STROUDWATER

FINAL REPORT
OF THE
RURAL TEXAS OBSTETRICS STUDY

June 3, 2024

Contents

INTRODUCTION

Background

Rural obstetrics (OB) programs nationwide are struggling, with many facing increasing costs, staffing shortages, and flat demand for labor and delivery (L&D) services. Many others risk closure or have already closed. This trend is felt acutely in East Texas, where a multi-county area of more than 80,000 residents lacks an in-region labor and delivery program. This is just one example of many.

In 2023, the T.L.L. Temple Foundation expressed interest in exploring ways to address the challenges of rural obstetrics programs. At the Foundation's urging, a team of dedicated professionals representing the National Rural Health Association, the Federal Office of Rural Health Policy, rural healthcare consultancy Stroudwater Associates, researchers from Massachusetts and Colorado, and six innovative rural providers of labor and delivery services convened to share sustainable approaches for these services that could serve as models for addressing the nation's rural obstetrics crisis. The project's guiding principle was that documenting and sharing rural obstetric program innovations would be useful in maximizing the collective knowledge of the rural health landscape and preserving access to obstetrics care.

This project was envisioned as a two-track endeavor:

1. **The Innovation Summit:**
   - Stroudwater would convene representatives from six rural health systems ("innovation sites") that were employing innovative practices to maintain and deliver obstetrics care to their communities at a single location to present what they did and how they did it.
   - Policymakers, hospital leaders, stakeholders, and academics would join the event to learn from the presentations and participate in discussions.
   - A write-up on the **innovations and leadership findings** from the innovation sites would be developed and published to RHI Hub.

2. **The Rural Texas Obstetrics Study:**
   - Stroudwater would conduct a study of the state of rural obstetrics in Texas.

This report summarizes the information learned through the Rural Texas Obstetrics Study.

Acknowledgments

This study and the Rural Obstetrics Innovation Summit would not have been possible without several key partners who assisted in funding and sharing information to move the project forward. Thanks to the organizations and individuals listed below, we can offer these findings as a tool for those passionate about supporting maternal health access in rural America.

We would like to thank:

- The T.L.L. Temple Foundation
- The Federal Office of Rural Health Policy (FORHP)
- Benjamin D. Anderson
- Texas Organization of Rural and Community Hospitals (TORCH)
- Erin Sullivan, PhD
- Mark Deutchman, MD
- The National Rural Health Association (NRHA)
- Goodall-Witcher Healthcare, TX
- Sterling Regional Medical Center, CO
- Southcentral Foundation, AK
- Fairview Hospital, MA
- UNC Chatham, NC
- Mahaska Health, IA

Methodology

In examining the state of rural OB care in Texas, Stroudwater utilized the following data sources to develop geographic spreads, tables, and other materials for analysis:

- Texas All-Payer Data (TORCH, Lucky Dog Analytics)
- 2020 Census Data
- HCRIS (Cost Report) Data
- FORHP Texas Maternal Facilities
- FORHP Rural vs. Non-Rural Designation
- CMS National Provider Identifier Data
- Hospital Testimonials & Data
- HRSA Maternal and Infant Health Mapping Tool

Methodology for Data Normalization

Stroudwater examined cost report filings for the 15 Texas rural labor and delivery services that had stopped delivery services between 2012 and 2024. The cost report data was normalized so that the year of labor and delivery program closure was labeled as year 0 and the five years preceding closure were labeled years -5 to -1. Post-closure years were labeled years +1 and so on. Facility volumes and financial results were then compared based on their proximity to the year of closure. Results for the calendar years 2020 and 2021 were excluded from the analysis due to the impacts of the COVID-19 pandemic on hospital operations and financial performance.

Methodology for Interviews & Survey

Stroudwater coordinated with the Texas Organization of Rural and Community Hospitals (TORCH) to reach its rural members. Separately, Stroudwater reached out to 26 hospitals across the state of Texas requesting that hospital leadership participate in an interview with the Stroudwater team or answer a set of survey questions. A total of 18 hospitals responded affirmatively to the request; of that group, 10 respondents shared their information via survey, while eight spoke to the Stroudwater team directly. One responding hospital formerly provided OB care, while the other respondents currently maintain an active program.

Methodology for Determining Provider Shortages

Stroudwater utilizes studies of medical services utilization per population size from the Graduate Medical Education National Advisory Committee (GMENAC), Hicks & Glenn, and The Wharton School of Business to examine provider need based on population ratios. For each area of Texas, Stroudwater applied the various ratios to determine overall provider need.

GEOGRAPHIC ACCESS IN THE STATE OF TEXAS

Stroudwater developed a series of maps to examine the realities of geographic access to labor and delivery services in the state of Texas at a high level. These maps illustrate obstetrics accessibility, drive times, and potential obstetrics deserts created by rural obstetric program closures and rural hospital closures.

State-designated Maternal Facilities

There are 219 designated Maternal Facilities in Texas according to the state's Department of Health and Human Services website.[1] Sixty-four (64) of these state-designated Maternal Facilities are in a Federal Office of Rural Health Policy (FORHP)-designated Rural area.[2]

The following fifteen Texas OB programs have closed or announced an OB program closing since 2012:[3]

- Pampa Regional Medical Center (2021)
- WJ Mangold Memorial Hospital (2016)
- Wise Regional Health System / North Texas (2013)
- Graham Regional Medical Center (2015)
- Medical Arts Hospital (2018)
- Llano/Mid-Coast Medical Center – Central (2015)
- Lion Star – Nacogdoches Memorial Hospital (2024)[4]
- St. Marks Medical Center (2018)
- Rice Medical Center (2018)
- Yoakum Community Hospital (2018)
- CHRISTUS Southeast Texas – Jasper Memorial (2019)
- UT Health Carthage (2012)
- Cleveland Regional Medical Center (2013)
- Timberland Hospital/Crockett Medical (2016)
- Gulf Coast Medical Center (2014)

[1] https://www.dshs.texas.gov
[2] https://www.hrsa.gov/rural-health/about-us/what-is-rural
[3] HCRIS Data
[4] Beckers Hospital Review reported on February 24, 2024, that Lion Star, the group operating Nacogdoches Memorial Hospital, would close four clinics in March 2024; the obstetrics unit was one candidate for closure. Lion Star closed its labor and delivery program in 2024. Nacogdoches is included in the analysis and maps that follow.

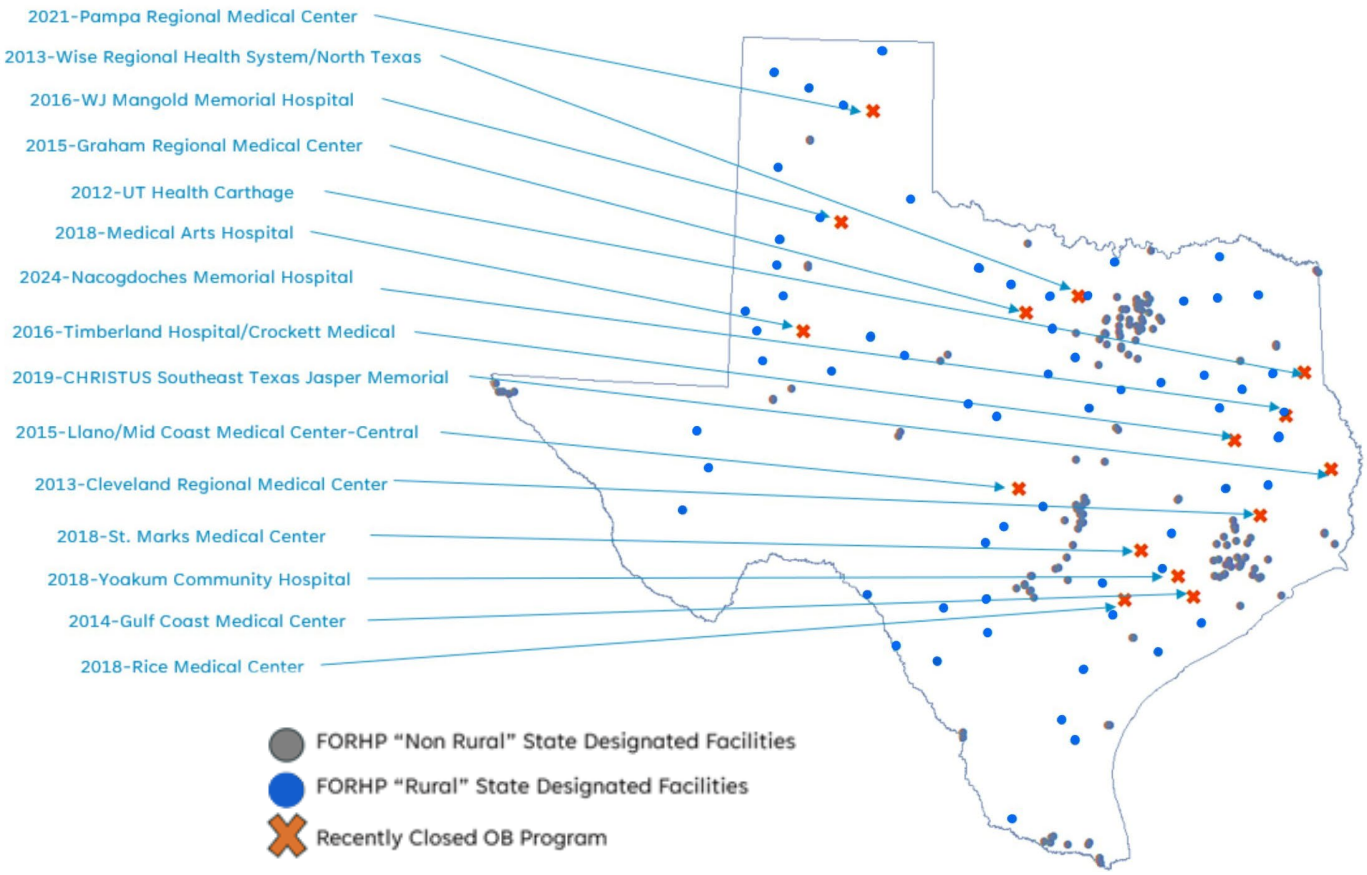


Exhibit A: State-Designated Maternal Facilities
Source: Stroudwater Associates

It is important to note that due to data limitations, the maps included in this report display the total population, and do not delineate by women of childbearing age. The block group data shared by the U.S. Census does not delineate gender and age with the specificity to accurately understand access to care.

Population & Drive Time from Open Obstetrics Facility

The map shown in Exhibit B illustrates the population density of individuals living outside of a 60-minute drive distance from the nearest open facility providing obstetrics care. Each green dot displayed on the map represents a cluster of 50 people who reside outside of the 60-minute drive distance.

Clusters of green dots indicate a particularly high number of people living without access to a nearby obstetrics facility.

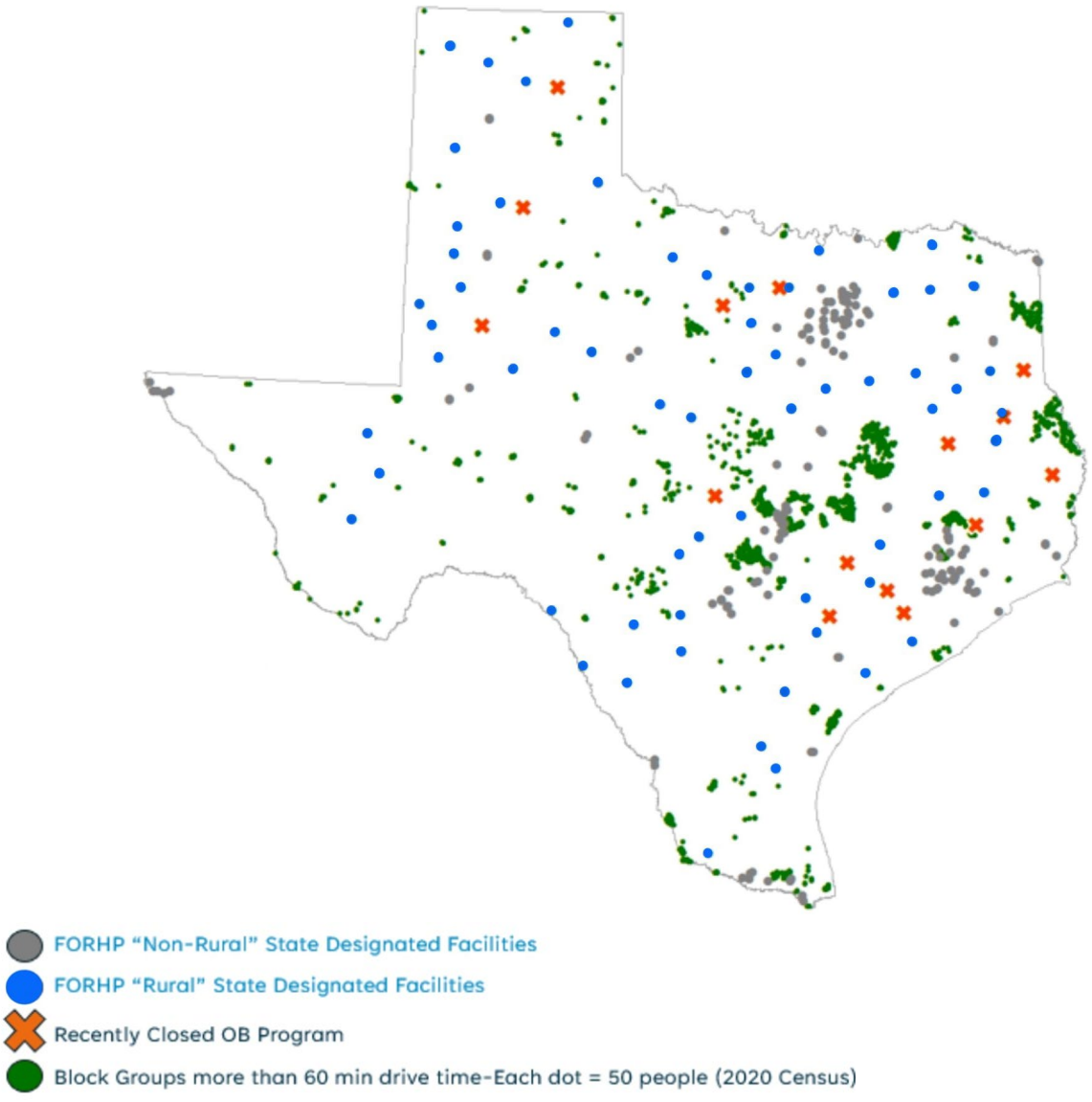


Exhibit B: Population & Drive Time From Open Obstetrics Facility

Source: Stroudwater Associates

Population & Drive Time from Obstetrics Facilities

In examining the hospitals that have closed their obstetrics programs, Stroudwater found that the closure of certain programs between 2012 and 2024 left an additional portion of the rural Texas population more than 60 minutes away from the nearest obstetrics facility.

In Exhibit C below, the total population of Texas (drawn from the 2020 US Census) is segmented by the number of people who must travel a certain distance to reach a facility. The 2nd column shows the current breakout, while the 3rd column shows the difference in population proximity if the 15 closed programs had remained open.

Drive Time from Nearest Program Location	Population Within Proximity to a Currently Open Obstetrics Program	Population Within Proximity to an Open Obstetrics Program Prior to Closures (2012-2024)	Population Difference
Less than 30 minutes	25,890,694	26,102,136	-211,442
Between 30 and 60 minutes	2,731,368	2,617,251	114,117
Within 60 minutes	28,622,062	28,719,387	-97,325
More than 60 minutes	523,443	426,118	97,325
Total Population of 2020 Texas Census	**29,145,505**		

Exhibit C: Comparing Access Population & Drive Time from Open Obstetrics Facilities

Source: Stroudwater Associates

Drive Times Around Obstetrics Programs Before Closures

The maps in Exhibit D below display the "before" and "after" impact of obstetrics program closures in the designated drive time areas. Both maps show the drive times around obstetrics facilities, with orange areas within 30 minutes of a facility, and grey areas within 60 minutes of a facility.

The map on the left displays the drive times of all facilities on the map, including the programs indicated as recently closed. In contrast, the map on the right removes the drive times around the facilities that have closed—the areas of the state with the most significant changes in coverage after closure are circled in red.

Drive Time Bands for All Facilities Currently or Formerly Providing OB Care (Pre-Closure, 2012)

Changes Indicated Drive Time Bands for Facilities Providing OB Care (Post-Closure, 2024)

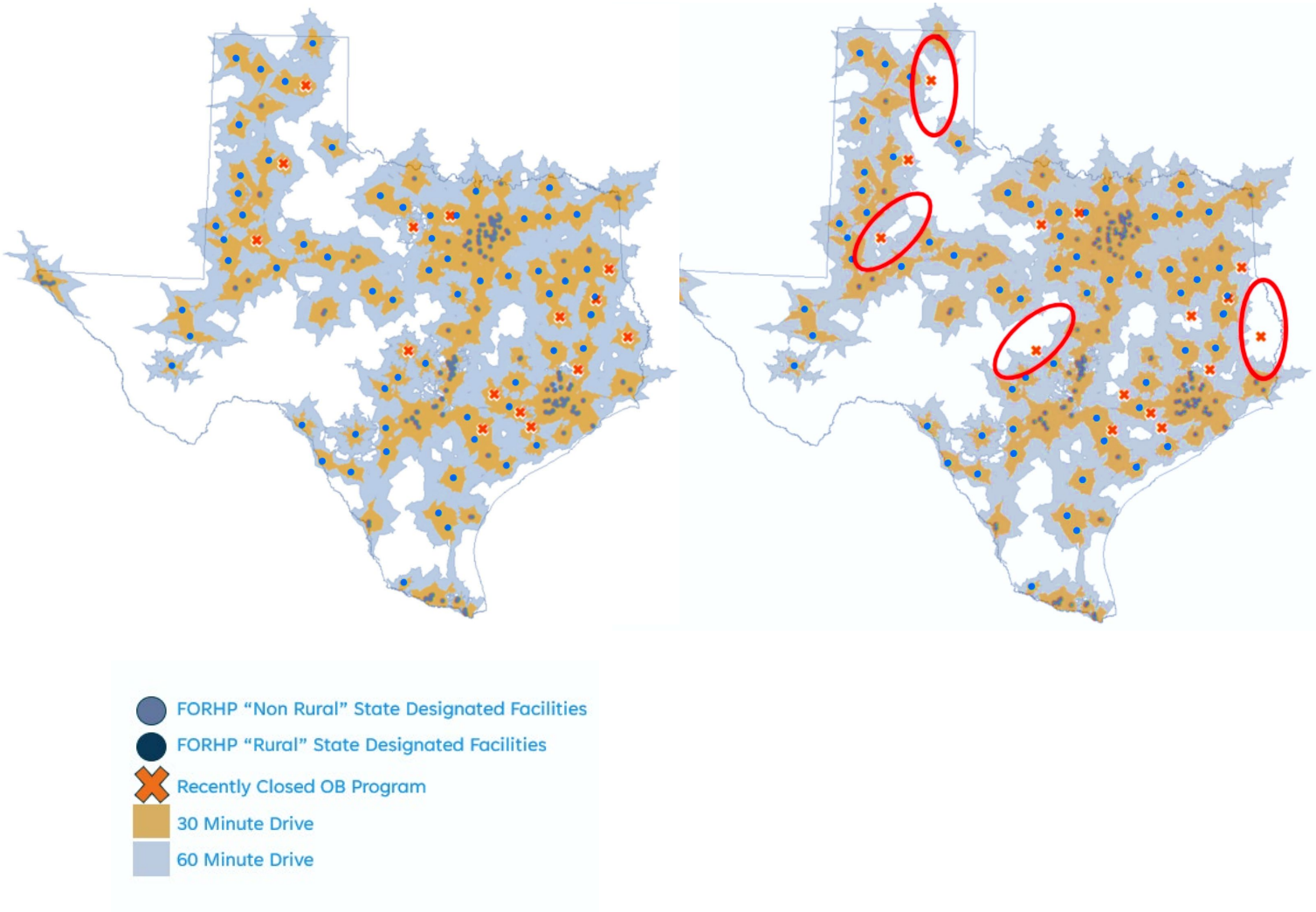


Exhibit D: Comparison view – Drive Time Bands Around Open & Closed Obstetrics Programs, Drive Time Bands Around Open Obstetrics Programs

Source: Stroudwater Associates

Rural Hospital Closures In Texas

To provide context for the obstetrics program closures, data collected by the UNC Sheps Center since 2010 illustrates the hospital closures in Texas. The map in Exhibit E shows 26 Rural Hospitals in the state of Texas where one of the following occurred:[5]

- **Complete closure:** the hospital is no longer offering any provider services of any kind
- **Converted closure:** the hospital no longer offers inpatient services but does offer some form of healthcare service (long-term care, skilled nursing, primary care)
- **Converted to REH status since 2020:** the hospital converted to a Rural Emergency Hospital (REH), a new CMS provider type established in the Consolidated Appropriations Act of 2021 to help avert potential rural hospital closures

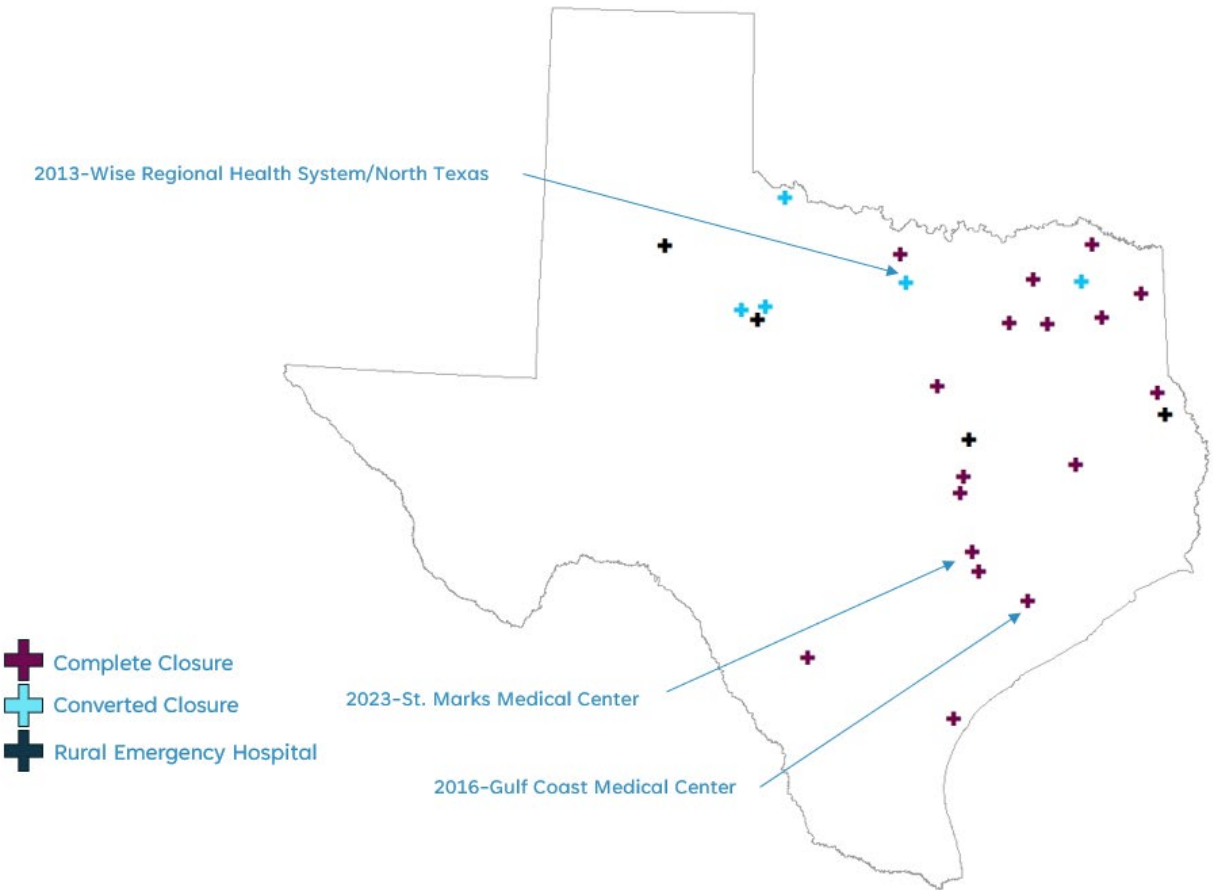


Exhibit E: Rural Hospital Closures Since 2010
Source: Stroudwater Associates, UNC Sheps Center

[5] UNC Sheps Center Rural Closure 2010
https://www.dshs.texas.gov

Three of the 26 hospitals on the map in Exhibit E appear on the list of closed obstetrics programs displayed on page 6. These hospitals are:

- **Wise Regional Health System/North Texas:** Converted closure, this facility no longer provides inpatient services
- **St. Marks Medical Center:** Complete closure in 2023
- **Gulf Coast Medical Center:** Complete closure in 2016

Maternal And Infant Health Status

A component of this study examined maternal-fetal health and variation in access to services and health outcomes within Texas compared to United States averages. It is important to note that there were only 15 data points available, and no access to longitudinal health status information by county.

Thus, the following information is not intended to suggest a correlation or causation between the closure of the labor & delivery program and maternal & fetal health in these Texas counties. It is included as a reference point to highlight the variance among the counties included.

The tables in Exhibit F illustrate the metrics associated with each county that included an OB program closure. Counties with performance metrics that were worse than the Texas state average are highlighted in orange in the table. The key metrics that were highlighted are:

- Infant mortality per 1,000[6]
- Percentage of low-birthweight babies
- Percentage of expectant mothers receiving prenatal care in the first trimester

[6] Maternal mortality is infrequent enough that data is suppressed at the county level in all but the most populous counties. As a result, this metric was not included due to significant gaps in the available data for rural Texas.

Hospital	County	Infant Mortality - County	Infant Mortality - State	Low Birth Weight % - County	Low Birth Weight % - State	Prenatal Care 1st Trimester % - County	Prenatal Care 1st Trimester % - State
Rice Medical Center	Colorado County	9.6%	5.3%	8.3%	8.7%	70.5%	67.0%
Yoakum Community Hospital	Lavaca and DeWitt Counties	4.9% and 4.7%	5.3%	8.0% and 8.1%	8.7%	75.4% and 73.1%	67.0%
Gulf Coast Medical Center	Wharton County	4.8%	5.3%	8.6%	8.7%	72.1%	67.0%
Christus Southeast TX Medical Center Jasper	Jasper County	7.1%	5.3%	8.9%	8.7%	71.7%	67.0%
UT Health Carthage	Panola County	7.9%	5.3%	9.9%	8.7%	72.5%	67.0%
Cleveland Regional Medical Center	Liberty County	6.0%	5.3%	8.6%	8.7%	58.8%	67.0%
Timberland Medical – Crockett Hospital	Houston County	6.3%	5.3%	8.6%	8.7%	66.7%	67.0%
Pampa Regional Medical Center	Gray County	8.3%	5.3%	7.4%	8.7%	71.6%	67.0%
W.J. Mangold Memorial Hospital	Floyd County	6.3%	5.3%	8.3%	8.7%	69.1%	67.0%
Wise Regional Health System	Wise County	5.6%	5.3%	6.7%	8.7%	72.1%	67.0%
Graham Regional Medical Center	Young County	5.0%	5.3%	5.7%	8.7%	74.8%	67.0%
Medical Arts Hospital	Dawson County	7.3%	5.3%	9.3%	8.7%	50.9%	67.0%
Llano Mid Coast Medical Center	Llano County	2.4%	5.3%	7.8%	8.7%	68.2%	67.0%
St. Mark's Medical Center	Fayette County	6.3%	5.3%	8.0%	8.7%	71.5%	67.0%
Nacogdoches Memorial Hospital	Nacogdoches County	4.4%	5.3%	8.6%	8.7%	69.6%	67.0%

Exhibit F: Maternal & Infant Health Status

Source: Stroudwater Associates, HRSA

Key Takeaways

After the closure of the 15 Texas OB programs identified on pp. 5-6, 64 rural OB programs remain in FORHP-designated rural areas of Texas. However, the closure of the 15 OB hospital programs has created further access issues. As a result of the closures, **523,443 Texas residents now reside more than 1 hour (60 minutes) from the nearest labor and delivery program**.

These closures have created the greatest concentration of accessibility issues in the following four locations:

- Christus Southeast Texas Jasper Hospital, Jasper area (Jasper County)
- Pampa Regional Medical Center, Pampa area (Gray County)
- Medical Arts Hospital, Lamesa area (Dawson County)
- Gulf Coast Medical Center, Wharton area (Wharton County)

In addition to the accessibility challenges, maternal-fetal health status indicators show that three of the four counties (excluding Wharton County) have fetal mortality rates higher than the Texas average. Dawson County and Jasper County were found to have a higher rate of low-birthweight babies than the Texas average. Gray County was the only county below the United States average for low-birthweight babies.

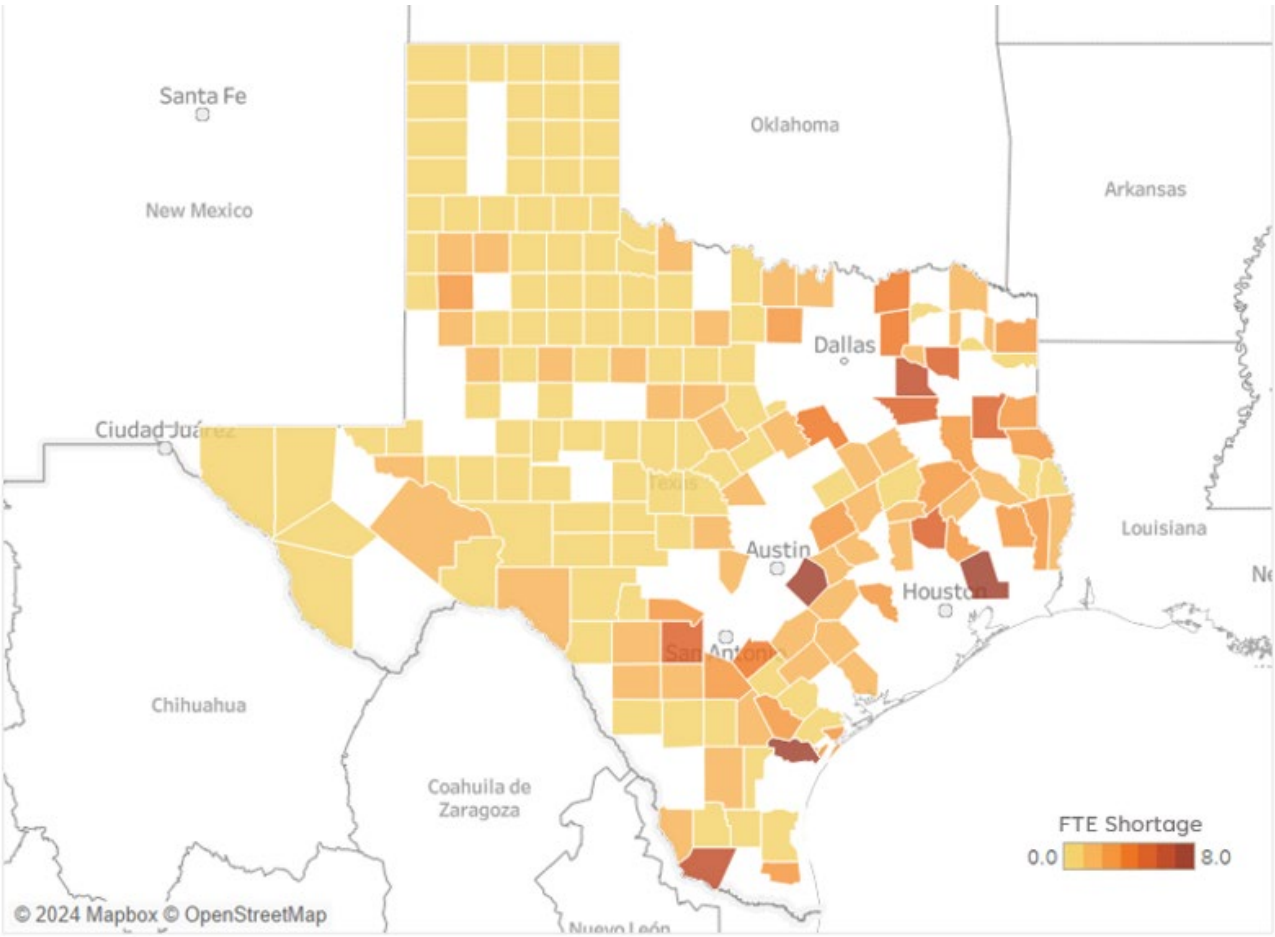
Notably, Dawson County is the only one of the four counties below the Texas average for access to prenatal care in the first trimester. However, all four counties are below the United States average.

Additionally, of the 26 Texas hospitals that have closed their doors since 2010, there were 22 instances where an Emergency Department (ED) does not remain via conversion to Rural Emergency Hospital (REH) status. Because of the loss of the EDs in those areas, the population faces additional strain in access to OB care, as the ED may have been able to supplement the loss of obstetrics programs in emergent circumstances.

PROVIDER SHORTAGES

A distinct component of this study focused on identifying provider shortages within the rural and mostly rural[7] counties of Texas. The column labeled "Current Physicians" reflects the distinct count of National Provider Identifier (NPI) numbers in the segmented areas. The full-time equivalent (FTE) status of individual providers is unknown based on the accessible data. In Exhibits G, H, and I, the FTE Shortage scale refers to the FTE of each county, with 8.0 indicating the highest possible shortage and 0.0 indicating no shortage.

OBGYN Physician Shortages



	2020 Population	Current Physicians	FTE Need	Physician Shortage
Grand Total	2,991,112	75	319.8	244.8

Exhibit G: OBGYN Provider Shortage in Rural & Mostly Rural Texas Counties

Source: Stroudwater Associates, CMS

[7] Counties indicated as rural & mostly rural are based on HRSA methodology that calculates the percentage of the county population within census tracts that are designated as rural. A county with 100% of its population within rural census tracts is considered "Rural" while a rural census tract population between 50-100% is considered "Mostly Rural."

Our data showed that within 176 Texas counties that are designated as rural or mostly rural, there is a combined shortage of nearly 245 obstetrician-gynecologist (OBGYN) physicians. These counties collectively have a population of nearly 3 million people.

Based on the data, Eastern and Southern Texas have the greatest shortages of OBGYN physicians.

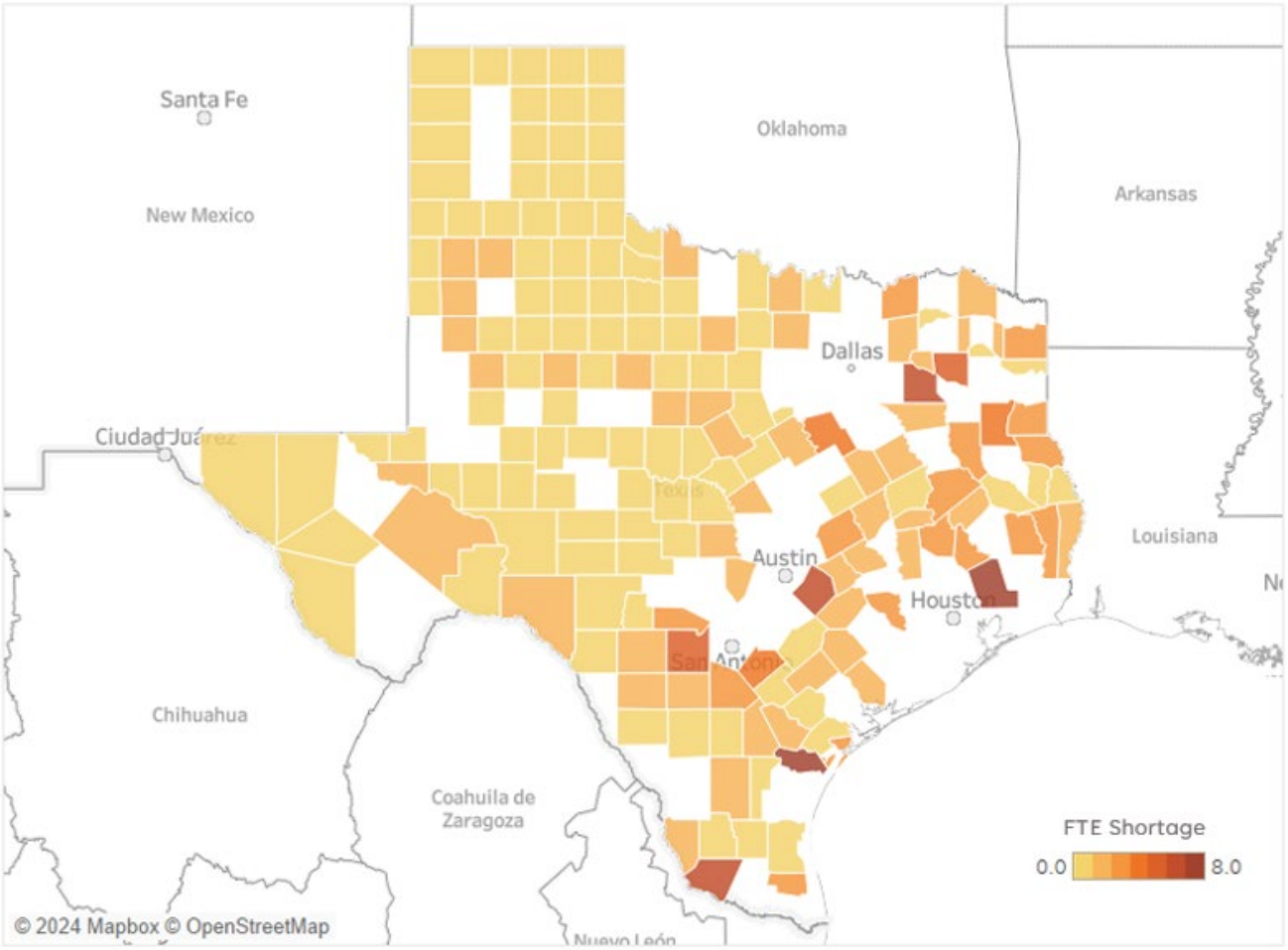
Rural locations often rely on visiting providers from more urban areas. This may account for some of the larger shortages outside of Dallas, Austin, and Houston. Women in high-shortage areas may have to rely on traveling to urban areas for care or may be able to access visiting providers who provide care in that area less than full-time. It should be noted that access provided in either of those instances does not eliminate the experienced shortages.

OBGYN Provider Shortages

In addition to OBGYN physicians, the study also examined access to Advanced Practice Providers (APPs) with OBGYN specialization. Texas is a restricted practice state, which limits the type of care that APPs are allowed to provide to patients. The neighboring states of Louisiana and Arkansas are reduced practice states, which allow a greater degree of access to APPs who may provide OBGYN services.

The analysis found that access to APPs reduced the overall shortages by 8.5% (20 providers.)

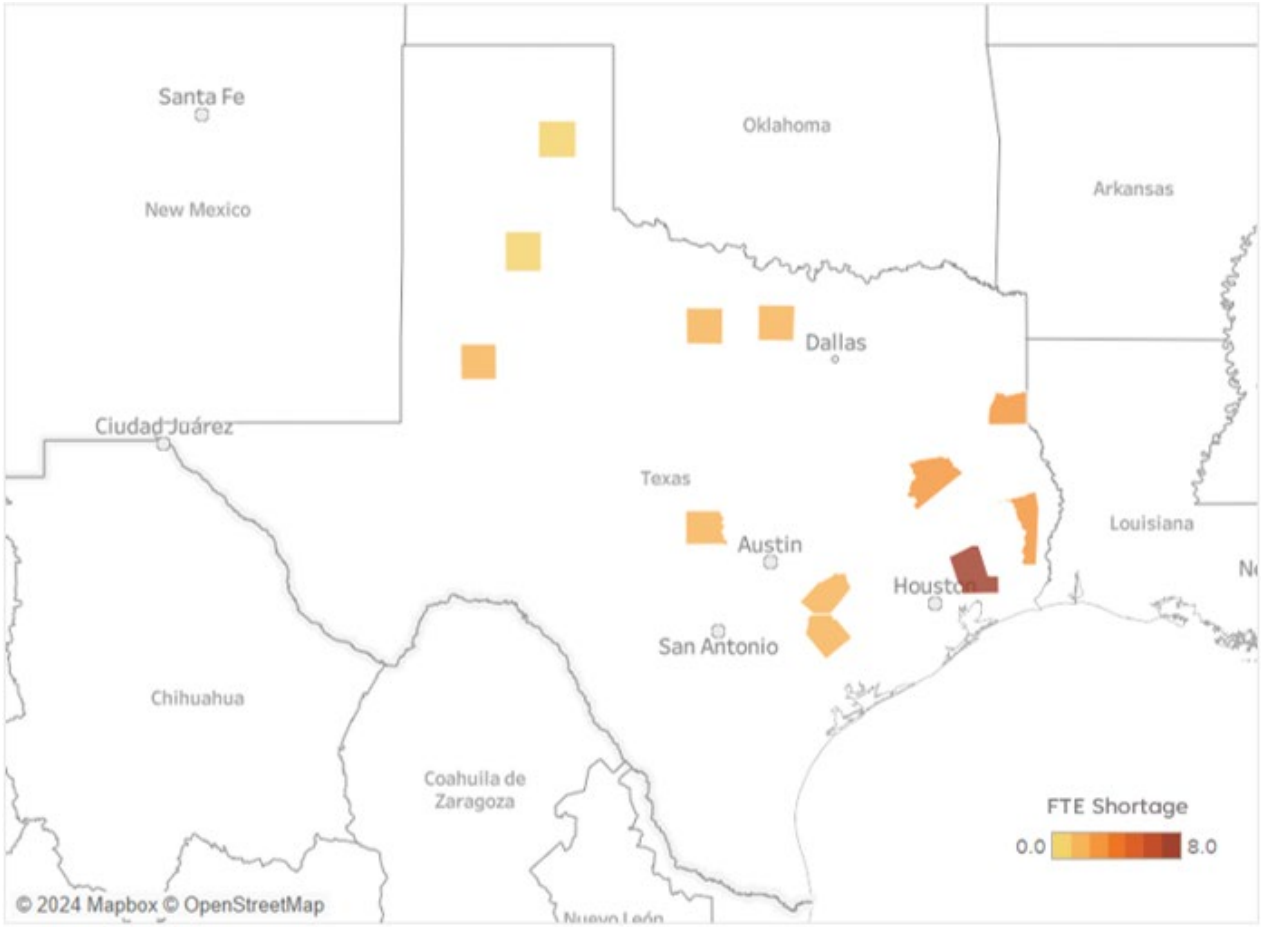
To account for the difference between APP and physician care, the APP count was adjusted for physician equivalent utilization (50% adjustment.)



County Type	2020 Population	Current Physicians	Current APPs	Current Effective FTEs	FTE Need	Adjusted Shortage
Grand Total	2,991,112	75	40	95	319.8	224.8

Exhibit H: OBGYN Provider Shortage in Rural & Mostly Rural Texas Counties, Adjusted to Include APPs
Source: Stroudwater Associates, CMS

Diving deeper, 12 of the 15 Texas counties (highlighted in Exhibit I on the next page) with an OB program closure currently have a shortage of just over 25 providers if APPs are included in the provider mix. Without APPs included, the FTE need for OBGYN physicians in these counties increases to 38.2.



County Type	2020 Population	Current Physicians	Current APPs	Current Effective FTEs	FTE Need	Adjusted Shortage
Grand Total	357,050	10	6	13	38.2	25.2

Exhibit I: OBGYN Provider Shortage in Rural & Mostly Rural Texas Counties, Adjusted to Include APPs, with Highlight

Source: Stroudwater Associates, CMS

RESPONSES TO INTERVIEWS AND SURVEY

Overview

As a component of the report, Stroudwater reached out to 26 hospitals across Texas to request their time for an interview with the Stroudwater team or answers to a set of survey questions. The objective was to understand the challenges of the hospitals that currently provide obstetrics care and the decisions that led to program closure for hospitals that no longer provide the service.

Of the 18 hospitals that responded, 10 hospitals chose the survey, while eight participated in interviews with the Stroudwater team. Of all the hospitals that responded to the interviews and survey, only one responding hospital formerly provided OB care, while the other 17 respondents maintained an active program. Of the 18 total respondents to the survey or interviews, five were

located in Southern Texas, four in Central Texas, four in Northern Texas, three in East Texas, and two in West Texas.

None of the survey respondents indicated that they were in danger of closing in the next six months. However, five hospitals noted that they were uncertain of the timing of a potential closure.

From the responses to the survey and interviews, Stroudwater identified several key themes:

- Retention & recruitment of providers and staff
- Financial pressure & reimbursement
- Quality & service continuity

The assessment below focuses on strengths, weaknesses, potential factors leading to closure, the impact of recent changes in Texas Medicaid payment, threats to OB services in rural Texas, changes in program operations over the last five years, and additional insights that participating organizations shared. For purposes of anonymity, we have removed identifying details in the findings and quotes outlined below.

Recruitment & Retention of Providers and Staff

Across the board, retention of providers and staff was identified as one of the major areas that created strain for hospital OB programs. Eleven of the 18 organizations interviewed or surveyed reported providers retiring, burning out, or choosing to work at a larger organization to maintain a better work-life balance. Even the hospitals that were fully staffed at the time of the survey and interviews still identified staffing as a potential make-or-break situation for their hospital. Losing only one provider could result in the decision to close the program.

Of the group that responded to the survey, eight out of the nine identified clinical staff availability as a major factor in whether they would be able to maintain their OB program. Additionally, five respondents shared that the availability of anesthesia coverage would be a factor. The one respondent who had closed an OB program listed the availability of OB coverage as one of the primary reasons for closure.

Several hospitals utilized adaptable staffing models to overcome this challenge. Some hospitals have effectively staffed their OB programs by employing a mix of OBGYNs, Family Practice OBs (FPOBs), and Midwives to provide OB care. In one case, a hospital had an OBGYN and a Certified Nurse Midwife on call 24/7. In another case, a hospital used a combination of OBGYNs and FPOBs to provide care.

Some hospitals interviewed experienced challenges in trying to blend the staff. One organization utilized FPOBs exclusively but was in the process of recruiting an OBGYN to keep a percentage of their volume that would have otherwise been transferred to a larger facility due to complications. The FPOBs on staff shared concerns about how the addition of the OBGYN would fit.

Recruiting providers and staff was also identified as a particularly massive challenge. Several hospitals interviewed were in the process of recruiting at the time of the conversation, and described it as a herculean effort, especially while competing with larger facilities to meet staff and providers' changing expectations of work-life balance and compensation. Work-life balance was shared in particular as a factor in drawing away providers and staff—it is a challenge to provide that same lifestyle in a rural setting, so larger centers are more attractive for prospective employees. Some have even resorted to pulling providers out of retirement to maintain call coverage.

The cost of recruiting creates massive financial stress for the hospital, especially when agency services are required to fill the void in the interim. One hospital said "The nurses left for larger healthcare systems, to stay home with new babies, or retired. Since that time, we have had no applicants for our open positions and rely on agency nurses to provide care, an expensive solution to a long-standing problem."

Other hospitals reported relying on partnerships with nearby high schools, colleges, and universities to attract young students to their organization. In one example, a hospital developed a relationship with a nearby school and recruited students as patient care technicians (PCT.) The first cohort of students working at the hospital were paid decent wages and had the opportunity to experience the hospital's culture. The leadership decided to extend an offer of employment to the student cohort, with a pathway for each individual to grow in their role. The majority of that cohort signed on by the end of the week the offer was made. However, other hospitals shared that some challenges arose from having a relatively new nursing staff that lacked certain experience.

Financial Pressure & Reimbursement

Several areas were reported to create additional financial pressure for rural obstetrics programs; OB services were found to be operating at a loss in many cases, indicating systemic financial challenges. Eight of the survey respondents said that the cost of OB coverage would be a potential factor in their decision to close, and seven said the same for the cost of anesthesia coverage. Three respondents of the survey noted that the cost of surgical coverage would be a factor as well. The one respondent who had previously closed an OB program listed one of the primary reasons for closure as the cost of OB and surgical coverage.

As previously mentioned, recruiting and retaining staff has put financial pressure on rural obstetrics programs, with much-needed agency nurses draining funds while the hospital tries to fill vacant positions.

One area that Stroudwater looked to explore in particular was the impact of the recent Medicaid enhancements in Texas, referring to the change in baseline payment for delivery from $500 to $1,500 before changes to Disproportionate Share Hospital (DSH) payments and Upper Payment Limit (UPL) supplemental payments, etc.

Several respondents asserted that the Medicaid changes did not change their evaluation of their OB program. Three hospitals said that the change has been a significant help, and two of those responses specifically noted that the enhanced funds have been redirected back into maintaining the OB physician call coverage, which has been a major expense.

Some hospitals receive a significant portion of their volume from across state lines, which varies from the amount they would expect to receive from a Texas-based payer. One hospital interviewed shared that the majority of their program's deliveries were from families based in the neighboring state, which had a rate of reimbursement that was much lower than in Texas. Families from out of state do not typically return to the same hospital for post-natal care, which is an additional loss.

While not directly related to the provision of labor and delivery services, Medicare Advantage was also mentioned as a cause of financial strain on the interviewed hospitals. Delayed or denied payments associated with Medicare Advantage plans are seen as increasing the financial pressures facing rural hospitals, and by extension, clinical programs like labor and delivery with significant costs and lower contribution margins.

Quality & Service Continuity

Although these sites faced a range of challenges, each organization displayed a unique commitment to maintaining appropriate quality standards for their facility. One facility recognized its certified nurses as a key strength, while another commended its nursing staff for their exceptional performance. A different facility highlighted its broad range of care, emphasizing its extensive coverage area. Several hospitals encourage the pursuit of additional certifications and education for their staff. One facility that was interviewed highlighted its involvement in the TexasAIM program, which supports quality improvement in Texas birthing hospitals through technical assistance and collaborative learning.

However, the hospitals did share honest concerns related to the populations they serve, with one hospital saying, "We also have experienced increased numbers of drop-in patients without any prenatal care, amplifying the possibility of risk in a hospital with a level 1 [Neonatal Facility] designation." One of the primary negative outcomes of closure was the health of the newborn and birthing parent, as well as the negative perception of the hospital's referral patterns. Continuous issues with staffing, particularly in attracting and keeping providers, present challenges even in otherwise successful settings.

Shifting patient volume was also top of mind for many facilities. Some hospitals shared their struggle with keeping volumes in their area, given other proximate non-rural facilities, which impacts service utilization. On the opposite end, some hospitals had serious concerns over whether they would be able to reasonably take on the additional delivery volume with their current staffing levels if any of their neighbors were to close their OB program.

ANALYSIS OF CLOSED RURAL TEXAS OBSTETRICS PROGRAMS

As part of this report, Stroudwater examined cost report data for the 15 programs that closed between 2012 and 2024. Our approach to this analysis allowed the team to compare the pre- and post-closure performance of the organizations that closed their OB programs to understand each organization's situation leading up to the closure and identify their similarities and differences. The key markers evaluated, such as deliveries (using Nursery Days as a proxy), surgical volume (using inpatient surgery gross charges as a proxy), and financial performance, help us to understand the conditions in which the decision to close the OB program was made.

The available data was normalized around the year of closure. Years before closure were ascribed a negative number in descending order away from the year of closure. The year of closure was ascribed the year "0" and the years post-closure were ascribed an ascending positive number. It is important to note that the years 2020 and 2021 were removed from this longitudinal analysis to eliminate the most serious disruptions and effects of the pandemic.

Medicare Cost Report Nursery Days

The Medicare Cost Report does not capture the number of deliveries at hospitals. As a proxy, the Stroudwater team used Nursery Days listed on the Medicare Cost Report, which references the days that a newborn occupies a newborn bed in a nursery, including an infant remaining in the hospital after the mother is discharged. When normalizing the closure date around the number of nursery days found in the cost report, the data from the 15 closed OB programs where data was available revealed the following:

- Two of the OB programs that closed had fewer than 100 nursery days two years before closure.
- Four of the OB programs that closed had between 100 and 300 nursery days two years before closure.
- Five of the OB programs that closed had between 300 and 500 nursery days two years before closure.
- Four of the OB programs that closed had more than 500 nursery days two years before closure.

A similar profile exists the year before closure for the 15 programs with data a year before closure:

- Three of the OB programs that closed had fewer than 100 nursery days one year before closure.
- Four of the OB programs that closed had between 100 and 300 nursery days one year before closure.
- Six of the OB programs that closed had between 300 and 500 nursery days one year before closure.
- Two of the OB programs that closed had more than 500 nursery days one year before closure.

Year	-5	-4	-3	-2	-1	0
Jasper	544	453	976	1,015	485	19
Lion Heart	1,098	787			785	
Medical Arts	196	165	150	216	183	136
Pampa	415	337	233	280	257	59
Rice	50	72	70	67	54	16
Yoakum	125	136	133	82	131	135
Gulf Coast			467	515	50	-
Doctors				355	382	72
Cleveland				611	697	319
Crockett			432	413	421	317
Llano			367	342	365	298
ETMC Carthage					369	153
Graham Regional			371	372	312	344
WJ Mangold			102	68	73	63
St Mark's			466	383	259	75
Average	405	325	342	363	322	143
Median	306	251	367	355	312	105

Exhibit J: Nursery Days Normalized Around Date of Closure

Source: Stroudwater Associates

Inpatient Surgery Gross Charges Before Program Closure

Another metric that was examined was inpatient surgery gross charges since an inpatient (IP) surgery program can help spread the costs of standby anesthesia and operating room (OR) staff coverage. Having a significant amount of inpatient surgery gross charges is an indicator of significant inpatient surgery activity which allows for anesthesia coverage and OR staff call coverage costs to be offset by inpatient surgery revenue. For this reason, having a robust inpatient surgery program can be an asset for labor & delivery program viability.

One key finding from this analysis is that nine of the 14 OB programs that closed (with data available) had inpatient surgery gross charges greater than $500,000 in the year before closure. Additionally, seven of the 14 OB programs that closed had inpatient surgery gross charges of over $1 million in the year before closure. For these programs with more than $500,000 in gross inpatient surgery revenues, the median inpatient surgery gross charges the year before closure were $1.4 million and the average inpatient surgery gross charges were $2.8 million.

Another key finding is that five OB programs closed with inpatient surgery gross charges of less than $500,000 in the year before closure. Of these programs, the year before closure showed $99,000 in median inpatient surgery gross charges and $186,000 in average inpatient surgery gross charges.

Total Income Before Program Closure

Eight of 13 OB programs that closed and where data is available had negative total margins in the year before closure. For the organizations with negative margins, the average loss in the year before closure was -$2.7M, and the median total loss was -$1.7M.

Of the five hospitals that were profitable in the year before closing their OB programs, the median positive margin was $824,000 and the average positive margin was $1.07M in the year before closure.

Change In Net Patient Services Revenue (NPSR) After Program Closure

For some of the hospitals with OB program closures, data was not available for each year of the longitudinal analysis. Data for 2020 and 2021 was excluded due to the pandemic. And some post program closure data was not yet available if it was a more recent program closure. As a result the number of data observations available varies among the longitudinal timeframe analyzed. The group comparing the year pre-closure to one year post-closure (**Group 1**), has data observations across eight Texas hospitals. The group comparing the year pre-closure to two years post-closure (**Group 2**) has data observations across four Texas hospitals. There is overlap in the hospitals represented between the two groups.

Of the eight Texas hospitals in Group 1, seven experienced declines in NPSR from the year before closing to the year after closing their OB programs. The average decrease in NPSR was -$1.7 million during that period.

Of the four Texas hospitals in Group 2, three experienced declines in NPSR from the year before closing to two years after closing their OB programs. However, the one increase in NPSR from the year before closing OB to two years post-closing OB was large enough to increase the average change to $400,000.

Change in Operating Expense After Program Closure

Of the hospitals in Group 1, eight saw declines in operating expenses from the year before closure to the year after closing their OB programs. The average decrease in OP expense was nearly -$3.0 million during that period.

Of the hospitals in Group 2, two experienced declines in operating expenses from the year before closure to two years after closing their OB programs. On average, these four programs saw a very modest increase in operating expenses from one year before closing OB to two years post-closing OB of $17,000.

Total Income After Program Closure

Of the eight Texas hospitals in Group 1, five had negative total incomes one year after closing. Four of four Texas hospitals in Group 2 had positive total incomes two years after closing.

In Group 1, the average improvement in total income was $988K during that period. Five of the eight hospitals improved their total income during this time.
In Group 2, the average improvement in total income was $1,079K during that period. Three of the four hospitals experienced improved total income during this time.

Of note, three of the hospitals that closed their OB programs also subsequently closed as inpatient acute-care facilities.

COMPARISONS OF CLOSED OBSTETRICS PROGRAMS BY HOSPITAL TYPE

For-Profit vs. Not-For-Profit

Of the 15 closed Texas OB programs, 11 were not-for-profit and four were for-profit at the time of closure. Of the 11 not-for-profit hospitals for which data is available, four were profitable the year before closure. The eleven not-for-profit hospitals had an average of 276 nursery days in the year before program closure. Inpatient surgery charges were, on average, $0.9M at each of the 11 not-for-profit systems in the year before the OB programs closed.

Of the four for-profit hospitals where labor and delivery programs closed, three had data available the year before program closure. One of the three for-profit hospitals was profitable in the year before the closure of its OB programs. For the three for-profit hospitals, the number of average nursery days in the year before closure was 511 and the average inpatient surgery charges were $5.5M. The average not-for-profit hospital in the year before closure had 74% and 16% of these values, respectively. On average, the not-for-profit hospitals that closed had significantly lower volumes and much smaller inpatient surgery programs over which anesthesia costs and other standby costs could be spread compared to the for-profit hospitals.

System vs. Independent

Of the 15 closed Texas OB programs, 11 were owned or managed by systems at the time of closure and four were independent. Five of the ten system-owned or managed closed programs for which data is available were profitable the year before program closure. These ten system-owned or managed programs had an average of 395 nursery days or an estimated 232 deliveries in the year before program closure. On average, inpatient surgery charges were $2.2M across the ten system-owned or managed facilities where data was available for the year before program closure.

Of the four independent hospitals where labor and delivery programs closed and where data is available, none were profitable the year before closure. For these same four independent hospitals, the average nursery days in the year before the closure were 155 and the average inpatient surgery charges were $979K, or 39% and 44% of the levels of system-owned or managed programs in the year before program closure. On average, compared with the system-owned hospitals, the

independent hospitals that closed had significantly lower volumes and much smaller inpatient surgery programs over which anesthesia costs and other standby costs could be distributed.

Key Indicators: Year Before Closure for Closed Texas Obstetrics Programs

	For-Profit	Not-for-Profit	System	Independent
Profitability	1 of 3*	4 of 11	5 of 10*	0 of 4
Average Nursery Days	511	276	395	155
Average Inpatient Surgery Gross Charges	$5,540K	$860K	$2,220K	$979K
*Total is for hospitals where data was available				

Hospital Comparison Findings

A significant portion of the rural Texas OB programs that closed from 2010 through 2024 had markers that suggested they should have been at lower risk of closure:

- **Profitability:** 5 of the 14 programs that closed (with data available) had positive total margins the year before closure.
- **Inpatient surgery:** 9 of the 14 programs that closed (with data available) had inpatient surgery gross charges above $500K in the year before closure.
- **Nursery days:** 8 of 15 OB programs that closed (with data available) had more than 300 nursery days the year before closure, suggesting they enjoyed more than 175 deliveries annually if we assume an average of 1.7 nursery days per delivery.

Closing OB has reduced expenses faster than revenue and appears to have had a somewhat positive impact on the bottom line for a majority of the hospitals studied.

- Five of the eight hospitals in Group 1 saw an improvement in total income from one year before closing OB to one year after closing their OB program.
- Three of four hospitals in Group 2 saw an improvement in total income from one year before closing OB to two years after closing their OB program.

However, three of the hospitals that closed OB programs went on to close completely from 2010 to 2023.

OVERALL ANALYSIS FINDINGS

Of the 14 closed rural obstetrics programs where data was available (one hospital lacked data), a significant portion profiled as lower risk for closure because the organization was profitable the year before closure, the hospital had inpatient surgical programs with significant activity before closure (enabling anesthesia costs to be spread over additional patient volume), and the programs themselves had more than 300 nursery days, suggesting more than 175 deliveries in the program's final year. We would have expected a higher proportion of unprofitable organizations with minimal or nonexistent inpatient surgery programs and fewer programs with more than 175 or more deliveries annually to have closed in the timeframe studied. While the number of observations is limited to 14, the differences in the profiles of the closed Texas rural labor and delivery programs (independent vs. system-owned and not-for-profit vs. for-profit organizations) may warrant

additional study nationally to see what trends may emerge when more data points for closed rural OB programs are available.

The major areas of concern for active rural labor and delivery programs in Texas included:

- Retention & Recruitment of Providers and Staff
- Financial Pressure & Reimbursement
- Quality & Service Continuity

Between 2012 and 2024, the closure of 15 labor and delivery programs in Texas resulted in 97,000 additional Texans driving more than 60 minutes to the nearest labor and delivery program. Using 2020 Census population figures, before the labor and delivery program closures, 426,118 Texans resided more than 60 minutes from the nearest labor and delivery program. After the labor and delivery program closures, using 2020 Census population figures, 523,443 Texans lived more than 60 minutes from the nearest labor and delivery program.

In the next decade, the impact of additional labor and delivery program closures may be amplified. Much of the redundancy in access to proximate labor and delivery systems has been eliminated by hospital and labor and delivery program closures. The distance to the "next closest" program for more than 523,443 Texans and rural Americans is already more than 60 minutes away. Staffing and provider shortages, Medicaid payments that lag the cost of care, the costs of obstetrical and anesthesia call coverage, and continuing downward pressure on hospital margins from a variety of forces all pose significant ongoing challenges for rural labor and delivery programs.

APPENDIX

LANDSCAPE OF RURAL HEALTH

Sample Case Studies

As context for the exploration of rural obstetrics program closures, Stroudwater reviewed three obstetrics service line case studies from former rural clients that illustrate the methods used to evaluate the performance of rural obstetrics programs. Names and identifying information have been removed for this study.

Case Study 1

An acute-care hospital in the mid-south region of the United States received a report from their financial advisors concluding that their obstetrics program was losing roughly $800,000 annually. The team that performed the analysis recommended that the hospital discontinue its obstetrics program.

Stroudwater was brought in to review the study, which led to the unearthing of two major mistakes:

1. The team that performed the financial analysis looked at all of the overhead costs that were being applied to the obstetrics program and then based their analysis on a fully allocated costs standpoint instead of reviewing the program from a contribution margin basis (program revenue less variable expenses).

2. This hospital generated roughly $2.5 million from its 340B contracted retail pharmacy program. If their obstetrics program were discontinued, the hospital's Medicaid payer mix would drop to the point where the organization would no longer be eligible for the 340B program.

After identifying these issues with the initial report, Stroudwater recast the contribution margin of the hospital's obstetrics program, resulting in a positive $1.7 million contribution. If hospital leadership had followed the recommendations in the initial report, the hospital's bottom line would have taken a $1.7 million hit.

Case Study 2

A Critical Access Hospital (CAH) in Colorado maintained an obstetrics program that performed 60 deliveries annually. The CAH's leadership had assessed that the program was losing $1.5 million annually and that the best course of action would be to discontinue it.

The hospital requested that Stroudwater review the program. The team stripped back some fixed costs that were being allocated to the program and also included the contribution margin generated from ancillary services referred from the OB providers.

Stroudwater concluded that the program was losing only $100,000 annually, as opposed to the $1.5 million initially indicated. The challenge for hospital leadership instead became developing a

strategy to cover the $100,000 negative contribution as opposed to completely discontinuing the program based on an incomplete analysis.

Case Study 3

A hospital in Arkansas operated an obstetrics program with 60-70 births annually. The program had one family physician with obstetrics training (FPOB) performing deliveries in their town, which required per diem OB providers to cover any time when the FPOB was unavailable.

The per diem providers were costing the hospital roughly $800,000 a year, none of which was reimbursable on the Medicare cost report. Stroudwater was brought in to review the program and found that the program had a negative contribution of approximately $700,000 per year. The negative contribution margin from the obstetrics program was a heavy burden given the organization's weakening liquidity (cash) position.

Unfortunately, the hospital discontinued the program, unable to sustain the losses and remain open. However, the FPOB provider was able to continue providing obstetrics services at a hospital 20 miles away while continuing to provide pre- and post-natal care in the community.

Market Trends

Before diving into the details of the study, it is important to understand some key context points related to the healthcare market.

Despite the COVID-19 pandemic, the market has continued to transition. The cost of healthcare is still increasing, as evidenced by the Kaiser Family Foundation's report indicating a rise in family health insurance premiums to $24,000 in 2023.

Concurrently, there has been substantial growth in Medicare Advantage (MA), with MedPAC reporting that MA now comprises 52% of eligible Medicare beneficiaries. Additionally, hospital inpatient volumes have continued to decline**.** The federal government remains committed to transitioning the payment system toward value-based reimbursement, with a 2030 goal of 100% of Medicare beneficiaries enrolled in either a Medicare Advantage plan or an Accountable Care Organization (ACO)**.** However, while Medicare Advantage has experienced this growth, enrollment in ACOs has remained flat.

The market is also seeing a significant decline in Medicare margins in all hospitals. While there was an uptick in 2021 as a direct result of COVID-19 pandemic relief funding, the outlook is projecting a negative 8% Medicare margin in 2024. This challenging circumstance can be attributed to the reduced patient volume, Medicare Advantage, and inflationary cost increases exceeding Medicare payment rate increases.

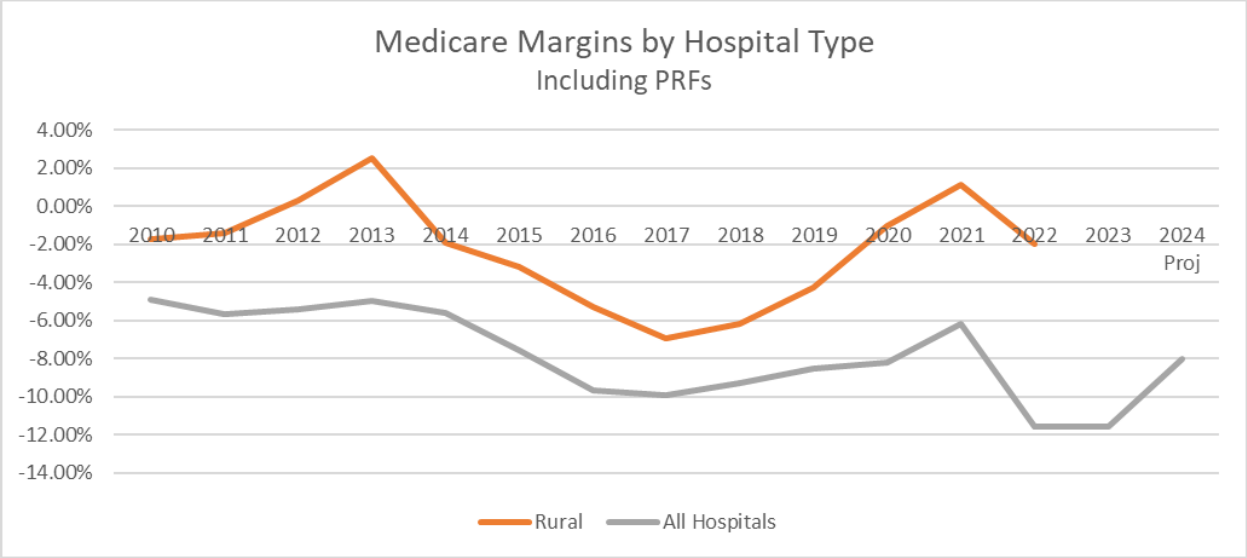


Exhibit K: Medicare Margins by Hospital Type, Including PRFs

Source: MedPAC Report to the Congress: Medicare and the Health Care Delivery System, March 15, 2023 (http://medpac.gov/docs/default-source/reports/mar22_medpac_report_to_the_congress_sec.pdf)

In essence, the payment systems of the future require a new strategic focus for providers. Stroudwater developed the Transition Framework (Exhibit L on the following page) to help provider organizations rethink their transition strategy across the "shaky bridge" of changing functional imperatives to value-based payment. The Transition Framework depicts an environment where payment systems are evolving from fee-for-service (FFS) to value-based, moving from left to right, beginning with the first column best thought of as FFS with quality and utilization control incentives and progressing to an environment of full value-based payment on the right. Further, the framework separates and distinguishes three strategic domains, the delivery system (current sick care), the population health management system, and the payment system, as each of these areas must be transitioned or created to meet the needs of the current and future payment systems.

In the first column in Exhibit L, where a majority of provider organizations are currently, the functional imperatives remain focused on FFS with some opportunities to get paid for health-related activities (MIPS, VBP, provider-sponsored health plans, etc.). This opens the opportunity to invest in creating the infrastructure for population health while not moving too quickly and reducing FFS volume. In addition, providers must improve the efficiency of the current sick-care delivery system and actively engage patients through higher-quality care and community outreach.

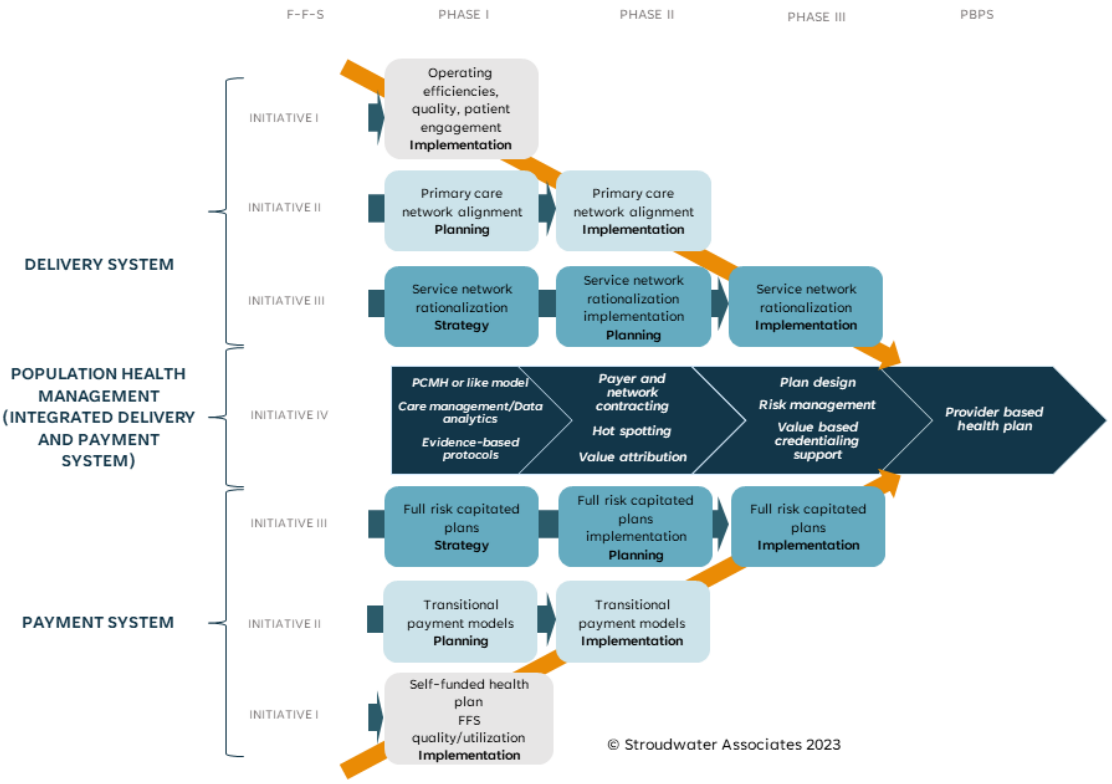


Exhibit L: Transition Framework
Source: Stroudwater Associates

In the second column of Exhibit L, the evolved payment system consists of alternative payment models (APMs) built on an FFS infrastructure. In this environment, provider organizations have now taken some limited amount of risk or have gain-sharing arrangements for reducing the total cost of care. Provider financial statements remain based on FFS mechanics, which often results in short-term decreased financial performance while providers enhance efforts to create healthcare.

At this point, provider organizations must truly align with their primary care providers to increase the number of covered lives included in their "system." This alignment is best accomplished through functional, contractual, and governance linkages. Further, because providers now have some total-cost-of-care incentives, the population health management system should evolve to include a funds flow model that includes sharing total cost-of-care risk and reward.

In the third column of payment in Exhibit L, best thought of as alternative payment models built on alternative payment model infrastructure, providers are taking full risk for defined patient populations. In this payment system, providers will be required to aggregate to diversify insurance risk as well as maintain the full range of access to both healthcare and sick care resources. They must recognize revenue from premium dollars (not claim dollars) and then invest in sick care and

healthcare resources through resource allocation. The sick care system should be "rationalized" to remove excess supply "costs" as avoidable sick care volume is removed from the care model, using saving costs to further invest in developing the population health management system.

The fourth column becomes an environment in which healthcare organizations have incorporated the payment system, population health management system, and sick care delivery system under one umbrella of care delivery. This type of evolved delivery system is already playing out in several regions within the country.

The Transition Framework has three positive attributes for provider organizations:

1. It breaks down the complicated nature of the 180-degree change in provider functional imperatives into bite-size strategies and tactics;
2. It aligns the timing of transitioning payment and sick care delivery with the creation of a population health management system to ensure organizations do not get ahead or fall behind on each of the three dimensions; and
3. It creates a series of options and strikes so that provider organizations can evolve the payment system, and related sick care and population health management system, in a timeframe that fits with their strategy and current market environment.

What the Transition Framework does not do is dictate the timing of the transition. Instead, it presents the force and motion vector of the healthcare industry in transition and allows providers to time their strategy and tactics with their market forces. Provider organizations' strategic plans can no longer remain silent to the changing payment system and have been immensely complicated as a result.

STROUDWATER

1685 Congress Street, Portland, ME
https://www.stroudwater.com/
800-947-5712