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Claims Data Analytics In Target Evaluation: A Case Study in Center-Based Orthopedics

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Orthopedic practices are a growing area of investor focus, supported by an aging population and positive reimbursement dynamics, particularly in the outpatient setting. Herein, Marwood presents its proprietary analytics platform for reimbursement claims analysis through a case study of the outpatient orthopedics space in North Carolina. The approach demonstrates the ability to assess ambulatory surgical center opportunities through claims analysis with an eye to payor mix, rate trends and geographic variability in reimbursement at the intra-state level.



I. Growth In Investor Activity In Orthopedics

Orthopedic practices have been in focus of investors, following similar trends seen in dermatology, ophthalmology, urology and gastroenterology. There are almost 23,000 orthopedic surgeons practice in the U.S.¹ Fundamentally, activity in the space is geared around creating economies of scale to increase cost-effectiveness as well as market and associated payor bargaining power. Independent orthopedic practices in the US have become attractive targets for acquisition by hospital systems and private equity firms due to increasing demand for outpatient surgery.

Expenditures related to orthopedic care are projected to grow rapidly to support an active, aging population. There are already around 1 million hip and knee replacements alone performed in the U.S. annually, and by 2030 the number of total knee replacements is expected to hit 3.5 million per year.² Those seeking care for osteoarthritis and other non-traumatic joint disorders represent the largest segment of care seekers; growing at ~5.5% annually over the past 20 years. Among those seeking care for orthopedic conditions, average expenditure has increased ~3.5% annually over the past 20 years.³

As healthcare insurance payors look to save costs, they have supported the shift toward procedures done in the ambulatory surgical center (ASC) over the last decade. The pandemic has only accelerated this trend, as previous hospital-based orthopedic surgeons took cases to surgery centers during the pandemic when hospitals halted nonurgent surgeries. Now those surgeons are comfortable

with outpatient surgeries, even outpatient total joint replacements, and look to expand patient treatment in the ASC setting. Thus, as of 2022, orthopedic surgery is the most common type of procedure performed in the ASC, nationally.⁴

II. The North Carolina Market For Orthopedics

North Carolina was selected in this case study based on a number of forces which bode well for ambulatory surgical center growth and consolidation in the state. Chief among them, economic growth. North Carolina is among the top 20 states for economic and population growth. Notably, its location as a retirement destination has expanded the population of demographic most likely to utilize orthopedic services. To no surprise, over the past decade, the states with the most acquired clinics include North Carolina (7.4%), only second to Pennsylvania (13.2%). However, during that same time period, the number of small practices (2-24 orthopedists) increased in the southeast. This is in contrast to regions such as the Midwest, where they decreased, indicating potentially higher consolidation that has already occurred.

In addition, North Carolina ranks in the 50th percentile of orthopedic surgeons per capita, providing a significant eligible workforce for expansion. Notably, this workforce is relatively affordable as North Carolina ranks below the 70th percentile in salaries for orthopedic surgeons.

Finally, from a regulatory perspective, state certificate of need regulations in North Carolina have become more favorable to ASCs in the last year. It is becoming easier in North

¹ Definitive Healthcare's Physician View. <https://www.definitivehc.com/>

² American Association of Hip and Knee Surgeons. <https://www.aahks.org/>

³ The Agency for Healthcare Research & Quality. www.ahrq.gov

⁴ ASCA Ambulatory Surgery Center Association. www.ascassociation.org

Carolina for independent physicians to open surgery centers and increase case volume.

However, there remains significant variation in the average rate and variability of claims with distinct regional and provider differences. In the following section, the case study will focus on a single code across these metrics. Application of this approach provides a case study of how this system can be utilized to benchmark rates as well as identify opportunities.

III. Study Methodology

Marwood’s proprietary analytics platform contains over a billion Medicare, commercial and Medicaid claims. In this case study, Marwood focused on codes billed by orthopedics providers in North Carolina over the last 2+ years (2020-Present). The most frequently billed orthopedic procedure codes were identified (Figure 1). Marwood analyzed associated remitted payment amounts, normalizing to percentage of Medicare by year and geography across leading payors (Figure 2). The data was also stratified by state MSA (Figure 3). Subsequently analyzing remitted claims for a single code (CPT 27447) by select MSAs, Marwood examined the distribution of remitted charges as a percentage of year and geography-adjusted Medicare rates (Figure 4).

IV. Leading Orthopedic Claims in North Carolina

Marwood utilized the analytics tool to survey orthopedics procedure claims in North Carolina over the past 2 years. CPT 27447, corresponding to repair of knee joint is the leading code (17.3%) followed by CPT 27096 (11.5%), injections into the sacroiliac joints which link the pelvis and lower spine (Figure 1).

a. Description of leading orthopedic codes. **Bolded code, representing the largest share of submitted claims, to be highlighted subsequently**

CPT	DESCRIPTION
27447	Repair of knee joint
27096	Injection procedure into sacroiliac joint for anesthetic or steroid
29848	Release of wrist ligament using an endoscope
23350	Injection of dye for X-ray imaging of shoulder joint
29827	Repair of shoulder rotator cuff using an endoscope
25600	Closed treatment of broken forearm bones
25111	Removal of cyst at wrist
20985	Computer-assisted surgical navigational procedure for bone procedures
25447	Removal of bone joints between wrist and fingers
27093	Injection of dye for X-ray imaging of hip joint
23472	Prosthetic repair of shoulder joint

b. Distribution of submitted claims

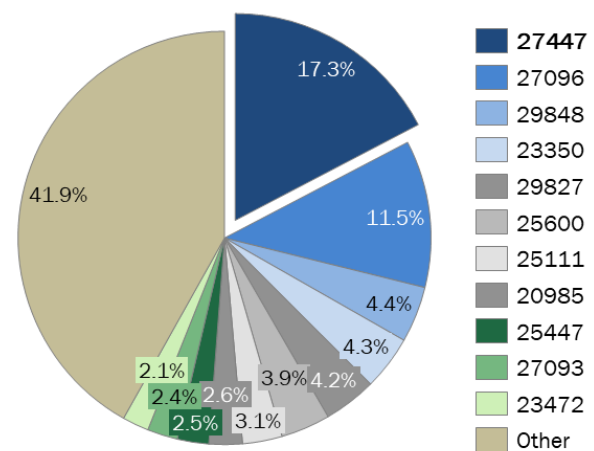
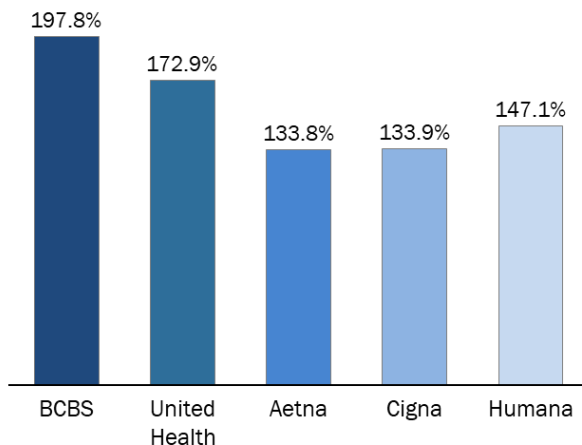


Figure 1. Provider submitted claims for leading orthopedic procedures in North Carolina (2020-2022)

V. Reimbursement For Orthopedic Procedures In NC By Commercial Payor

Rate analysis across all submitted professional commercial orthopedic claims in North Carolina reveals on average, Blue Cross Blue Shield (BCBS) reimbursement is significantly more generous than United Health Care and especially Aetna, Cigna or Humana (Figure 2a). Notably, BCBS makes up 51% of submitted claims in the database (Figure 2b) and the largest share of claims.⁵ This bodes well for North Carolina ASCs, wherein the most frequent utilized payor maintains the highest rates.

a. Reimbursement for remitted orthopedic procedure claims; % Medicare by leading payor



b. Relative share of visualized remitted orthopedic claims among leading payors

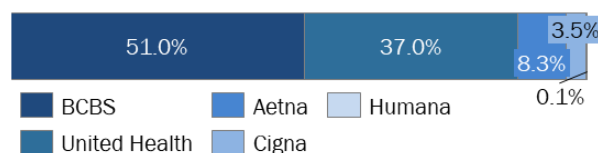


Figure 2. Remittance data of reimbursement for orthopedic procedures in North Carolina (2021-2022) (a) and relative share of remitted orthopedic claims in North Carolina (2021-2022) among leading payors (b).⁶

⁵ AIS Health database of total state claims

⁶ Note that percentage of payor claims processed through a clearinghouse vary by payor, thus figure 2b is more informative as to the source of data rather than enumerating the relative share of data.

VI. Commercial Payor Reimbursement For Orthopedic Procedures In North Carolina By MSA

Rate analysis across all submitted commercial orthopedic claims in North Carolina reveals on average, reimbursement as a percentage of Medicare is more generous among some of the largest MSAs in the state (Winston-Salem (206%) and Charlotte (197%)) but not exclusively, with Greensboro (174%) and Raleigh (173%) below Rocky Mount (193%) and Durham-Chapel Hill (177%) (Figure 3).

MSA	% Medicare
Winston-Salem	206%
Charlotte-Concord-Gastonia	197%
Rocky Mount	193%
Durham-Chapel Hill	177%
Greensboro-High Point	174%
Raleigh	173%
Hickory-Lenoir-Morganton	159%
Asheville	156%
Fayetteville	154%
Pinehurst-Southern Pines	153%
Myrtle Beach-Conway-N. Myrtle Beach	145%

Figure 3. Reimbursement, % Medicare by MSA, Sigma submit data of reimbursement for orthopedic procedures in North Carolina (2021-2022) by MSA. Data depicted limited to the largest MSAs.

Marwood’s analytics platform also can provide a visualized distribution of remitted claims for a single code. In this case, the most frequently billed code, CPT 27447, repair of knee joint (Figure 4). Scatter plotting reveals claims in Raleigh for this code to be reimbursed more tightly around a mean of ~183% of Medicare, compared particularly to Charlotte or Winston-Salem where there is greater variation around the means of 204% and 222%, respectively. In addition, the data demonstrates clustering of rates to be much tighter with United Health Group than BCBS.

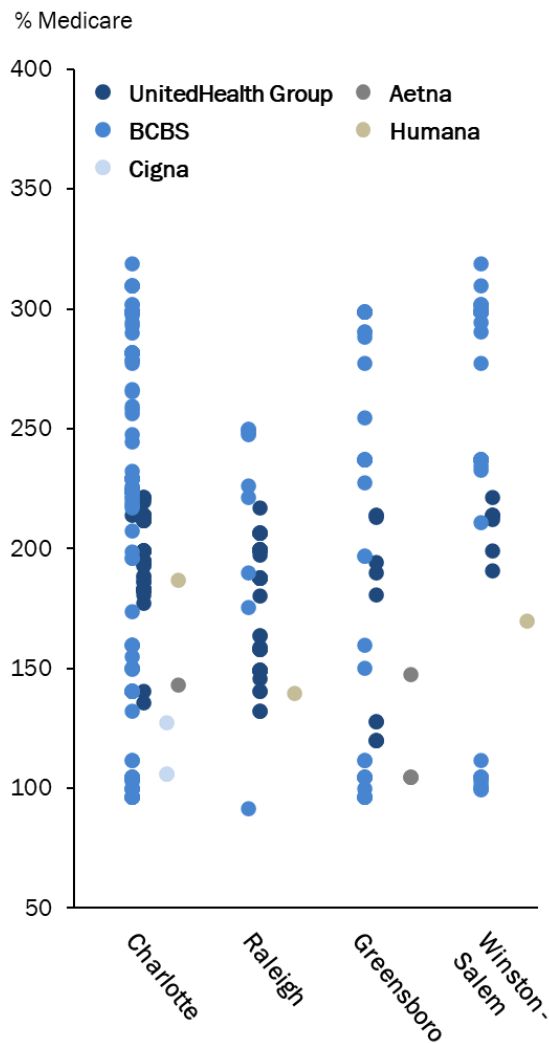


Figure 4. Reimbursement, % Medicare By largest North Carolina MSAs and select payor (2021-2022) for CPT 27447.

VI. Commercial Payor Perspectives

Commercial and Medicare Advantage plan stakeholders have cited the growth of an active aging population as a key driver of the orthopedics space. Although significantly impacted by COVID and the associated suspension/avoidance of elective procedures, both commercial and Medicare Advantage stakeholders expect a steady increase in ambulatory surgical center utilization to at least pre-COVID levels.

“Our baby boomer population is growing, leading to an increased diagnosis of chronic conditions requiring treatment.”

- Medical Director, National Payor

In recent years, commercial payors such as United Healthcare and Anthem have instituted policies aimed at shifting procedures out of the hospital and into ASCs, a trend expected to continue, as ASCs represent a lower-cost setting. UnitedHealth Group projects that migrating half of routine total joint replacements from hospitals to ASCs could yield \$3 billion in annual savings. However, while orthopedics is an area of concern for plans, the majority are not expected to further increase their level of focus over the next 3-5 years, having already implemented rather tight prior authorization requirements and medical necessity reviews in order for patients to receive these services.

Certainly in growth states such as North Carolina, the alignment among regional payors to these general national trends require more granular analysis. Similarly, while value-based care and bundled payments provide another route for cost savings, state specific work is required to glean regional payor enthusiasm and capacity to apply such measures to their lives.

Finally, commercial reimbursement outlook for a particular provider will depend on where that provider's reimbursement sits relative to its peers in a given market and the degree of leverage a particular provider has relative to its peers. Additionally, outlook for reimbursement can be impacted by Medicare's changes to reimbursement as payors tend to base rates to Medicare reimbursement. While there has been relative stability of rates, regional analysis is required to identify trends, including network dynamics, which may impact these rates, particularly in the ASC environment over the next 5 years.

VII. Future Considerations

Target analysis in this environment requires an ability to parse commercial data at the regional level to identify opportunities and challenges with not only an industry, but a geography. Marwood's proprietary claims database can be used to assist clients with questions related to reimbursement benchmarking, including which growth markets may be most attractive from a reimbursement perspective, how a given provider's rates compare to the market and where there may be opportunities to renegotiate rate increases with payors, as well as areas where there may be risk for reductions. The claims data can also be used to understand trends related to market share, utilization, site of care shift, and leakage analysis across sectors

With extensive experience in federal regulatory & legislative considerations as well as state Medicaid and policy analysis, our capability to explore commercial rate variations across these dimensions and tie them to strategic considerations of landscape and competition, provide a 360° view of target market access considerations.

ABOUT THE AUTHORS

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ABOUT MARWOOD

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