

Medical Cost and Quality of Care Trends in the Texas Workers' Compensation System

Texas Department of Insurance
Workers' Compensation Research Group

Purpose of This Analysis

- To analyze the average medical cost per claim over time;
- To identify various medical cost drivers in the system; and
- To examine the quality of medical care provided to injured workers in Texas.

Seven areas of focus for the medical cost portion of this analysis:

- The average medical cost per claim
- The distribution of medical payments by injury type
- The distribution of medical payments by type of health care provider
- The percentage of health care providers that account for a majority of the medical costs

Seven areas of focus for the medical cost portion of this analysis, *continued*:

- The average number of physical medicine and diagnostic testing services per injured worker
- The average number of physical medicine and diagnostic testing services per visit
- Physical medicine utilization differences for outlier health care providers

Data Sources for Medical Cost Analysis

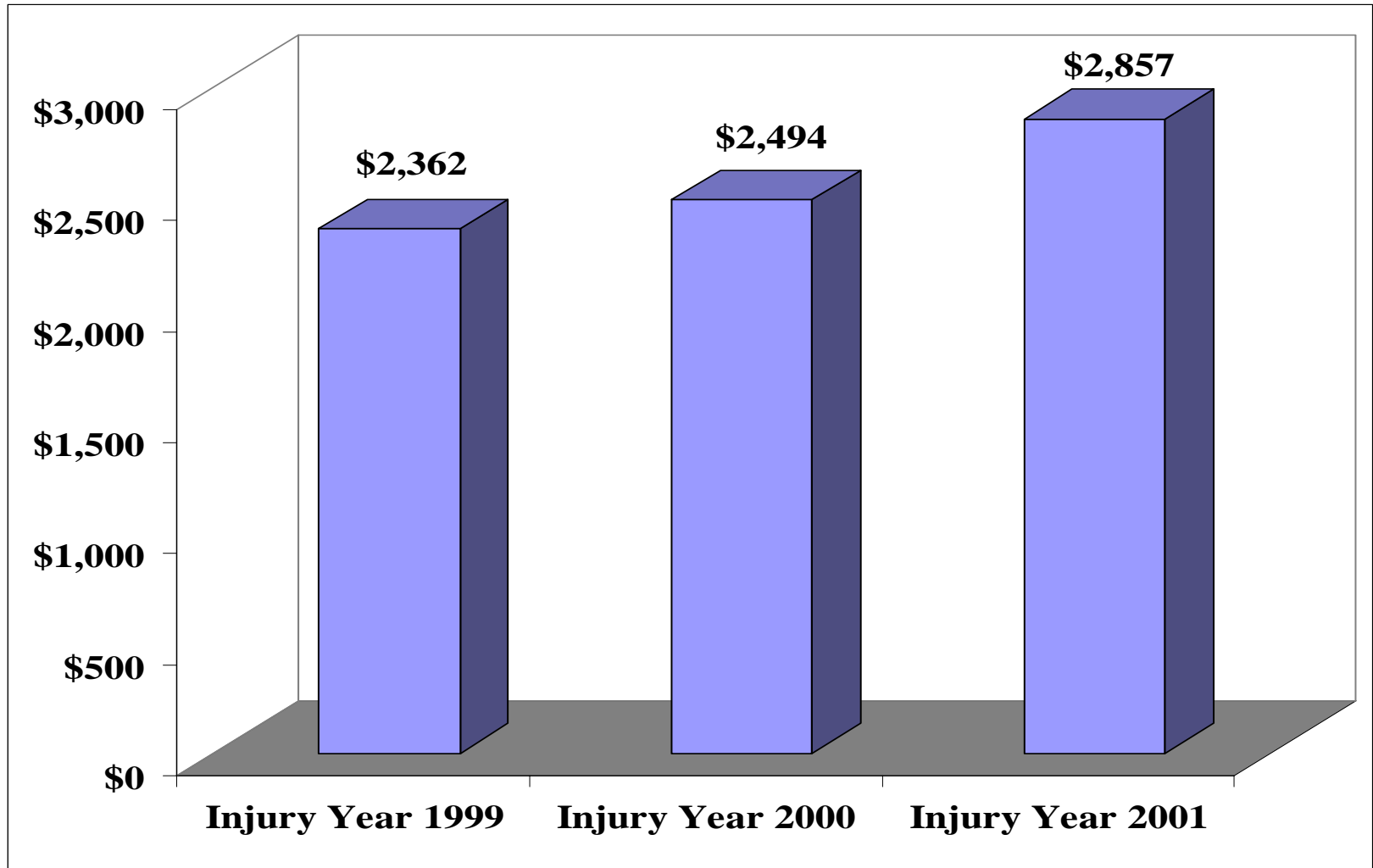
- Texas Workers' Compensation Commission (TWCC) medical database, as of October 2003
 - Contains approximately 40 million records: 1999-2003.
 - Includes medical bills for all workers' compensation claims.
 - Includes both professional service and hospital bills.
 - Currently does not contain any pharmacy bills.

Methods for Medical Cost Analysis

- To ensure an “apples to apples” comparison, TDI grouped all diagnoses into diagnostic “buckets” according to a methodology prescribed by the American College of Occupational and Environmental Medicine (ACOEM).
- Findings for this presentation were calculated for injury years 1999-2001 at twelve months post-injury to ensure that all claims included in the analysis have the same claim maturity.

Medical Cost Findings

Average Workers' Compensation Medical Cost Per Claim, Injury Years 1999-2001, One-Year Post Injury



Source: Texas Department of Insurance, Workers' Compensation Workgroup, 2004.

Note: Average medical costs per claim do not include pharmacy costs.

Distribution of Total Workers' Compensation Medical Costs by Injury Type – Injury Years 1999-2001, One-Year Post Injury

Injury Type	% of Total Medical Payments Injury Year 1999	% of Total Medical Payments Injury Year 2000	% of Total Medical Payments Injury Year 2001
Ankle & Foot Soft Tissue	1.9%	1.9 %	2.0 %
Hand & Wrist Nerve Compression	3.8%	3.9 %	3.9 %
Hand & Wrist Superficial Trauma	3.0 %	2.9 %	2.9 %
Hand & Wrist Soft Tissue	2.8 %	2.8 %	3.4 %
Knee Internal Derangement	4.6 %	4.5 %	4.6 %
Low Back Nerve Compression	7.0 %	7.3 %	7.6 %
Low Back Soft Tissue	15.8 %	16.4 %	16.0 %
Multiple Soft Tissue	1.8 %	1.8 %	1.9 %
Neck Soft Tissue	7.0 %	7.0 %	7.2 %
Shoulder Soft Tissue	7.1 %	7.9 %	8.5 %
Other Injuries	45.2 %	43.8 %	42.0 %

Source: Texas Department of Insurance, Workers' Compensation Research Group, 2004.

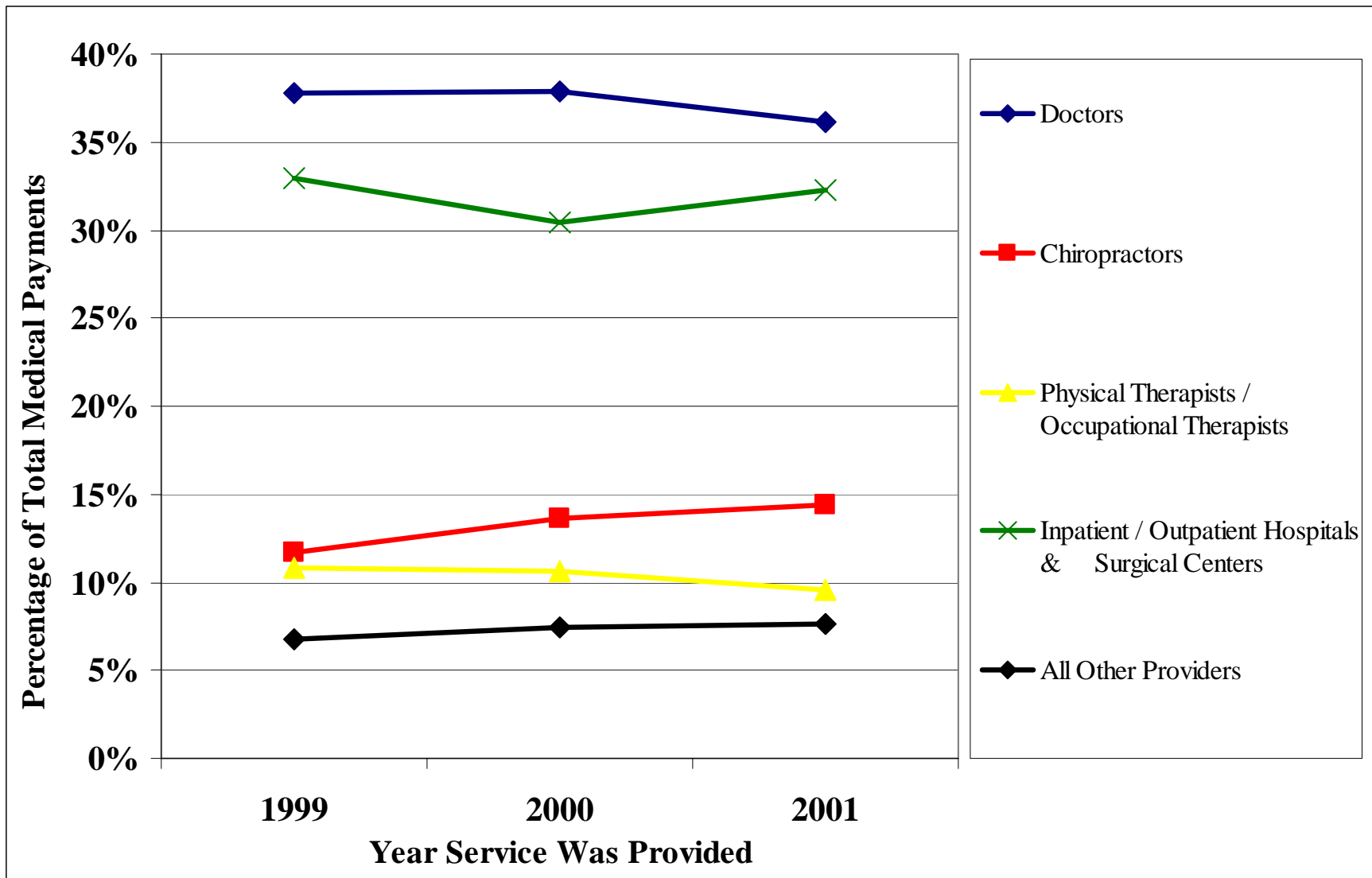
Distribution of Total Workers' Compensation Medical Costs by Injury Type – Injury Year 2000, One-Year Post Injury

Injury Type	Total Medical Payments	% of Total Medical Payments
Ankle & Foot Soft Tissue	\$13,146,673	1.9%
Hand & Wrist Nerve Compression	\$26,362,235	3.9%
Hand & Wrist Superficial Trauma	\$19,467,726	2.9%
Hand & Wrist Soft Tissue	\$19,165,430	2.8%
Knee Internal Derangement	\$30,599,220	4.5%
Low Back Nerve Compression	\$49,462,840	7.2%
Low Back Soft Tissue	\$111,570,825	16.4%
Multiple Soft Tissue	\$12,379,939	1.8%
Neck Soft Tissue	\$47,651,886	7.0%
Shoulder Soft Tissue	\$53,742,990	7.9%
Other Injuries	\$298,402,418	43.8%

Source: Texas Department of Insurance, Workers' Compensation Research Group, 2004.

Note: Total medical payments do not include pharmacy costs.

Distribution of Total Workers' Compensation Medical Costs by Provider Type – Service Years 1999-2001



Source: Texas Workers' Compensation Commission, System Data Report: Data as of December 2003, 2004 and the Texas Department of Insurance, Workers' Compensation Research Group, 2004.

Distribution of Total Workers' Compensation Medical Costs by Provider Type – Service Years 1999-2001

(percentages in parentheses)

Type of Health Care Provider	1999	2000	2001
Doctors	\$388,220,563 (37.8%)	\$389,601,242 (37.9%)	\$414,744,045 (36.1%)
Chiropractors	\$119,981,711 (11.7%)	\$139,930,256 (13.6%)	\$164,752,862 (14.4%)
Physical Therapists/Occupational Therapists	\$111,048,653 (10.8%)	\$108,891,118 (10.6%)	\$109,680,775 (9.6%)
Inpatient / Outpatient Hospitals & Surgical Centers	\$338,085,492 (32.9%)	\$312,518,310 (30.4%)	\$371,031,992 (32.3%)
All Other Health Care Providers	\$70,099,908 (6.8%)	\$75,953,139 (7.4%)	\$87,193,349 (7.6%)

Source: Texas Workers' Compensation Commission, System Data Report: Data as of December 2003, 2004 and the Texas Department of Insurance, Workers' Compensation Research Group, 2004.

Note: Total medical costs do not include pharmacy costs,

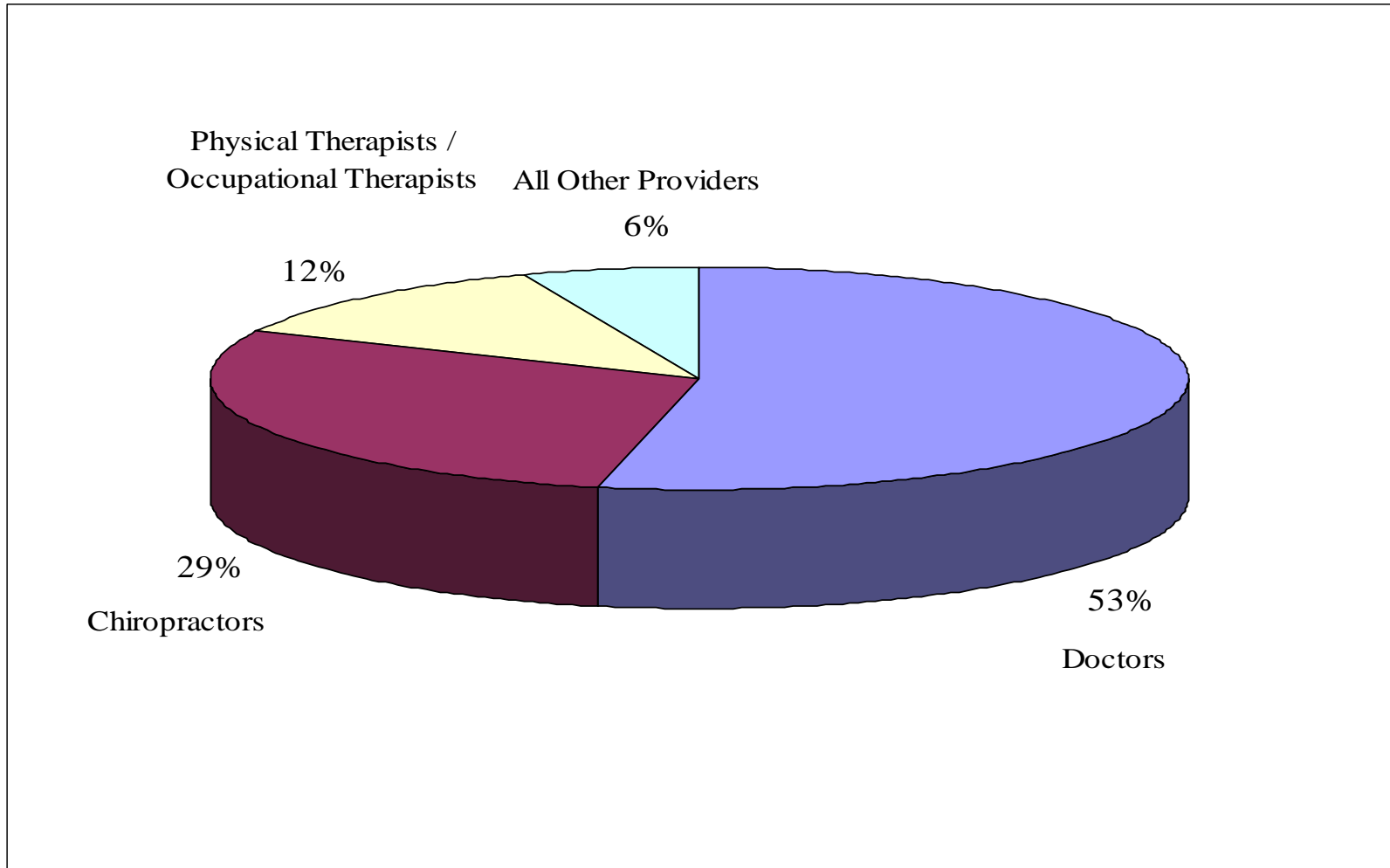
Percentage of Health Care Providers That Account for a Majority of Non-Hospital Medical Costs, Injury Years 1999-2001, One Year Post Injury

(actual # of providers in parentheses)

Percentage of Non-Hospital Medical Costs	Percentage Health Care Providers Injury Year 1999	Percentage Health Care Providers Injury Year 2000	Percentage Health Care Providers Injury Year 2001
50 percent	1.7% (1,127)	2.3% (1,681)	2.3% (1,650)
60 percent	2.8% (1,816)	3.7% (2,732)	3.6% (2,643)
70 percent	4.5% (2,915)	6.0% (4,401)	5.8% (4,186)
80 percent	7.5% (4,928)	10.1% (7,437)	9.5% (6,866)
90 percent	15.3% (9,977)	20.0% (14,724)	17.9% (13,026)
95 percent	25.2% (16,451)	33.2% (24,390)	28.9% (20,974)

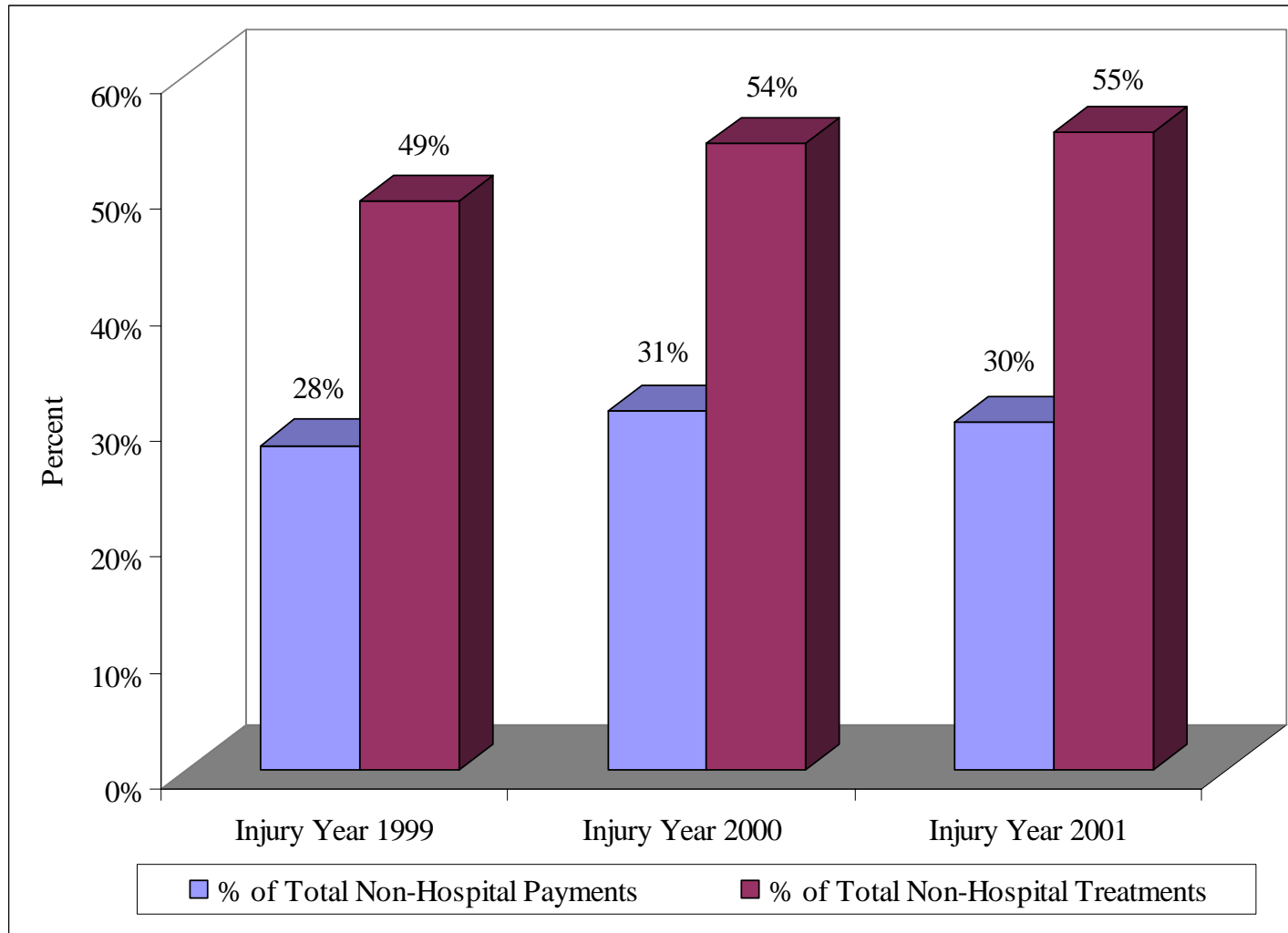
Source: Texas Department of Insurance, Workers' Compensation Research Group, 2004.

Distribution of Health Care Providers That Account for 50 Percent of Non-Hospital Medical Costs, Injury Year 2000, One Year Post Injury



Physical Medicine Findings

Percentage of Total Non-Hospital Medical Payments and Treatments That Are for Physical Medicine Services. Injury Years 1999-2001, One-Year Post Injury



Source: Texas Department of Insurance, Workers' Compensation Workgroup, 2004.

Note: Percentage of total non-hospital medical payments do not include pharmacy costs.

Average Number of Physical Medicine Treatments Per Injured Worker Who Received These Treatments, Injury Years 1999-2001, One-Year Post Injury

Type of Physical Medicine Service	1999	2000	2001	% Change 1999-2001
Therapeutic Exercises	21	23	28	33.3%
Manipulation	22	24	26	18.2%
Aquatic Therapy	22	27	34	54.5%
Chronic Pain Management	78	92	89	14.1%
Work Hardening	90	98	95	5.6%
Work Conditioning	44	46	48	9.1%
Neuromuscular Re-education	12	13	15	25.0%
Therapeutic Activities – Group	11	16	16	45.5%
Therapeutic Activities – One on One	11	11	13	18.2%
Unlisted Procedures	12	21	15	25.0%

Source: Texas Department of Insurance, Workers' Compensation Research Group, 2004.

Average Number of Physical Medicine Treatments Per Visit, Injury Years 1999-2001, One-Year Post Injury

Type of Physical Medicine Service	1999	2000	2001	% Change 1999-2001
Therapeutic Exercises	2.1	2.2	2.3	9.5%
Manipulation	1.3	1.2	1.2	-7.7%
Aquatic Therapy	2.5	2.8	3.2	28.0%
Chronic Pain Management	6.6	7.1	7.6	7.6%
Work Hardening	5.7	5.9	5.9	3.5%
Work Conditioning	4.1	4.2	4.4	7.3%
Neuromuscular Re-education	1.3	1.4	1.4	7.7%
Therapeutic Activities – Group	1.4	1.9	1.7	21.4%
Therapeutic Activities – One on One	1.6	1.7	1.8	12.5%
Unlisted Procedures	3	5.1	4.3	43.3%

Source: Texas Department of Insurance, Workers' Compensation Research Group, 2004.

Average Number of Physical Medicine Visits Per Worker, Injury Years 1999-2001, One-Year Post Injury

Type of Physical Medicine Service	1999	2000	2001	% Change 1999-2001
Therapeutic Exercises	10	11	12	20.0%
Manipulation	17	19	22	29.4%
Aquatic Therapy	9	10	11	22.2%
Chronic Pain Management	11	12	12	9.1%
Work Hardening	16	16	16	0.0%
Work Conditioning	11	11	11	0.0%
Neuromuscular Re-education	9	9	10	11.1%
Therapeutic Activities – Group	7	8	9	28.6%
Therapeutic Activities – One on One	7	7	7	0.0%
Unlisted Procedures	4	4	4	0.0%

Source: Texas Department of Insurance, Workers' Compensation Research Group, 2004.

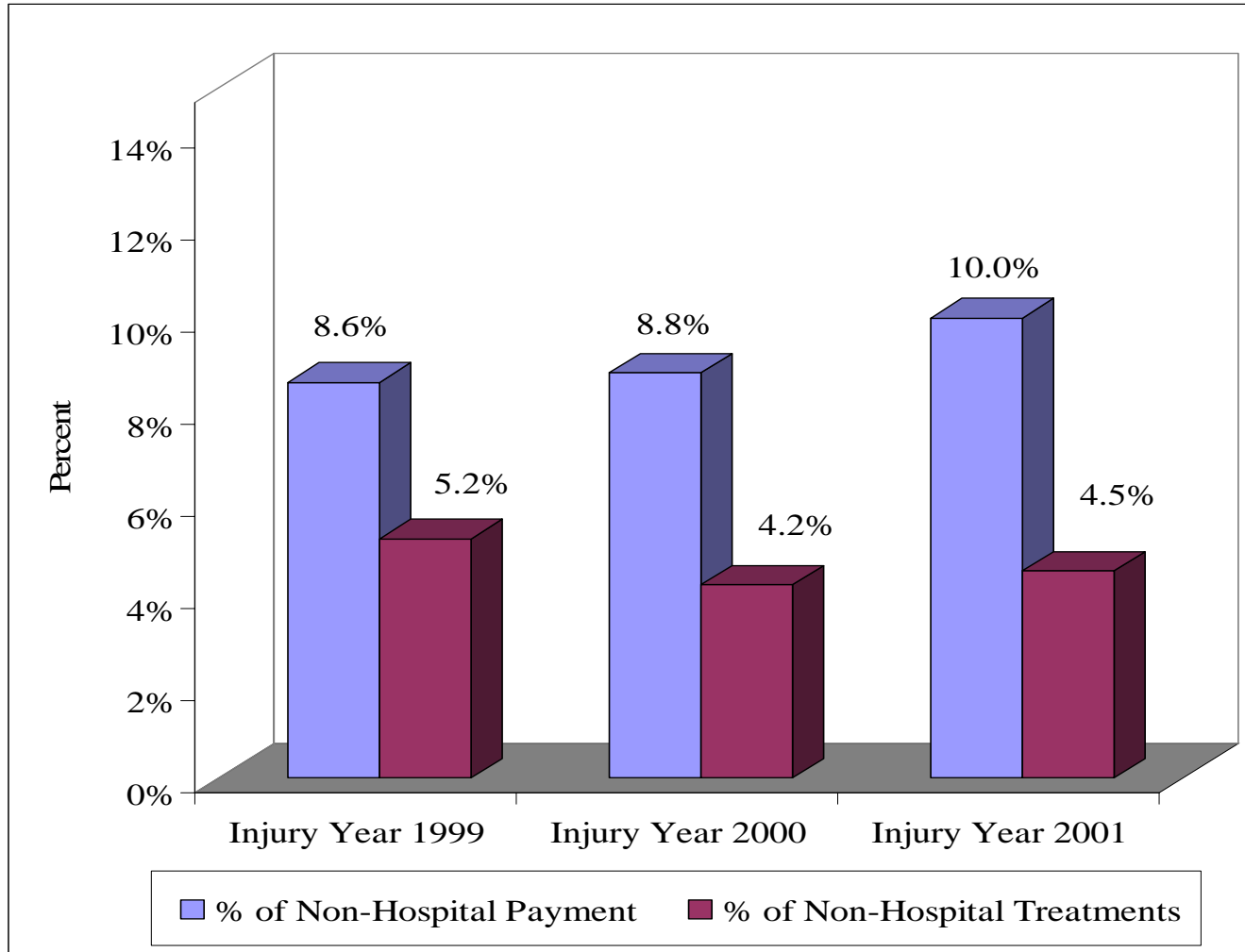
Median Number of Physical Medicine Treatments per Injured Worker with Low Back Soft Tissue Injuries, Injury Year 2000, One-Year Post Injury

Type of Physical Medicine Treatment	# of Services Per Worker – All Providers (50 th Percentile)	# of Services Per Worker – High Volume Providers (95 th Percentile)
Therapeutic Exercises	6	41
Manipulation	6	35
Aquatic Therapy	8	52
Chronic Pain Management	19	160
Work Hardening	50	195
Work Conditioning	28	102
Neuromuscular Re-education	4	23
Therapeutic Activities – Group	4	30
Therapeutic Activities – One on One	3	26
Unlisted Procedures	5	253

Source: Research and Oversight Council on Workers' Compensation, 2002 and 2003.

Diagnostic Testing Findings

Percentage of Total Non-Hospital Medical Payments and Treatments That Are for Diagnostic Testing Services, Injury Years 1999-2001, One-Year Post Injury



Source: Texas Department of Insurance, Workers' Compensation Research Group, 2004.

Note: Percentage of total non-hospital medical payments do not include pharmacy costs.

**Average Number of Diagnostic Testing Services and
Average Payment Per Injured Worker Who Received These
Services, Injury Years 1999-2001, One-Year Post Injury**
(average payment per worker in parentheses)

Type of Diagnostic Testing Service	Injury Year 1999	Injury Year 2000	Injury Year 2001
Nerve Conduction Studies	11.8 (\$623)	13.1 (\$677)	15.0 (\$711)
MRIs	1.6 (\$839)	1.6 (\$865)	1.7 (\$901)
CT Scans	1.4 (\$362)	1.4 (\$356)	1.4 (\$358)
Other Diagnostic Tests	2.5 (\$113)	2.6 (\$116)	2.6 (\$124)

Source: Texas Department of Insurance, Workers' Compensation Research Group, 2004.

Note: "Other Diagnostic Tests" include radiologic examinations, myelography, and diskography, among others.

Average Number of Diagnostic Testing Services Per Visit, Injury Years 1999-2001, One-Year Post Injury

Type of Diagnostic Testing Service	Injury Year 1999	Injury Year 2000	Injury Year 2001
Nerve Conduction Studies	9.8	10.6	12.0
MRIs	1.4	1.4	1.4
CT Scans	1.3	1.2	1.2
Other Diagnostic Tests	1.5	1.5	1.5

Source: Texas Department of Insurance, Workers' Compensation Research Group, 2004.

Note: "Other Diagnostic Tests" include radiologic examinations, myelography, and diskography, among others.

Average Number of Diagnostic Testing Services Per Visit Who Received These Services by Provider Type, Injury Year 2001, One-Year Post Injury

Type of Diagnostic Testing Service	MDs/DOs	Chiropractors	Physical Therapists / Occupational Therapists	Other Health Care Providers
Nerve Conduction Studies	10.6	14.4	11.8	12.8
MRIs	1.4	1.4	1.6	1.3
CT Scans	1.2	1.1	1.3	1.2
Other Diagnostic Tests	1.5	1.9	1.5	1.6

Source: Texas Department of Insurance, Workers' Compensation Research Group, 2004.

Note: "Other health care providers" includes podiatrists, physician assistants, and other health care providers not able to be classified using TWCC's data. "Other Diagnostic Tests" include radiologic examinations, myelography, and diskography, among others.

Average Number of Diagnostic Testing Visits Per Worker, Injury Years 1999-2001, One-Year Post Injury

Type of Diagnostic Testing Service	Injury Year 1999	Injury Year 2000	Injury Year 2001
Nerve Conduction Studies	1.2	1.2	1.3
MRIs	1.2	1.2	1.2
CT Scans	1.2	1.1	1.2
Other Diagnostic Tests	1.7	1.7	1.7

Source: Texas Department of Insurance, Workers' Compensation Research Group, 2004.

Note: "Other Diagnostic Tests" include radiologic examinations, myelography, and diskography, among others.

Average Number of Diagnostic Testing Visits Per Worker Who Received These Services by Provider Type, Injury Year 2001, One-Year Post Injury

Type of Diagnostic Testing Service	MDs/DOs	Chiropractors	Physical Therapists / Occupational Therapists	Other Health Care Providers
Nerve Conduction Studies	1.2	1.2	1.1	1.1
MRIs	1.2	1.2	1.0	1.1
CT Scans	1.1	1.1	1.0	1.1
Other Diagnostic Tests	1.7	1.3	1.1	1.3

Source: Texas Department of Insurance, Workers' Compensation Research Group, 2004.

Note: "Other health care providers" includes podiatrists, physician assistants, and other health care providers not able to be classified using TWCC's data.

Quality of Medical Care

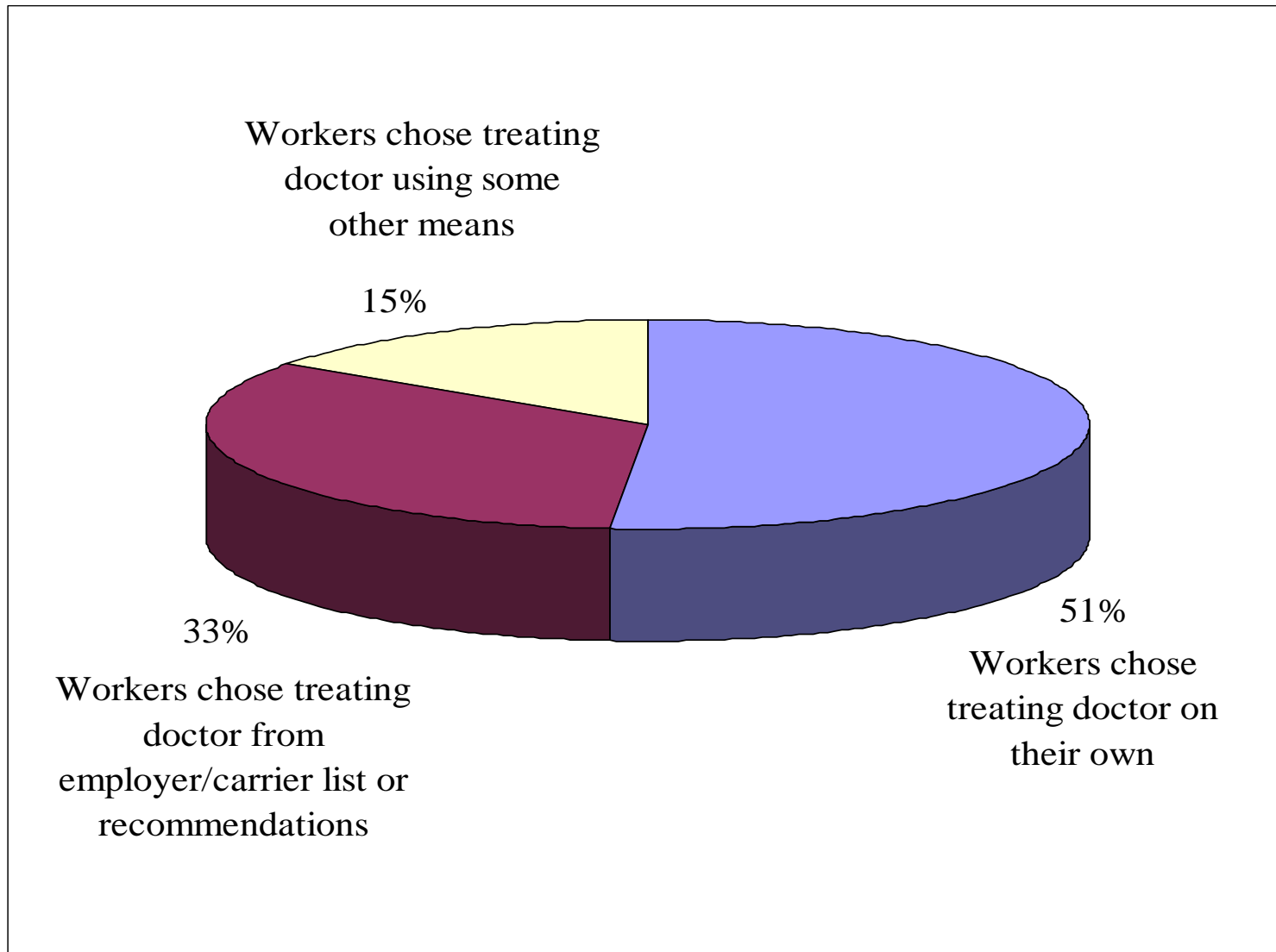
Three areas of focus for the quality of medical care portion of this analysis:

- Selection of first non-emergency doctor
- Injured worker general satisfaction with medical care
- Return-to-work outcomes of injured workers in Texas

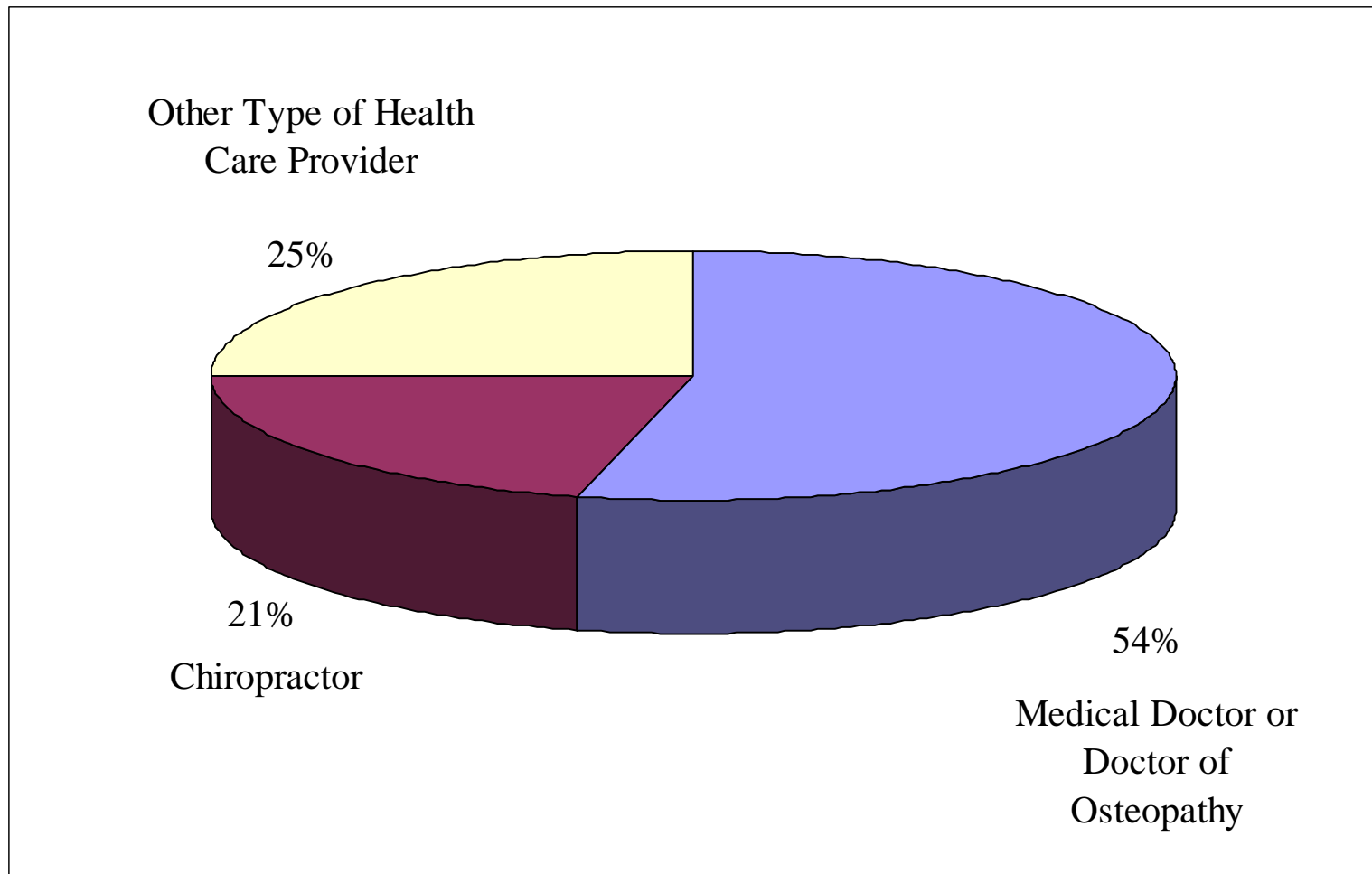
Data Sources and Methods for Quality of Care Analysis

- Findings presented here are from a 2002 ROC survey of 970 private sector and state workers injured in 2000.
- All injured workers included in the survey had low back, neck and shoulder soft tissue injuries.

Selection of First Treating Doctor



Types of Health Care Providers Selected by Injured Workers to be Treating Doctors



Perceptions of Injured Workers Regarding the Quality of the Medical Care They Received from Their Treating Doctor

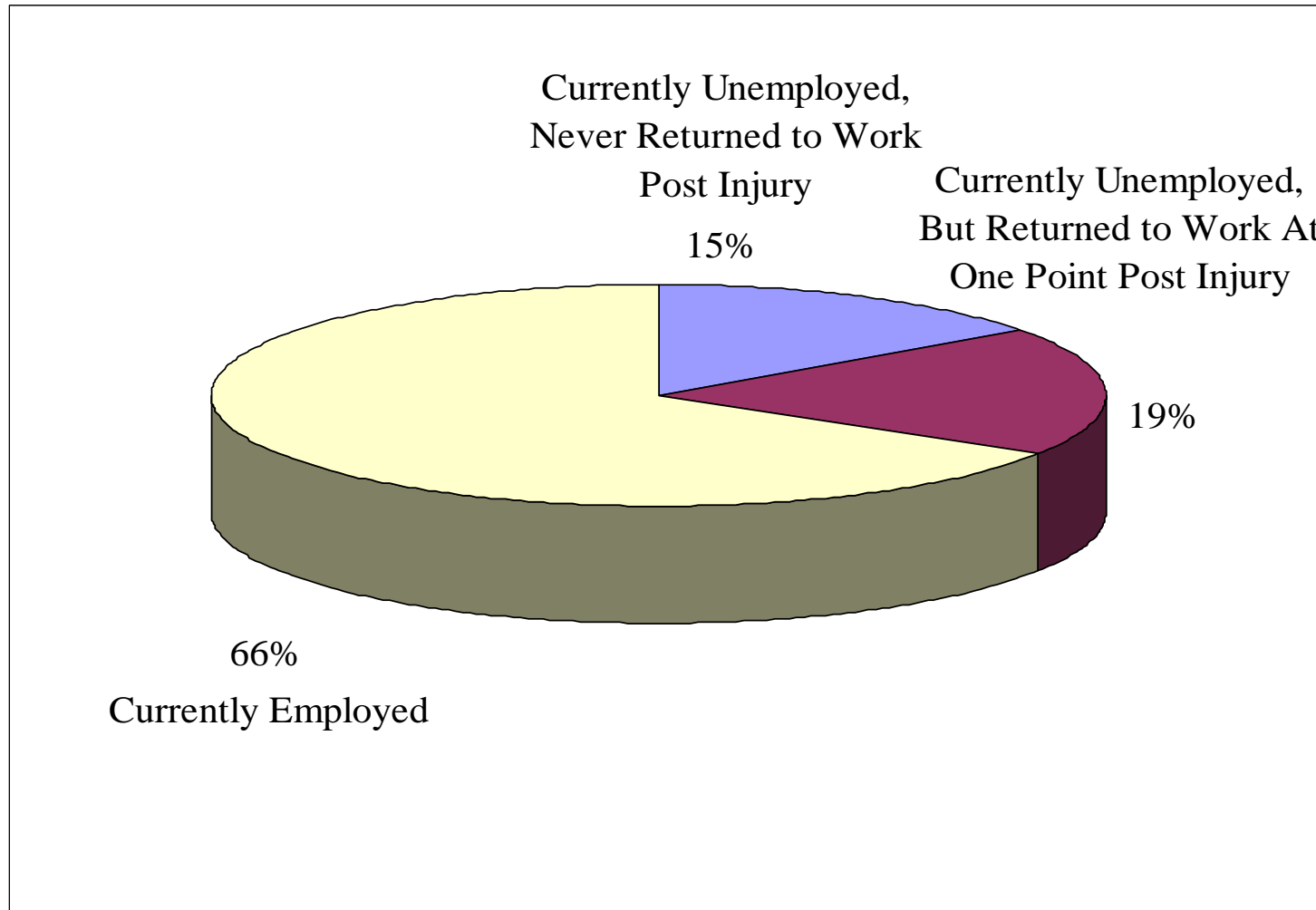
The doctor I saw most often for my work related injury or illness...	% of Injured Workers Who Agreed	% of Injured Workers Who Were Undecided	% of Injured Workers Who Disagreed
Overall, provided me with very good medical care that met my needs.	84%	2%	14%
Gave me a thorough medical examination.	84%	3%	12%
Explained my medical condition in a way that I could understand.	89%	1%	10%
Has my complete trust.	81%	3%	16%
Tried to understand my daily job tasks and duties.	85%	2%	13%
Doubted that I was really sick or injured.	22%	3%	75%
Seemed to care more about what the insurance company or employer thought about my care.	26%	5%	68%

Percentage of Injured Workers in Agreement with Various Statements Regarding the Quality of Care They Received from Their Treating Doctor, by Method of Doctor Selection

The doctor I saw most often for my work related injury or illness...	Treating Doctor Selected from Employer/Carrier List or Recommendations	Treating Doctor Selected by Injured Worker
Overall, provided me with very good medical care that met my needs.	77%	85%
Gave me a thorough medical examination.	74%	87%
Explained my medical condition in a way that I could understand.	83%	92%
Has my complete trust.	74%	84%
Tried to understand my daily job tasks and duties.	82%	89%
Doubted that I was really sick or injured.	25%	19%
Seemed to care more about what the insurance company or employer thought about my care.	31%	18%

Source: Research and Oversight Council on Workers' Compensation, Survey of Injured Workers Regarding Work-Related Health Problems: Comparison of State and Private Sector Worker Experiences, 2003.

Return-to-Work Outcomes for Injured Workers in Texas, 21 to 33 Months Post-Injury



Summary

- The average medical cost per claim has increased approximately 21 percent from injury years 1999-2001.
- The findings in this presentation demonstrate that these medical cost increases are not a result of changes in injury patterns, but rather from increased utilization of medical care.
- As an example, this presentation shows that there have been increases in the amount and the intensity of physical medicine services and nerve conduction studies provided to injured workers in Texas from 1999-2001.

Summary, *continued*

- Specifically, there are significant utilization differences between the top 95th percentile of providers and the rest of the health care provider population.
- Chiropractors and other types of health care providers have seen increases in their total medical cost market share from service year 1999 to 2001, while medical doctors and physical therapists/occupational therapists have experienced a decline.
- A relatively small percentage of providers account for a majority of the medical costs in the system.

Summary, *continued*

- Although injured workers whose choice of treating doctor was influenced by their employer/carrier were less satisfied with the quality of the medical care they received, it is important to note that a significant majority of injured workers were still satisfied with the quality of care they received.
- Even two years after their injury, a significant percentage of injured workers with soft tissue injuries are not currently employed and 15 percent never went back to work after their injury.