

The Impact of Price Transparency on HealthCost Services in New Hampshire

New Hampshire Insurance Department

August 11, 2009

Purpose

The purpose of this analysis is to determine the impact of the New Hampshire Insurance Department's HealthCost website on the payment level for health care services included on the website. Payment level is considered the price for health care services.

Summary Results

The NHID did not observe any converging of payments, and saw increases within similar ranges in prior years. We observed a high amount of variability with increases between years. Hospital provider payments appear to be increasing faster on average than payments to non-hospital providers. In several cases, the payment median for non-hospital providers did not increase during the four years analyzed. Procedure pricing is based on the "allowed" amount, which includes health insurance carrier payments and any patient liabilities.

Average Rate of Increase	Hospital Providers	Non-hospital Providers
2005 to 2006	3.3%	4.2%
2006 to 2007	8.7%	1.3%
2007 to 2008	5.1%	1.7%

Background

The New Hampshire Insurance Department (NHID) released HealthCost version 2 on February 28, 2007. The website uses a substantially different methodology and presentation than the pilot version 1. Since the release of the website, the NHID has periodically updated the data to reflect the most current information available from the New Hampshire Comprehensive Health Information System (NHCHIS).

Prior to release of the website, concerns were expressed that providing "cost" information in the public domain could result in higher prices for insurers and patients as increased awareness of provider competitor rates became public knowledge. Providers would "race to the top." Others suggested that prices would become more consistent among providers as those receiving higher amounts would have their payment levels reduced, and those receiving lower amounts would have their payments increased. Alternatively, some raised the possibility that the procedures included on the website could go down in price, due to providers competing against one another for patients.

The target audience of the website is patients who use health care services. Accordingly, the "costs" shown on the website are often a compilation of payments made to multiple providers for multiple services, rather than a specific payment for one discrete service to one provider. Because of the bundling methodology, determining the actual contract rates between an insurer and a provider is difficult, if not impossible. A full explanation of the website rate calculation methodology is available here:

<http://www.nhhealthcost.org/method.aspx>.

In June 2009, the NHID performed an analysis of the claims data for HealthCost procedures, using timeframes before and after the release of the website. This project was completed in cooperation with the Center for Studying Health Systems Change, which performed interviews with health insurance carriers, health care providers, and others to better understand the impact of increasing health care price transparency in New Hampshire.

Explanation of Detailed Results

Appendix B includes a breakdown of each HealthCost procedures with the average allowed amount paid, the coefficient of variation, the median allowed amount, and the percent increase for each year analyzed. Appendix C provides the same information for non-hospital providers. Not all procedures included in HealthCost are performed by both hospitals and non-hospital providers.

The coefficient of variation is the standard deviation as a percentage of the average, and is an indicator of how much the allowed amounts differ among providers. The median is the value which half of the providers are paid more and the other half less. The median is not overly influenced by outliers, so when the median and average differ, this is an indication that the data are skewed. Skewed data are when the distribution of payment levels is not uniform, or considered normally distributed. (If you imagine a frequency distribution that looks like the head of a duck facing sideways, the data are skewed in the direction the duck is facing.) Skewed data exist when there are enough payments that are noticeably higher or lower than what would be expected with an even distribution. This may happen because of particular contracts that pay disproportionately more or less to providers for the same service.

Since price variation clearly did not decrease over the time period analyzed, significance testing was not performed. In several cases the procedure specific price variation was actually highest in the final year of the analysis.

Appendix A includes graphs that show the price changes as a percentage for each procedure for each year. There are four years of data used, beginning in 2005, so three different data points. The HealthCost website became live on February 28, 2007. If HealthCost influenced pricing, this may be apparent during 2007, but is more likely to be observed in 2008.

There are only two procedures for which the average increase for non-hospital providers exceeds that of hospital providers: an MRI – pelvis and CT – chest. For destruction of lesions, the rates decreased for both types of providers, but less so for non-hospital providers. Of the 26 procedures in the comparison, eight have a similar pattern of increases when hospital and non-hospital providers are compared. Most of these procedures are radiology services. Another eight have a divergent pattern, where the trend appears to be opposite between the hospital and non-hospital provider groups. Similar patterns suggest fee schedules are used by carriers and changes are made to the

conversion factor for both provider groups. Divergent patterns suggest inconsistent contracting strategies among carriers and the two different types of provider groups.

Divergent Pattern	Similar Pattern
Destruction of Lesion	Arthrocentesis
Arthroscopic Knee Surgery	MRI – Brain
Tonsillectomy and Adenoidectomy	Spine X-Ray
Hernia Repair	Shoulder X-Ray
CT - Chest	Knee X-Ray
MRI – Back	Ankle X-Ray
Foot X-Ray	Mammogram
Ultrasound - Pelvic	Ultrasound – Breast

The percent change between years is used rather than the actual dollar amounts because for many procedures there is a “professional” component that is paid to the physician and a “technical” component that is paid to a hospital. These payments are at different levels, even for the same procedure. As the focus of this analysis is on changes over time, the percent change in pricing is most relevant.

The price increases observed in this analysis are limited to a relatively small number of health care procedures, and many of them radiology procedures. These increases should not be considered generalizable to all health care procedure payments or health care costs.

Methodology

Four years of claims data were used to track changes from 2005 through 2008. The time frame for each year was October 1 – September 30. October 1 is the beginning of the fiscal year for many NH hospitals and the time when price changes take place. As data are not available in the NHCHIS for dates prior to January 1 of 2005, the first year of data includes only ten months. Therefore, the average rates used from 2005 are likely to be slightly higher (showing a smaller difference when compared to 2006) than if 2005 were complete.

The analysis includes the procedures included on the HealthCost website, with the exception of a normal vaginal delivery. Vaginal delivery is an inpatient service and payment for a procedure is not as easily identified in the same way as for the outpatient procedures on HealthCost. Also, the methodology for calculating rates in this analysis differs from that for the rates on the website. Healthcost bundles multiple services and providers together and calculates median payment amounts. This analysis does not bundle services or providers and uses the average amount paid. Payments are based on the allowed amount, which is determined by the contract between the carrier and the provider and includes carrier and patient responsibilities. Average is used instead of the median because it is more sensitive to changes in payment levels. Payments are not bundled because we are most interested in changes that take place in payments for a

specific procedure to one provider, not when services are grouped together among multiple providers.

Rates are calculated by procedure, by provider, without consideration for health insurance carrier or type of insurance (HMO, PPO, or POS). Although stratifying the data by additional factors could make the analysis more sensitive to specific reimbursement contract changes, we cannot create a model that adequately considers all factors (such as whether one population is self insured, and another fully insured), and detection errors in the calculated results would increase. Additionally, we are most interested in the impact of HealthCost on the prices to the insured population in general, not whether prices went up for one carrier and down for another.

Rates among providers are calculated using a simple average. If one provider performs nine times as many of the same procedure as another provider, the calculation is not weighted more heavily for the high volume provider. The advantage of this approach is that it better reflects what is happening at the contract level between a carrier and all providers. The disadvantage is the price difference calculations do not give more weight to high volume providers.

Changes in the current procedural terminology (CPT) coding guidelines are addressed so that data on procedures from one year are compared correctly to future years. The procedure descriptions are from the HealthCost website. The actual CPT descriptions are more specific.

Limitations

The data used in this analysis are New Hampshire claims data. Claims data include the actual amounts paid, not necessarily what the contract between a carrier and provider calls for. If payments are made incorrectly, the data reflect the incorrect payment.

The analysis assumes practice patterns of providers and market position of carriers is static. In reality, physicians change which group they practice with, carriers increase and decrease in market share and product offerings. As these shifts take place, the volume of services paid for according to particular contract terms shift. If one carrier captures additional membership in a particular community, and that carrier pays local providers more than the former carrier, the calculations performed in this analysis will reflect higher payments as though the contracts between the carriers and providers changed.

In addition, multi-year contracts exist for many providers and carriers, and neither party may have had the opportunity to consider increased price transparency before negotiating new terms.

Billing practices may change. Billing for a particular provider may shift to another location, influencing the price paid for the same services. This analysis is based on the amounts paid, and assumes changes are due to contract changes.

A control group was not used. A control group would need to include either procedures or providers that are not included on the HealthCost website, with prices analyzed over the same time period. Although these options were explored, the control group would need to include the procedures that are performed at both the hospitals and non-hospital providers that are included in HealthCost, or hospitals and other providers in New Hampshire that are not on the HealthCost website. As the HealthCost procedures are based on some of the most common outpatient procedures patients receive, and all acute care hospitals in the state were included, methodological issues prevented the use of control group.

Geographic specific variation was not addressed. Although price transparency may have different results by regions within the state, several factors would need to be adjusted for to accurately detect unique geographic pricing changes due to price transparency. Carrier market share and the distribution of provider types are differences that could influence the analysis results and attempts to adjust for all geographic differences that may impact pricing would result in small sample sizes.

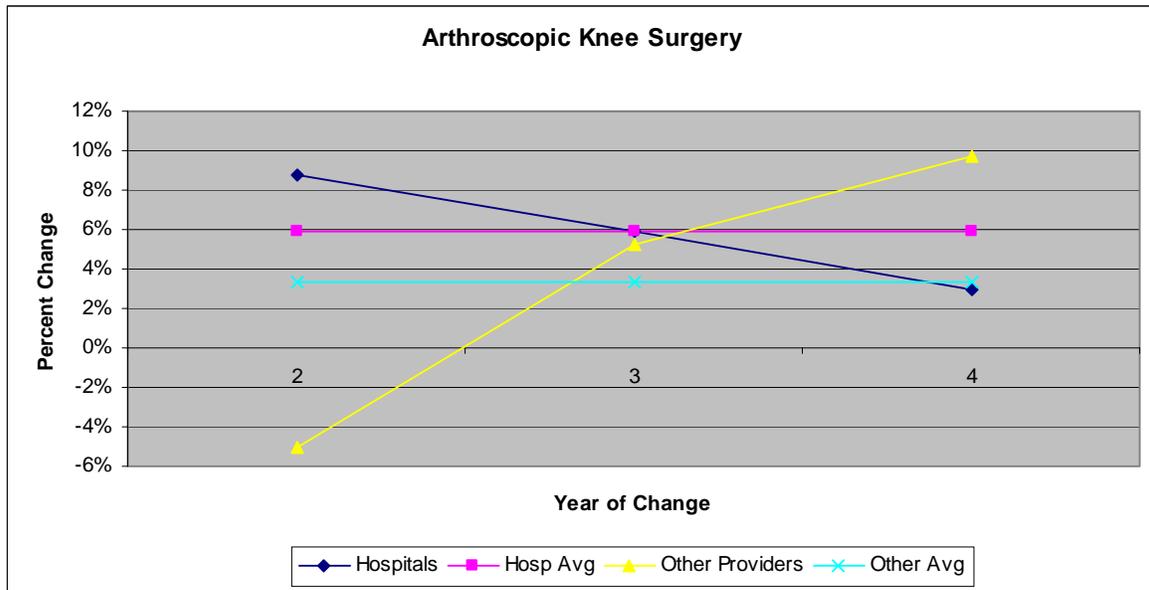
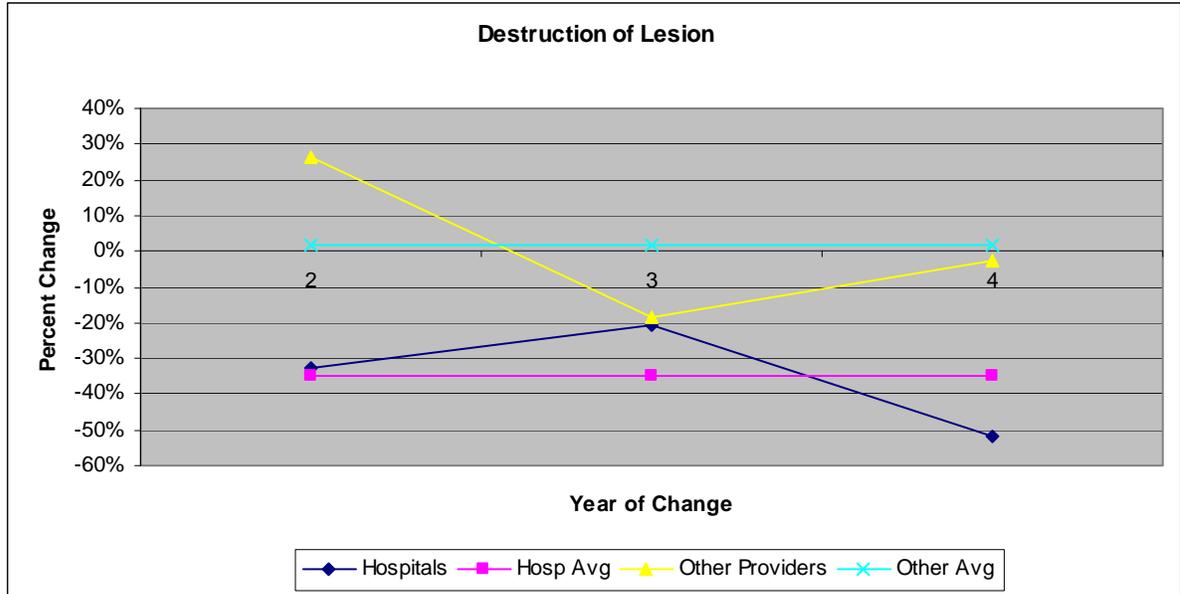
Conclusion

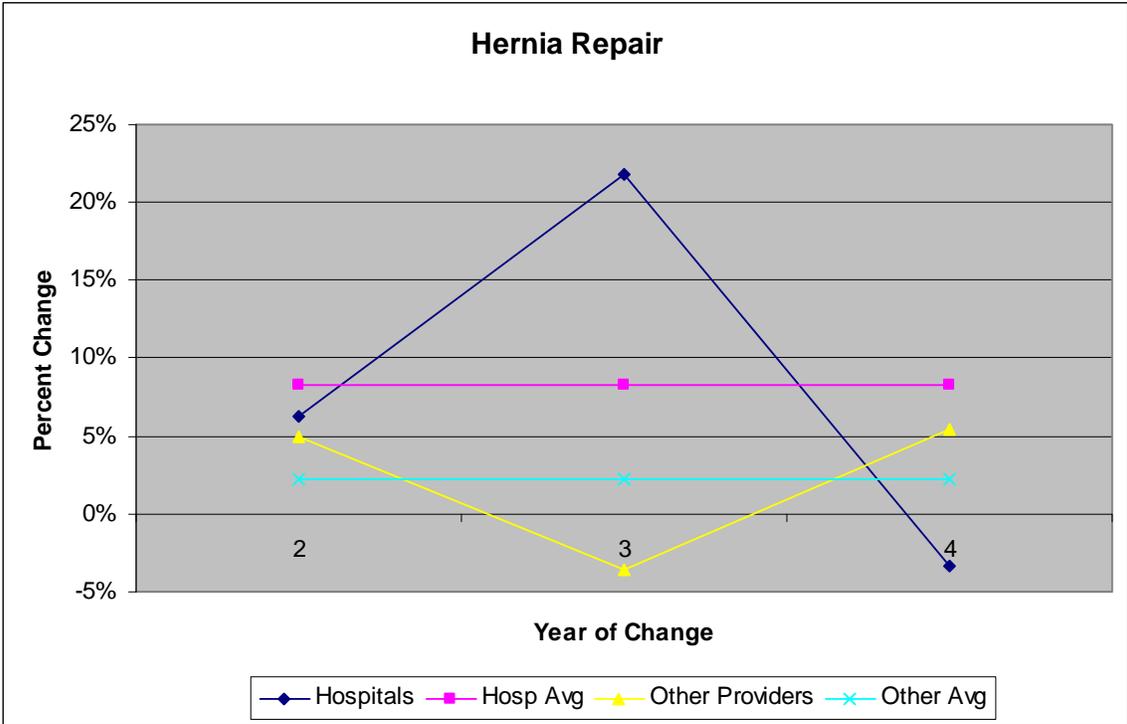
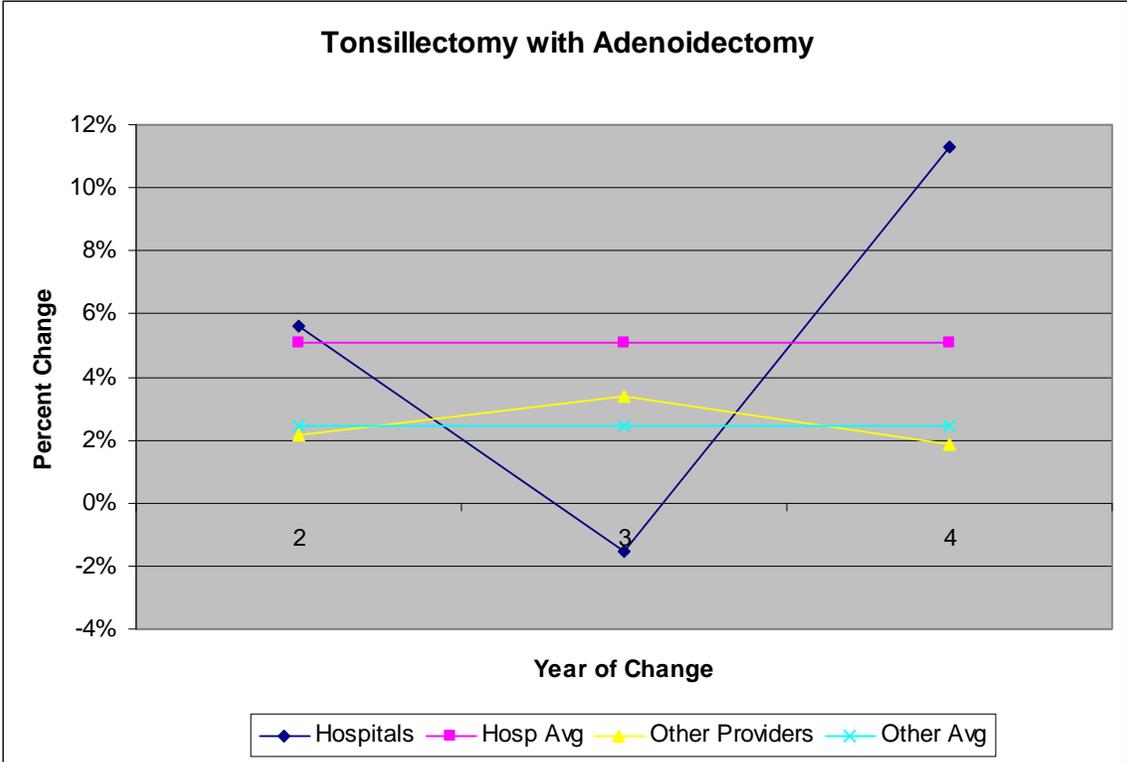
The HealthCost website is a step forward with health care procedure price transparency. This findings in this analysis suggests that the HealthCost website has not had an impact on pricing variation or increases in the New Hampshire marketplace, but early indicators may change as carriers and providers respond to increasing interest from consumers of health care. Further research at a later point in time is appropriate.

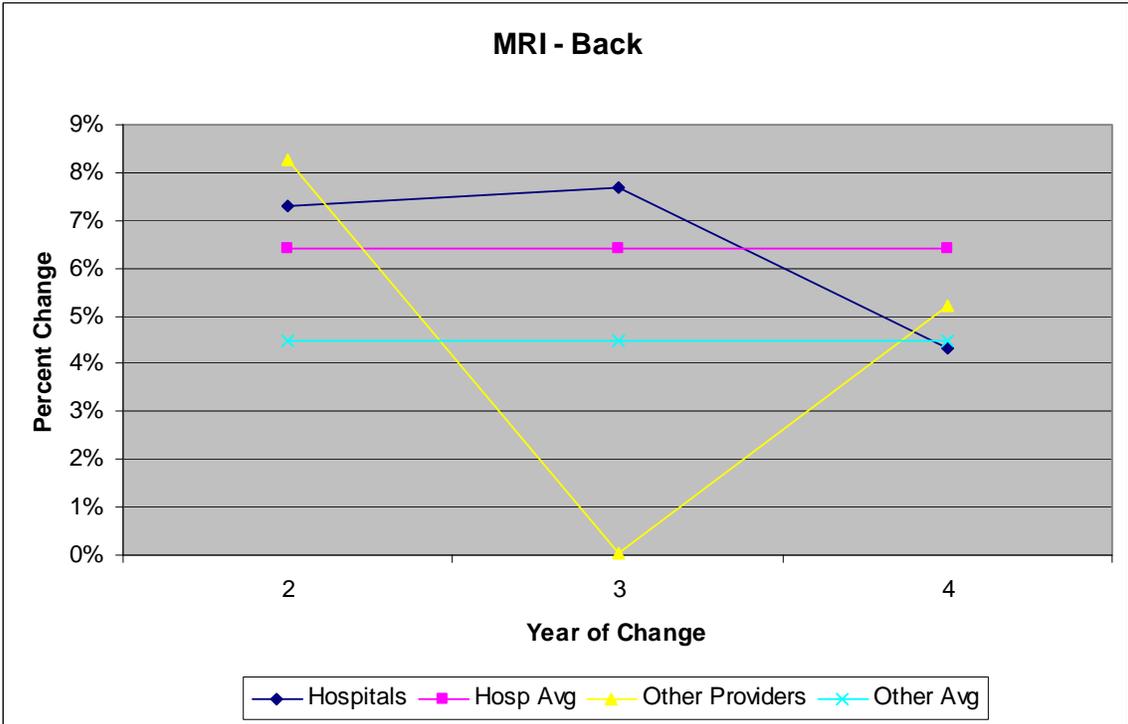
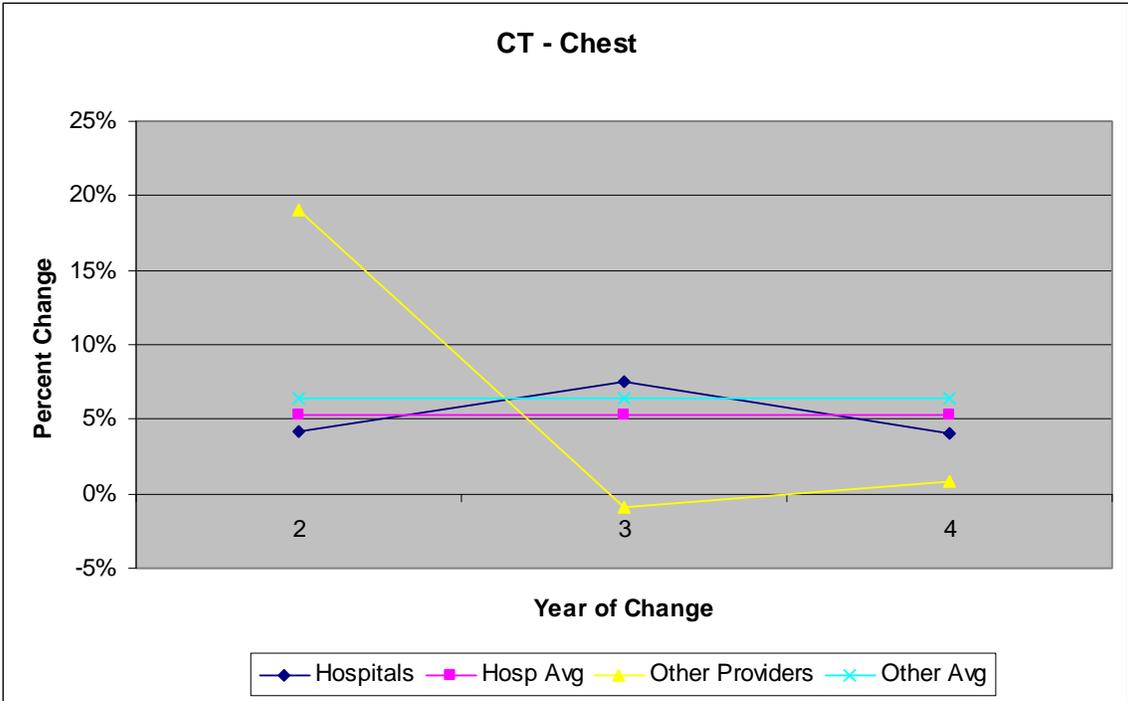
Questions or comments should be directed to Tyler Brannen, Health Care Statistician at the New Hampshire Insurance Department (tyler.brannen@ins.nh.gov).

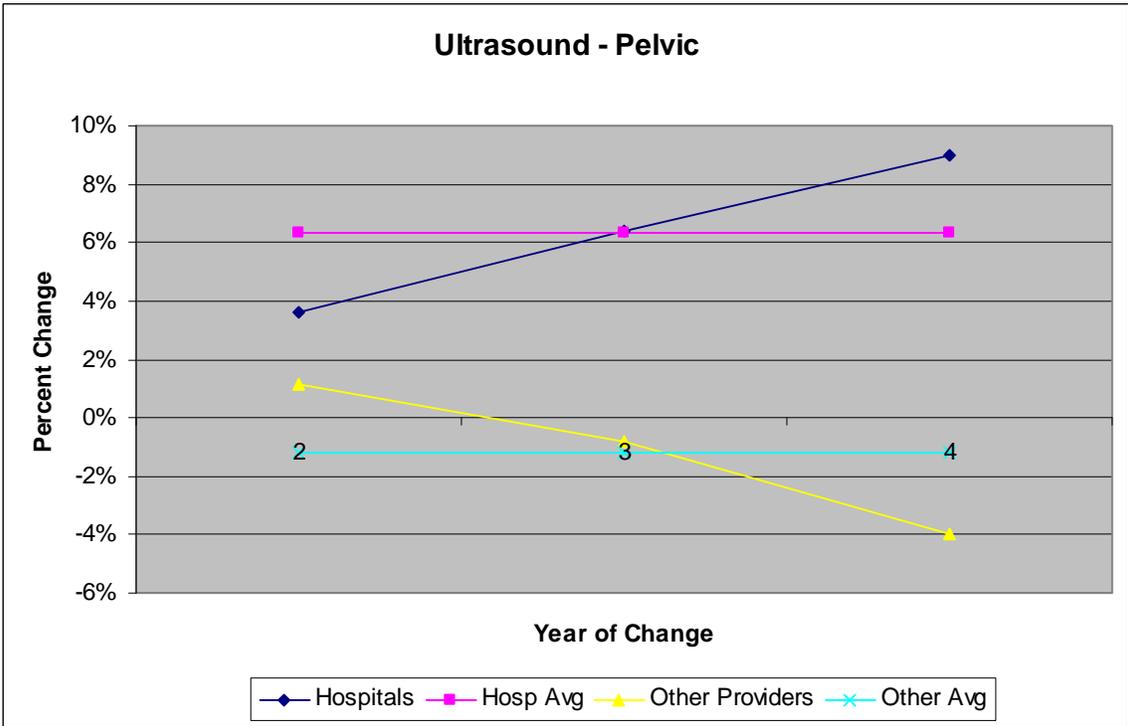
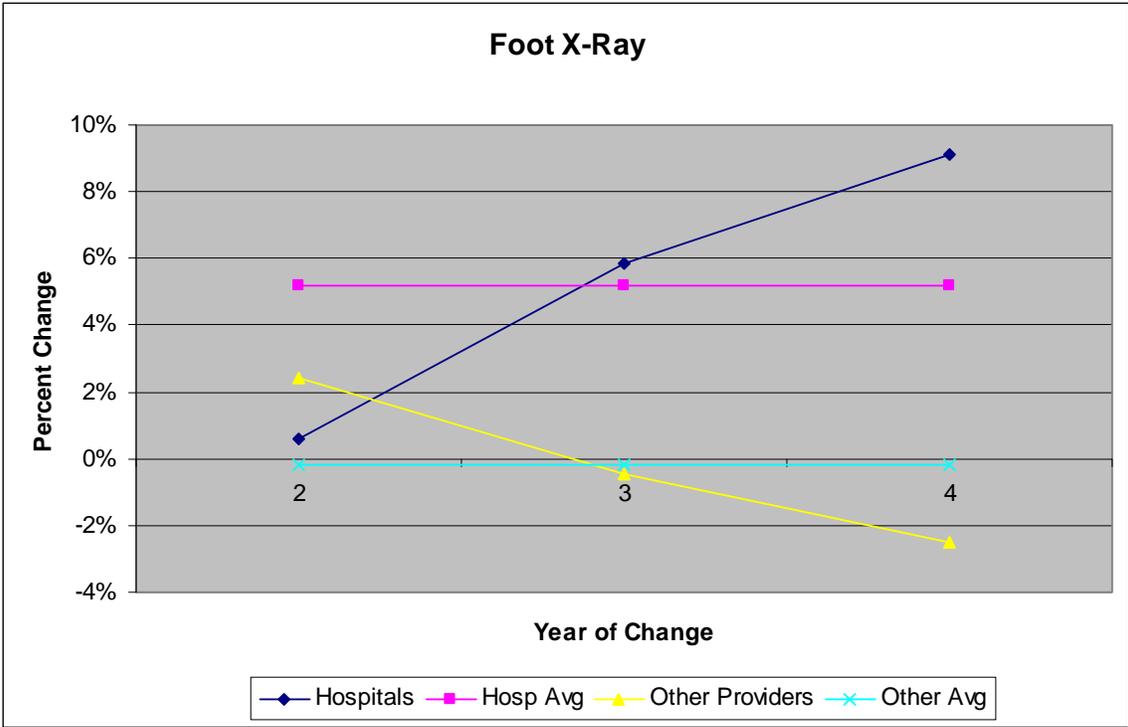
APPENDIX A

Divergent Patterns

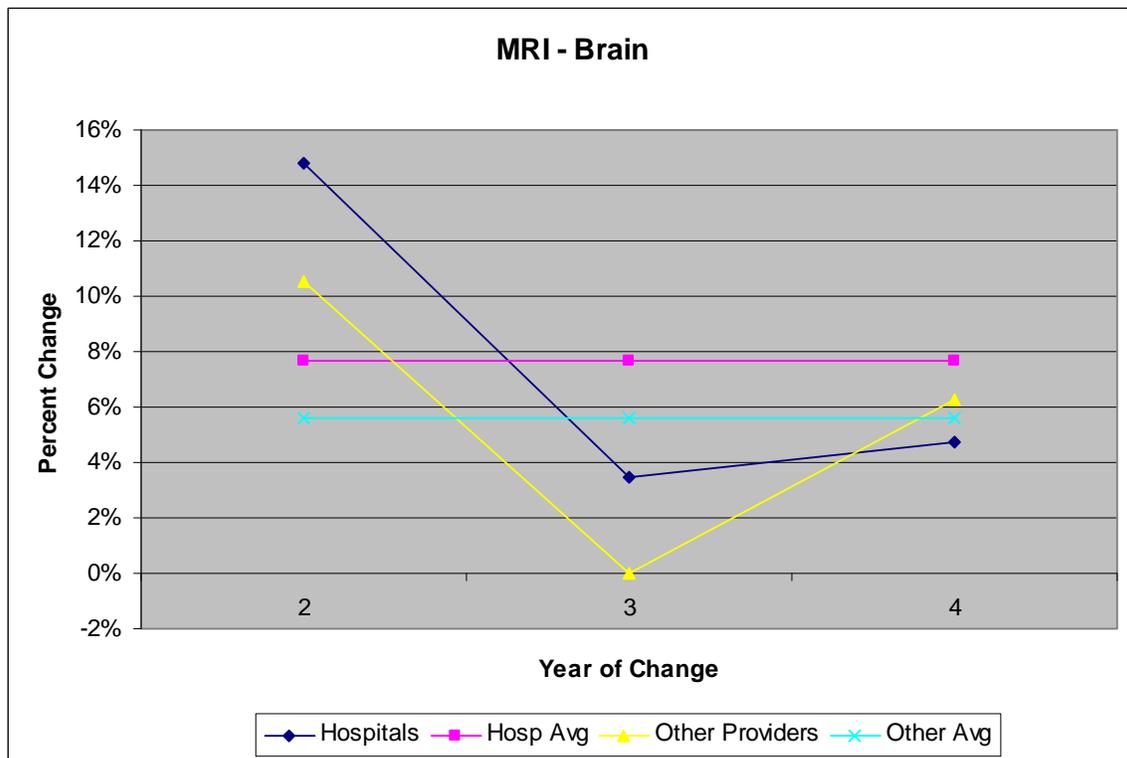
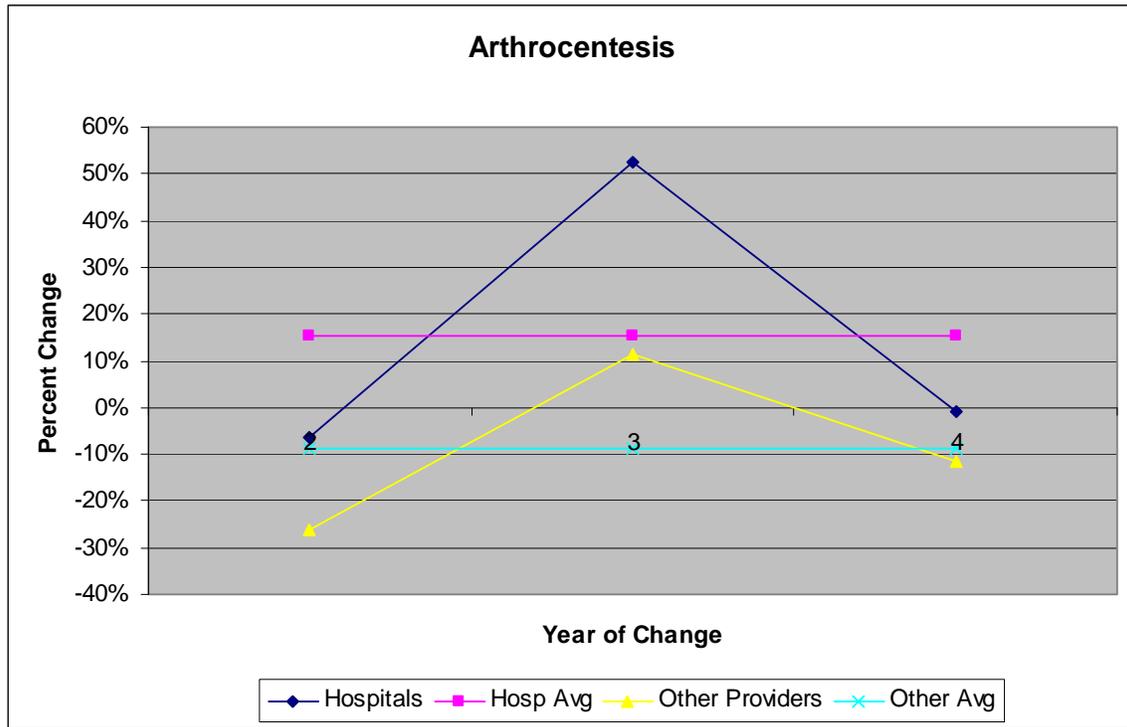


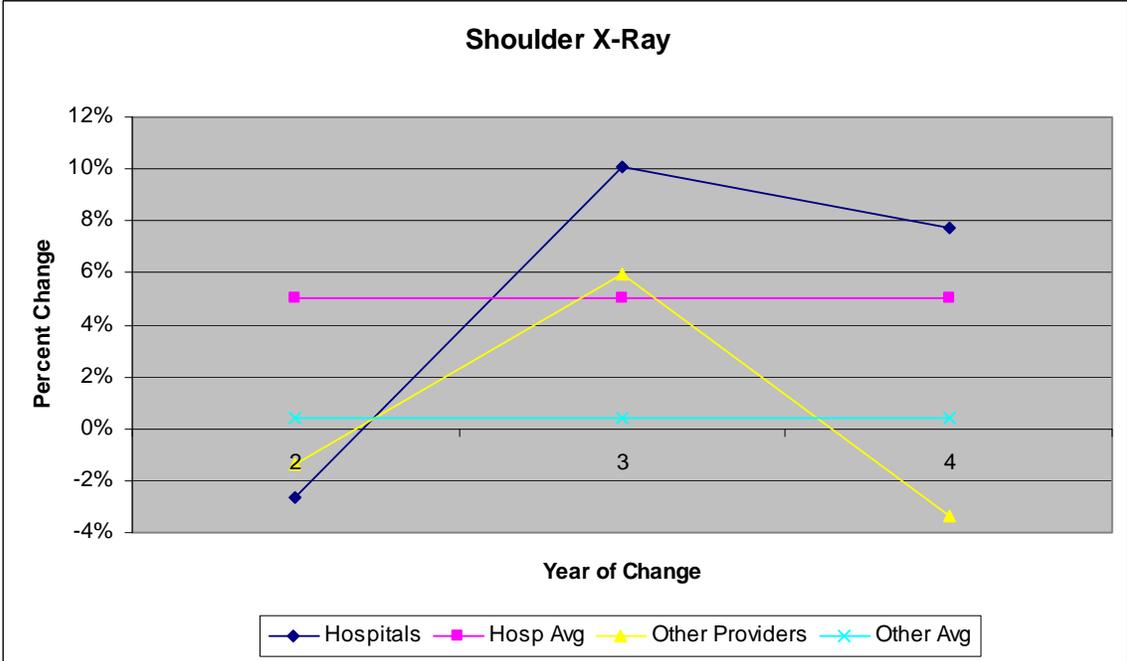
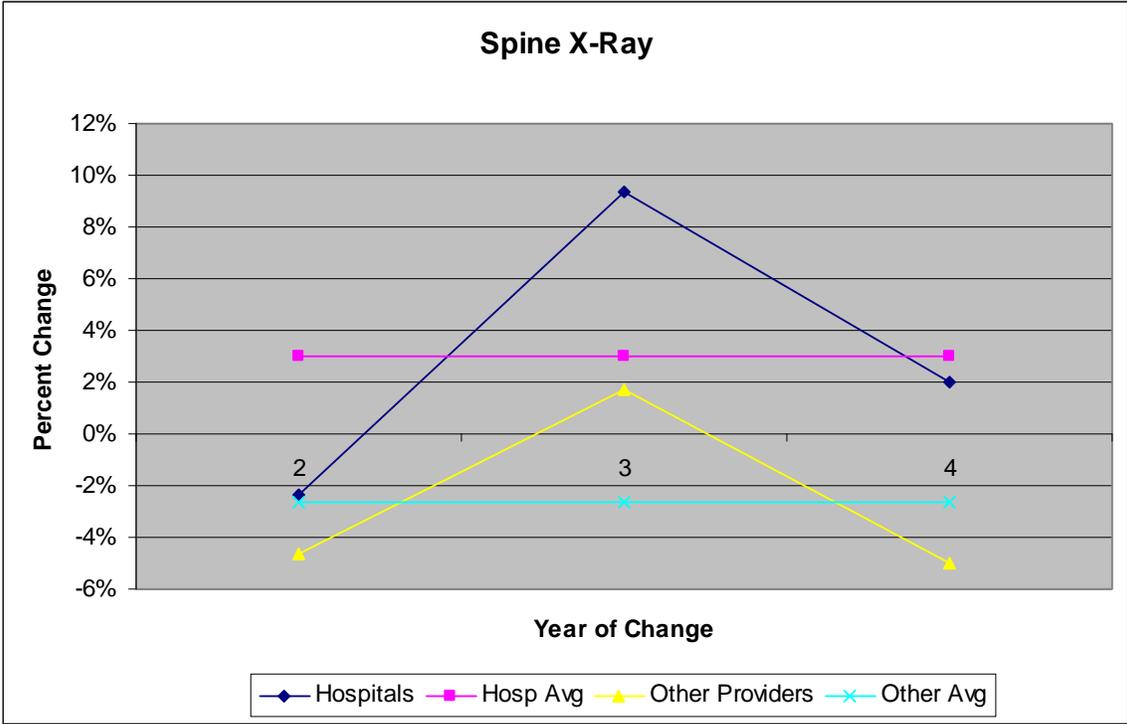


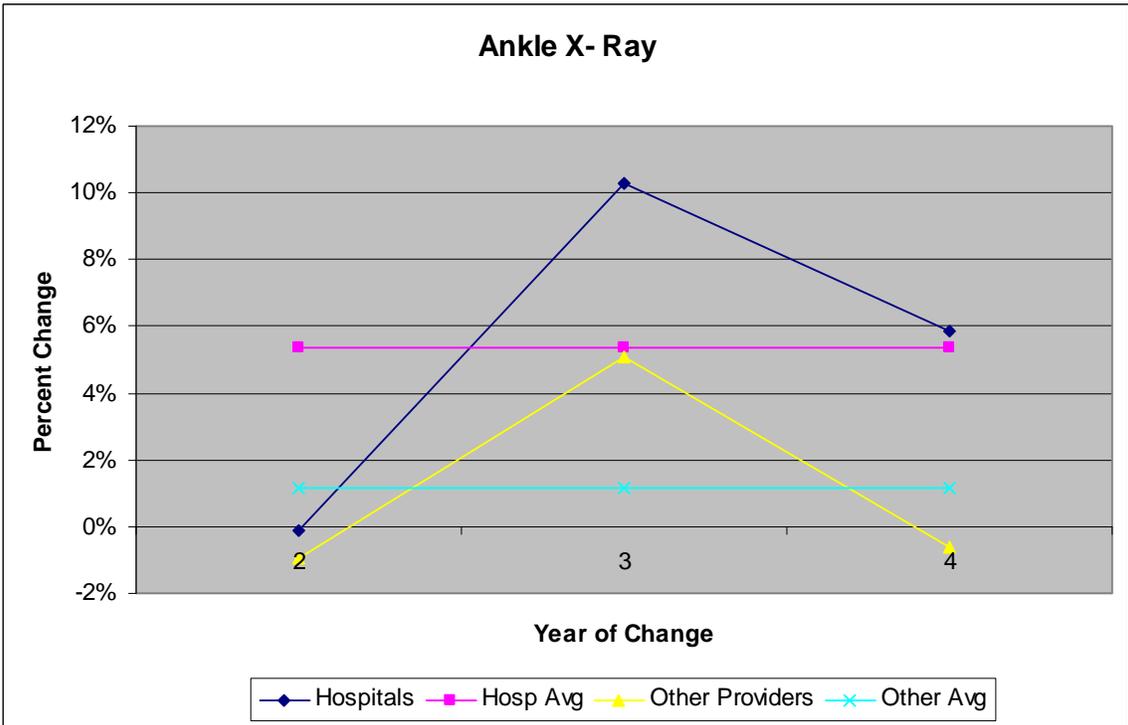
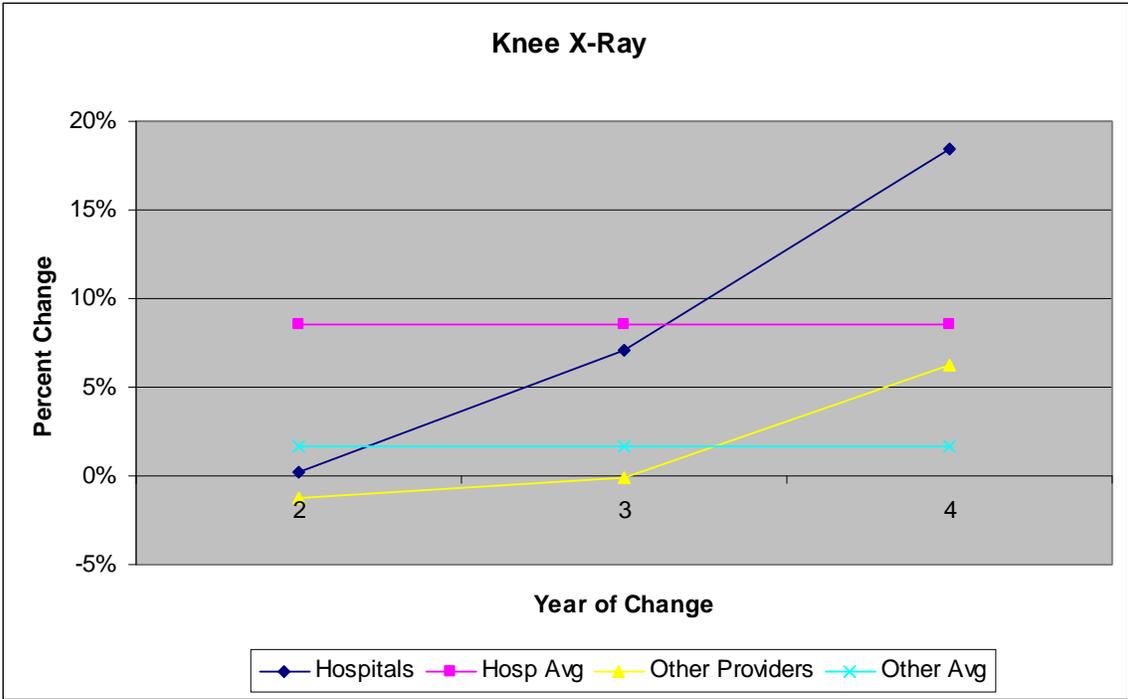


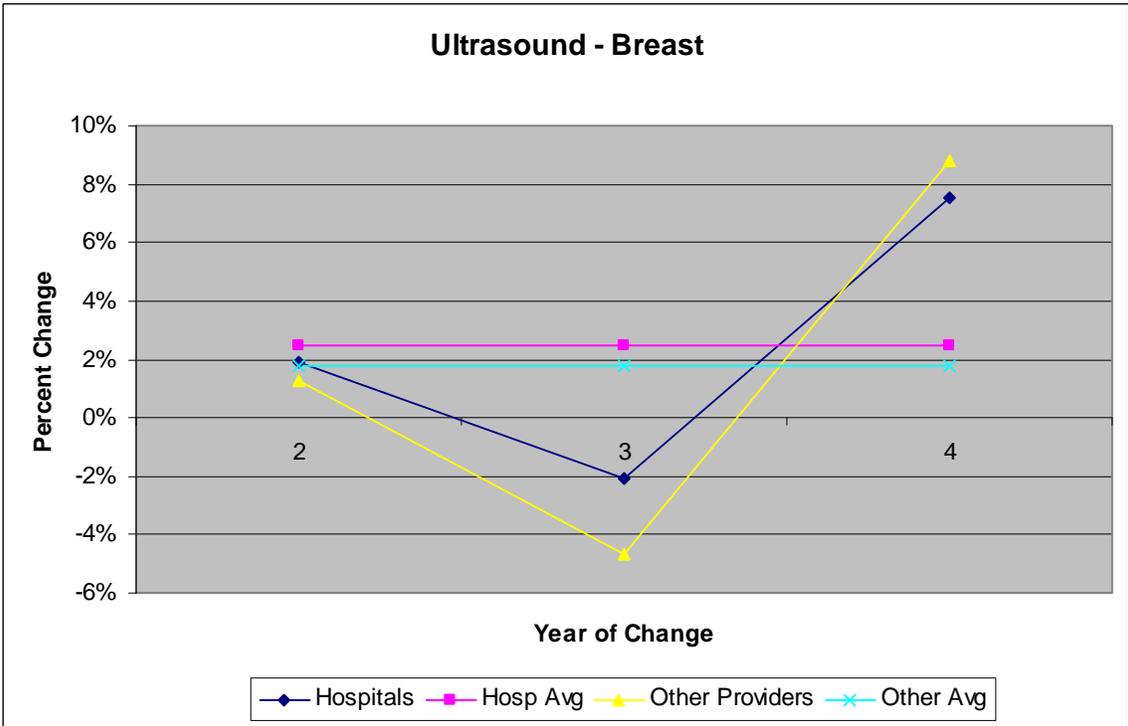
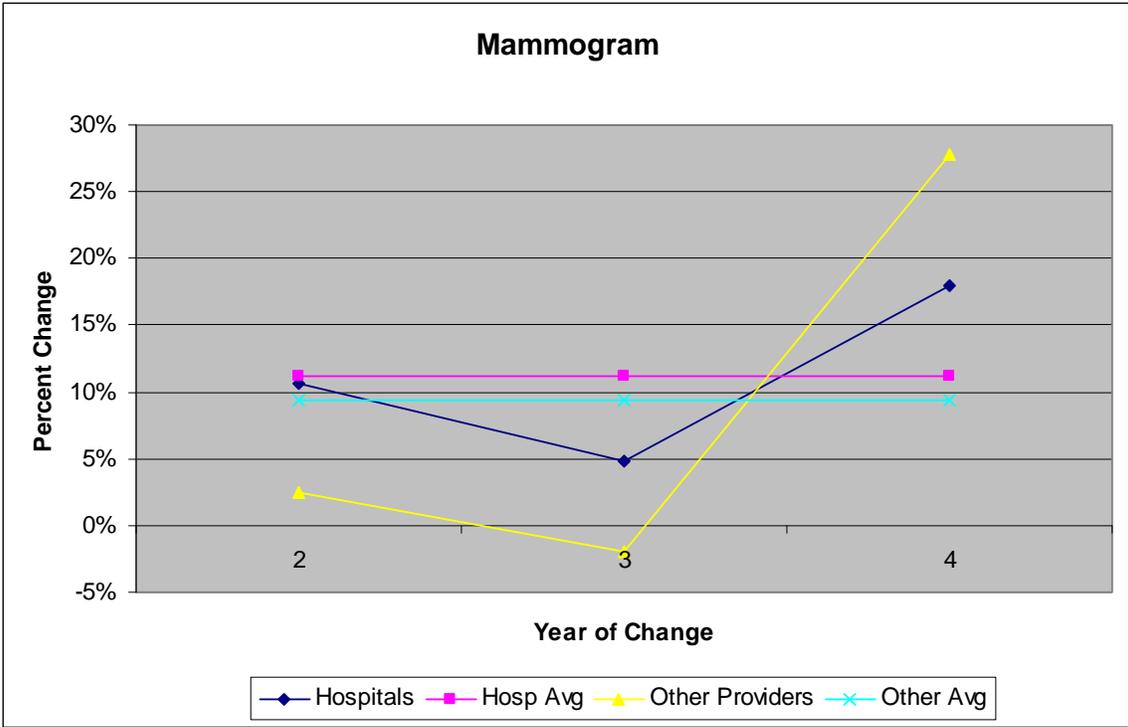


Similar Patterns

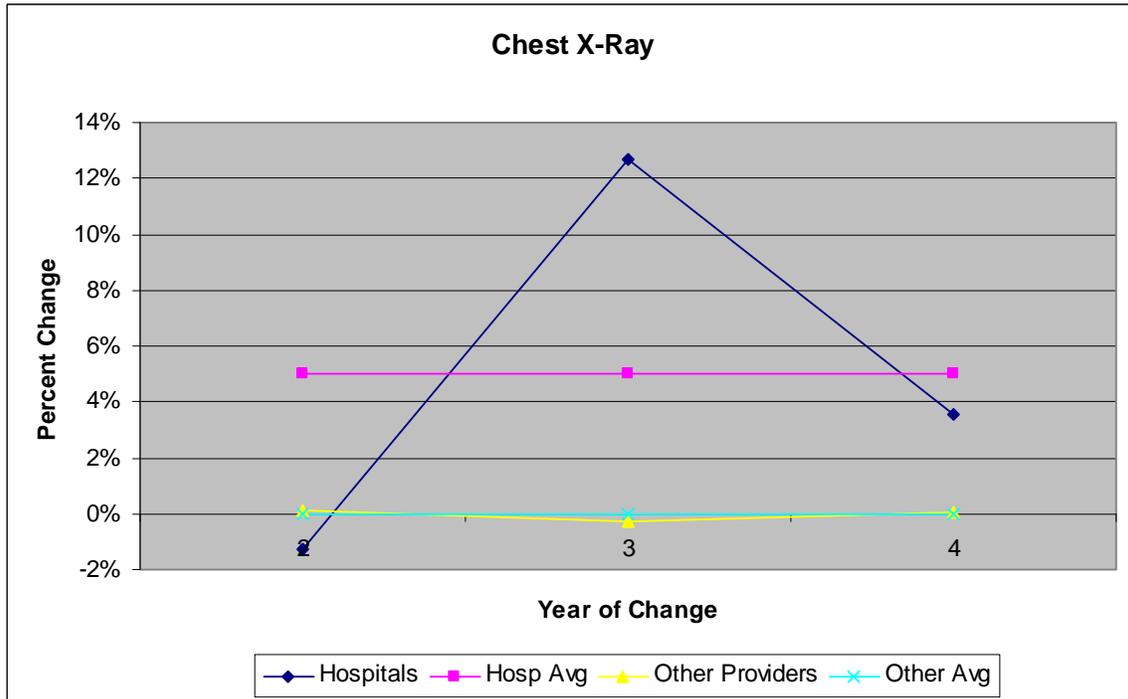
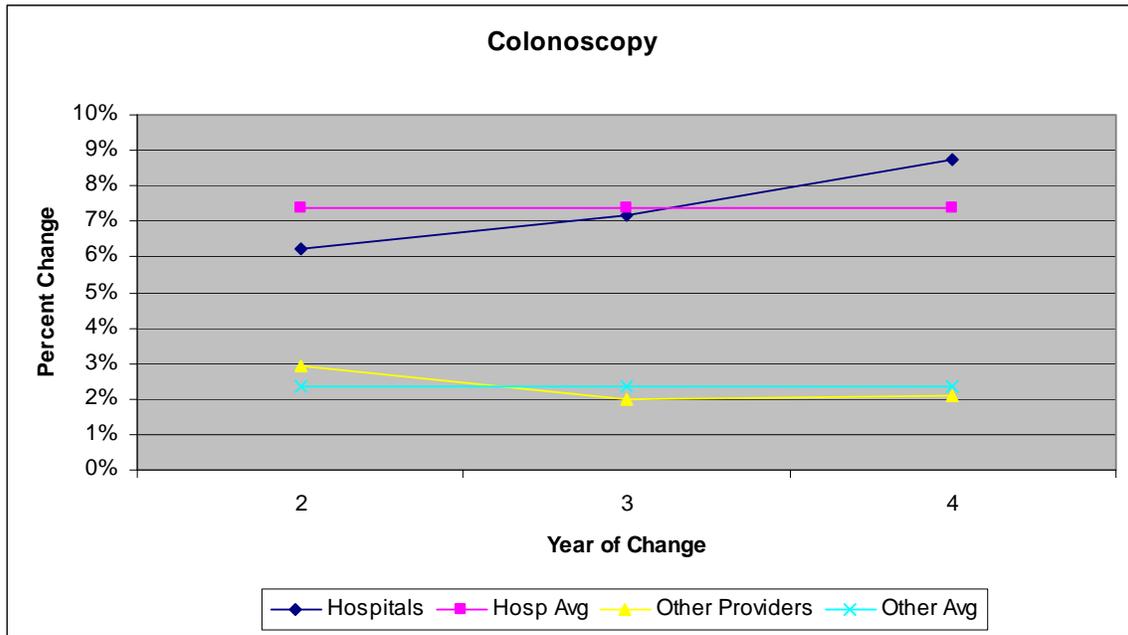


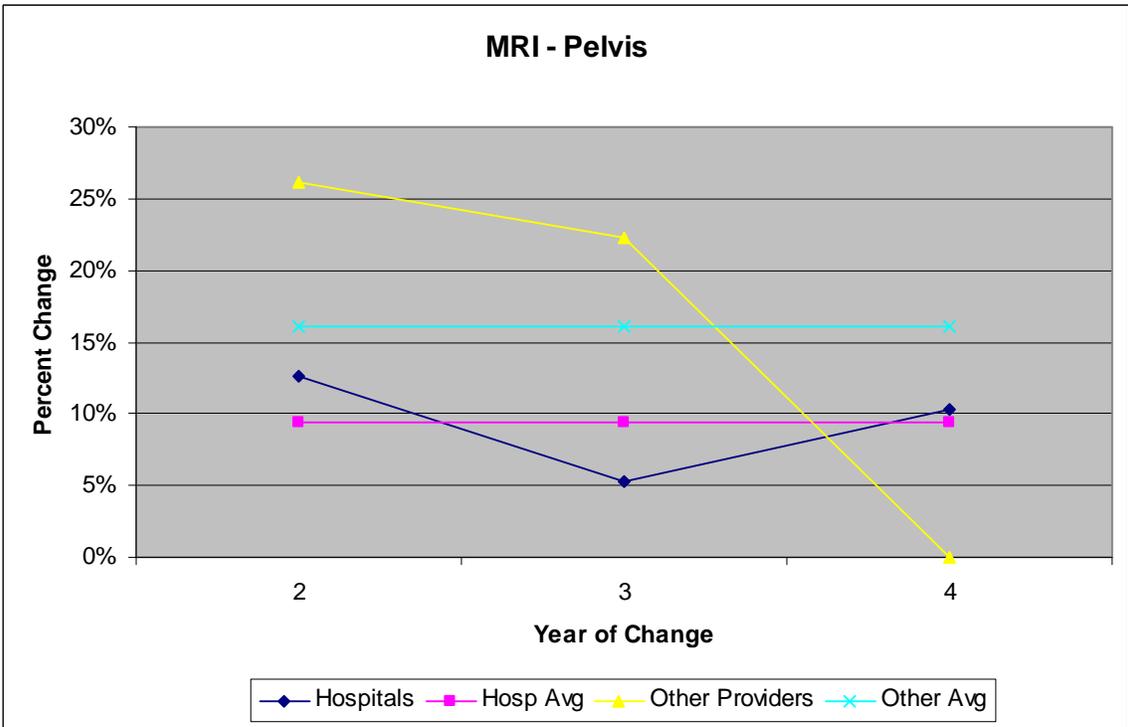
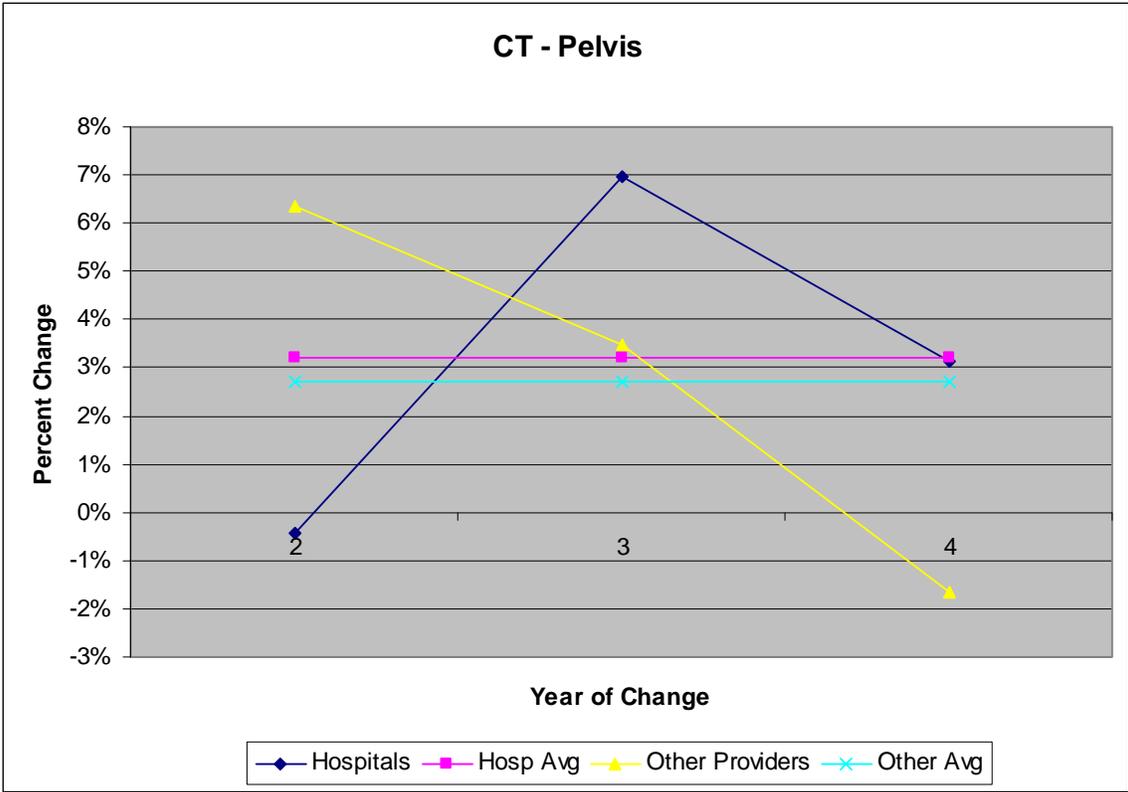


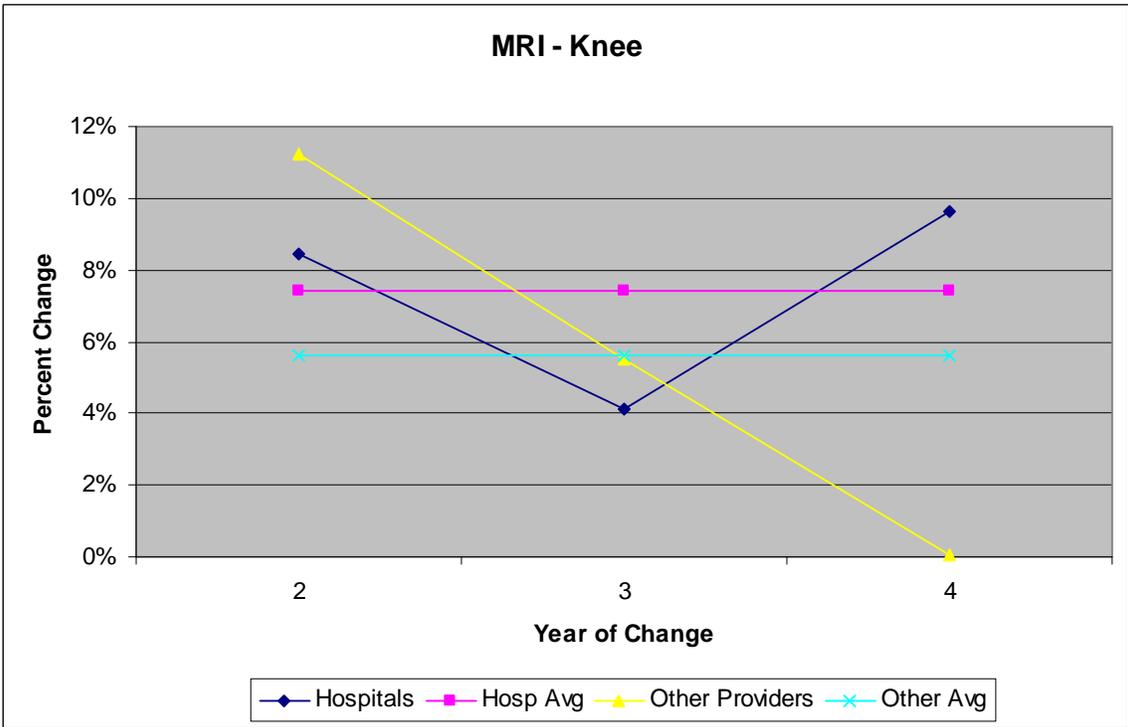
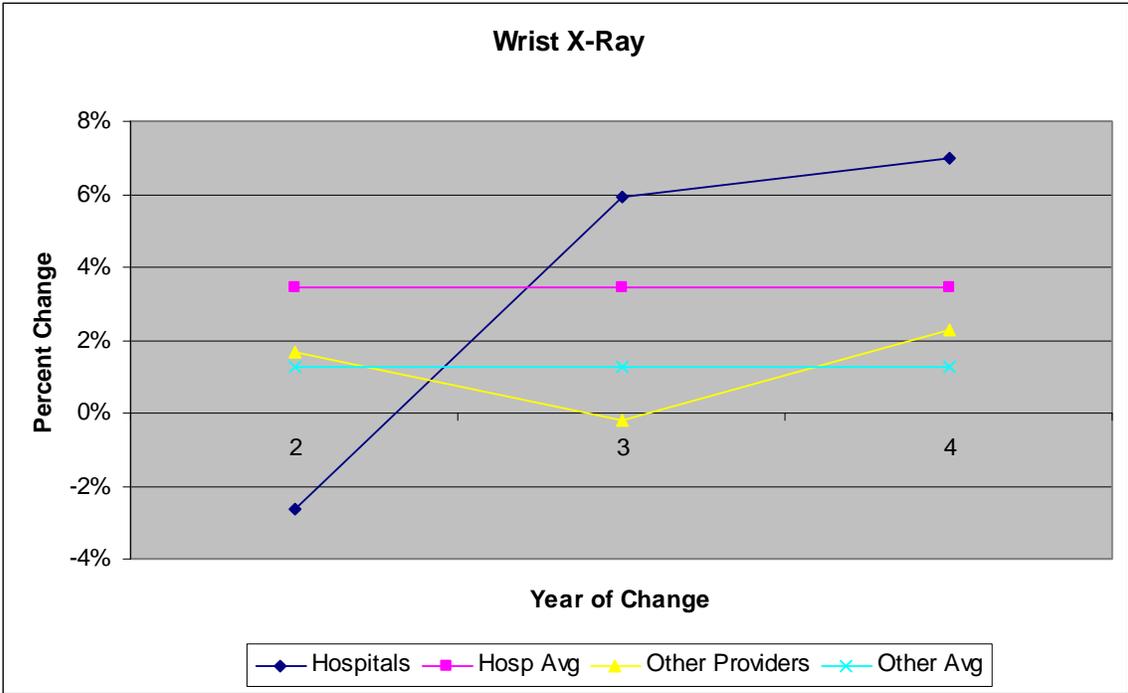


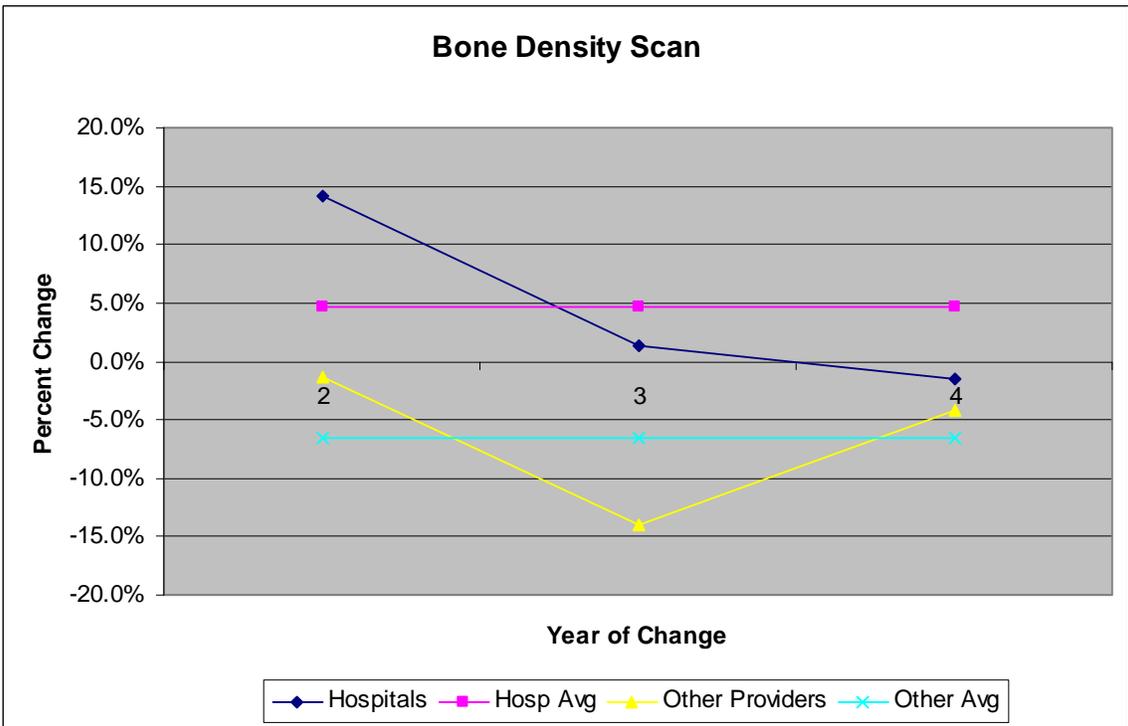
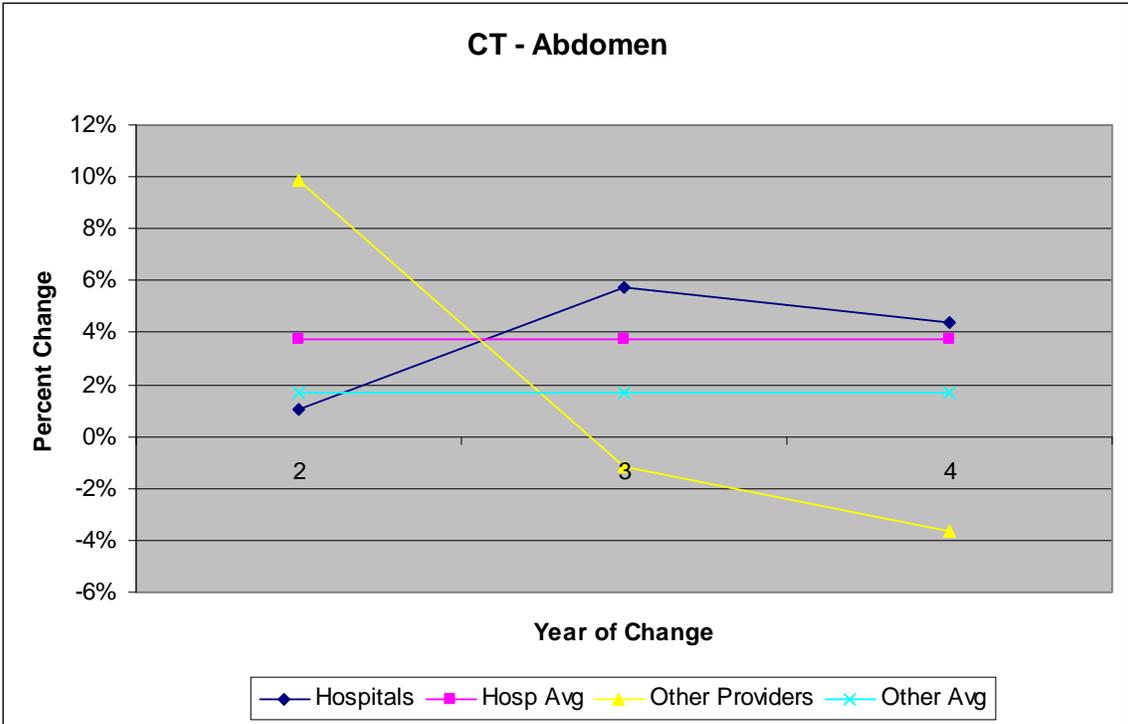


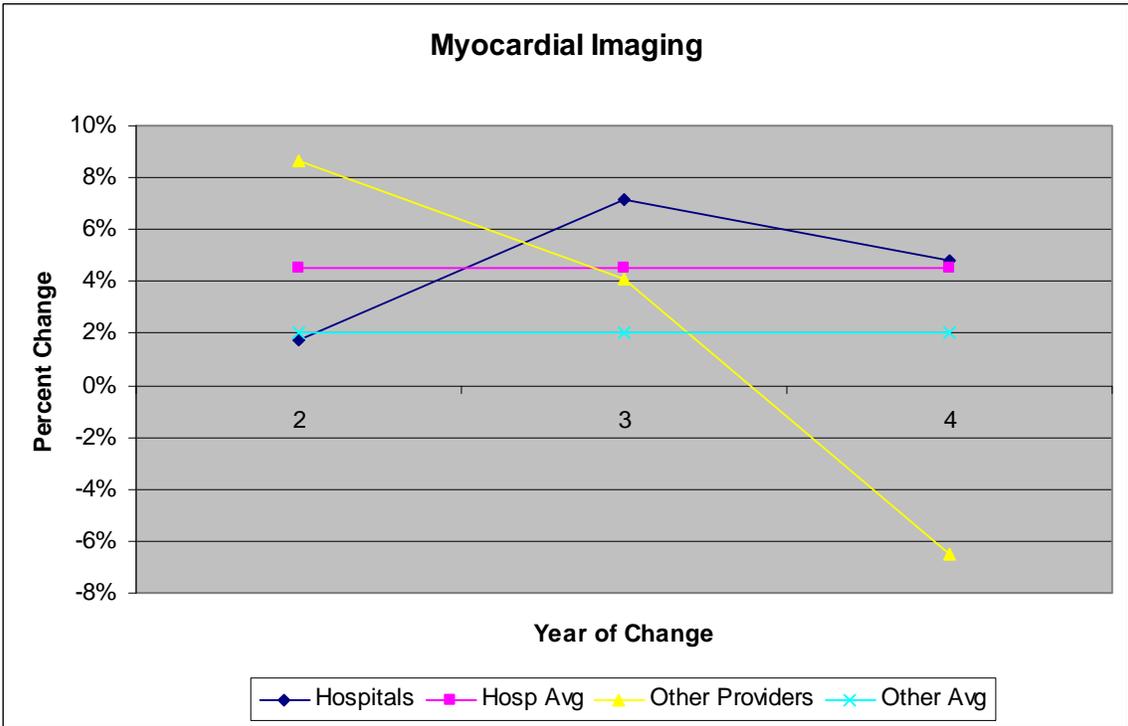
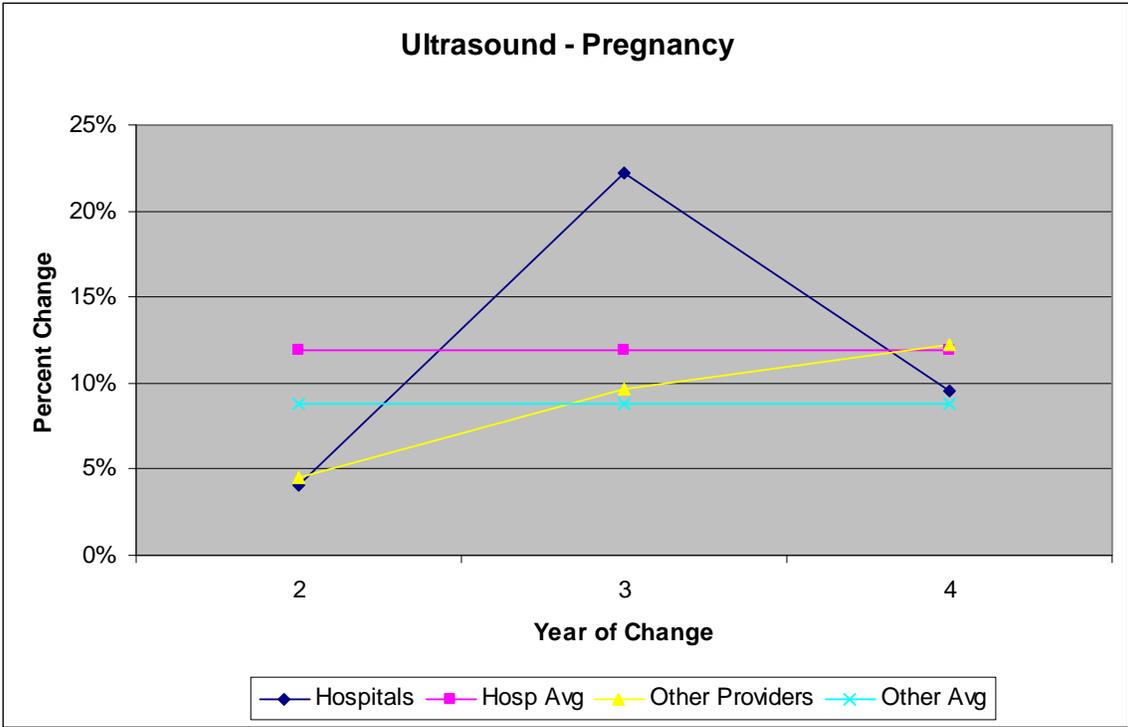
No Obvious Pattern











APPENDIX B

HOSPITAL PROVIDERS:

CPT Code	HealthCost Description	Yr	Average Payment	Coefficient of Variation	Median	Percent Change from Prior Yr
17000	Destruction of Lesion	1	\$218	1.46	\$140	
		2	\$147	1.30	\$108	-32.5%
		3	\$117	0.85	\$98	-20.4%
		4	\$57	1.11	\$26	-51.5%
19103	Breast Biopsy	1	\$783	0.56	\$734	
		2	\$876	0.57	\$746	11.9%
		3	\$991	0.55	\$912	13.0%
		4	\$884	0.47	\$816	-10.7%
20610	Arthrocentesis	1	\$170	1.04	\$119	
		2	\$160	0.98	\$123	-6.2%
		3	\$244	1.23	\$176	52.6%
		4	\$242	0.96	\$185	-0.9%
29881	Arthroscopic Knee Surgery	1	\$2,029	0.47	\$1,949	
		2	\$2,207	0.46	\$2,143	8.8%
		3	\$2,338	0.48	\$2,146	5.9%
		4	\$2,406	0.50	\$2,306	2.9%
42820	Tonsillectomy with Adenoidectomy	1	\$1,471	0.44	\$1,437	
		2	\$1,554	0.51	\$1,544	5.6%
		3	\$1,529	0.51	\$1,588	-1.6%
		4	\$1,702	0.53	\$1,867	11.3%
45378	Colonoscopy (outpatient)	1	\$1,024	0.38	\$1,035	
		2	\$1,088	0.38	\$1,087	6.3%
		3	\$1,166	0.40	\$1,221	7.2%
		4	\$1,267	0.41	\$1,314	8.7%
47562	Gall Bladder Surgery	1	\$3,348	0.64	\$2,650	
		2	\$3,865	0.61	\$3,173	15.4%
		3	\$4,224	0.64	\$3,399	9.3%
		4	\$4,881	0.60	\$4,100	15.6%
49505	Hernia Repair	1	\$1,967	0.42	\$1,768	
		2	\$2,091	0.48	\$1,910	6.3%

		3	\$2,548	0.61	\$2,351	21.9%
		4	\$2,463	0.51	\$2,306	-3.3%
50590	Kidney Stone Removal	1	\$4,808	0.49	\$4,549	
		2	\$4,613	0.59	\$4,983	-4.0%
		3	\$5,228	0.49	\$5,542	13.3%
		4	\$5,898	0.47	\$5,858	12.8%
70553	MRI - Brain	1	\$1,733	0.35	\$1,695	
		2	\$1,990	0.36	\$1,849	14.8%
		3	\$2,059	0.36	\$2,013	3.5%
		4	\$2,157	0.39	\$2,097	4.8%
71020	Chest X-Ray	1	\$117	0.68	\$125	
		2	\$115	1.85	\$92	-1.2%
		3	\$130	1.06	\$137	12.7%
		4	\$134	1.80	\$120	3.5%
71260	CT - Chest	1	\$892	0.47	\$903	
		2	\$929	0.51	\$916	4.2%
		3	\$999	0.53	\$957	7.5%
		4	\$1,039	0.53	\$1,037	4.0%
72100	Spine X-Ray	1	\$122	0.53	\$102	
		2	\$119	0.57	\$87	-2.4%
		3	\$130	0.61	\$98	9.4%
		4	\$133	0.56	\$110	2.0%
72148	MRI - Back	1	\$1,238	0.31	\$1,261	
		2	\$1,328	0.32	\$1,395	7.3%
		3	\$1,430	0.32	\$1,498	7.7%
		4	\$1,492	0.32	\$1,573	4.3%
72193	CT - Pelvis	1	\$790	0.50	\$754	
		2	\$787	0.49	\$718	-0.4%
		3	\$842	0.50	\$755	7.0%
		4	\$868	0.51	\$793	3.1%
72197	MRI - Pelvis	1	\$1,638	0.32	\$1,673	
		2	\$1,845	0.39	\$1,831	12.7%
		3	\$1,942	0.32	\$1,963	5.2%
		4	\$2,142	0.31	\$2,140	10.3%
73030	Shoulder X-Ray	1	\$115	0.74	\$110	
		2	\$112	0.63	\$84	-2.6%

		3	\$124	0.67	\$88	10.1%
		4	\$133	0.68	\$104	7.7%
73110	Wrist X-Ray	1	\$101	0.63	\$96	
		2	\$98	0.62	\$74	-2.6%
		3	\$104	0.66	\$79	5.9%
		4	\$111	0.63	\$97	7.0%
73562	Knee X-Ray	1	\$113	0.62	\$88	
		2	\$113	0.72	\$72	0.2%
		3	\$121	0.73	\$80	7.1%
		4	\$144	0.74	\$110	18.4%
73610	Ankle X-Ray	1	\$102	0.54	\$111	
		2	\$102	0.59	\$77	-0.1%
		3	\$113	0.61	\$82	10.3%
		4	\$120	0.61	\$100	5.9%
73630	Foot X-Ray	1	\$105	0.56	\$115	
		2	\$106	0.64	\$77	0.6%
		3	\$112	0.65	\$80	5.8%
		4	\$122	0.65	\$99	9.1%
73721	MRI - Knee	1	\$1,115	0.34	\$1,071	
		2	\$1,210	0.35	\$1,156	8.5%
		3	\$1,259	0.35	\$1,221	4.1%
		4	\$1,381	0.34	\$1,369	9.6%
74160	CT - Abdomen	1	\$880	0.50	\$861	
		2	\$889	0.55	\$872	1.1%
		3	\$940	0.59	\$926	5.7%
		4	\$981	0.57	\$974	4.4%
76075	Bone Density Scan	1	\$220	0.31	\$211	
		2	\$251	0.35	\$220	14.1%
		3	\$254	0.31	\$249	1.4%
		4	\$251	0.36	\$241	-1.6%
76092	Mammogram	1	\$120	0.35	\$116	
		2	\$133	0.35	\$131	10.6%
		3	\$139	0.39	\$138	4.8%
		4	\$164	0.33	\$168	17.9%
76645	Ultrasound - Breast	1	\$182	0.64	\$143	
		2	\$185	0.67	\$143	1.9%

		3	\$181	0.60	\$153	-2.1%
		4	\$195	0.56	\$169	7.5%
76805	Ultrasound - Pregnancy	1	\$246	0.41	\$241	
		2	\$256	0.43	\$245	4.0%
		3	\$313	0.41	\$298	22.2%
		4	\$343	0.40	\$350	9.5%
76856	Ultrasound - Pelvic	1	\$277	0.53	\$287	
		2	\$287	0.54	\$285	3.6%
		3	\$305	0.68	\$285	6.4%
		4	\$333	0.57	\$299	9.0%
78465	Myocardial Imaging	1	\$1,198	0.39	\$1,092	
		2	\$1,219	0.35	\$1,132	1.8%
		3	\$1,306	0.38	\$1,292	7.1%
		4	\$1,368	0.48	\$1,338	4.8%
99281	Emergency Room Visit - Very Minor	1	\$74	0.45	\$71	
		2	\$76	0.48	\$71	2.6%
		3	\$89	0.50	\$89	16.3%
		4	\$102	0.74	\$91	14.9%
99283	Emergency Room Visit - Medium	1	\$189	0.57	\$201	
		2	\$209	0.59	\$223	11.0%
		3	\$229	0.57	\$239	9.5%
		4	\$267	0.71	\$274	16.2%

APPENDIX C

NON-HOSPITAL PROVIDERS:

CPT Code	HealthCost Description	Yr	Average Payment	Coefficient of Variation	Median Payment	Percent Change from Prior Yr
17000	Destruction of Lesion	1	\$93	0.38	\$104	
		2	\$118	0.27	\$129	26.1%
		3	\$96	0.56	\$114	-18.4%
		4	\$94	0.71	\$103	-2.6%
20610	Arthrocentesis	1	\$155	1.88	\$110	
		2	\$114	0.78	\$101	-26.2%
		3	\$128	1.00	\$120	11.5%
		4	\$113	0.64	\$111	-11.4%
29881	Arthroscopic Knee Surgery	1	\$1,934	0.53	\$1,640	
		2	\$1,837	0.51	\$1,640	-5.0%
		3	\$1,933	0.61	\$1,640	5.2%
		4	\$2,120	0.64	\$1,640	9.7%
42820	Tonsillectomy with Adenoidectomy	1	\$1,175	0.10	\$1,196	
		2	\$1,200	0.15	\$1,228	2.1%
		3	\$1,241	0.22	\$1,228	3.4%
		4	\$1,263	0.25	\$1,228	1.8%
45378	Colonoscopy	1	\$750	0.23	\$735	
		2	\$772	0.18	\$779	2.9%
		3	\$788	0.24	\$809	2.0%
		4	\$804	0.23	\$784	2.1%
49505	Hernia Repair	1	\$1,084	0.25	\$1,039	
		2	\$1,137	0.26	\$1,081	4.9%
		3	\$1,096	0.38	\$1,081	-3.6%
		4	\$1,156	0.35	\$1,081	5.5%
70553	MRI - Brain	1	\$505	1.13	\$310	
		2	\$558	1.14	\$310	10.5%
		3	\$558	1.16	\$292	0.0%
		4	\$593	1.11	\$324	6.3%
71020	Chest X-Ray	1	\$37	0.73	\$26	
		2	\$37	0.76	\$25	0.1%
		3	\$37	1.08	\$25	-0.3%
		4	\$37	0.86	\$25	0.0%

71260	CT - Chest	1	\$190	0.93	\$130	
		2	\$226	0.98	\$134	19.1%
		3	\$224	1.05	\$139	-0.9%
		4	\$226	1.09	\$134	0.9%
72100	Spine X-Ray	1	\$42	0.56	\$30	
		2	\$40	0.61	\$30	-4.7%
		3	\$41	0.62	\$30	1.7%
		4	\$39	0.71	\$27	-5.0%
72148	MRI - Back	1	\$390	0.97	\$162	
		2	\$422	0.95	\$195	8.3%
		3	\$422	0.97	\$204	0.0%
		4	\$444	0.96	\$204	5.2%
72193	CT - Pelvis	1	\$177	0.90	\$115	
		2	\$188	0.92	\$122	6.3%
		3	\$195	1.10	\$122	3.5%
		4	\$192	1.15	\$124	-1.7%
72197	MRI - Pelvis	1	\$460	1.18	\$245	
		2	\$581	1.14	\$245	26.1%
		3	\$710	1.02	\$310	22.2%
		4	\$710	0.99	\$323	0.1%
73030	Shoulder X-Ray	1	\$38	0.71	\$24	
		2	\$37	0.63	\$25	-1.3%
		3	\$39	0.87	\$28	5.9%
		4	\$38	0.72	\$26	-3.3%
73110	Wrist X-Ray	1	\$34	0.65	\$23	
		2	\$35	0.66	\$24	1.7%
		3	\$35	0.68	\$24	-0.2%
		4	\$36	0.78	\$25	2.3%
73562	Knee X-Ray	1	\$42	0.72	\$46	
		2	\$41	0.79	\$29	-1.3%
		3	\$41	0.78	\$33	-0.1%
		4	\$44	0.82	\$33	6.3%
73610	Ankle X-Ray	1	\$34	0.68	\$23	
		2	\$34	0.73	\$24	-0.9%
		3	\$36	0.79	\$24	5.1%
		4	\$35	0.85	\$25	-0.6%
73630	Foot X-Ray	1	\$37	0.65	\$43	
		2	\$38	0.70	\$28	2.4%
		3	\$38	0.75	\$27	-0.5%

		4	\$37	0.81	\$25	-2.5%
73721	MRI - Knee	1	\$327	0.93	\$146	
		2	\$364	0.89	\$185	11.3%
		3	\$384	0.91	\$185	5.5%
		4	\$385	0.95	\$193	0.1%
74160	CT - Abdomen	1	\$205	0.91	\$127	
		2	\$226	0.92	\$138	9.9%
		3	\$223	0.91	\$138	-1.2%
		4	\$215	0.94	\$138	-3.6%
76075	Bone Density Scan	1	\$142	0.62	\$163	
		2	\$140	0.67	\$163	-1.3%
		3	\$120	0.78	\$138	-14.1%
		4	\$115	0.79	\$137	-4.2%
76092	Mammogram	1	\$95	0.41	\$101	
		2	\$97	0.43	\$101	2.5%
		3	\$95	0.51	\$101	-1.9%
		4	\$122	0.49	\$137	27.8%
76645	Ultrasound - Breast	1	\$91	0.44	\$98	
		2	\$92	0.46	\$98	1.2%
		3	\$88	0.53	\$77	-4.6%
		4	\$95	0.51	\$77	8.8%
76805	Ultrasound - Pregnancy	1	\$132	0.41	\$132	
		2	\$138	0.37	\$137	4.5%
		3	\$151	0.54	\$137	9.6%
		4	\$170	0.62	\$143	12.3%
76856	Ultrasound - Pelvic	1	\$129	0.59	\$142	
		2	\$130	0.64	\$142	1.2%
		3	\$129	0.62	\$134	-0.8%
		4	\$124	0.68	\$134	-4.0%
78465	Myocardial Imaging	1	\$176	0.51	\$194	
		2	\$191	0.62	\$194	8.6%
		3	\$199	0.90	\$203	4.1%
		4	\$186	0.53	\$203	-6.5%