



Texas Department of Insurance

Access to Medical Care in the Texas Workers' Compensation System, 1998-2010

2012 Results

Workers' Compensation Research and Evaluation Group

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Executive Summary

In accordance with the Fiscal Year 2010 research agenda, Workers' Compensation Research and Evaluation Group conducted an analysis of injured employee access to medical care provided under the Texas workers' compensation system. This 2012 update is aimed at monitoring any change in the system's performance since the 2010 study, and bringing network results up to date.

This study focuses on the injured employees' initial access to physicians excluding emergency medical services. Principal measurements are physician participation and timeliness of care.

Physician Participation

- The total number of physicians actively practicing in Texas is increasing while the number of WC participating physicians is stable. Its result is a decreasing participation rate.
- The total number of WC claims reported is decreasing. And thus the average number of WC patients per participating physician is decreasing.
- The WC participation rate of primary care physicians has decreased slightly since 2005, but the absolute number of participating primary care physicians has actually increased since 2005. Decreasing participation by primary care (PC) physicians is in part alleviated by increasing participation by Emergency Medicine specialists.

Physician Retention

- Overall WC physician retention rate is high and stable at around 80 percent. This means that about 80 percent of this year's participating physicians will also participate in the next year.
- Retention rates for orthopedic surgery, radiology/pathology, emergency medicine, and anesthesiology specialties stayed between 90 to 95 percent since 2005. Considering a natural rate of attrition due to practice change and retirement, these rates indicate almost no change in WC participation status.
- Retention rate for primary care physicians decreased from 81.4 percent in 1999 to 73.7 percent in 2010. But their absolute number increased slightly since 2005.
- 'Top 20%' WC physicians in terms of claim volume have higher participation and annual retention rates at over 98 percent.

Access to Medical Care by Geographical Area

- More than 75 percent of active physicians in Texas practice in the five metro areas. A similar percentage of workers' compensation claims also occur in these areas.
- Access to care measures in non-metro areas are affected greatly by changes in a few physicians, and may display large year-to-year changes.
- Some non-metro areas and border regions have a higher number of WC patients per physician. Any lack of physician access is primarily due to the low total number of physicians practicing in these areas rather than a low WC participation rate.

Timeliness of Care

- Overall, initial access (timeliness of care) measures show that WC patients received non-emergency treatments faster in 2010 than in 1998. About 82 percent of patients received initial care in 7 days or less in 2010, up from 75 percent in 1998. This rate stayed the same around 82 percent since 2007.
- Delayed initial care is correlated with higher total medical costs. Claims with greater than 7 days delay had on average 50 percent more total medical costs in the first 6 months.
- Delayed claims with more than 7 days accounted for 14 to 25 percent of the total claims. Smaller metro areas have higher percentage of delayed cases but they are often affected by a few extreme values.
- Large metro areas generally show about 10 percent or less of their claims traveling out of their area for their first treatment. Smaller HRRs have higher number of claims traveling outside of their HRR, some over 30 percent.

Health Care Networks and Timeliness of Care

- Initial access for WC Network patients is slightly better than non-network patients, and it improved in 2010 while non-network claims showed no change.
- The share of claims that received initial treatment within 7 days is higher and increasing among networks. The share of delayed claims that took 29 days or more before first treatment is lower and decreasing faster for network claims compared to non-network claims.

Effects of Disputes/Denials on Access to Care

- Denial and/or disputes tend to delay initial care by doubling the number of days between injury and first treatment.
- Despite delays, initial access to care has improved for denied and/or disputed claims steadily since 1998.
- Approximately 66 percent of denied/disputed cases received initial care in 7 days or less in 2010, up from 63 percent in 2005 and from 55 percent in 1998. For all claims, about 82 percent of claims received initial care in 7 days of less.

Other Factors Influencing Delays in Initial Access

- The type of injury (such as open wound vs. carpal tunnel syndrome) appears to play a significant role in determining how early or late injured employees seek and receive treatment. The delay associated with this factor is not directly related to access and physician participation measures of the workers' compensation system.

1. Introduction

House Bill 28 (78th Legislature, third called session, 2003) created a new workers' compensation research function at the Texas Department of Insurance (TDI) by transferring the research function of the former Research and Oversight Council on Workers' Compensation (ROC) to the agency. Per Chapter 405 of the Texas Labor Code, the Workers' Compensation Research and Evaluation Group (REG) is responsible for conducting professional studies and research on various system issues, including the delivery of benefits, litigation and controversy, insurance rates and rate-making procedures, rehabilitation and reemployment of injured workers, workplace health and safety issues, the quality and cost of medical benefits, and other matters relevant to the cost, quality, and operational effectiveness of the workers' compensation system.

House Bill 7 (79th Legislature, Regular Session, 2005) included a new Section 405.0026, Texas Labor Code, which requires the Commissioner of Insurance to adopt an annual research agenda for the Workers' Compensation Research and Evaluation Group (REG) at the Texas Department of Insurance (TDI). Section 405.0026, Texas Labor Code, also requires TDI to post a proposed research agenda in the Texas Register for public review and comment and requires the Commissioner of Insurance to hold a public hearing on the research agenda if requested by a member of the public.

In accordance with the Fiscal Year 2010 research agenda, REG conducted an analysis of injured employee access to medical care provided under the Texas workers' compensation system. This 2012 update, as an important subject in the quality of medical benefits, is aimed at monitoring any change in the system's performance since the last study, and bringing network results up to date. The 2010 report was of necessity preliminary in its analysis of the access to medical care in the Department-certified workers' compensation health care networks since these networks were certified only since 2006. We now have sufficient medical service and billing data for analyzing several networks up to the 2011 injury year.

In the remainder of this section, we discuss definitions, data sources and methodology used for this report. Analytic results are then presented in seven major sections. In each section, a summary of key findings offers an overview, followed by a list of key performance indices.

Key Access-to-Care Measures

1. “**Participation rate**” is defined as the number of workers' compensation **participating physicians** divided by the total number of **active physicians** in Texas.
2. “**Active physicians**” are defined as physicians (Doctor of Medicine or Doctor of Osteopathy) licensed by Texas Medical Board who are Texas-based, non-military, and direct patient care physicians. These physicians include those whose registration status is ‘active’ (AC) or ‘active – not in practice’ (ACN) and exclude those who are working at military and VA hospitals or those who hold teaching, administration and research positions. The registration status ‘active but not in practice’ is included since many of these physicians treat patients prior to the date their status changed. TMB registry is a snapshot at the end of a year and does not have registration status change dates.

3. “**Participating physicians**” in a given year are active physicians who have workers’ compensation medical bills for one or more patients (claims) for that year.
4. “**Claims to physician ratio**” is calculated as the total number of WC claims divided by the total number of participating physicians per given year.
5. “**Retention rate**” is the percentage of a prior year’s WC participating physicians who also participate in the following year.
6. “**Timeliness of care**” is measured by the number of days from the date of injury to the first non-emergency treatment (first visit to an MD or DO physician). Medical service data for timeliness is limited to 6 months maturity, which means that medical services are analyzed only for the first six months after an injury. Thus, we exclude possible cases with a delayed treatment, for example, if an injured employee first saw a doctor more than six months after the injury.
7. “**Geographical areas**” are defined by using Hospital Referral Regions (HRRs) developed by the Dartmouth Atlas of Healthcare project. In Texas, there are 24 Hospital Referral Regions constructed using Medicare hospitalization records and patient referral patterns. Texas HRRs also roughly correspond to major metro areas.

Data Sources

This report utilizes five different datasets as follows:

- Division of Workers’ Compensation (DWC) Medical Data. This data collection has approximately 100 medical data elements, including billing and payment information, service date, physician license number, patient ZIP codes, CPT and ICD9 codes for each injured employee.
- Archived annual files of the Texas Medical Board’s list of physicians (TMB list) are obtained from the Health Professions Resource Center at the Texas Department of State Health Services. This data file is an annual snapshot of TMB’s real-time registry of licensed MD and DO physicians. Detailed data were available from 1999.
- Network claims list is provided by WC network data calls administered by the TDI WC Research and Evaluation Group (REG). These network claims were identified and matched with DWC medical data.
- DWC data of denied/disputed claims for 1998-2010.
- Hospital Referral Region (HRR) ZIP code boundary data comes from the Dartmouth Atlas of Healthcare project. Patient’s location is based on the ZIP code in the medical bills. For physicians, the practice location in the TMB list is used.

Methodological Notes

This study focuses on physicians (Doctor of Medicine or Doctor of Osteopathy) even though there are some injured employees whose first visit may include non-physicians such as chiropractors (DC) and physical and occupational therapists (PT/OT). This is mainly because the policy focus is on the access to medical doctors. In addition, data integrity and other practical reasons limit our analysis to physicians. For example, MD/DO identifiers in the medical data are highly reliable unlike DC or PT/OT license numbers. And archived licensee lists for past years were available only for MD/DO providers. Finally, chiropractors and physical/occupational therapists tend not to be the first provider of choice for non-emergency visits. Although MD/DO physicians account for about 70 percent of all bills and payments in the workers' compensation system, they make up 95 percent of all providers at initial visit.

This study also focuses on non-emergency care only. In the measurement of timeliness to care (initial care), all claims whose first day services include emergency services have been excluded. This results in about 15 percent of claims being excluded from the analysis.

The specialty of each physician is based on the primary specialty specified in the TMB list. Most physicians also have secondary specialties. Therefore, data classifications by specialty in this report may not be exclusive. And a few of specialty groups used in this report require some clarification. First, it should be noted that the 'Emergency Medicine' specialty refers to the primary specialty field in the TMB list, not according to services they provide. In other words, this classification has no direct connection to emergency services, and their services may occur in various non-ER settings. The 'Primary Care' specialty group consists of family medicine, general practice and internal medicine specialties. The 'Other Specialty' includes all other specialties including the four large groups of pediatrics, psychiatry, obstetrics & gynecology and dermatology. It also includes physical medicine & rehabilitation and occupational medicine specialties. These two specialties are relatively small groups. However, given their close relationship with workers' compensation, we may create a separate group in future updates while some other groups may be consolidated to prevent overcrowded data presentation.

2. Physician Participation

Key Findings

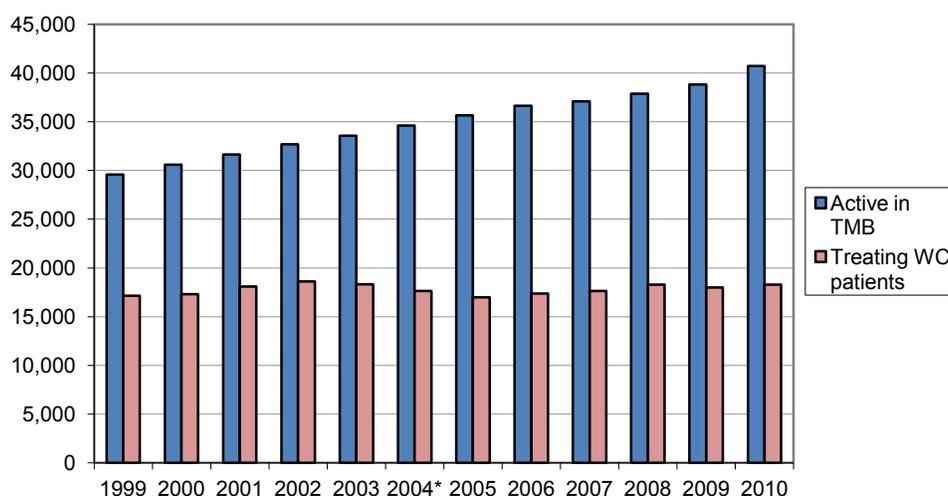
- The total number of physicians actively practicing in Texas is increasing while the number of WC participating physicians is stable. Its result is a decreasing participation rate.
- The total number of WC claims reported is decreasing. And thus the average number of WC patients per participating physician is decreasing.
 - Result: 22.1 patients per participating physician in 1999; 16.1 patients per physician in 2010 (a 27 percent decrease).
- Decreasing participation by primary care (PC) physicians is in part alleviated by increasing participation by Emergency Medicine specialists.
 - PC physician participation rate decreased from 63.7 percent in 1999 to 44.2 percent in 2010. Actual number decreased from 5,807 to 5,162.
 - Emergency Medicine physician participation rate increased from 76.9 percent in 1999 to 88.4 percent in 2010. Actual number increased from 650 to 1,752.
- The WC participation rate of primary care physicians has decreased slightly since 2005, but the absolute number of participating primary care physicians has actually increased since 2005.

PARTICIPATION

Number of Active and WC Participating Physicians

- The number of active physicians in Texas is growing steadily at an annual rate of 3 percent.
- The number of participants is relatively stable except for decreases in 2003-2005.
- Overall, 45 percent of all Texas physicians participate in WC (2010).

Description: This measure shows the number of physicians participating in the Texas workers’ compensation system compared with the total number of active physicians licensed by the Texas Medical Board, from 1999 to 2010. The number of active physicians grew from 29,579 in 1999 to 40,724 in 2010, a 38 percent increase and at a steady pace of 3 percent a year. During the same period, workers’ compensation participating physicians grew from 17,150 to 18,284, a total increase of 7 percent. This represents a 58 percent participation rate for 1999, and a 45 percent participation rate for 2010.



Calendar year	Active in TMB	Treating WC patients
1999	29579	17150
2000	30600	17318
2001	31656	18087
2002	32698	18606
2003	33581	18317
2004*	34620	17647
2005	35659	16977
2006	36623	17363
2007	37080	17640
2008	37880	18281
2009	38833	18007
2010	40724	18284

Source of data: TMB physicians master file & TDI-DWC medical billing data.

Data definition: *Active in TMB* refers to the total number of active physicians licensed by the Texas Medical Board. See page 1 for the definition of ‘active.’ *Treating WC patients* refers to the number of participating physicians who billed at least one service in a given service/calendar year according to the medical billing data.

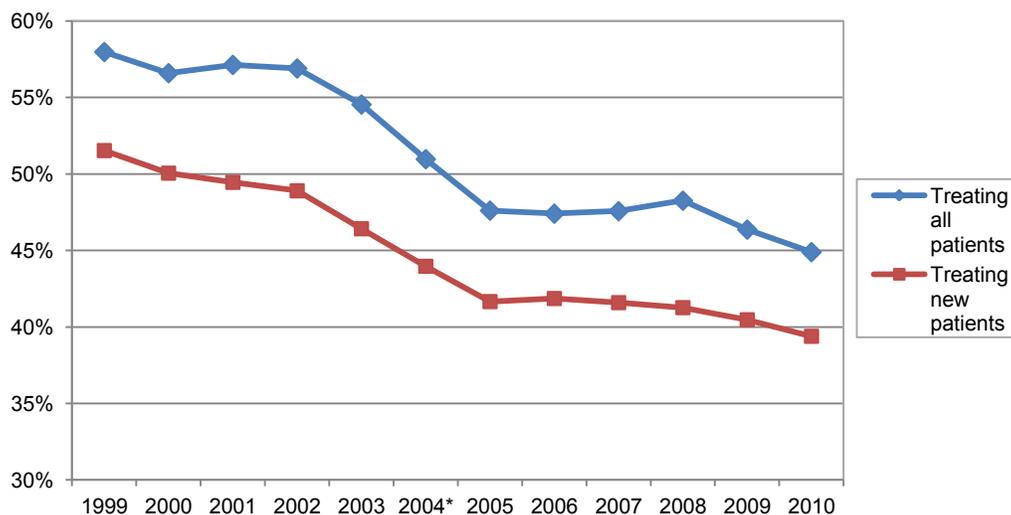
Notes: * denotes an average of 2003 and 2005 figures due to problems with 2004 reported data.

PARTICIPATION

Participation Rates

- As the total number of active physicians increases and that of WC participants remains stable, the participation rate decreases.
- Participation rates declined primarily because of the increase in the number of active doctors in Texas except during the period between 2002 and 2005.
- Most of the decrease occurred between 2002 and 2005, by about 10 percent, due to decreasing numbers of participating physicians.

Description: This measure shows a continuous decline in the physician participation rates. Considering all physicians treating all workers’ compensation patients, the physician participation rate decreased from 58 percent in 1999 to 45 percent in 2010. Considering new injuries only, the participation rate decreased from 52 percent in 1999 to 39 percent in 2010. Participation rate for all patients is higher since it includes physicians treating old patients only while not accepting new patients. The graph shows that the most significant drop in participation rate occurred between 2002 and 2005.



Calendar/ Injury year	Active	Treating all patients ¹	Treating new patients ²
1999	29579	17150	15244
2000	30600	17318	15318
2001	31656	18087	15657
2002	32698	18606	15991
2003	33581	18317	15590
2004*	34620	17647	15224
2005	35659	16977	14857
2006	36623	17363	15333
2007	37080	17640	15424
2008	37880	18281	15633
2009	38833	18007	15718
2010	40724	18284	16044

Source of data: TMB physicians master file & TDI-DWC medical billing data.

Data definition: Participation rate = (Treating WC patients) / (Active in TMB). *Treating all patients* is based on service year data; *treating new patients* considers physicians treating new injuries and based on injury year data with 6 months maturity.

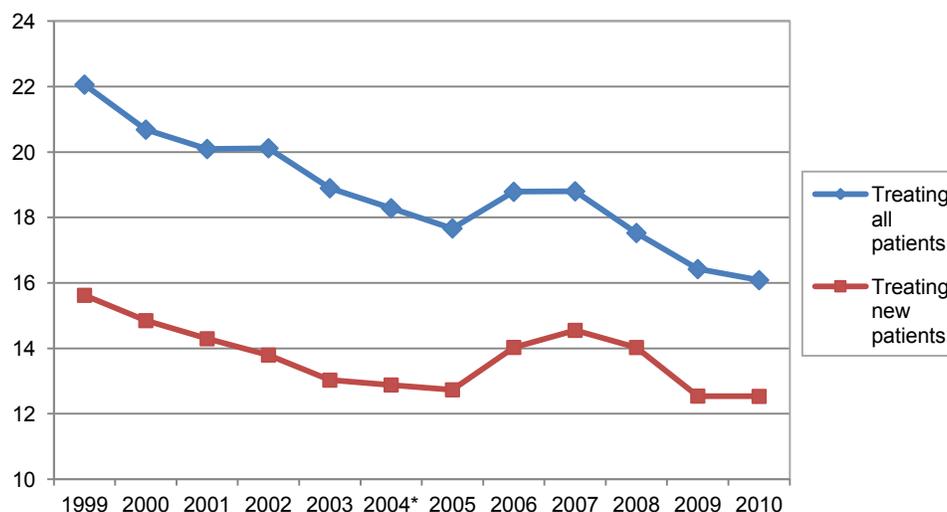
Notes: 1. In service years. 2. In injury years. * denotes an average of 2003 and 2005 figures due to problems with 2004 reported data.

PARTICIPATION

Number of Claims per Participating Physician

- Since 1999, the number of WC claims decreased each year in Texas except in 2006 and 2007.
- A stable number of physicians are treating a decreasing number of WC claims. As a result, the average number of claims per physician is decreasing in both new injury and all injury cases:

Description: This measure shows the number of claims per participating physician. Considering all physicians treating all patients, the average number of claimants per physician decreased from 22.1 in 1999 to 16.1 in 2010. Considering only new injuries, the average number per physician was 15.6 in 1999 which decreased to 12.5 in 2010. These numbers decreased continuously except for 2006 and 2007 when they increased slightly due to increases in the number of claims and decreases in the number of participating physicians.



Calendar/ Injury year	Number of All Claims	Number of New Claims	Treating all patients ¹	Treating new patients ²
1999	378359	238143	22.1	15.6
2000	358235	227448	20.7	14.8
2001	363439	223819	20.1	14.3
2002	374290	220619	20.1	13.8
2003	346119	203132	18.9	13.0
2004*	322263	196164	18.3	12.9
2005	299942	189196	17.7	12.7
2006	326187	215118	18.8	14.0
2007	331638	224452	18.8	14.6
2008	320427	219298	17.5	14.0
2009	295753	197137	16.4	12.5
2010	294108	201087	16.1	12.5

Source of data: TMB physicians master file & TDI-DWC medical billing data.

Data description: Numerator = total number of unique claims. Denominator = total number of unique physicians billing at least one service. *Treating all patients* is based on service year data; *treating new patients* considers physicians treating new injuries and based on injury year data with 6 months maturity.

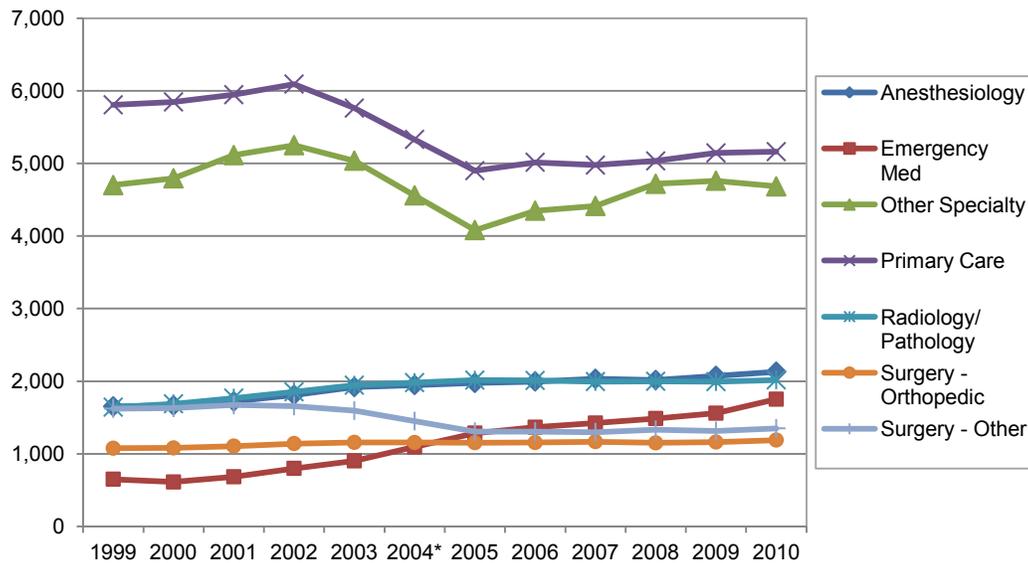
Notes: 1. In service years. 2. In injury years. *: 2004 is an average of 2003 and 2005 figures due to problems with 2004 reported data.

PARTICIPATION

Number of Participating Physicians by Specialty

- Significant changes in 2003-2005: decrease in primary care, ‘other surgery’ and ‘other specialty’ physicians.
- ‘Emergency medicine’ physicians are fewer relative to others but growing fastest.
- All specialties including primary care are increasing, except for ‘Other Specialty’.

Description: This measure shows the number of participating physicians by specialty. Primary care physicians are the largest group with 5,807 in 1999, which decreased to 4,900 in 2005 and increased slightly to 5,162 in 2010. ‘Other Specialty’ is the second most common group accounting 4,684 in 2010. Its number also decreased significantly between 2002 and 2005 but rebounded since then. Radiology/pathology and surgery specialties, each ranging between 1,000 and 2,000, stayed relatively stable in number. Emergency medicine grew rapidly from 650 in 1999 to 1,752 in 2010.



Specialty	1999	2000	2001	2002	2003	2004*	2005	2006	2007	2008	2009	2010
Anesthesiology	1652	1665	1720	1811	1919	1948	1976	1996	2032	2016	2073	2130
Emergency Med	650	611	683	799	902	1094	1285	1366	1423	1486	1559	1752
Other Specialty	4701	4795	5114	5251	5038	4560	4082	4349	4414	4719	4762	4684
Primary Care	5807	5847	5947	6093	5762	5331	4900	5016	4977	5034	5144	5162
Radiology/Pathology	1642	1688	1767	1853	1945	1980	2015	2010	1994	1998	1993	2017
Surgery - Orthopedic	1076	1080	1106	1141	1157	1155	1153	1155	1167	1150	1162	1189
Surgery - Other	1622	1632	1672	1658	1594	1450	1305	1307	1297	1331	1314	1350

Source of data: TMB physicians master file & TDI-DWC medical billing data.

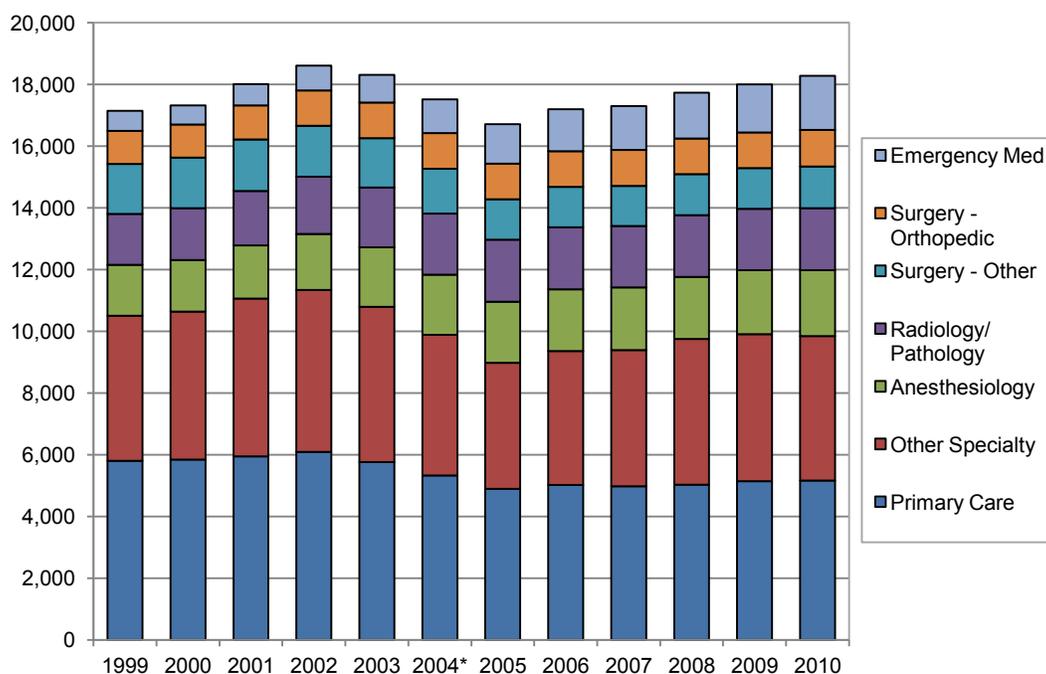
Notes: * denotes an average of 2003 and 2005 figures due to problems with 2004 reported data. ‘Other specialty’ includes such specialties as pediatrics, OB/GYN, cardiovascular diseases, and ophthalmology.

PARTICIPATION

Number of Participating Physicians by Specialty (Cumulative)

- The total number of primary care physicians, whose share of all participating physicians decreased since 1999, has been stable in the last five years.
- Shares of physicians specializing in emergency medicine, radiology/pathology, and anesthesiology increased.

Description: This measure is a cumulative bar graph of the number of participating physicians by specialty (see the previous metric). Total participating physicians grew from 17,150 in 1999 to 18,284 in 2010, a total increase of 7 percent. The graph shows a decreasing share of primary care physicians since 1999, from 34 percent to 28 percent of total. Emergency medicine, radiology/ pathology, and anesthesiology specialties are smaller in numbers but their shares are growing faster. Their share together increased from 23 percent in 1999 to 32 percent in 2010.



Source of data: TMB physicians master file & TDI-DWC medical billing data.

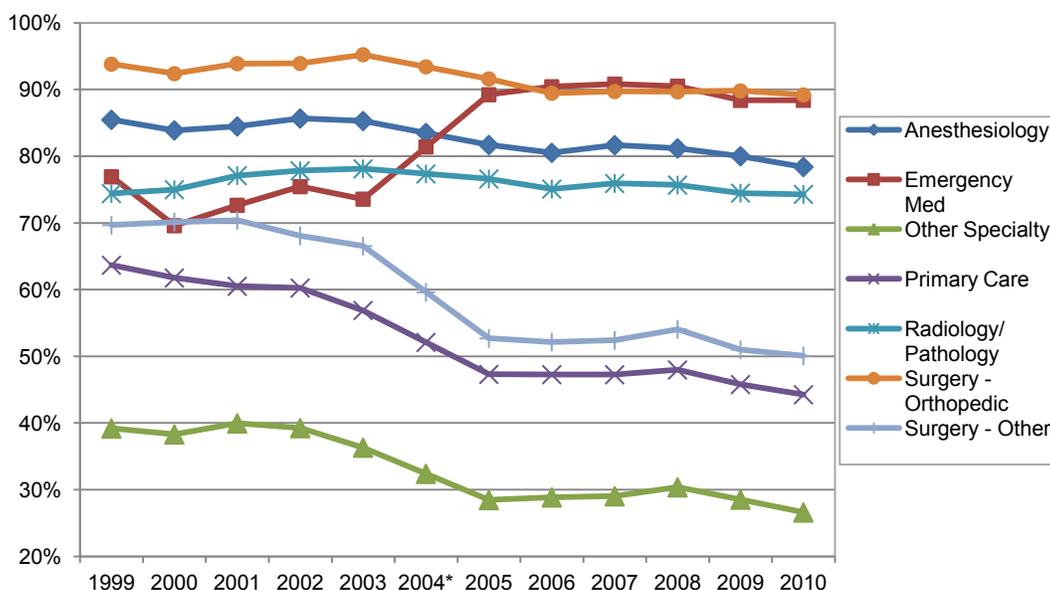
Note: * denotes an average of 2003 and 2005 figures due to problems with 2004 reported data.

PARTICIPATION

Participation Rates by Specialty

- Almost 90 percent of active Orthopedic and Emergency Medicine physicians participated in workers’ compensation in 2010.
- Primary care physicians’ participation rate decreased from 64 percent in 1999 to 44 percent in 2010. This decrease is somewhat compensated by increasing participation by Emergency Medicine specialists.
- Participation rates have been stable or slightly decreasing since 2005.

Description: This measure shows the participation rates by specialty from 1999 to 2010. Participation rate has consistently been 75 percent or higher for orthopedic surgery, anesthesiology, and radiology/pathology specialties. That of emergency medicine specialty increased rapidly from 70 percent in 2000 to 88 percent in 2010. Primary care and other specialty physicians had 60 to 70 percent participation rates in 1999, which decreased substantially between 2002 and 2005, but since then stabilized at around 50 percent. Physicians in other specialty have the lowest participation rate at below 30 percent, mainly since they include specialties that are least related to worksite injuries such as OB-GYN and pediatrics.



Specialty	1999	2000	2001	2002	2003	2004*	2005	2006	2007	2008	2009	2010
Anesthesiology	85.5	83.9	84.5	85.7	85.3	83.4	81.5	80.7	81.5	80.5	80.0	78.4
Emergency Med	76.9	69.6	72.7	75.4	73.6	81.4	89.3	90.8	90.6	89.8	88.4	88.4
Other specialty	39.2	38.3	40.0	39.2	36.3	31.9	27.5	28.3	28.1	29.1	28.5	26.6
Primary care	63.7	61.7	60.5	60.2	56.9	51.7	46.5	46.6	45.8	45.7	45.8	44.2
Radiology/Pathology	74.4	75.0	77.1	77.8	78.1	77.2	76.3	75.1	75.2	75.2	74.5	74.3
Surgery - Orthopedic	93.8	92.4	93.9	93.9	95.2	93.3	91.4	89.5	90.3	89.4	89.8	89.2
Surgery - Other	69.7	70.1	70.4	68.1	66.5	59.3	52.1	51.4	51.5	52.2	51.0	50.1

Source of data: TMB physicians master file & TDI-DWC medical billing data.

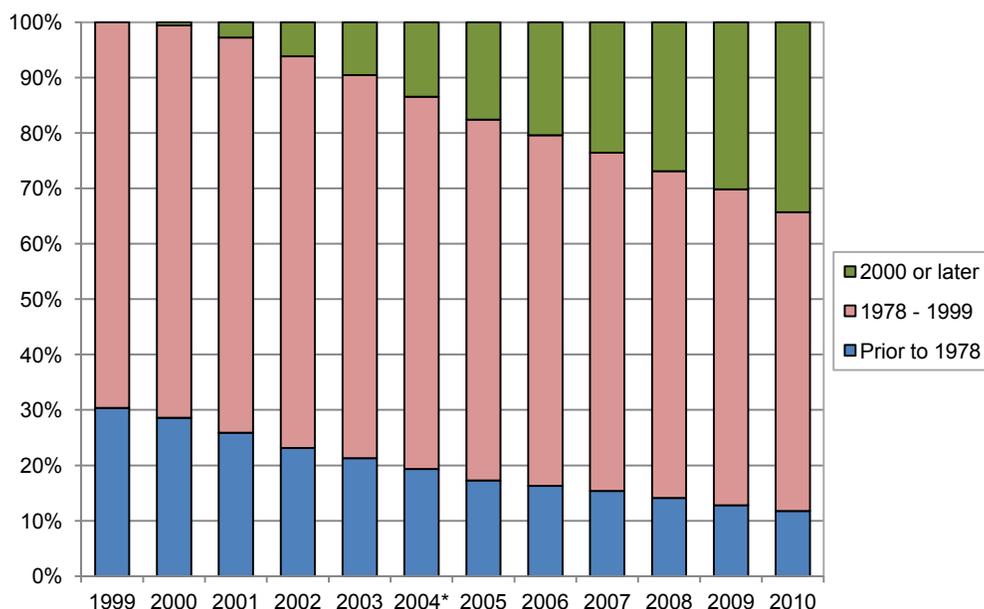
Note: * denotes an average of 2003 and 2005 figures due to problems with 2004 reported data.

PARTICIPATION

Participating Physicians by Year of License

- In 2010, 34 percent of participants were physicians licensed in 2000 or later, growing from zero percent in 1999.
- In 2010, 12 percent of participants were physicians licensed prior to 1978, down from 30 percent of the total in 1999.

Description: This measure groups WC participating physicians by their year of license. The most recent group was licensed in 2000 or later and accounts for 34 percent of the total participating physicians in 2010. This group did not exist in 1999 and its share has been growing steadily. The share of the oldest group of physicians who were licensed in 1977 or earlier declined from 30 percent in 1999 to 12 percent in 2010. This measure shows the fact that participating physicians exit and enter the WC market continuously, and that the main dynamics of such changes is the natural process of licensing, aging and retirement.



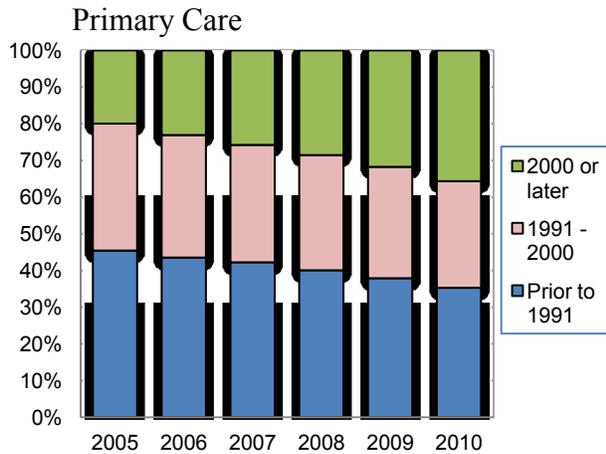
Year of license	1999	2000	2001	2002	2003	2004*	2005	2006	2007	2008	2009	2010
Prior to 1978	5208	4953	4678	4300	3898	3416	2933	2830	2710	2577	2302	2145
1978 - 2000	11942	12263	12907	13161	12667	11864	11060	10991	10775	10792	10275	9863
2000 or later	0	102	502	1145	1752	2368	2984	3542	4155	4912	5430	6276

Source of data: TMB physicians master file & TDI-DWC medical billing data.

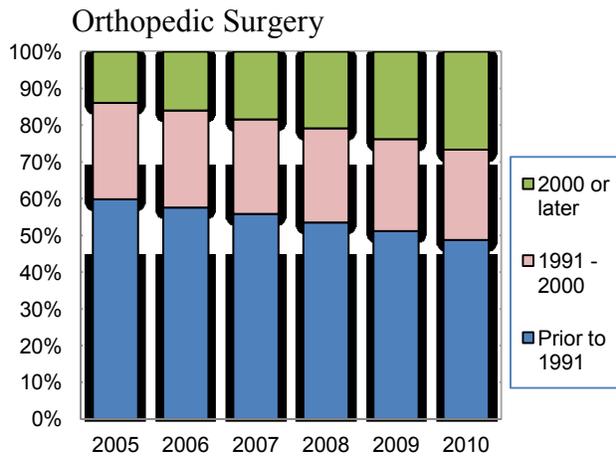
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PARTICIPATION

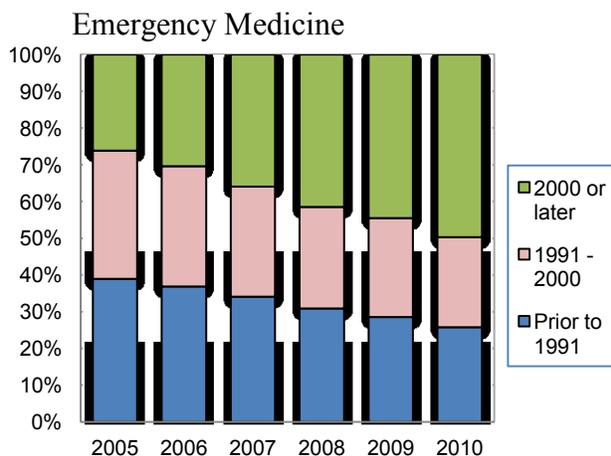
Participation by Year of License for Selected Specialties



The majority of primary care physicians are licensed in 1991 or later. Since 2000, the total number of participating primary care physicians has been stable at around 5,100.



About half of participating orthopedic surgeons are licensed in 1990 or earlier.



Over 70 percent of participating physicians whose specialty is emergency medicine are licensed in 1991 or later.

Source of data: TMB physicians master file & TDI-DWC medical billing data.

Top 20% Physicians

WC health care market is highly specialized due to the nature of occupational injuries, reimbursement and review processes, regulatory rules, and the initial investment costs for providers (training, adapting to rules and procedures, special devices, and so on). National WC markets are also highly concentrated. In Louisiana, for example, 3.8 percent of physicians accounted for 72 percent of WC costs.¹

Physicians in the top 20 percentile are identified by the number of WC patients treated in a given year. They treated on average at least 40 WC patients each in 2003 and 32 WC patients each in 2010. They accounted for 88 to 90 percent of the total payments to MD/DO, and their participation in WC is continuous. The number of physicians and total payments are summarized in the table below:

		1999	2003	2005	2006	2007	2008	2009	2010
Number	Top 20%	3464	3696	3417	3488	3563	3699	3645	3659
	Bottom 80%	13686	14621	13560	13875	14077	14582	14362	14625
Total Payments	Top 20%	\$298	\$343	\$256	\$260	\$264	\$264	\$272	\$269
	Bottom 80%	\$41	\$41	\$35	\$36	\$36	\$36	\$37	\$38

Note: For selected years. Payments are in millions of dollars.

Top 20% physicians by geographical areas (HRRs) in selected specialties in 2010

HRR	All	Primary Care	Radiology/ Pathology	Surgery - Orthopedic
Abilene	49	9	15	12
Amarillo	67	18	26	11
Austin	234	43	88	41
Beaumont	69	11	27	17
Bryan	41	7	21	8
Corpus Christi	90	21	33	16
Dallas	787	175	232	121
El Paso	108	13	26	29
Fort Worth	308	72	85	62
Harlingen	70	36	12	10
Houston	880	171	248	176
Longview	21	0	12	2
Lubbock	88	29	29	8
McAllen	96	37	20	14
Odessa	59	14	23	10
San Angelo	31	5	13	6
San Antonio	412	125	96	56
Shreveport	4	4	0	0
Temple	45	10	20	9
Texarkana	21	3	8	5
Tyler	91	15	29	21
Victoria	25	4	11	3
Waco	32	6	13	2
Wichita Falls	22	4	11	4
Unknown	9	1	5	
Total	3659	833	1103	643

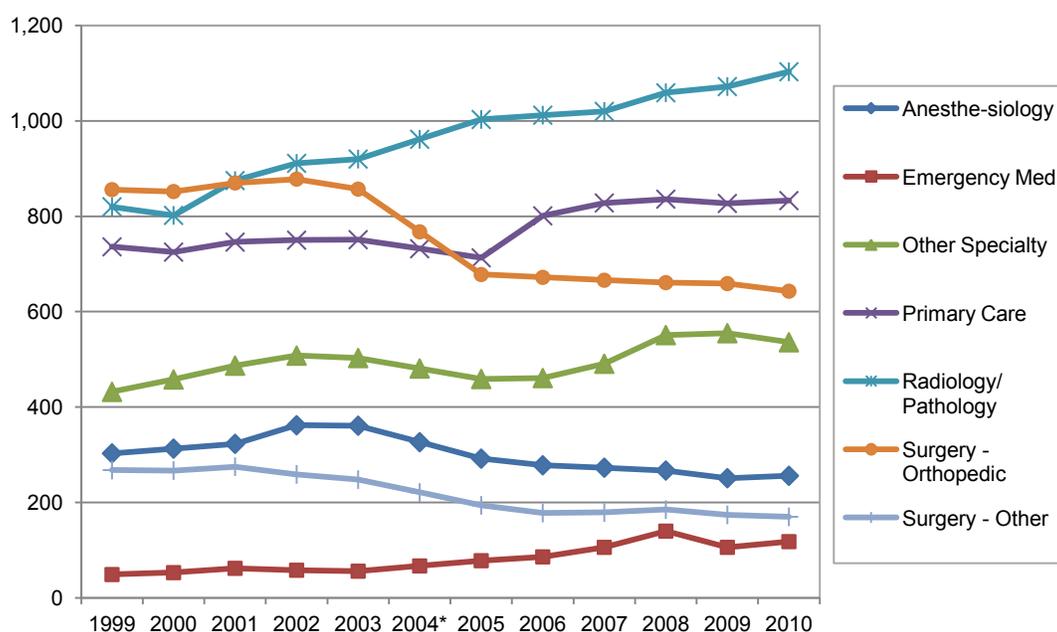
¹ See “The impact of cost intensive physicians on workers’ compensation,” by Bernacki et al., *Journal of Occupational and Environmental Medicine*, 51(1): 22-28, January 2010.

PARTICIPATION

Number of Top 20% Physicians by Specialty

- Among the top 20% in 1999, the most numerous of the specialties were orthopedic surgeons. In 2010, this changed to radiology/pathology group.
- The number of top 20% primary care physicians has increased since 2005.

Description: This measure shows the number of WC participating physicians by specialty from 1999 to 2010. The number of physicians in radiology/pathology, primary care, emergency medicine and other specialty groups increased during the period while orthopedic surgery, other surgery and anesthesiology specialties decreased. The total combined share of these three surgery-related groups decreased from 41 percent in 1999 to 29 percent in 2010. The specialty with the highest number of participants is radiology/pathology, growing by 35 percent from 820 in 1999 to 1,103 in 2010.



Specialty	1999	2000	2001	2002	2003	2004*	2005	2006	2007	2008	2009	2010
Anesthesiology	303	313	323	362	361	326.5	292	278	273	267	251	256
Emergency Med	49	53	62	58	56	67	78	86	106	140	106	118
Other Specialty	432	458	487	508	503	481	459	461	491	551	555	536
Primary Care	736	725	746	750	751	732	713	801	828	836	827	833
Radiology/Pathology	820	802	875	911	920	961.5	1003	1012	1020	1059	1072	1103
Surgery - Orthopedic	856	852	870	878	857	767.5	678	672	666	661	659	643
Surgery - Other	268	267	275	259	248	221	194	178	179	185	174	170

Source of data: TMB physicians master file & TDI-DWC medical billing data.

Note: * denotes an average of 2003 and 2005 figures due to problems with 2004 reported data.

3. Physician Retention

Key Findings

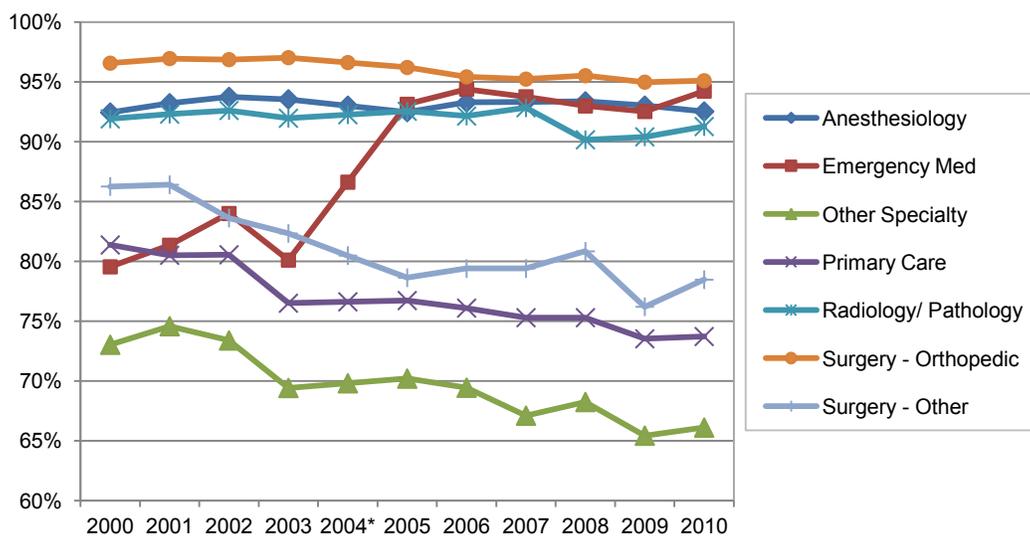
- Overall WC physician retention rate is high and stable at around 80 percent. This means that about 80 percent of this year's participating physicians will also participate in the next year.
- Retention rates for orthopedic surgery, radiology/pathology, emergency medicine, and anesthesiology specialties stayed between 90 to 95 percent since 2005. Considering a natural rate of attrition due to practice change and retirement, these rates indicate almost no change in WC participation status.
- Retention rate for primary care physicians decreased from 81.4 percent in 1999 to 73.7 percent in 2010. But their absolute number increased slightly since 2005.
- 'Top 20%' WC physicians in terms of claim volume have higher participation and annual retention rates at over 98 percent. 'Top 20%' participation rate as a whole appears unaffected by changes in fee schedule and other rules. Their participation remained relatively stable even during the 2002-2005 period.

RETENTION

Year-to-Year (Consecutive) Retention Rates by Specialty

- Orthopedic surgeons maintained the highest retention rate and it remains above 90 percent.
- Overall, physicians have an 80 percent retention rate (82.5 percent in 2000 and 79.3 percent in 2010). The remaining 20 percent is partly explained by normal attrition rates among physicians (retirement, death, changes in practice type, migration and so on).

Description: This measure shows year to year retention rates of the WC participating physicians by specialty group. Retention rates for orthopedic surgery, radiology/pathology, and anesthesiology specialties stayed between 90 to 95 percent in the last ten years. Retention rates for primary care, other surgery, and other specialty are generally lower, ranging from 65 percent to 80 percent, and these rates are steadily decreasing since 2000. Retention rate for emergency medicine specialists was around 85 percent in 2000, but increased to the 95 percent range in 2005 and stayed the same since then.



Specialty	2000	2001	2002	2003	2004*	2005	2006	2007	2008	2009	2010
Anesthesiology	92.4%	93.2%	93.7%	93.5%	93.0%	92.5%	93.3%	93.3%	93.4%	93.0%	92.5%
Emergency Med	79.5%	81.3%	84.0%	80.1%	86.6%	93.1%	94.4%	93.8%	93.0%	92.5%	94.2%
Other Specialty	73.0%	74.6%	73.4%	69.4%	69.8%	70.2%	69.4%	67.1%	68.2%	65.4%	66.1%
Primary Care	81.4%	80.5%	80.5%	76.5%	76.6%	76.7%	76.1%	75.3%	75.3%	73.5%	73.7%
Radiology/ Pathology	91.9%	92.3%	92.6%	92.0%	92.2%	92.5%	92.1%	92.8%	90.2%	90.4%	91.3%
Surgery - Orthopedic	96.6%	96.9%	96.9%	97.0%	96.6%	96.2%	95.4%	95.2%	95.5%	95.0%	95.1%
Surgery - Other	86.3%	86.4%	83.6%	82.3%	80.5%	78.6%	79.4%	79.4%	80.8%	76.2%	78.5%

Data definition: Retention rate is the percentage of a prior year’s participants who participate in the following year.

Source of data: TMB physicians master file & TDI-DWC medical billing data.

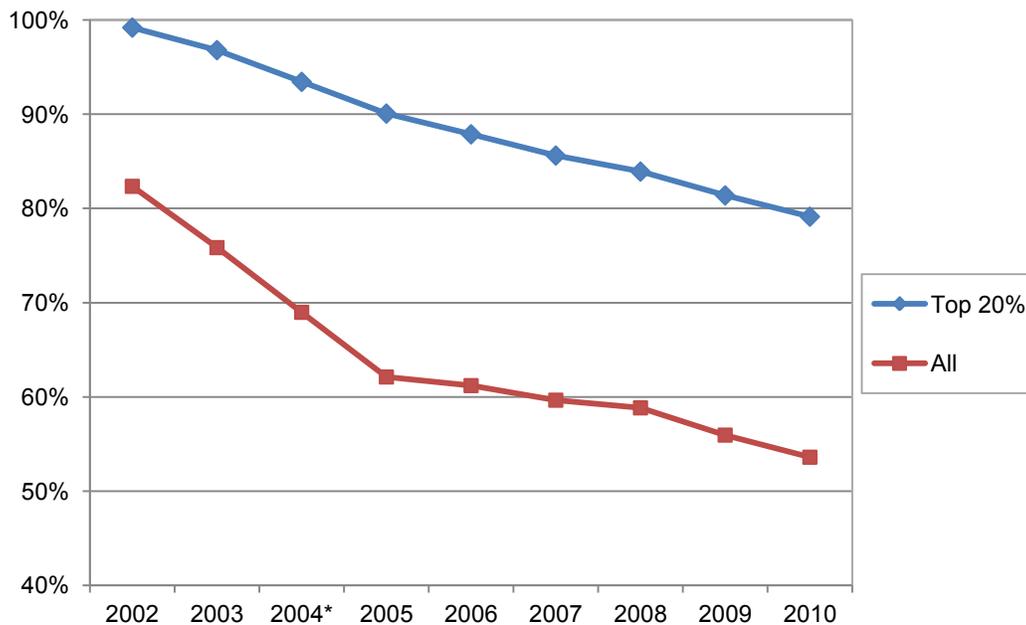
Note: * denotes an average of 2003 and 2005 figures due to problems with 2004 reported data.

RETENTION

Cumulative Retention Rates

- Overall, 54 percent of all physicians who had participated in 2001 continued to participate in 2010 nine years later. Among ‘top 20%’ participating physicians, 79 percent of 2001 participants still participated in 2010.
- Cumulative retention rate decreased more steeply prior to 2005 except for ‘top 20%’ whose cumulative retention rate has not changed significantly.

Description: This measure shows the cumulative retention rates for the ‘top 20%’ group and for the overall participants. For ‘top 20%’ group, 79 percent of those who participated in 2001 were still participating in 2010. Attrition rate is about 3 percent each year. Overall, 18 percent dropped out in 2002 with an additional 7 percent more in the following years until 2005. The cumulative retention rate decreased slowly from 62 percent in 2005 to 54 percent in 2010. This means that 54 percent of physicians who participated in 2001 were still participating in 2010.



Data definition: *Cumulative retention rate* for the 2001 cohort is the percentage of participating physicians in each following year of those who participated in 2001. A cumulative retention rate of 80 percent in 2010 means that, out of those who participated in 2001, 80 percent of them were still participating nine years later.

Source of data: TMB physicians master file & TDI-DWC medical billing data.

Note: * denotes an average of 2003 and 2005 figures due to problems with 2004 reported data.

4. Access to Medical Care by Geographical Area

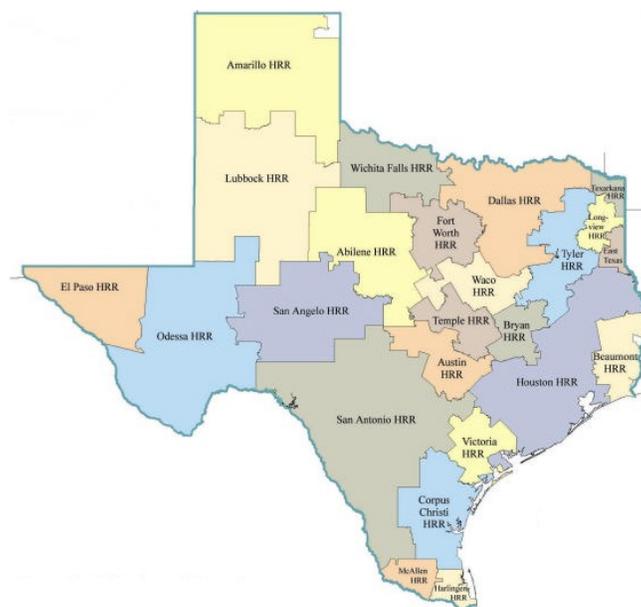
Key Findings

- More than 75 percent of active physicians in Texas practice in the five metro areas. A similar percentage of workers' compensation claims also occur in these areas.
- Access to care measures in non-metro areas are affected greatly by changes in a few physicians, and may display large year-to-year changes.
- Some non-metro areas and border regions have a higher number of WC patients per physician. Any lack of physician access is primarily due to the low total number of physicians practicing in these areas rather than a low WC participation rate.

Hospital Referral Region (HRR)

HRRs are based on *The Dartmouth Atlas of Health Care*.

- HRRs are constructed using Medicare hospitalization records and patient referral patterns, closely resembling the pattern of medical care and access.
- HRRs roughly correspond to major metro areas, but these are more relevant to medical care as they are constructed by patient referral pattern. There are 24 HRRs in Texas. Two HRRs are removed from our analysis: 'Texarkana' and 'Shreveport' HRRs are primarily located in Arkansas and Louisiana, respectively.
- Patients' and physicians' ZIP codes are recoded into HRRs. Patient's location is based on the ZIP code in the medical bills. For physicians, the practice location ZIP code in the TMB list is used.

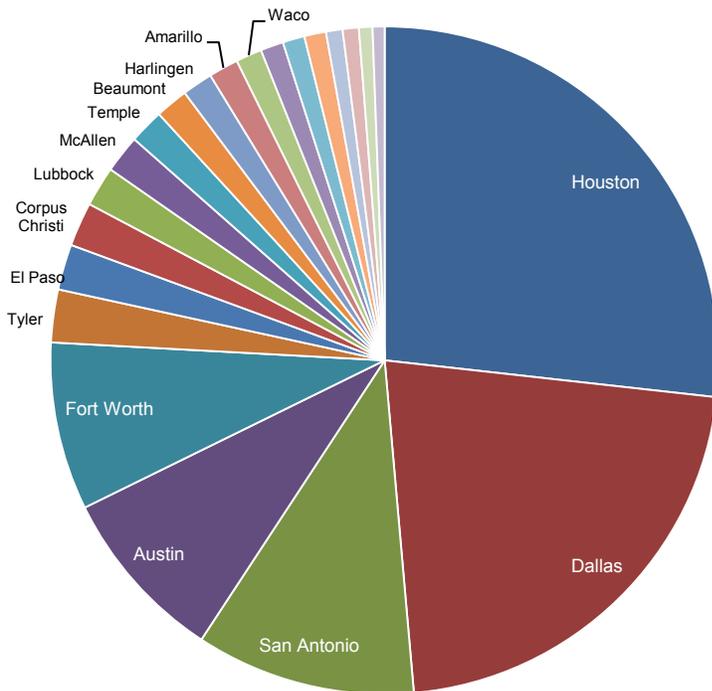


ACCESS BY GEOGRAPHICAL AREAS

Active Physicians by HRR (2010)

- Total number of active physicians (MD/DOs) in 2010 was 40,289.
- Houston, Dallas, San Antonio, Fort Worth & Austin account for 76 percent of all active physicians.

Description: This pie chart shows the number of active physicians in each of the 22 hospital referral regions in Texas. It ranges from 10,783 for Houston to 234 for Victoria. Actual numbers are provided in the table on the right.



HRR	Number of physicians
Houston	10783
Dallas	8799
San Antonio	4285
Austin	3421
Fort Worth	3274
Tyler	1029
El Paso	889
Corpus Christi	859
Lubbock	781
McAllen	738
Temple	676
Beaumont	641
Harlingen	596
Amarillo	579
Waco	508
Odessa	447
Bryan	427
Abilene	423
Wichita Falls	323
Longview	314
San Angelo	263
Victoria	234

Data definition: Active physicians include only non-military and direct patient care MD/DO physicians whose practice state is Texas.

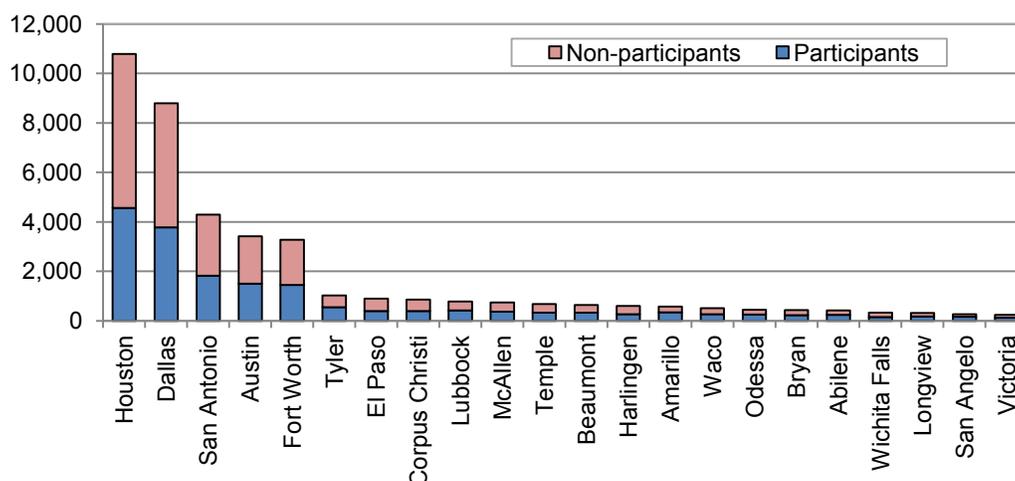
Source of data: Texas Medical Board physicians master file.

ACCESS BY GEOGRAPHICAL AREAS

Physician Number and Participation Status by HRR (2010)

- Overall, 45 percent of active Texas physicians participate in WC, and 73 percent of those are in 5 largest metro areas. In comparison, 70 percent of all WC claims are in the same 5 metro areas.

Description: This measure shows the number of non-participants and participants for 22 Texas hospital referral regions. Houston, Dallas, San Antonio, Austin, and Fort Worth account for more than 75 percent of the total. Participation rates for these five metro areas range between 42 percent and 44 percent. Smaller areas all show higher participation rates.



HRR	Participants	Non-participants	Participation rate
Houston	4559	6224	42.3%
Dallas	3773	5026	42.9%
San Antonio	1821	2464	42.5%
Austin	1505	1916	44.0%
Fort Worth	1444	1830	44.1%
Tyler	545	484	53.0%
El Paso	393	496	44.2%
Corpus Christi	392	467	45.6%
Lubbock	420	361	53.8%
McAllen	369	369	50.0%
Temple	333	343	49.3%
Beaumont	327	314	51.0%
Harlingen	260	336	43.6%
Amarillo	341	238	58.9%
Waco	265	243	52.2%
Odessa	252	195	56.4%
Bryan	222	205	52.0%
Abilene	241	182	57.0%
Wichita Falls	146	177	45.2%
Longview	177	137	56.4%
San Angelo	160	103	60.8%
Victoria	126	108	53.8%

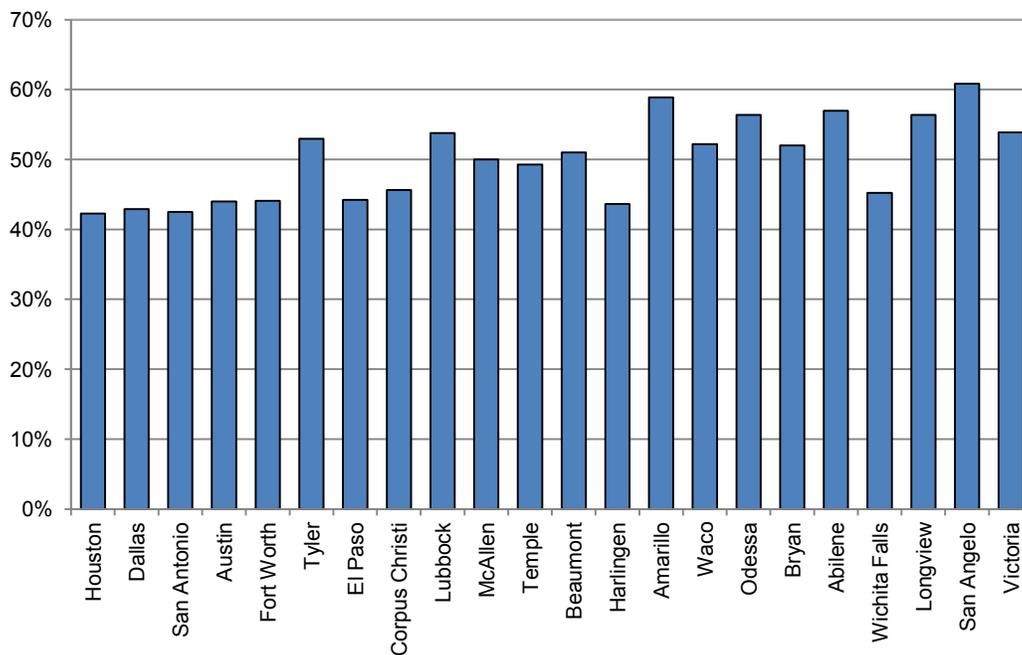
Source of data: TMB physicians master file, TDI-DWC medical billing data, and Dartmouth Atlas of Health Care.

ACCESS BY GEOGRAPHICAL AREA

WC Participation Rates by HRR (2010)

- Participation rates are generally lower in larger metro areas as there are more doctors in these areas. The rates range from 42 percent to 44 percent.
- Participation rates in smaller HRRs are generally higher than those of large HRRs, but overall, participation rates do not differ drastically across HRRs.

Description: This measure shows the participation rate for the 22 hospital referral regions (HRRs) in Texas. The largest HRRs are on the left-hand side. Their participation rates range from 42 percent to 44 percent. Other smaller HRRs show a participation rate between 44 percent and 61 percent. The differences across HRRs are relatively small.



Data definition: Participation rate = (Treating WC patients) / (Active in TMB).

Source of data: TMB physicians master file, TDI-DWC medical billing data, and Dartmouth Atlas of Health Care.

ACCESS BY GEOGRAPHICAL AREA

Claims per Physician by HRR (2005-2010)

- El Paso and Harlingen HRRs have the lowest access in terms of the number of claims per physician. Higher number of claims per physician means more competition among injured employees for care, and therefore lower access.
- Fort Worth and San Antonio show the lowest access among metro areas. There were significant improvements in Fort Worth but a significant worsening in San Antonio in the last five years.
- Worsened since 2005: Harlingen, El Paso, and Lubbock.
- Most improved since 2005: Dallas, Austin, and Longview.

Description: This table shows the average number of claims per participating physician, and the change rate from 2005 to 2010.

HRR	2005	2006	2007	2008	2009	2010	Change in 2005-2010
Abilene	14.98	18.02	17.65	16.64	16.89	16.09	7.40%
Amarillo	15.12	16.09	17.99	15.90	15.28	15.57	2.95%
Austin	14.49	15.50	14.77	12.66	12.41	11.87	-18.05%
Beaumont	16.11	17.13	16.58	16.69	14.99	16.85	4.61%
Bryan	13.52	13.65	14.46	12.34	12.07	11.75	-13.05%
Corpus Christi	18.60	19.48	18.84	18.31	17.81	18.36	-1.29%
Dallas	17.71	17.62	16.69	15.90	14.27	13.89	-21.55%
El Paso	25.93	29.94	31.90	32.02	29.36	29.64	14.31%
Fort Worth	23.27	25.77	26.30	22.94	21.81	20.87	-10.29%
Harlingen	22.04	23.79	25.35	25.37	25.71	26.29	19.31%
Houston	15.23	16.44	16.60	15.62	14.59	13.80	-9.36%
Longview	18.33	19.57	19.28	16.70	15.36	15.07	-17.81%
Lubbock	14.95	15.66	17.07	16.70	15.73	16.72	11.83%
McAllen	20.48	19.96	22.53	19.82	20.17	19.25	-6.03%
Odessa	24.28	24.76	25.12	23.06	19.74	20.33	-16.26%
San Angelo	14.51	14.33	14.07	13.49	11.98	12.32	-15.10%
San Antonio	19.57	21.49	21.61	20.35	19.64	20.69	5.73%
Temple	16.39	18.84	18.92	18.39	16.71	14.18	-13.48%
Tyler	13.79	14.52	14.95	13.26	12.49	11.76	-14.76%
Victoria	16.01	16.28	15.73	13.85	13.03	14.96	-6.58%
Waco	19.28	22.95	21.68	21.92	19.71	17.50	-9.24%
Wichita Falls	14.07	15.28	16.92	14.67	13.73	14.73	4.70%

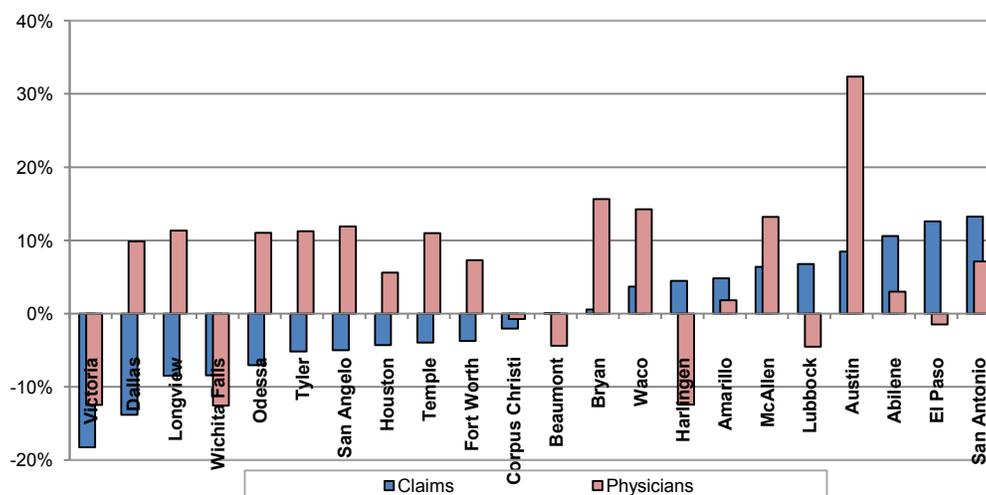
Source of data: TMB physicians master file, TDI-DWC medical billing data, and Dartmouth Atlas of Health Care.

ACCESS BY GEOGRAPHICAL AREA

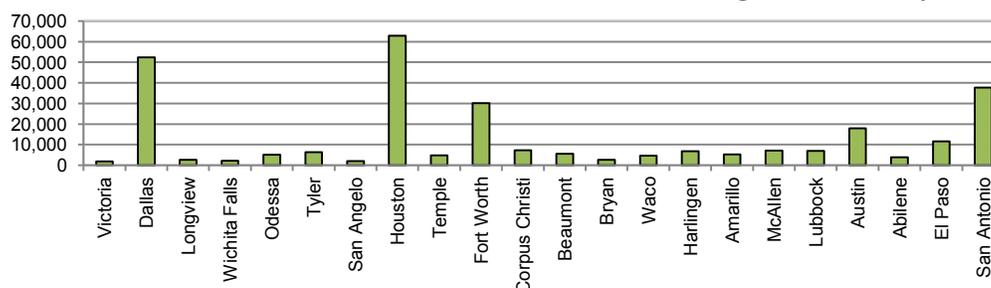
Rates of Change in Claims and Participating Physicians by HRR

- The number of claims decreased in 11 HRRs and increased in 11 HRRs from 2005 to 2010, while the number of participating physicians increased in 15 areas.
- The number of physicians decreased by more than 10 percent in Victoria, Wichita Falls, and Harlingen. Smaller decreases occurred in Beaumont, Lubbock, El Paso, and Corpus Christi. In Harlingen and Lubbock, participating physicians decreased while claims increased.
- Large metro areas saw decreases in claims but increases in physicians, except Austin where both claims and physicians increased.

Description: This measure shows 2005 to 2010 changes in the number of claims for 22 HRRs, from decreasing rates on the left, to increasing rates on the right. 11 HRRs saw increases in the number of claims while 11 saw decreases, ranging from 18 percent decline for Victoria to 13 percent increase for San Antonio. This is compared with the rate of change in the number of physicians. 15 HRRs experienced increases in physicians at about 10 percent while Austin had an increase of 32 percent. Victoria, Wichita Falls and Harlingen show the largest decline at more than 10 percent decrease.



Total Number of Claims Treated in 2010, Including Medical Only



Source of data: TMB physicians master file, TDI-DWC medical billing data, and Dartmouth Atlas of Health Care.

ACCESS BY GEOGRAPHICAL AREA

Ratio of Physician Share to Claim Share by HRR

- Bryan, Tyler and Austin areas have relatively more physicians than claims.
- El Paso, Harlingen, Fort Worth and San Antonio have relatively less physicians. (Ft. Worth may be considered separately since many of Fort Worth patients may travel to Dallas HRR.)

Data definition: *Ratio of physician share to claim share* is defined as ‘% HRR physicians in total Texas physicians’ divided by ‘% HRR claims in total Texas WC claims’, or

$$\frac{\left(\frac{\text{Physicians}_{HRR}}{\text{Physicians}_{TX}}\right)}{\left(\frac{\text{Claims}_{HRR}}{\text{Claims}_{TX}}\right)}$$

A ratio greater (less) than 1 means that the HRR’s share of participating Texas physicians is higher (lower) than its share of WC patients, implying that the area has relatively more (less) physicians than its share of claims.

HRR	2005	2006	2007	2008	2009	2010	Change in ratio
Bryan	1.29	1.36	1.29	1.40	1.35	1.35	0.06
Tyler	1.27	1.28	1.24	1.31	1.30	1.35	0.09
Austin	1.21	1.20	1.26	1.37	1.31	1.34	0.13
San Angelo	1.21	1.30	1.32	1.28	1.36	1.29	0.09
Houston	1.15	1.13	1.12	1.11	1.11	1.15	0.00
Dallas	0.99	1.06	1.12	1.09	1.14	1.15	0.16
Temple	1.07	0.99	0.98	0.94	0.97	1.12	0.06
Wichita Falls	1.24	1.22	1.10	1.18	1.18	1.08	-0.16
Victoria	1.09	1.14	1.18	1.25	1.25	1.06	-0.03
Longview	0.95	0.95	0.97	1.04	1.06	1.06	0.10
Amarillo	1.16	1.16	1.03	1.09	1.06	1.02	-0.13
Abilene	1.17	1.03	1.05	1.04	0.96	0.99	-0.18
Lubbock	1.17	1.19	1.09	1.04	1.03	0.95	-0.22
Beaumont	1.09	1.09	1.12	1.04	1.08	0.94	-0.14
Waco	0.91	0.81	0.86	0.79	0.82	0.91	0.00
Corpus Christi	0.94	0.95	0.99	0.95	0.91	0.87	-0.07
McAllen	0.85	0.93	0.83	0.87	0.81	0.83	-0.03
Odessa	0.72	0.75	0.74	0.75	0.82	0.78	0.06
San Antonio	0.89	0.87	0.86	0.85	0.83	0.77	-0.12
Fort Worth	0.75	0.72	0.71	0.76	0.74	0.76	0.01
Harlingen	0.79	0.78	0.73	0.68	0.63	0.61	-0.19
El Paso	0.67	0.62	0.58	0.54	0.55	0.54	-0.14

Source of data: TMB physicians master file, TDI-DWC medical billing data, and Dartmouth Atlas of Health Care.

5. Timeliness of Care

Timeliness of care is a measure of initial access, and measured by the number of days between the date of injury and the first visit to a physician for medical treatment. In comparison, secondary access is concerned with timely access to specialty physicians or referral procedures. Due to the lack of data, our analysis focuses on the initial access. As a measure of access to medical care, timeliness of care is affected by physician availability and participation rates as well as such non-supply factors as type of injury, travel preferences, and dispute and denial processes. Therefore, timeliness of care presented in this section goes beyond physician participation in understanding access to medical care.

In this report, timeliness of care measures were calculated for new injuries and non-emergency services only. All claims that had one or more emergency services were removed from analysis. Medical services were considered for only the first 6 months. Injury and illness cases whose first treatment occurred more than 6 months after the injury were removed from analysis. Finally, for technical reasons, our analysis includes only those who saw MD/DO physician on the first treatment day and excludes those who saw chiropractors and/or physical therapists on their first visit.

Key Findings

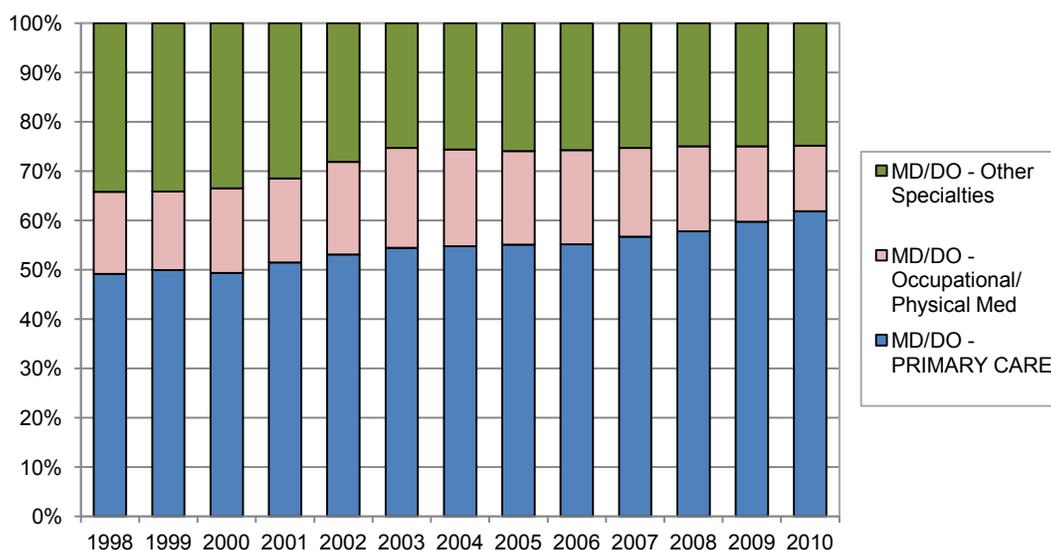
- Overall, initial access (timeliness of care) measures show that WC patients received non-emergency treatments faster in 2010 than in 1998.
- About 82 percent of patients received initial care in 7 days or less in 2010, up from 75 percent in 1998. This rate stayed the same around 82 percent since 2007.
- Delayed initial care is correlated with higher total medical costs. Claims with greater than 7 days delay had on average 50 percent more total medical costs in the first 6 months.
- Delayed claims with more than 7 days accounted for 14 to 25 percent of the total claims. Smaller areas have higher percentage of delayed cases but they are often affected by a few extreme values.
- Large metro areas generally show about 10 percent or less of their claims traveling out of their area for their first treatment. Smaller HRRs have higher number of claims traveling outside of their HRR, some over 30 percent.

TIMELINESS OF CARE

Shares of Treating Doctor Types Delivering First Treatment

- The majority of injured employees saw a primary care physician on their first treatment day, and this rate has increased from 49 percent in 1998 to 62 percent in 2010.
- About 13 percent of new patients saw Occupational/Physical Medicine specialists on the first day of treatment in 2010 although these specialty physicians account for less than 3 percent of the total MD/DO participants.

Description: This measure shows cumulative shares of claims by the type of physician that they saw for their first treatment. The table with absolute number of claims is provided below. The majority of them saw primary care physicians, and more patients are seeing primary care physicians in recent years (62 percent in 2010). Occupational and physical medicine specialists were the second most important group. In 2005, 19 percent of patients saw occupational/physical medicine specialists, which decreased to 13 percent in 2010.



Number of new claims by type of physician visited on their first treatment day

Specialty	1998	1999	2000	2001	2002	2003	2004*	2005	2006	2007	2008	2009	2010
MD/DO - PRIMARY CARE	92822	82883	77497	78431	79150	74621	74152	73683	84593	91797	90912	84259	90042
MD/DO - Occupational/Physical Med	31375	26429	27022	25910	28047	27719	26566	25412	29378	29033	27157	21553	19386
MD/DO - Other Specialties	64552	56647	52544	47990	41911	34646	34669	34692	39430	40936	39229	35190	36131

Source of data: TMB physicians master file & TDI-DWC medical billing data.

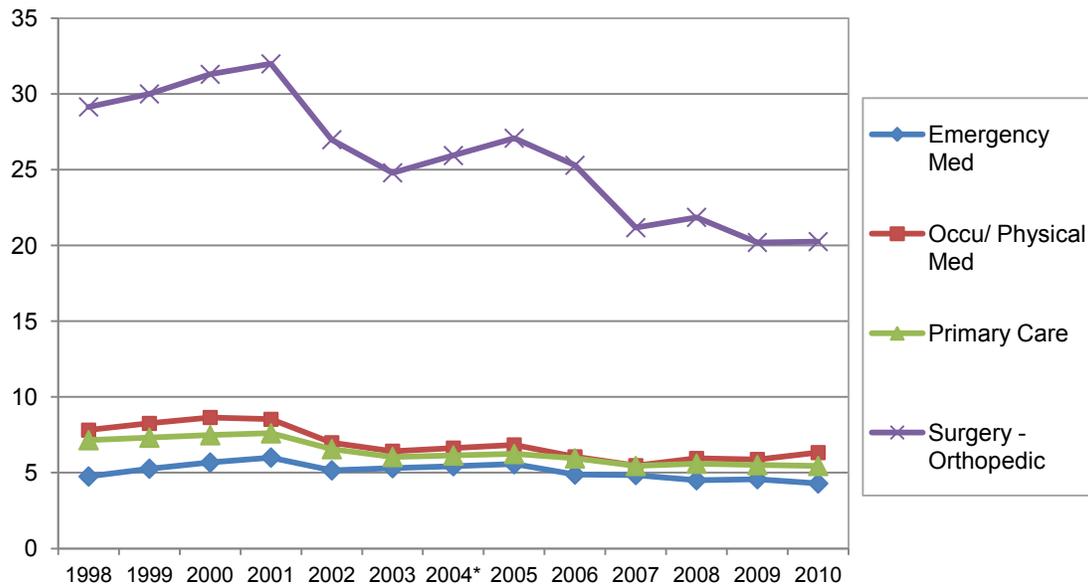
Note: * denotes an average of 2003 and 2005 figures due to problems with 2004 reported data.

TIMELINESS OF CARE

Average Days Between Injury and First Visit

- The average number of days between injury and first treatment are similar for physicians in primary care, emergency medicine, and occupational/physical medicine, at around 5 days.
- For those whose first treatment was with an orthopedic surgeon, the average number of days (delays) was much higher but improving as it decreased from 32 days in 2001 to 20 days in 2010.

Description: This metric calculates the average number of days between the injury date and the first treatment by type of physician. Patients who saw physicians in primary care, emergency medicine and occupational/physical medicine specialties took 4 to 6 days on average. This delay has decreased slightly in the last ten years. In comparison, those whose first treatment was by an orthopedic surgeon took more than 20 days for their first treatment, which nevertheless decreased from 32 days in 2001 to 20 days in 2010.



Source of data: TMB physicians master file & TDI-DWC medical billing data.

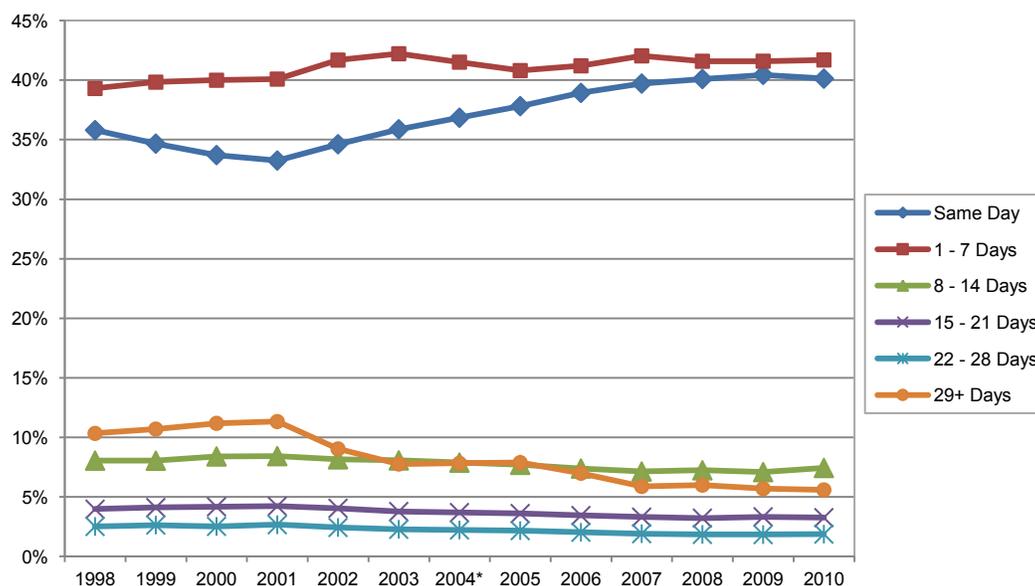
Note: * denotes an average of 2003 and 2005 figures due to problems with 2004 reported data.

TIMELINESS OF CARE

Percent of Claims by Number of Days Between Injury and First Visit

- ‘Same day’ and ‘1 to 7 days’ groups accounted for 73 percent in 2001, increasing steadily to 82 percent in 2010 (12 percent increase).
- The largest decrease was in the share of extreme delays (29 days or more): it decreased from 10 percent to 6 percent.

Description: This measure shows the percent of claims by the number of days before first medical treatment in six broad day groups from 1998 to 2010. In 2001, 73 percent of all claims received medical treatments on the same day as their injury or within 7 days from injury. This timeliness of care measure has improved continuously. In 2010, 82 percent of the claims received their first care within 7 days of their injury. Claims with more than 7 days’ delay stayed about the same except the most delayed group with 29 days or more whose number has decreased significantly since 2001.



	1998	1999	2000	2001	2002	2003	2004*	2004	2005	2006	2007	2008	2009	2010
Same Day	35.8%	34.7%	33.7%	33.3%	34.6%	35.9%	36.9%	35.7%	37.8%	38.9%	39.7%	40.1%	40.4%	40.1%
1 - 7 Days	39.3%	39.8%	40.0%	40.1%	41.7%	42.2%	41.5%	39.4%	40.8%	41.2%	42.0%	41.6%	41.6%	41.7%
8 - 14 Days	8.1%	8.0%	8.4%	8.4%	8.2%	8.1%	7.9%	7.6%	7.7%	7.4%	7.1%	7.2%	7.1%	7.4%
15 - 21 Days	4.0%	4.1%	4.2%	4.2%	4.1%	3.8%	3.7%	3.6%	3.6%	3.4%	3.3%	3.2%	3.3%	3.3%
22 - 28 Days	2.5%	2.6%	2.5%	2.7%	2.4%	2.3%	2.2%	2.2%	2.2%	2.0%	1.9%	1.9%	1.8%	1.9%
29+ Days	10.3%	10.7%	11.2%	11.3%	9.0%	7.8%	7.8%	11.5%	7.9%	7.0%	5.9%	6.0%	5.7%	5.6%

Source of data: TDI-DWC medical billing data.

Data definition: Timeliness of care measures are calculated for new injuries only. Medical service records are in injury year with 6 months maturity.

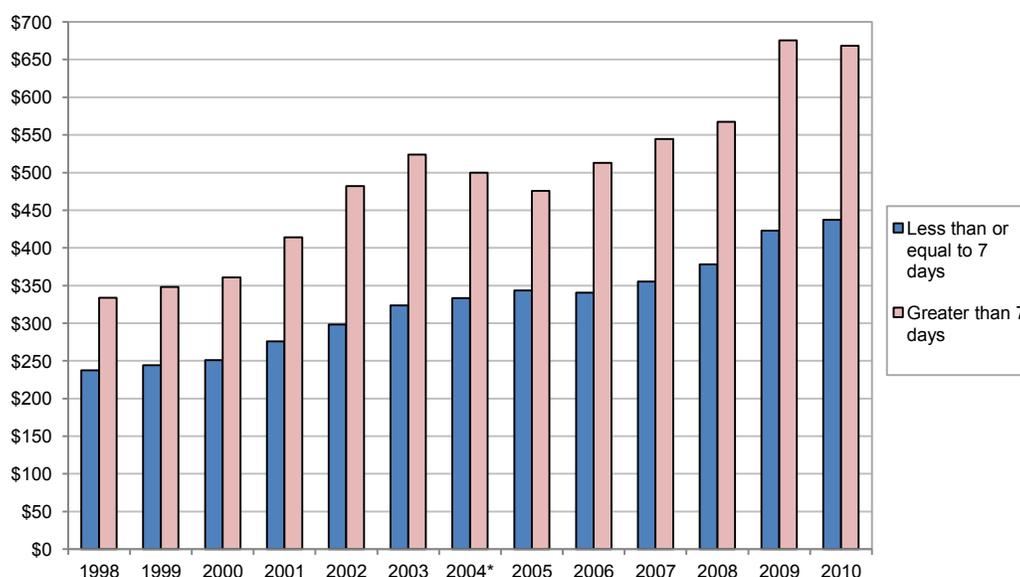
Note: * denotes an average of 2003 and 2005 figures due to problems with 2004 reported data.

TIMELINESS OF CARE

Median Total Cost per Claim, 6 Months Post-Injury by Number of Days

- Median medical cost for the delayed (more than 7 days) group was 53 percent higher than that of ‘within 7 days’ group in 2010.
- Median costs fluctuate more for the delayed group.

Description: This measure compares median medical costs for delayed and non-delayed groups of claims. From 1998 to 2010, the median medical cost of the delayed group (that took more than 7 days for first treatment) was 50 percent higher on average than that of the claims that received medical treatment within 7 days of injury. Median costs increased by 80 percent for non-delayed group while they doubled for the delayed group. (Figures are in current dollars without any adjustments for inflation.)



	1998	1999	2000	2001	2002	2003	2004*	2005	2006	2007	2008	2009	2010
Less than or equal to 7 days	\$237	\$244	\$251	\$276	\$298	\$324	\$333	\$343	\$341	\$355	\$378	\$423	\$437
Greater than 7 days	\$334	\$348	\$361	\$414	\$482	\$524	\$500	\$476	\$513	\$545	\$567	\$676	\$668

Source of data: TDI-DWC medical billing data.

Data definition: Medical costs are only for the first six months after injury.

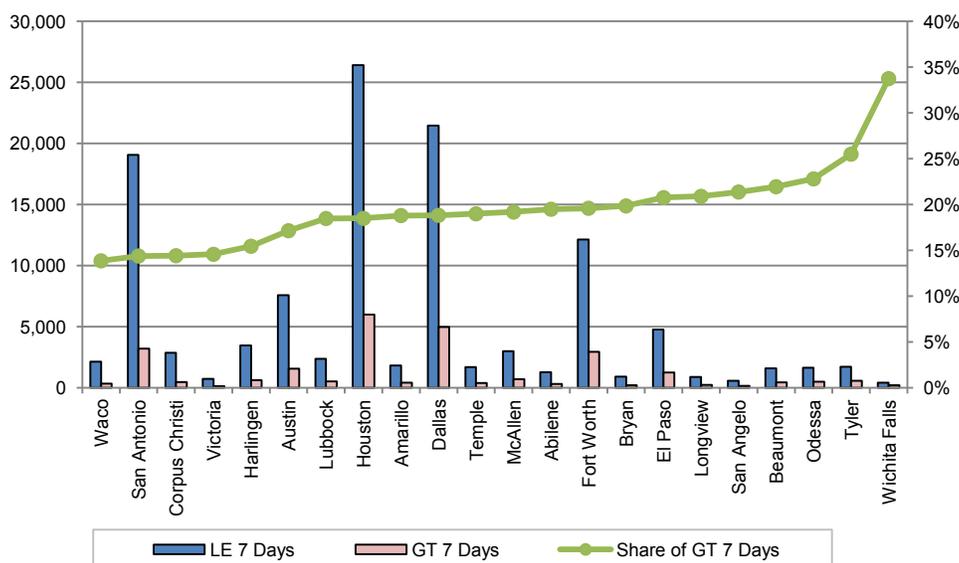
Note: * denotes an average of 2003 and 2005 figures due to problems with 2004 reported data.

TIMELINESS OF CARE BY HRR

Number of Claims by Number of Days, by HRR (2010)

- Workers in Wichita Falls HRR had the highest chance of delayed treatment.
- Among large metro areas, Houston has the most delayed cases (5,997), and Fort Worth has the highest percentage of delays (19.6 percent).

Description: The line graph shows, from left to right, the percentage of delayed treatment (greater than 7 days) group, ranging from 13.9 percent of Waco HRR to 33.8 percent of Wichita Falls HRR. It also shows the numbers of non-delayed (within 7 days) and delayed (more than 7 days) claims in bar graphs for each HRR. These numbers are also presented in the table below.



HRR	LE 7 Days	GT 7 Days	Share of GT 7 Days
Waco	2155	347	13.9%
San Antonio	19070	3207	14.4%
Corpus Christi	2859	482	14.4%
Victoria	744	127	14.6%
Harlingen	3467	634	15.5%
Austin	7592	1572	17.2%
Lubbock	2381	540	18.5%
Houston	26414	5997	18.5%
Amarillo	1826	423	18.8%
Dallas	21472	4983	18.8%
Temple	1697	398	19.0%
McAllen	2997	712	19.2%
Abilene	1292	313	19.5%
Fort Worth	12147	2962	19.6%
Bryan	908	225	19.9%
El Paso	4762	1248	20.8%
Longview	889	235	20.9%
San Angelo	570	155	21.4%
Beaumont	1596	449	22.0%
Odessa	1655	489	22.8%
Tyler	1726	591	25.5%
Wichita Falls	424	216	33.8%

Source of data: TDI-DWC medical billing data and Dartmouth Atlas of Health Care.

Data definition: For smaller HRRs, these measurements are affected greatly by small changes in the number of ‘top 20%’ participating physicians.

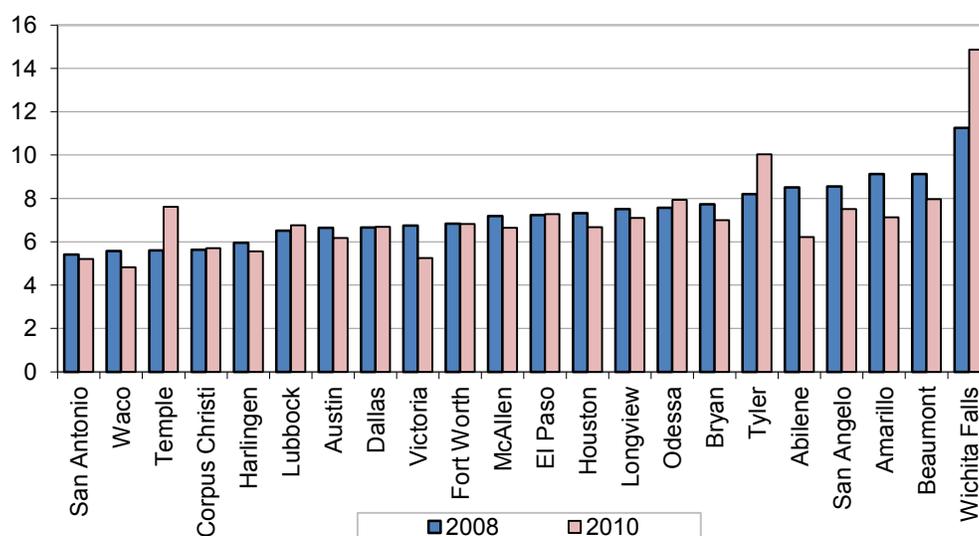
Note: LE = “less than or equal to.” GT = “greater than.”

TIMELINESS OF CARE BY HRR

Average Number of Days Between Injury and First Visit by HRR (2008-2010)

- In 2010, the average duration to the first treatment in Wichita Falls (14.9 days) was almost three times longer than that in San Antonio (5.2 days).
- Compared to 2008, first treatments in Wichita Falls, Tyler, and Temple areas were delayed significantly in 2010.

Description: This measure compares 2008 and 2010 average days between injury and first treatment for 22 Texas hospital referral regions. The average number of days range from 5 days to 14 days. Most areas experienced a slight reduction in delay in 2010 except Wichita Falls, Tyler and Temple areas where delay increased significantly.



	2008	2010
San Antonio	5.41	5.20
Waco	5.57	4.83
Temple	5.60	7.61
Corpus Christi	5.64	5.70
Harlingen	5.96	5.56
Lubbock	6.51	6.77
Austin	6.65	6.18
Dallas	6.66	6.69
Victoria	6.75	5.25
Fort Worth	6.83	6.83
McAllen	7.18	6.64
El Paso	7.24	7.27
Houston	7.33	6.68
Longview	7.51	7.10
Odessa	7.57	7.93
Bryan	7.73	7.00
Tyler	8.20	10.04
Abilene	8.52	6.22
San Angelo	8.55	7.50
Amarillo	9.12	7.13
Beaumont	9.13	7.96
Wichita Falls	11.26	14.86

Source of data: TDI-DWC medical billing data and Dartmouth Atlas of Health Care.

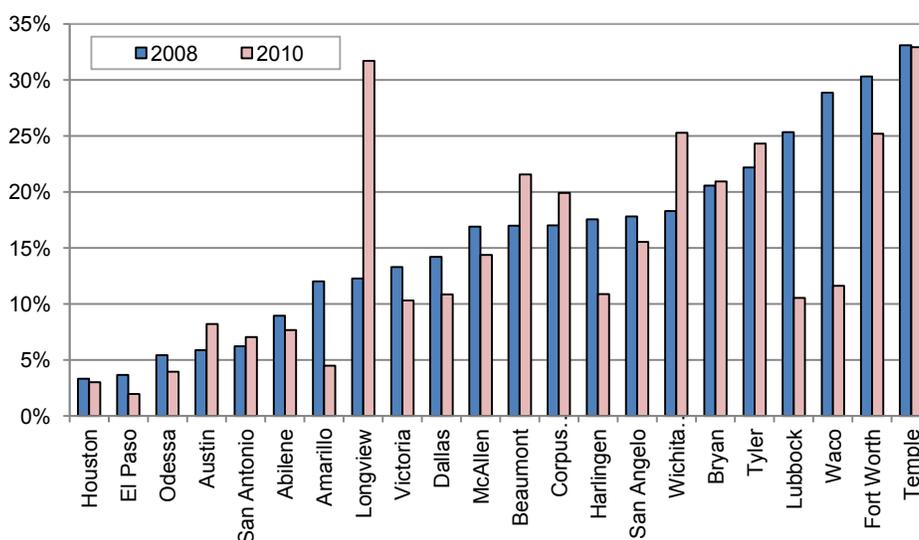
Data definition: This measure is presented in averages which are often affected by small number of cases with extreme values. The median number of days for this measure is 1 day for most HRRs.

TIMELINESS OF CARE BY HRR

Traveling out of HRR for Initial Treatment (2008-2010)

- Large metro areas show about 10 percent or less of their claims traveling out of their area for their first treatment, except Fort Worth where some patients travel to Dallas HRR.
- Smaller HRRs have a higher number of claims traveling outside of their HRR.

Description: This measure shows the percent of claims that went out of their HRR for their first treatment. The 2008 percentages are shown from left to right by increasing percentage of ‘out of HRR’ non-emergency services, ranging from 3.3 percent for Houston to 33.1 percent for Temple. Among large metro areas, Austin and San Antonio experienced a slight increase in out of HRR travel in 2010. Among smaller areas, Longview, Wichita Falls, Beaumont, Corpus Christi and Tyler show an increase in out-of-HRR travel.



HRR	2008		2010	
	Within HRR	Outside HRR	Within HRR	Outside HRR
Houston	32002	1101	29792	920
El Paso	5902	224	5780	115
Odessa	2115	121	2019	83
Austin	9177	573	7833	699
San Antonio	20482	1359	19719	1491
Abilene	1315	129	1412	117
Amarillo	1929	263	2065	97
Longview	1194	167	756	351
Victoria	803	123	765	88
Dallas	23730	3928	21854	2658
McAllen	2932	596	3059	513
Beaumont	1578	323	1539	423
Corpus Christi	2657	545	2586	643
Harlingen	3499	745	3612	441
San Angelo	697	151	566	104
Wichita Falls	572	128	452	153
Bryan	942	244	828	219
Tyler	2192	625	1687	542
Lubbock	2173	737	2435	287
Waco	1887	765	2148	282
Fort Worth	11775	5118	10884	3664
Temple	1305	645	1099	539

Source of data: TDI-DWC medical billing data and Dartmouth Atlas of Health Care.

Data definition: ‘Traveling out of HRR’ means that the patient’s HRR is different from physician/facility HRR. Large changes in Longview, Wichita Falls, and Beaumont are mainly due to practice changes of a few ‘top 20%’ physicians.

6. Health Care Networks and Timeliness of Care

In 2005, the 79th Texas Legislature passed House Bill 7, which authorized the use of workers' compensation health care networks certified by the Texas Department of Insurance (Department). In March 2006, the Department began certifying workers' compensation health care networks. Currently 34 networks covering 250 Texas counties are certified to provide workers' compensation health care services. Among the certified networks, 27 were treating injured employees as of February 1, 2011.

This study covers networks in 2008 – 2010 injury years. Three certified networks – Texas Star, Travelers, and Liberty – had a sufficient number of claims since 2008. All other smaller networks are grouped into 'other networks.' In addition, certain public entities and political subdivisions have the option to contract directly with health care providers. This report includes Alliance, a joint contracting partnership of five political subdivisions (authorized under Chapter 504, Texas Labor Code) that chose to directly contract with health care providers. While not required to be certified by the Department under Chapter 1305, Texas Insurance Code, the Alliance network must still meet TDI's workers' compensation reporting requirements.

Key Findings

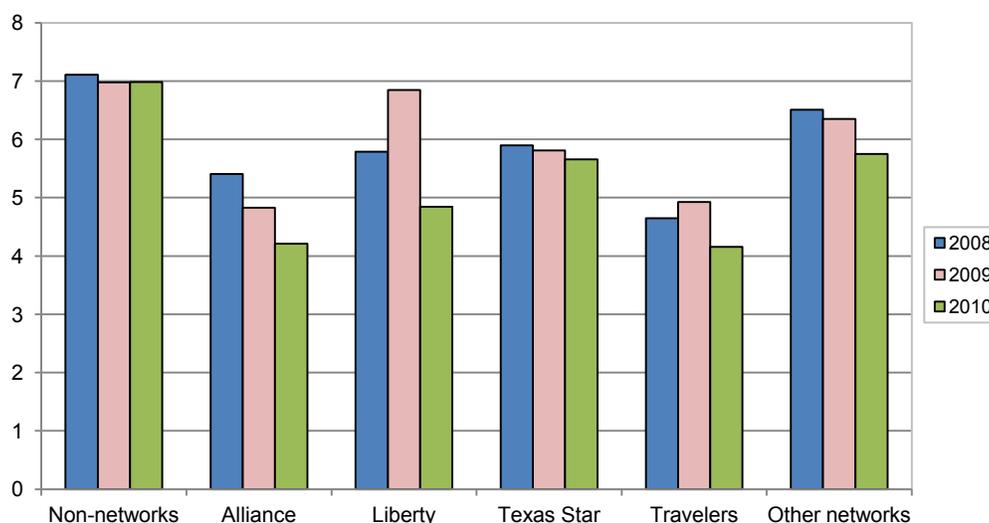
- Initial access for WC Network patients is slightly better than non-network patients, and it improved in 2010 while non-network claims showed no change.
- The share of claims that received initial treatment within 7 days is higher and increasing among networks. The share of delayed claims that took 29 days or more before first treatment is lower and decreasing faster for network claims compared to non-network claims.

TIMELY ACCESS TO CARE: NETWORK VS. NON-NETWORKS

Average Number of Days Between Injury and First Visit by Network

- Initial access in networks is better than that in non-network WC care.
- Networks show more improvement in initial access than non-networks.

Description: This measure shows the average number of days between injury date and first visit to a physician for the claims in five networks compared to all non-network claims, from 2008 to 2010. The average duration for non-network claims was 7.1 days in 2008, slightly decreasing to 7.0 days in 2010. All networks showed a lower average in all years, and larger decrease in 2010 than non-network. Travelers showed a decrease from 4.7 days in 2008 to 4.2 days in 2010. The average numbers for Alliance, Liberty and Texas Star were higher than that of Travelers but still lower than that of non-networks.



Number of claims:

	2009	2010*
Non-networks	103,480	73,427
Alliance	10,421	4,656
Liberty	2,231	1,631
Texas Star	14,631	11,059
Travelers	2,765	2,402
Other networks	9,990	6,971

Source of data: TDI-DWC medical billing data and REG network data calls.

Data definition: Network claims were identified using the lists of claims collected via network data calls. Claims include only new injuries in each injury year.

Note: Figures for 2010 are partial as the network data call covered only January to August of that year.

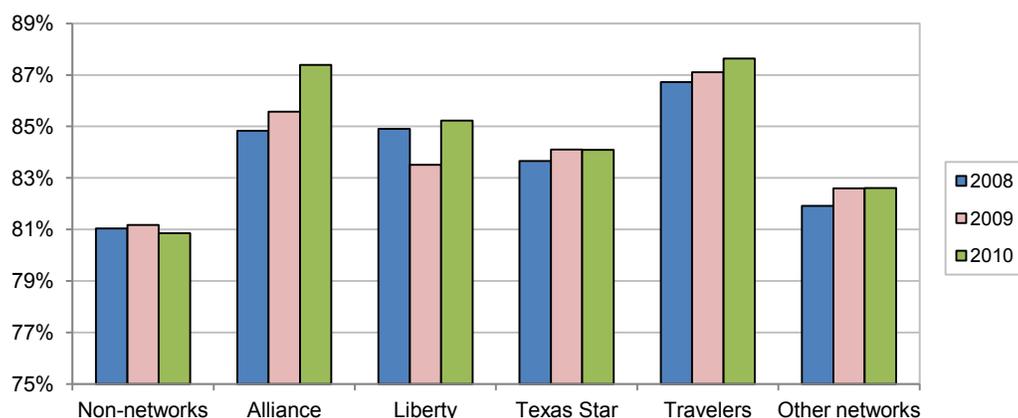
TIMELY ACCESS TO CARE: NETWORK VS. NON-NETWORKS

Percent of Injured Employees by Number of Days by Network

- Injured employees in networks are seeing physicians faster than those in non-networks. Networks also show more improvements in 2010 than non-networks.

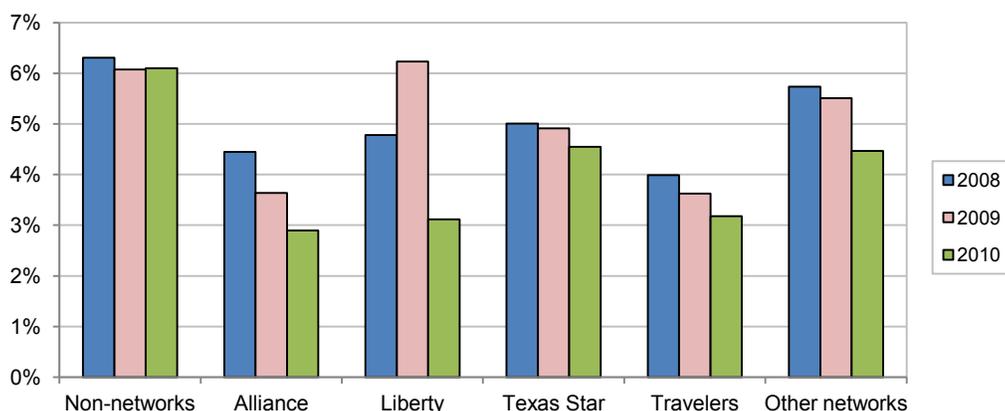
Percent of Injured Employees Who Saw a Physician within 7 Days or less

The share of network patients who saw a physician within 7 days after the injury ranges from 82 to 87 percent, which is higher than the 81 percent for non-network claims. Travelers network showed the fastest access at 88 percent in 2010. All networks also showed more improvements in 2010 than non-networks.



Percent of Injured Employees Who Saw a Physician in 29 Days or more

The share of patients with critical delays (29+ days) is lower in networks. About 6 percent of non-network patients were delayed by 29 or more days, while it was 4.4 percent for Alliance, which further decreased to 2.9 percent in 2010. Networks in general show more improvement in reducing critical delays than non-networks.



Source of data: TDI-DWC medical billing data and REG network data calls.

Data definition: Network claims were identified using the lists of claims collected via network data calls. Claims include only new injuries in each injury year. Figures for 2010 are partial as the network data call covered only January to August of that year.

7. Effects of Disputes/Denials on Access to Care

The denial and dispute process may have a significant effect on the access to medical care for injured employees. They may delay initial access to a physician or may exclude certain services and procedures.

To identify disputed claims, we rely on the list of denied and disputed claims reported by insurers. When insurers find that an injury is not compensable or that they are not liable for the injury, they are required to file a notice of denial of a claim (form PLN-1). This type of dispute/denial revolves around compensability of the claim. A dispute may arise for a compensable injury regarding additional body parts or injury conditions and particular treatments or services. Such a dispute/denial is an extent of injury issue, and the insurer must file a notice of dispute of extent of injury (form PLN-11).

There are about 25,000 to 35,000 denied/disputed claims for each injury year. About 20 percent of these can be matched with TDI-DWC medical billing data. In other words, 80 percent of denied/disputed claims do not have any medical service bills. Furthermore, about 15 to 20 percent of denied/disputed claims are based on compensability and the rest of the claims are on extent of injury.

There are delays in the dispute/denial determination process. Some claims may be notified of a compensability denial or an extent of injury denial several years after the injury. Therefore, 2009 and 2010 results should be regarded as preliminary as the number of cases may still increase in the future.

Key Findings

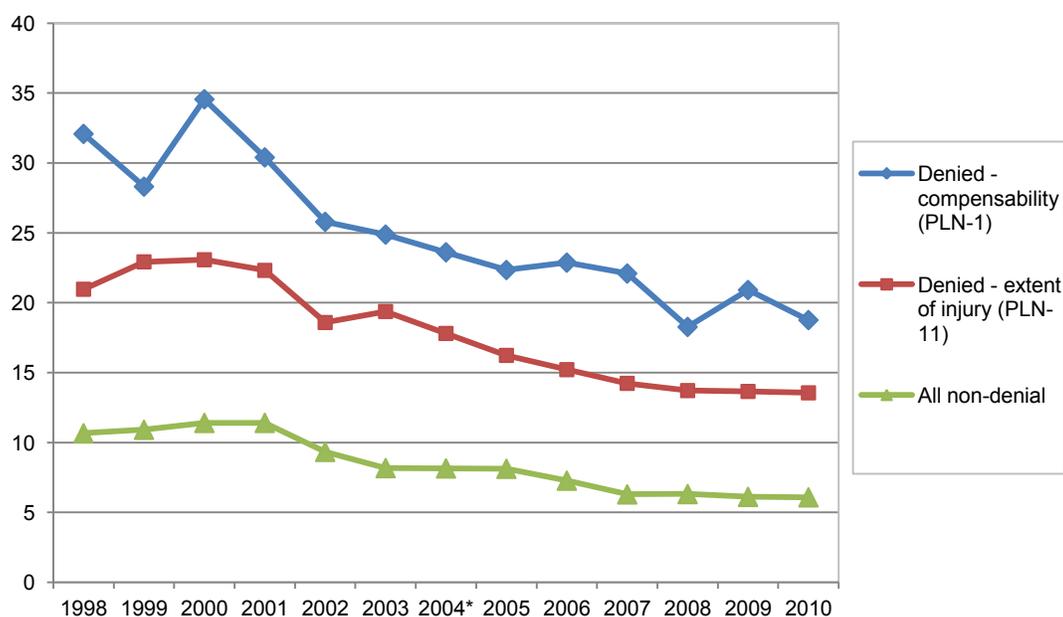
- Denial and/or disputes tend to delay initial care by doubling the number of days between injury and first treatment.
- Despite delays, initial access to care has improved for denied and/or disputed claims steadily since 1998.
- Approximately 66 percent of denied/disputed cases received initial care in 7 days or less in 2010, up from 63 percent in 2005 and from 55 percent in 1998. For all claims, about 82 percent of claims received initial care in 7 days or less.

ACCESS TO CARE BY DISPUTE STATUS

Average Days Between Injury and First Visit by Dispute Status

- Initial access to care for claims disputed for compensability is delayed 3 times longer than all non-denial claims.
- Both disputed and non-disputed claims improved access to care continuously since 1998.

Description: This measure shows the number of days from injury to the first treatment for compensability denial cases, extent of injury denial cases, and all non-denial cases. All three groups show a steady, continuous decrease from 1998 to 2010. In 2010, the average number of days was 18.8 days, 13.6 days and 6.1 days, respectively. Compensability denial cases are delayed three times longer than non-denials while ‘extent of injury’ denial cases are delayed twice as long as non-denials.



	1998	1999	2000	2001	2002	2003	2004*	2005	2006	2007	2008	2009	2010
Denied - compensability (PLN-1)	32.1	28.3	34.6	30.4	25.8	24.9	23.6	22.3	22.9	22.1	18.3	20.9	18.8
Denied - extent of injury (PLN-11)	21.0	22.9	23.1	22.3	18.6	19.4	17.8	16.2	15.2	14.2	13.7	13.7	13.6
All non-denial	10.7	10.9	11.4	11.4	9.3	8.2	8.2	8.1	7.3	6.3	6.3	6.1	6.1

Source of data: TDI-DWC medical billing data and the dispute/denial list compiled by TDI-DWC.

Data definition: Because disputed claims are fewer in number, delays in these claims have minimal effect on the overall access to care.

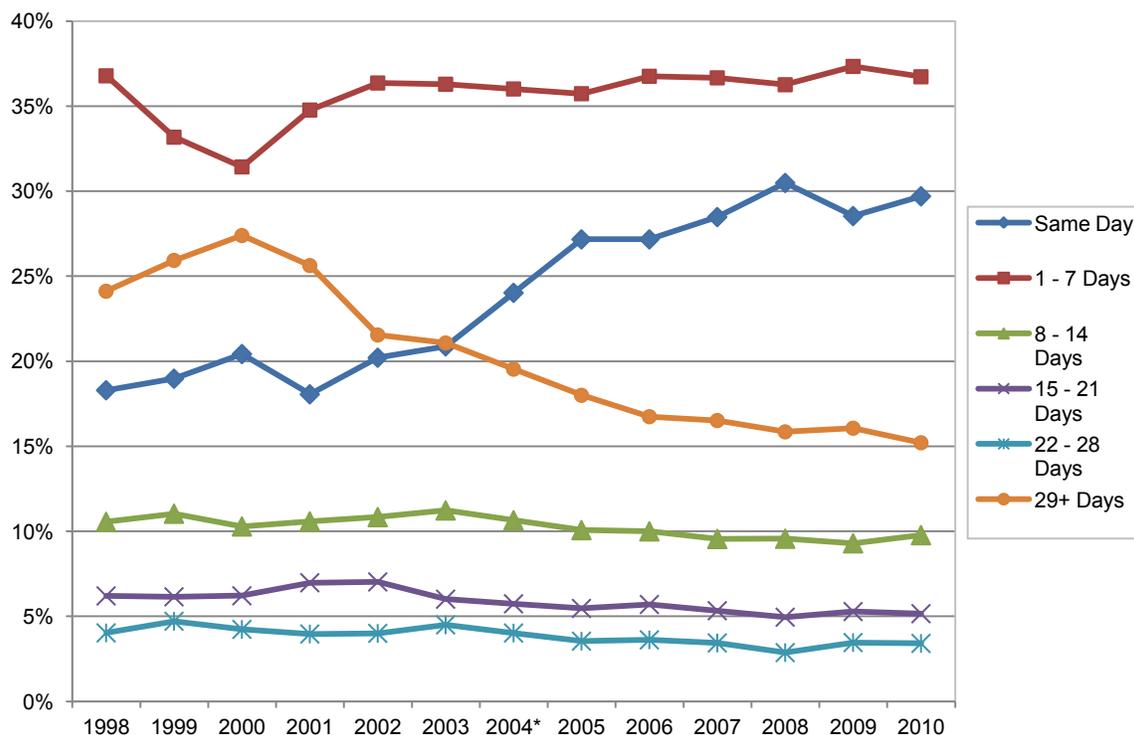
Note: * denotes an average of 2003 and 2005 figures due to problems with 2004 reported data.

ACCESS TO CARE BY DISPUTE STATUS

Percent of Injured Employees by Number of Days for Disputed Claims

- Improvements in timeliness of care resulted from an increasing share of ‘same day’ group and a decreasing share of ‘29+ days’ group.
- ‘Same day’ access has made the biggest improvement (18.3 percent in 1998 to 29.7 percent in 2010).

Description: This measure shows the percent of claims by the number of days between injury and first treatment in seven broad day groups. The shares of these groups are quite similar to non-denial cases except that the share of the same day group is much lower (18 percent vs. 36 percent in 1998) and that of the extreme delay group with 29 or more days of delay is very high (24 percent vs. 10 percent in 1998). But the shares of these groups show steady improvement: the same day group increased to 30 percent by 2010 while 29+ days group decreased to 15 percent. Still, the share of claims with 7 days or less in 2010 is 66.4 percent compared to 82 percent for all claims.



Source of data: TDI-DWC medical billing data and the dispute/denial list compiled by TDI-DWC.

Note: * denotes an average of 2003 and 2005 figures due to problems with 2004 reported data.

8. Other Factors Influencing Delays in Initial Access

About 82 percent of injured employees receive medical treatment within 7 days or less after the injury and this timeliness measure has been about the same in the last five years. Medical care for the remaining 18 percent is ‘delayed,’ taking more than 7 days. A critical question in improving the timeliness of care is to find out which characteristics or factors – other than the lack of physician access – might underlie their delay in receiving or seeking treatment.

To control for the effect of physician availability, we analyzed 2010 claims only in the five large metropolitan areas – Houston, Dallas, Fort Worth, San Antonio, and Austin HRRs – where a lack of participating physician is not a major barrier to medical access. The following result indicates that the type of injury (such as open wound vs. carpal tunnel syndrome) appears to play a significant role in determining how early or late injured employees seek and receive treatment. The delay associated with this factor is not directly related to access and physician participation measures of the workers’ compensation system.

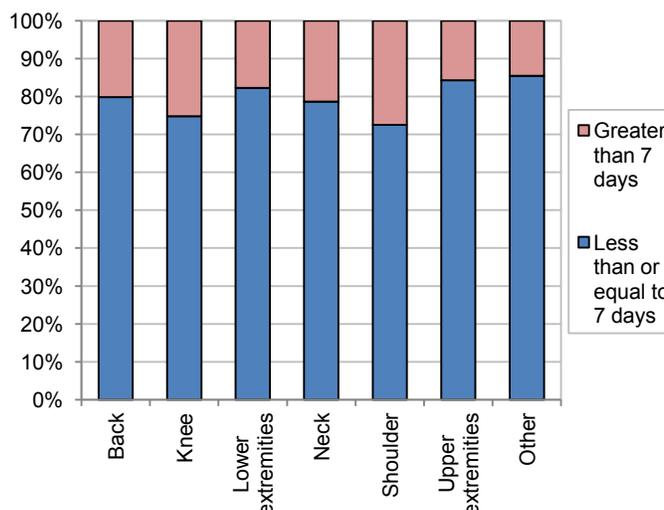
Gender

First, there is some noticeable difference in timely access by gender. Female employees tend to have delays in initial treatment.

		Female	Male
Less than or equal to 7 days	Number	30,966	50,705
	Percent	80.74%	83.51%
Greater than 7 days	Number	7,388	10,010
	Percent	19.26%	16.49%

Body Part Affected

Injuries in upper and lower extremities tend to receive faster treatment than injuries of the knee or shoulder. Back and neck injuries are in the middle.



Diagnosis/Type of Injury

The two tables below present the top 20 diagnoses based on the primary ICD9 codes assigned by the physician on their first treatment for ‘less than or equal to 7 days’ (LE 7) and ‘greater than 7 days’ (GT 7) groups. 847.2 (lumbar sprain) is the most common diagnosis for both groups. However, ‘open wounds’ and ‘contusion’ dominate the LE 7 group. By the nature of these injuries, they are recognized immediately and medical treatment is sought relatively quickly. On

the other hand, the GT 7 group is relatively more common with lumbago (724.2) and joint pain (719.46), which are more complicated musculoskeletal disorders (MSD) than injury classifications (ICD9 847) used in LE 7 groups. The 12th most common diagnosis for the GT 7 group is 354.0 (carpal tunnel syndrome) for which a precise injury date is difficult to assign. This injury type will adversely affect the average number of days when measuring timeliness.

Top 20 ICD9 codes for the 'less than or equal to 7 days' group, 2010

ICD9	# of claims	% of claims	Type of injury	Body part
847.2	6928	7.79%	SPRAINS, STRAINS	BACK
883.0	4814	5.41%	OPEN WOUND	FINGER
845.00	2646	2.98%	SPRAINS, STRAINS	ANKLE
840.9	2440	2.74%	SPRAINS, STRAINS	SHOULDER
844.9	2339	2.63%	SPRAINS, STRAINS	LEG, UNS
847.0	2240	2.52%	SPRAINS, STRAINS	NECK
924.11	2180	2.45%	CONTUSION	KNEE
882.0	1602	1.80%	OPEN WOUND	HAND
847.1	1501	1.69%	SPRAINS, STRAINS	CHEST
842.00	1437	1.62%	SPRAINS, STRAINS	WRIST
920	1416	1.59%	CONTUSION	FACE, UNS
724.2	1237	1.39%	STRAINS AND SPRAINS	BACK
846.0	1040	1.17%	SPRAINS, STRAINS	BACK
923.20	1024	1.15%	CONTUSION	HAND
924.20	963	1.08%	CONTUSION	FOOT
923.3	918	1.03%	CONTUSION	FINGER
847.9	901	1.01%	SPRAINS, STRAINS	BACK
918.1	823	0.93%	SCRATCHES, ABRASIONS	EYE
719.46	760	0.85%	STRAINS AND SPRAINS	LOWER LEG
922.31	702	0.79%	CONTUSION	BACK

Top 20 ICD9 codes for the 'greater than 7 days' group, 2010

ICD9	# of claims	% of claims	Type of injury	Body part
847.2	1339	6.88%	SPRAINS, STRAINS	BACK
844.9	685	3.52%	SPRAINS, STRAINS	LEG, UNS
840.9	670	3.44%	SPRAINS, STRAINS	SHOULDER
847.0	524	2.69%	SPRAINS, STRAINS	NECK
719.46	462	2.37%	STRAINS AND SPRAINS	LOWER LEG
724.2	447	2.30%	STRAINS AND SPRAINS	BACK
924.11	431	2.21%	CONTUSION	KNEE
845.00	406	2.09%	SPRAINS, STRAINS	ANKLE
842.00	395	2.03%	SPRAINS, STRAINS	WRIST
719.41	338	1.74%	STRAINS AND SPRAINS	SHOULDER
846.0	316	1.62%	SPRAINS, STRAINS	BACK
847.1	269	1.38%	SPRAINS, STRAINS	CHEST
883.0	267	1.37%	OPEN WOUND	FINGER
726.32	250	1.28%	STRAINS AND SPRAINS	ELBOW
354.0	249	1.28%	DIS. OF THE NERVES AND PERI. GANGLIA	WRIST
727.05	222	1.14%	STRAINS AND SPRAINS	HAND
840.8	197	1.01%	SPRAINS, STRAINS	SHOULDER
719.43	184	0.94%	STRAINS AND SPRAINS	FOREARM
729.5	180	0.92%	STRAINS AND SPRAINS	NEC
840.4	178	0.91%	SPRAINS, STRAINS	SHOULDER

Note: UNS = unspecified. NEC = not elsewhere classified.

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