

Changes in Hospital Uncompensated Care Following the Texas Medicaid Waiver Implementation

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ABSTRACT

In 2011, Texas implemented an 1115 Medicaid Waiver in lieu of Medicaid expansion. This study assesses changes in hospital uncompensated care percentage (UCP) and measures the effect of the delivery system reform incentive payment (DSRIP) initiatives, using two payment variables (Category 1 and 2 payments and Category 3 payments) on UCP between 2012 and 2016. Data were obtained from the American Hospital Association for 2011 to 2016 and from Texas Health and Human Services for 2011 to 2015. A mixed-effects model was used to estimate the association between DSRIP funding and changes in UCP the following year. Independent variables included Fiscal Year, Bed Size, Underfunded Patient Mix, and DSRIP earned funding amounts. The study found DSRIP funding for Category 3 (outcome-based measures) was significantly associated with decreased UCP. Category 1 and 2 payments, which primarily funded infrastructure, were not significant; however, they are necessary to achieve Category 3 outcomes. These results indicate UCP can be decreased through funding achievements in Category 3 outcomes. This is promising for CMS and Texas as Texas implements waiver 2.0, which is structured to pay for large-scale improvements in health outcomes.

Keywords: Medicaid Waiver, Hospital Uncompensated Care, Regional Healthcare Partnership

INTRODUCTION

Uncompensated healthcare (UC) costs have become a major concern to hospitals after the Emergency Medical Treatment and Active Labor Act (EMTALA) required hospitals to provide certain services regardless of a patient's ability to pay (Mann, Melnick, Bamezai, & Zwanziger, 1997). The American Hospital Association defines uncompensated care costs as "an overall measure of hospital care provided for which no payment was received from the patient or insurer." UC costs increased nationally from 2001 to 2014 (American Hospital Association, 2016) with low-income, uninsured and underinsured individuals generating the majority of uncompensated care. Historically, Medicaid has partially funded UC through Disproportionate Share Hospital (DSH) or Upper Payment Limit (UPL) reimbursements based on a hospital's service delivery share. Despite these payments, Texas hospitals provided more than \$6.5 billion in uncompensated care costs during 2013 (Texas Health and Human Services Commission, 2016a).

In 2014, the Affordable Care Act (ACA) allowed states to expand the eligibility of Medicaid to non-elderly adults with incomes at or below ~138% of the Federal Poverty Level. Data from Medicaid expansion states concluded a \$5 billion decrease in uncompensated care occurred between 2013 and 2014, while the UC in non-expansion states remained roughly the same (Cunningham, Rudowitz, Young, Garfield, & Foutz, 2016). The same data also indicated a larger decline in the number of uninsured (self-pay) admissions, which is a major source of UC (Bachrach, Boozang, & Lipson, 2015; Nikpay, Buchmueller, & Levy, 2016). This was substantiated by the Kaiser Family Foundation (Antonisse, Garfield, Rudowitz, & Artiga, 2017) which reported "Medicaid expansions result in reductions in uncompensated care costs for hospitals and clinics." Similarly, Blavin (2016) found the mean annual UC costs declined by \$2.0 million for hospitals in expansion states while increasing by \$180,000 in non-expansion states.

In 2011, Texas had the highest rate of uninsured individuals (25.5%) among the 50 states (National Center for Health Statistics, 2017). This rate remained high through 2014 (21.3%) and continues to be considerably higher than the national average of 12% (Texas Health and Human Services Commission, 2016b). Not surprising, Texas experienced a tripling in UC costs over a 10-year period, from \$2.0 billion in 2002 to \$6.2 billion in 2011 (Health and Human Services Commission, 2016a). Texas also had the highest amount of UC as a percentage of total revenue among the seven most populous states (Texas Department of State Health Services, 2013). Despite the high rate of uninsured, Texas did not participate in the Medicaid expansion and instead opted to pursue section 1115 of the Medicaid Waiver program in 2011.

Texas Section 1115 Medicaid Waiver

By 2015, six states implemented an 1115 Medicaid Waiver in lieu of Medicaid expansion. Each state designed a state-specific program aimed at increasing the provision of care for the low-income and uninsured population (Musumeci & Rudowitz, 2015). In Texas, the waiver began in 2011 and replaced the upper payment limit (UPL) and created two funding pools, a hospital UC pool to provide a buffer for UC costs and a Delivery System Reform Incentive Payment (DSRIP)

program to transform the delivery system, improve the quality of healthcare, and improve population health (Gates, Rudowitz, & Guyer, 2014). During the Texas 5-year waiver program, -the ratio of funds allocated to the UC pool decreased while the DSRIP allocation increased. The funding ratios were purposeful to incentivize innovation and accountability across healthcare providers.

Texas received \$29 billion in waiver funding, distributed over 6 years (2011 to 2016), and spread between the two statewide pools: hospital UC pool (\$17.6 billion) and DSRIP (\$11.4 billion). The Texas Waiver DSRIP pool comprised 1,451 demonstration projects, implemented across the state, intended to transform the quality of healthcare delivery while reducing costs. Of the total DSRIP funding, 75% was allocated to hospitals and 25% to physician practices affiliated with an academic health science center, community mental health center and/or local health department (Texas Health and Human Services Commission, 2012).

During the first year of the waiver, communities developed DSRIP-related plans that included a community health needs assessment and a list of innovative delivery projects with milestones selected from a CMS-approved menu. Each year individual projects were given a prospective payment rate based on achievement of metrics. These metrics were classified as Category 1, 2, and 3 metrics. Categories 1 and 2 were largely related to building infrastructure, while Category 3 represented agreed upon outcomes from the previous two categories. Projects earned payments by achieving metrics in each category. Over the waiver period, funding for Categories 1 and 2 decreased as funding for Category 3 increased.

Texas has 20 regions (regional healthcare partnerships or RHPs) to facilitate effective delivery of care and collaboration among the providers implementing waiver projects. Each RHP is led by an anchor, which is a public hospital or local government entity that coordinates RHP activities and serves as the RHP's point of contact with the state and CMS (Gates et al., 2014). During the first year of the waiver, RHPs developed DSRIP-related plans that included a community health needs assessment and a list of innovative delivery projects with milestones selected from a CMS-approved menu. The following years of the waiver involved implementation, assessment and improvement of projects in demonstration years 2 to 5 (Schoenberg, Chau, Salsberry, & Miller, 2013; Texas Health and Human Services Commission, 2016b, 2016c). The waiver period consisted of five 12-month demonstration periods of each year. DSRIP projects consisted of four categories: infrastructure development, program innovation and redesign, quality improvement measures, and population health improvement metrics (Gates et al., 2014). Each RHP received DSRIP funding based on: 1) the percentage of the state population with incomes below 200% of the federal poverty level; 2) the percentage of acute care payments made to the region in fiscal year 2011; and 3) the percentage of supplemental payments (relative to the total) made under the Upper Payment Limit program to RHP providers in fiscal year 2011 (Texas Health and Human Services Commission, 2012).

With the 5-year demonstration period at its end, stakeholders are interested in measuring the waiver's impact on slowing the rate of UC in Texas (Guyer, Shine, Rudowitz, & Gates, 2015). Due to the diversity of projects and geographic differences among regions, it is challenging to evaluate the impact of the DSRIP program. However, evaluation of changes in hospital UC expenditures provides some insight on the impact of the waiver on the low-income and uninsured

who use hospital services. The present study explores the relationship between the waiver funding and changes in hospital UC percent. This study expands on prior research (Antonisse, Garfield, Rudowitz, & Artiga, 2017), which evaluated multiple factors that may influence UC.

Research Aim

This study assesses changes in UC across Texas during the Texas 1115 Waiver implementation. Specific objectives include: 1) analyzing state-wide changes in UC percentage between 2012 and 2016; and 2) measuring the association of earned DSRIP funding, using two payment variables (Category 1 and 2 combined payments and Category 3 payments) on UCP.

METHODS

The study uses hospital data from the American Hospital Association for 2011 to 2016, which included 610 hospitals in Texas. Hospitals with less than 25 beds were excluded from the analysis since they are dissimilar due to economies of scale and/or critical access designation. In addition, specialty and military hospitals were excluded, as were hospitals that did not report for all years in the study period. Uncompensated care percentage (UCP) was calculated as UC cost divided by net patient revenues, and was the dependent variable in the analysis. Hospitals with UCP outside the 0-1 range were excluded since the data were inaccurate. The final analysis included 214 hospitals, which provided 856 observations for the 4-year study period. Data on waiver funding from the first year were used as a point of reference in the model to assess the effect on UCP for the following years.

To control for repeated measurements over time, a mixed-effects model was used in the analysis, containing both fixed and random effects (Dunn & Chen, 1994). The dependent and independent variables are defined in Table 1. Although other research evaluated UC costs as a percentage of total expenses and as a percentage of operating costs, (Blavin, 2016; Dranove, Garthwaite, & Ody, 2016), this study used net patient revenue as the denominator to be consistent with analysis by the Texas Department of State Health Services (Texas Department of State Health Services, 2013). Using revenue, instead of expense, should produce somewhat similar results, since hospital operating margins, which calculate differences between revenue and expenses, tend to be low. The effect of DSRIP funding was assumed to have a year lag effect on UCP. Specifically, DSRIP funding from 2011 to 2015 was used to assess effect on UCP for the period 2012 to 2016. For DSRIP funding rates, FY0 represents October 1 2011 to September 30, 2012. This study defined fiscal year for hospitals as July 1 to June 30; for example, FY0 represents July 1 2012 to June 30 2013. The DSRIP payments were broken into two categories. The DSRIP payments were broken into two categories; 1) aggregated Category 1 and 2 payments (Category 1-2) and representing funds paid for building infrastructure, and 2) Category 3 funds which paid for service utilization and/or achievement of quality outcomes.

Table 1. Definitions of dependent and independent variables

Variables	Definition
UCP	Total uncompensated care costs/total net patient revenues.
Hospital Fiscal Year	2013 = 0, 2014 = 1, 2015 = 2, 2016 = 3
Bed Size	Number of beds in services, adults and pediatrics for each hospital
Underfunded Mix	Sum of Gross Medicaid charges, total charges for state and local indigent care program, and charges of SCHIP divided by adjusted net revenues for each RHP
Category 1-2 (standardized)	Total amount of Category 1 and 2 paid, at the RHP level, divided by the Medicaid/Uninsured population for the prior year
Category 3 (standardized)	Total amount of Category 3 paid, at the RHP level, divided by the Medicaid/Uninsured population for the prior year

Changes in UCP were estimated while controlling for three covariates: 1) hospital fiscal year; 2) hospital bed size, and 3) underfunded payer mix. The model independent variables were DSRIP earned amounts (Category 1-2 and Category 3). The research model is similar to the 2015 study by Chen et al., which evaluated changes in UC costs using hospital financial data and a fixed effects model to control for covariates. All statistical analyses were performed with Statistical Analysis System software (Version 9.4; SAS Institute, Cary, North Carolina).

The final model (population level) was:

$$UCP_{ij} = \beta_0 + \beta_1 \text{Fiscal year}_i + \beta_2 \text{Bed Size} + \beta_3 \text{Underfunded Mix}_{ij} + \beta_4 \text{Funding Rate of Category 1} - 2_{ij} + \beta_5 \text{Funding Rate of Category 3}_{ij}$$

RESULTS

Table 2 summarizes the results of the mixed-effects model for all the covariates. The first objective, to analyze changes in UCP occurring across Texas, was addressed by examining the coefficient of the Fiscal Year variable, displayed in Table 2, while controlling for the other covariates. The statistically significant coefficient is 0.004529. Therefore, since the base year is 2011, for every year between 2012 and 2016 there has been an average increase in the percentage of uncompensated care of 0.004529 percentage points across the state. However, the annual effect is mitigated by changes in either of the other two significant variables of Underfunded Mix and Category 3. The level of underfunded mix reflects the community served.

Table 2. Model Results

Variables	Estimate	SE	<i>p</i> value
Intercept	0.04919	0.0097	<0.0001
Hospital Fiscal Year	0.00453	0.0008	<0.0001
Bed Size	-1.8E-07	2.1E-06	0.931
Underfunded Mix	0.06842	0.0071	<0.0001
Category 1 – 2 (standardized)	9.8E-07	8.7E-06	0.9104
Category 3 (standardized)	-0.00055	7.0E-05	<0.0001

The estimated relationship of the second variable, Total Beds, is statistically non-significant, which suggests that if the total number of beds in Texas were to either increase or decrease there would be no net effect on the uncompensated care percentage. Given bed size does not typically change each year and the exclusion of smaller hospitals in this study, this variable should merely be considered a control factor.

The variable Underfunded Mix represents the percentage of gross charges attributed to Medicaid, state and local revenue, and SCHIP relative to net revenue for each RHP. This variable is statistically significant and implies that for every 1-percentage point increase in charges coming from the underinsured, the uncompensated rate increases by 0.06842 percentage points, or a 6.8% increase. This likewise is considered a control factor.

The second objective of the study, to measure DSRIP funding effect on UCP during those years associated with total waiver funding received, and was addressed by examining the results of the two payment variables (Category 1-2 payments and Category 3 payments). These two funding rate variables represent the funds received in one year per Medicaid/uninsured person, which were earned in the previous year. In the studied data set, the minimum funding rate for Category 1-2 was \$59.37 per capita Medicaid/uninsured, with the maximum amount received in any one year being \$326.42 per capita Medicaid/uninsured. For funding rate Category 3, the minimum amount received in any one year was \$8.56 per capita Medicaid/uninsured and the maximum was \$138.38. Therefore, when interpreting the mixed model coefficients for each variable, the range of dollar value changes should be limited to these extremes. However, since the variable for Category 1-2 is not statistically significant, it should not be interpreted as effecting UCP, but should be maintained in the model for control.

Payment variable Category 3 is statistically significant and suggests that an earned increase payment of \$100 per capita Medicaid/uninsured in a fiscal year is associated with a 0.055 percentage point drop in UCP the following year. Thus, if the UCP rate in one year were 10%,

for example, the estimated effect for a \$100 increase in Category 3 payment on UCP would be an expected drop to 9.945%. It is important to take into account that Category 3 funding cannot exist without the necessary infrastructure funded with Category 1-2. Therefore, these variables should be considered together and not separately. Based on the existing data, the interpretations of the per capita dollar changes for each variable should be limited to \$200 for funding rate Category 1-2 and \$100 for funding rate Category 3. Note, the estimated effect from Category 3 would be slightly less than that shown in the model since funds must be expended in all three categories to get a beneficial effect on UPC. Further, the rate of funding for Category 3 was sufficiently high during the Waiver thus mitigated the annual increase in UCP each fiscal year.

DISCUSSION

Public concern over healthcare access and costs continues despite ACA provisions to ameliorate both. The cost of uncompensated care continues to burden US hospitals, particularly in those states with high levels of uninsured patients. The expansion of coverage through Medicaid has been associated with reduced UC costs, increase access, and improve outcomes. Non-expansion states, such as Texas, are being evaluated for their alternatives to Medicaid expansion. Initiatives such as the Medicaid waiver, are seen as alternatives to reduce uncompensated care cost by expanding access to care. In Texas, the cost of UC was approximately \$6.2 billion in 2011 with an uninsured rate of approximately 25.5 percent (Health and Human Services Commission, 2016).

There is an abundance of current research that demonstrates the financial and patient benefits of the Medicaid expansion (Antonisse, Garfield, Rudowitz, & Artiga, 2017); however, a paucity of evidence exists to support non-expansion alternatives using Medicaid waivers. Now that the five-year initial implementation of the Texas Medicaid waiver has concluded, CMS, along with the Texas Department of Health and Human Services, is assessing the degree of tangible benefits. Policy leaders are now looking for evidence that states can effectively reduce costs and improve access via initiatives other than Medicaid expansion.

The present study found the overall rate of UCP change increased annually in Texas during the studied 4-year waiver period. The findings are consistent with a report from the Texas Health and Human Services Commission (Texas Health and Human Services Commission, 2016d) that found uncompensated care cost increased from 2010 to 2014 based on AHA data, with the largest increase occurring from 2010 to 2011.

The finding that Category 1-2 is not statistically significant on reducing UCP, but Category 3 funding is significant, has a clear explanation. This is because the Category 1-2 payments were provided in the early years of the Waiver and were intended to fund building infrastructure necessary for service delivery, while Category 3 payments were paid largely in years 3-5 and centered on outcomes. Therefore, a sound conclusion is that the impact on UCP is largely driven by initiatives that have direct effect on delivering patient services and resulting outcomes. As Texas moves into 1115 Waiver 2.0, recently approved for the 2017–2022 period, project funding will be based largely on achieving outcomes that are associated with improvements in health.

Study Limitations

This study is limited to the Texas 1115 Waiver experience. AHA data were self-reported by individual hospitals to CMS and were the primary source of hospital level information.

Nonetheless, AHA data are routinely used to study hospital financial performance. Hospital UC data do not quantify benefits in care coordination or access to care, both of which were reported in prior research as benefits resulting from the 1115 Waiver (Begley et al., 2016; Revere et al., 2016). In addition, the accounting fiscal year for hospitals is not directly aligned with DSRIP funding years.

CONCLUSIONS

Financing hospital care for the uninsured is a national, state and local policy concern. Providers have relied on disproportionate share payments and other forms of financing, such as Medicaid waivers, to offset costs of care for the uninsured. This is particularly true in states, such as Texas, which have high rates of uninsured persons. The 1115 Medicare Waiver provided Texas with a funding stream for innovative projects aimed at increasing access and reducing uncompensated care. Early results suggest improvements and achievement of outcomes, and larger impact on reducing UCP stemming from Category 3 payments, than from efforts in increasing or building infrastructure. This holds promise for as the State of Texas begins to implement Waiver 2.0; a funding mechanism designed to encourage existing projects to scale up through a payment model that supports demonstrated success in improving patient outcomes. Additional research is needed to better understand the particular 1115 Medicaid Waiver projects that were effective in enhancing access, improving outcomes, and reducing hospital UCP in Texas.

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