Bundled Payments in Otolaryngology: Early Lessons from Arkansas

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Abstract
The Medicare Access and CHIP Reauthorization Act (MACRA) of 2015 established value-based reimbursement as the new norm in health care. As part of this shift, public and private insurers have adopted bundled payments in an effort to improve quality and control cost. Arkansas recently implemented an otolaryngology-specific bundled payment, which reimburses episodes of care involving adenoidectomy and/or tonsillectomy. In this mandatory model, otolaryngologists have the potential for shared savings or losses based on spending relative to risk-adjusted historical benchmarks and performance on quality metrics. The initiative has resulted in reduced health care costs and rates of postoperative antibiotic prescription and secondary bleeding. However, this experiment also illustrates potential pitfalls with bundled payments, such as emphasis of quality metrics lacking clinical relevance and incentive for increased service volume. The Arkansas initiative offers important lessons for otolaryngologists as ongoing reform under MACRA brings episode-based care to the forefront of our field.

Keywords
otolaryngology, alternative payment model, value-based care, bundled payment

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The Medicare Access and CHIP Reauthorization Act (MACRA) of 2015 established pay for performance as the new norm in health care; the Centers for Medicare and Medicaid Services (CMS) now estimates that 60% of Medicare physician spending will be linked to value-based reimbursement in 2019, with further increases thereafter.1 As part of this shift, public and private insurers have adopted bundled payments in an effort to improve quality and control cost. In contrast to population-based alternative payment models (eg, accountable care organizations), bundled payments center on defined episodes of care (EOCs) and are often more applicable to the practice of specialists, including surgeons.1 EOCs encompass services typically excluded from global surgery packages, such as initial consultation, diagnostic tests and procedures, and reoperation for complications.

Although bundled payment initiatives have largely focused on cardiac and orthopedic procedures to date, the state of Arkansas recently implemented an otolaryngology-specific EOC (adenoidectomy/tonsillectomy).2 This demonstration offers important lessons for otolaryngologists as ongoing reform under MACRA brings episode-based care to the forefront of our field.

Arkansas Payment Improvement Initiative
The Arkansas Payment Improvement Initiative is a multipayer model that requires providers to participate in bundled payments with the potential for shared savings or losses based on spending relative to risk-adjusted historical benchmarks and performance on quality metrics.2 The initiative presently includes 14 EOCs, such as cholecystectomy and upper respiratory infection. For each episode, payers identify a primary accountable provider (PAP), who bears financial risk and must achieve quality targets to earn shared savings. The methodology for assigning PAPs varies by EOC: whereas the surgeon is always the PAP for adenoidectomy/tonsillectomy, the diagnosing provider is the PAP for upper respiratory infections (ie, pharyngitis, sinusitis, laryngitis, and tracheitis).

Arkansas launched the adenoidectomy/tonsillectomy EOC in 2013. This episode (Figure 1) includes nearly all related services in each phase of care: preoperative (eg, initial consultation), perioperative (eg, professional and facility fees), and postoperative (eg, readmission within 30 days).3 To earn shared savings, otolaryngologists must ensure that intraoperative steroids are administered in at least 85% of

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cases. Otolaryngologists are additionally required to report rates of primary bleeding, secondary bleeding, and post-operative antibiotic prescription as quality measures.

The initiative has achieved several key milestones thus far. Between 2013 and 2015, otolaryngologists in Arkansas delivered nearly 11,000 adenoidectomy/tonsillectomy EOCs, predominantly (83%) in the Medicaid population. During this period, the mean risk-adjusted cost per episode decreased by 7% for Medicaid patients; rates of surgical pathology usage, postoperative antibiotic prescription, and secondary bleeding declined as well (48%, 83%, and 56% relative reduction, respectively). In 2015, nearly all (96%) otolaryngologists were eligible for gain sharing with Medicaid (mean payment $1,845 per PAP) based on spending, although the mean rate of intraoperative steroid administration (71%) was below the threshold.

Ongoing Reform

Under MACRA, the CMS has initiated 2 alternative payment models that may require otolaryngologists to participate in episode-based care—the Merit-Based Incentive Payment System and the Oncology Care Model. The majority of otolaryngologists are required to participate in the Merit-Based Incentive Payment System, which will begin factoring cost measures into provider reimbursement in 2019. The CMS is currently developing cost measures for high-expenditure EOCs and has collaborated with the American Academy of Otolaryngology—Head and Neck Surgery to begin defining episodes for laryngectomy, tracheal repair, and tracheostomy. The American Academy of Otolaryngology—Head and Neck Surgery has additionally solicited the CMS to develop cost measures for additional episodes, such as sudden hearing loss and peritonsillar abscesses, to help ensure that otolaryngologists are evaluated based on clinically relevant benchmarks.

The CMS Oncology Care Model is a multipayer bundled payment initiative that began in 2016 and affects >3000 episodes of head and neck cancer care per year. In this model, oncology practices are responsible for 6-month EOCs upon initiation of chemotherapy. Although surgeons are not often exposed to direct financial risk in the Oncology Care Model, surgical care is a key driver of performance. For instance, the high utilization of post–acute care in head and neck cancer EOCs was attributed to necessary rehabilitation following surgery. As a result, medical oncologists may eschew treatment regimens with neoadjuvant therapy or preferentially refer patients to otolaryngologists adept at coordinating post–acute care.

Implications for Practice

The Arkansas initiative demonstrates that otolaryngologists can succeed in bundled payment models. Nonetheless, this experiment illustrates several potential pitfalls with episodic payment. First, for episodes applicable to primary care physicians and specialists (eg, upper respiratory infection), cost benchmarks and quality measures (eg, frequency of antibiotic usage) may lack adequate risk adjustment to reflect the complexity of cases referred to specialists. There is anecdotal evidence that specialists may accordingly refuse referrals. Second, quality measures may lack clinical relevance or attainability, as evidenced by the failure of otolaryngologists to achieve a mean rate of intraoperative steroid administration above the performance threshold in 2014 and 2015. Third, bundled payments may incentivize increased service volume due to the potential for reduced margins. Of note, the number of adenoidectomy/tonsillectomy episodes increased by >10% between 2014 and 2015, while the number of performing otolaryngologists remained constant.

Given such limitations of bundled payments, otolaryngologists should endeavor to optimize factors within their
control. Early experience with bundled payment for joint replacement suggests that medical device and post–acute care costs can be lowered to achieve significant savings without decreased quality.\textsuperscript{8} Furthermore, otolaryngologists should consider negotiating with payers to facilitate investments in information technology and practice staff to address increased administrative burden, as noted in a recent pilot of bundled payments for head and neck cancer.\textsuperscript{9}

The scope of bundled payments in otolaryngology remains to be seen. Although there are challenges associated with the model, this novel method of reimbursement may also present an opportunity for otolaryngologists to reassess how best to deliver high-value care.

**Author Contributions**

Vinay K. Rathi, study conception and design, drafting the article, revising manuscript critically for important intellectual content, final approval; Ralph Metson, study conception and design, drafting the article, revising manuscript critically for important intellectual content, final approval; Mark A. Varvares, study conception and design, drafting the article, revising manuscript critically for important intellectual content, final approval; Matthew R. Naunheim, study conception and design, drafting the article, revising manuscript critically for important intellectual content, final approval; Stacey T. Gray, study conception and design, drafting the article, revising manuscript critically for important intellectual content, final approval.

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