Parent Resource Guide
Status Update

As Required by
Chapter 161, Texas Health and Safety Code, Sections 161.501 and 161.502

Texas Health and Human Services Commission

December 2018
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Executive Summary

The Texas Health and Human Services Commission (HHSC) submits the Parent Resource Guide Status Update in accordance with Chapter 161, Texas Health and Safety Code (HSC), Sections 161.501 and 161.502. As of January 1, 2010, 161 HSC Sections 161.501 and 161.502 requires Medicaid prenatal care and delivery providers to supply a parent resource guide to mothers, fathers, and caregivers of infants in Texas. Providers may disseminate any guide meeting the statutory requirements. The Department of State Health Services (DSHS) makes a parent resource guide (Guide) available free-of-charge to qualifying Medicaid providers. HHSC is required to submit a report on the effectiveness of the DSHS-produced Guide by December 1 of every even-numbered year.

During the period covered by this report, August 2016 through July 2018, a total of 181,250 Guides were distributed by DSHS, an increase of 25,600 Guides from the 2016 report. Sixty of 254 counties (24 percent) ordered Guides during the reporting period. The highest number of Guides was distributed in Harris County (39,325). Dallas and Bexar counties also had a high number of Guides distributed, with 34,425 and 15,225, respectively.

To support targeted dissemination efforts, HHSC examined Guide orders with respect to Medicaid deliveries and Health Service Regions (HSR) to determine if the number of Guides ordered was proportionate to the number of Medicaid deliveries in the region. In state fiscal year 2017, the Houston region (HSR 6/5S) had the highest Guide to Medicaid deliveries ratio with 0.87, and the San Antonio region (HSR 8) had the lowest ratio with 0.16. Currently, DSHS is conducting a pilot project with HSR 8 to promote the Guide through the Texas Health Steps Program (THSteps). Findings in this report indicate that HSR 8 had one of the lowest Guide to Medicaid delivery ratios over time, supporting this region as a good choice for the DSHS pilot project to increase awareness and distribution of the Guide. If the pilot project is successful, DSHS will look to expand the project to other HSRs. HSRs 9/10 and 11 were among the lowest Guide to Medicaid delivery ratios in state fiscal year 2016 and 2017, so these regions could be included in any pilot project expansion efforts.

161 HSC Sections 161.501 and 161.502 requires HHSC to evaluate the effectiveness of the Guide in improving health outcomes for children and reducing
costs to the state. Several limitations prevent HHSC from conducting these analyses in relation to the Guide. Despite these limitations, HHSC used existing data to examine two Healthcare Effectiveness Data and Information Set (HEDIS) measures related to information included in the Guide: Well-child visits and childhood immunizations. No relationship was found between these HEDIS measures and Guide distribution by Medicaid service delivery area (SDA).

Although no relationship was found between Guide distribution and child health-related HEDIS measures, there is evidence in the literature to support cost savings for well-child visits and immunizations. Specifically, prior research suggests that implementation of recommendations in the Guide around well-child visits and immunizations are an essential preventative practice in averting expensive healthcare costs to the state.

DSHS continues to promote the Guide to providers of Medicaid-enrolled mothers and caregivers in Texas. The information derived from this report will support DSHS in future Guide promotion and distribution efforts.
161 HSC Sections 161.501 and 161.502 require that Medicaid prenatal care and delivery providers supply “the woman and the father of the infant, if possible, or another adult caregiver with a resource guide that includes information in both English and Spanish relating to the development, health, and safety of a child from birth until age five,” including:

- Selecting and interacting with a primary health care practitioner.
- Establishing a “medical home”.
- Dental care.
- Effective parenting.
- Child safety.
- The importance of reading to a child.
- Expected developmental milestones.
- Healthcare resources available in Texas.
- Selecting appropriate childcare.
- Additional resources available in the state.

161 HSC Sections 161.501 and 161.502 requires dissemination of a parent resource guide as of January 1, 2010. Under 161 HSC Sections 161.501 and 161.502, DSHS is responsible for producing and making a parent resource guide available at no cost to Medicaid providers. Medicaid prenatal care and delivery providers may meet the legislative requirement by disseminating the DSHS-produced Guide or another guide that contains the required information. HHSC is responsible for evaluating its effectiveness on child health outcomes and reducing costs to the state.

A status report on the distribution of the DSHS-produced Guide to Medicaid providers has been submitted every other year since December 2010. This report quantifies the distribution of the Guide in English and Spanish since the last report in 2016 for the time period of August 2016 through July 2018, statewide and by DSHS HSR. Additionally, HHSC examines the distribution of the Guide over time in comparison to the number of Medicaid deliveries to determine if Guide distribution is proportionate to the number of Medicaid deliveries by HSR. Finally, this report evaluates two child health care quality measures related to information in the Guide—well-child visits and childhood immunizations, and their correlation with Guide distribution. While any changes in these measures cannot be directly
attributed to dissemination of the Guide to mothers and caregivers, they can help target future dissemination efforts.

This report, due December 1, 2018, fulfills the legislative requirement that HHSC submit a report each even-numbered year on the effectiveness of the Guide.
2. Background

History of Parent Resource Guide

A Parent’s Guide to Raising Healthy, Happy Children was initially developed by the Raising Texas Initiative and its partners in 2009 as the result of a Frew lawsuit strategic initiative.\(^1\) The Raising Texas Initiative was a collaboration between state agencies and private organizations to create a comprehensive early childhood system in Texas, with the goal that children under age six are ready for school and master developmental milestones.

The American Academy of Pediatrics (AAP) and Centers for Disease Control and Prevention (CDC) emphasize the importance of education to new parents around preventative care practices for children to minimize future health concerns and recognize early signs or symptoms for medical needs.\(^1,2\) Practices include: establishing a medical home, regular medical and dental screenings at well-child visits, following the recommended vaccine schedule, identifying developmental milestones, implementing certain parenting techniques, and maintaining the overall health and mental health of the parent(s) or caregivers.\(^1,2\)

Parent Resource Guide Revisions

In compliance with statutory requirements, DSHS selected the Guide developed by the Raising Texas Initiative. Since its initial distribution in 2010, DSHS has regularly reviewed and updated the Guide. The original guide was in a calendar format, but the current format is a 5 by 7-inch pocket booklet. Over time, additional updates included a list of health and safety resources and a vaccine schedule.

In state fiscal year 2017, DSHS performed a comprehensive review of the Guide with input from national, state, and community partners. During this review, important changes to the Guide included:

- Updates to follow the requirements of the new Health and Human Services Brand Guide.\(^\text{II}\)

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\(^1\) The Frew strategic initiative was the result of the Frew v. Phillips lawsuit, where the Texas Legislature appropriated $150 million to HHSC for the 2008-2009 biennium to implement strategic initiatives to expand Medicaid-enrolled children’s access to Medicaid services.

• More information on the requirements for quality child care programs.
• The addition of the AAP timeline and screening tool recommendations for early childhood developmental screenings.

**Current Distribution Activities**

Providers of prenatal care or delivery services to Medicaid-enrolled parents or caregivers can order free copies of the Guide, available in English or Spanish, through the organization Texans Care for Children. The minimum order is 100 Guides. It is also available for free download on both the DSHS and Texans Care for Children websites. Providers are required to give a guide to parents and caregivers, but may comply with the legislation by using an alternate parent resource guide that includes the required information. DSHS promotes the Guide by emailing the following hyperlinks to partners and stakeholders to download and share the Guide with Medicaid providers and their patients:

• Parent Resource Guide (PDF): [dshs.texas.gov/mch/default.shtm](dshs.texas.gov/mch/default.shtm)
• Online Bulk Order Form: [txchildren.org/parenting-guide](txchildren.org/parenting-guide)

To increase dissemination of this resource to parents and caregivers, DSHS has partnered with the THSteps program in HSR 8. Through this pilot project DSHS partners with Medicaid providers to understand barriers to distribution of the Guide and promote the Guide.iii At these visits, THSteps staff:

• Give the provider a copy of the Guide.
• Review the benefits of using the Guide with patients.
• Explain how to order the Guide in bulk.
• Discuss the requirement of 161 HSC Sections 161.501 and 161.502 that the Guide, or a similar guide with the same information, be given to parents of newborn children.

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iii The THSteps is an online program that offers continuing education courses for primary care providers and other health professionals. More information on the THSteps can be found at [www.txhealthsteps.com](www.txhealthsteps.com).
3. Results

Building upon prior reports, this status update describes Guide distribution data from August 2016 through July 2018, as well as over time and by HSR. Based on order request data, Guide distribution is measured as the number of Guides sent free-of-charge to Medicaid providers who ordered and were approved to receive them by DSHS. Non-Medicaid providers who paid for the Guide and digital downloads are not included in the Guide distribution count. Currently, data are not collected from patients or providers who download the Guide electronically, so it is unknown whether downloads are by Medicaid providers, other providers, or individuals. Additionally, data are not available to determine if providers are disseminating alternative parent resource guides in lieu of the Guide. Finally, Guide (or an alternative) dissemination to parents and caregivers is required to be recorded in the patient medical record, but these data are not available to HHSC. Therefore, the analysis of Guide distribution is limited to those orders placed by Medicaid providers and fulfilled by DSHS.

DSHS targets Guide promotion efforts by HSR. To support continued DSHS promotion of the Guide, HHSC calculated HSR-level ratios using the number of Guides distributed and Medicaid deliveries to examine whether the volume of Guide distribution corresponds to the volume of deliveries by region. Medicaid delivery data are available at the county level by state fiscal year. Counties can be aggregated by HSR, so the Guide to Medicaid delivery ratio is reported by HSR and state fiscal year.

161 HSC Sections 161.501 and 161.502 requires HHSC to evaluate the effectiveness of the Guide using selected measures. To perform this evaluation, HHSC selected two child health outcomes, specifically utilizing HEDIS measures for well-child visits and childhood immunizations. These measures were selected because they are related to information required to be in the Guide. Specifically, the Guide includes recommended schedules for well-child visits and vaccines from birth to age five.

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IV HEDIS measures are nationally standardized, publicly available health outcome measures that are calculated statewide and by Texas Medicaid Managed Care programs, reported geographically by SDA every calendar year.
161 HSC Sections 161.501 and 161.502 also requires an evaluation of cost savings to the state. Given available data, cost savings analysis is not feasible. Therefore, a brief review of literature related to cost savings of well-child visits and childhood immunizations is included.

**Parent Resource Guide Distribution**

Since the last report a total of 181,250 Guides were distributed between August 2016 through July 2018 by DSHS, including 131,900 English and 49,350 Spanish versions (Table 1). This is an increase from 155,650 Guides distributed during the previous reporting period, which covered August 2014 through July 2016.

**Table 1. Parent Resource Guide Distribution by Health Service Region, August 2016-July 2018.**

<table>
<thead>
<tr>
<th>Health Service Region</th>
<th>Regional Headquarters</th>
<th>English</th>
<th>Spanish</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lubbock</td>
<td>3,375</td>
<td>350</td>
<td>3,725</td>
</tr>
<tr>
<td>2/3</td>
<td>Arlington</td>
<td>46,375</td>
<td>15,400</td>
<td>61,775</td>
</tr>
<tr>
<td>4/5N</td>
<td>Tyler</td>
<td>9,350</td>
<td>3,725</td>
<td>13,075</td>
</tr>
<tr>
<td>6/5S</td>
<td>Houston</td>
<td>36,475</td>
<td>15,050</td>
<td>51,525</td>
</tr>
<tr>
<td>7</td>
<td>Temple</td>
<td>11,100</td>
<td>5,300</td>
<td>16,400</td>
</tr>
<tr>
<td>8</td>
<td>San Antonio</td>
<td>13,550</td>
<td>4,325</td>
<td>17,875</td>
</tr>
<tr>
<td>9/10</td>
<td>El Paso</td>
<td>1,675</td>
<td>1,450</td>
<td>3,125</td>
</tr>
<tr>
<td>11</td>
<td>Harlingen</td>
<td>10,000</td>
<td>3,750</td>
<td>13,750</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td></td>
<td><strong>131,900</strong></td>
<td><strong>49,350</strong></td>
<td><strong>181,250</strong></td>
</tr>
</tbody>
</table>

Note. Data source is Guide orders approved and fulfilled by DSHS for Medicaid providers.
The Guide distribution for August 2016 through July 2018 is displayed in three maps: By county, HSR, and provider. Figure 1 displays the distribution of the Guide for this reporting period by county, and includes HSR boundaries. Providers in 60 of 254 counties (24 percent) ordered guides during the reporting period. The highest distribution was Harris County with 39,325 Guides. Other counties with a high number of Guides ordered include Dallas and Bexar counties with 34,425 and 15,225, respectively. There were eight counties that ordered the minimum of 100 Guides during the reporting period. There were 194 counties (76 percent) without orders for the Guide through DSHS.

Figure 2 displays the distribution of the Guide during the reporting period by HSR. There were two HSRs with over 20,000 Guides ordered: HSR 2/3 with 61,775 Guides and HSR 6/5S with 51,525 Guides. HSR 1 and HSR 9/10 had less than 5,000 Guides ordered. HSR 9/10 ordered the lowest number with 3,125 Guides.

Figure 3 displays the location of the 185 unique providers who placed one or more orders for the Guide. Providers self-identified on the order form for each order as one of the following: Physician office (30.7 percent), hospital (29.8 percent), birthing center (14.5 percent), or a practice including midwifery (2.1 percent). Requestors self-identified on the order form as providers of prenatal care services (89.1 percent), delivery services (76.1 percent), or both (66.4 percent).
Figure 1. Department of State Health Services Parent Resource Guide Orders by County

Figure 2. Department of State Health Services Parent Resource Guide Orders by Health Service Region

Figure 3. Providers of Prenatal Care or Delivery Services Who Ordered the Parent Resource Guide by County

Guide Distribution and Medicaid Deliveries over Time

To examine the relationship between Guide distribution and Medicaid deliveries over time, HHSC assembled data by state fiscal year from 2012 through 2018. Medicaid deliveries data are available by state fiscal year through HHSC, however, data for Guide orders through DSHS are only available by month through July 2018 for the current reporting period. Therefore, Guide distribution numbers for state fiscal year 2018 are incomplete and exclude August 2018.

Figure 4 displays the distribution of the Guide for state fiscal years 2012 through partial state fiscal year 2018 (excluding August 2018) overall and by language. Requests for the Guide by Medicaid providers fluctuated over time. The number of Guides distributed peaked in 2014 with approximately 120,000. The largest number of English Guides was requested in 2014 with 85,000 and Spanish Guide distribution peaked in state fiscal year 2012 with over 41,000.

While the total number of Guides distributed during the current reporting period (August 2016 through July 2018) increased from the previous two-year reporting period (August 2014 through July 2016), when aggregated by state fiscal year there appears to be annual fluctuation in Guide distribution. While only 11 months of data are available for state fiscal year 2018, distribution of the Guide was down to 56,625 overall—42,675 in English, and 13,950 in Spanish. Appendix A includes a complete list of Guide orders over time by HSR.
Figure 4. Parent Resource Guide Distribution, SFY 2012-2018

Notes. SFY=State fiscal year (September 1-August 31). Data source is Guide orders approved and fulfilled by DSHS for Medicaid providers.
A State fiscal year 2018 does not include August 2018

**Ratio of Guides to Medicaid Deliveries**

To examine whether distribution of the Guide was proportionate to the number of Medicaid deliveries by HSR, a Guide to Medicaid delivery ratio was calculated by dividing the number of Guides distributed by the number of Medicaid deliveries for state fiscal years 2012-2017.\(^V\) The Guide to Medicaid delivery ratio for state fiscal year 2018 was not calculated since Guide distribution data are incomplete for that year. A ratio of 1.0 indicates one Guide was ordered for each Medicaid delivery, while a ratio of 0.5 indicates there was one Guide ordered for every two Medicaid deliveries.

\(^V\) Medicaid deliveries are determined using certain payment codes in the Medicaid claims and encounters data, indicating Medicaid paid for a delivery. Stillbirths are included in this count and multiple births are counted as one delivery. These counts are available by state fiscal year and include deliveries in Medicaid managed care and fee-for-service. These data are available online through state fiscal year 2016 ([https://hhs.texas.gov/about-hhs/records-statistics/data-statistics/healthcare-statistics](https://hhs.texas.gov/about-hhs/records-statistics/data-statistics/healthcare-statistics)). State fiscal year 2017 data are available through Health and Human Services Commission - Center for Analytics and Decision Support. Ratios for state fiscal year 2018 are not included here since Guide distribution data are incomplete for that year.
deliveries, or half the number of Guides needed to provide one for each delivery. Therefore, a higher ratio indicates a higher level of opportunity for Guide dissemination based on the number of Medicaid deliveries. Figure 5 displays the statewide Guide to Medicaid delivery ratio. The overall ratio of Guides to Medicaid deliveries fluctuates over time, but was highest in state fiscal year 2012 and 2014 at 0.57 and 0.56, respectively, and lowest in 2013 at 0.35. Order information does not indicate which providers are replenishing or stockpiling Guides, or the length of time over which Guides will be disseminated (i.e., if enough Guides are ordered to disseminate over a one year period, two year period, etc.).

Figure 5. Guide to Medicaid Deliveries Ratio, SFY 2012-2017

Note. SFY=State fiscal year (September 1-August 31).
^ Medicaid deliveries are determined using certain payment codes in the Medicaid claims and encounters data. Stillbirths are included in this count and multiple births are counted as one delivery. These counts are available by state fiscal year and include deliveries in Medicaid managed care and fee-for-service. These data are available online through state fiscal year 2016 (https://hhs.texas.gov/about-hhs/records-statistics/data-statistics/healthcare-statistics). State fiscal year 2017 data are available through Health and Human Services Commission - Center for Analytics and Decision Support. Ratios for state fiscal year 2018 are not included here since Guide distribution data are incomplete for that year.

The Guide to Medicaid delivery ratio varied over time among all HSRs. It is important to note HSR-level ratios do not include Medicaid deliveries among undocumented immigrants who receive emergency Medicaid to cover labor and delivery (Medicaid Type Program 30, or TP30). TP30 deliveries account for approximately 25 percent of all Medicaid deliveries statewide, but are not available.
at the county level. Therefore, the HSR-level Guide to Medicaid delivery ratios presented here may be overestimated (Figure 6, Figure 7, Appendix A: Table A2).

Figure 6 presents Guide to Medicaid delivery ratios for HSRs 2/3, 6/5S, 8, and 11, the HSRs with the highest number of deliveries in state fiscal year 2017. These four HSRs include the five counties with the highest number of deliveries: Dallas and Tarrant, Harris, Bexar, and Hidalgo, respectively. HSR 2/3 consistently maintains a ratio near or above 1.0. While the ratio in HSR 8 spiked to 0.88 in state fiscal year 2016, ratios in HSRs 8 and 11 remained among the lowest over time.
Figure 6. Guide to Medicaid Delivery Ratios by Health Service Regions: Regions with the Highest Number of Medicaid Deliveries, SFY 2012-2017

Note. SFY=State fiscal year (September 1-August 31).

A Medicaid deliveries are determined using certain payment codes in the Medicaid claims and encounters data. Stillbirths are included in this count and multiple births are counted as one delivery. These counts are available by state fiscal year and include deliveries in Medicaid managed care and fee-for-service. These data are available online through state fiscal year 2016 (https://hhs.texas.gov/about-hhs/records-statistics/data-statistics/healthcare-statistics). State fiscal year 2017 data are available through Health and Human Services Commission Center for Analytics and Decision Support. Ratios for state fiscal year 2018 are not included here since Guide distribution data are incomplete for that year.

B Counts of Medicaid deliveries by HSR and statewide DO NOT include those in Medicaid Type Program 30 (TP30, Undocumented Aliens) or those with an unknown county. TP30 deliveries account for approximately 25% of all Medicaid deliveries so ratios reported may be overestimated. Number of TP30 deliveries from state fiscal years 2012-2017: 52,303; 52,125; 54,732; 54,340; 53,489; and 49,815, respectively.

Figure 7 presents Guide to Medicaid delivery ratios for HSRs 1, 4/5N, 7, and 9/10, those with a lower number of Medicaid deliveries in state fiscal year 2017. Over
time, HSR 4/5N maintained one of the highest ratios every state fiscal year except 2014. Ratios among other HSRs in this figure varied over time.

**Figure 7. Guide to Medicaid Delivery Ratios by Health Service Regions: Regions with the Lowest Number of Medicaid Deliveries, SFY 2012-2017^A,B**

![Graph showing ratio of number of guides to Medicaid deliveries by state fiscal year from 2012 to 2017 for different HSRs.]

Note. SFY=State fiscal year (September 1-August 31).

^A Medicaid deliveries are determined using certain payment codes in the Medicaid claims and encounters data. Stillbirths are included in this count and multiple births are counted as one delivery. These counts are available by state fiscal year and include deliveries in Medicaid managed care and fee-for-service. These data are available online through state fiscal year 2016 ([https://hhs.texas.gov/about-hhs/records-statistics/data-statistics/healthcare-statistics](https://hhs.texas.gov/about-hhs/records-statistics/data-statistics/healthcare-statistics)). State fiscal year 2017 data are available through Health and Human Services Commission Center for Analytics and Decision Support. Ratios for state fiscal year 2018 are not included here since Guide distribution data are incomplete for that year.
Counts of Medicaid deliveries by HSR and statewide DO NOT include those in Medicaid Type Program 30 (TP30, Undocumented Aliens) or those with an unknown county. TP30 deliveries account for approximately 25 percent of all Medicaid deliveries so ratios reported may be overestimated. Number of TP30 deliveries from state fiscal years 2012-2017: 52,303; 52,125; 54,732; 54,340; 53,489; and 49,815, respectively.

Child Health Outcomes and Cost Savings

161 HSC Sections 161.501 and 161.502 require the Guide to provide parents or caregivers information and recommendations on healthcare visits and services for their child. 161 HSC Sections 161.501 and 161.502 also require that HHSC evaluate the effectiveness of the Guide as it relates to child health outcomes and reducing costs to the state.

Limitations to Analyses

There are several limitations that prevent an evaluation of child health outcomes and cost benefits directly related to the Guide, as specified in 161 HSC Sections 161.501 and 161.502. Although providers are required to furnish resource guides to parents and caregivers, they are not required to distribute the DSHS-produced Guide and may provide alternate guides meeting the same legislative requirements. DSHS collects data on any provider that orders the DSHS-produced Guide, but no information is available on providers that may be using an alternate parent resource guide. 161 HSC Sections 161.501 and 161.502 requires that providers document the receipt of a parent resource guide in the patient’s medical record, however, HHSC and DSHS do not have access to those data. Given these limitations, we cannot determine a comparison group of providers that did not distribute a guide, parents or caregivers that did or did not receive a guide, or whether a guide is the DSHS-produced Guide or an alternate version.

Furthermore, the effects of the Guide cannot be isolated. The state is unable to determine if recipients of the Guide received other similar materials that may have influenced behavior, or the extent to which a Guide received was utilized. Given these limitations, we cannot directly or indirectly attribute any cost savings or improvement in child health outcomes to receipt of the Guide.

Well-Child Visits and Childhood Immunizations

In consideration of these limitations, and in order to meet the requirements of 161 HSC Sections 161.501 and 161.502, HHSC examined two HEDIS measures related to child health outcomes—well-child visits and childhood immunizations—across
different regions of the state. HEDIS measures are a nationally recognized, standardized set of public health outcome measures. In Texas, HEDIS rates are monitored and calculated by HHSC’s External Quality Review Organization. All HEDIS rates are published online and publically available for calendar years 2011-2016 on the Texas Healthcare Learning Collaborative (THLC) portal: thlcportal.com/home.

The two HEDIS measures HHSC examined are defined as follows:

- **Well-Child Visits in the First 15 Months of Life (W15)**, defined as the percentage of children who received six or more well-child visits in the first 15 months of life.³

- **Childhood Immunization Status (CIS)**, defined as the percentage of children who received certain combinations of vaccines by age two.³,VI

The Guide includes a recommended schedule for well-child visits and immunizations, which align with the minimum measurement criteria for both W15 and CIS.VII HHSC examined W15 and CIS to analyze whether well-child visits and childhood immunizations were associated with Guide distribution. Based on availability of data for HEDIS rates and Guide distribution, W15 was examined for calendar year 2012-2016 and CIS was examined for calendar year 2011-2016.VIII,IX

There was no meaningful relationship found between the HEDIS measures and

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³ HEDIS CIS measures include a separate rate for 9 possible vaccine combinations. For this report, Combination 4 was selected. Combination 4 immunizations include: Diphtheria, tetanus, and acellular pertussis (DTaP), inactivated polio vaccine (IPV), measles, mumps, and rubella (MMR), haemophilus influenza type b (HiB), hepatitis b (HepB), varicella (VZV), pneumococcal conjugate (PCV), and hepatitis a (HepA).

VII The Guide currently recommends six well-child visits within the first 15 months of life. The Guide provides a schedule for immunizations, including Combination 4. Combination 4 was selected as this is the minimum combination of immunizations for children up to 25 months as required by state law for child care and pre-K facilities. See: Texas Department of State Health Services (2018). 2018-2019 Texas minimum state vaccine requirements for child-care and pre-k facilities (DSHS Stock No. 6-15). Austin, TX: Texas Department of State Health Services.

VIII On the THLC portal, HEDIS rates are available by calendar year for both statewide and SDA rates. HEDIS rates are calculated for Texas Medicaid managed care programs (e.g. STAR), which are reported geographically by Medicaid service delivery area. The Department of State Health Services uses HSRs for their Guide distribution efforts, but HEDIS measures are not available by HSR.

IX HEDIS rates are reported in the calendar year following the measurement year. To account for the delay between receiving the Guide and the time needed to measure HEDIS rates, data lags were used. For W15, a one year lag was used (e.g. W15 rate for calendar year 2015 is compared to Guide distribution in calendar year 2014). For CIS, a two year lag was used (e.g. CIS rate for calendar year 2016 was compared with Guide distribution in 2014).
Guide distribution. Appendix B provides more information on the methods and findings for this analysis.

**Cost Savings**

While specific data necessary to conduct an analysis of cost savings directly related to the distribution of the Guide are not available, there is evidence to support cost savings from implementation of recommendations in the Guide, particularly with respect to well-child visits and immunizations. Several factors discussed above limit our ability to determine if there is an association between Guide distribution and child health outcomes as defined by HEDIS W15 and CIS. However, the literature supports the idea that immunizations and well-child visits have the potential to result in cost savings to the state.

Well-child visits are widely recognized in healthcare fields as an essential preventative practice for children. The Guide currently recommends a minimum schedule of seven well-child visits within the first 15 months of life. According to the AAP, recommended periodicity schedules for well-child visits are appropriate for children that receive competent parenting, have no manifestations of health problems, and are developing satisfactorily. Currently, the recommended schedule in the Guide fits within the AAP periodicity schedule for well-child visits.

Well-child visits have been described in the literature as an optimal setting for children to receive their immunizations. Studies have found that children with well-child visits and immunizations that followed the AAP recommended schedule were less likely to visit the emergency department and had a lower risk of hospitalization. For children that begin to manifest health problems or developmental concerns, well-child visits are ideal for parents to receive guidance and reassurance from healthcare practitioners. As such, well-child visits contribute to important preventative practices that help parents recognize early signs that a child might need more frequent supervision and avert costs of more drastic, expensive healthcare services.

The Guide contains the recommended schedule for 10 vaccines to prevent 14 diseases. Building upon previous work, a study of children born in the United States in 2009 found that routine childhood immunizations substantially reduced the incidence of disease and estimated a net savings of $13.5 billion dollars in direct costs over the lifetime of the 2009 birth cohort. The authors found that for every $1 spent on the vaccination program, approximately $3 were saved in direct costs.
(outpatient and inpatient visits, outbreak control) and $10 in indirect costs (productivity loss due to illness, caretaking, and disability).  

Immunizations provided through the Vaccines for Children Program are paid for by the CDC, but state Medicaid programs pay for the cost of administering them. The CDC published a study of the Vaccines for Children Program from 1994 through 2013 in which they estimated “routine childhood vaccines introduced during the Vaccines for Children era (excluding influenza and hepatitis A) together will prevent about 1.4 million hospitalizations and 56,300 deaths.” The Texas Medicaid program realizes cost savings through averted cases of vaccine-preventable diseases such as measles, mumps, rubella, and pertussis.
4. Conclusion

DSHS continues to collaborate with Texans Care for Children to update and distribute the Guide to providers as required by the 161 HSC Sections 161.501 and 161.502. The total number of Guides distributed to providers increased since the last reporting period. Child health outcomes and potential cost savings cannot be directly attributed to the distribution of the Guide, but continued outreach and marketing efforts can be informed by results presented in this report.

For example, HSR 8 had one of the lowest Guide to Medicaid deliveries ratio over time. This finding supports the DSHS pilot study with THSteps in HSR 8 to increase dissemination of the Guide to mothers and caregivers in this region. If the pilot study with THSteps in HSR 8 increases dissemination of the guide, DSHS will look to expand the project to other HSRs. HSRs 9/10 and 11 were among the lowest Guide to Medicaid delivery ratios in state fiscal year 2016 and 2017, so these regions could be included in any pilot study expansion efforts.

The CDC and AAP recommend promoting awareness and education to new parents on preventative practices for children, such as well-child visits and immunizations. This study found no meaningful relationship between Guide distribution and HEDIS outcomes, and are based on data aggregated at the SDA level, diluting any county-level relationships that may exist. Therefore, further study is needed to determine if there is a relationship between Guide distribution and HEDIS outcomes.

Finally, evidence from the literature suggests these preventative practices are cost-effective, so new avenues for Guide distribution could be considered. DSHS could provide promotional materials and information to Medicaid managed care organizations to share among their provider networks. While the legislation mandates a parent resource guide be provided during prenatal care or delivery, consideration should be given to providing the Guide free of charge to Medicaid pediatricians as well.

Efforts should continue to increase awareness of the Guide available at no cost to Medicaid providers so they can further disseminate this important information to new parents.
5. References


### List of Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAP</td>
<td>American Academy of Pediatrics</td>
</tr>
<tr>
<td>CDC</td>
<td>Centers for Disease Control and Prevention</td>
</tr>
<tr>
<td>CIS</td>
<td>Childhood immunization status (HEDIS measure)</td>
</tr>
<tr>
<td>CY</td>
<td>Calendar year</td>
</tr>
<tr>
<td>DSHS</td>
<td>Department of State Health Services</td>
</tr>
<tr>
<td>Guide</td>
<td>Parent resource guide</td>
</tr>
<tr>
<td>HEDIS</td>
<td>Healthcare Effectiveness and Data Information Set</td>
</tr>
<tr>
<td>HHSC</td>
<td>Health and Human Services Commission</td>
</tr>
<tr>
<td>HSR</td>
<td>Health service region</td>
</tr>
<tr>
<td>SDA</td>
<td>Service delivery area</td>
</tr>
<tr>
<td>SFY</td>
<td>State fiscal year</td>
</tr>
<tr>
<td>THLC</td>
<td>Texas Healthcare Learning Collaborative</td>
</tr>
<tr>
<td>THSteps</td>
<td>Texas Health Steps</td>
</tr>
<tr>
<td>W15</td>
<td>Child and Adolescent Well-Care Visits (HEDIS measure)</td>
</tr>
</tbody>
</table>
### Appendix A. Supplemental Materials

**Table A 1. Distribution of Parent Resource Guide by Health Service Region, SFY 2012-2018**

<table>
<thead>
<tr>
<th>Health Service Region</th>
<th>Regional Headquarters</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018^</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lubbock</td>
<td>2,300</td>
<td>1,900</td>
<td>5,925</td>
<td>1,925</td>
<td>3,475</td>
<td>2,200</td>
<td>1,125</td>
</tr>
<tr>
<td>2/3</td>
<td>Arlington</td>
<td>45,425</td>
<td>32,075</td>
<td>55,125</td>
<td>38,075</td>
<td>31,850</td>
<td>32,025</td>
<td>22,375</td>
</tr>
<tr>
<td>4/5N</td>
<td>Tyler</td>
<td>5,975</td>
<td>2,825</td>
<td>4,100</td>
<td>3,150</td>
<td>2,675</td>
<td>6,525</td>
<td>5,950</td>
</tr>
<tr>
<td>6/5S</td>
<td>Houston</td>
<td>18,500</td>
<td>12,600</td>
<td>26,025</td>
<td>18,375</td>
<td>19,800</td>
<td>33,550</td>
<td>16,475</td>
</tr>
<tr>
<td>7</td>
<td>Temple</td>
<td>14,500</td>
<td>9,825</td>
<td>8,125</td>
<td>11,300</td>
<td>7,400</td>
<td>10,450</td>
<td>4,650</td>
</tr>
<tr>
<td>8</td>
<td>San Antonio</td>
<td>6,325</td>
<td>4,700</td>
<td>7,575</td>
<td>5,200</td>
<td>16,850</td>
<td>3,100</td>
<td>2,525</td>
</tr>
<tr>
<td>9/10</td>
<td>El Paso</td>
<td>16,300</td>
<td>5,275</td>
<td>3,200</td>
<td>5,600</td>
<td>3,100</td>
<td>2,400</td>
<td>425</td>
</tr>
<tr>
<td>11</td>
<td>Harlingen</td>
<td>8,300</td>
<td>2,800</td>
<td>9,800</td>
<td>3,400</td>
<td>4,925</td>
<td>9,050</td>
<td>3,100</td>
</tr>
<tr>
<td></td>
<td>Statewide</td>
<td>117,625</td>
<td>72,000</td>
<td>119,875</td>
<td>87,025</td>
<td>90,075</td>
<td>99,300</td>
<td>56,625</td>
</tr>
</tbody>
</table>

Notes. SFY=State fiscal year (September 1-August 31).

^ SFY 2018 does not include August 2018.
### Table A 2. Guide to Medicaid Deliveries Ratio by Health Service Region, SFY 2012-2017

<table>
<thead>
<tr>
<th>Health Service Region</th>
<th>Regional Headquarters</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lubbock</td>
<td>0.38</td>
<td>0.32</td>
<td>0.95</td>
<td>0.33</td>
<td>0.60</td>
<td>0.39</td>
</tr>
<tr>
<td>2/3</td>
<td>Arlington</td>
<td>1.20</td>
<td>0.85</td>
<td>1.43</td>
<td>1.00</td>
<td>0.82</td>
<td>0.85</td>
</tr>
<tr>
<td>4/5N</td>
<td>Tyler</td>
<td>0.73</td>
<td>0.28</td>
<td>0.40</td>
<td>0.32</td>
<td>0.27</td>
<td>0.67</td>
</tr>
<tr>
<td>6/5S</td>
<td>Houston</td>
<td>0.49</td>
<td>0.34</td>
<td>0.68</td>
<td>0.49</td>
<td>0.51</td>
<td>0.87</td>
</tr>
<tr>
<td>7</td>
<td>Temple</td>
<td>1.07</td>
<td>0.70</td>
<td>0.56</td>
<td>0.80</td>
<td>0.53</td>
<td>0.76</td>
</tr>
<tr>
<td>8</td>
<td>San Antonio</td>
<td>0.36</td>
<td>0.26</td>
<td>0.40</td>
<td>0.27</td>
<td>0.88</td>
<td>0.16</td>
</tr>
<tr>
<td>9/10</td>
<td>El Paso</td>
<td>1.45</td>
<td>0.47</td>
<td>0.29</td>
<td>0.52</td>
<td>0.29</td>
<td>0.23</td>
</tr>
<tr>
<td>11</td>
<td>Harlingen</td>
<td>0.42</td>
<td>0.14</td>
<td>0.48</td>
<td>0.17</td>
<td>0.25</td>
<td>0.48</td>
</tr>
</tbody>
</table>

Notes. SFY=State fiscal year (September 1-August 31).

A Medicaid deliveries are determined using certain payment codes in Medicaid claims and encounters data. Stillbirths are included in this count and multiple births are counted as one delivery. This data is available by state fiscal year and include deliveries in Medicaid managed care and fee-for-service. These data are available online through state fiscal year 2016 ([https://hhs.texas.gov/about-hhs/records-statistics/data-statistics/healthcare-statistics](https://hhs.texas.gov/about-hhs/records-statistics/data-statistics/healthcare-statistics)). State fiscal year 2017 data are available through Health and Human Services Commission Center for Analytics and Decision Support. Ratios for state fiscal year 2018 are not included here since Guide distribution data are incomplete for that year.

B Counts of Medicaid deliveries by HSR and statewide DO NOT include those in Medicaid Type Program 30 (TP30, Undocumented Aliens) or those with an unknown county. TP30 deliveries account for approximately 25 percent of all Medicaid deliveries so ratios reported may be overestimated. Number of TP30 deliveries from state fiscal years 2012-2017: 52,303; 52,125; 54,732; 54,340; 53,489; and 49,815, respectively.
Appendix B. Analysis of Guide Distribution and Child Health Outcomes

HHSC examined two HEDIS measures for this analysis: W15 and CIS. HEDIS W15 measures the percentage of children who received six or more well-child visits in the first 15 months of life. HEDIS CIS measures the percentage of children who received certain combinations of vaccines by age two.

On the THLC portal, HEDIS rates are available by calendar year for both statewide and Medicaid SDA rates. HEDIS rates are available based on an administrative or hybrid calculation. The methodology for calculating administrative and hybrid rates differ as specified by the National Committee for Quality Assurance. The administrative method uses only administrative data and the hybrid method includes administrative data and information from patient health records. All HEDIS rates for SDAs are administrative rates, but statewide HEDIS rates may be calculated using administrative or hybrid methods. Therefore, SDA-level administrative rates may underreport statewide hybrid rates. Over time, some statewide HEDIS rates have changed from administrative to hybrid measures. All statewide HEDIS rates are compared with national performance benchmarks as indicated on the THLC portal.

Well-Child Visits

Table B1 displays the statewide rates for HEDIS W15 from 2012-2016, along with the type of measurement (either administrative or hybrid calculation), and the HEDIS W15 national performance percentile for Texas in each year. Since W15 is calculated for children who turned 15 months during the measurement year, Guide distribution was examined one calendar year prior to the HEDIS rate because, per 161 HSC Sections 161.501 and 161.502 requirements, the Guide should be disseminated during prenatal care or at delivery. For example, the HEDIS W15 rate for 2012 is aligned with the accompanying Guide distribution from calendar year 2011.

As displayed in Table B1, the statewide rate over time has remained at or near 60 percent, with the highest being 62.2 percent in 2013 and the lowest being 54.7 percent in 2015. This has consistently placed Texas within the 25th-50th national performance percentile. The total number of Guides disseminated fluctuated over these years.
Table B1. Parent Resource Guide Distribution and Statewide HEDIS W15 Rates

<table>
<thead>
<tr>
<th>Calendar Year</th>
<th>HEDIS Rate</th>
<th>Type of Measurement</th>
<th>Texas Performance Rank (National Percentile)</th>
<th>Total Guides Distributed in Previous CY^A</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>60.8%</td>
<td>Admin</td>
<td>25th-50th</td>
<td>88,150</td>
</tr>
<tr>
<td>2013</td>
<td>62.2%</td>
<td>Admin</td>
<td>25th-50th</td>
<td>117,175</td>
</tr>
<tr>
<td>2014</td>
<td>58.5%</td>
<td>Admin</td>
<td>25th-50th</td>
<td>72,000</td>
</tr>
<tr>
<td>2015</td>
<td>54.7%</td>
<td>Admin</td>
<td>25th-50th</td>
<td>131,775</td>
</tr>
<tr>
<td>2016</td>
<td>60.2%</td>
<td>Hybrid</td>
<td>25th-50th</td>
<td>69,525</td>
</tr>
</tbody>
</table>

Note. HEDIS=Healthcare Effectiveness Data and Information Set, W15=Well-Child Visits in the First 15 Months of Life, CY=Calendar year.

^A Guides are reported in the calendar year prior to the HEDIS year (i.e. HEDIS rate for calendar year 2012 is reported with Guide distribution from calendar year 2011).

Pearson correlation analysis were performed to examine the relationships between the HEDIS W15 rate and the number of Guides disseminated at the SDA level. To account for the delay between receiving the Guide and the time needed to determine the W15 rate, a one year lag was used (e.g., the HEDIS W15 rate for calendar year 2015 was compared to the Guide distribution in calendar year 2014). The analysis indicated a very weak positive association between the W15 rate and the number of Guides disseminated (r=0.11, p=0.40, N=61). It is important to note HEDIS measures are not available at the county level. The SDA-level analysis means counties with a high number of Guides distributed and counties with zero Guides distributed are combined, thus obscuring intercounty variation in Guide distribution and diluting any relationship between Guide distribution and HEDIS measures.

^X While p-values are reported for these correlations, statistical significance testing is not applicable in the traditional sense because population-level data was used rather than a sample. These correlations should be interpreted within the context of limited data availability due to data lag; only two years of data were used.
Childhood Immunizations

Table B2 displays the statewide rates for 2013-2016 HEDIS CIS Combination 4, along with the measurement type (administrative or hybrid) and national performance percentile for Texas each year. For 2014, the statewide HEDIS CIS rate is not available on the THLC portal. Per 161 HSC Sections 161.501 and 161.502 requirements, the Guide is distributed during the prenatal period or delivery, approximately two years prior to the measurement year. HEDIS CIS requires that a child turns two years old during the measurement year. Therefore, Guide distribution numbers were examined during the calendar year that is two years prior to the HEDIS reporting year. For example, for HEDIS year 2013, the accompanying Guide distribution year is calendar year 2011. Guide distribution is not available prior to calendar year 2011, so HEDIS rates are reported here for 2013-2016.

As displayed in Table B2, statewide rates for HEDIS CIS Combination 4 have slightly decreased, with the highest rate being 75.8 percent in 2013 and the lowest rate being 69.4 percent in 2015. The total number of Guides distributed increases and decreases from year to year.
Table B2. Parent Resource Guide Distribution and Statewide HEDIS CIS Rates

<table>
<thead>
<tr>
<th>Calendar Year</th>
<th>HEDIS Rate</th>
<th>Type of Measurement</th>
<th>Texas Performance Rank (National Percentile)</th>
<th>Total Guides Distributed Two Years Prior&lt;sup&gt;A&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>75.8%</td>
<td>Hybrid</td>
<td>75th-90th</td>
<td>88,150</td>
</tr>
<tr>
<td>2014&lt;sup&gt;B&lt;/sup&gt;</td>
<td>Not Available</td>
<td>Not Available</td>
<td>Not Available</td>
<td>117,175</td>
</tr>
<tr>
<td>2015</td>
<td>69.4%</td>
<td>Hybrid</td>
<td>50th-75th</td>
<td>72,000</td>
</tr>
<tr>
<td>2016</td>
<td>72.2%</td>
<td>Hybrid</td>
<td>50th-75th</td>
<td>131,775</td>
</tr>
</tbody>
</table>

Note. HEDIS=Healthcare Effectiveness Data and Information Set, CIS=Childhood Immunization Status, CY=Calendar year.

<sup>A</sup> Guides are reported two calendar years prior to the HEDIS year (i.e. HEDIS rate for calendar year 2013 is reported with Guide distribution from calendar year 2011).

<sup>B</sup> Statewide rates for 2014 are not available.

Pearson correlation analysis were used to examine the relationship between the CIS rate and the number of Guides distributed. To account for the delay between receiving the Guide and the time needed to determine the CIS rate, a two year lag was used, (e.g., the HEDIS CIS rate for calendar year 2016 was compared to the Guide distribution in calendar year 2014). The analysis indicated a very weak negative association between the CIS rate and the number of Guides disseminated ($r=-0.12$, $p=0.41$, $N=52$).<sup>XI</sup> As with the W15, it is important to note CIS rates are not available at the county level. The SDA-level analysis means counties with a high number of Guides distributed and counties with zero Guides distributed are combined, thus obscuring intercounty variation in Guide distribution and diluting any relationship between Guide distribution and HEDIS measure.

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<sup>XI</sup> While p-values are reported for these correlations, statistical significance testing is not applicable in the traditional sense because population-level data was used rather than a sample. These correlations should be interpreted within the context of limited data availability due to data lag; only one year of data were used.