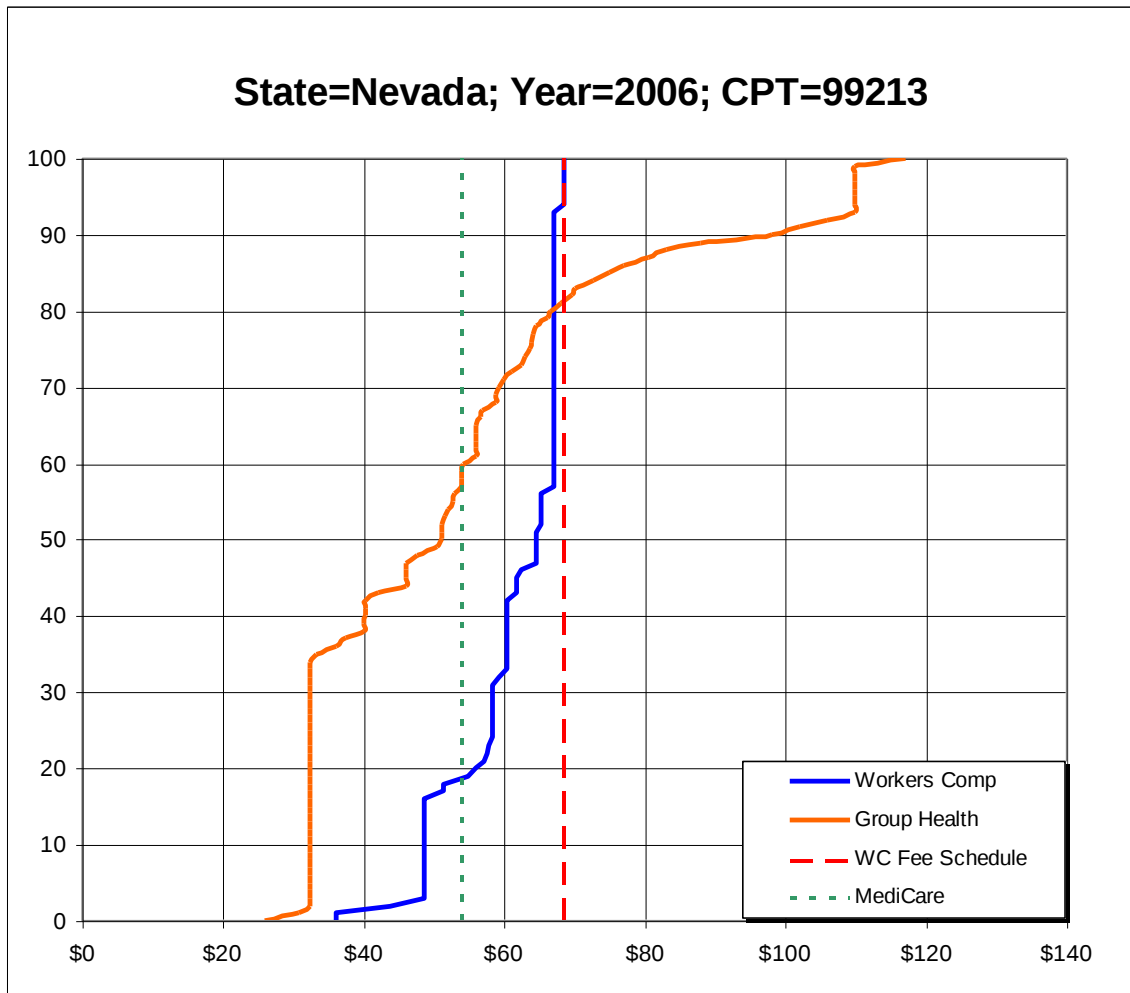
While Kentucky, like Arkansas, has Medicare at around \$48 and a MAR in the low \$60s, the Kentucky WC payments are less concentrated at the MAR than Arkansas, but with still a hefty 35% of Kentucky office visit payments concentrated there, and no WC reimbursements exceeding the MAR. This makes sense because the GH curve shows that the market rate for Kentucky is closer to the lower Medicare rate, with about 30% of GH visits reimbursed at \$50. And we find that the greater portion of Kentucky WC experience below the MAR conforms to market conditions. The S-shaped GH curve for Kentucky is narrow due to the concentration near the Medicare rate, with 10% of its payments exceeding the WC MAR.



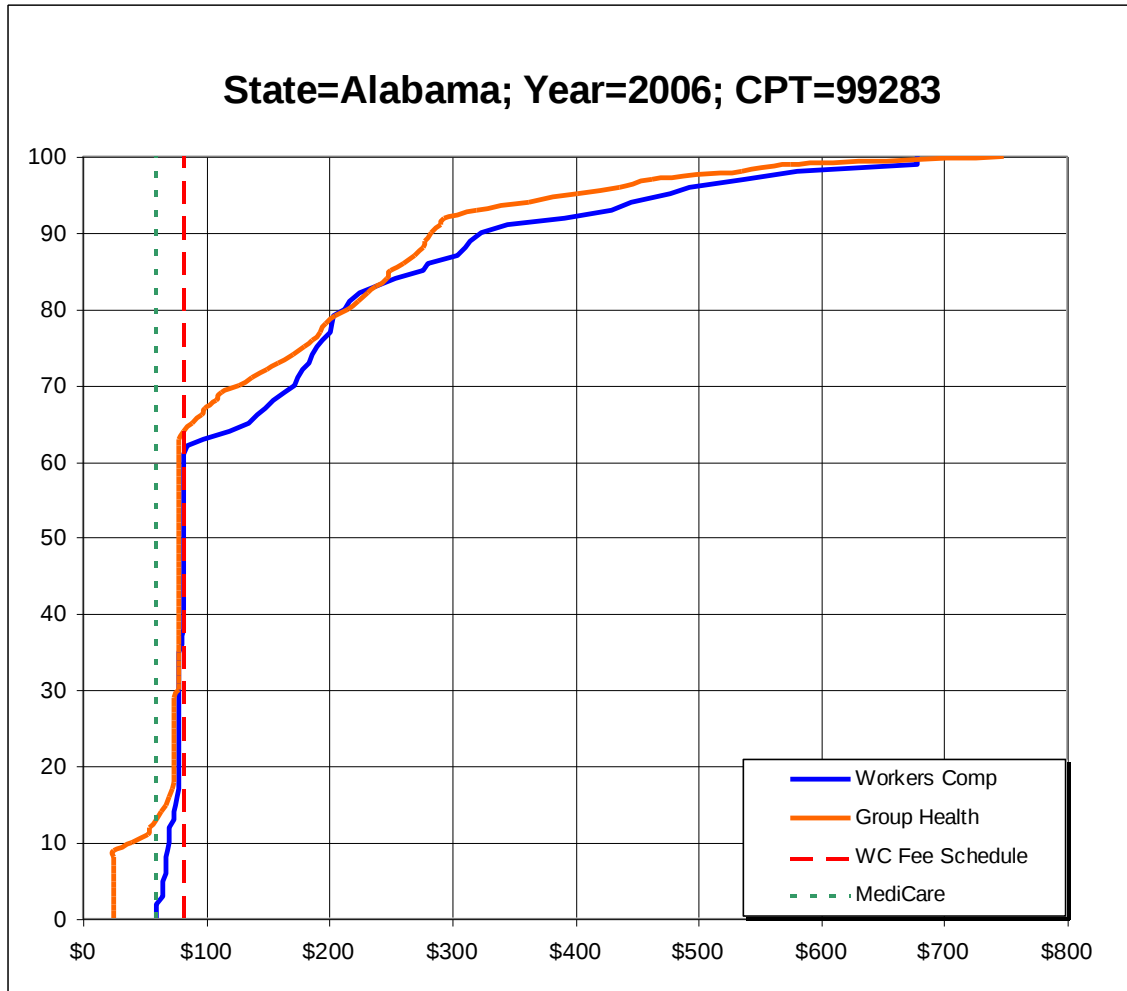
Maine illustrates the case when there is a bigger difference between Medicare and the WC MAR, \$83.40 being 65% greater than \$50.48 ($83.40/50.46 = 1.653$). We again have a heavy concentration, 40%, of WC at the MAR and no significant number of WC office visit reimbursements exceeding the WC MAR. GH has two concentrations of payment with about a fourth of the payments near \$62 and another 6% at \$80. Both WC and GH reimbursements are nearly all situated in the broad range between Medicare and the MAR. In this case, while a lot of the GH payments were near Medicare and well below the MAR, the WC payments seem to be more influenced by the MAR than by the market rate. Almost all the area between the WC and GH curves has WC to the right, illustrating the higher reimbursement level for WC over GH. As the arrow suggests, some of that higher payment level may be “artificial” in the sense of being prompted by the fee schedule. Indeed, the high MAR may itself have “pushed” the WC curve to the right and contributed to the higher WC payment level. Of course, an alternative reading of the chart is that, without the fee schedule, the WC curve would follow a parallel “S-shape” shifted about \$20 to the right of the GH curve and resulting in 80% of WC payments over \$80 and a WC curve even further to the right. The clustering of the WC payments at and just under the MAR, however, suggests that the former interpretation is the more believable, and that setting the Maine fee schedule amount well above market prompted selectively higher bills for the WC office visits. With only a very small percentage of GH office visit payments exceeding the MAR, we conclude that the Maine fee schedule produces the (presumably unintended) result of increasing WC reimbursement for office visits.



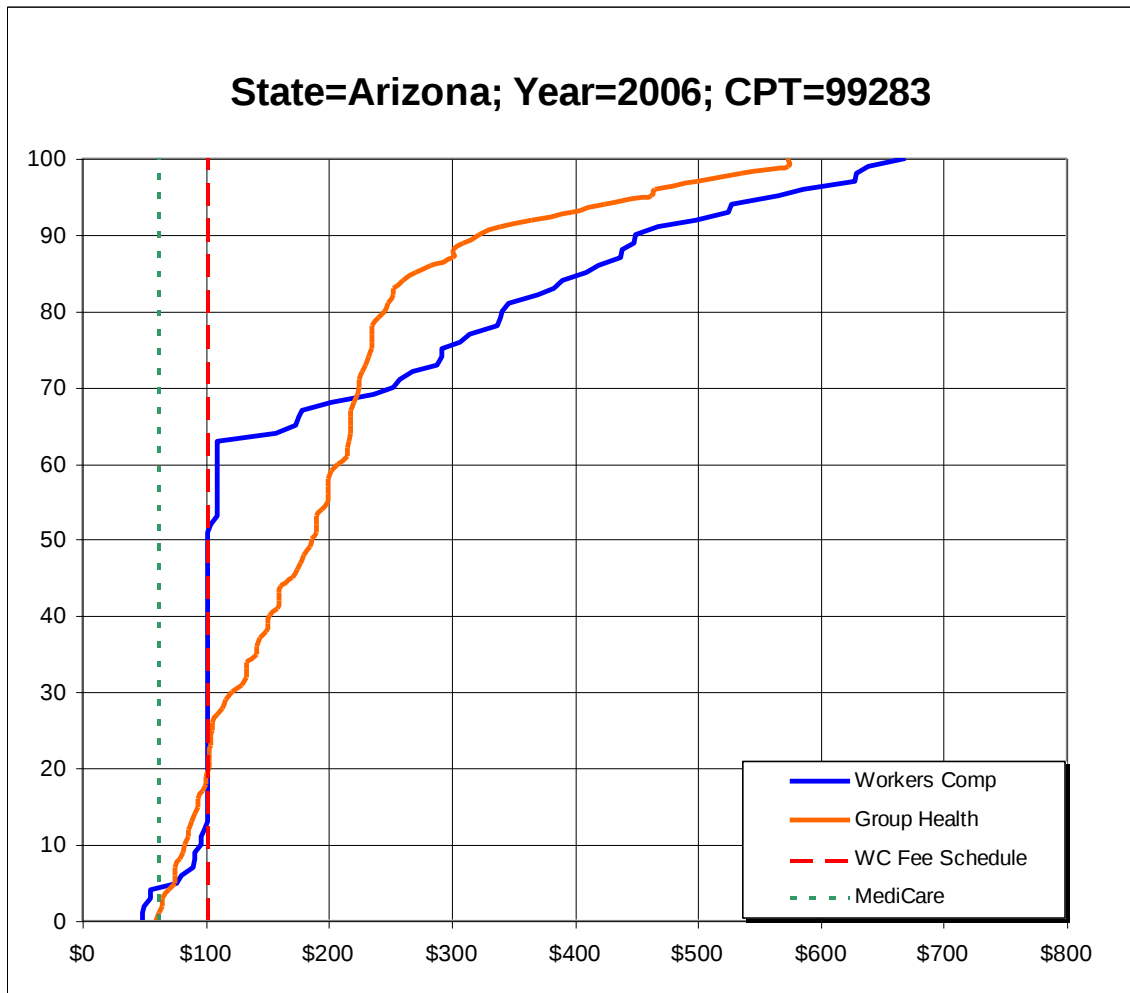
In contrast to Maine, Maryland illustrates the case where the WC Mar of \$58.93 is near the Medicare rate of \$55.99, being only 5% greater ($58.93/55.99 = 1.053$). As in the other states, we have WC reimbursements concentrated at the MAR—here the concentration is high, with 70% of WC payments being within only a few dollars of the MAR. In this case, GH has its greatest concentration of payments at about \$53, which is below the Medicare rate. Only about 25% of GH reimbursements are higher than Medicare. The area between the WC and GH curves has two pieces. The larger piece below the 85th percentile has WC to the right, showing higher WC reimbursement than GH. However, the area above the 85th percentile has GH to the right. This illustrates how the application of the Maryland fee schedule offsets much of the higher WC reimbursement just noted. Overall, the chart illustrates an example when setting the MAR near Medicare results in GH and WC reimbursements that are reasonably close and do not vary a lot.



The payment patterns for Code 99213 in Nevada are similar in their general shape and relative position to those for Maryland, except they are more spread out horizontally with a bigger difference between the Medicare rate and the WC MAR. The MAR of \$68.58 is 27% above the \$53.96 Medicare rate ($68.58/53.96 = 1.271$). This is a good illustration of how a greater separation between Medicare rate and MAR can be associated with more variability in payments overall. WC reimbursements are concentrated at the MAR, as usual, and as is expected. In Nevada, both WC and GH show lower reimbursement amounts than seen in most states, and both have concentration amounts below the Medicare rate, at around \$32 and \$50, respectively. Observe that the concentration of GH payments at \$110, a little more than double the Medicare rate, suggests that the Nevada GH data for Code 99213 includes a significant number of charges for two established patient office visits that are grouped together on the same bill.

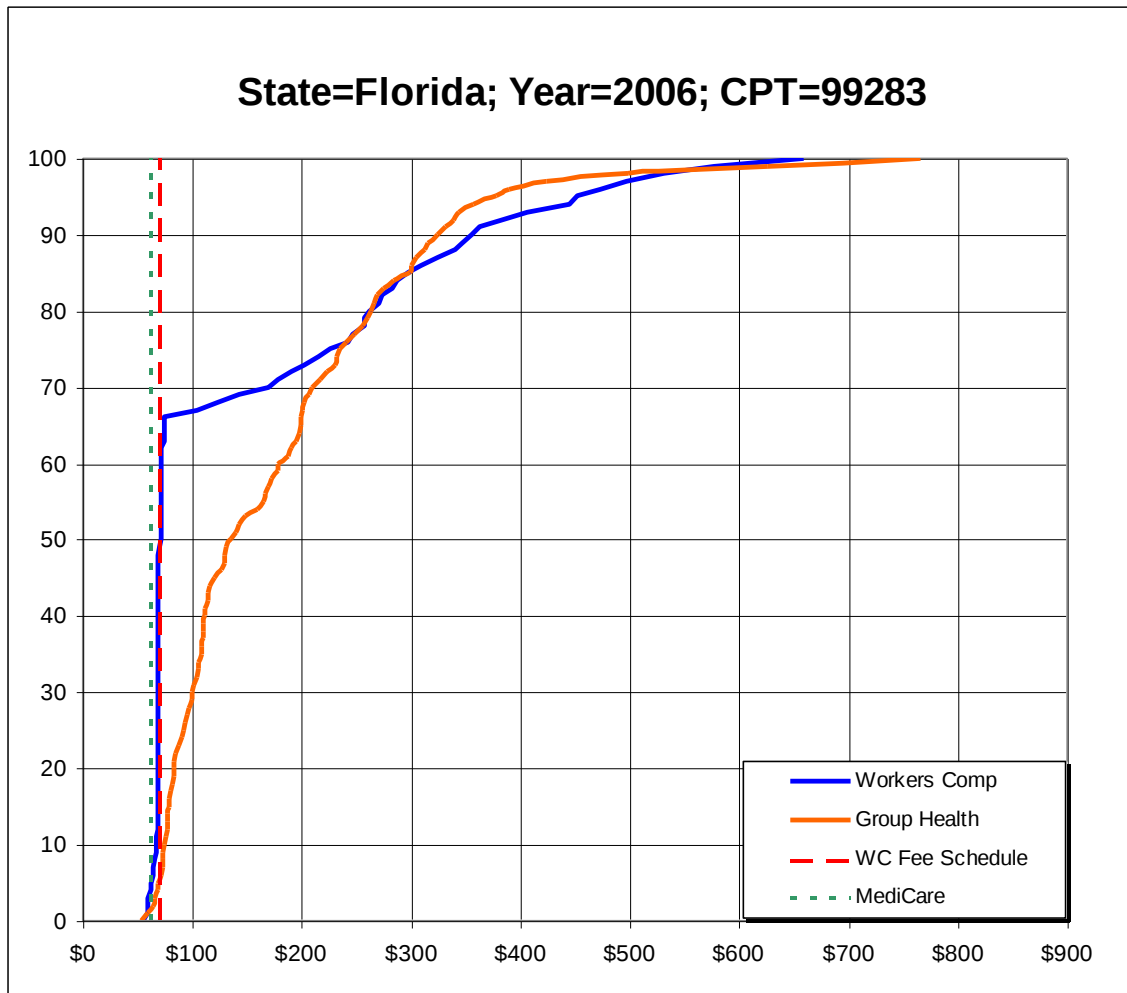


We have already observed in the overall median by state charts that the experience for emergency room visits presents a different picture than the other procedures. We next take a closer look at Code 99283, again for an ER visit, which illustrates some of the challenges confronting WC medical cost containment in general and fee schedules in particular. For Alabama in 2006, we see that the WC MAR of \$81.73 is 37% above the Medicare rate of \$59.50 ($81.73 / 59.50 = 1.374$). Virtually no WC payments fall below Medicare, and less than 10% of GH payments fall below Medicare. On the other hand, almost 40% of both GH and WC charges were paid at amounts above the MAR. The shape of the WC curve tracks with that for GH for amounts over \$70, and this suggests that the fee schedule MAR is essentially being ignored nearly 40% of the time. Emergency room visits pose a challenge to WC fee schedules because they are often billed by hospitals rather than by physicians and may include facility fees that are not anticipated by physician fee schedules. This is also evidenced by the great variation observed in the reimbursements for this CPT code. This pattern for Alabama is different than what has been observed for other CPT codes because there is no discernable “pull back” effect separating the WC from the GH curve.



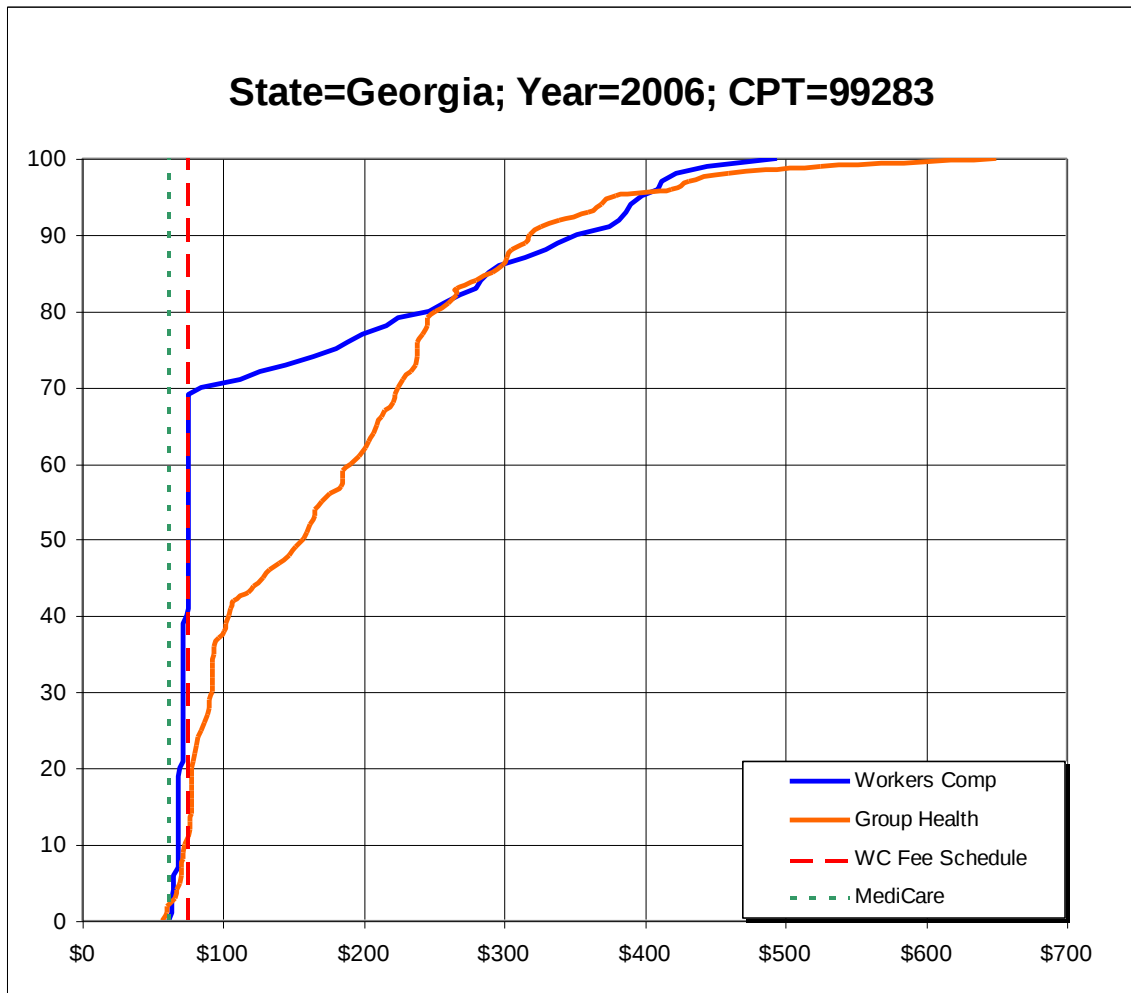
For Code 99283 in Arizona, the WC curve is similar to that observed for Alabama, but the Arizona GH curve is not concentrated at any one paid amount. As a result, the WC curve does appear to be a “pulled back” to the MAR. Here we again find that virtually all reimbursements exceed the \$62.29 Medicare rate and about three-fourths of GH payments exceed the MAR of \$101.48. It is interesting to note the two offsetting sections of the area between the WC and GH curves, indicating fairly close agreement between WC and GH in the overall reimbursement level for emergency room visits, despite the different distributions of payments.

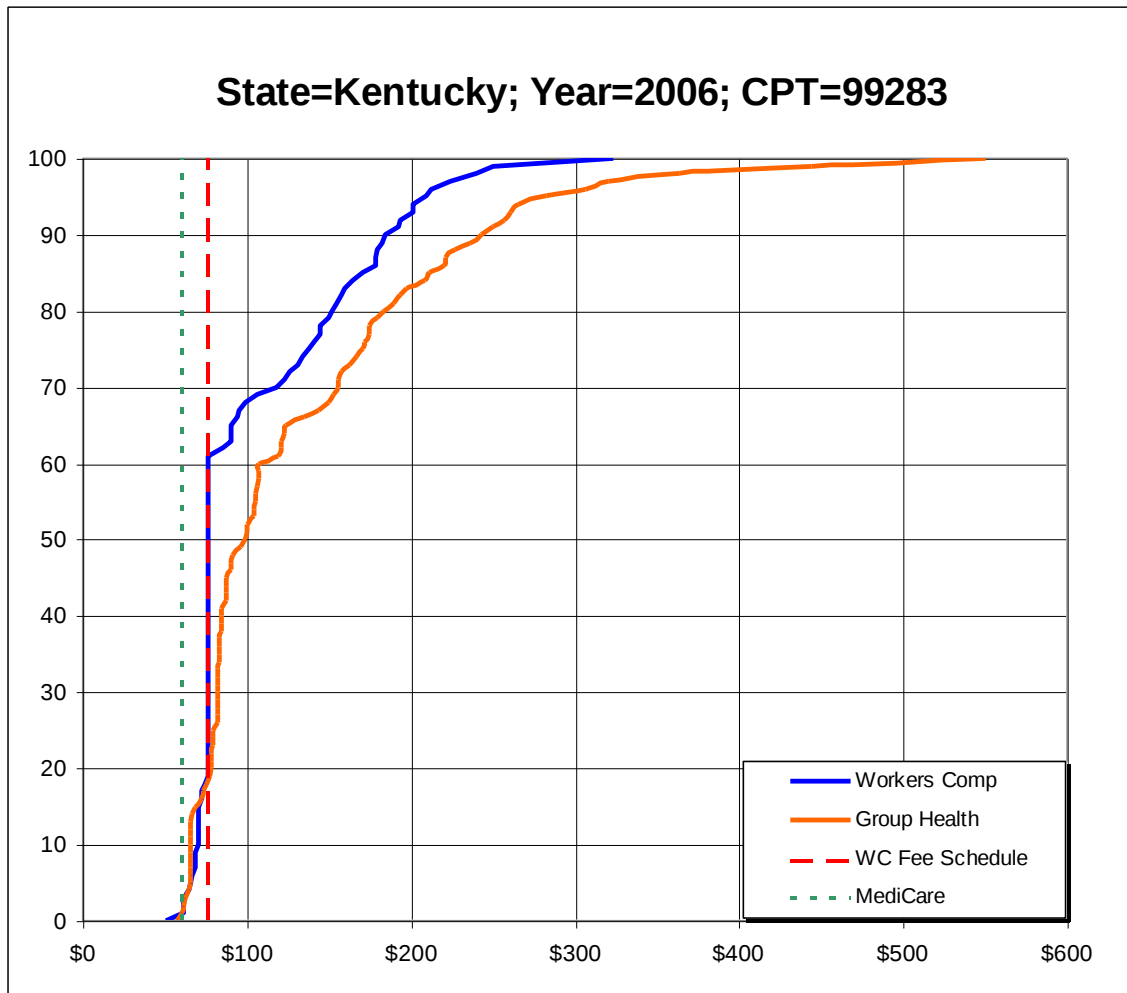
The Arizona chart for 99283 suggests that the Medicare rate is unrealistically low compared to market price. Consequently, WC fee schedules that are directly or indirectly based on the Medicare’s undervaluing of emergency room visits are also understated as payment for the services (sometimes inclusive of facility charges) reimbursed under Code 99283. This is reflected in these charts by a high percentage of WC reimbursement above the MAR, which for both Arizona and Alabama approaches 40%.



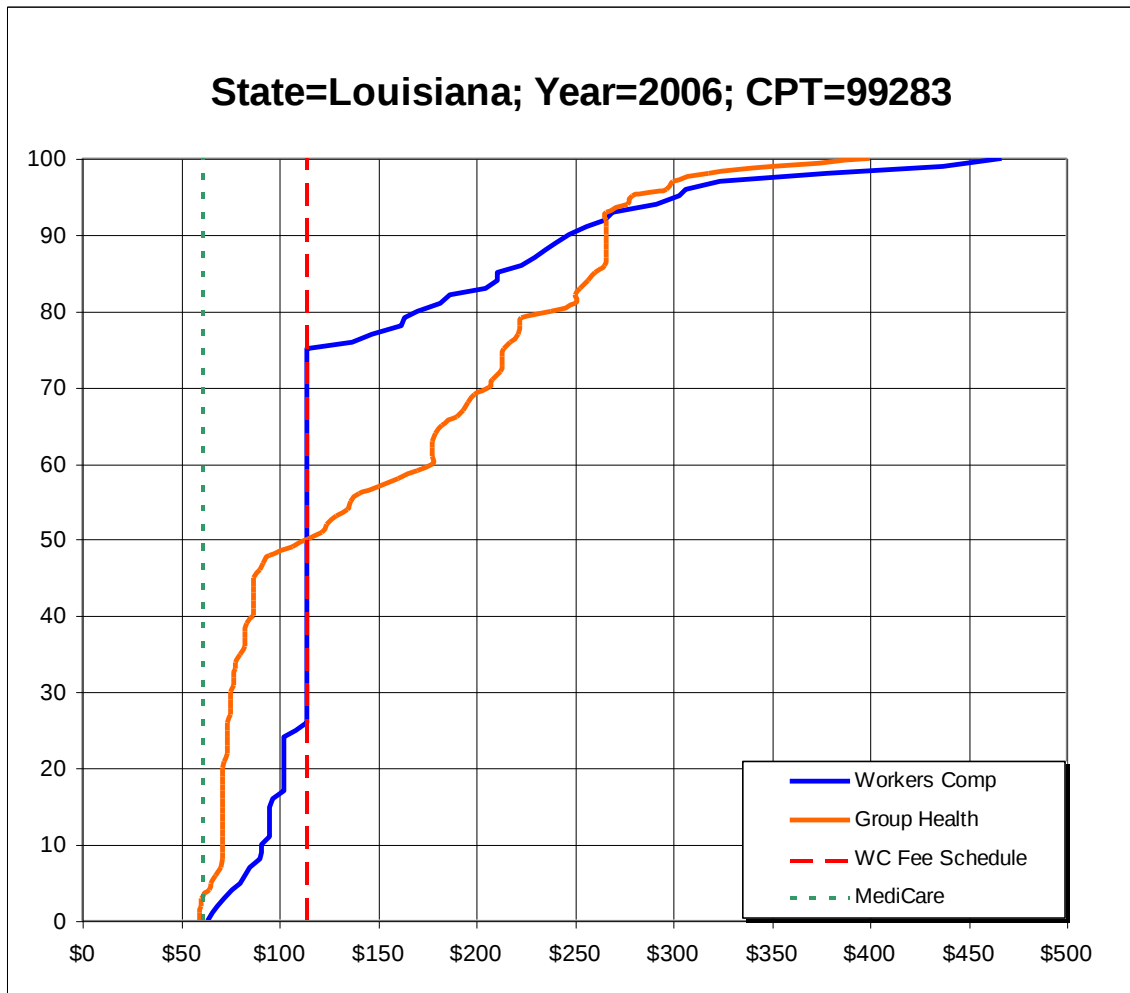
The pattern for Florida reinforces what was observed in Arizona. In Florida, the Medicare rate of \$62.88 is fairly near the MAR of \$70.25. The GH experience is not concentrated at any one payment amount. Only the WC payment pattern is concentrated, with 65% of payments made at or very near the MAR amount. Again we see not only a significant pull-back pattern on the WC curve, but also a high percentage, about 35%, of WC payments not being pulled back to the MAR.

The next two charts provide the CPT Code 99283 reimbursement pattern for two more states:

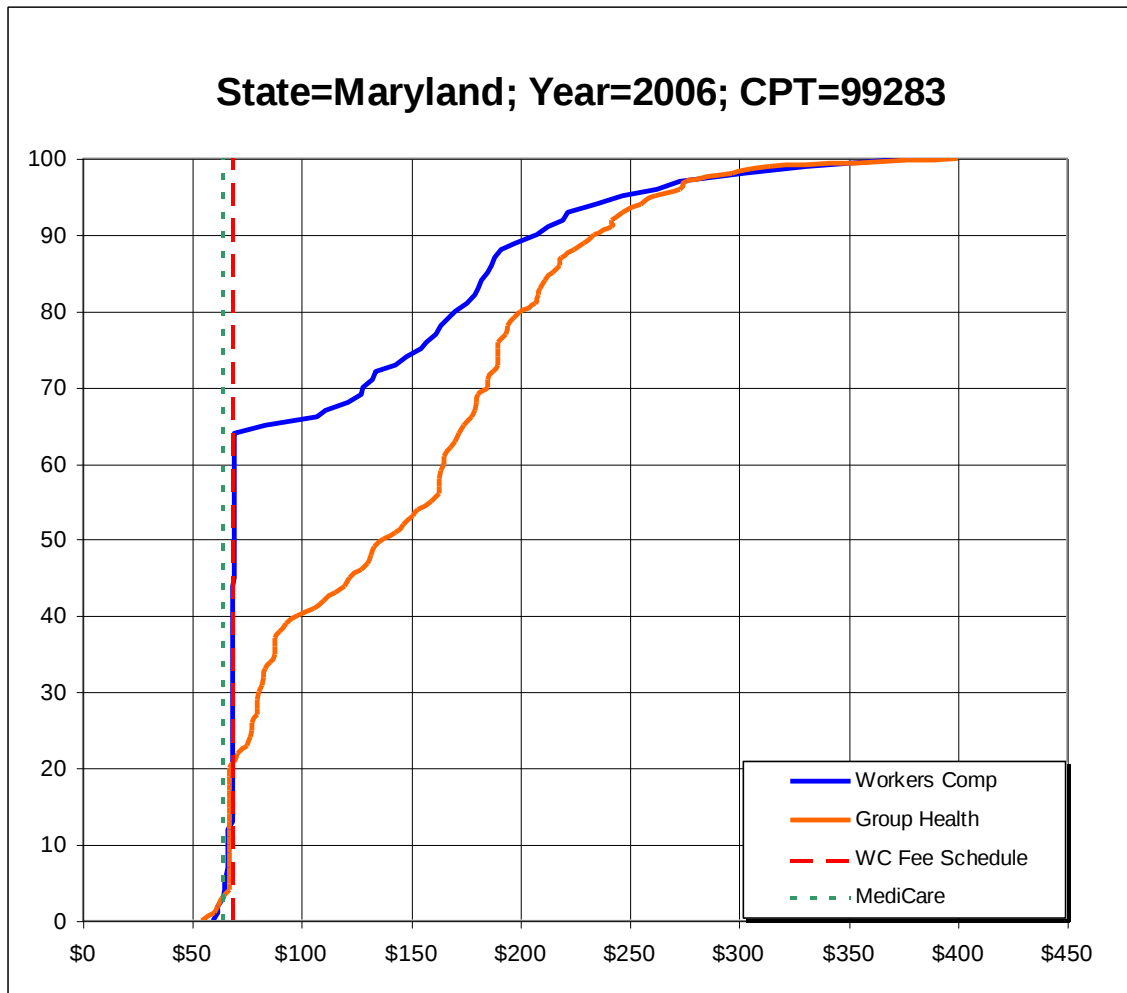




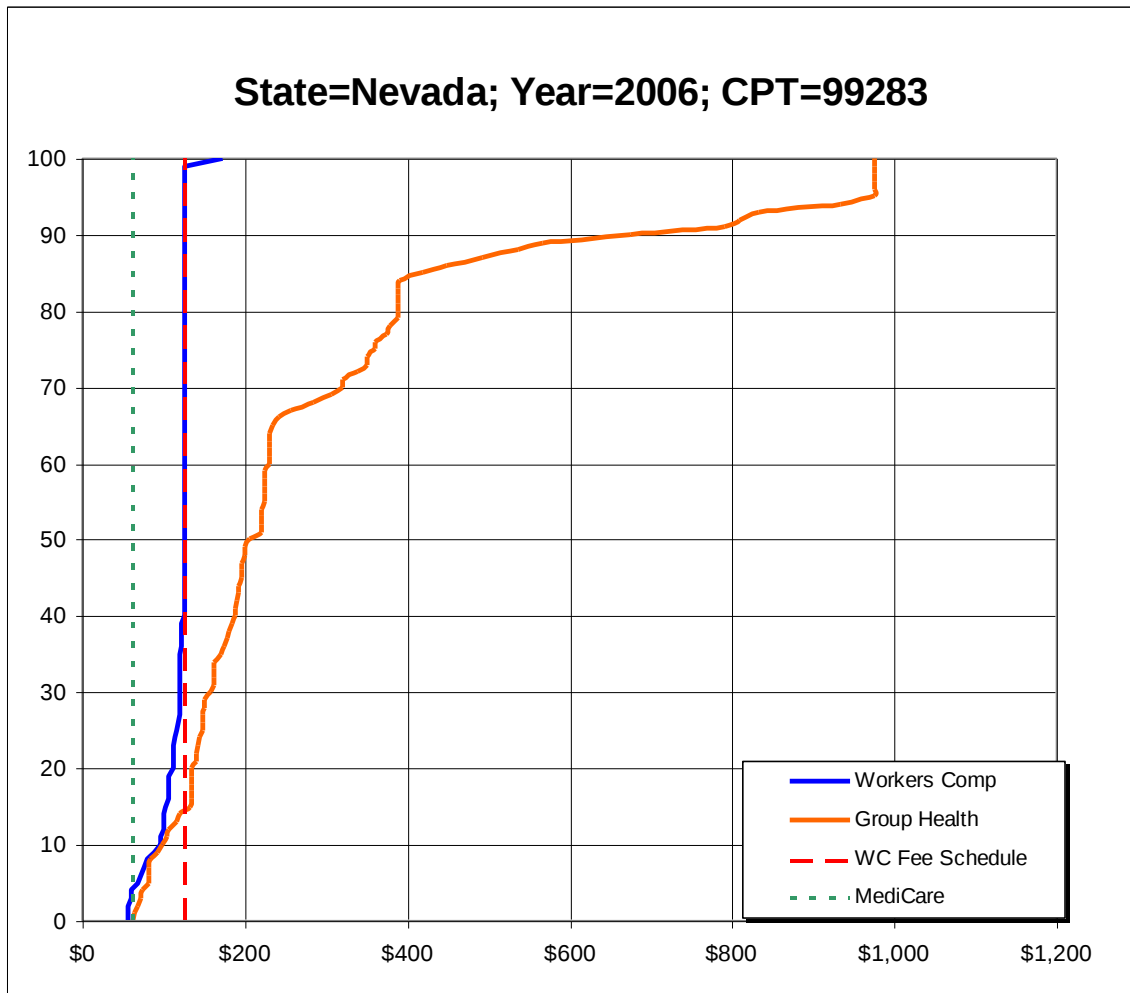
The patterns for Georgia and Kentucky are both reminiscent of what was seen for Florida and Arizona, and while the high percentage of WC payments above the MAR makes them different from the pattern for most other codes, that pattern is typical for this code among the states. Considering the areas between the WC and GH curves, these four states, unlike Alabama, have GH mostly to the right of WC, which indicates that despite being exceeded 30–40% of the time, the MAR “pulls back” the WC curve and lowers the WC reimbursement level below that for GH.



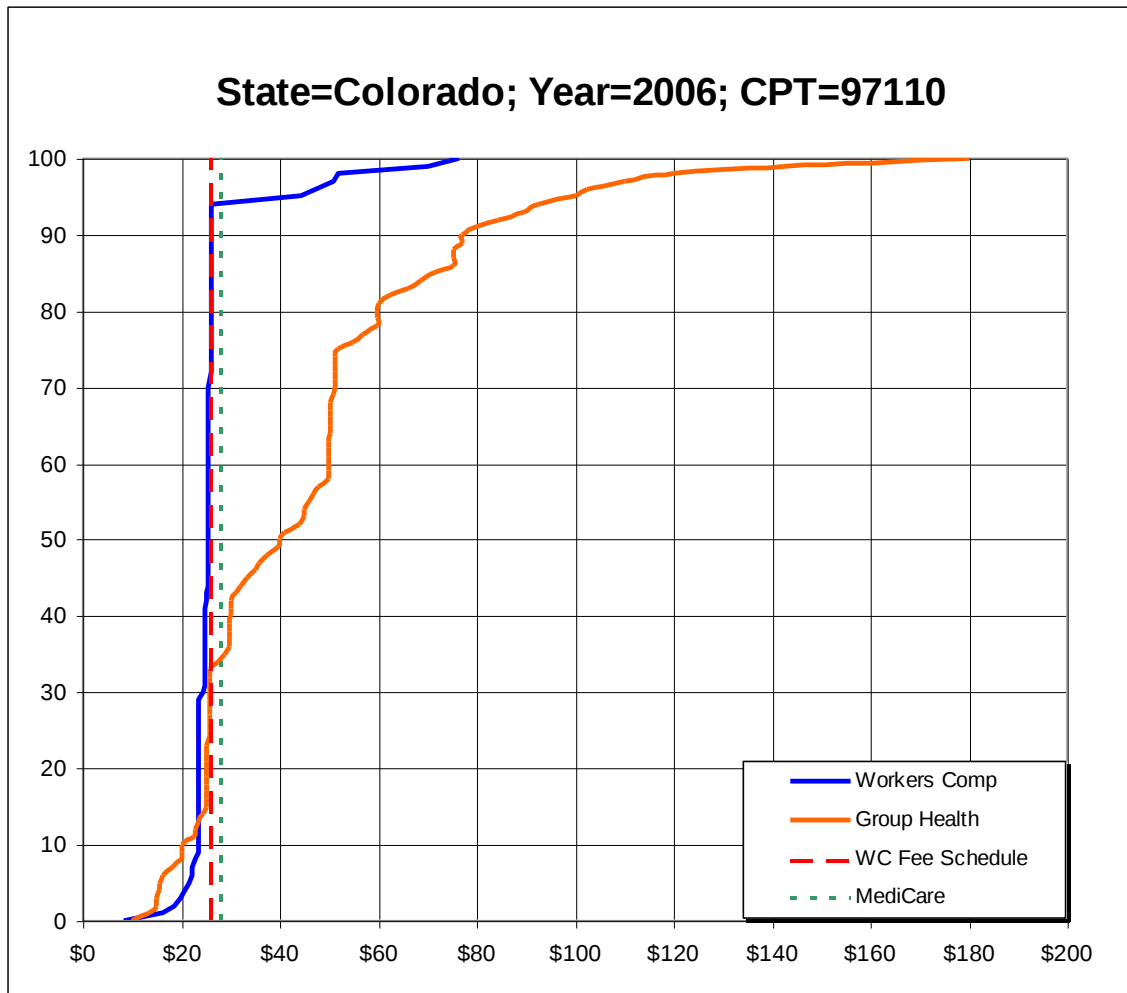
Louisiana illustrates a pattern in which the MAR is set closer to the market rate, here at the \$114 median GH payment amount. The result is greater proportions of WC and GH payments falling at or below the MAR. Considering the area between the WC and GH curves, the “pull back” is largely, but not completely, offset by a “push forward” of the WC curve to the MAR, indicating a somewhat lower reimbursement rate for WC than GH for emergency room visits in Louisiana.



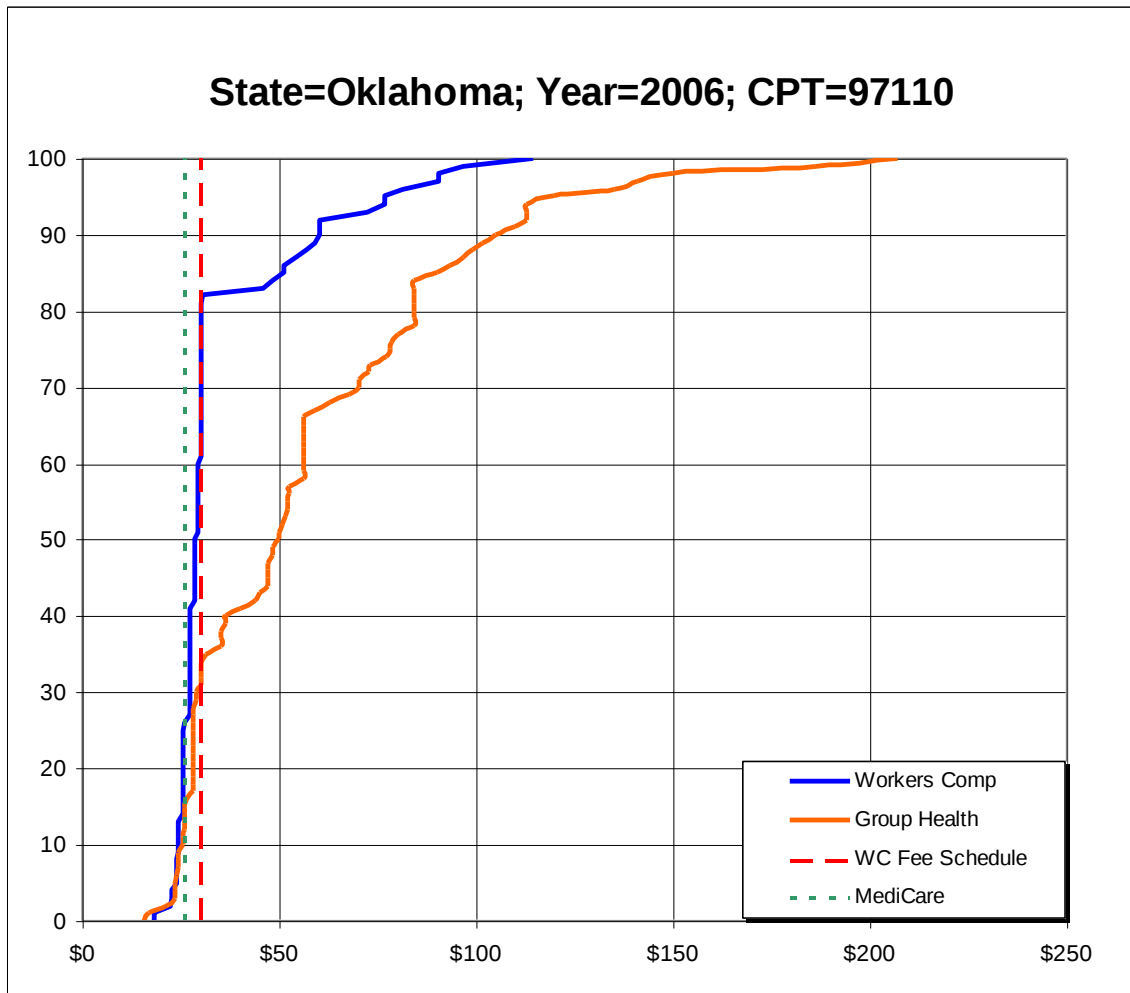
As was the case with outpatient visits, Maryland illustrates what happens when the MAR is set near the Medicare rate for emergency room visits. The pattern is very similar to that observed for Florida, which also set its MAR near the Medicare rate. And again we observe a high proportion of payments, especially GH payments, for which the Medicare and MAR amounts seem largely ignored, with 80% of GH payments above the Medicare rate and 35% of WC above the WC MAR.



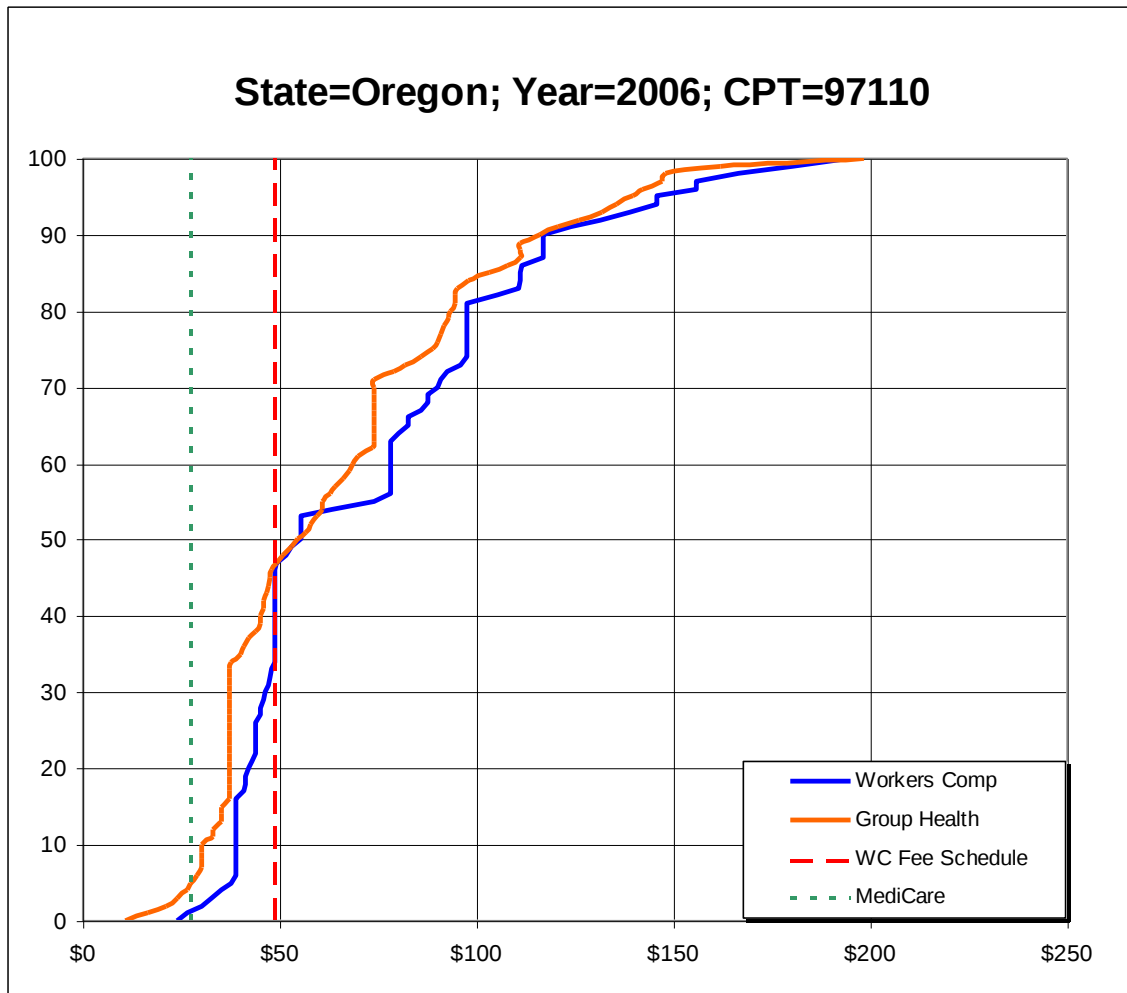
Nevada provides an exceptional picture for Code 99283, where nearly all WC payments for emergency room visits appear subject to the MAR. The WC reimbursements are extremely concentrated, with 60% at and 90% near the MAR of \$125.73. The GH payments on Code 99283 in Nevada, however, display the same spread-out pattern observed in the other states. The area between the curves dramatically illustrates the “pull back” of the WC curve to the left of the GH curve, indicating a lower reimbursement for WC than for GH, as dictated by the Nevada fee schedule.



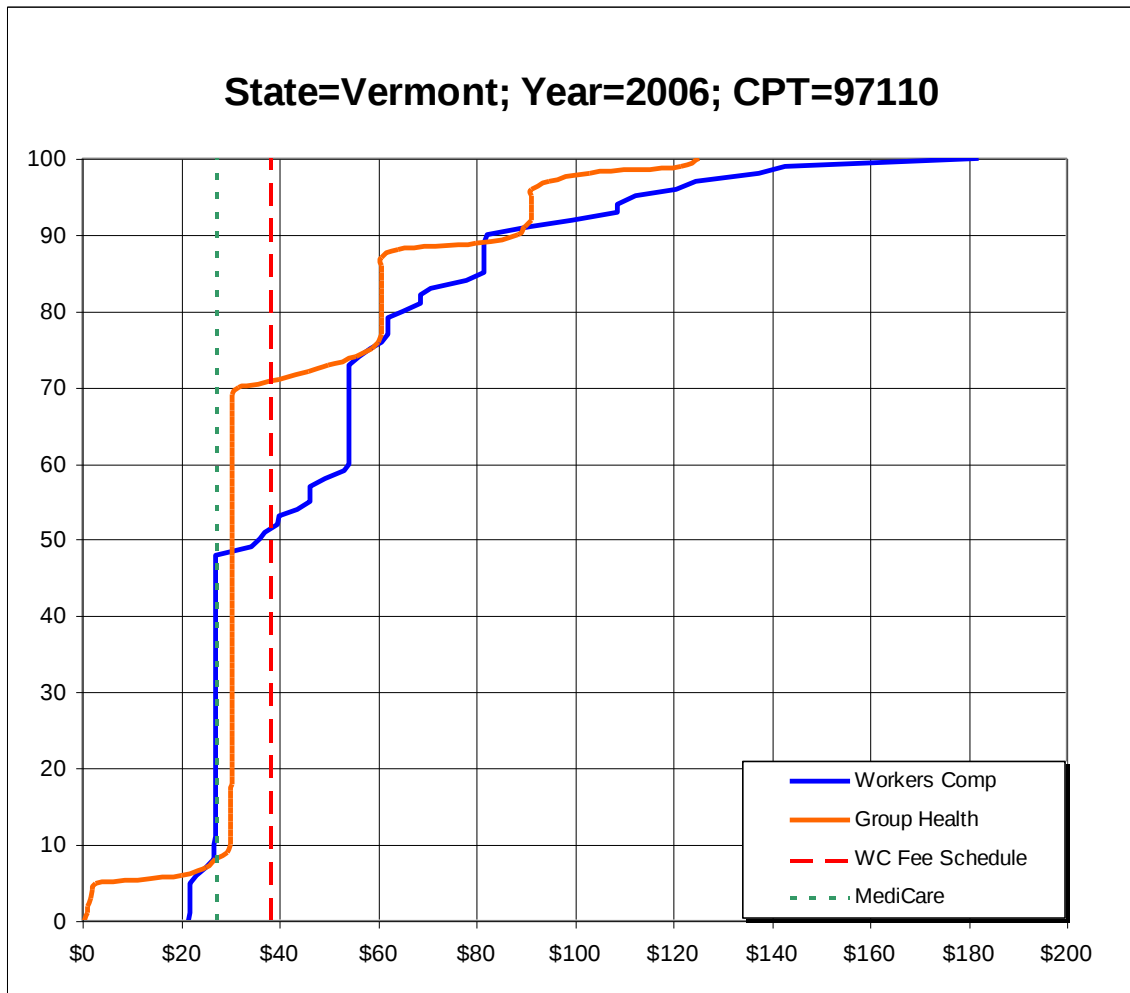
CPT Code 99110 identifies generic, therapeutic treatments that are low price physical therapy procedures. The code is very common for GH and is especially common for WC. The pattern for this and similar physical therapy procedures is generally quite similar among the states and over the years. Colorado illustrates this pattern. Here, the Medicare rate of \$28.04 exceeds the MAR at \$26.00 but the two are quite close. Correspondingly, both WC and GH payment distributions have payments concentrated around \$25. Indeed, over 90% of the WC payments are about \$25. Notice the GH concentration around \$50 (and a smaller one around \$75). These steps indicate the presence of bills in which charges for two (and sometimes three) 99110 procedures are billed together. The less pronounced corner at \$50 on the WC curve is also likely due to grouped charges. The area between the curves has mostly GH to the right. We conclude that GH has a higher reimbursement level for 99110 but that most of that is attributable to a higher proportion of the 99110 billings in GH being for multiple applications than for WC experience in Colorado.



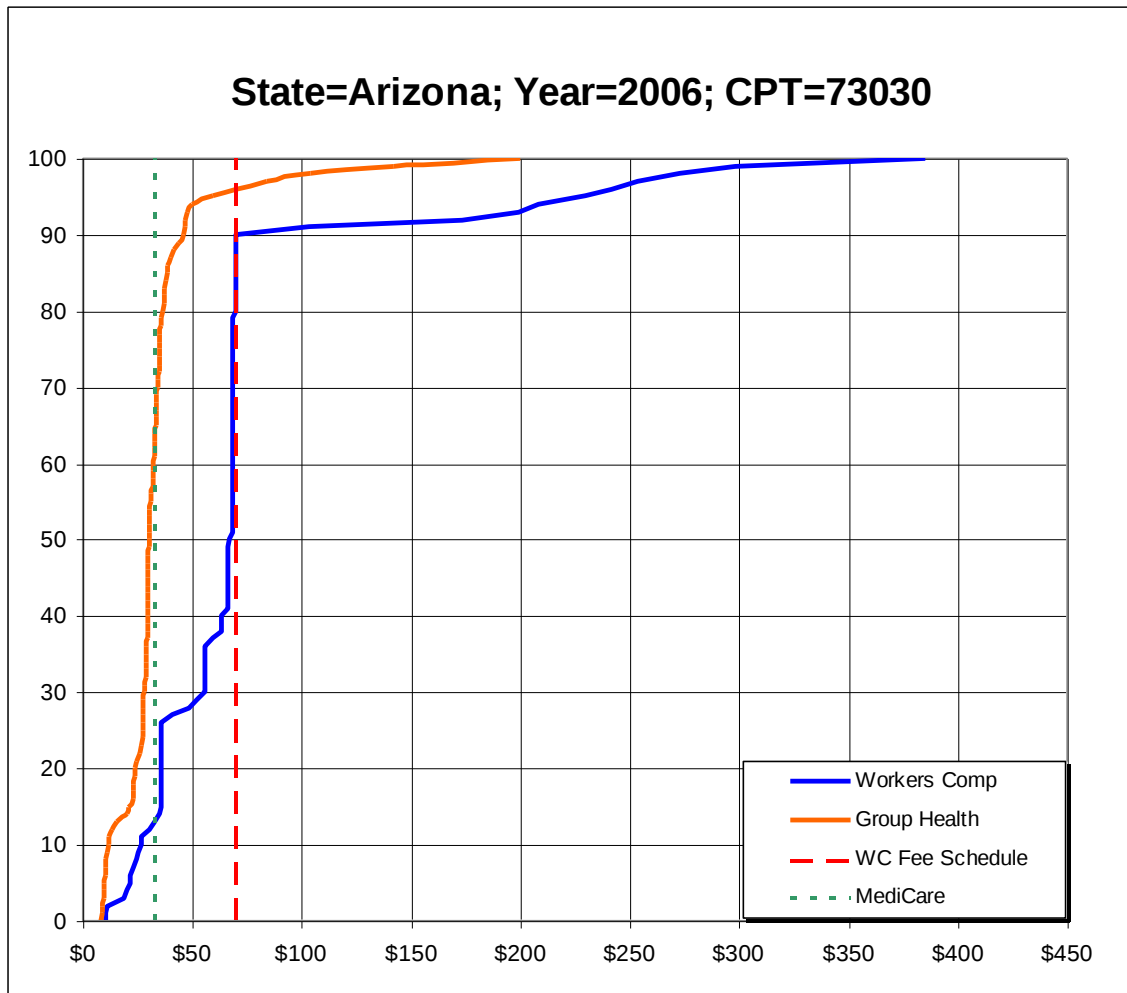
The 97110 chart for Oklahoma also shows how grouped billing produces multiple concentration points. GH has steps at \$26, \$52, and \$78 corresponding to billings for one, two, and perhaps three applications. WC has a step at the MAR of \$30.12 and another at \$60.24 that correspond with one and two applications billed together. In Oklahoma, 80% of WC charges for Code 97110 are billed as a single application for which the MAR applies directly; while for GH only about half that proportion, 40%, is for a single application. The GH single-application rate is concentrated between the Medicare rate of \$26.08 and the MAR. Similar to Colorado, the area between the curves shows a higher GH reimbursement level for 97110 in Oklahoma, mostly due to more multiple application billings for 97110 in GH than in WC.



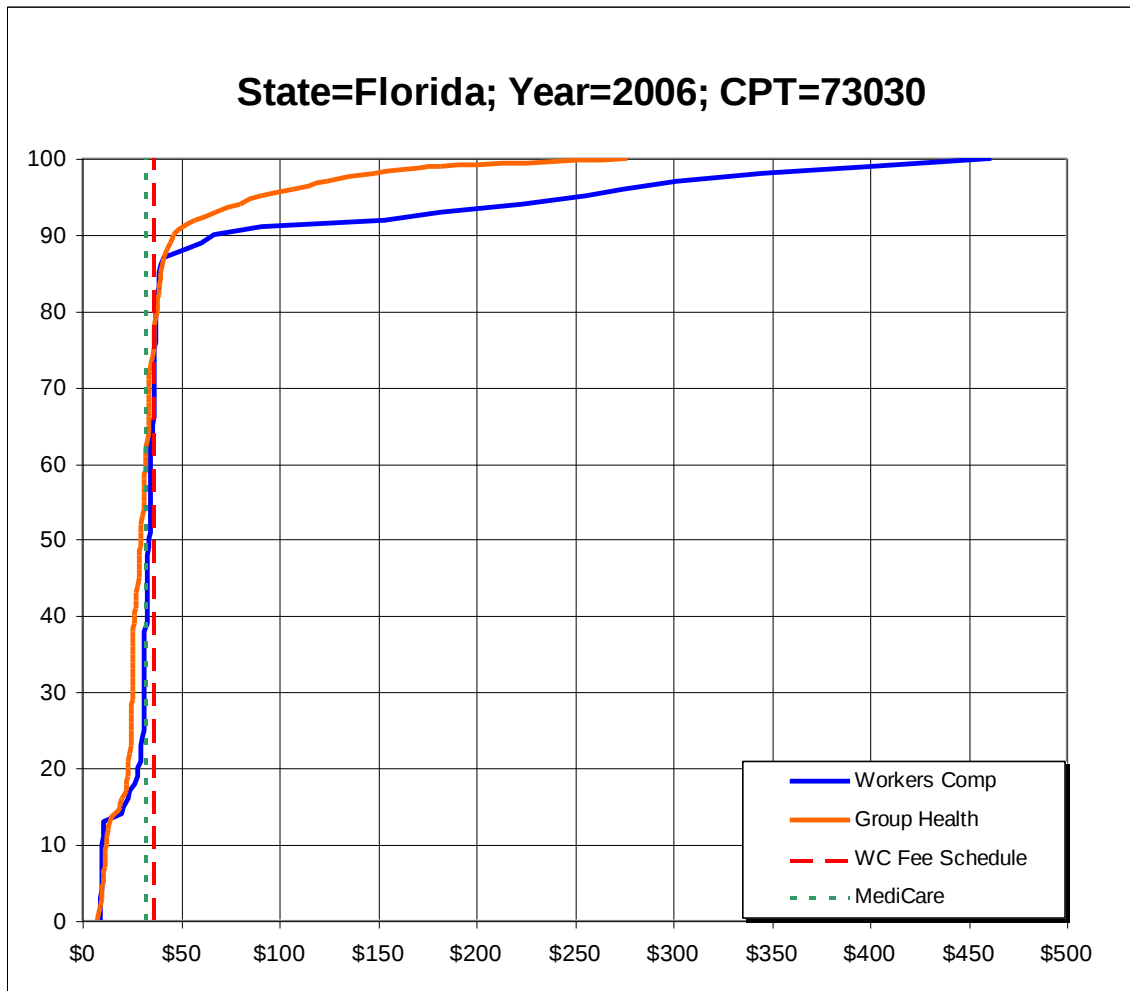
Oregon again presents a pattern of grouped billing and multiple concentration points. Note first that the Medicare rate of \$27.44 appears unrealistically low for the Oregon marketplace since neither the WC nor the GH charges have a significant proportion of charges at such a low amount (with the farthest left charges being more likely incidental supplies billed to the Code 97110 procedure than for the professional service itself). GH has steps at \$37, \$74, and \$111 corresponding to billings for one, two, and three applications. For WC, in addition to steps at the MAR of \$48.68 and another at twice that amount, WC also has concentrations near the GH steps of \$37 and \$74. This implies that WC reimburses both at the “market” GH rate and at the MAR rate for 97110. WC and GH are also similar inasmuch as both have about half of the charges for Code 97110 billed for a single application. Considering the area between the WC and GH curves, WC is to the right, which implies a higher WC reimbursement rate; however, the area is not large and that also suggests that WC and GH have fairly close reimbursement rates for 97110.



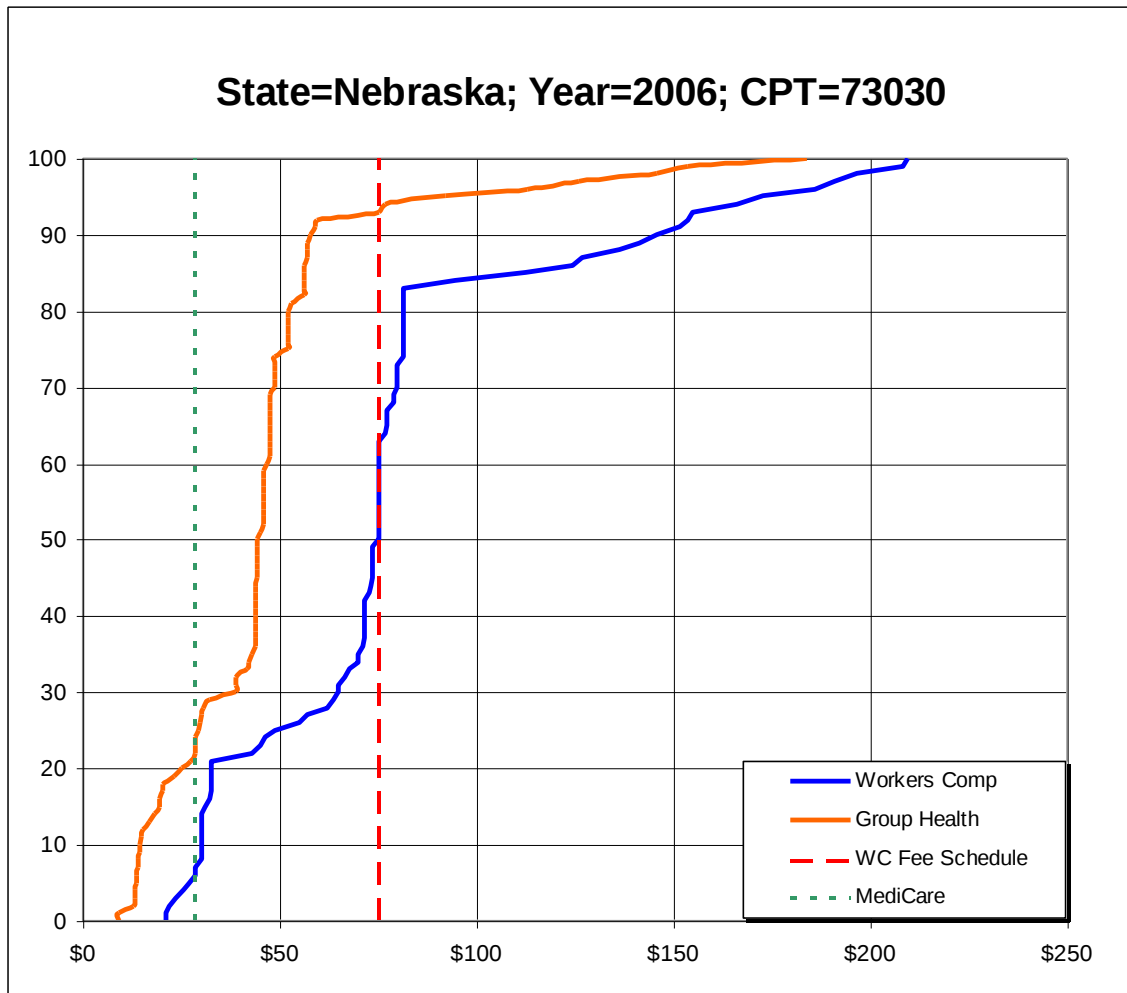
Vermont presents yet another pattern of grouped billing and multiple concentration points. Note first that the Medicare rate of \$27.35 effectively dominates for WC charges (with clusters at \$27.18, \$54.36, and \$81.54) rather than the MAR of \$38.31. GH reimburses more than Medicare, paying \$30.43 per application (with multiple clusters at \$60.86 and \$91.29). In Vermont, 70% of GH charges for Code 97110 are billed as a single application; while for WC, less than half the charges are for a single application. Because most of the area between the WC and GH curves has WC to the right, we conclude that a higher reimbursement level for WC is entirely attributable to more multiple applications in the GH billings than for the WC billings under Code 97110.



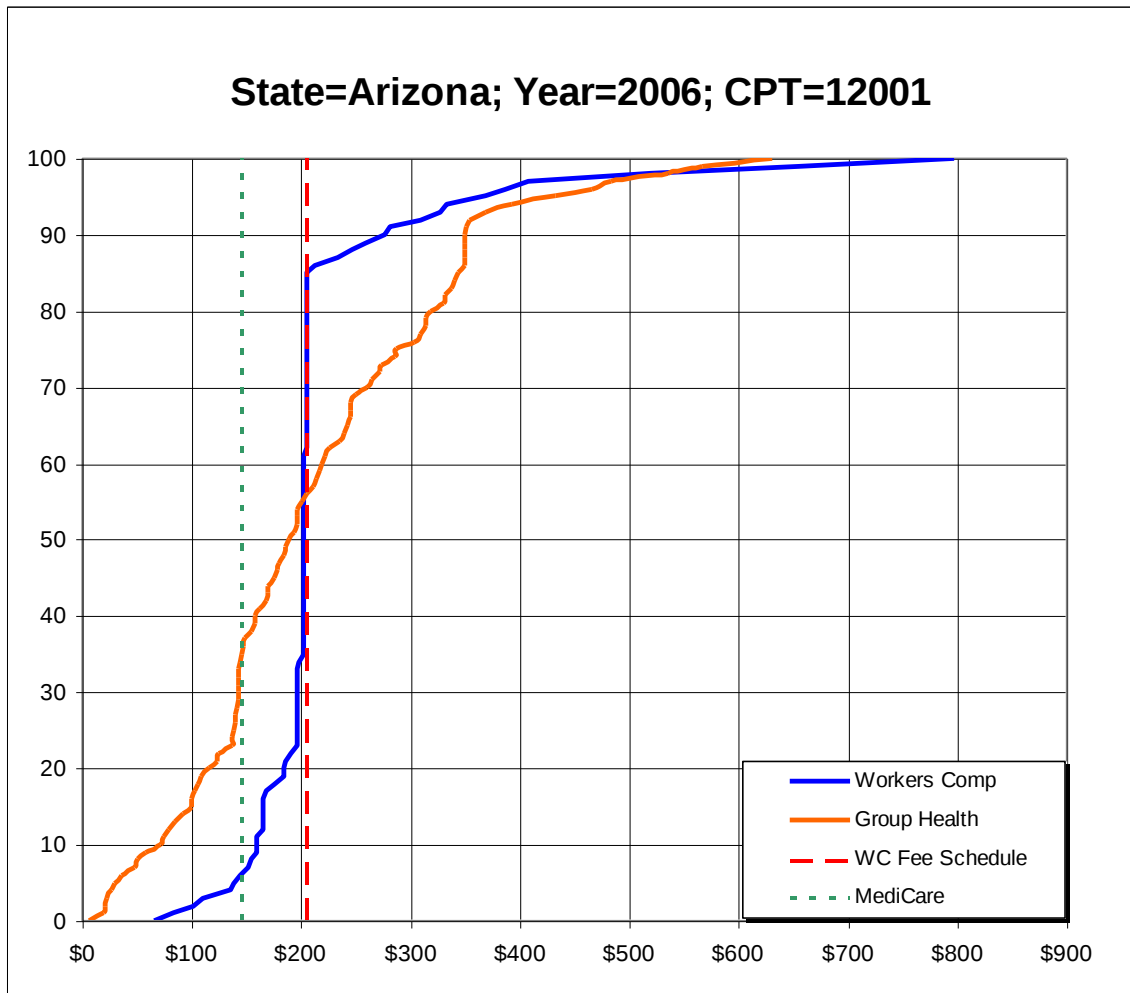
CPT Code 73030 identifies a radiological exam of the shoulder. For Arizona in 2006, we observe that about 60% of GH charges are near the Medicare rate of \$32.53, while 50% of WC charges are paid at near the MAR of \$70, more than double the usual GH reimbursement. WC also has another 10% concentrated at the Medicare rate. Even with a MAR set at double the GH “market” rate, WC has 10% of the charges exceeding the MAR, while GH has less than 5%. Also, the spread-out shape of the right-hand tails does not suggest that multiple applications of the procedure are driving the WC or GH charges up over MAR, but rather suggests a more variable cause, like the presence of medical complications or the inclusion of a technical component in a small percentage of the billings. The basic message here is that setting the MAR so far above market leads to higher reimbursements that, in turn, increase WC costs for this common radiological service.



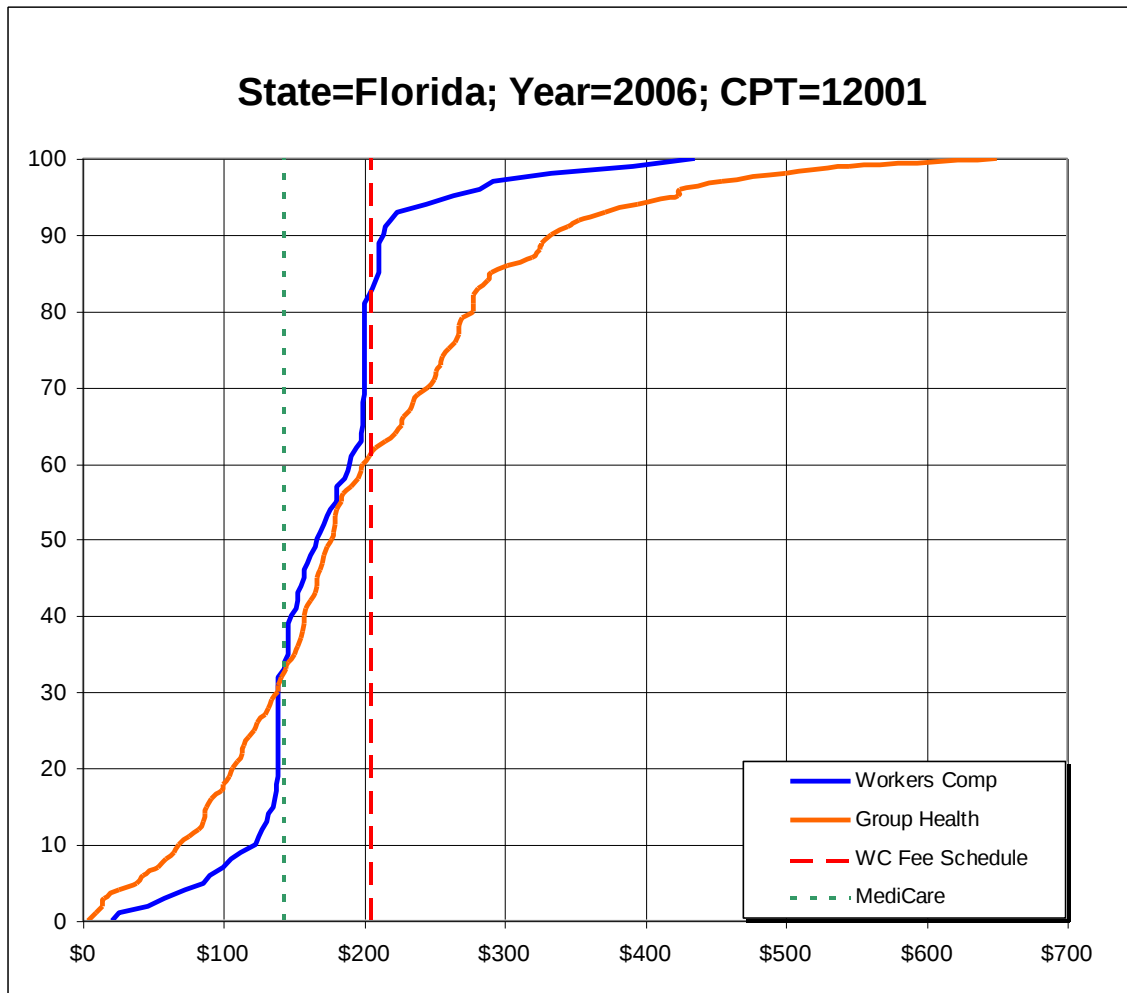
The MAR of 36.25 for Florida in 2006 is much closer to the Medicare rate of \$32.10, and this yields a significantly different picture. Both WC and GH have around 70% of their reimbursements concentrated near \$30. We find that WC and GH have about 10% of their charges exceeding the MAR and, again, the spread-out shape of the right-hand tails suggests the presence of medical complications or the inclusion of a technical component in a small percentage of the billings. This renders the top ends of the WC and GH curves above the 90th percentile difficult to interpret. This means that 90% of the time, GH and WC are reimbursing for this radiological procedure at very similar rates.



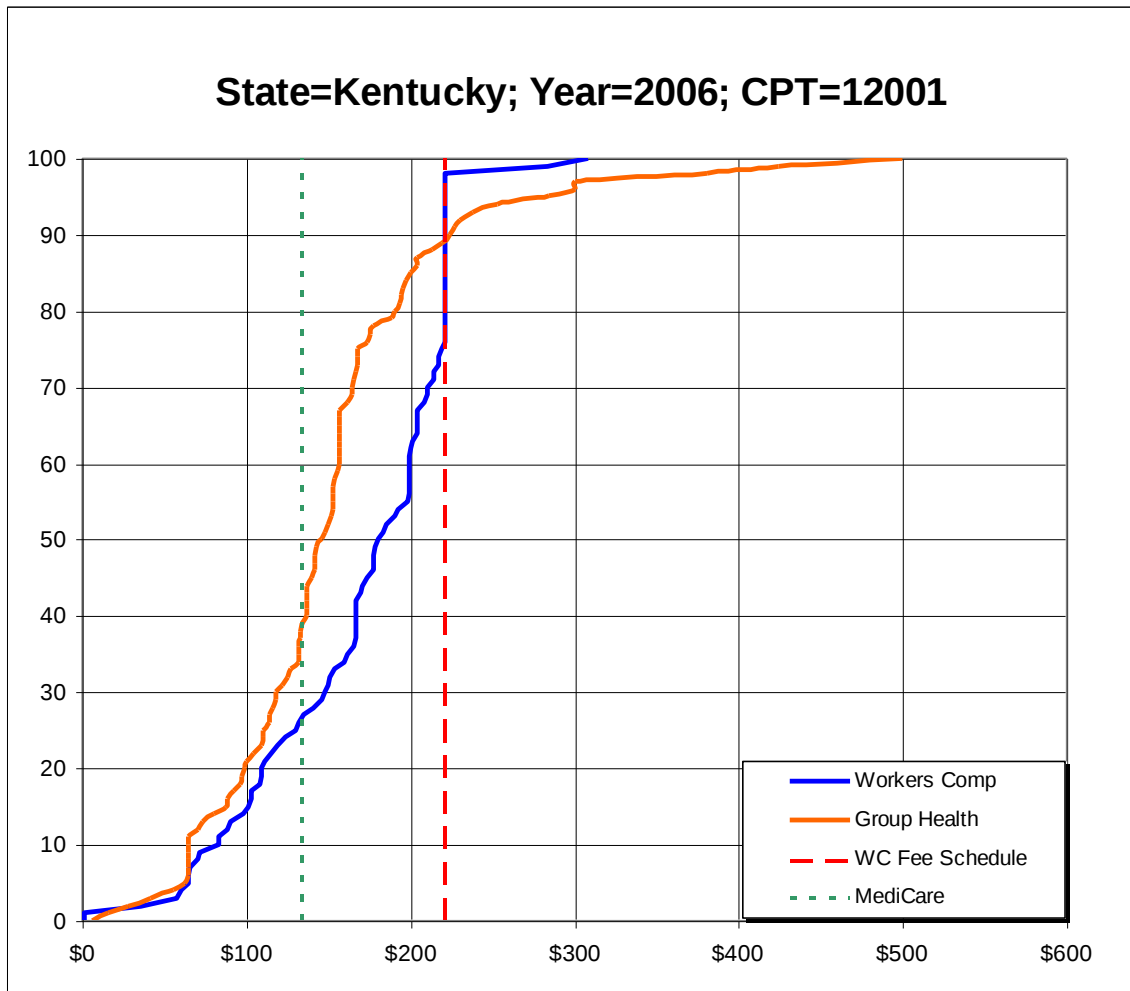
The MAR of \$75.12 for Nebraska in 2006 is more than two and a half times the Medicare rate of \$28.57 and half again that of the \$50 reimbursement typical of GH. WC shows about 30% of reimbursements near the MAR and another 10% concentrated at the Medicare rate. Even with a MAR set well above the GH “market” rate, WC has 35% of the payments exceeding it, while GH has only about 5%. Perhaps the small step in the WC curve at \$150, about twice the MAR, is from multiple applications of the 73030 procedure, but that would account for at most only a small part of the WC reimbursements in excess of the MAR. Moreover, the spread-out shape of the right-hand tails for both WC and GH, again, is more suggestive of the inclusion of a technical component in some of the highest reimbursements (and when reimbursements are itemized by provider, hospitals have a significantly higher level of reimbursement than physicians). The message for Nebraska is similar to that for Arizona, only more so since the difference in WC and GH reimbursement levels is greater—setting the MAR well above the market rate results in higher paid amounts that in turn increase WC costs for shoulder X-rays.



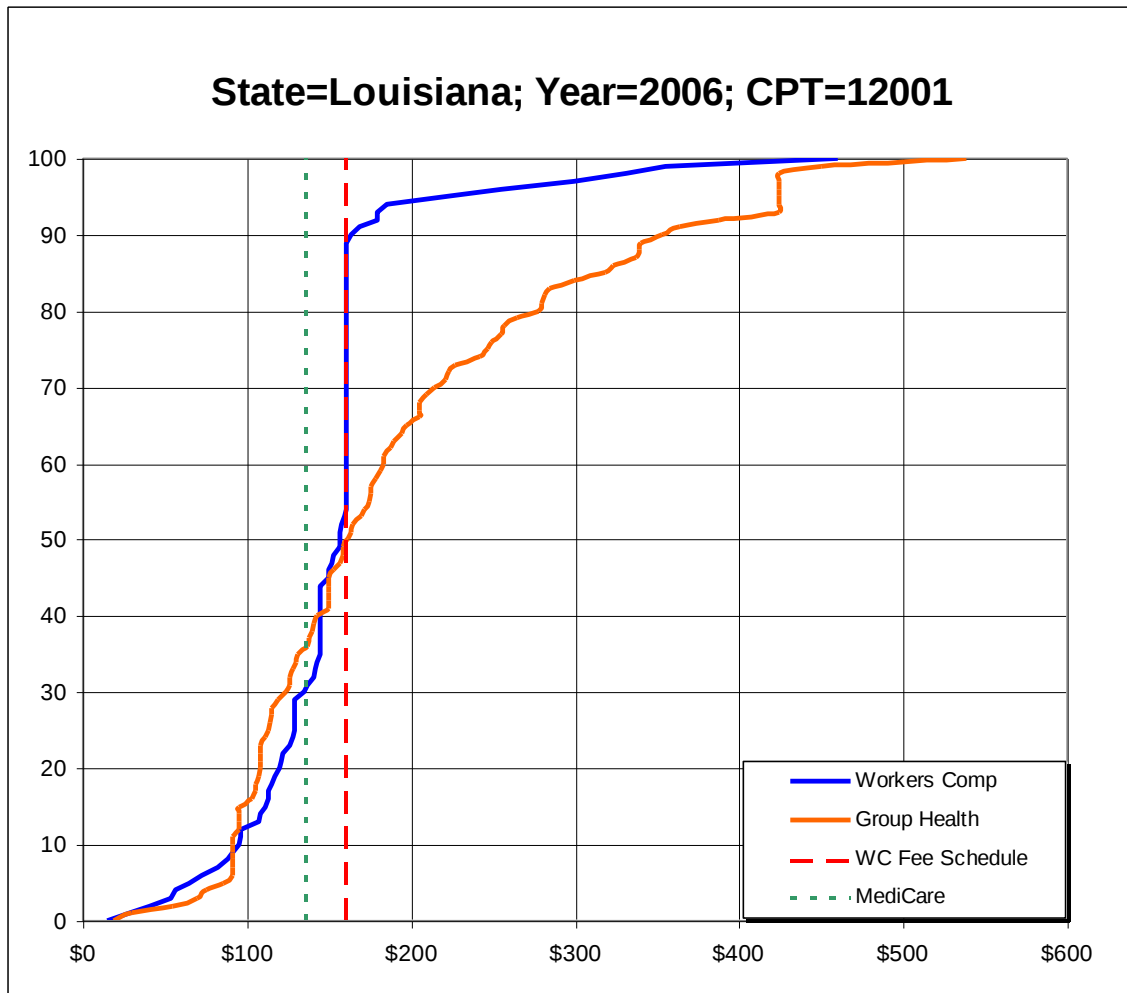
CPT Code 12001 identifies a simple surgical repair of a laceration or cut, up to 2.5 cm. and is a very common procedure for WC as well as for GH. For Arizona in 2006, we observe that about 65% of WC charges are near the MAR of \$206, which is itself more than 40% greater than the Medicare rate of \$145.32 ($206 / 145.32 = 1.42$). The GH curve is fairly S-shaped with only one concentration point at the Medicare rate, where 5% of the GH payments cluster. WC has 15% of reimbursements exceeding the MAR, while nearly half the GH charges exceed the MAR. Consequently, while we observe a “pull back” to MAR of the WC curve, that stops at the 85th percentile. For the payments below \$200, the WC curve appears to be “pushed forward” nearer MAR and increases WC reimbursement compared with GH, while the “pull back” above \$200 decreases it. The two corresponding areas between the WC and GH curves are similar and effectively cancel each other out. For this routine surgical procedure, therefore, Arizona provides an example where the cost impact of the fee schedule appears to be mixed.



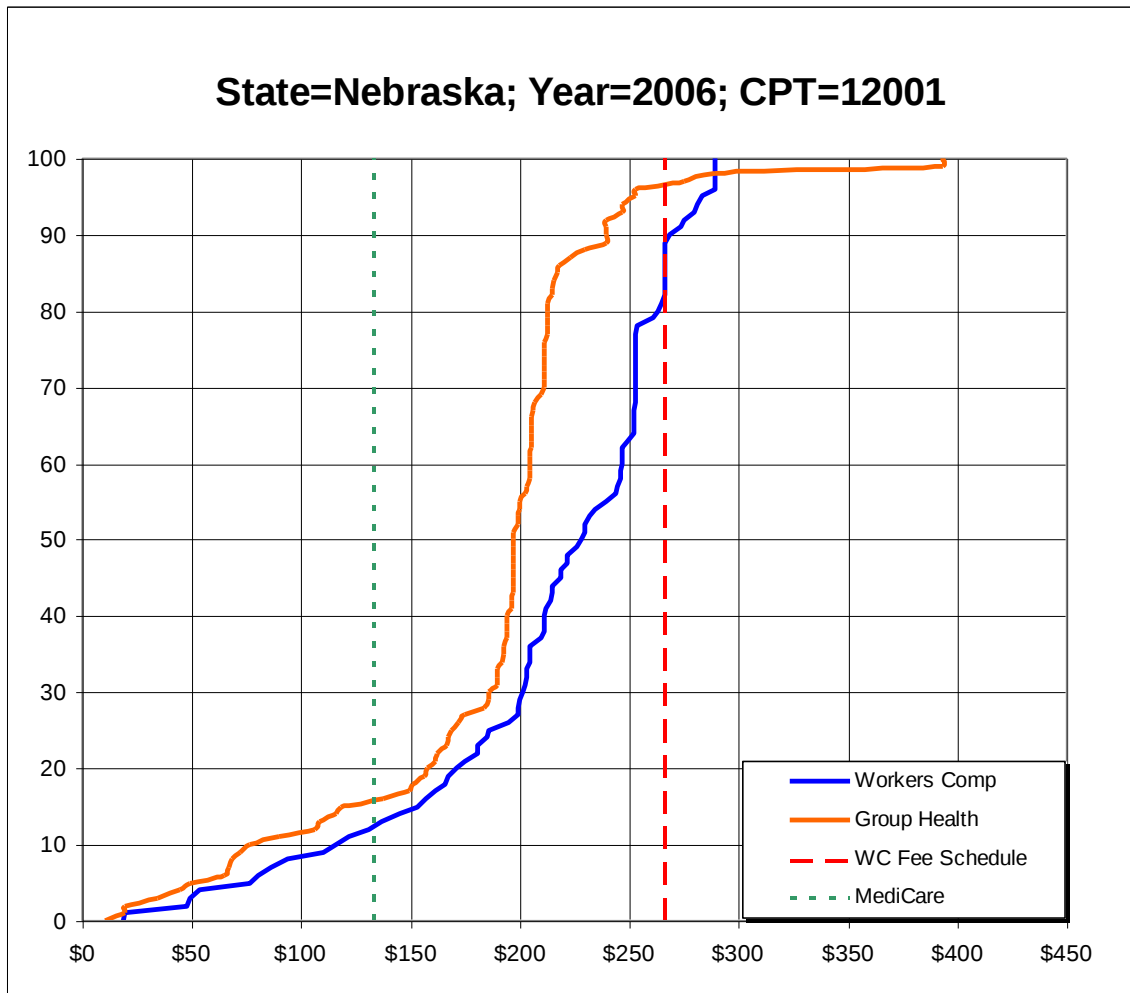
For Florida, the GH curve is S-shaped with no concentration points, while the WC curve has some concentration at the Medicare rate of \$143.84 as well as concentration at the \$204.25 MAR. WC has 10% of reimbursements exceeding the MAR, while 40% of the GH payments exceed the MAR. Consequently, while we observe a “pull back” to MAR of the WC curve, that stops at the 90th percentile. For the Medicare payments below, the WC curve concentration at the Medicare rate “pushes forward” the WC curve and, therefore, increases payments over GH. On the other hand, the “pull back” of the WC curve for the MAR reduces the WC reimbursement by more than the “push forward” increases it. We conclude that the Florida fee schedule produces a net WC savings in expected reimbursements for sutures and the like as compared with what GH pays.



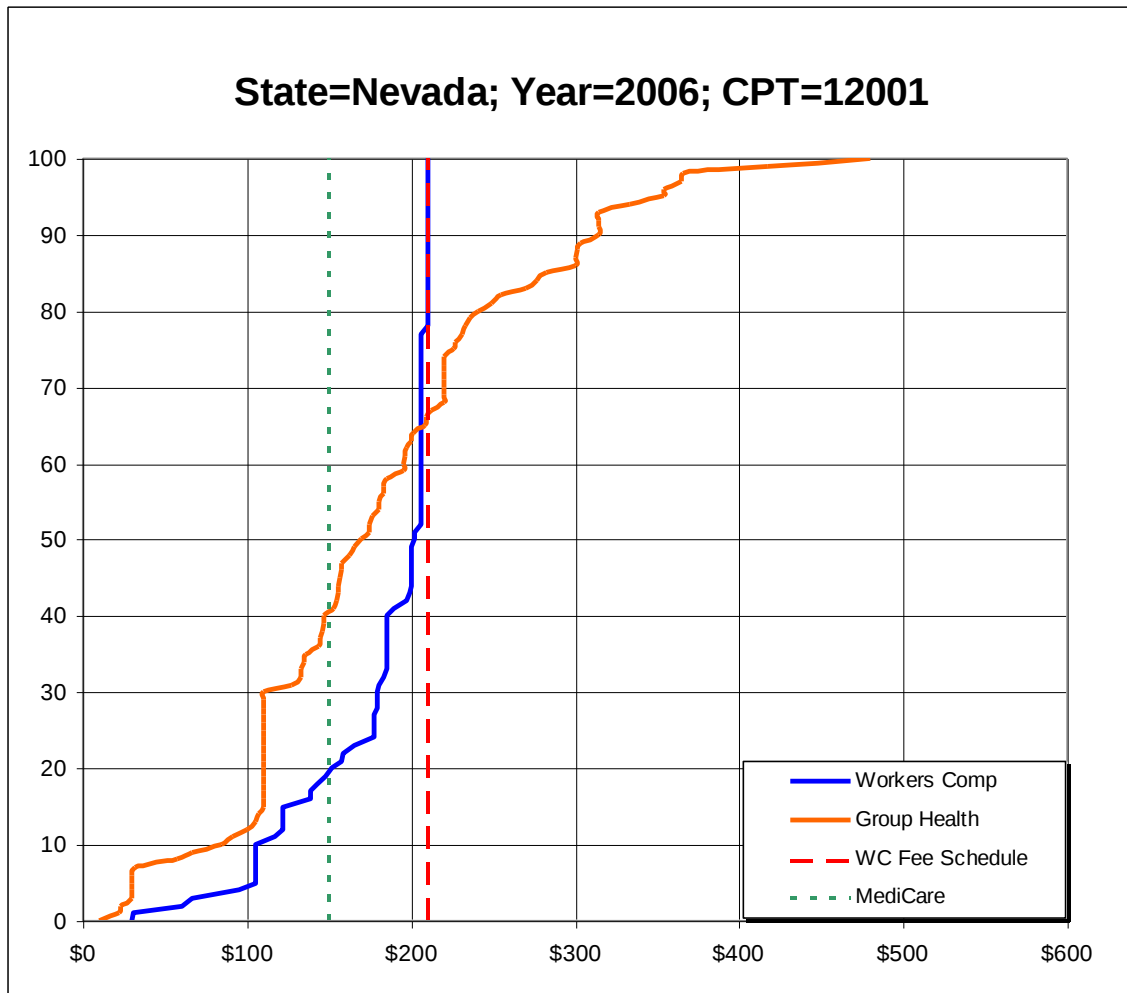
For Kentucky, the GH curve is again S-shaped, with only a small corner step at the Medicare rate of \$133.79, while the WC curve has only about 20% of its charges at the higher MAR of \$221.31. WC reimbursement is essentially limited by the MAR, while GH has about 10% of the charges exceeding the MAR. Consequently, we observe only a small “pull back” to MAR of the WC curve, and most of the area between the WC and GH curves represents an increased reimbursement for WC over GH. This case of minor surgical repair in Kentucky illustrates the “unintended consequence” of the fee schedule increasing WC reimbursements by pushing lower end payments upward to the MAR.



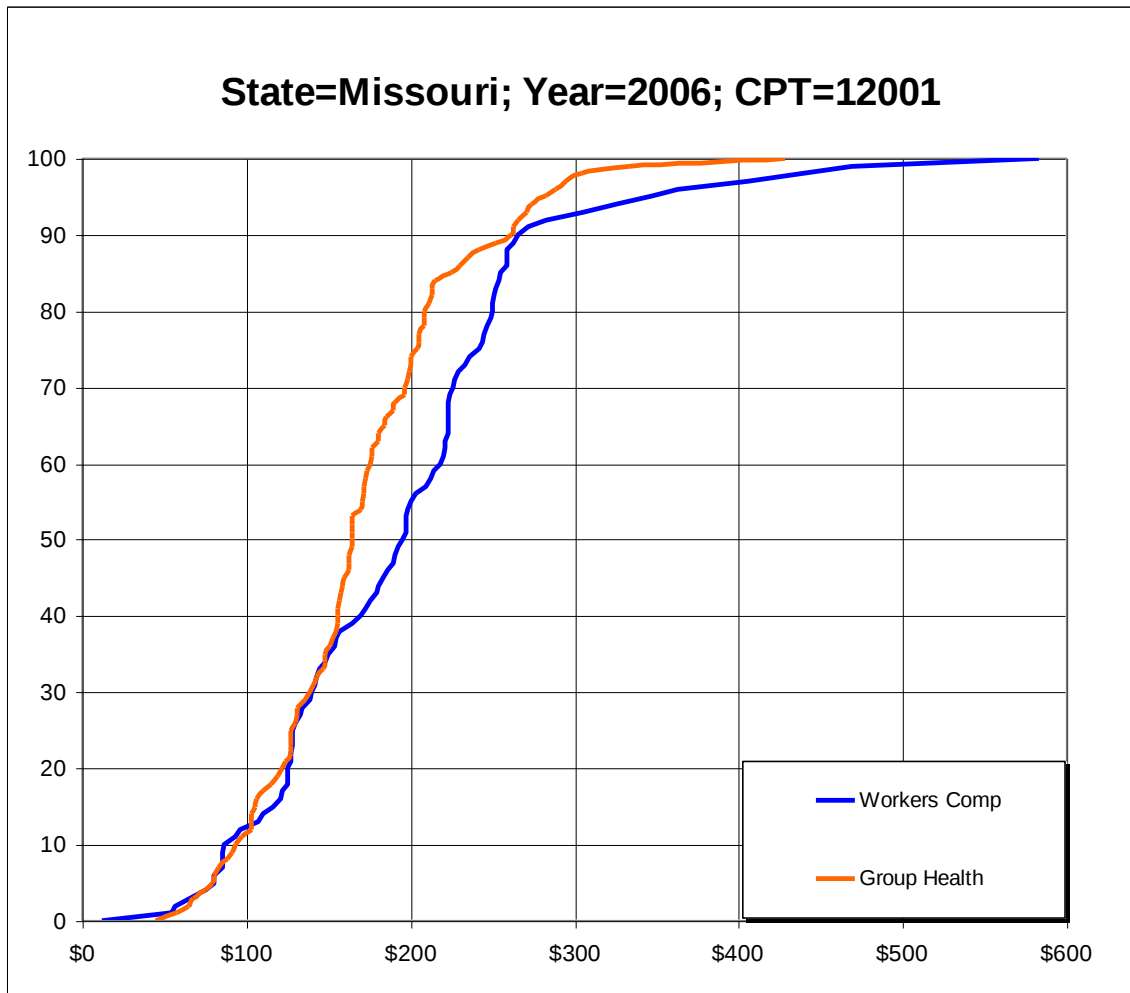
For Louisiana, the GH curve is again S-shaped with no significant clusters, while the WC curve has about 40% of its charges at the MAR of \$161, set at less than 20% above the Medicare rate of \$135.65 ($161 / 135.65 = 1.187$). WC reimbursement is largely limited by the MAR with about 10% of its charges being greater, while GH has about 50% of its charges exceeding the MAR. Consequently, we observe a significant pull back to MAR of the WC curve, which accounts for most of the area between the WC and GH curves and a lower reimbursement for WC than for GH. In contrast with Kentucky's "unintended" increase in WC reimbursement, Louisiana payments for CPT 12001 provide a textbook illustration of how a fee schedule is intended to control prices by selectively cutting back charges that are well above market value.



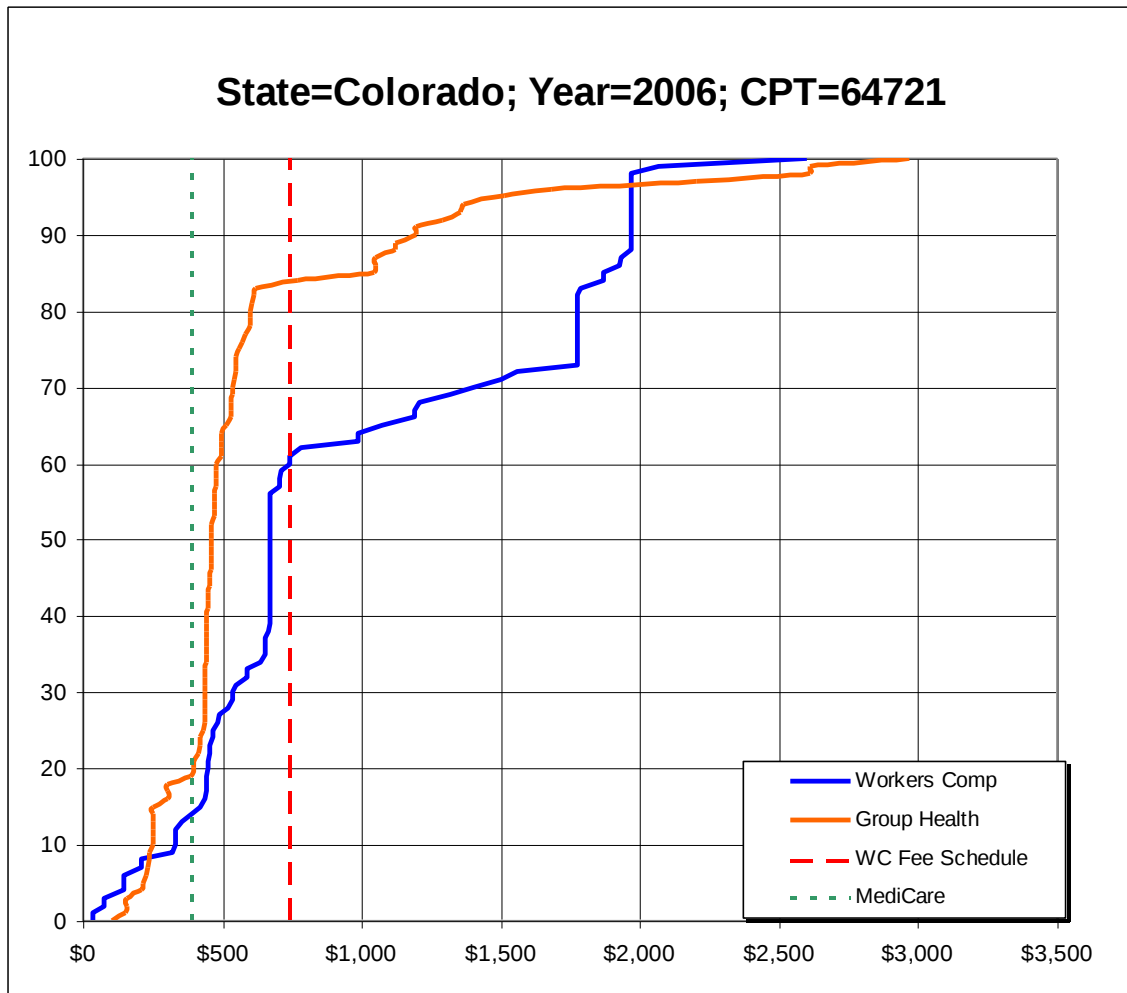
The Nebraska reimbursement experience for CPT procedure 12001 is another textbook example, here showing how a MAR set well above market can introduce incentives to raise WC reimbursement rates and increase WC costs. The Nebraska MAR of \$266.37 is just double the Medicare rate of \$133. Less than 5% of GH charges exceed this MAR. The GH curve shows no concentration points, and the WC curve has just 10% of charges concentrated at the MAR. The high MAR essentially sits to the right of the experience and draws the WC curve toward it. This results in the WC curve being consistently to the right of the GH curve, which means that WC reimbursement is consistently above that for the market, as measured by GH experience.



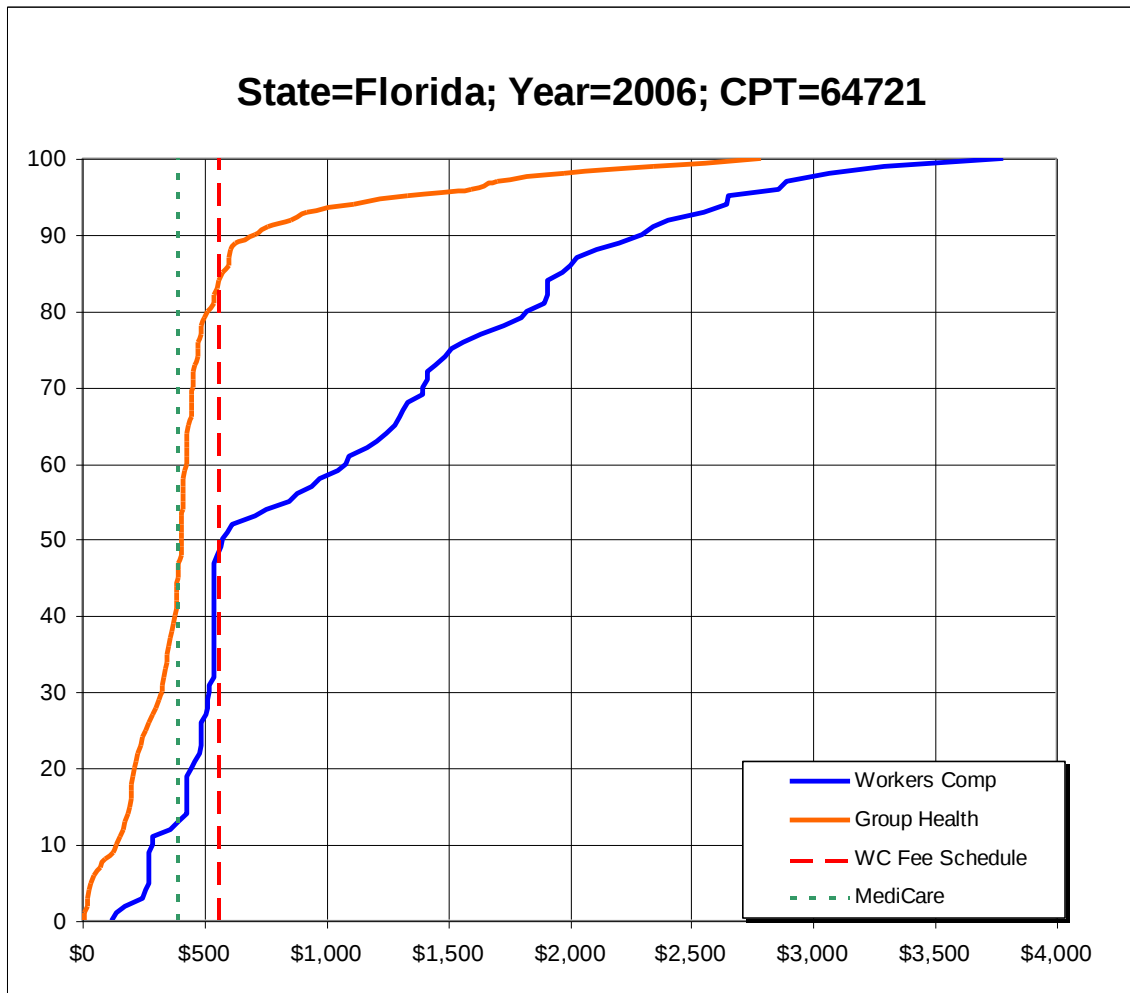
The Nevada reimbursement experience for CPT procedure 12001 provides another example of how the same MAR can increase some WC reimbursement by “pushing” smaller reimbursements upward while also “pulling” some WC reimbursement down to the limit. The 2006 Nevada MAR of \$210.72 is over 40% above the Medicare rate of 149.35 ($210.72 / 149.35 = 1.411$). About 35% of GH charges exceed the MAR, while the WC charges are limited to the MAR, which accounts for nearly 50% of the WC reimbursements. It is interesting that both WC and GH have some concentration of payments at around \$110, well below the Medicare rate. This is likely the result of a negotiated discount that accounts for 15% of GH payments but only 5% of WC payments. Considering the area between the WC and GH curves, we see that this has two pieces. The lower piece has WC to the right and corresponds to the MAR pushing the WC curve closer and increasing WC reimbursement. The upper piece has WC to the left since limiting to the MAR pulls back the WC curve and lowers WC reimbursements. The two areas appear rather similar and offsetting. As did Arizona, Nevada provides an instance where the cost impact of the fee schedule appears to be mixed.



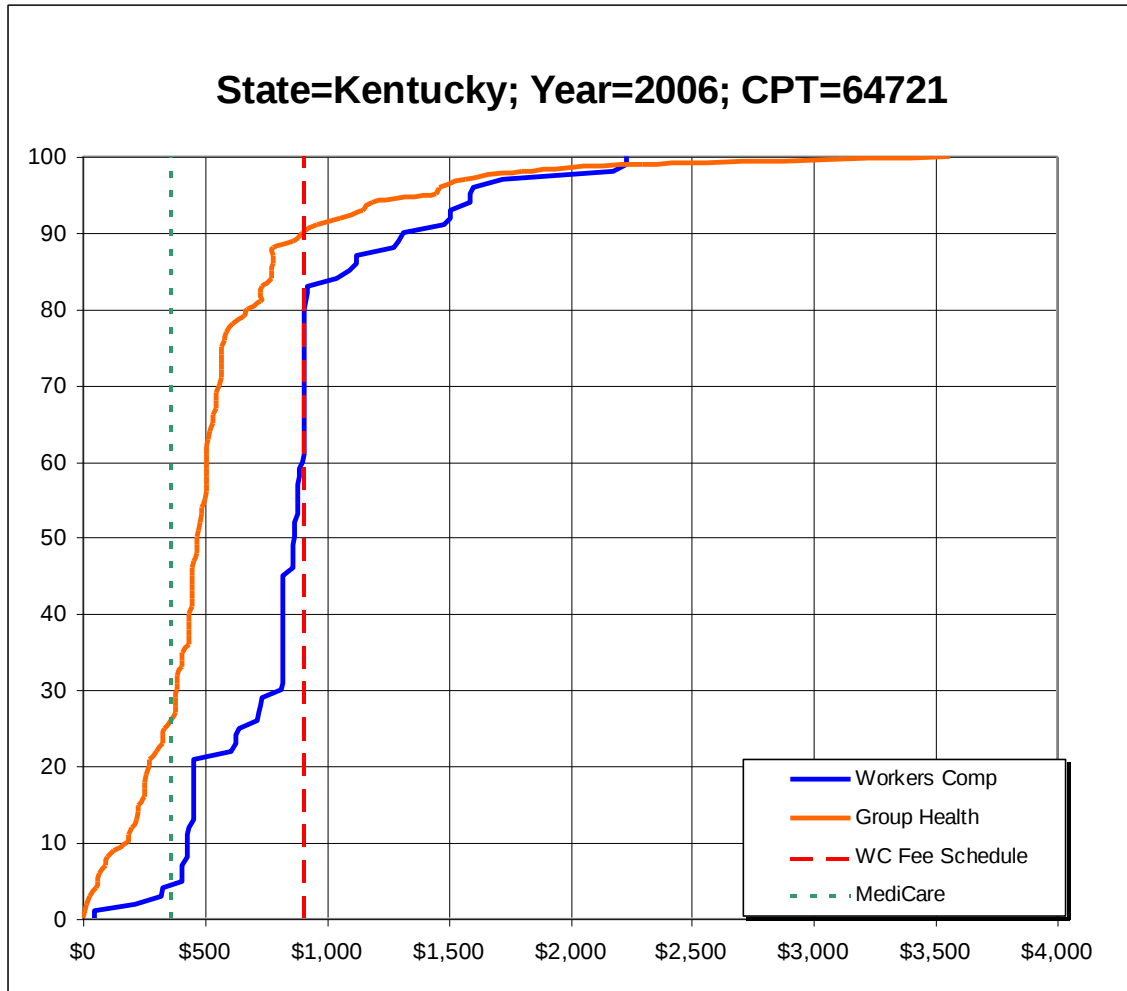
We have hypothesized that setting a MAR too high relative to the market can shift low-end payments for CPT 12001 upward. Many times, the clustering at the MAR makes it apparent that the fee schedule is the cause of the shift. When the shift is simply to the right but not clustered at the MAR, it may be that other causes account for that observed shift. It is instructive, therefore, to look at reimbursement patterns for states without any fee schedule. Missouri is typical of what is observed, with the WC and GH curves both being S-shaped, with no significant clusters, as well as being quite near one another, especially for the low-end charges. This strengthens our interpretation that a high MAR for 12001 can introduce incentives for higher payments even when the payments are well below the MAR.



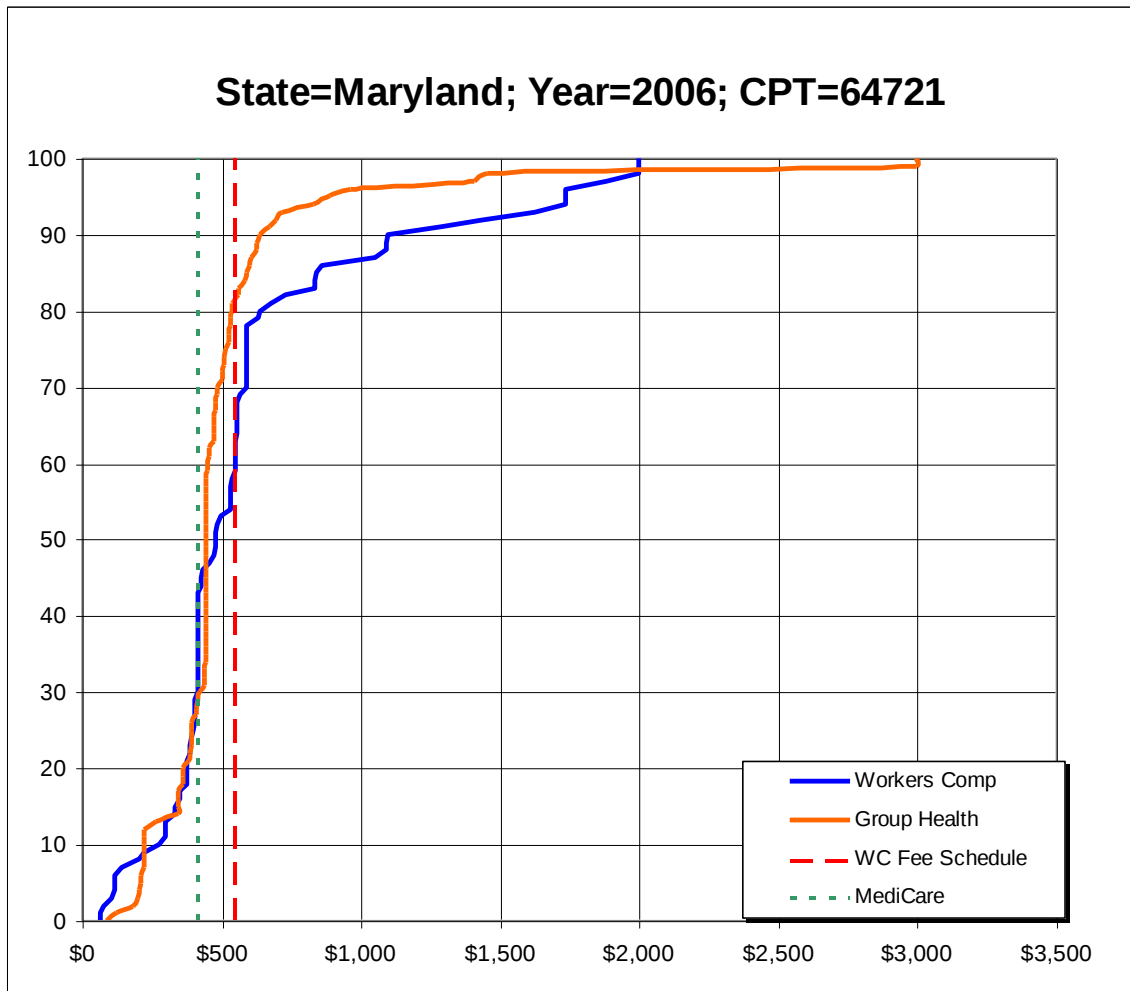
The CPT Code 64721 identifies another surgical procedure important for WC—neuroplasty and/or transposition of the median nerve at carpal tunnel. For CTS surgery in Colorado in 2006, we observe that about 20% of WC charges are near the MAR of \$744.32, which is itself 90% greater than the Medicare rate of \$391.16 ($744.32 / 391.16 = 1.903$). The GH curve is fairly S-shaped and most concentrated between \$400 and \$500. WC has about 40% of the charges exceeding the MAR, while about 15% of the GH charges exceed the MAR. The WC curve also shows a cluster of 10% of its payments at a little under \$2,000. The GH curve also takes an upward turn at a little over \$1,000. From what we have seen before, it might be hypothesized that reimbursement for multiple applications is at work here (one wrist vs. two). However, an examination of the CPT modifier code indicates that this is not the case. More likely, these are payments for outpatient surgeries done at a hospital or APC (Ambulatory Procedure Center), whose services are billed as a service bundle and include facility charges not anticipated in the MAR. As discussed, facilities pose a challenge to fee schedules, but perhaps an opportunity as well. The chart shows the WC curve nearly always right of the GH curve, which puts WC reimbursements consistently above GH. The chart also shows a MAR limitation that puts only a dent in the WC curve, represented by the “corner” where the WC curve crosses the vertical MAR line. While that dent does reduce the area between the two curves (and so the amount by which the WC reimbursement level exceeds the GH level), a significant area remains, and WC reimbursement for CTS surgery in Colorado is above market rate, as measured by the GH experience.



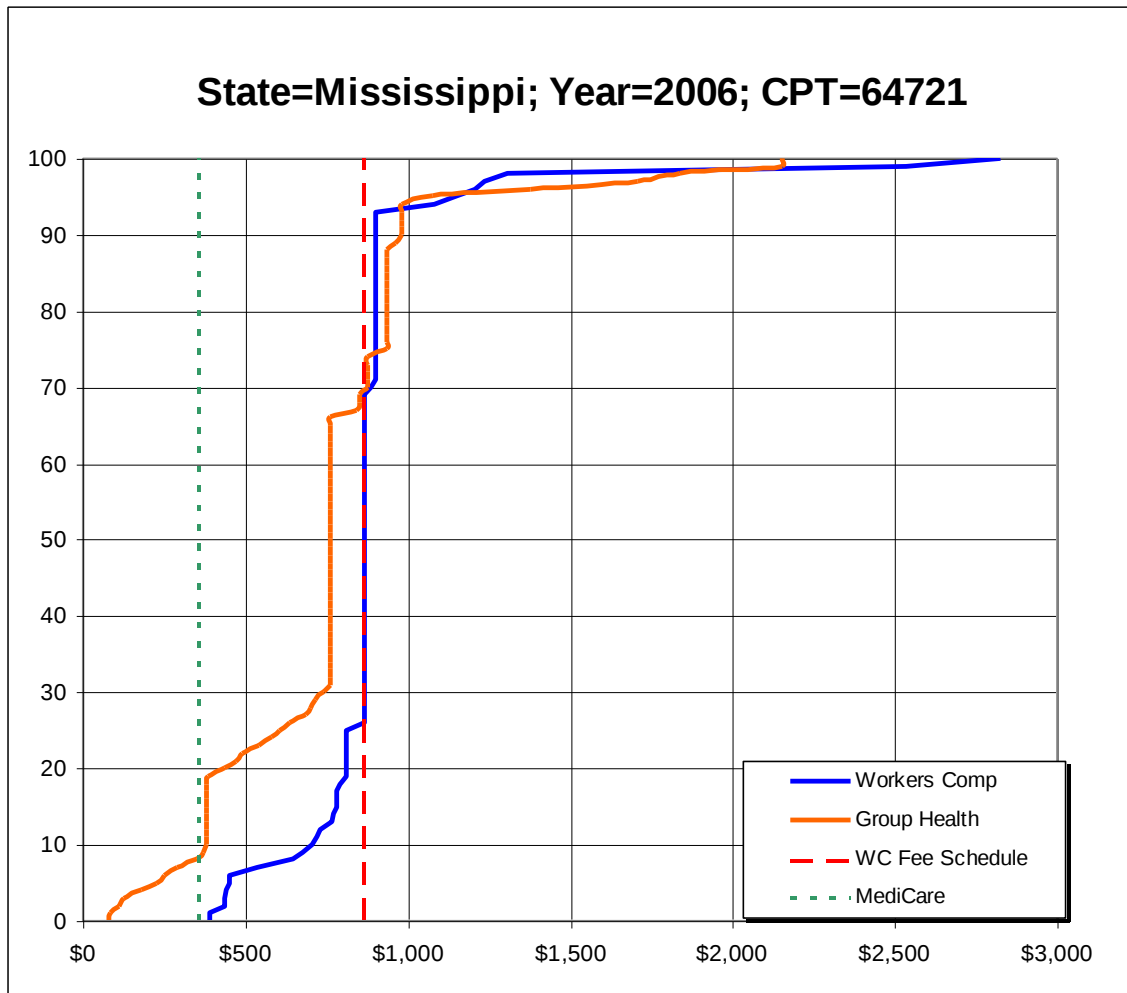
For Florida in 2006, we observe that 50% of WC charges for CTS surgery exceed the MAR of \$561.65, which is about 40% greater than the Medicare rate of \$394.02 ($561.65 / 394.02 = 1.425$). The GH curve is steeply S-shaped, with no single cluster point but very concentrated between the Medicare and MAR payment amounts. WC has only about 20% of its charges at the MAR. The fact that half the WC payments exceed the MAR illustrates the concern that many billings fall outside the fee schedule or otherwise avoid application of the schedule. This is a particular concern for outpatient surgery. Reform in Florida is addressing this by making the schedules more comprehensive, especially in the area of bringing facility fees subject to the schedule.



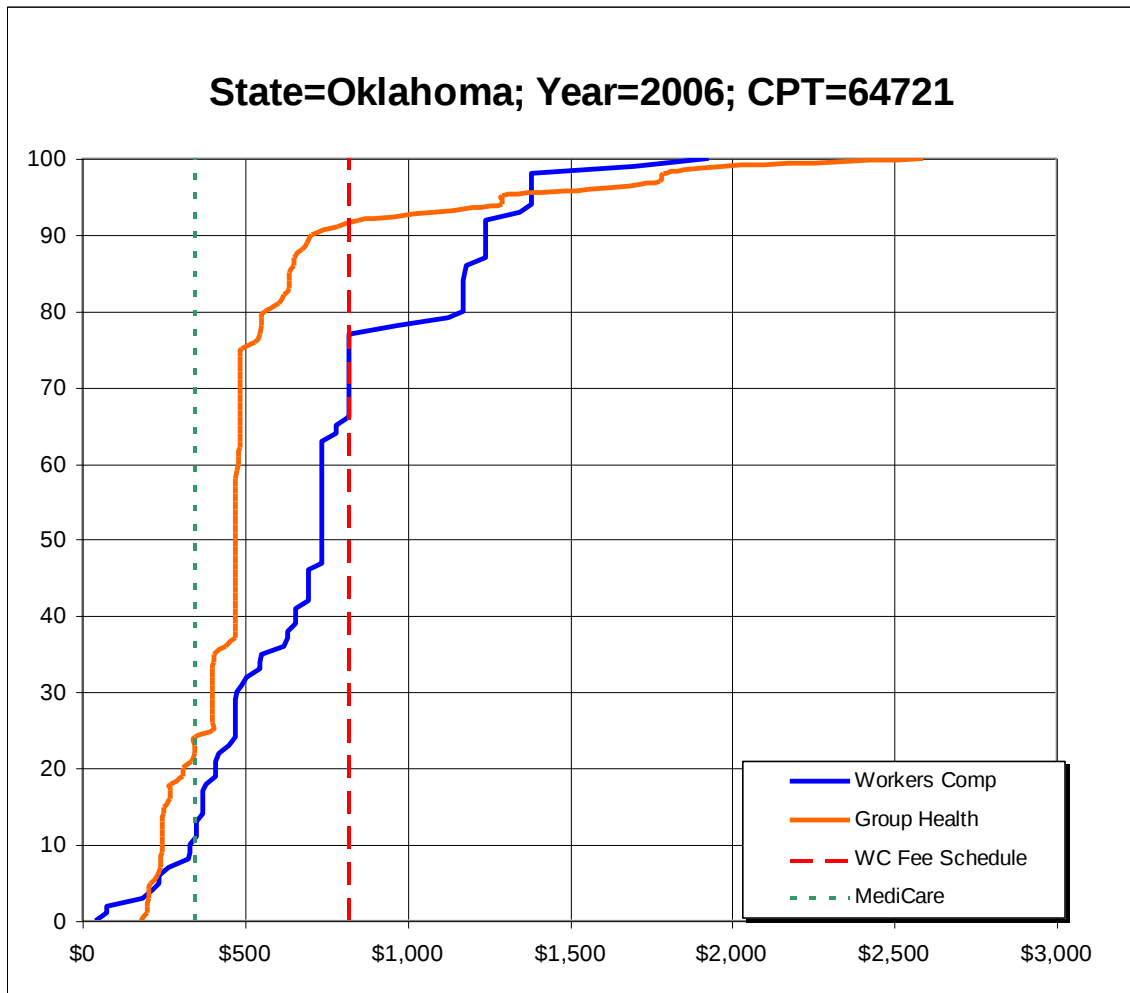
For Kentucky in 2006, we have a MAR value of \$909.42, which is two and a half times the Medicare rate of \$360.47 ($909.42 / 360.47 = 2.523$). The GH curve is S-shaped, with no cluster point per se but is most concentrated (steepest slope) at its \$500 median. Even though 50% of WC payments fall near the MAR and another 15% near the Medicare rate, that is not enough to pull back the WC curve to the GH curve. The coverage problem remains, with 15% of WC payments above the MAR and outside the control of the schedule. As a result, the WC curve is always to the right of the GH curve, corresponding to consistently higher paid amounts for WC above GH.



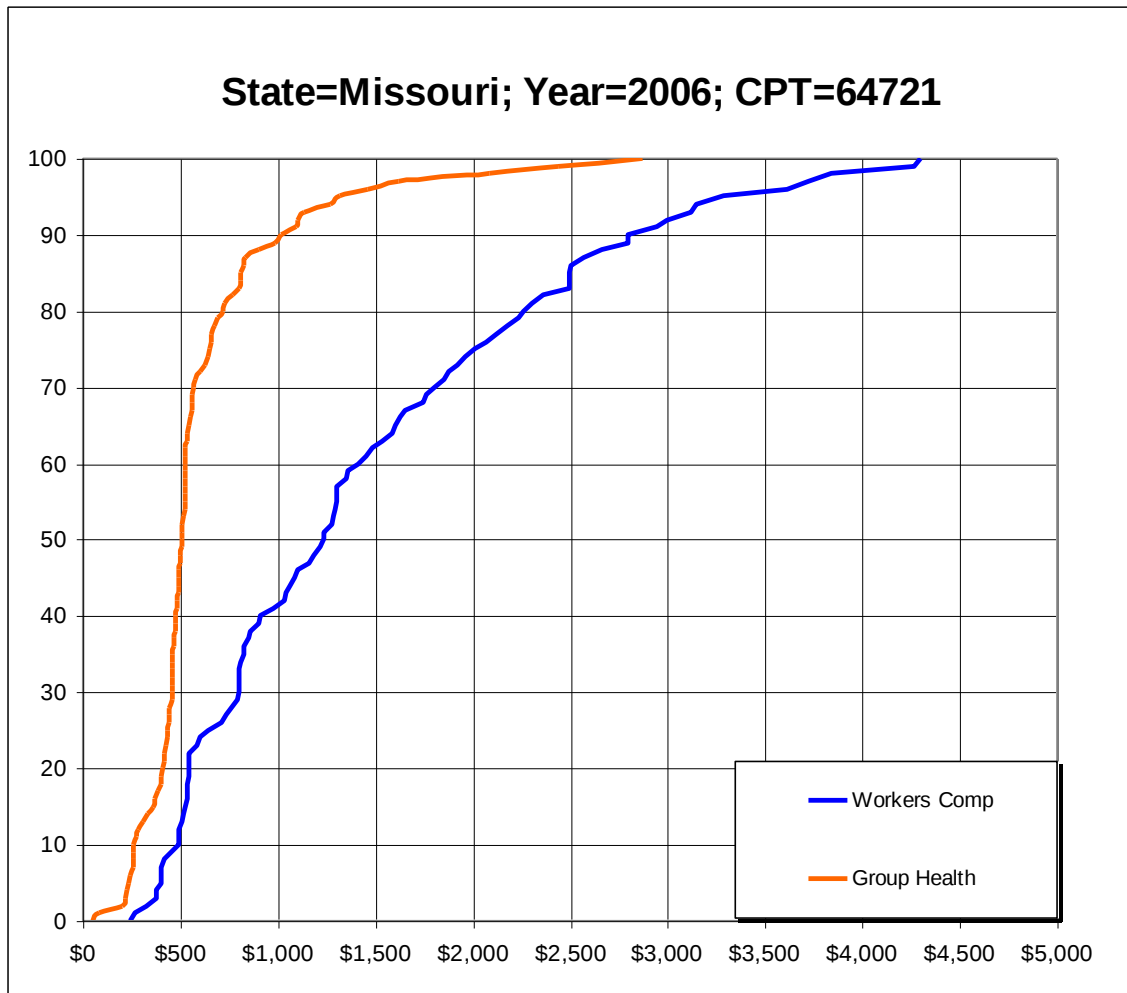
For Maryland in 2006, we have a MAR value of \$546.74, which is 30% above the Medicare rate of \$416.94 ($546.74 / 416.94 = 1.311$). The GH and WC curves are steeply S-shaped, with half of each's payments concentrated between the MAR and Medicare rates. The most notable difference between the curves is at the high-end payments, where WC amounts are greater and account for a somewhat higher reimbursement level for WC over GH.



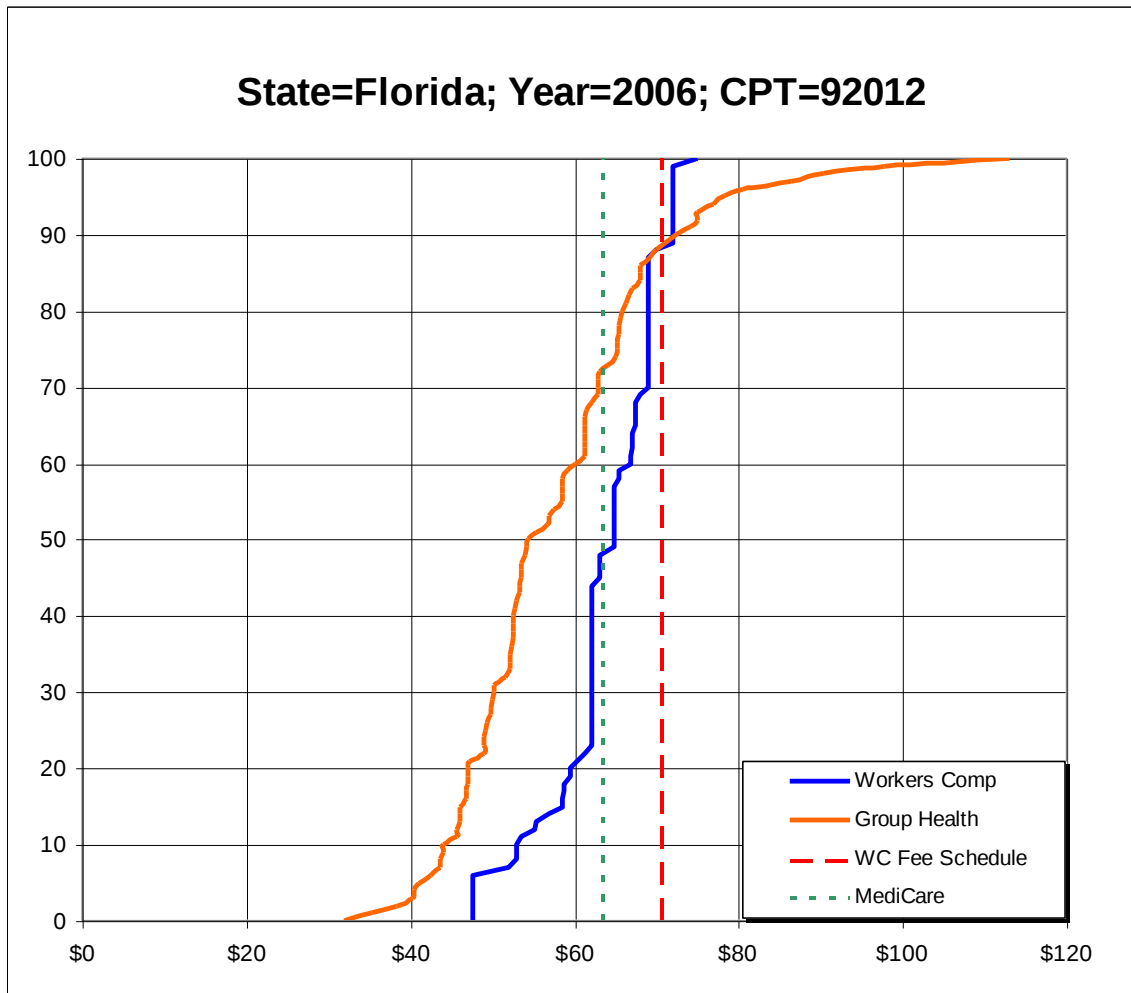
The MAR for CTS surgery in Mississippi during 2006 is \$867.13, nearly two and a half times the Medicare rate of \$353.24 ($867.13 / 353.24 = 2.458$). The GH curve has a concentration of 10% at \$380, with 35% at \$760 suggesting that some surgeons bill at Medicare rates while more double that fee level. The WC curve is concentrated at the MAR, which accounts for almost 70% of the WC payments. CTS surgery in Mississippi, as in the other states considered, has a higher reimbursement level for WC than for GH. However, unlike the other states where this was driven by the high-end payments, for Mississippi this is the result of the low-end payments being pushed forward toward a MAR set well above Medicare rates.



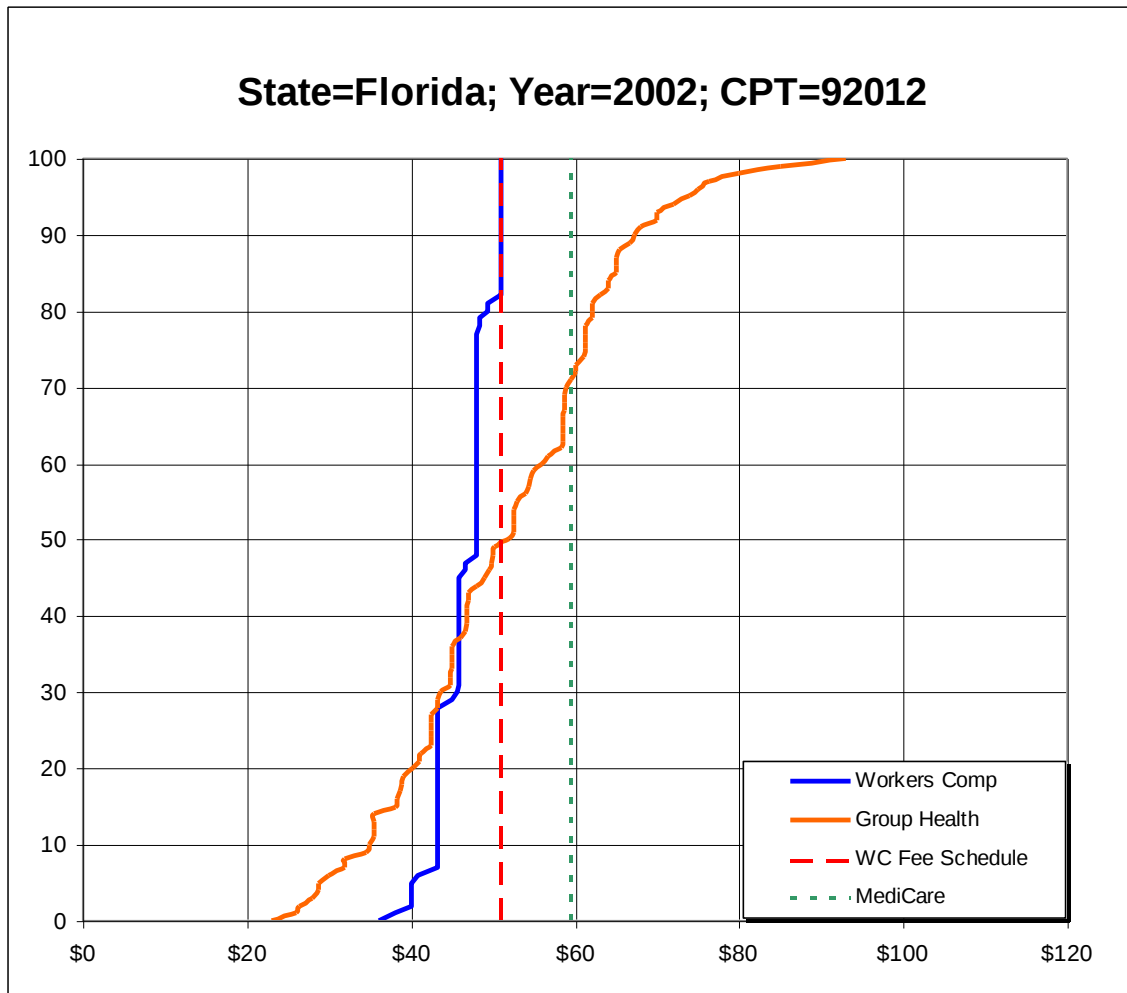
For Oklahoma, we have a MAR value of \$820.35, which is more than two times the Medicare rate of \$346.89 ($820.35 / 346.89 = 2.364$). The GH curve has a concentration of almost 40% of its payments around \$500. The WC curve has 10% concentrated at the MAR and 15% at \$738.32, both well above the \$500 GH cluster. Consequently, there is only a small “pull back” on the WC curve to the MAR, and the WC curve remains to the right of the GH curve except at the extreme percentiles. Here, the higher reimbursement for WC over GH is due mostly to payments at or above \$500. In contrast to Mississippi, Oklahoma’s setting the MAR well above Medicare did not dramatically “push forward” the low-end WC payments.



This chart for Missouri provides a reimbursement pattern for CTS surgery when there is no applicable WC medical fee schedule. The GH curve has the expected “S-shape,” with no significant clusters, but with greatest concentration at its \$500 median. The WC curve, however, indicates a widely spread out payment pattern. Even at the low end, WC payments are greater than those for GH, and the greater spread of the WC curve makes the difference between the WC and GH curves increase with increasing payment amounts. This suggests that without a fee schedule, WC reimbursements for CTS surgery increase well above market rates and arguably very much out of control.

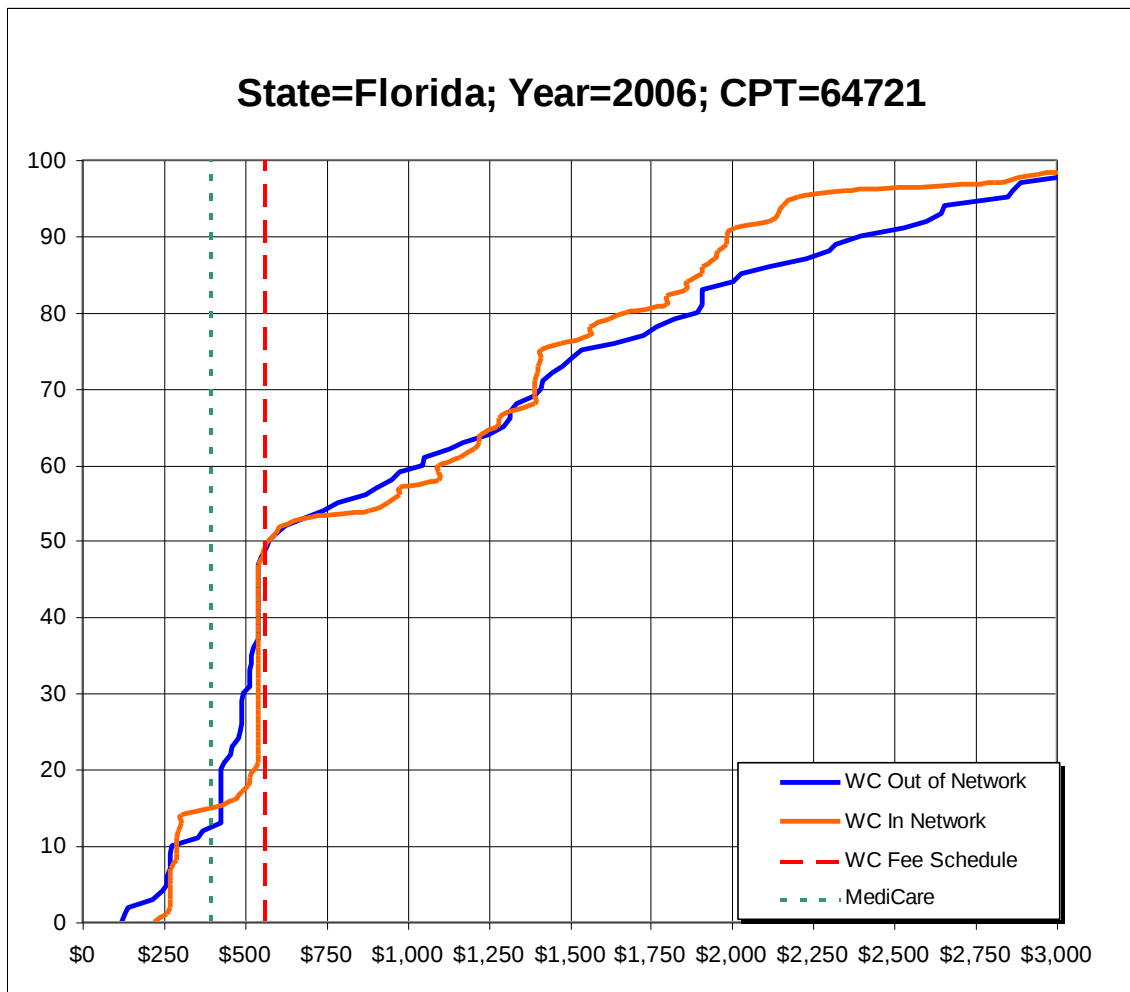


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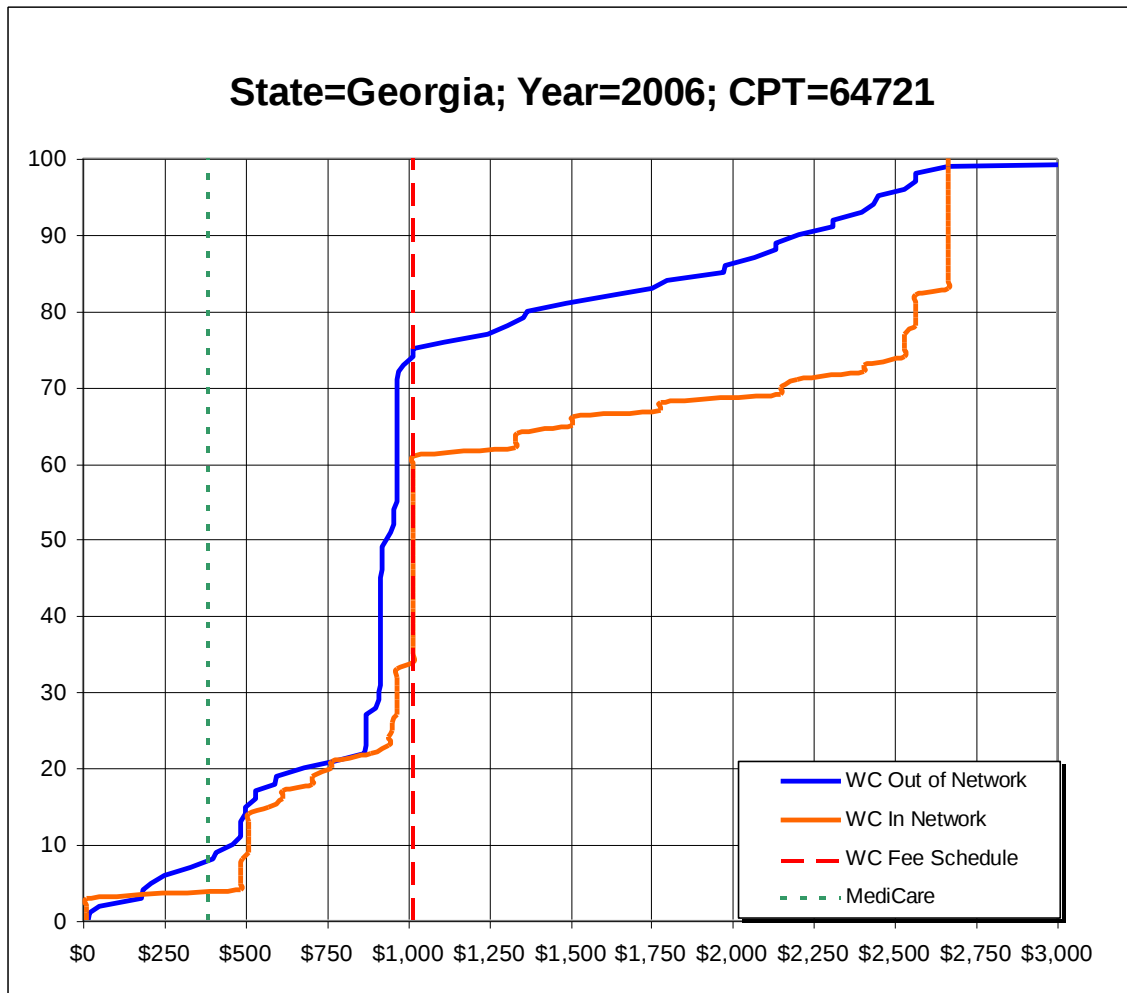


The two charts above for Florida provide some insight into the 2002 reforms, which made significant changes to the Florida medical fee schedule. Prior to that change, Florida's schedule, when Medicare is used as a benchmark, was the lowest in the nation, often with rates set well below Medicare. After the change, Florida still remains among the lower states but is now much more in line with other states. The charts above use the CPT Code 92012, for an eye exam, to illustrate the change in the payment distributions when the MAR is moved from below to above Medicare. The 2002 chart reflects the prereform Florida situation with a MAR of \$51 compared with a Medicare rate of \$59.46. The 2006 chart reflects Florida post reform with a MAR of \$70.65 compared to a Medicare rate of \$63.46. The GH curve does not change very much from 2002 to 2006. In contrast, there is a clear shift to the right in the WC curves—very much in concert to the intent of the reform. Consider the area differences between the WC and GH curves. For 2002, the greater area is the top piece where GH is to the right, meaning that GH has the higher reimbursement level. For 2006, however, the bottom piece has the greater area with WC to the right, meaning that post-reform WC has the higher reimbursement level.

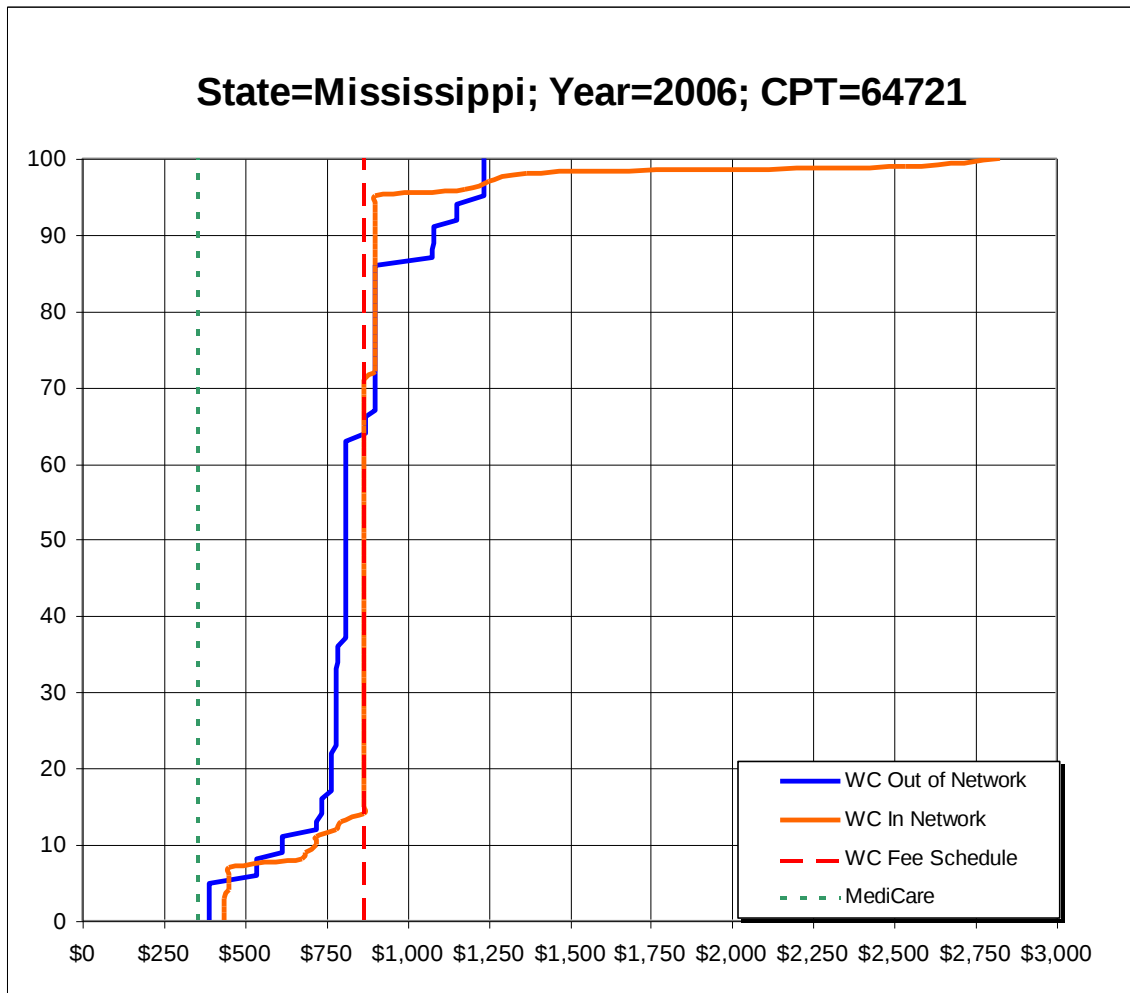
State-Specific Examples Comparing In and Out of Network.



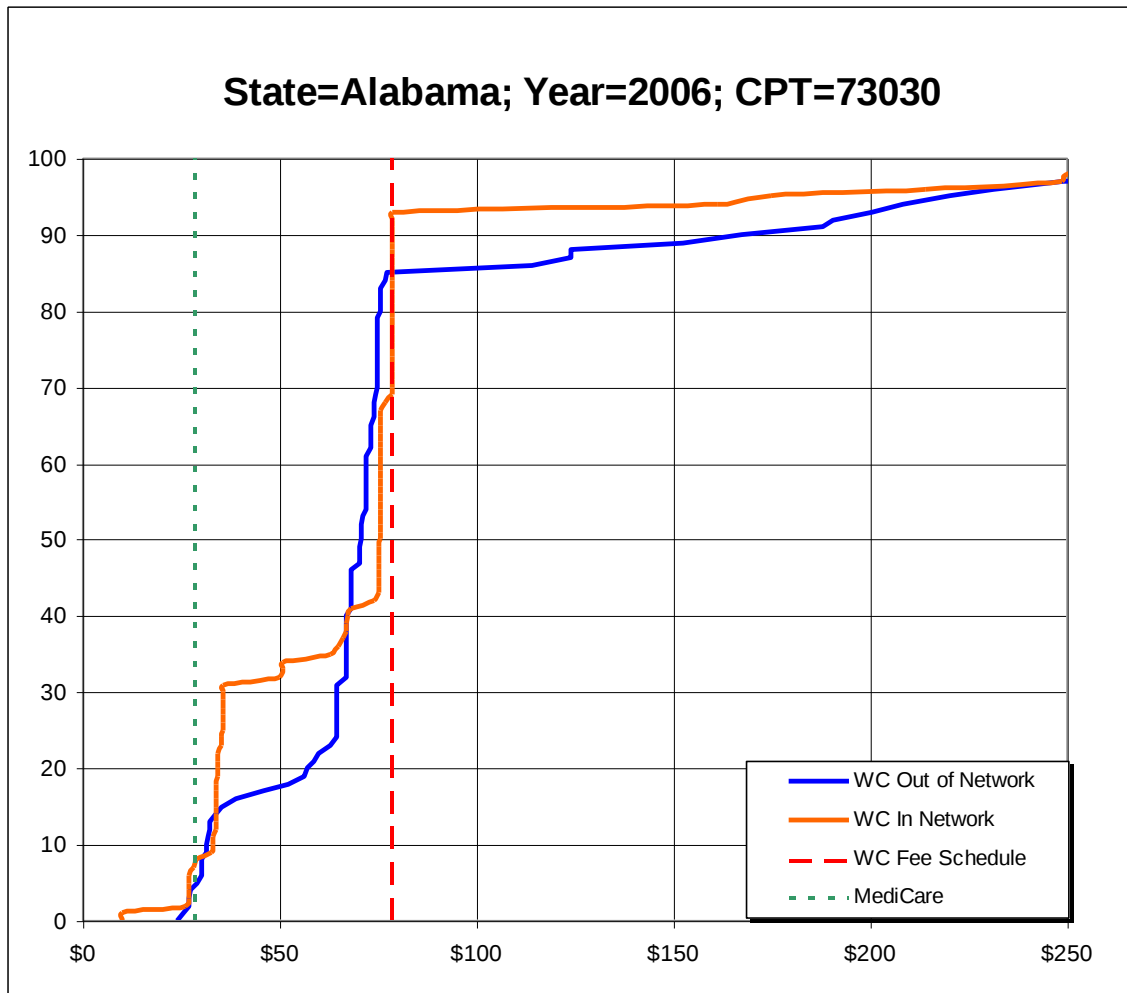
For Florida in 2006, both the in network and out of network experience show that 50% of the charges for CTS surgery exceed the MAR of \$561.65. This is a case where use of networks seems to make little difference in the distribution of reimbursements.



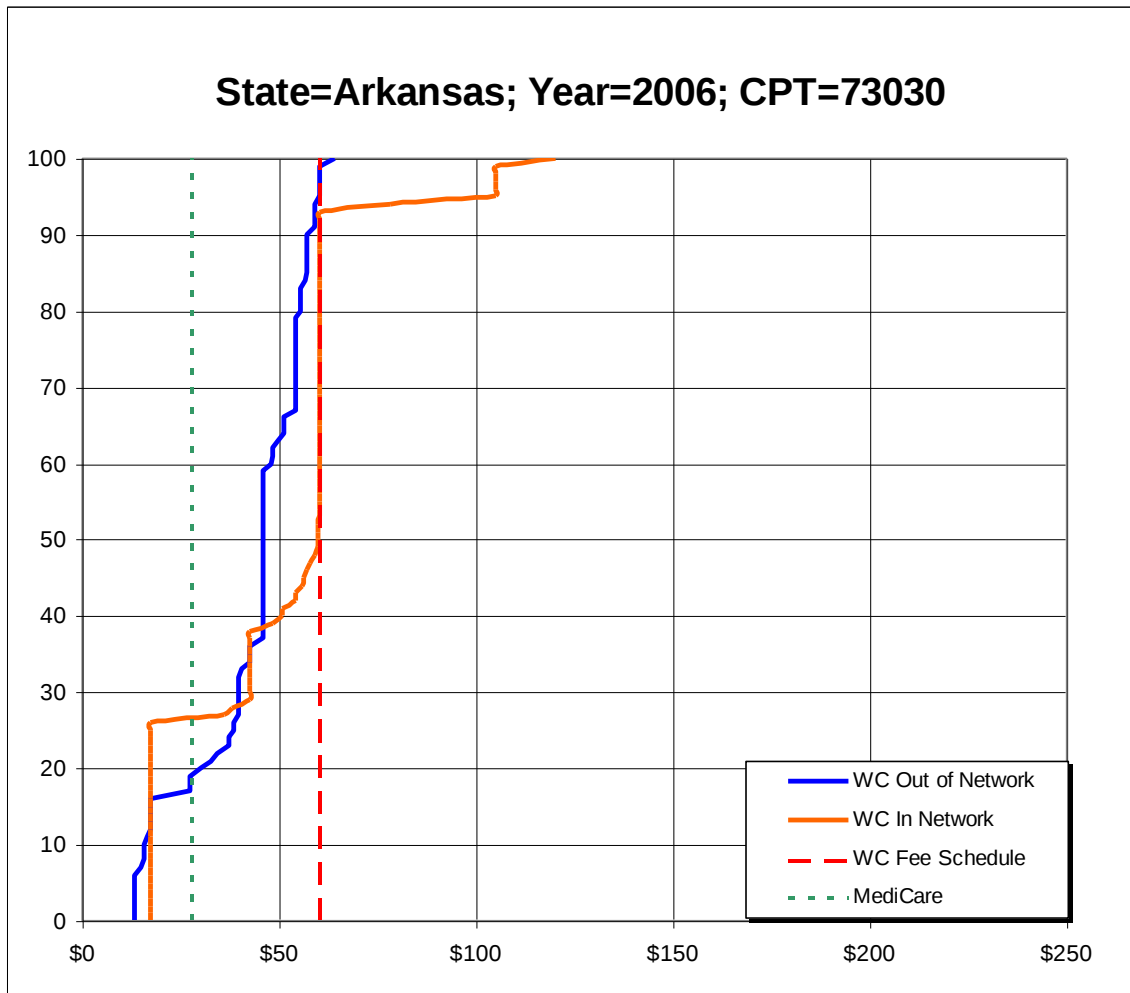
For CTS surgery in Georgia during 2006, the in network curve is consistently to the right of the out of network curve. This surgical procedure has a MAR set well above Medicare. The in network curve has a step above the 80th percentile that suggests multiple applications (i.e., both wrists) and with that the implication that in network care has a higher proportion of patients treated for both wrists. This keeps the in network curve to the right and results in a higher reimbursement rate for the in network experience.



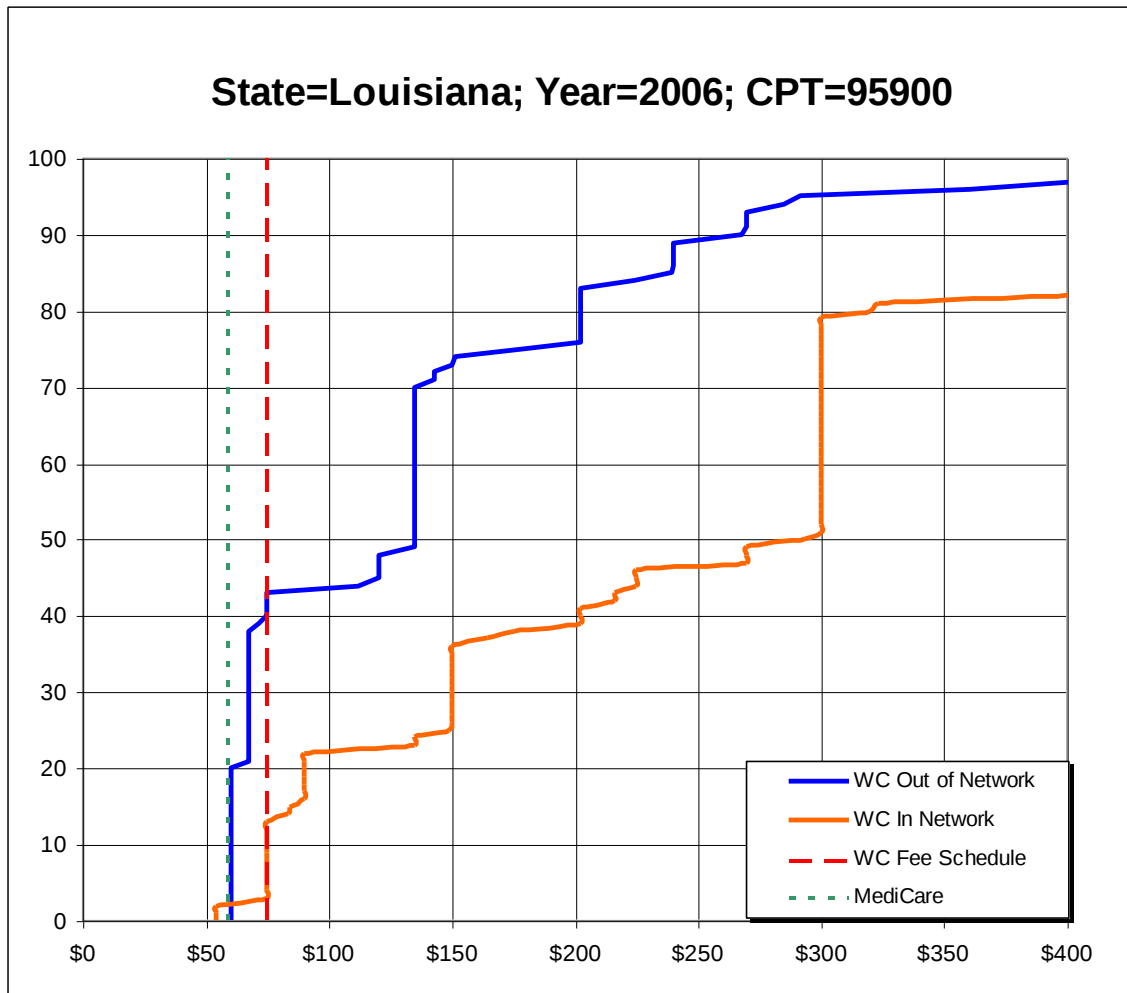
For Mississippi in 2006, both the in network and out of network experience have 70% of the charges for CTS surgery very near the \$867.13 MAR. This is another case where use of networks seems to make little difference in the distribution of reimbursements because the fee schedule dominates the payment patterns.



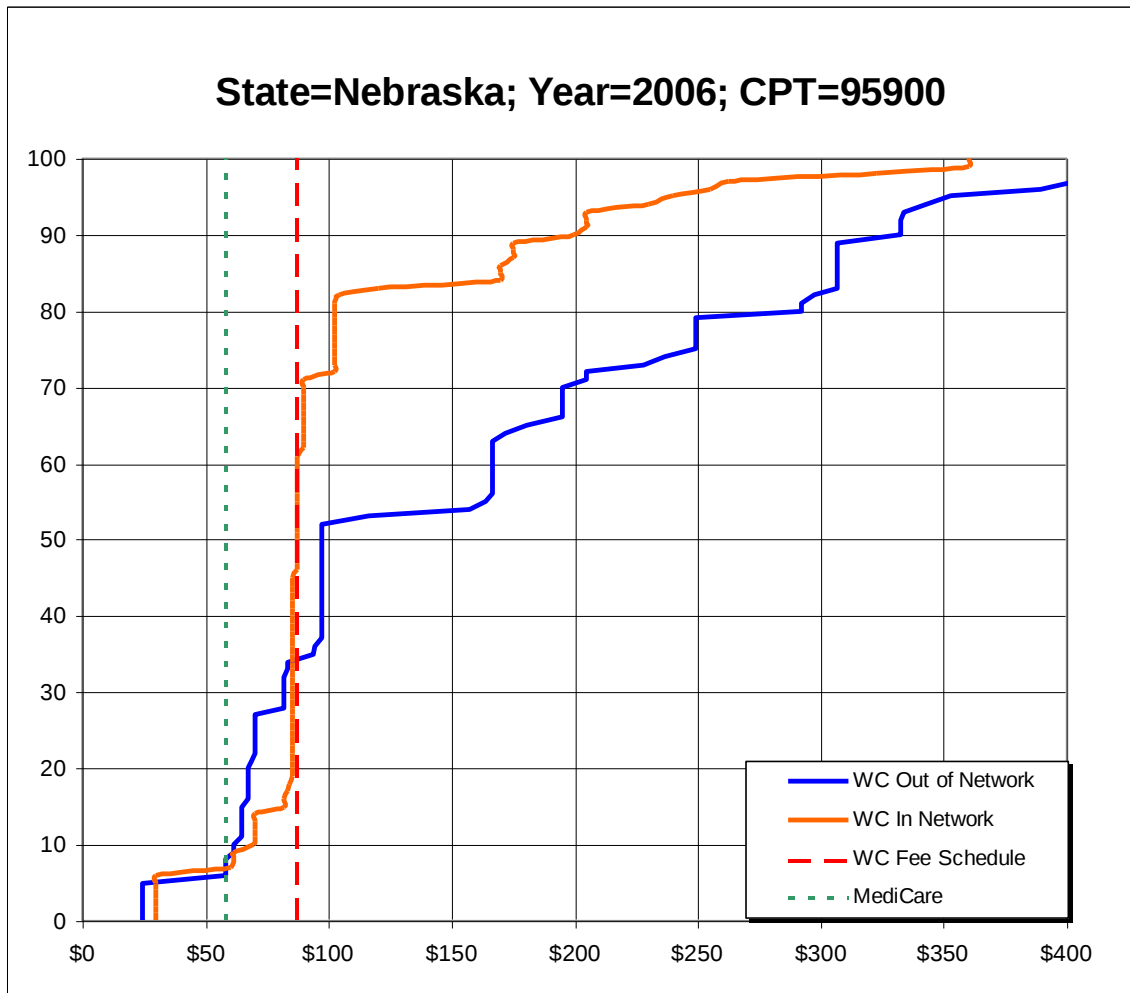
CPT Code 73030 for shoulder X-ray has a MAR greater than twice the Medicare rate in Alabama during 2006. The in network experience has a higher percentage of payments near the lower Medicare rate, and this keeps the in network curve to the left of the out of network up to the 30th percentile. Both in and out of network have over half their payments very near the MAR. The out of network experience has about 15% of its payment above the MAR as compared with only about half that for the in network. This too, keeps the in network curve to the left and contributes to an overall lower reimbursement level for the in network experience.



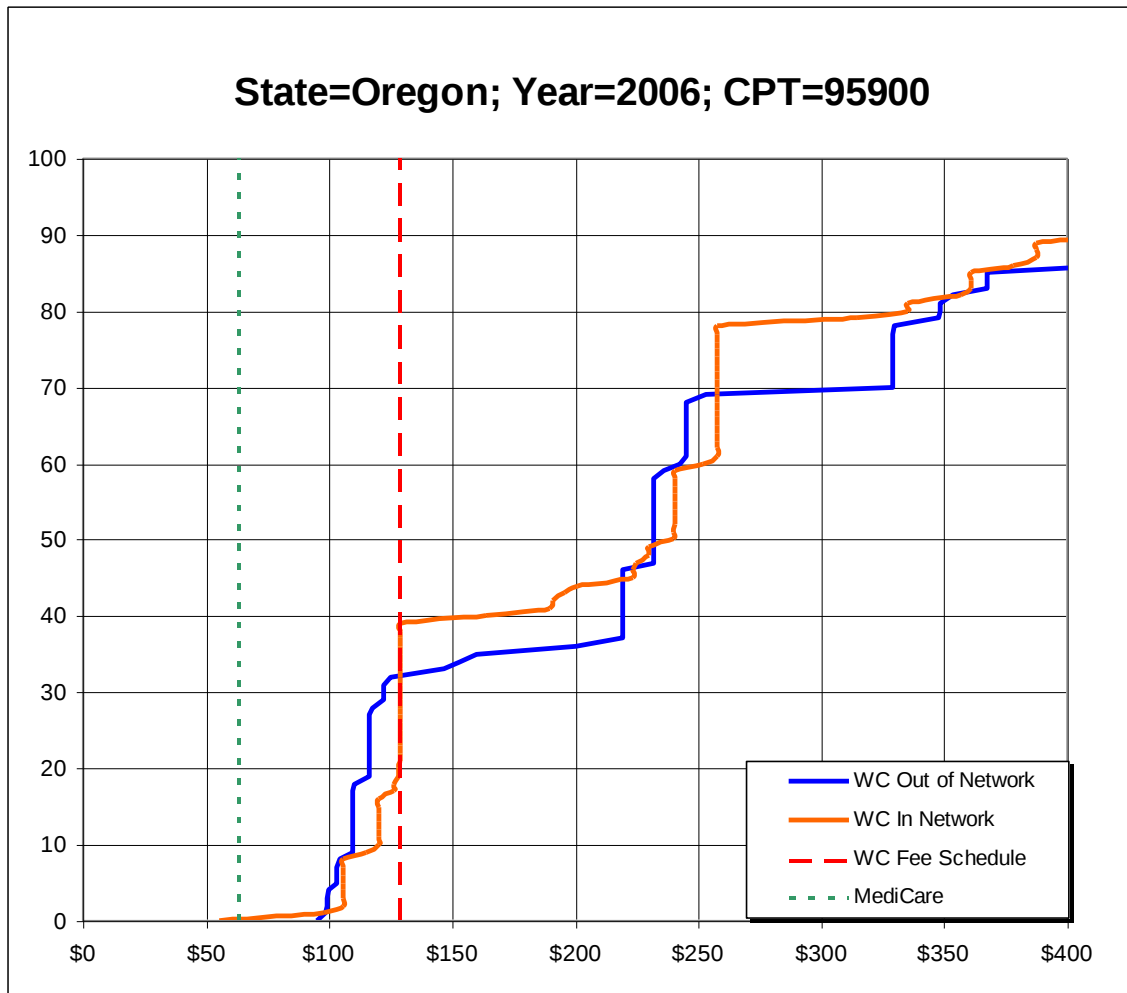
CPT Code 73030 for shoulder X-ray has a MAR greater than twice the Medicare rate in Arkansas during 2006. The in network experience has a higher percentage of payments at or below the lower Medicare rate and this keeps the in network curve to the left of the out of network up to about the 30th percentile. The out of network experience is nearly all below the MAR, while about 45% of the in network experience is concentrated at the MAR. Much of the 7% of in network payments that exceed the MAR are due to multiple applications, as indicated by the step in the in network curve above the 95th percentile. This provides a case where the use of networks is associated with higher reimbursement rates because networks reinforce a high-fee schedule MAR that is above the market rate for this radiology procedure.



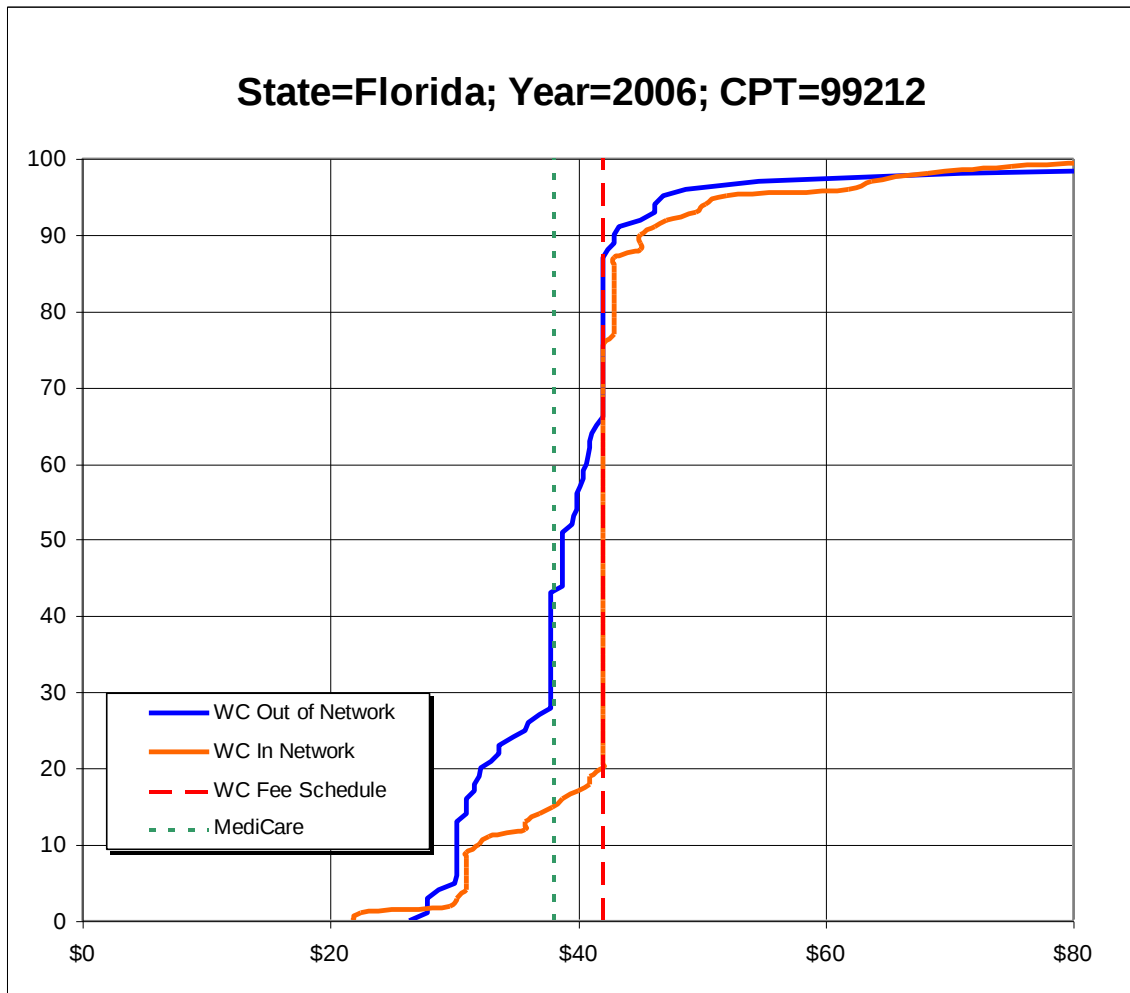
CPT Code 95900 for a nerve conduction test has a MAR set reasonably close to Medicare in dollar terms for Louisiana in 2006. Both in and out of network reimbursement appear near the MAR on a per-test basis. The difference here appears to be the proportion of patients that were given multiple tests. The in network patients received more tests per bill, which results in a higher in network reimbursement rate.



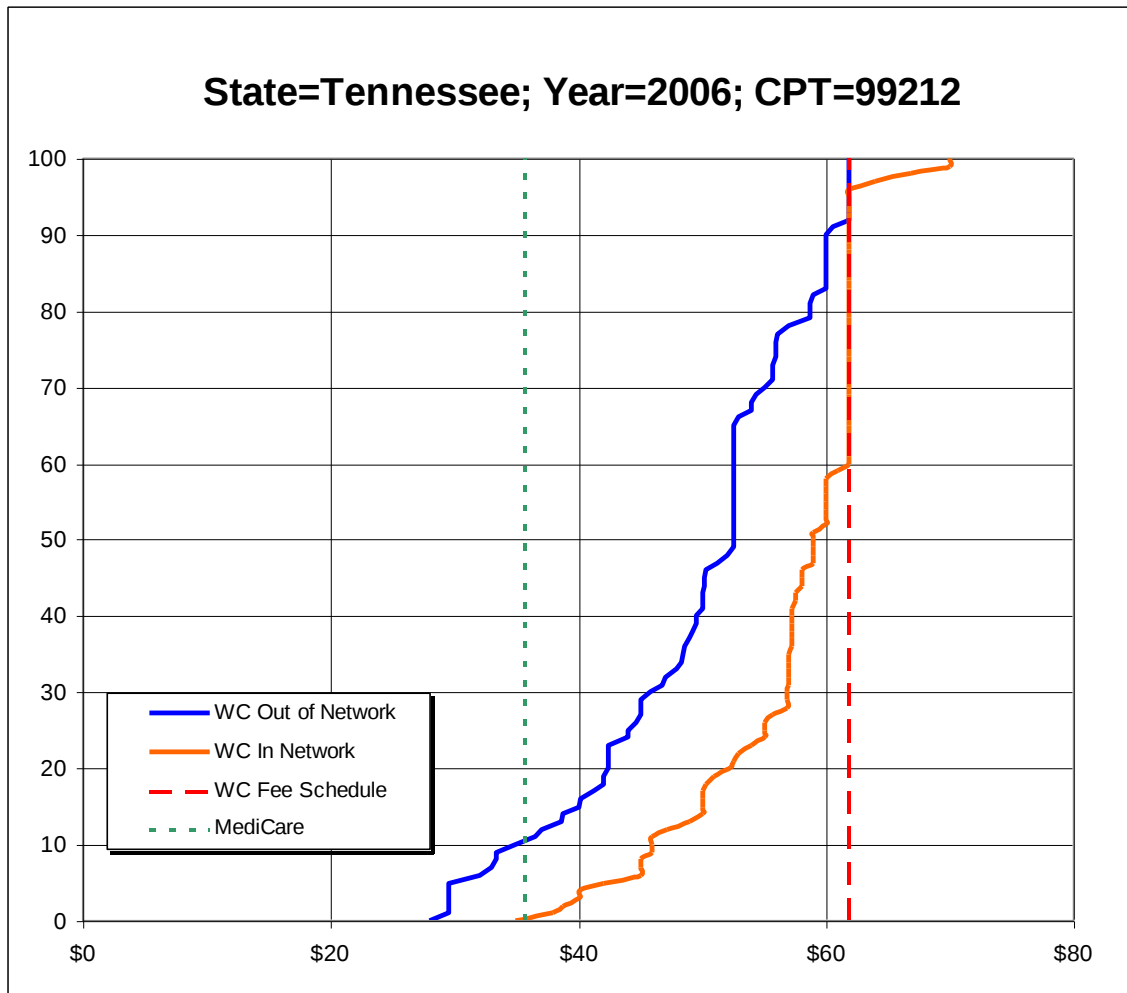
CPT Code 95900 for a nerve conduction test has a MAR set reasonably close to Medicare in dollar terms for Nebraska in 2006. Although the in network distribution is more concentrated at the MAR, both in and out of network reimbursement appear near the MAR on a per-test basis. The difference here again appears to be the proportion of patients that were given multiple tests. Unlike Louisiana, the in network patients received fewer tests per bill, which results in a lower in network reimbursement rate.



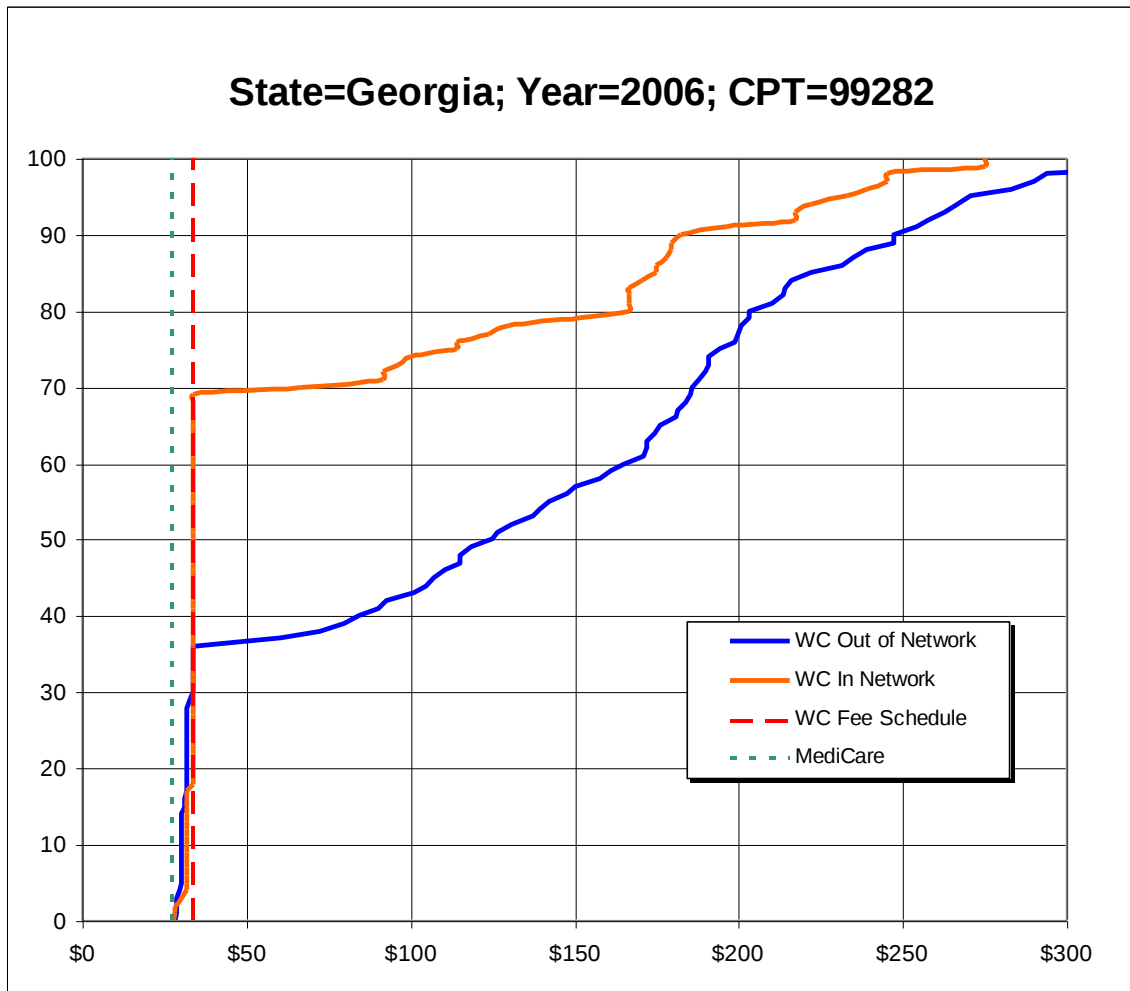
CPT Code 95900 for a nerve conduction test has a MAR set well above that for Medicare in Oregon in 2006. Although the in network distribution is more concentrated at the MAR, both in and out of network reimbursement appear near the MAR on a per-test basis. Here, however, there appears to be little difference in the proportion of patients that were given multiple tests, and the overall in and out of network reimbursement rates are similar.



For Florida in 2006, the CPT office visit Code 99212 has MAR somewhat greater than the Medicare rate, at least in dollar terms. The out of network experience is quite concentrated, with 60% of payments between Medicare and MAR. The in network experience is even more concentrated, with 70% at the MAR. This puts the in network experience to the right. This is an example of where the network reinforcement of the schedule results in an overall office visit reimbursement rate that is greater than that for out of network.



For Tennessee in 2006, the CPT office visit Code 99212 has MAR set well above the Medicare rate. The out of network experience is not concentrated, with no more than 15% of the payments near any particular amount. By contrast, the in network has over 35% of its payments at the MAR. This puts the in network experience to the right and provides another example of where the network reinforcement of the schedule results in an overall office visit reimbursement rate that is greater than that for out of network. Unlike Florida, Tennessee has Medicare well below the MAR, and that greater separation translates into a bigger difference in the in and out of network reimbursement rates.



The final chart is for emergency room visit Code 99282 in Georgia for 2006. The chart for this code is similar for many states and combined. The MAR and Medicare rates are near to one another. The point is, again, how much more concentrated the in network experience is as compared with out of network experience. In network has 60% of reimbursements at the MAR compared with about 30% for out of network payments. This gives a state-specific picture of how use of provider networks can serve to extend the range of the fee schedule to cover more facility services. This is another illustration of how the use of networks can reinforce the effectiveness of a fee schedules. Above the 40th percentile, the in network curve is well to the left of the out of network curve, resulting in networks' lowering the reimbursement for emergency room visits.

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