Spinal Infusions: Bone Morphogenetic Protein

Use of VortexT Analytics technology allowed Covenant Health to identify specific use cases and conditions where scheduled spinal infusion cases utilizing bone morphogenetic protein might result in denials.

The Use Case

In early 2016 Covenant Health initiated a project to reduce denied claims related to spinal implant procedures. This process included forming a team tasked with investigating denied claims related to spinal implants, particularly around the use of bone morphogenetic protein (BMP).

> Background: In the U.S. BMP has been used in spinal cases since 2002, but in the mid-2000s independent research groups began reporting serious complications around the use of BMP, with complication rates ranging from 20 to 70 percent. Consequently, in 2010, CMS conducted a technology assessment that included this finding: "There is moderate evidence that off-label use of rhBMP2 in anterior cervical spinal fusion increases cervical swelling and related complications." Subsequently private payers modified contracts, medical coverage policies, and reimbursement guidelines related to the approach and efficacy of BMP, resulting in an increase in the number of denied claims related to BMP usage nationwide.

> " VortexT Analytics technology identified that a relatively new physician to our organization was using BMP. This allowed us to provide medical coverage education, not only to this physician, but also to his peers.
>
> -- Sherri Ernst, Director of Revenue Integrity & Utilization Management

The Covenant team tasked with reducing the number of denied claims instigated a manual review of denied claim records to determine the extent of the problem and the specific reasons some BMP procedures were being denied.

CLIENT OVERVIEW

Covenant Health

KNOXVILLE, TN USA

> Nine acute-care hospitals

> Outpatient and specialty services

> 1500 affiliated physicians

> Not-for-profit

✓ **RAPID ASSESSMENT OF DENIALS AND IDENTIFICATION OF ROOT CAUSE**

✓ **IMPROVED ACCURACY IN IDENTIFYING RELEVANT CASES**

✓ **SIGNIFICANT REDUCTION IN LABOR HOURS REVIEWING DENIED CASES**

✓ **ABLE TO SCALE SEAMLESSLY FROM THE PATIENT/ACCOUNT LEVEL TO THE ENTERPRISE/ IDN LEVEL**

VortexT A N A L Y T I C S

The team discovered that the denied cases were primarily associated with **unapproved** BMP usage related to an anterior (rather than posterior) approach, as per specific payer guidelines. Denied charges averaged $20,000 per case. The manual denials review process used by the Covenant team was both labor intensive and error prone, as even with best efforts, some cases remained unidentified.

The VortexT Analytics Solution

Utilizing its award winning VortexT® big data analytics technology, VortexT Analytics, Inc demonstrated a quick and simple search for BMP and related terms directly within the text of the patient records, to facilitate the identification of all patient accounts associated with the use of this product. The VortexT application allowed a thorough and automated review of historic records and the identification of additional denied procedures overlooked in the manual review. Within that subset of records, VortexT provided the capability to analyze and compare characteristics such as location, payer, and physician. It also provided the capability to search for significant terms contained in transcribed records for accounts of interest.

Additionally, VortexT technology provided the ability to cluster accounts based on unstructured transcription data to reveal key terms. By comparing the differences between approved and denied accounts, VortexT helped identify the root cause of denials. VortexT also identified BMP usage with specific location and approach combinations (which could be denied) and identified the surgeons most responsible for the denied procedures. Covenant used these BMP usage findings to facilitate surgeon education aimed at reducing denied claims.

The Potential Return On Investment

By utilizing the VortexT technology to facilitate automated searches, the Covenant team expects a significant reduction in the number of labor hours associated with the manual review of cases, as well as an increase in the accuracy of the reviews. Covenant also anticipates a reduction in improper BMP usage and BMP claim denials. Next steps include continued examination of BMP cases, while expanding the scope to include other implants.

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About VortexT Analytics

Established in 2016, from technologies originating in national security, VortexT Analytics brings advanced data analytics to hospitals and healthcare systems to allow customers to discover hidden relationships within data.

Visit us at www.vortextanalytics.com or call us at 877.775.6532

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We were very pleased with the results we received from VortexT in the spinal fusions program and are very excited to continue the relationship and more fully utilize the platform. With the release of current roadmap items, we anticipate significant cost savings and improved productivity and outcomes."

-- Kevin Brown, Vice President – Patient Account Services