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Rural Oklahoma Health Industry and All Industry Employment and Earnings: A Trend Analysis Comparison of Change by Age and Gender 2001 to 2017



**Oklahoma Employment Security Commission
Economic Research and Analysis Division**

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A Trend Analysis Comparison of Change
by Age and Gender, 2001 to 2017**

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EXECUTIVE SUMMARY

The following study is a trend analysis of employment and earnings in ambulatory healthcare services (NAICS 621), hospitals (NAICS 622), and nursing and residential care facilities (NAICS 623) industries using data from the Longitudinal Employer-Household Dynamics (LEHD) program.

Major Findings for Employment and Employment Change

- Regardless of gender group, in 2017 rural Oklahoma employment in all industry, ambulatory health care services, hospitals and nursing and residential care facilities had the largest two employment age groups in the three middle age groups of ages 25 to 34, 35 to 44 and 45 to 54. The one exception being the employment of males in hospitals with the largest employment group in ages 55 to 64, by one employee.
- While the amounts of female and male employment in ‘all ages’ in rural Oklahoma all industries is relatively small in difference, the ‘all ages’ ratio of females to males in ambulatory health care services is over five and a half and in hospitals the female to male ratio is over four times that of males.
- Regardless of gender group in all industries, hospitals, and nursing and residential care facilities the two older age groups of 55 to 64 and 65 to 99 always have the two largest amounts of employment increases, usually with several of the four younger age groups decreasing in the amount of employment over 17 years of observance.
- The largest amount of employment gains for male and female ambulatory health care services workers are also in one of these same two oldest age groups, but the second-largest employment increase for both genders is in ages 25 to 34, with only one age group for each gender decreasing in employment, in this time interval.
- Male employment in ‘all ages’ in all industry, in hospitals, and in nursing and residential care facilities increased more rapidly than females, with females increasing more rapidly than males only in ambulatory health care services.
- In males and females the employment in the three health industry groups always increased most rapidly in ages 65 to 99 and second-most rapidly in ages 55 to 64; with employment decreasing in several of the younger age groups in all but ambulatory health care services. .

Major Findings for Employment and Employment Change

- In almost all gender groups in the four industry groups the age groups with the two largest 2017 earnings are ages 45 to 54 and ages 55 to 64. The two exceptions are males employed in hospitals having the largest earnings in ages 65 to 99 and females employed in ambulatory health care services having the largest earnings in ages 35 to 44.
- With the exception of nursing and residential care facilities, males have significantly higher annual average monthly earnings than did their female counterparts; this exception exhibits much more male to female equalitarian earnings, than in the other three industry groups. This finding was also determined to be true in our previous report on (all) Oklahoma
- The two health industry groups of hospitals and nursing and residential care facilities always had the largest male and female earnings change in the oldest three age groups of ages 45 to 54, ages 55 to 64 and ages 65 to 99. However, females in ambulatory health care services had the largest earnings change in ages 35 to 44. Males in this industry group had the second-largest earnings change in ages 25 to 34.
- Both males and females in all industry have the highest earnings rate change in the two oldest of the eight age groups. Both males and females in all three health industries have one of the two highest earnings change rate in the oldest age group. However males employed in hospitals and nursing and residential care facilities had the second-largest earnings change in the youngest of the eight age groups.
- In rural Oklahoma, two of the health industry groups, female earnings change rate is faster than their male counterparts, but the male earnings change rate grew faster in all industries and hospitals. In (all) Oklahoma, the female ‘all ages’ earnings change rate was faster than that of males in all four industry groups, over the 17 years of observation.

Conclusions

The analysis and findings allow three conclusions:

- Females appear to be maintaining their historically higher portion of employment in the health industry than males with ‘all ages’ experiencing only a tiny less higher employment growth rate than males in hospitals and nursing and residential care facilities and a higher amount more in ambulatory health care services, that is not likely to change anytime soon.
- Females’ lower earnings than males will likely continue since the ‘all ages’ earnings increased a small amount more than males per year in two of the health industry groups and actually increased less than males in hospitals, over the 17 years of observance.
- Although employment in the 55 and older ages in Oklahoma’s health industry are not the largest, their portion of employment is growing more rapidly than are younger age groups, with several of the younger actually decreasing in employment. This is especially true in hospitals and residential nursing care facilities with near retirement employment

ages growing faster than the U.S., and younger people not choosing to work in some areas of health industry. This signifies potential future health industry employment shortages. The latter trend appears to be worse in rural Oklahoma than (all) Oklahoma, especially so in hospitals and nursing and residential care facilities.

I. Introduction

This report on rural Oklahoma health industry is the second in the series. The first covering all of Oklahoma was published on our OESC website in January 2019¹. The third and last planned to follow this publication will cover two of Oklahoma's urban areas, namely a combination of Oklahoma City and Tulsa, Oklahoma Metropolitan Statistical Areas.

There are numerous reasons for investigations of Oklahoma health industry employment and earnings change by different geographical areas. One important reason is the employment size rank the health industry holds in overall Oklahoma industry employment. A second major reason is the enormous amount of employee earnings the industry contributes to Oklahoma's economy. A third beneficial reason for such an analysis is the projected future employment increases deemed necessary to address Oklahoma's aging population health care needs. All three are likely key reasons for such an analysis. In recent years, with small rural towns continuing to lose their practicing doctors, and the closing of many rural hospitals, examinations of rural health care have become essential.

The proposition that these three are key reasons for conducting in support of an analysis of the industry is supported by the following sources. The U.S. Census Bureau's Longitudinal Employer-Household Dynamics (LEHD) Survey of Oklahoma annual year 2017 industry sector (all-owner) employment estimates, which determined that NAICS 62 Health Care and Social Assistance sector's rank is number one in sector size, employing 216,789 or 14.2 percent of the state's total 1.5 million employment. The 2017 LEHD data of earnings totals confirm that this sector contributes nearly \$10 billion a year in employee earnings to the state's economy, 14.4 percent of the state's total employee earnings. The increasing need for Oklahoma health industry workers is substantiated by the U.S. Census 2017 estimate of the age group 65 years and older being slightly over 600,000 or 15.3 percent of the state's total population, a 1.8 percent increase in this age group's portion of the total state population since the 2010 census, seven years before.

The following analysis uses data from the Longitudinal Employer-Household Dynamics (LEHD) program, which is part of the Center for Economic Studies at the U.S. Census Bureau. The data refers to the first three subsectors of the healthcare and social assistance sector as defined by the North American Industry Classification System (NAICS). Due to the fact that this sector consists of ambulatory healthcare services (NAICS 621), hospitals (NAICS 622), nursing and residential care facilities (NAICS 623), and social assistance (NAICS 624), and that the latter is excluded from our analysis, we do not use the term 'health care sector' in this report of our findings. Our analysis of health care employment and earnings refers to NAICS 621, 622, and 623 statewide in a comparison with those of an aggregate of Oklahoma industries, the former three are referred to as industry groups, and the latter is referenced as 'all industry' in this report. This analysis is also planned for an urban combination of Oklahoma City and Tulsa Metropolitan Statistical Areas, following this current report for the rural area of the state.

This analysis and report covers a 17-year interval, beginning in 1st quarter 2001 through 4th quarter 2017. This is reported in 32 tables and 88 charts in eight appendices. For reasons of limited space, only a more important limited share of the total of these is displayed in central core of this report, along with the text and descriptions concerning each as displayed. However, each of the eight appendixes may be viewed and printed by clicking on the line of its listing in the Table of Contents. Links are also provided when an

appendix is cited. Tables and charts from our previous (all) Oklahoma health industry report, are also linked when they appear in the text.

II. Employment and Employment Change by Age Group

Table 1c shows the rural Oklahoma all industry average annual employment by eight age groups and a ninth aggregate of all ages (ages 14 to 99) for the 17 years, 2001 through 2017. For ‘all ages’ the average annual employment increased more than 10,000, from 136,026 in 2001 to 146,307 in 2017. During this time, four of the eight age groups decreased in employment, while the middle two age groups, ages 22 to 24 and 25 to 34, and the oldest age groups of ages 55 to 64 and ages 65 to 99, increased in employment during the 17 years. Age group 55 to 64 increased the most and age group 65 to 99 increasing the second most. In our previous report on (all) Oklahoma health industry, [Table 1a²](#) displays that all industry in the same two age groups also had the highest amount of total change.

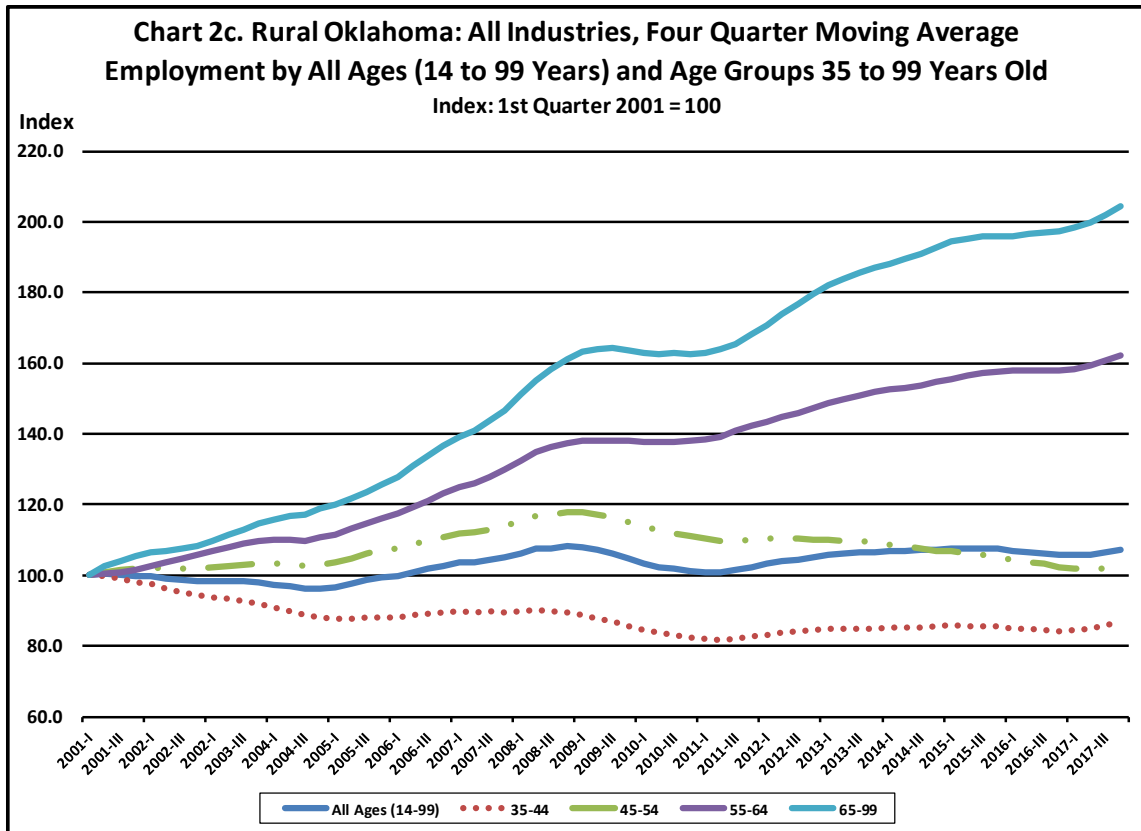
**Table 1c. Rural Oklahoma: All Industries
Annual Average Employment by Age Group**

Year	Employee Age Group								
	All Ages (14 to 99)	Ages 14 to 18	Ages 19 to 21	Ages 22 to 24	Ages 25 to 34	Ages 35 to 44	Ages 45 to 54	Ages 55 to 64	Ages 65 to 99
2001	136,026	6,303	7,806	7,597	27,844	34,692	30,134	16,389	5,258
2002	134,223	5,863	7,559	7,583	27,111	33,398	30,207	17,099	5,400
2003	133,502	5,574	7,288	7,506	26,515	32,572	30,605	17,720	5,720
2004	131,251	5,268	6,995	7,555	25,924	31,165	30,544	17,873	5,925
2005	135,300	5,380	7,203	7,966	26,868	31,141	31,725	18,755	6,261
2006	140,071	5,570	7,260	8,163	27,805	31,709	32,856	19,894	6,812
2007	143,077	5,571	7,244	8,168	28,380	31,677	33,743	20,968	7,323
2008	147,606	5,611	7,350	8,117	29,674	31,672	34,915	22,216	8,047
2009	142,754	4,617	6,871	7,678	28,795	30,271	34,068	22,284	8,167
2010	138,101	3,925	6,537	7,247	27,862	29,195	32,932	22,283	8,118
2011	139,584	3,803	6,751	7,393	28,419	29,245	32,592	22,992	8,385
2012	143,411	3,936	6,965	7,869	29,321	29,889	32,652	23,814	8,962
2013	145,281	3,840	7,074	8,212	29,868	30,059	32,354	24,542	9,328
2014	146,314	3,966	6,972	8,419	30,424	30,241	31,703	24,979	9,609
2015	146,501	4,190	6,833	8,360	30,460	30,246	31,147	25,480	9,783
2016	144,204	4,163	6,681	8,002	29,824	29,817	30,332	25,537	9,844
2017	146,307	4,191	6,999	7,878	30,079	30,649	30,133	26,177	10,198
2001 - 2017	10,281	-2,112	-807	281	2,235	-4,043	-1	9,788	4,940

Note: Using Beginning of Quarter Employment Counts.

On the next page, Chart 2c shows the employment for all industries for the four oldest age groups, as indexed to 1st quarter 2001 as being equal to 100, with all ages, years 14 to 99, as a comparison. Indexed data are handy because they allow an observer to quickly determine rates of growth by looking at a chart's vertical axis. They also allow for comparison of variables with different magnitudes.

Chart 2c shows that rural Oklahoma's all industry employment for the two oldest age groups of 55 to 64 years and 65 to 99 years, grew rapidly over the 17 years. The other four younger age groups ages 14 to 34 are not shown but may be seen in [Chart 1c³](#) in [Appendix E](#). The latter chart shows that the other four age groups either increased by a smaller amount, or in the case of the youngest two age groups, actually experienced decreasing employment, in most quarters over the 17 years studied. In our previous health report for (all) Oklahoma all industry, [Chart 1a⁴](#) shows a similar finding with the three younger age groups displaying a decline.



**Table 2c. Rural Oklahoma: Ambulatory Health Care Services
Annual Average Employment by Age Group**

Year	Employee Age Group								
	All Ages (14 to 99)	Ages 14 to 18	Ages 19 to 21	Ages 22 to 24	Ages 25 to 34	Ages 35 to 44	Ages 45 to 54	Ages 55 to 64	Ages 65 to 99
2001	3,812	70	132	183	858	1,046	912	462	148
2002	4,155	59	131	200	957	1,117	1,011	509	168
2003	4,402	54	152	210	1,010	1,131	1,085	556	201
2004	4,394	47	149	203	1,018	1,118	1,088	578	190
2005	4,435	48	142	211	1,012	1,119	1,101	612	187
2006	5,495	66	178	262	1,181	1,368	1,374	792	270
2007	6,125	69	204	283	1,343	1,497	1,503	906	318
2008	6,386	62	189	305	1,382	1,531	1,550	993	371
2009	6,653	51	178	295	1,453	1,613	1,618	1,044	399
2010	6,601	47	169	306	1,447	1,573	1,579	1,067	411
2011	6,628	40	173	302	1,457	1,588	1,539	1,117	408
2012	6,446	31	175	281	1,432	1,553	1,463	1,103	405
2013	6,126	28	163	252	1,421	1,488	1,347	1,037	386
2014	6,139	27	151	254	1,414	1,518	1,314	1,068	391
2015	6,090	30	146	258	1,375	1,504	1,334	1,056	385
2016	6,276	38	175	269	1,422	1,490	1,391	1,073	417
2017	6,851	38	212	274	1,545	1,610	1,488	1,195	486
2001 - 2017	3,039	-32	80	91	687	564	576	733	338

Note: Using Beginning of Quarter Employment Counts.

Above Table 2c displays the average annual employment for rural Oklahoma ambulatory health care, with the largest employment in the middle age groups, 25 to 34 years old and 35 to 44 years old. Considering employment change, in Table 2c the largest employment increase is in the next to oldest age group of age group of ages 55 to 64 and the second largest amount of employment increase over the 17

years is in middle age group of ages 25 to 34. The employment of the three youngest age groups either increased a much smaller amount or as with the case of the youngest age group of ages 14 to 18, actually decreased. In the previous (all) Oklahoma report, younger and older age groups displayed similar patterns of increases and decreases, as reported in [Table 2a⁵](#).

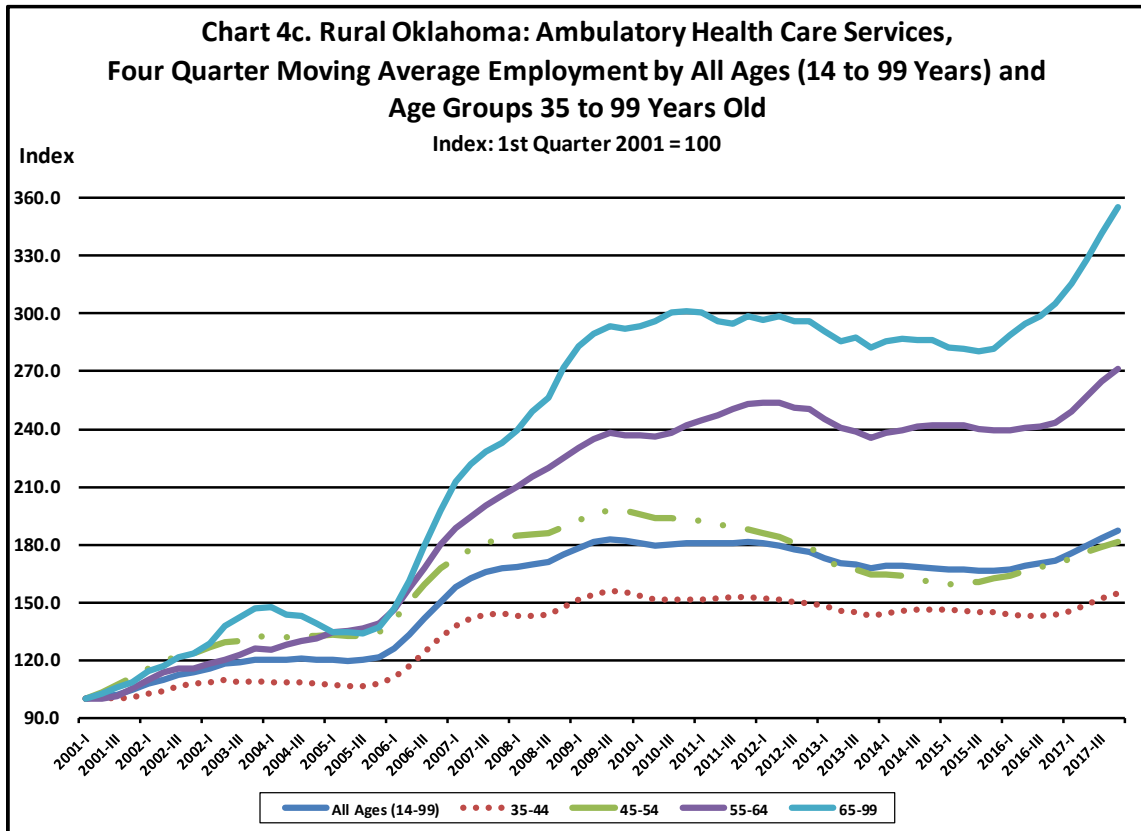


Chart 4c shows that the employment for rural Oklahoma ambulatory health care services for the two oldest age groups, ages 55 to 64 and ages 65 to 99, grew at a faster rate than the employment for the same two older age groups of all industry, as shown on the previous page in Chart 2c. Comparing the above chart to the same two older age groups in this same industry of our pervious (all) Oklahoma report, [Chart 4a⁶](#), the older of the oldest two age groups grew faster than the younger of the two oldest age groups.

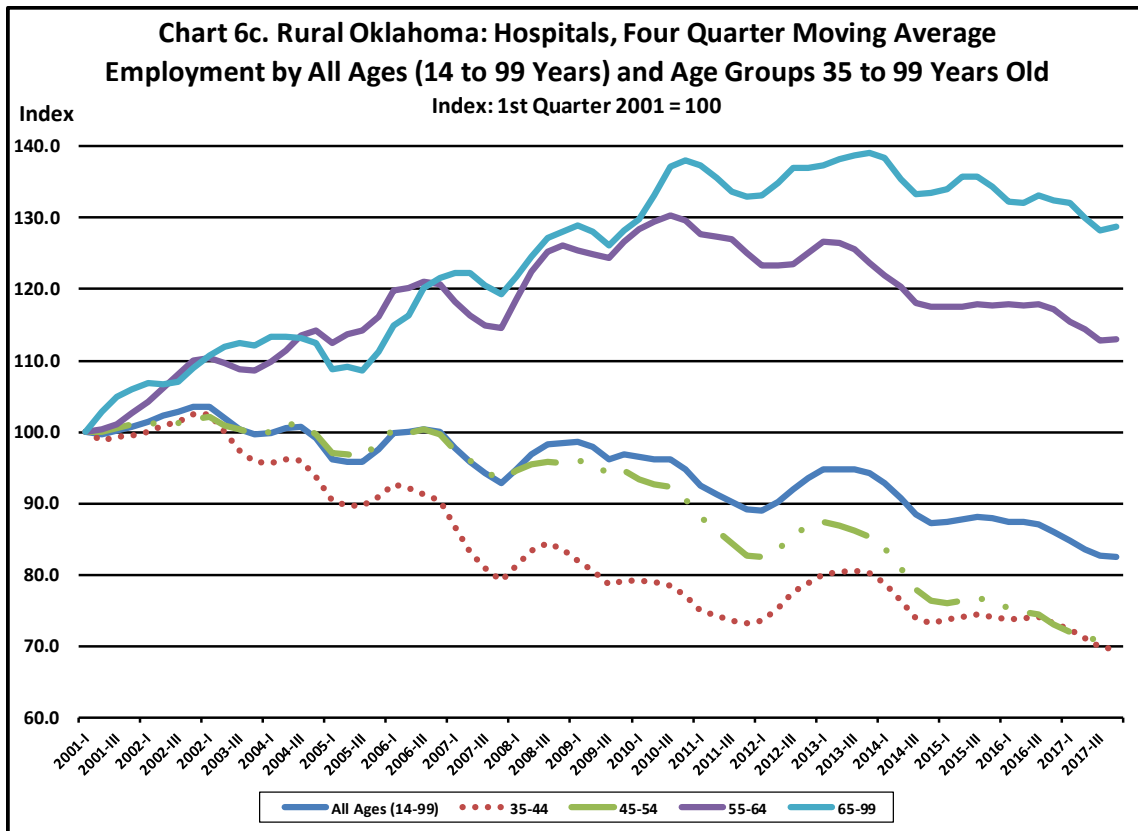
Chart 3c rural Oklahoma ambulatory health care services for these four younger age groups employment, may be viewed in [Appendix E](#). Compared to the employment in these same four younger age groups in this industry, as analyzed in our previous (all) Oklahoma report to rural Oklahoma in [Chart 3a⁷](#), the three age groups of ages 19 to 21, 22 to 24 and 25 to 34 showed similar patterns of large increase. However in both in (all) Oklahoma and rural Oklahoma, employment in age group 14 to 18 decreased.

On the next page, Table 3c reveals annual average hospital employment from 2001 through 2017. Note that the pink shaded cells indicate aggregated data, some of which are significantly distorted to protect employers' identities. The table shows that the employment of the two oldest age groups grew, while the employment in the other six age groups decreased. In our previous (all) Oklahoma report, the same age group ages 55 to 64 grew the most, but ages 25 to 34 grew the second most, as shown in [Table 3a⁸](#).

**Table 3c. Rural Oklahoma: Hospitals
Annual Average Employment by Age Group**

Year	Employee Age Group								
	All Ages (14 to 99)	Ages 14 to 18	Ages 19 to 21	Ages 22 to 24	Ages 25 to 34	Ages 35 to 44	Ages 45 to 54	Ages 55 to 64	Ages 65 to 99
2001	5,098	47	150	201	1,001	1,343	1,349	765	239
2002	5,233	61	153	216	996	1,381	1,358	820	246
2003	5,037	46	149	202	949	1,293	1,331	810	253
2004	5,019	29	128	220	940	1,264	1,331	851	254
2005	4,931	37	133	215	888	1,225	1,313	867	251
2006	5,063	36	135	244	922	1,218	1,330	900	274
2007	4,693	32	124	214	884	1,068	1,245	854	269
2008	4,983	37	128	209	976	1,127	1,275	940	289
2009	4,898	33	123	187	992	1,067	1,261	944	290
2010	4,790	28	101	192	941	1,039	1,209	967	312
2011	4,508	23	102	185	873	987	1,104	932	300
2012	4,728	21	116	201	921	1,064	1,159	933	309
2013	4,763	21	124	213	947	1,081	1,137	923	314
2014	4,414	14	102	206	906	987	1,019	876	301
2015	4,450	15	107	208	918	1,000	1,018	878	303
2016	4,351	12	110	202	888	988	975	874	299
2017	4,169	13	113	180	849	938	941	842	291
2001 - 2017	-929	-34	-37	-21	-152	-405	-408	77	52

Note: Using Beginning of Quarter Employment Counts.



On the previous page, Chart 6c displays the oldest age group of ages 55 to 64 grew the most and the oldest hospital employment for the four oldest age groups, ages 35 to 99, during the 17 years of examination. This chart shows those ages 65 to 99 and ages 55 to 64, display a dramatic increase over the 17 years of observation. The employment for the other two age groups shown in this chart both decreased in the same 17 year time period. The employment for the four younger age groups in rural Oklahoma is not shown, but may be viewed in Chart 5c, [Appendix E](#). These four age groups also decreased in employment. In our previous (all) Oklahoma health report, hospital employment for the older two age groups increased at a much higher rates as shown in [Chart 6a⁹](#), than it did in rural Oklahoma, with the other two age groups in this chart of (all) Oklahoma, not showing much change in employment.

Table 4c shows the average annual employment for rural Oklahoma nursing and residential care facilities for eight age groups and an aggregate of all ages (ages 14 to 99) for the years 2001 to 2017. The table shows that the older two age groups of ages 55 to 64 and ages 65 to 99, increased more than any others, more than hospital employment, but not as much as did these two age groups in all industry and rural Oklahoma ambulatory health care services employment. This table also shows that the other six age groups actually decreased in employment over the 17 years of observation.

Comparing the results discussed in the previous paragraph to (all) Oklahoma nursing and residential care facilities revealed in [Table 4a¹⁰](#) in our previous report, these same two older age groups had the largest increase in employment, with all but one of the remaining six age groups also decreasing in employment, ages 25 to 34.

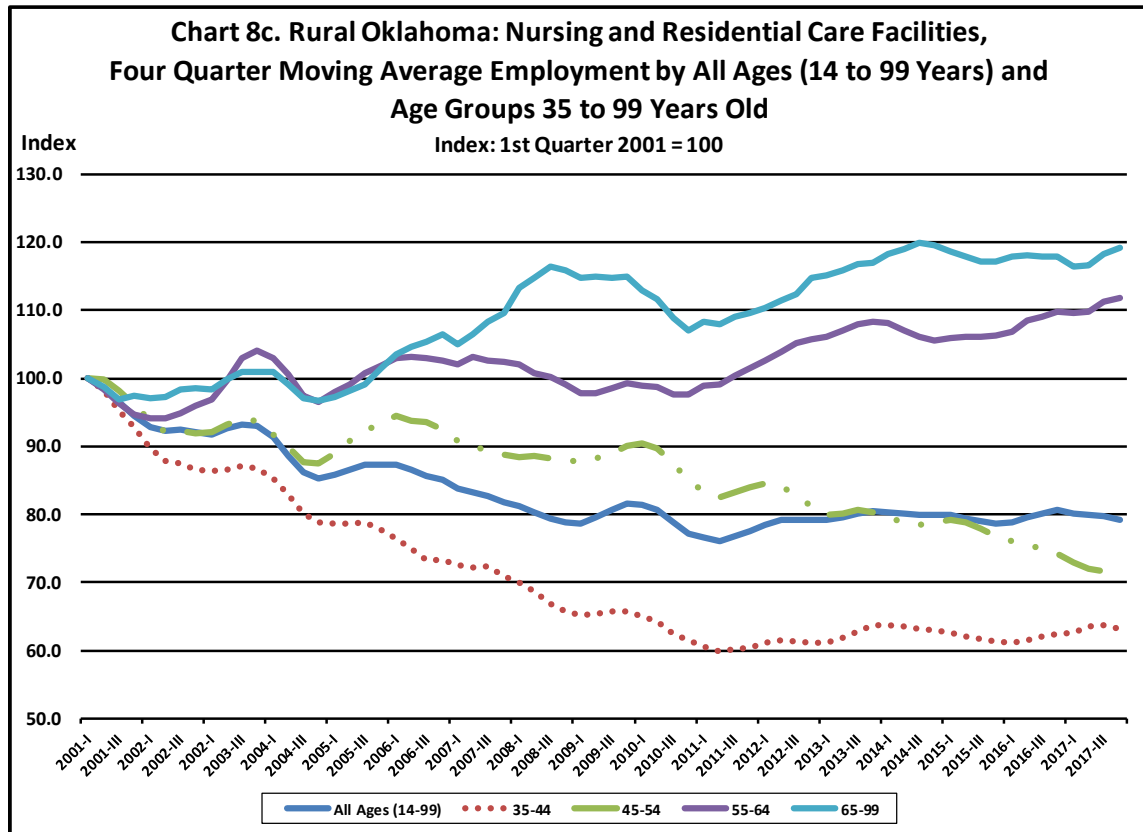
**Table 4c. Rural Oklahoma: Nursing and Residential Care Facilities
Annual Average Employment by Age Group**

Year	Employee Age Group								
	All Ages (14 to 99)	Ages 14 to 18	Ages 19 to 21	Ages 22 to 24	Ages 25 to 34	Ages 35 to 44	Ages 45 to 54	Ages 55 to 64	Ages 65 to 99
2001	7,559	346	495	465	1,497	1,858	1,629	912	354
2002	7,372	327	506	494	1,470	1,733	1,558	925	359
2003	7,441	279	508	477	1,476	1,738	1,589	1,004	367
2004	6,824	230	442	448	1,358	1,578	1,482	931	351
2005	6,985	206	419	430	1,434	1,558	1,584	983	369
2006	6,813	198	395	423	1,381	1,468	1,568	990	387
2007	6,535	186	349	407	1,277	1,422	1,505	987	399
2008	6,306	184	319	365	1,249	1,316	1,493	955	421
2009	6,529	166	367	417	1,355	1,318	1,527	958	418
2010	6,177	153	360	404	1,257	1,231	1,440	941	389
2011	6,197	151	385	383	1,268	1,208	1,424	979	398
2012	6,336	154	374	397	1,372	1,223	1,375	1,021	417
2013	6,432	136	402	416	1,369	1,275	1,362	1,045	425
2014	6,389	119	381	461	1,378	1,260	1,336	1,017	435
2015	6,297	143	368	439	1,363	1,227	1,302	1,025	426
2016	6,446	151	411	456	1,427	1,252	1,259	1,060	429
2017	6,336	146	404	416	1,382	1,267	1,207	1,079	433
2001 - 2017	-1,223	-200	-91	-49	-115	-591	-422	167	79

Note: Using Beginning of Quarter Employment Counts.

On the next page Chart 8c illustrates rural Oklahoma nursing and residential care facilities employment for the four older groups, from 2001 to 2017. The two oldest groups, ages 55 to 64 and ages 65 to 99, grew slowly over the 17-year time period. The other two age groups in this chart as well as the four other age groups in this industry are shown in Appendix E Table 7c, decreased in employment in the same interval.

As reported in our previous (all) Oklahoma report for this same industry, the two older age groups, ages 55 to 64 and ages 65 to 99, also grew and grew at a much faster rate, as shown in [Chart 8a¹¹](#).



In summary of Section II, all industry had its largest 2017 employment in ages 25 to 34 and its second largest employment in ages 35 to 44. Hospitals had the same two age groups as with their largest employment, only with the rank reversed. Ambulatory health care services had their largest 2017 employment in ages 35 to 44 and their second largest employment in ages 25 to 34. Nursing and residential care facilities had the same two age groups with their largest employment as ambulatory health care services, only with their rank reversed.

Employment change amount was examined for the four industry groups by comparing the eight age groups employment change for the 17 years, 2001 to 2017. All four industry groups had their largest amount of employment increase in ages 55 to 64 and their second largest amount in ages 65 to 99. The major difference between the rural Oklahoma employment change amounts and (all) Oklahoma change amounts in the four industry groups is that in (all) Oklahoma ambulatory health care services and hospitals had their two largest employment change in ages 25 to 34 and ages 55 to 65.

Employment change was evaluated by calculating and charting the indexed four industry groups' four quarter moving average employment over the 17 years, 2001 to 2017. For all four industry groups, the highest rate of employment increase is in ages 65 to 99 and the second highest rate of employment increase is in ages 55 to 64. In hospitals and in nursing and residential care facilities the four younger age groups had a decreased rate of employment, in ambulatory health care services three of the younger age groups had an increased rate of employment, while the youngest ages 14 to 18 had a decreased rate of employment. The largest difference in the change of employment the four younger age groups in rural

Oklahoma and in (all) Oklahoma is that in the former employment more had a more decreased or had a smaller increased rate of change than the latter. This difference is more apparent in hospital employment, where all four younger ages decreased in rural Oklahoma, while in (all) Oklahoma the two older of the four youngest age groups increased.

III. Earnings and Earnings Change by Age Group

Of special interest to employers, policy makers, career advisors, students and other health industry stakeholders is the amount of earnings and earnings change that has occurred in the industry over time. This section explores these two topics for health industries by age group, beginning with an aggregate of Oklahoma all industry for comparative purposes.

Table 1d reveals rural Oklahoma all industry average monthly earnings by eight age groups, and an aggregate of all age groups (ages 14 to 99), from 2001 to 2017. The table confirms that the larger earnings are in ages 45 to 54 and ages 55 to 64. Ages 55 to 64 had the largest amount of earnings change and ages 65 to 99 had slightly less and the second largest earnings increase over the 17 years of analysis. The younger three age groups only display average monthly earnings increases in the hundreds of dollars, during this period of time.

Not shown but in our previous report, [Table 1b¹²](#) for (all) Oklahoma and all industry for these eight age groups displays a similar distribution pattern of earnings and earning amount change; however with the ranking of the two highest age groups in each of the two categories reversed.

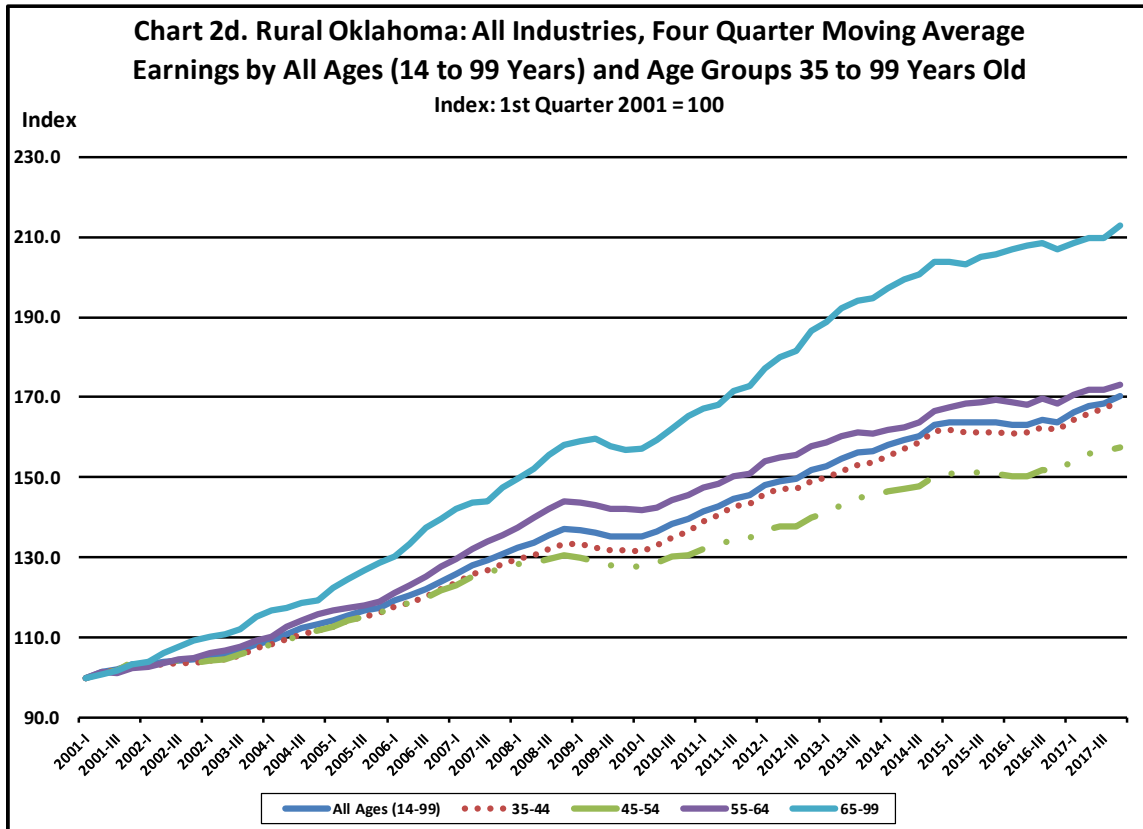
**Table 1d. Rural Oklahoma: All Industries
Average Monthly Earnings by Age Group**

Year	Employee Age Group								
	All Ages (14 to 99)	Ages 14 to 18	Ages 19 to 21	Ages 22 to 24	Ages 25 to 34	Ages 35 to 44	Ages 45 to 54	Ages 55 to 64	Ages 65 to 99
2001	\$1,799	\$427	\$857	\$1,258	\$1,692	\$2,005	\$2,291	\$2,052	\$1,235
2002	\$1,821	\$436	\$852	\$1,240	\$1,712	\$2,016	\$2,289	\$2,105	\$1,309
2003	\$1,888	\$441	\$854	\$1,250	\$1,772	\$2,089	\$2,360	\$2,190	\$1,381
2004	\$1,978	\$447	\$886	\$1,296	\$1,857	\$2,173	\$2,468	\$2,322	\$1,428
2005	\$2,048	\$452	\$908	\$1,345	\$1,913	\$2,258	\$2,563	\$2,389	\$1,542
2006	\$2,163	\$467	\$971	\$1,452	\$2,001	\$2,375	\$2,684	\$2,565	\$1,672
2007	\$2,283	\$484	\$1,040	\$1,520	\$2,115	\$2,501	\$2,812	\$2,722	\$1,766
2008	\$2,388	\$519	\$1,112	\$1,631	\$2,228	\$2,598	\$2,882	\$2,885	\$1,892
2009	\$2,359	\$521	\$1,057	\$1,571	\$2,181	\$2,564	\$2,815	\$2,850	\$1,879
2010	\$2,432	\$535	\$1,059	\$1,577	\$2,227	\$2,657	\$2,878	\$2,920	\$1,978
2011	\$2,535	\$545	\$1,123	\$1,651	\$2,345	\$2,790	\$2,975	\$3,026	\$2,071
2012	\$2,646	\$567	\$1,224	\$1,746	\$2,459	\$2,901	\$3,086	\$3,164	\$2,237
2013	\$2,731	\$579	\$1,263	\$1,823	\$2,553	\$2,991	\$3,200	\$3,227	\$2,330
2014	\$2,846	\$598	\$1,337	\$1,919	\$2,680	\$3,144	\$3,315	\$3,338	\$2,442
2015	\$2,853	\$588	\$1,331	\$1,924	\$2,666	\$3,138	\$3,329	\$3,393	\$2,462
2016	\$2,852	\$582	\$1,272	\$1,905	\$2,661	\$3,148	\$3,343	\$3,377	\$2,477
2017	\$2,966	\$606	\$1,340	\$1,999	\$2,793	\$3,291	\$3,472	\$3,470	\$2,549
2017 - 2001	\$1,167	\$179	\$483	\$741	\$1,101	\$1,286	\$1,181	\$ 1,418	\$1,314

Note: Using Beginning of Quarter Employment Counts.

On the next page Chart 2d displays the earnings change for all rural Oklahoma industries, the older four age groups and all ages (age 14 to 99). The oldest age group, ages 65 to 99, had the largest

rates of earnings change, with over a 110 percent increase. The next oldest age group, ages 55 to 64 had the second highest earnings increase of a little above 70 percent increase. Not shown here, but available in [Appendix F, Chart 1d¹³](#) for the youngest four age groups, shows that ages 17 to 21, ages 22 to 24 and ages 25 to 34 all had earnings increases above 60 percent. In our previous (all) Oklahoma report in [Chart 1b¹⁴](#) shows these same three age groups earnings increase is slightly lower.



At the top of the next page, Table 2d, provides rural Oklahoma ambulatory health care services average monthly earnings by eight age groups, compared to all age groups (ages 14 to 99). The table shows that in 2017 ages 45 to 54 had the largest earnings of \$3,035 and ages 35 to 44 had the second largest average monthly earnings of \$2,923. The table also shows that ages 35 to 44 had the largest amount of earnings change and the oldest ages 65 to 99 had the second largest earnings change, over the 17 years. In the previous (all) Oklahoma report, in [Table 2b¹⁵](#) the older 4 age groups average monthly earnings for this industry group earned over \$2,000 more,

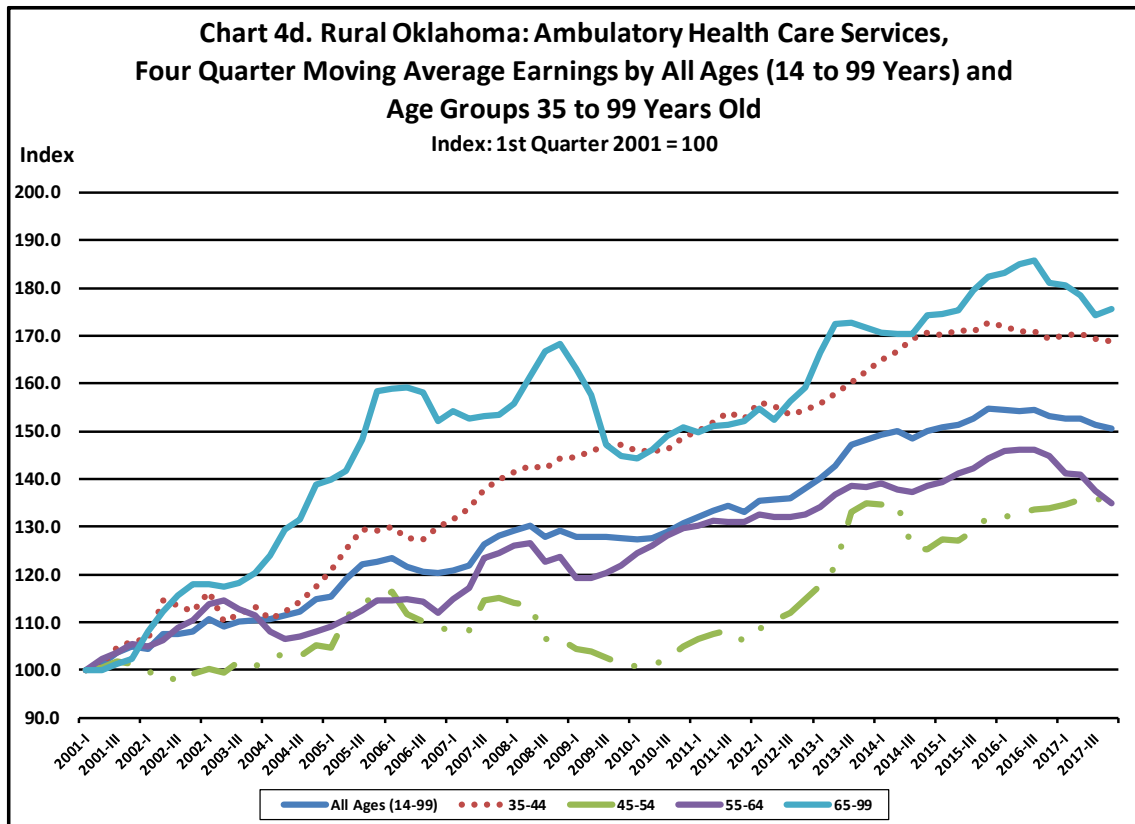
On the bottom of the next page, Chart 4d illustrates the rural Oklahoma ambulatory health care services earnings change for the older four age groups, as compared to all ages (14 to 99 years). The chart shows that ages 65 to 99 have the highest rate of earnings change of these four older age groups, and ages 35 to 44 have the second highest rate of earnings change. In the previous (all) Oklahoma report in [Chart 4b¹⁶](#), ages 65 to 99 in this same four age groups and same industry group also increased at the highest rate.

Not shown in this report, a comparison of ambulatory health care services in the four younger age groups in rural and all Oklahoma reveals that each area had two age groups exceeding a 50 percent gain in earnings: Ages 14 to 18 and ages 25 to 34 in rural Oklahoma in [Appendix F Chart 3d](#)¹⁷; and 22 to 34 in (all) Oklahoma, in [Chart 3b](#)¹⁸.

**Table 2d. Rural Oklahoma: Ambulatory Health Care Services
Average Monthly Earnings by Age Group**

Year	Employee Age Group								
	All Ages (14 to 99)	Ages 14 to 18	Ages 19 to 21	Ages 22 to 24	Ages 25 to 34	Ages 35 to 44	Ages 45 to 54	Ages 55 to 64	Ages 65 to 99
2001	\$1,807	\$401	\$800	\$1,244	\$1,608	\$1,835	\$2,266	\$2,130	\$1,196
2002	\$1,859	\$485	\$818	\$1,178	\$1,649	\$1,939	\$2,214	\$2,227	\$1,378
2003	\$1,902	\$580	\$820	\$1,134	\$1,769	\$1,959	\$2,248	\$2,252	\$1,405
2004	\$1,977	\$476	\$903	\$1,088	\$1,877	\$2,033	\$2,348	\$2,182	\$1,620
2005	\$2,113	\$533	\$882	\$1,130	\$1,868	\$2,234	\$2,561	\$2,318	\$1,860
2006	\$2,076	\$546	\$884	\$1,196	\$1,856	\$2,252	\$2,432	\$2,266	\$1,789
2007	\$2,205	\$479	\$927	\$1,281	\$1,924	\$2,418	\$2,570	\$2,516	\$1,794
2008	\$2,226	\$464	\$860	\$1,392	\$2,074	\$2,500	\$2,378	\$2,500	\$1,969
2009	\$2,196	\$530	\$835	\$1,379	\$2,080	\$2,545	\$2,259	\$2,458	\$1,692
2010	\$2,252	\$656	\$922	\$1,376	\$2,073	\$2,575	\$2,339	\$2,618	\$1,760
2011	\$2,291	\$554	\$949	\$1,392	\$2,092	\$2,645	\$2,366	\$2,648	\$1,778
2012	\$2,376	\$520	\$956	\$1,393	\$2,187	\$2,675	\$2,561	\$2,675	\$1,865
2013	\$2,553	\$597	\$957	\$1,399	\$2,244	\$2,813	\$3,021	\$2,794	\$2,006
2014	\$2,582	\$575	\$930	\$1,354	\$2,412	\$2,953	\$2,799	\$2,795	\$2,036
2015	\$2,667	\$518	\$948	\$1,415	\$2,466	\$2,989	\$2,953	\$2,911	\$2,136
2016	\$2,639	\$542	\$913	\$1,392	\$2,426	\$2,933	\$2,994	\$2,923	\$2,118
2017	\$2,595	\$529	\$865	\$1,404	\$2,399	\$2,923	\$3,035	\$2,727	\$2,054
2017 - 2001	\$788	\$128	\$65	\$160	\$791	\$1,088	\$769	\$597	\$858

Note: Using Beginning of Quarter Employment Counts.



**Table 3d. Rural Oklahoma: Hospitals
Average Monthly Earnings by Age Group**

Year	Employee Age Group								
	All Ages (14 to 99)	Ages 14 to 18	Ages 19 to 21	Ages 22 to 24	Ages 25 to 34	Ages 35 to 44	Ages 45 to 54	Ages 55 to 64	Ages 65 to 99
2001	\$1,805	\$410	\$767	\$1,114	\$1,564	\$2,026	\$2,043	\$1,917	\$1,390
2002	\$1,866	\$485	\$779	\$1,108	\$1,637	\$2,049	\$2,123	\$2,014	\$1,555
2003	\$1,946	\$488	\$784	\$1,158	\$1,739	\$2,102	\$2,230	\$2,050	\$1,695
2004	\$2,097	\$508	\$847	\$1,282	\$1,870	\$2,184	\$2,436	\$2,253	\$1,734
2005	\$2,211	\$485	\$869	\$1,358	\$1,959	\$2,363	\$2,542	\$2,360	\$1,821
2006	\$2,333	\$559	\$930	\$1,416	\$2,029	\$2,505	\$2,645	\$2,558	\$2,111
2007	\$2,532	\$545	\$915	\$1,521	\$2,091	\$2,730	\$2,865	\$2,868	\$2,415
2008	\$2,677	\$628	\$989	\$1,623	\$2,258	\$2,838	\$2,909	\$3,180	\$2,624
2009	\$2,785	\$798	\$1,086	\$1,642	\$2,302	\$2,966	\$2,952	\$3,391	\$2,802
2010	\$2,773	\$639	\$1,087	\$1,637	\$2,267	\$2,907	\$2,919	\$3,374	\$2,885
2011	\$2,811	\$726	\$1,185	\$1,575	\$2,292	\$2,966	\$2,928	\$3,388	\$3,064
2012	\$2,948	\$754	\$1,201	\$1,724	\$2,420	\$3,085	\$3,080	\$3,532	\$3,386
2013	\$2,954	\$801	\$1,196	\$1,655	\$2,499	\$3,137	\$3,051	\$3,498	\$3,473
2014	\$3,082	\$855	\$1,209	\$1,722	\$2,582	\$3,305	\$3,219	\$3,552	\$3,695
2015	\$3,281	\$974	\$1,267	\$1,807	\$2,685	\$3,512	\$3,472	\$3,811	\$3,985
2016	\$3,312	\$669	\$1,311	\$1,800	\$2,689	\$3,479	\$3,632	\$3,799	\$4,022
2017	\$3,394	\$872	\$1,342	\$1,767	\$2,884	\$3,547	\$3,824	\$3,818	\$3,720
2017 - 2001	\$1,589	\$462	\$575	\$653	\$1,320	\$1,521	\$1,781	\$1,901	\$2,330

Note: Using Beginning of Quarter Employment Counts.

Table 3d shows the rural Oklahoma hospitals average monthly earnings by eight age groups and by all ages (14 to 99 years). Note that the pink cells in the table are significantly distorted, in order to avoid identifying employees with these earnings. The table confirms that in 2017 hospital employment in ages 45 to 54 and ages 55 to 64 had the two highest average monthly earnings, of \$3,824 and \$3,818, respectively. Age group 65 to 99 years had the largest earnings amount change and age group 55 to 65 years had the second largest earnings amount change, during the 17 year interval.

At the top of the next page, Chart 5d displays rural Oklahoma hospitals earnings change for the youngest four of eight age groups, ages 14 to 34; while at the bottom of the next page Chart 6d does the same for the oldest four of age groups 35 to 99. The earnings for ages 65 to 99 grew an astounding 175 percent. The second highest earnings change rate for the eight groups is ages 55 to 64 with a little over 105 percent increase. However, a very close third is ages 14 to 18, which although showed volatile changes from year to year, ended in year 2017 with a little over 104 percent change, over the 17 years. Not shown here, but in our previous report for (all) Oklahoma, in [Chart 6b](#)¹⁹ shows similar pattern of age group change, as Chart 6d does for the older four age groups.

The fourth and remaining health industry group earnings change by age group to be reported is nursing and residential care facilities, for rural Oklahoma.

Chart 5d. Rural Oklahoma: Hospitals, Four Quarter Moving Average Earnings by All Ages (14 to 99 Years) and Age Groups 14 to 34 Years Old

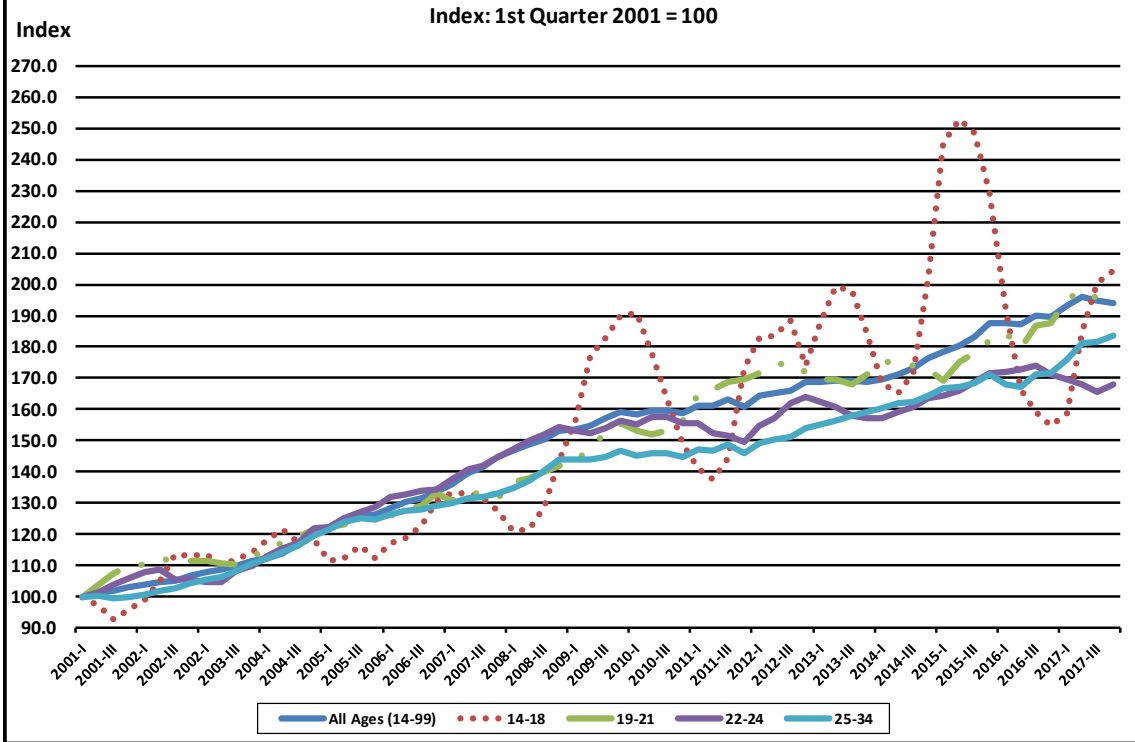
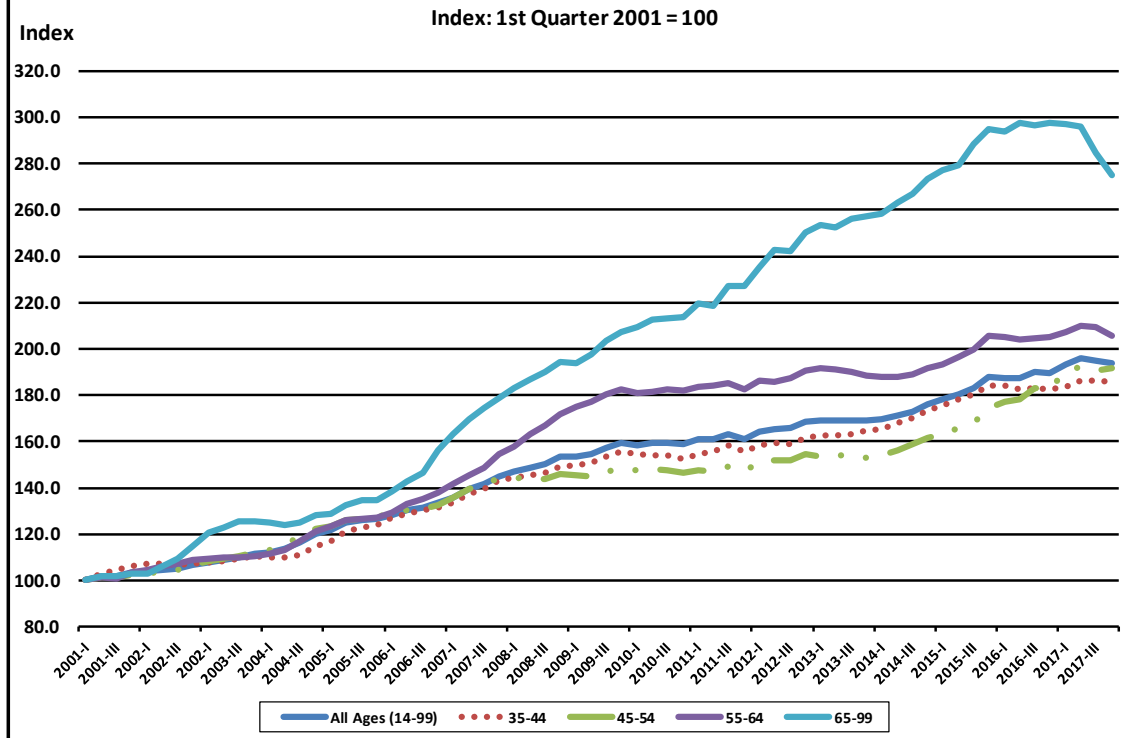


Chart 6d. Rural Oklahoma: Hospitals, Four Quarter Moving Average Earnings by All Ages (14 to 99 Years) and Age Groups 35 to 99 Years Old



**Table 4d. Rural Oklahoma: Nursing and Residential Care Facilities
Average Monthly Earnings by Age Group**

Year	Employee Age Group								
	All Ages (14 to 99)	Ages 14 to 18	Ages 19 to 21	Ages 22 to 24	Ages 25 to 34	Ages 35 to 44	Ages 45 to 54	Ages 55 to 64	Ages 65 to 99
2001	\$1,183	\$533	\$730	\$895	\$1,083	\$1,325	\$1,368	\$1,385	\$1,127
2002	\$1,202	\$565	\$771	\$900	\$1,104	\$1,359	\$1,385	\$1,392	\$1,170
2003	\$1,233	\$564	\$794	\$886	\$1,147	\$1,401	\$1,401	\$1,372	\$1,235
2004	\$1,290	\$610	\$817	\$944	\$1,195	\$1,455	\$1,472	\$1,436	\$1,236
2005	\$1,297	\$584	\$808	\$902	\$1,178	\$1,431	\$1,506	\$1,485	\$1,215
2006	\$1,379	\$607	\$832	\$1,001	\$1,235	\$1,508	\$1,602	\$1,566	\$1,382
2007	\$1,460	\$618	\$885	\$1,017	\$1,310	\$1,603	\$1,684	\$1,671	\$1,401
2008	\$1,529	\$627	\$881	\$1,106	\$1,360	\$1,651	\$1,745	\$1,809	\$1,487
2009	\$1,541	\$619	\$988	\$1,144	\$1,347	\$1,680	\$1,753	\$1,818	\$1,556
2010	\$1,604	\$652	\$1,060	\$1,175	\$1,414	\$1,745	\$1,836	\$1,877	\$1,550
2011	\$1,632	\$661	\$1,025	\$1,161	\$1,444	\$1,788	\$1,880	\$1,908	\$1,562
2012	\$1,634	\$680	\$1,030	\$1,188	\$1,439	\$1,736	\$1,900	\$1,956	\$1,603
2013	\$1,675	\$754	\$1,082	\$1,252	\$1,479	\$1,755	\$1,955	\$2,005	\$1,605
2014	\$1,743	\$771	\$1,107	\$1,304	\$1,516	\$1,820	\$2,086	\$2,096	\$1,636
2015	\$1,791	\$770	\$1,141	\$1,342	\$1,585	\$1,898	\$2,083	\$2,152	\$1,732
2016	\$1,805	\$811	\$1,187	\$1,365	\$1,605	\$1,889	\$2,121	\$2,165	\$1,805
2017	\$1,806	\$822	\$1,179	\$1,372	\$1,609	\$1,877	\$2,089	\$2,158	\$1,872
2017 - 2001	\$623	\$289	\$449	\$477	\$526	\$552	\$721	\$773	\$745

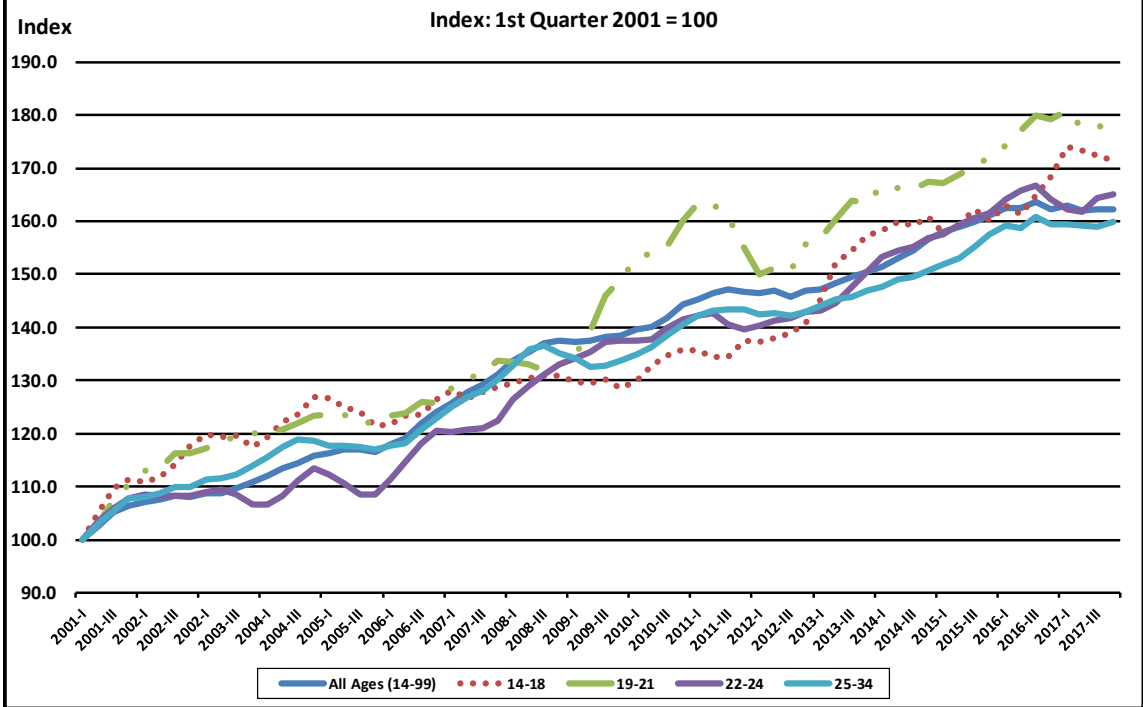
Note: Using Beginning of Quarter Employment Counts.

Table 4d exhibits the average monthly earnings of rural Oklahoma nursing and residential facilities, as shown by eight age groups, as compared to an aggregate of all ages, ages 14 to 99. The table shows that ages 55 to 64 and 45 to 54, had the largest and second largest 2017 average monthly earnings, respectively; of \$2,158 for the former and \$2,089 for the latter. On the other hand, it is ages 55 to 64 and ages 65 to 99 that had the largest and second largest average monthly earnings amount change, respectively; over the 17 years of observance.

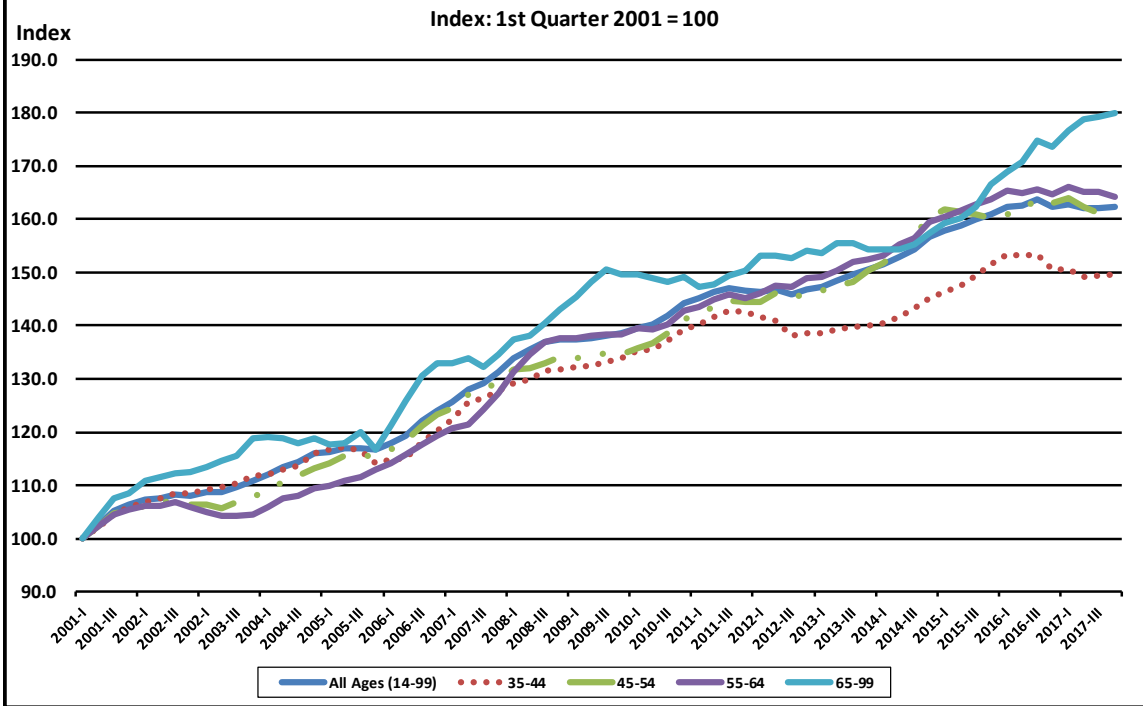
At the top of the next page, Chart 7d displays rural Oklahoma nursing and residential care facilities earnings change for the youngest four of eight age groups, ages 14 to 34; while at the bottom of the next page Chart 8d does the same for the oldest four of age groups 35 to 99. The earning for ages 65 to 99 grew at a hearty 80 percent. A very close second highest earnings change rate for the eight groups is ages 19 to 21 with a 78 percent increase. The third highest earnings change is ages 14 to 18, which ended in year 2017 with a little over 71 percent change, over the 17 years.

Not shown here, but in our previous report for (all) Oklahoma, in [Chart 8b²⁰](#) shows similar pattern of age group change for the oldest four of the eight age groups, as Chart 8d does for the rural Oklahoma oldest four age groups. Also not shown, but in our previous (all) Oklahoma report, [Chart 7b²¹](#) shows a similar pattern of change for the younger four age groups and Chart 7d displays for the younger four age groups.

**Chart 7d. Rural Oklahoma: Nursing and Residential Care Facilities,
Four Quarter Moving Average Earnings by All Ages (14 to 99 Years) and
Age Groups 14 to 34 Years Old**



**Chart 8d. Rural Oklahoma: Nursing and Residential Care Facilities,
Four Quarter Moving Average Earnings by All Ages (14 to 99 Years) and
Age Groups 35 to 99 Years Old**



In summary of Section III, the analysis of rural Oklahoma health average earnings by industry groups and age groups in year 2017 determined that ages 45 to 55 had their largest average earnings in the three industry groups of all industries, ambulatory health care services and hospitals, while the fourth industry group of nursing and residential care had their largest average earnings in ages 55 to 64. All industries and hospitals had their second largest average earnings that year in in ages 55 to 64, while ambulatory and health care services had their second largest earnings in ages 35 to 44 and nursing care and residential care facilities had their second largest average earnings in ages 45 to 54 in year 2017.

Average monthly earnings change amounts for years 2001 to 2017 was also calculated for all four industry groups by eight age groups and the aggregate of all ages. It was found that in all industries and in nursing care and residential care facilities, the largest amount of change is ages 55 to 64 and their second largest average earnings change is in ages 65 to 99. Ambulatory and health care services and hospitals had their largest amount of earnings change in ages 65 to 99, while the former industry group had their largest average earnings average change in ages 25 to 34 and the latter industry group had their largest average earnings change in ages 55 to 64.

The four quarter moving averages earnings change rate was calculated and charted for the four industry groups by eight age groups. In all four industry groups, ages 65 to 99 average earning grew the most in ages 65 to 99; in all industries growing more than 110 percent and in hospitals growing more than 175 percent, while in ambulatory and health care services growing more about 75 percent and in nursing care and residential care facilities growing 80 percent over the 17 years.

The second highest average earnings increase in all industries and hospitals is ages 55 to 64; while the second highest in ambulatory and health care services is ages 35 to 44 and the second highest average earnings increase in nursing care and residential care facilities is in ages 14 to 18, the latter showing volatile changes in earnings, from 2001 to 2017. The second highest average earnings increase in hospitals is over 105 percent and the second highest average earnings increase in the remaining three observed industry groups change in amounts ranging between 68 percent and 74 percent.

In a comparison of the rural Oklahoma four health industry groups with the same (all) Oklahoma groups: Although there are individual age groups differences, each of the four health industry groups showed similar patterns of average earnings change with their counter-part in the other geographical area.

IV. Employment and Employment Change by Age Group and Gender Group

Another beneficial way of examining health industry employment is by both age and gender concurrently. Traditionally and historically females have had the larger portion of employment than males in the health industry. Has this larger female than male portion employed in the health industry changed in recent years? Below Table 6c displays rural Oklahoma all industry average annual male employment by age.

**Table 6c. Rural Oklahoma: All Industries
Annual Average Employment for Males by Age Group**

Year	Employee Age Group								
	All Ages (14 to 99)	Ages 14 to 18	Ages 19 to 21	Ages 22 to 24	Ages 25 to 34	Ages 35 to 44	Ages 45 to 54	Ages 55 to 64	Ages 65 to 99
2001	65,716	2,962	3,971	4,042	14,366	16,439	13,807	7,656	2,469
2002	63,785	2,737	3,744	3,928	13,747	15,586	13,725	7,797	2,519
2003	63,666	2,609	3,595	3,923	13,528	15,376	13,962	7,982	2,690
2004	62,956	2,468	3,491	3,960	13,348	14,738	14,129	7,985	2,834
2005	65,267	2,523	3,591	4,159	13,904	14,820	14,857	8,414	2,997
2006	67,707	2,633	3,615	4,288	14,488	15,137	15,441	8,849	3,254
2007	69,204	2,588	3,723	4,256	14,686	15,083	15,879	9,460	3,525
2008	71,542	2,641	3,766	4,255	15,337	15,049	16,450	10,170	3,873
2009	68,127	2,114	3,455	3,914	14,558	14,228	15,833	10,174	3,849
2010	66,449	1,783	3,229	3,747	14,235	13,950	15,423	10,251	3,827
2011	68,557	1,756	3,390	3,908	14,876	14,397	15,507	10,744	3,976
2012	71,323	1,849	3,649	4,219	15,473	14,833	15,747	11,291	4,260
2013	72,933	1,820	3,659	4,446	15,873	15,032	15,765	11,863	4,472
2014	73,988	1,892	3,642	4,528	16,258	15,241	15,588	12,233	4,604
2015	73,792	1,975	3,573	4,431	16,138	15,131	15,310	12,486	4,748
2016	71,460	1,903	3,365	4,188	15,432	14,739	14,698	12,424	4,708
2017	73,677	1,938	3,620	4,243	15,849	15,434	14,798	12,874	4,918
2001 - 2017	7,961	-1,024	-351	201	1,483	-1,005	991	5,218	2,449

Note: Using Beginning of Quarter Employment Counts.

Table 6c shows that all industries in year 2017 had their largest male employment in ages 25 to 34 and their second largest male employment in ages 35 to 44. On the other hand, all industries had their largest male employment increase in ages 55 to 64 and their second largest male employment increase in ages 65 to 99. Three of the other six age groups decreased in male employment. In our previous report for (all) Oklahoma, all industries males employment in the other six remaining age groups decreased in employment in all but one of the age groups, ages 25 to 34 as shown in [Table 6a²²](#), over the 17 years of observation.

At the top of the next page, Table 7c displays that in 2017 all industries had their largest female employment in ages 45 and 55, and their second largest employment in ages 35 and 44. However, all industries had their largest female employment increase in ages 55 to 64 and their second largest female employment increase in ages 65 to 99. Four of the other six age groups decreased in female employment. In our previous report for (all) Oklahoma, all industries females employment in the other six remaining age groups decreased in employment in all but two of the age groups, ages 25 to 34 and ages 22 to 24 as shown in [Table 7a²³](#), over the 17 years.

**Table 7c. Rural Oklahoma: All Industries
Annual Average Employment for Females by Age Group**

Year	Employee Age Group								
	All Ages (14 to 99)	Ages 14 to 18	Ages 19 to 21	Ages 22 to 24	Ages 25 to 34	Ages 35 to 44	Ages 45 to 54	Ages 55 to 64	Ages 65 to 99
2001	70,310	3,340	3,834	3,555	13,478	18,252	16,326	8,733	2,789
2002	70,437	3,125	3,814	3,655	13,364	17,812	16,481	9,302	2,880
2003	69,836	2,965	3,693	3,582	12,987	17,196	16,643	9,738	3,030
2004	68,294	2,799	3,504	3,594	12,575	16,427	16,415	9,887	3,090
2005	70,033	2,856	3,611	3,807	12,964	16,320	16,867	10,341	3,264
2006	72,363	2,936	3,645	3,874	13,317	16,571	17,415	11,045	3,558
2007	73,873	2,983	3,520	3,913	13,694	16,593	17,863	11,507	3,797
2008	76,063	2,971	3,584	3,861	14,337	16,623	18,464	12,046	4,174
2009	74,626	2,503	3,415	3,764	14,237	16,043	18,235	12,110	4,317
2010	71,652	2,141	3,308	3,500	13,626	15,244	17,509	12,031	4,290
2011	71,027	2,046	3,360	3,485	13,543	14,848	17,085	12,248	4,409
2012	72,088	2,087	3,316	3,651	13,847	15,055	16,905	12,522	4,702
2013	72,347	2,020	3,413	3,766	13,995	15,027	16,588	12,679	4,855
2014	72,327	2,074	3,330	3,891	14,166	14,999	16,115	12,746	5,004
2015	72,708	2,215	3,259	3,928	14,322	15,115	15,837	12,994	5,035
2016	72,744	2,260	3,316	3,814	14,392	15,077	15,633	13,112	5,136
2017	72,629	2,252	3,379	3,634	14,230	15,214	15,334	13,303	5,280
2001 - 2017	2,319	-1,088	-455	79	752	-3,038	-992	4,570	2,491

Note: Using Beginning of Quarter Employment Counts.

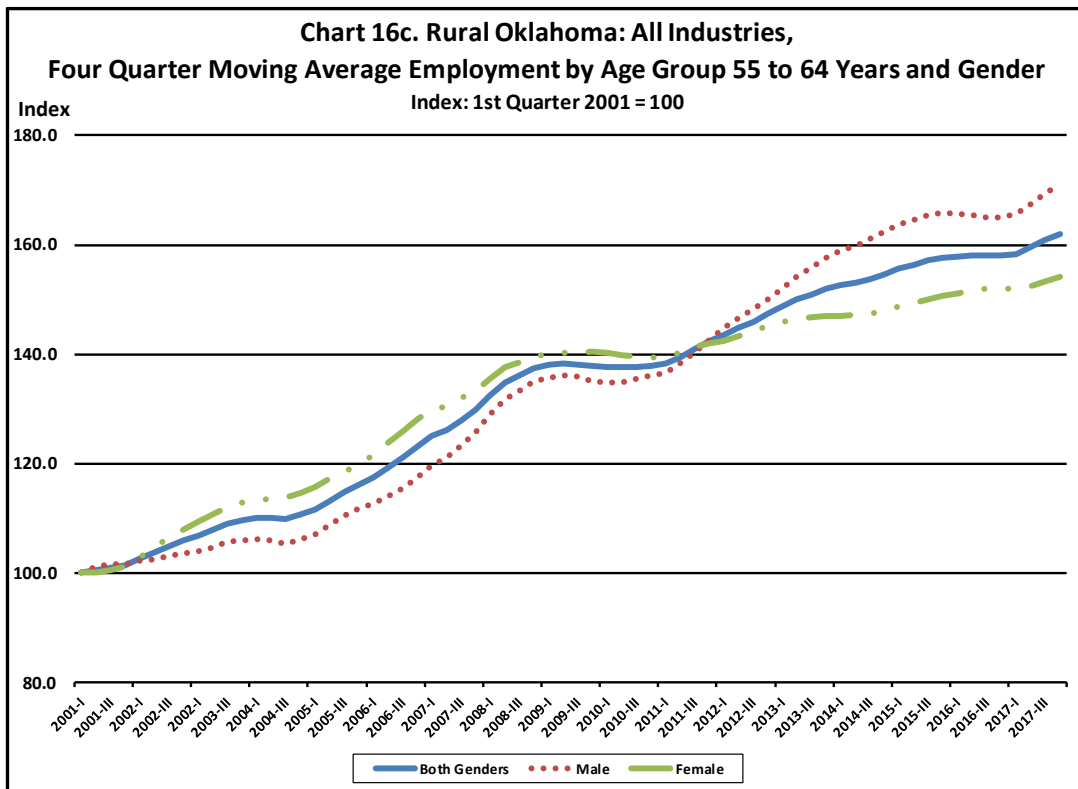
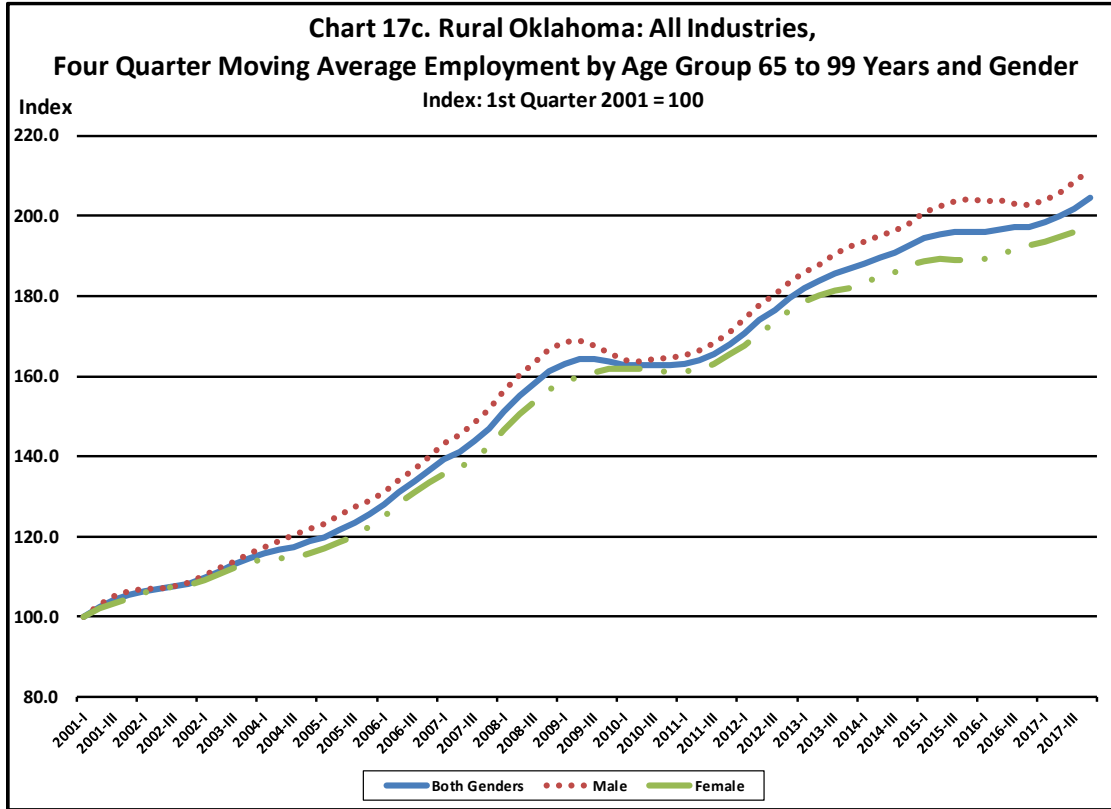


Chart 16c shows the all industry employment in rural Oklahoma for ages 55 to 64 by gender and at the top of the next page, Chart 17c show the same for ages 65 to 99; as indexed to 1st quarter 2001 equal to 100. Male employment increased about 70 percent in the former and just over 110 percent in the latter, while female employment increased a little over 54 percent in Chart 16c, and 98 percent in Chart 17c.

Charts for the other six age groups in all industries are in [Appendix G](#). Not shown, but in our previous report for (all) Oklahoma health groups' employment for all industries age groups and gender groups, [Chart 16a](#)²⁴ and [Chart 17a](#)²⁵ displayed similar patterns.



**Table 9c. Rural Oklahoma: Ambulatory Health Care Services
Annual Average Employment for Males by Age Group**

Year	Employee Age Group								
	All Ages (14 to 99)	Ages 14 to 18	Ages 19 to 21	Ages 22 to 24	Ages 25 to 34	Ages 35 to 44	Ages 45 to 54	Ages 55 to 64	Ages 65 to 99
2001	719	18	22	33	147	188	183	86	38
2002	758	12	20	32	189	189	183	93	37
2003	804	13	25	30	192	208	199	95	39
2004	806	10	24	32	182	220	193	105	39
2005	802	13	26	33	187	204	193	103	39
2006	893	12	26	38	186	235	216	127	50
2007	960	13	30	34	204	247	220	152	57
2008	936	14	22	44	175	239	213	160	68
2009	915	13	23	35	168	236	212	157	69
2010	955	9	19	44	176	246	216	166	76
2011	1,021	9	19	49	193	267	213	190	78
2012	1,014	7	23	36	209	254	213	188	81
2013	1,036	7	25	35	228	254	206	192	87
2014	1,045	6	26	30	223	260	210	204	83
2015	1,023	6	27	30	208	249	223	194	82
2016	1,015	4	30	41	211	240	227	174	85
2017	1,042		32	41	214	252	243	167	87
2001 - 2017	323	-18	10	8	67	64	60	81	49

Note: Using Beginning of Quarter Employment Counts.

At the bottom of the previous page, Table 9c shows rural Oklahoma ambulatory health care services average annual employment for males by age group. Below, Table 10a shows the same for females. The pink cells in the former table, indicates aggregated data, some of which are significantly distorted to protect employers identities. The two tables confirm that in 2017 Oklahoma ambulatory health care services average annual employment for males was only about 38 percent of the employment of females. The largest employment of males is in ages 34 to 44 and the second largest employment of males is in ages 54 to 64. For females, these same two age groups are largest, only the rank is reversed. In both males and females, the amount of employment change is largest in ages 55 to 64 and the second largest amount of employment change is in ages 25 to 34. Charts for other six rural Oklahoma age groups in this industry are available in [Appendix G](#).

In our previous report on (all) Oklahoma in ambulatory health care services, females employment is more than three times that of males.

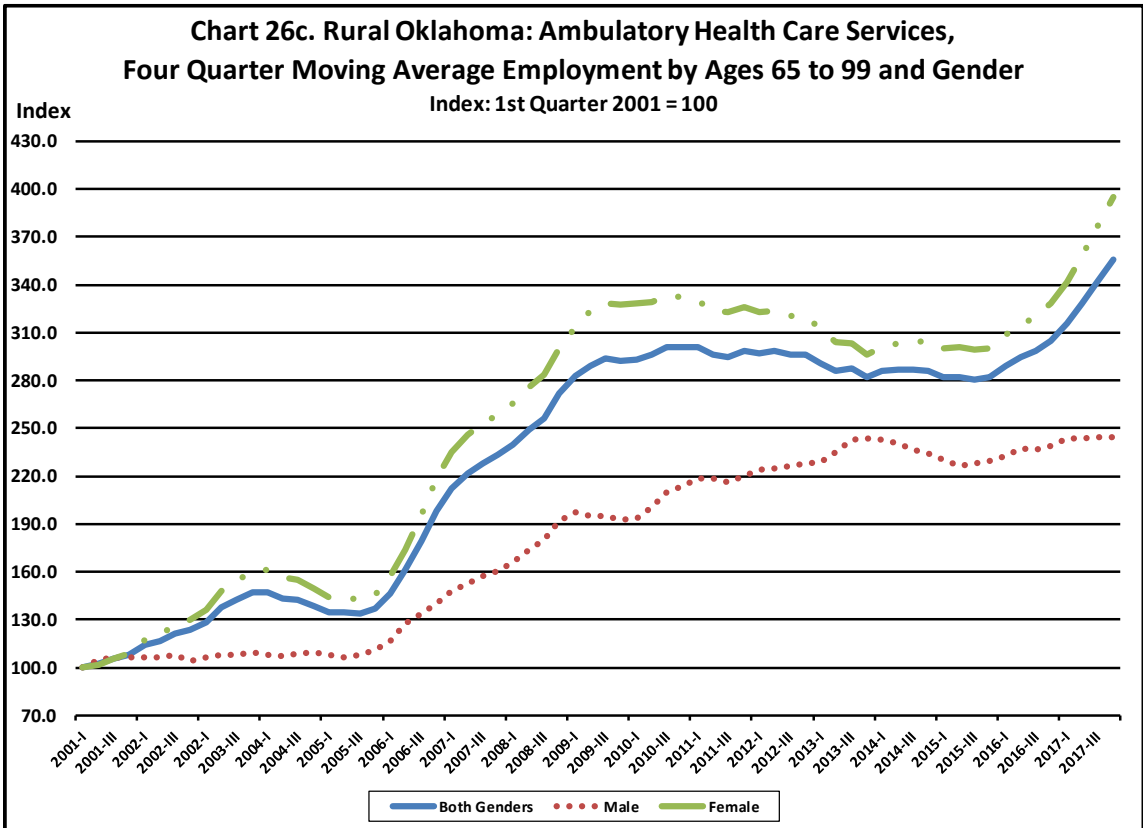
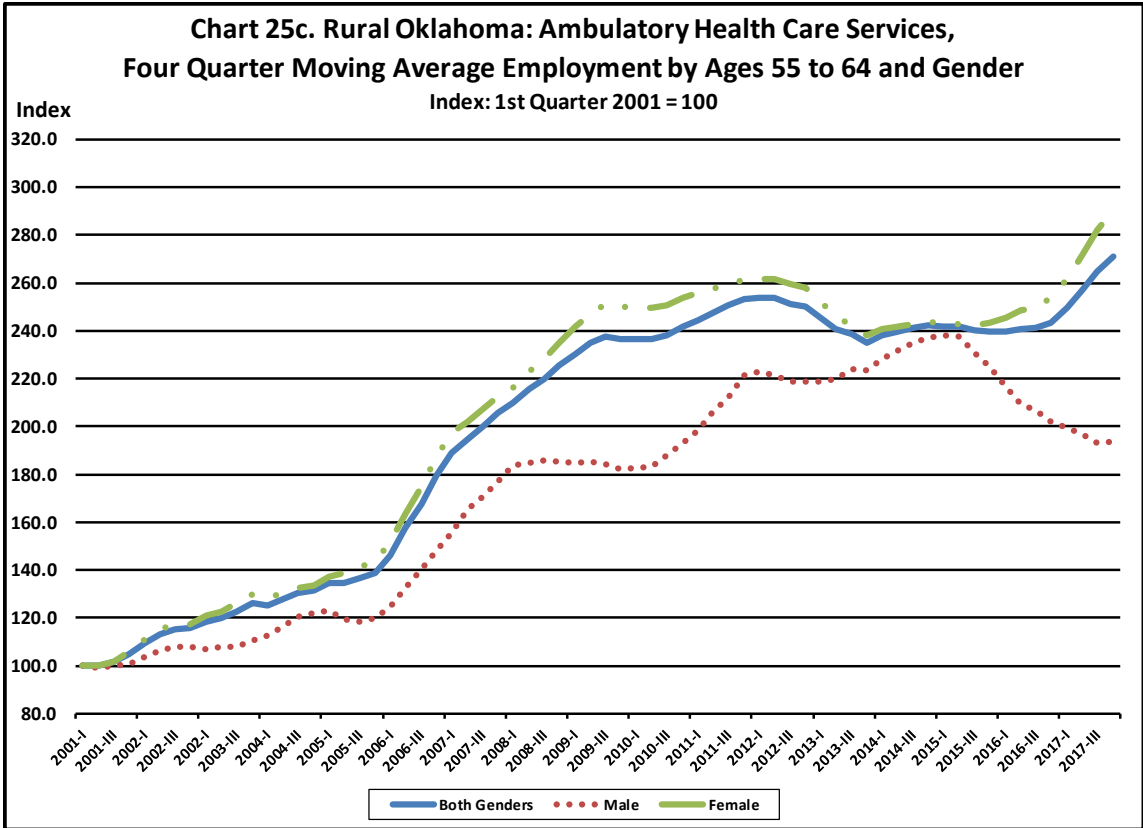
**Table 10c. Rural Oklahoma: Ambulatory Health Care Services
Annual Average Employment for Females by Age Group**

Year	Employee Age Group								
	All Ages (14 to 99)	Ages 14 to 18	Ages 19 to 21	Ages 22 to 24	Ages 25 to 34	Ages 35 to 44	Ages 45 to 54	Ages 55 to 64	Ages 65 to 99
2001	3,092	51	109	149	710	857	728	375	110
2002	3,397	47	111	168	767	928	827	416	131
2003	3,597	40	127	180	817	923	886	461	162
2004	3,587	37	124	171	836	898	895	473	150
2005	3,632	35	116	178	825	914	907	509	147
2006	4,601	53	152	224	994	1,133	1,157	665	221
2007	5,165	55	173	249	1,138	1,250	1,282	754	261
2008	5,449	47	166	261	1,207	1,292	1,337	833	303
2009	5,738	38	155	259	1,285	1,376	1,406	887	330
2010	5,646	38	150	262	1,270	1,326	1,362	900	335
2011	5,606	31	153	253	1,264	1,320	1,327	926	329
2012	5,431	24	152	245	1,223	1,299	1,250	914	323
2013	5,089	21	138	217	1,193	1,233	1,141	844	299
2014	5,093	20	126	223	1,190	1,257	1,104	863	307
2015	5,067	24	118	227	1,167	1,254	1,111	862	303
2016	5,261	33	145	227	1,210	1,250	1,164	899	331
2017	5,809	34	179	232	1,331	1,358	1,245	1,028	399
2001 - 2017	2,717	-17	70	83	621	501	517	653	289

Note: Using Beginning of Quarter Employment Counts.

At the top of the next page, Chart 25c shows the ambulatory health care services employment change for ages 55 to 64 the second largest in amount of change by gender, and Chart 26c at the bottom of the next page shows the change for ages 65 to 99 is the largest employment change in the eight age groups by gender; as indexed to 1st quarter 2001 equal to 100. In ages 55 to 64 females employment changed over 190 percent and males employment changed over 93 percent, while in ages 65 to 99 females employment changed 295 percent and males employment changed 144 percent. The charts for the remaining six age groups in ambulatory health care services may be viewed in [Appendix G](#).

Not shown, but in our previous report for (all) Oklahoma ambulatory health care services in [Chart 25a²⁶](#) displays ages 55 to 64 also the second largest in employment change and in [Chart 26a²⁷](#) shows ages 65 to 99 is the largest in employment change of the eight age groups. Females employment in this industry in (all) Oklahoma in ages 55 to 64 changed more than male employment, while in ages 65 to 99 males changed more than females. However, neither of the other two gender groups in either of these two age groups had the employment amount change as females did in ages 65 to 99 in rural Oklahoma, at 295 percent.



**Table 12c. Rural Oklahoma: Hospitals
Annual Average Employment for Males by Age Group**

Year	Employee Age Group								
	All Ages (14 to 99)	Ages 14 to 18	Ages 19 to 21	Ages 22 to 24	Ages 25 to 34	Ages 35 to 44	Ages 45 to 54	Ages 55 to 64	Ages 65 to 99
2001	907	12	27	37	176	240	248	129	36
2002	919	9	27	42	167	250	245	140	34
2003	891	9	28	31	170	233	247	139	31
2004	910	5	20	33	172	246	246	151	34
2005	924	10	20	42	146	247	254	160	42
2006	937	9	21	41	167	243	244	159	50
2007	867	10	17	30	159	216	225	158	50
2008	912	7	17	26	164	226	228	184	56
2009	925	8	19	34	165	209	232	195	62
2010	925		23	35	158	206	230	200	66
2011	881		17	30	154	210	202	197	66
2012	918	4	20	31	166	217	219	191	67
2013	916	5	18	40	166	218	201	197	68
2014	853		11	37	158	198	187	189	67
2015	866		14	30	164	197	193	192	71
2016	840		17	28	157	191	184	188	73
2017	815		23	29	162	176	176	177	67
2001 - 2017	-92	"	-4	-8	-14	-64	-72	48	31

Note: Using Beginning of Quarter Employment Counts.

Table 12c above shows the rural Oklahoma hospitals average annual employment for males by age group, and on the next page, Table 13c shows the same for females. Note that the pink shaded cells indicate aggregated data, some of which are significantly distorted to protect employers' identities. Males had the highest 2017 employment in ages 55 to 64 and females had the highest 2017 hospital employment in ages 45 to 54. Males had the second highest employment tied in ages 35 to 44 and ages 45 to 55, while females had the second highest 2017 hospital employment in age 35 to 44. In 2017, female hospital employment in all ages was over four times that of males in that age group.

These two tables display that the amount of male and female hospital employment change from 2001 to 2017 was highest in ages 55 to 64 and second highest in ages 65 to 99. Additionally, the male hospital employment declined in the five age groups that could be determined and also declined in the remaining six age groups of female hospital employment. Moreover for both male and females, rural hospital employment declined over the 17 years of observation.

Not shown, but a comparison of these two rural Oklahoma charts of male and female hospital employment with their counterparts in our previous reported (all) Oklahoma hospital in Chart 12a and Chart 13a determines that the ratio of male to female was smaller in the rural areas, and also that in both genders, more of six younger of the eight ages groups' employment declined in rural hospitals, than it did in (all) Oklahoma hospitals.

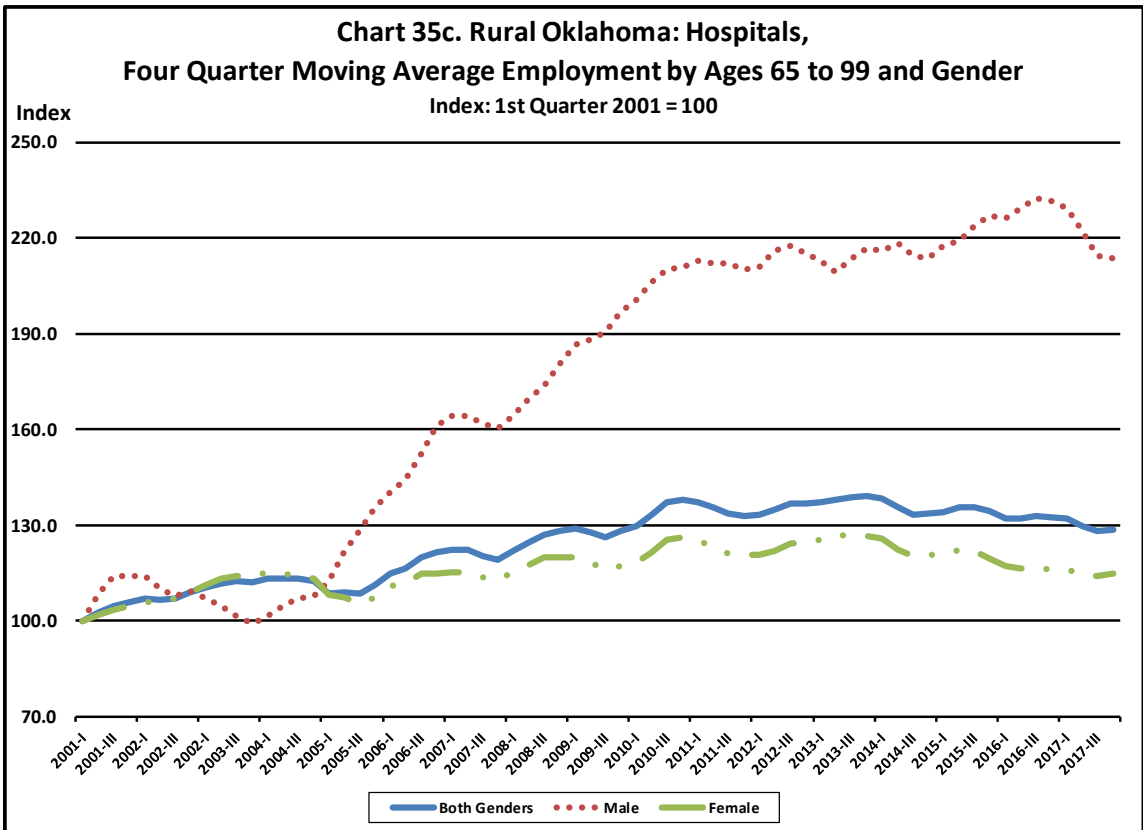
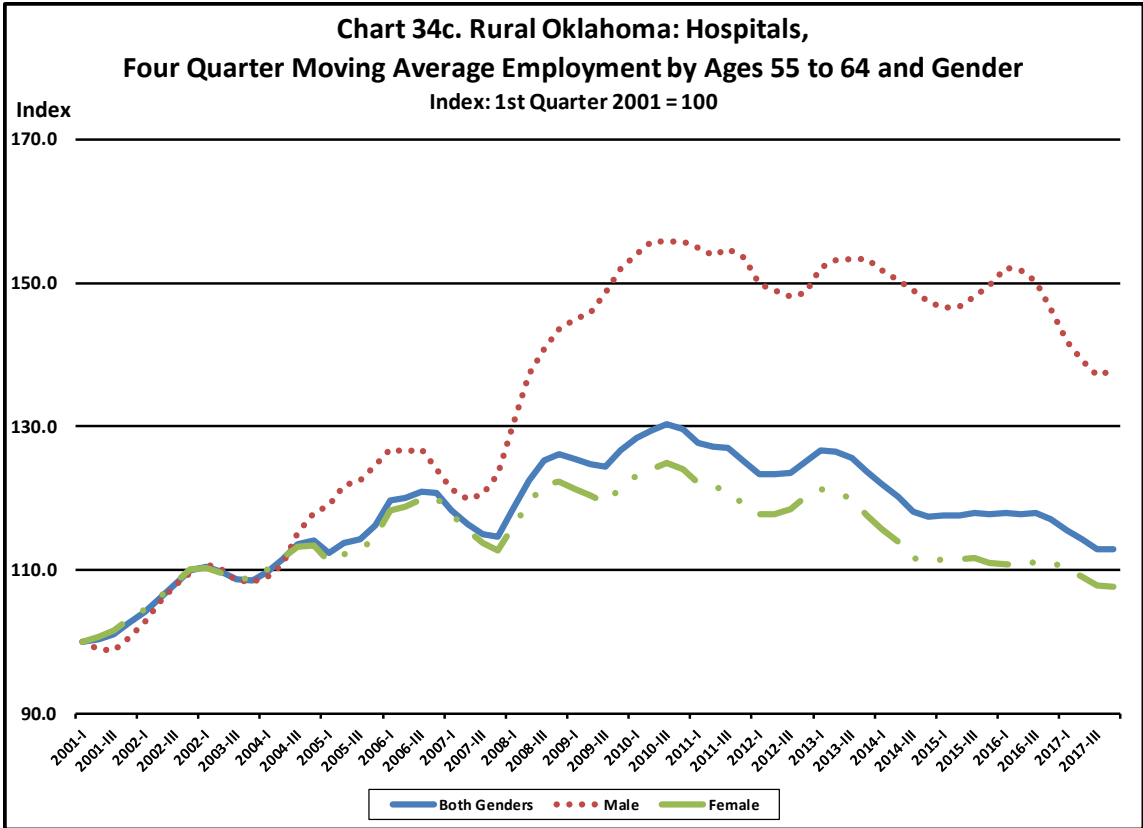
**Table 13c. Rural Oklahoma: Hospitals
Annual Average Employment for Females by AgeGroup**

Year	Employee Age Group								
	All Ages (14 to 99)	Ages 14 to 18	Ages 19 to 21	Ages 22 to 24	Ages 25 to 34	Ages 35 to 44	Ages 45 to 54	Ages 55 to 64	Ages 65 to 99
2001	4,191	34	123	163	824	1,103	1,101	636	203
2002	4,314	52	125	173	829	1,131	1,112	679	212
2003	4,146	37	121	171	780	1,060	1,083	671	221
2004	4,109	24	107	186	767	1,018	1,084	700	220
2005	4,007	27	112	172	741	978	1,058	707	209
2006	4,125	27	114	203	755	975	1,085	741	223
2007	3,826	22	106	184	725	852	1,019	696	219
2008	4,072	30	109	182	812	901	1,047	755	233
2009	3,973	24	103	152	828	857	1,029	749	228
2010	3,864	22	78	157	783	833	978	766	245
2011	3,627	21	84	155	718	777	901	735	234
2012	3,809	16	95	169	755	846	941	742	242
2013	3,846	16	106	173	781	862	935	726	246
2014	3,560	11	91	168	748	788	831	686	234
2015	3,584	13	93	177	754	803	825	685	232
2016	3,510	11	93	174	731	797	791	686	225
2017	3,354	11	89	150	687	761	765	665	223
2001 - 2017	-837	-23	-34	-13	-137	-342	-336	29	20

Note: Using Beginning of Quarter Employment Counts.

At the top of the next page, Chart 34c shows Oklahoma hospitals employment change for ages 55 to 64 by gender group, the second highest employment change age group. Below on this same page, Chart 35c does the same for ages 65 to 99, showing the highest hospital employment change age group. Chart 34c displays that male hospital employment increased almost 38 percent and female hospital employment increased almost 8 percent in ages 55 to 64. Chart 35c displays that male hospital employment increased over 113 percent and female hospital employment increased about 15 percent in ages 65 to 99, from year 2001 to 2017. Not shown but disclosed in [Appendix G, Chart 29c²⁸](#) contains the only other age group and gender that increased in hospital employment; males in ages 19 to 21 increased over 4 percent, during this same time interval.

Also not show, but disclosed in our previous (all) Oklahoma report on hospital employment change by gender, [Chart 34a²⁹](#) and [Chart 35a³⁰](#) show that in ages 55 to 64 and ages 65 to 99, these two gender groups increased much more than their counterparts in rural Oklahoma. In fact in (all) Oklahoma, all gender groups and age groups increased in a range of about 57 percent to over 296 percent in hospital employment, over the 17 years of observation.



**Table 15c. Rural Oklahoma: Nursing and Residential Care Facilities
Annual Average Employment for Males by Age Group**

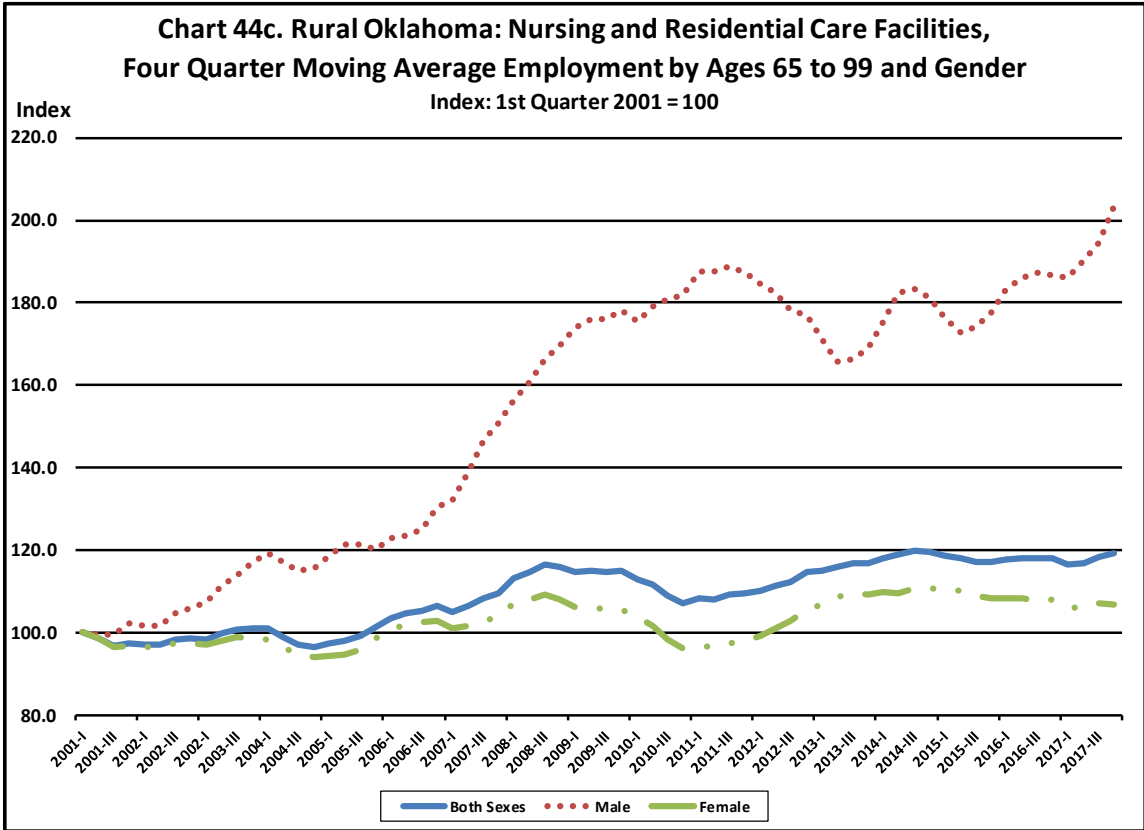
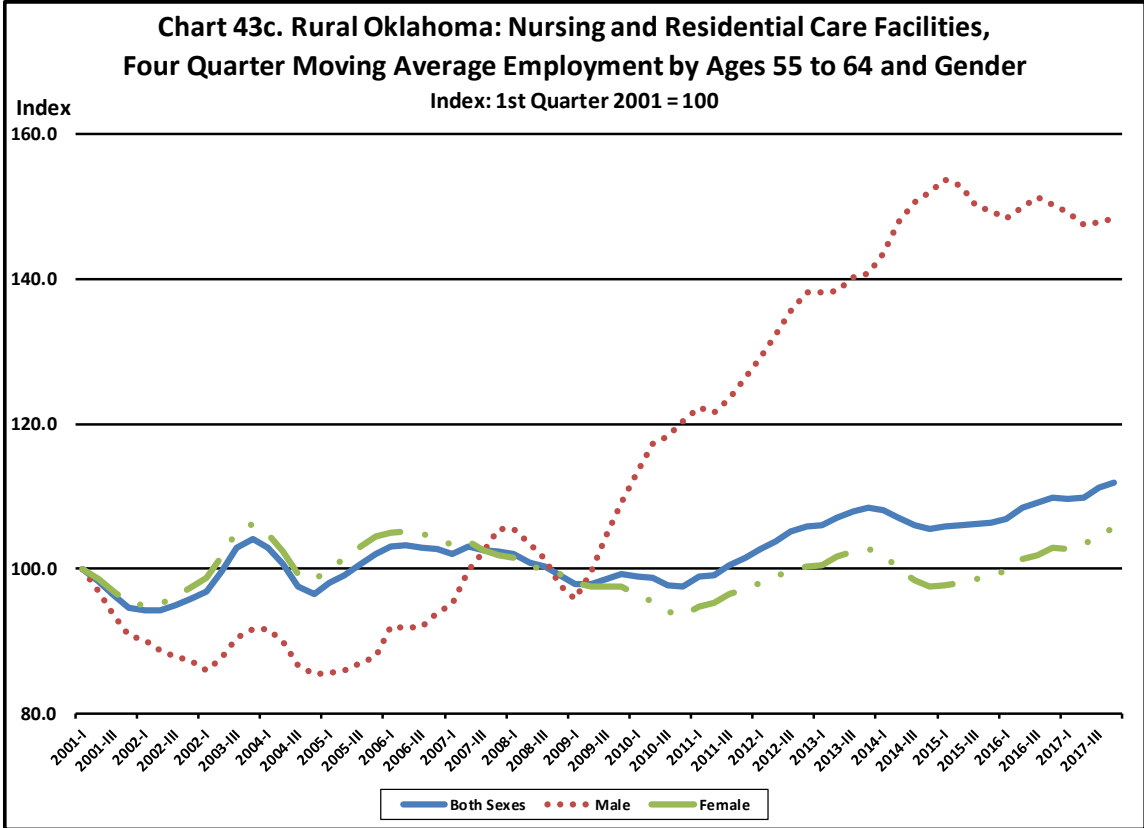
Year	Employee Age Group								
	All Ages (14 to 99)	Ages 14 to 18	Ages 19 to 21	Ages 22 to 24	Ages 25 to 34	Ages 35 to 44	Ages 45 to 54	Ages 55 to 64	Ages 65 to 99
2001	1,109	76	84	76	221	262	212	128	47
2002	1,096	81	95	76	233	237	198	123	49
2003	1,132	64	102	84	239	242	214	130	54
2004	1,026	44	72	87	212	222	212	121	54
2005	1,010	42	59	76	216	216	219	124	56
2006	1,049	43	64	70	227	208	241	133	61
2007	1,063	48	63	65	199	221	246	149	70
2008	1,035	47	58	64	188	206	253	138	79
2009	1,147	41	81	59	222	222	283	154	83
2010	1,114	31	74	72	208	215	256	170	85
2011	1,095	34	70	71	210	200	242	179	87
2012	1,123	36	62	69	232	206	237	195	82
2013	1,156	30	63	74	249	214	246	199	79
2014	1,177	27	70	70	249	215	243	215	84
2015	1,136	36	65	71	224	210	233	211	83
2016	1,179	32	73	77	249	220	226	213	87
2017	1,211	31	63	81	254	233	243	210	95
2001 - 2017	102	-45	-21	5	33	-29	31	82	48

Note: Using Beginning of Quarter Employment Counts.

Table 15c displays rural Oklahoma nursing and residential care facilities average annual employment for males by age group. Not shown here but in [Appendix C Table 16c³¹](#) does the same for females. In year 2017 both males and females had their largest employment in ages 25 to 34; while males had their second largest employment in ages 45 to 54, females had their second largest hospital employment in ages 35 to 44. Comparing the year 2017 all ages employment, female nursing and residential care facilities employment is over four times that of males. The latter is about the same ratio of females to males as in (all) Oklahoma.

Over the 17 years exhibited in the two tables, both males and females in rural Oklahoma nursing and residential care facilities had their largest amount of growth in ages 55 to 64 and their second largest amount growth in ages 65 to 99. For females, these are the only two age groups out of the eight that displayed, and increase, with the ‘all ages’ group experiencing a 1,325 employment decline. Males underwent an employment decline in half of their six remaining age groups, with and overall slight increase of employment in ‘all ages’ of 102 employees. Not shown, but in our previous report of (all) Oklahoma nursing and residential care facilities by gender, in [Table 15a³²](#) and [Table 16a³³](#), males show an overall employment increase in ‘all ages’, while females displayed a slight employment decrease, over the 17 years.

On the next page, Chart 43c and Chart 44c graphically display the employment change of the two oldest age groups, ages 55 to 64 and ages 65 to 99.



At the top of the previous page, Chart 43c illustrates rural Oklahoma nursing and residential care facilities average employment change for ages 55 to 64, by gender group. Below that chart on the same page, Chart 44b displays the same for ages 65 to 99. Of the eight age groups, Chart 44c shows the highest change for males at slightly over 103 percent, and the highest average employment rate of change for females at almost seven percent. Chart 44c displays the second highest rate of employment change for both males and females, of over 48 percent and almost 6 percent, respectively. Not shown here, but shown in [Appendix G](#) at the end of this report are this same industry's charts for the other six age groups, exhibiting that only males in ages 22 to 24 and ages 25 to 34 showed any rates of employment increase. The remaining age groups, for both males and females, had decreasing change in employment decreasing, over the 17 years of observation

Comparing rural Oklahoma's employment change to (all) Oklahoma in nursing and residential care facilities average employment change in these same two older age groups, not shown here but as reported in our prior health report in corresponding [Chart 43a³⁴](#) and [Chart 44a³⁵](#), reveals that employment in the latter changed a higher percent than employment in the former, over the 17 years.

In summary of Section IV, in 2017 for rural Oklahoma, the all industries group had the highest annual average male employment in the young ages 25 to 34, and the second highest male employment in ages 35 to 44; while the two health industry groups of ambulatory health care services and hospitals had the two highest ranked annual average male employment in two of the three age groups ages 35 to 44, ages 45 to 54 and ages 55 to 64. Nursing and residential care facilities had the highest male employment in ages 25 to 34 and the second highest average annual male employment in ages 45 to 54.

In 2017, in rural Oklahoma the all industries group had the highest annual average female employment in ages 45 to 54 and the second highest female employment in ages 35 to 44; with hospitals having the same two age groups as the first and second ranked average annual female employment groups. Ambulatory health care services had the highest female employment in ages 35 to 44 and the second highest annual average female employment in ages 25 to 34; while nursing and residential care facilities had these same two age groups as the highest ranking in average annual female employment, with the ranking order reversed.

While the amounts of female and male employment in 'all ages' in rural Oklahoma all industries are relatively little in difference, the "all ages" ratio of females to males in ambulatory health care services of 5:6, and in hospitals the ratio of 4:1. A comparison of these same three rural Oklahoma industry groups, with those in previously reported (all) Oklahoma determines that the 'all ages' female to male ratio is also closer to 1. However, the ratio in nursing and residential care is 3:6 and in hospitals is 3:6, lower than in rural Oklahoma. Only in nursing and residential care facilities is the 'all ages' female to male ratio about the same in the two areas, with a ratio of 3:2 in rural Oklahoma and 3:1 in (all) Oklahoma.

In Section IV, the amount of rural Oklahoma employment change over the 17 years of observation was also examined for all industries and the three health industry groups, by eight age groups, an aggregate of all age groups, two gender groups, and a combination of both genders. In all industries, hospitals, and ambulatory health care services the highest amount of both male and female employment change are in ages 55 to 64 and their second highest amount of employment change are in ages 65 to 99. In ambulatory health care services both male and female employment had their highest amount of employment change also in ages 55 to 64, but

their second highest amount of employment change in ages 25 to 34.

Four quarter moving average employment was also indexed and charted for the four industry groups, the eight age groups and the aggregate of all ages by gender group. In rural Oklahoma, in all industries as well as the three health industries and for male and females the largest employment rate of change was in ages 65 to 99 and the second highest rate of employment change in ages 55 to 64. For ambulatory health care services in all age groups and in both males and females, in all but one of the six younger age groups the rate of employment change is an increase, the exception being ages 14 to 18 where the rates of employment change is a decrease. In hospitals, only one age group in the six younger age groups had the employment change as an increase, that of males 19 to 21. For nursing and residential care facilities, in all six of the younger age groups the rate of employment change decreased. However, in these six age groups males showed a slight increased rate of employment in ages 22 to 24, 25 to 34 and ages 45 to 54.

V. Earnings and Earnings Change by Age Group and Gender Group

A topic frequently mentioned in connection to employment is the lower earnings of women, as compared to their male counterparts. Since both traditionally and historically, the health industry employs more women, (or females), then men (or males), comparison of the earnings of each, in all industry and the health industry is of value.

**Table 6d. Rural Oklahoma: All Industries
Annual Average Monthly Earnings for Males by Age Group**

Year	Employee Age Group								
	All Ages (14 to 99)	Ages 14 to 18	Ages 19 to 21	Ages 22 to 24	Ages 25 to 34	Ages 35 to 44	Ages 45 to 54	Ages 55 to 64	Ages 65 to 99
2001	\$2,227	\$459	\$1,016	\$1,488	\$2,020	\$2,524	\$2,931	\$2,642	\$1,500
2002	\$2,237	\$468	\$1,005	\$1,468	\$2,025	\$2,515	\$2,880	\$2,715	\$1,603
2003	\$2,325	\$477	\$1,012	\$1,479	\$2,100	\$2,604	\$2,992	\$2,836	\$1,644
2004	\$2,449	\$481	\$1,050	\$1,550	\$2,207	\$2,720	\$3,139	\$3,040	\$1,747
2005	\$2,554	\$496	\$1,091	\$1,623	\$2,303	\$2,835	\$3,292	\$3,098	\$1,914
2006	\$2,689	\$507	\$1,185	\$1,743	\$2,394	\$2,973	\$3,423	\$3,337	\$2,112
2007	\$2,832	\$528	\$1,247	\$1,808	\$2,539	\$3,125	\$3,570	\$3,531	\$2,212
2008	\$2,964	\$568	\$1,352	\$1,950	\$2,674	\$3,234	\$3,655	\$3,761	\$2,376
2009	\$2,883	\$550	\$1,243	\$1,836	\$2,574	\$3,131	\$3,530	\$3,638	\$2,322
2010	\$2,973	\$558	\$1,226	\$1,831	\$2,616	\$3,254	\$3,595	\$3,730	\$2,476
2011	\$3,129	\$588	\$1,326	\$1,943	\$2,793	\$3,434	\$3,747	\$3,903	\$2,626
2012	\$3,275	\$609	\$1,473	\$2,085	\$2,965	\$3,590	\$3,880	\$4,060	\$2,865
2013	\$3,387	\$632	\$1,524	\$2,177	\$3,087	\$3,695	\$4,036	\$4,144	\$2,971
2014	\$3,544	\$668	\$1,633	\$2,311	\$3,267	\$3,912	\$4,177	\$4,277	\$3,115
2015	\$3,516	\$645	\$1,599	\$2,294	\$3,209	\$3,862	\$4,150	\$4,313	\$3,101
2016	\$3,508	\$628	\$1,501	\$2,252	\$3,191	\$3,874	\$4,141	\$4,272	\$3,136
2017	\$3,680	\$652	\$1,610	\$2,385	\$3,403	\$4,091	\$4,331	\$4,412	\$3,253
2001 - 2017	\$1,453	\$193	\$594	\$897	\$1,383	\$1,567	\$1,400	\$1,770	\$1,753

Note: Using Beginning of Quarter Employment Counts.

Above, Table 6d displays that in 2017, all industry males had the highest earnings in ages 55 to 64, with \$4,412 annual average monthly earnings; followed by the second-highest in ages 45 to 54 of \$4,331 annual average monthly earnings. The table shows that males ages 55 to 64 experienced the largest amount of earnings increase, and ages 65 to 99 showed the second-largest increase over the 17 years of observation. Not shown, but in our previous (all) Oklahoma

report, in Table 6b , males in all industries had more than a \$1,000 more in their first and second-largest earnings groups than their counterparts in rural Oklahoma, and the highest and second-largest amount of earnings change is several hundred dollars more than rural Oklahoma's.

Table 7d shows the all industry earnings for females by age group. Table 7d confirms that in 2017, all industry females had the largest average annual monthly earnings in ages 45 to 54 with \$2,642 average monthly earnings; followed by the second-largest earnings in ages 55 to 64, with \$2,556 average monthly earnings. However, their earnings in each of these age groups are over \$1,600 less than males in the former age group and over \$1,800 less than males in the latter age group. Moreover, the amount earnings increase for females in their largest amount of earnings change is more than \$800 less than males in their largest earnings change age group and \$700 less than males in the second-largest earnings change age group over the 17 years of the analysis.

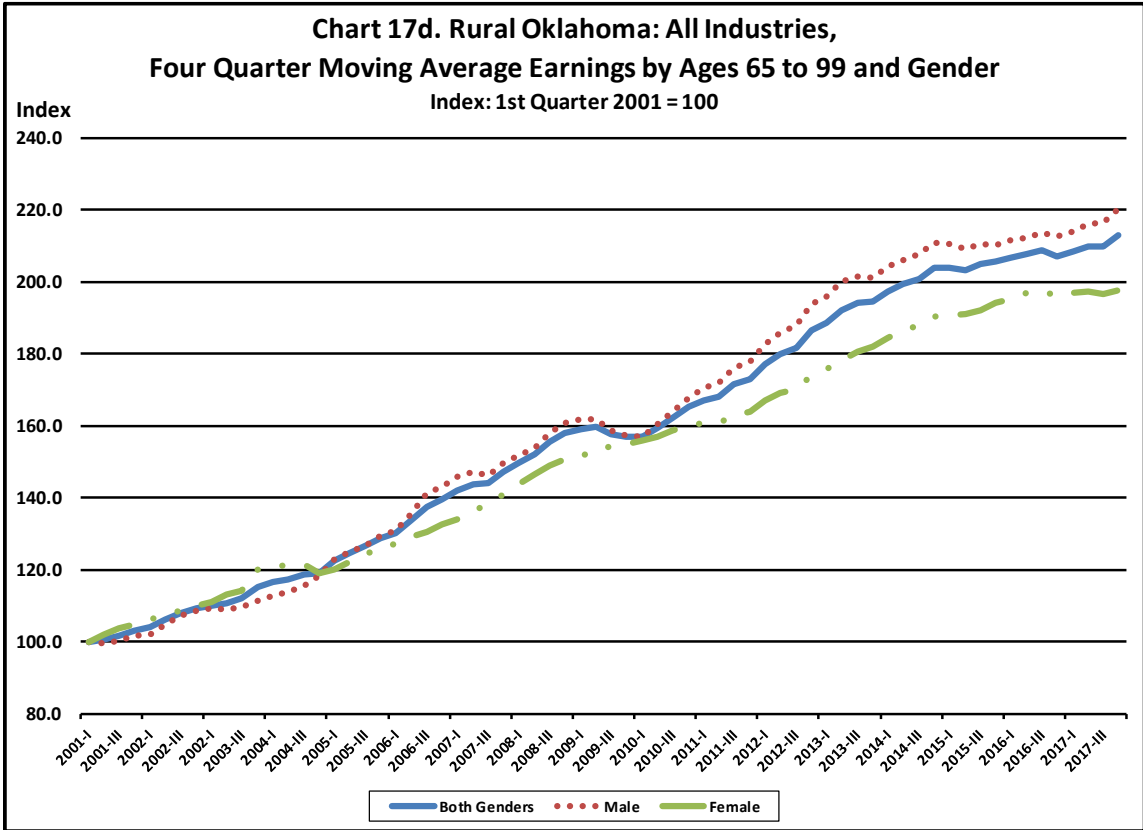
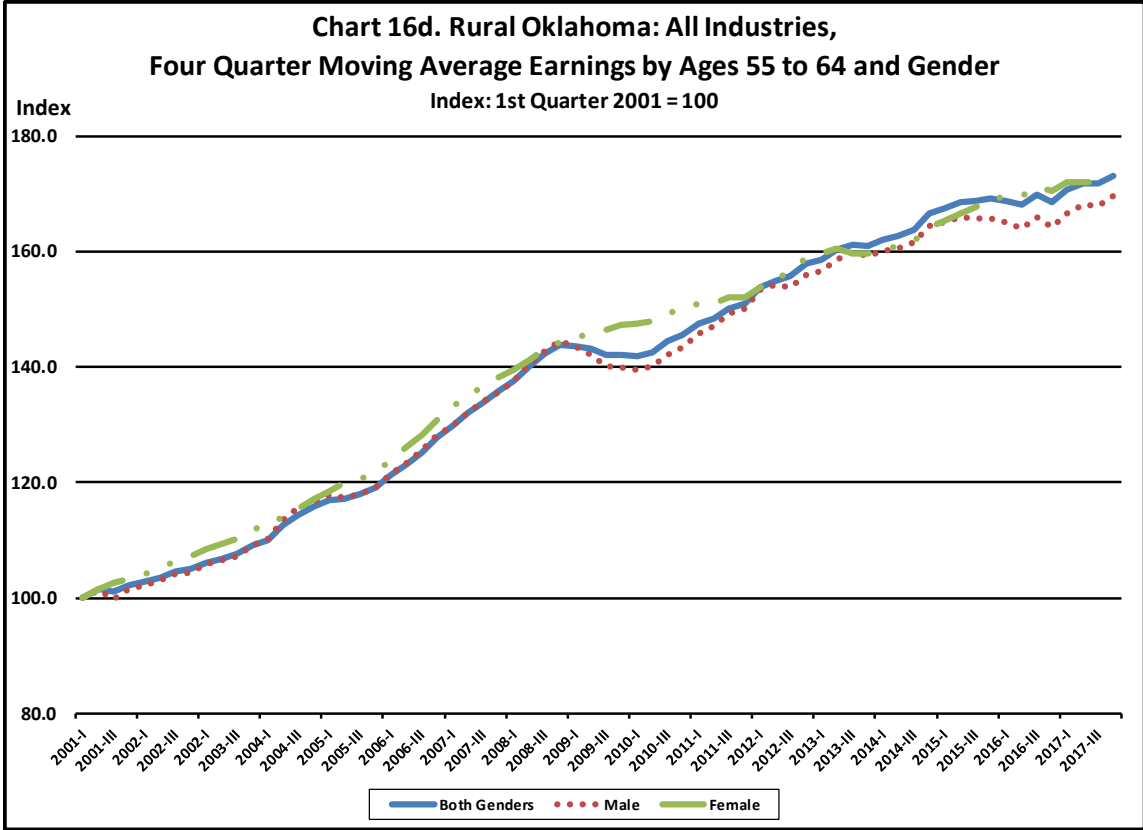
Not shown, but described in our previous (all) Oklahoma report, all industry females in Chart 7b have significantly larger earnings in the two highest earnings age groups and earnings amount increase in the two highest earnings increase age groups, than did their female counterparts in rural Oklahoma.

**Table 7d. Rural Oklahoma: All Industries
Annual Average Monthly Earnings for Females by Age Group**

Year	Employee Age Group								
	All Ages (14 to 99)	Ages 14 to 18	Ages 19 to 21	Ages 22 to 24	Ages 25 to 34	Ages 35 to 44	Ages 45 to 54	Ages 55 to 64	Ages 65 to 99
2001	\$1,400	\$398	\$692	\$997	\$1,343	\$1,538	\$1,749	\$1,534	\$1,002
2002	\$1,443	\$408	\$700	\$995	\$1,390	\$1,577	\$1,794	\$1,591	\$1,053
2003	\$1,489	\$410	\$699	\$1,002	\$1,431	\$1,628	\$1,827	\$1,659	\$1,150
2004	\$1,543	\$417	\$723	\$1,018	\$1,486	\$1,683	\$1,889	\$1,741	\$1,138
2005	\$1,576	\$413	\$725	\$1,042	\$1,496	\$1,733	\$1,918	\$1,809	\$1,200
2006	\$1,670	\$431	\$759	\$1,128	\$1,575	\$1,827	\$2,025	\$1,942	\$1,269
2007	\$1,767	\$445	\$822	\$1,204	\$1,661	\$1,930	\$2,135	\$2,052	\$1,351
2008	\$1,845	\$475	\$861	\$1,279	\$1,751	\$2,020	\$2,191	\$2,141	\$1,441
2009	\$1,880	\$496	\$869	\$1,296	\$1,779	\$2,061	\$2,193	\$2,186	\$1,483
2010	\$1,929	\$515	\$896	\$1,303	\$1,818	\$2,111	\$2,244	\$2,227	\$1,532
2011	\$1,961	\$508	\$918	\$1,322	\$1,852	\$2,165	\$2,273	\$2,255	\$1,569
2012	\$2,024	\$529	\$952	\$1,355	\$1,894	\$2,224	\$2,347	\$2,355	\$1,667
2013	\$2,070	\$532	\$984	\$1,407	\$1,948	\$2,288	\$2,408	\$2,368	\$1,741
2014	\$2,132	\$533	\$1,013	\$1,461	\$2,008	\$2,362	\$2,482	\$2,437	\$1,822
2015	\$2,180	\$537	\$1,037	\$1,505	\$2,054	\$2,414	\$2,535	\$2,509	\$1,859
2016	\$2,207	\$543	\$1,039	\$1,521	\$2,092	\$2,437	\$2,590	\$2,528	\$1,873
2017	\$2,240	\$566	\$1,052	\$1,548	\$2,113	\$2,479	\$2,642	\$2,556	\$1,890
2001 - 2017	\$840	\$168	\$360	\$551	\$770	\$941	\$893	\$1,022	\$888

Note: Using Beginning of Quarter Employment Counts.

At the top of the next page, Chart 16d illustrates all industry earnings change for ages 55 to 64 by gender group; while below Chart 17d does the same for age group 65 to 99, as indexed to 1st quarter 2001 as being equal to 100, with all ages, years 14 to 99, as a comparison.



In these two charts, both males and females show their highest rate of earnings change in ages 65 to 99 and both males and females show their second highest rate of earnings change in ages 55 to 64. The earnings rate of change for males is higher than females in the former age group; while females are higher than males in the latter. Shown in this link to [Appendix H³⁶](#), Chart 9d through Chart 15d provide all industry earnings change by gender group, for the other six age groups, which display similar but lower earnings change.

Not shown, but displayed in our previous report on (all) Oklahoma, [Chart 16b³⁷](#) and [Chart 17b³⁸](#) showed similar patterns and amounts of earnings change for all industry males and females, with females having the higher earnings change in both age groups.

**Table 9d. Rural Oklahoma: Ambulatory Health Care Services
Annual Average Monthly Earnings for Males by Age Group**

Year	Employee Age Group								
	All Ages (14 to 99)	Ages 14 to 18	Ages 19 to 21	Ages 22 to 24	Ages 25 to 34	Ages 35 to 44	Ages 45 to 54	Ages 55 to 64	Ages 65 to 99
2001	\$3,653	\$509	\$1,074	\$1,465	\$2,362	\$3,659	\$5,041	\$5,700	\$2,239
2002	\$3,865	\$708	\$1,103	\$1,638	\$2,354	\$4,260	\$4,826	\$6,223	\$3,172
2003	\$3,805	\$865	\$1,102	\$1,236	\$2,485	\$3,655	\$5,060	\$6,293	\$3,345
2004	\$3,798	\$646	\$1,014	\$1,293	\$2,595	\$3,511	\$5,262	\$5,354	\$4,119
2005	\$4,275	\$622	\$1,036	\$1,370	\$2,768	\$3,997	\$6,233	\$5,936	\$4,960
2006	\$4,221	\$472	\$1,058	\$1,472	\$2,774	\$4,032	\$5,663	\$5,879	\$4,857
2007	\$4,672	\$429	\$1,071	\$1,553	\$2,908	\$4,686	\$6,311	\$6,370	\$4,889
2008	\$4,559	\$320	\$802	\$1,409	\$3,127	\$4,646	\$5,261	\$6,420	\$5,470
2009	\$4,335	\$445	\$985	\$1,510	\$2,992	\$4,710	\$4,769	\$6,071	\$4,430
2010	\$4,419	\$691	\$939	\$1,640	\$2,867	\$4,742	\$4,753	\$6,474	\$4,554
2011	\$4,310	\$721	\$1,122	\$1,672	\$2,781	\$4,770	\$4,658	\$6,025	\$4,358
2012	\$4,407	\$801	\$1,265	\$1,561	\$2,995	\$4,631	\$5,128	\$5,813	\$4,771
2013	\$4,651	\$762	\$1,201	\$1,645	\$2,841	\$4,453	\$7,162	\$5,582	\$4,657
2014	\$4,383	\$1,132	\$893	\$1,627	\$3,136	\$4,461	\$5,493	\$5,577	\$4,257
2015	\$4,689	\$619	\$1,072	\$1,760	\$3,521	\$4,731	\$5,786	\$5,923	\$4,344
2016	\$4,773	\$693	\$1,002	\$1,733	\$3,567	\$4,763	\$5,838	\$6,461	\$4,592
2017	\$4,818		\$1,104	\$1,499	\$3,767	\$4,866	\$5,918	\$6,113	\$5,023
2001 - 2017	\$1,165	"	\$30	\$34	\$1,405	\$1,207	\$877	\$413	\$2,784

Note: Using Beginning of Quarter Employment Counts.

Table 9d shows rural Oklahoma ambulatory health care services annual average monthly earnings for males by age group; while on the next page, Table 10d does the same for females. Note that the pink shaded cells in the table indicate aggregated data, some of which are significantly distorted to protect employers' identities. In 2017, males had the largest earnings in ages 55 to 64, and second-largest earnings in ages 45 to 54. Females had the largest earnings in ages 35 to 44, and second-largest in 45 to 54. The largest and second-largest male earnings are over two and a third times larger than their female rank counterparts.

The two tables show that males had the largest amount of earnings change (\$2,784) from 2001 to 2017 in ages 65 to 99 and the second-largest change (877) in ages 45 to 54; while females had their largest earnings amount increase (\$1,131) in ages 35 to 44 and their second-largest change (\$916) in ages 45 to 54.

**Table 10d. Rural Oklahoma: Ambulatory Health Care Services
Annual Average Monthly Earnings for Females by Age Group**

Year	Employee Age Group								
	All Ages (14 to 99)	Ages 14 to 18	Ages 19 to 21	Ages 22 to 24	Ages 25 to 34	Ages 35 to 44	Ages 45 to 54	Ages 55 to 64	Ages 65 to 99
2001	\$1,376	\$364	\$742	\$1,194	\$1,453	\$1,430	\$1,561	\$1,309	\$832
2002	\$1,410	\$427	\$769	\$1,088	\$1,477	\$1,464	\$1,627	\$1,322	\$855
2003	\$1,481	\$485	\$765	\$1,117	\$1,604	\$1,581	\$1,614	\$1,424	\$932
2004	\$1,576	\$432	\$882	\$1,052	\$1,724	\$1,676	\$1,729	\$1,494	\$983
2005	\$1,646	\$498	\$847	\$1,086	\$1,668	\$1,850	\$1,799	\$1,608	\$1,043
2006	\$1,662	\$564	\$854	\$1,149	\$1,686	\$1,884	\$1,835	\$1,578	\$1,099
2007	\$1,748	\$491	\$901	\$1,243	\$1,750	\$1,972	\$1,931	\$1,735	\$1,113
2008	\$1,829	\$507	\$868	\$1,390	\$1,923	\$2,111	\$1,922	\$1,748	\$1,172
2009	\$1,858	\$559	\$813	\$1,360	\$1,962	\$2,180	\$1,882	\$1,824	\$1,120
2010	\$1,892	\$647	\$920	\$1,333	\$1,963	\$2,180	\$1,963	\$1,914	\$1,128
2011	\$1,927	\$511	\$926	\$1,339	\$1,986	\$2,222	\$2,005	\$1,962	\$1,167
2012	\$2,003	\$432	\$911	\$1,369	\$2,049	\$2,301	\$2,134	\$2,043	\$1,143
2013	\$2,131	\$542	\$911	\$1,360	\$2,129	\$2,479	\$2,288	\$2,168	\$1,253
2014	\$2,216	\$400	\$938	\$1,317	\$2,277	\$2,643	\$2,300	\$2,150	\$1,445
2015	\$2,265	\$492	\$919	\$1,367	\$2,280	\$2,644	\$2,397	\$2,245	\$1,552
2016	\$2,228	\$525	\$894	\$1,327	\$2,226	\$2,582	\$2,440	\$2,244	\$1,487
2017	\$2,195	\$537	\$820	\$1,386	\$2,178	\$2,561	\$2,477	\$2,176	\$1,402
2001 - 2017	\$819	\$173	\$78	\$192	\$725	\$1,131	\$916	\$867	\$570

Note: Using Beginning of Quarter Employment Counts.

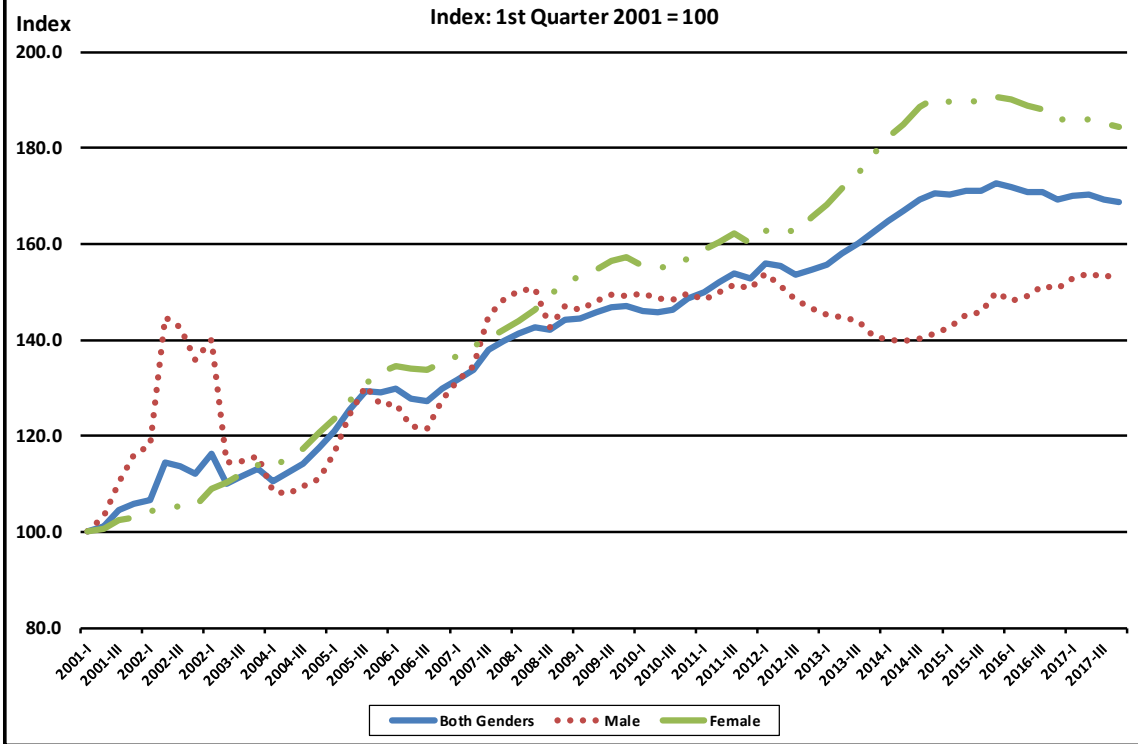
Not shown, but disclosed in [Table 9b³⁹](#) and [Table 10b⁴⁰](#) in our previous (all) Oklahoma report on health industry groups, in the two largest earning groups males in this same industry group had over three times the earnings as females in their two largest earnings groups, as opposed to two and a third times in rural Oklahoma. However, this larger magnitude of differences in the two genders in a comparison of the two geographical areas and the earnings in the two largest earnings groups, is mainly due to males earning much less in rural areas, than they did in (all) Oklahoma – about one half as much in the latter than in the former.

On the top of next page Chart 23d illustrates rural Oklahoma ambulatory health care services earnings change, for ages 35 to 44, while at the bottom page Chart 26d does the same for the ages 65 to 99, by gender group, as indexed to 1st quarter 2001 as being equal to 100. Chart 26d displays ages 65 to 99 as the top ranked earnings change group for both males and females, of nearly 98 percent and about 101 percent respectively. Chart 23d displays the second rank earnings change for females of over 84 percent. Not shown here but shown in this linked [Appendix H, Chart 22d⁴¹](#) reveals that males had their second largest earnings change of slightly over 65 percent in ages 25 to 34. Appendix H also reveals charts for the earnings rate of change for ‘all ages’ and the other five age groups by gender.

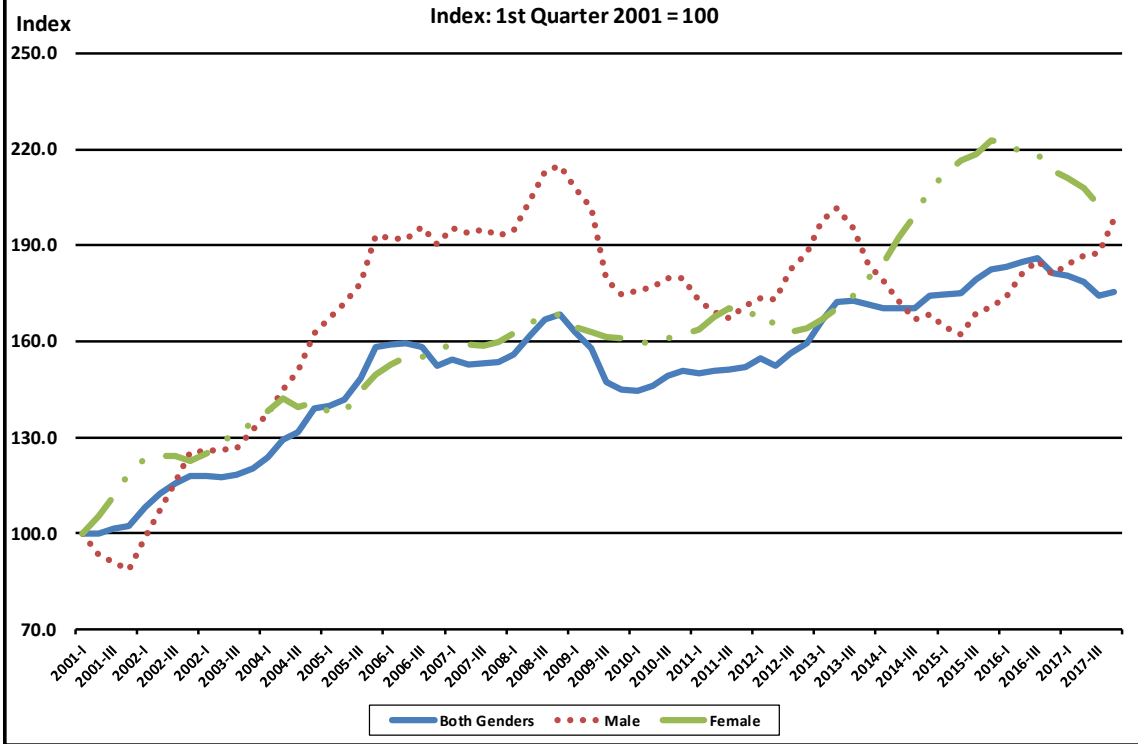
Also not shown but in our pervious (all) Oklahoma report, [Charts26b⁴²](#) displays the top female earnings change rate as just over 187 percent for ages 65 to 99, [Chart 25b⁴³](#) reveals that the second ranked female earnings change rate as over 118 percent for ages 55 to 64, while [Chart 20b⁴⁴](#) shows the top ranked male earnings change as well over 72 percent for ages 19 to 21 and [Chart 22b⁴⁵](#) gives males second rate of earnings change as slightly over 59 percent for ages 25 to 34, over the 17 years of the analysis. This means that in ambulatory health care services female’s earnings in the top two ranked age groups, increased at a higher change rate in (all) Oklahoma than they did in their rank counterparts in rural Oklahoma, but that the opposite is true for males with their higher rates in rural Oklahoma.

Next examined in this analysis of rural Oklahoma health industry by age groups and by gender, is the health industry subsector of hospitals.

**Chart 23d. Rural Oklahoma: Ambulatory Health Care Services,
Four Quarter Moving Average Earnings by Ages 35 to 44 and Gender**



**Chart 26d. Rural Oklahoma: Ambulatory Health Care Services,
Four Quarter Moving Average Earnings by Ages 65 to 99 and Gender**



**Table 12d. Rural Oklahoma: Hospitals
Annual Average Monthly Earnings for Males by Age Group**

Year	Employee Age Group								
	All Ages (14 to 99)	Ages 14 to 18	Ages 19 to 21	Ages 22 to 24	Ages 25 to 34	Ages 35 to 44	Ages 45 to 54	Ages 55 to 64	Ages 65 to 99
2001	\$2,642	\$456	\$678	\$1,308	\$1,794	\$3,248	\$2,781	\$3,263	\$3,216
2002	\$2,738	\$511	\$872	\$1,331	\$1,951	\$3,152	\$2,850	\$3,414	\$3,880
2003	\$2,890	\$427	\$895	\$1,240	\$2,170	\$3,146	\$3,136	\$3,392	\$4,981
2004	\$3,039	\$564	\$1,007	\$1,473	\$2,240	\$2,997	\$3,590	\$3,597	\$4,062
2005	\$3,165	\$486	\$981	\$1,438	\$2,456	\$3,297	\$3,786	\$3,525	\$3,160
2006	\$3,414	\$547	\$993	\$1,581	\$2,605	\$3,598	\$3,828	\$4,009	\$4,414
2007	\$3,782	\$632	\$923	\$1,437	\$2,565	\$3,901	\$4,114	\$4,873	\$5,322
2008	\$4,012	\$808	\$869	\$1,458	\$2,639	\$3,964	\$4,101	\$5,533	\$5,529
2009	\$4,170	\$1,074	\$1,167	\$1,816	\$2,673	\$4,314	\$4,003	\$5,828	\$5,834
2010	\$4,160	"	\$1,194	\$1,578	\$2,663	\$4,152	\$3,954	\$5,818	\$6,192
2011	\$4,305	"	\$1,435	\$1,312	\$2,684	\$4,262	\$3,809	\$6,041	\$6,862
2012	\$4,498	\$905	\$1,223	\$1,664	\$2,865	\$4,459	\$4,083	\$6,169	\$7,876
2013	\$4,390	\$603	\$1,167	\$1,673	\$2,920	\$4,375	\$4,247	\$5,527	\$8,013
2014	\$4,634	"	\$1,090	\$1,737	\$2,928	\$4,665	\$4,571	\$5,686	\$8,200
2015	\$5,115	"	\$1,455	\$1,755	\$3,420	\$5,195	\$4,806	\$6,223	\$9,046
2016	\$5,100	"	\$1,535	\$1,905	\$3,505	\$5,220	\$5,150	\$5,672	\$8,905
2017	\$5,216	"	\$1,389	\$1,853	\$3,697	\$5,484	\$5,630	\$5,990	\$8,214
2001 - 2017	\$2,574	"	\$711	\$545	\$1,903	\$2,236	\$2,849	\$2,727	\$4,998

Note: Using Beginning of Quarter Employment Counts.

**Table 13d. Rural Oklahoma: Hospitals
Annual Average Monthly Earnings for Females by Age Group**

Year	Employee Age Group								
	All Ages (14 to 99)	Ages 14 to 18	Ages 19 to 21	Ages 22 to 24	Ages 25 to 34	Ages 35 to 44	Ages 45 to 54	Ages 55 to 64	Ages 65 to 99
2001	\$1,623	\$394	\$787	\$1,069	\$1,515	\$1,762	\$1,875	\$1,642	\$1,072
2002	\$1,680	\$480	\$759	\$1,053	\$1,574	\$1,806	\$1,961	\$1,724	\$1,191
2003	\$1,742	\$505	\$759	\$1,143	\$1,644	\$1,872	\$2,021	\$1,770	\$1,243
2004	\$1,887	\$498	\$817	\$1,248	\$1,785	\$1,987	\$2,171	\$1,959	\$1,382
2005	\$1,989	\$485	\$849	\$1,338	\$1,859	\$2,126	\$2,240	\$2,094	\$1,545
2006	\$2,086	\$563	\$918	\$1,383	\$1,900	\$2,231	\$2,377	\$2,243	\$1,589
2007	\$2,247	\$505	\$914	\$1,534	\$1,986	\$2,432	\$2,586	\$2,411	\$1,750
2008	\$2,377	\$584	\$1,009	\$1,646	\$2,180	\$2,555	\$2,649	\$2,602	\$1,919
2009	\$2,461	\$702	\$1,071	\$1,603	\$2,227	\$2,636	\$2,715	\$2,754	\$1,980
2010	\$2,441	\$596	\$1,056	\$1,651	\$2,186	\$2,599	\$2,675	\$2,736	\$1,984
2011	\$2,447	\$554	\$1,134	\$1,627	\$2,207	\$2,614	\$2,730	\$2,681	\$1,996
2012	\$2,577	\$712	\$1,197	\$1,735	\$2,323	\$2,735	\$2,848	\$2,861	\$2,145
2013	\$2,613	\$865	\$1,201	\$1,652	\$2,409	\$2,824	\$2,794	\$2,954	\$2,225
2014	\$2,711	\$706	\$1,224	\$1,718	\$2,508	\$2,962	\$2,915	\$2,974	\$2,415
2015	\$2,838	\$864	\$1,238	\$1,816	\$2,525	\$3,096	\$3,158	\$3,145	\$2,450
2016	\$2,882	\$607	\$1,267	\$1,782	\$2,513	\$3,058	\$3,279	\$3,287	\$2,462
2017	\$2,947	\$824	\$1,329	\$1,749	\$2,689	\$3,092	\$3,407	\$3,238	\$2,401
2001 - 2017	\$1,324	\$430	\$542	\$680	\$1,174	\$1,330	\$1,532	\$1,596	\$1,329

Note: Using Beginning of Quarter Employment Counts.

At the top of the page, Table 12d displays rural Oklahoma hospitals annual average monthly earnings for males by age group. Beneath, Table 13d shows the same for females. Note that the pink cells in the two tables indicate aggregated data, some of which are significantly distorted to protect employers' identities. In 2017, males had the largest earnings amounts in ages 65 to 99 in the amount of \$8,214, which nearly three and a half times the \$2,401 earnings amount for females in that age group. Males' second-largest earnings was in ages 55 to 64 with \$5,990 annual average earnings. Females had the largest earnings in 2017 in ages 45 to 54 in the

amount of \$3,407, still \$2,223 less than that of males in their counterpart age groups. Females had the second-largest earning in ages 55 to 64, with annual average monthly earnings of \$3,238. In 2017, female annual average monthly earning was less than that of males in every age group for which male earnings could be calculated.

The amount of annual average monthly earnings amount change from 2001 to 2017 was also calculated for male and female hospital employees. Males had their largest earnings amount change in ages 65 to 99 and their second largest earnings amount change in ages 55 to 64, while females had their largest earnings amount change in ages 55 to 64 and their second largest annual average earnings amount change in ages 45 to 54.

It is interesting to compare the annual average monthly earnings of rural Oklahoma hospital male and female employees with their counter-parts in (all) Oklahoma. Not shown here, but as published in our previous report for (all) Oklahoma, [Table 12b⁴⁶](#) for hospital male and to [Table 13b⁴⁷](#) for hospital females, display that (all) Oklahoma females earn more than their rural Oklahoma age group counterparts in all eight age groups; as much as a \$1,000 more in the older four age groups. Although a similar finding is also true in a comparison males in the two areas in the seven age groups for which data is available for comparisons; in the largest 2017 earnings group in both areas, that of ages 65 to 99, hospital males in rural Oklahoma had the largest annual average monthly income of the two areas

At the top of the next page, Chart 34d illustrates rural Oklahoma hospital earnings change for ages 55 to 64 by gender group; while below Chart 35d does the same for age group 65 to 99, as indexed to 1st quarter 2001 as being equal to 100; with “all ages” 14 to 99, as a comparison.

Chart 35d reveals the highest rates of annual average monthly earnings change for both hospital males and females in ages 65 to 99 of 128 percent and a little over 142 percent, respectively, while Chart 34d displays second highest rate of hospital females in ages 55 to 64 as 104 percent, over the 17 years of analysis. Not shown here, but provided in [Appendix H, Chart 28d⁴⁸](#) displays the second highest rate of hospital males earnings change rate of a fraction over 145 percent, in ages 14 to 18. The remaining charts for hospital annual averages monthly earnings change rates for the five other age groups by gender are also shown in the same appendix.

Also not shown, but as recounted in our previous report for (all) Oklahoma, hospital male and female earnings changed the highest amount in ages 65 to 99, as illustrated in [Chart 35b⁴⁹](#). In this same report, [Chart 34b⁵⁰](#) displays that females had their second highest earnings change in ages 55 to 65, and [Chart 32b⁵¹](#) shows that hospital males had their second highest earnings change in ages 35 to 44. The (all) Oklahoma hospital male first and second ranked highest earnings change percent has a larger earnings change than their rural Oklahoma ranked counterpart age group. This is also true for (all) Oklahoma first ranked female age group, over the first ranked female age group. However, (all) Oklahoma second ranked female hospital earnings, changed slightly less than their second ranked rural Oklahoma hospital female age group, 102 percent and 104 percent respectively.

The next and last rural Oklahoma health industry group explored by age group and gender is nursing and residential care facilities.

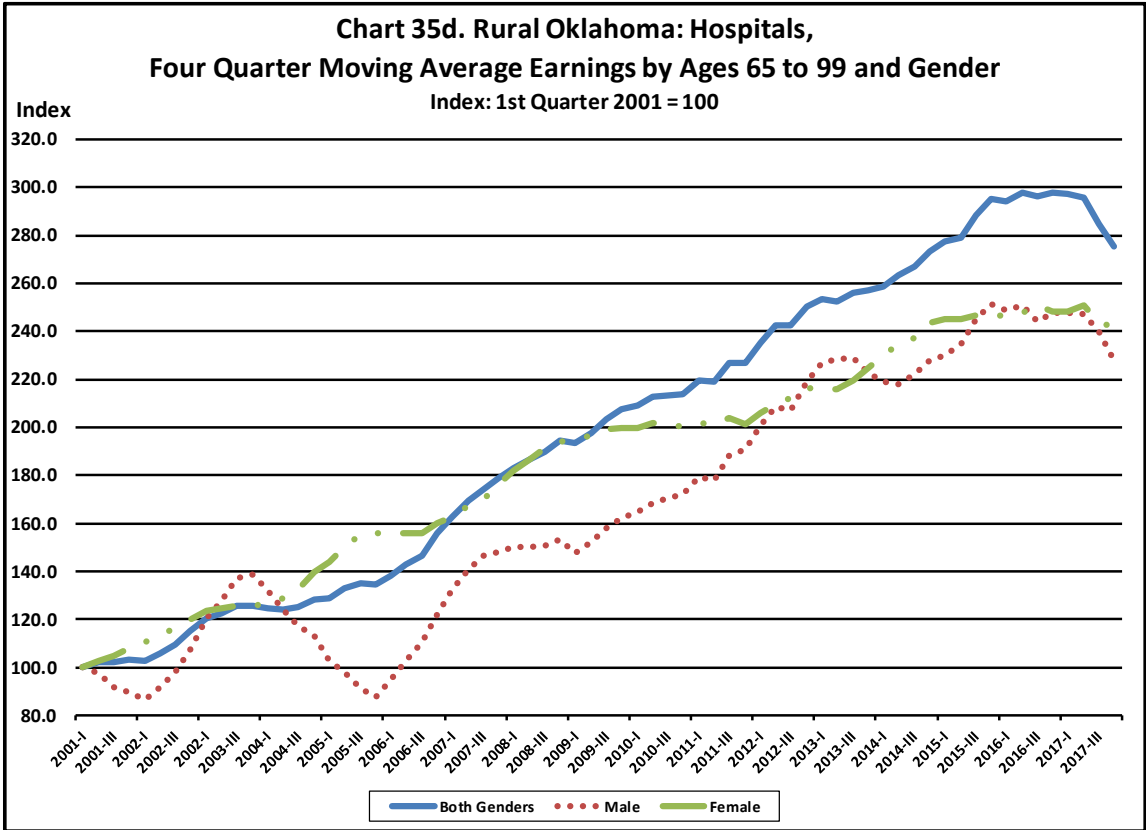
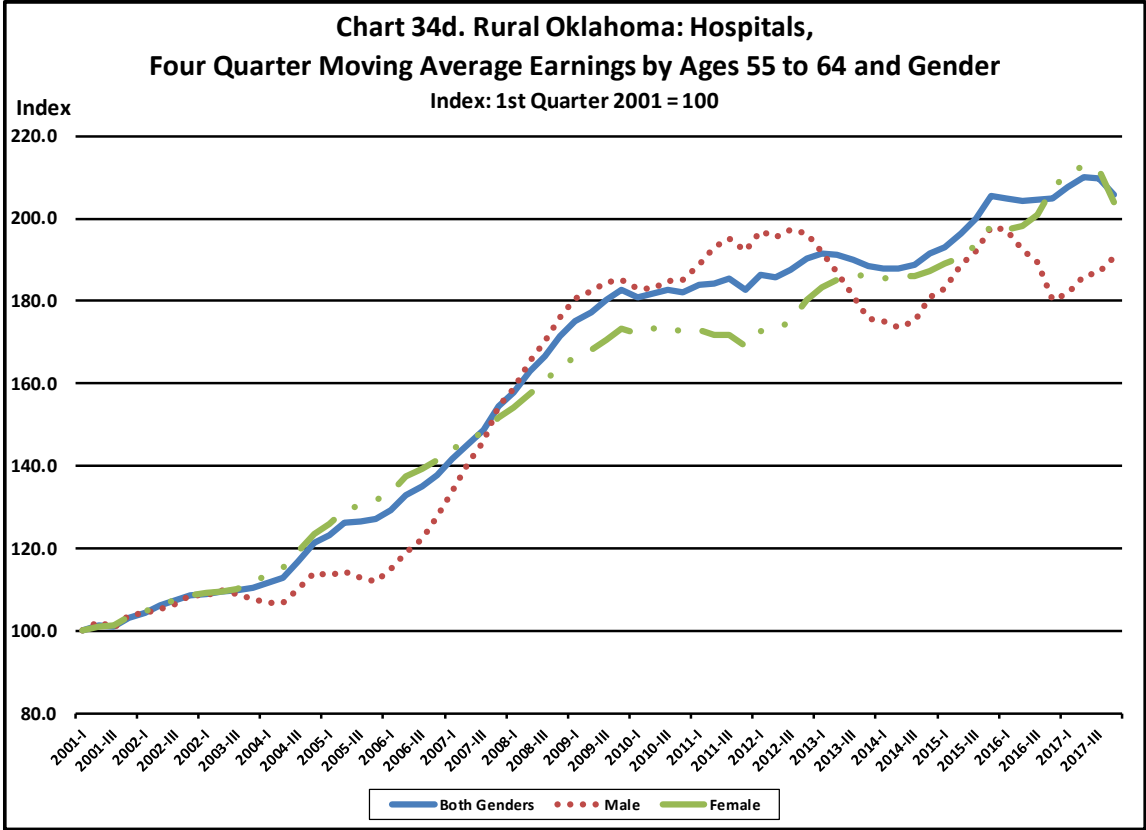


Table 15d exhibits the Oklahoma nursing and residential care facilities annual average monthly earnings for males by age group. Below it, Table 16d displays the same for females. In year 2017 both males and females in ages 55 to 64 had the largest earnings, with ages 45 to 54 displaying the second largest earnings. Females had their first and second largest earnings amount change in the same to age groups, respectively. However, males had their largest in ages 65 to 99 and their second largest earnings amount change in ages 45 to 54, by year 2017.

**Table 15d. Rural Oklahoma: Nursing and Residential Care Facilities
Annual Average Monthly Earnings for Males by Age Group**

Year	Employee Age Group								
	All Ages (14 to 99)	Ages 14 to 18	Ages 19 to 21	Ages 22 to 24	Ages 25 to 34	Ages 35 to 44	Ages 45 to 54	Ages 55 to 64	Ages 65 to 99
2001	\$1,248	\$494	\$704	\$855	\$1,105	\$1,598	\$1,375	\$1,654	\$1,110
2002	\$1,216	\$549	\$775	\$842	\$1,125	\$1,575	\$1,350	\$1,548	\$1,088
2003	\$1,292	\$567	\$748	\$881	\$1,151	\$1,757	\$1,482	\$1,382	\$1,410
2004	\$1,379	\$592	\$811	\$959	\$1,189	\$1,801	\$1,591	\$1,410	\$1,547
2005	\$1,388	\$635	\$773	\$939	\$1,240	\$1,755	\$1,599	\$1,533	\$1,206
2006	\$1,439	\$606	\$754	\$963	\$1,266	\$1,824	\$1,622	\$1,657	\$1,388
2007	\$1,522	\$592	\$828	\$918	\$1,306	\$1,951	\$1,729	\$1,706	\$1,468
2008	\$1,518	\$550	\$823	\$990	\$1,303	\$1,832	\$1,718	\$1,844	\$1,503
2009	\$1,514	\$532	\$1,004	\$1,177	\$1,238	\$1,660	\$1,724	\$1,900	\$1,591
2010	\$1,577	\$614	\$1,005	\$1,102	\$1,315	\$1,777	\$1,814	\$1,935	\$1,512
2011	\$1,585	\$530	\$990	\$1,028	\$1,350	\$1,672	\$1,927	\$1,952	\$1,562
2012	\$1,613	\$542	\$972	\$1,069	\$1,415	\$1,602	\$1,971	\$1,989	\$1,683
2013	\$1,617	\$619	\$990	\$1,256	\$1,453	\$1,508	\$1,965	\$1,972	\$1,654
2014	\$1,664	\$804	\$1,006	\$1,262	\$1,523	\$1,562	\$2,014	\$2,024	\$1,576
2015	\$1,716	\$810	\$1,075	\$1,304	\$1,615	\$1,622	\$1,951	\$2,147	\$1,699
2016	\$1,705	\$815	\$1,055	\$1,295	\$1,485	\$1,665	\$2,118	\$2,051	\$1,738
2017	\$1,674	\$754	\$943	\$1,275	\$1,443	\$1,607	\$1,987	\$2,077	\$1,861
2001 - 2017	\$426	\$260	\$239	\$420	\$338	\$9	\$612	\$423	\$751

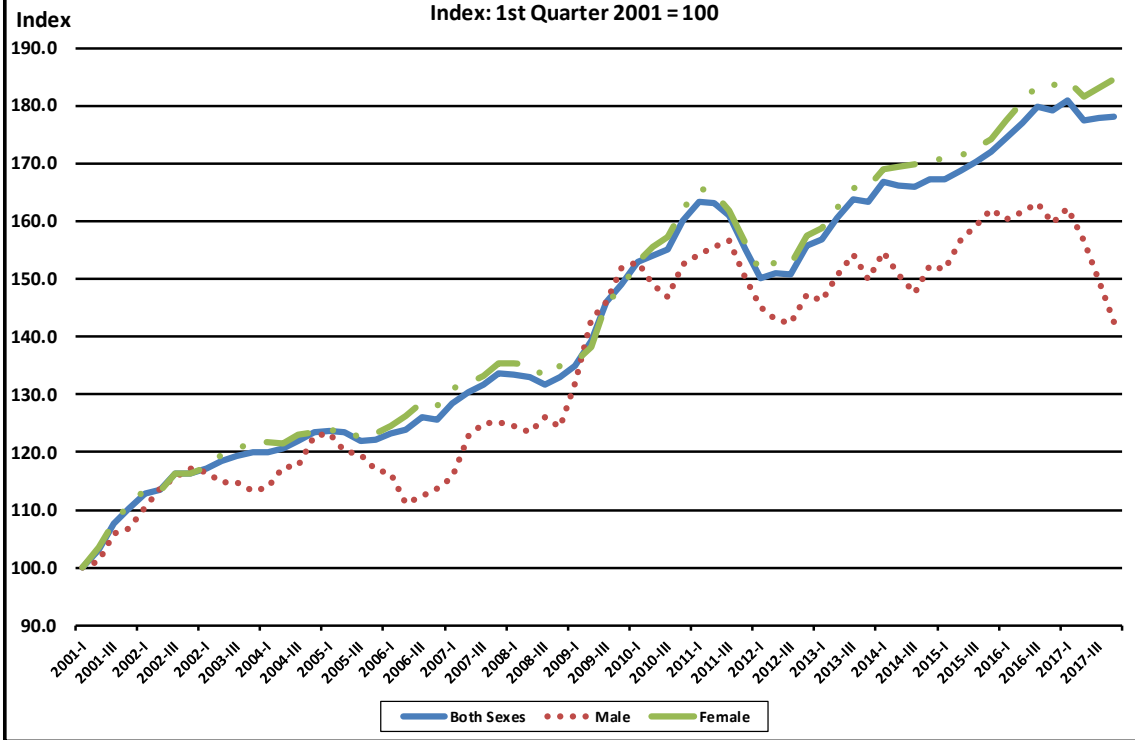
Note: Using Beginning of Quarter Employment Counts.

**Table 16d. Rural Oklahoma: Nursing and Residential Care Facilities
Annual Average Monthly Earnings for Females by Age Group**

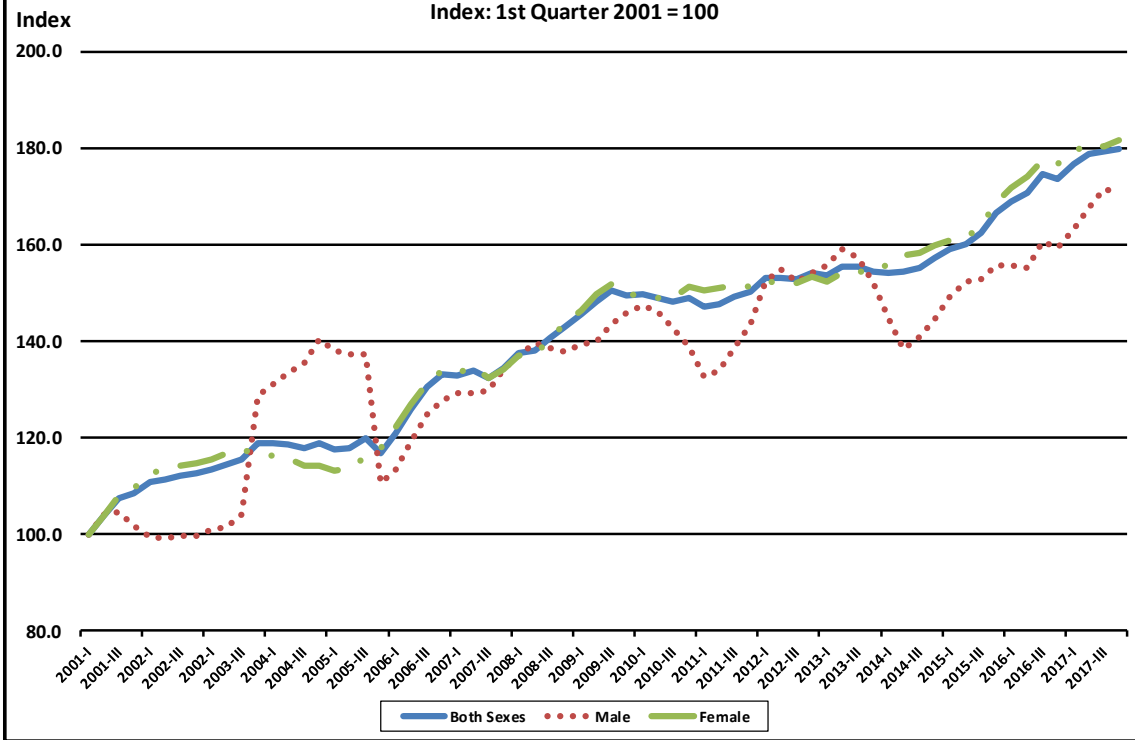
Year	Employee Age Group								
	All Ages (14 to 99)	Ages 14 to 18	Ages 19 to 21	Ages 22 to 24	Ages 25 to 34	Ages 35 to 44	Ages 45 to 54	Ages 55 to 64	Ages 65 to 99
2001	\$1,171	\$545	\$735	\$904	\$1,079	\$1,280	\$1,367	\$1,340	\$1,130
2002	\$1,200	\$570	\$770	\$911	\$1,100	\$1,325	\$1,390	\$1,368	\$1,183
2003	\$1,222	\$563	\$806	\$888	\$1,146	\$1,344	\$1,388	\$1,371	\$1,204
2004	\$1,274	\$614	\$819	\$940	\$1,196	\$1,397	\$1,452	\$1,441	\$1,180
2005	\$1,282	\$571	\$814	\$894	\$1,166	\$1,378	\$1,491	\$1,478	\$1,217
2006	\$1,368	\$607	\$847	\$1,009	\$1,229	\$1,455	\$1,598	\$1,552	\$1,381
2007	\$1,447	\$627	\$897	\$1,036	\$1,311	\$1,539	\$1,675	\$1,664	\$1,386
2008	\$1,531	\$654	\$894	\$1,131	\$1,371	\$1,617	\$1,750	\$1,803	\$1,484
2009	\$1,548	\$647	\$984	\$1,139	\$1,370	\$1,683	\$1,760	\$1,802	\$1,547
2010	\$1,610	\$662	\$1,074	\$1,191	\$1,434	\$1,738	\$1,841	\$1,864	\$1,561
2011	\$1,642	\$700	\$1,033	\$1,192	\$1,462	\$1,811	\$1,870	\$1,898	\$1,562
2012	\$1,638	\$723	\$1,042	\$1,215	\$1,445	\$1,764	\$1,885	\$1,948	\$1,583
2013	\$1,688	\$792	\$1,100	\$1,251	\$1,486	\$1,806	\$1,953	\$2,013	\$1,594
2014	\$1,761	\$761	\$1,130	\$1,312	\$1,515	\$1,874	\$2,102	\$2,115	\$1,651
2015	\$1,808	\$757	\$1,155	\$1,349	\$1,580	\$1,956	\$2,113	\$2,153	\$1,740
2016	\$1,828	\$809	\$1,216	\$1,379	\$1,630	\$1,937	\$2,121	\$2,194	\$1,823
2017	\$1,838	\$840	\$1,223	\$1,395	\$1,647	\$1,938	\$2,116	\$2,178	\$1,875
2001 - 2017	\$667	\$295	\$488	\$491	\$568	\$658	\$749	\$838	\$745

Note: Using Beginning of Quarter Employment Counts.

**Chart 38d. Rural Oklahoma: Nursing and Residential Care Facilities,
Four Quarter Moving Average Earnings by Ages 19 to 21 and Gender**



**Chart 44d. Rural Oklahoma: Nursing and Residential Care Facilities,
Four Quarter Moving Average Earnings by Ages 65 to 99 and Gender**



At the top of the previous page, Chart 38d illustrates rural Oklahoma nursing and residential care facilities earnings change for ages 19 to 21, by gender group. Below that chart on the same page, Chart 44d displays the same for ages 65 to 99. Of the eight age groups, Chart 38b shows the highest earnings rate change for females of over 84 percent; while Chart 44b reveals the highest earnings rate change for males at almost 71 percent, and the second-highest earnings rate change for females of over 81 percent. Not shown but shown in [Appendix H](#), Chart 37d⁵² reveals the second largest earnings change rate for males as approaching 68 percent in ages 14 to 18, over the 17 years of analysis.

Also not shown, but published in the previous report for (all) Oklahoma health groups, the earnings rate of change for Oklahoma nursing and residential care facilities determined a similar pattern and magnitude for earnings change, by age group and gender group, with both genders having their highest and second highest rates of change in the younger two age groups of ages 14 to 18 and ages 19 to 21 or in the older age group of ages 55 to 64 and also in ages 65 to 99, over the 17 years of observation by 2017. This is illustrated in the linked [Chart 37b⁵³](#), [Chart 38b⁵⁴](#), [Chart 43b⁵⁵](#) and [Chart 44b⁵⁶](#), in the order of the ascending age groups' ages, respectively.

In summary of Section V, in 2017 males in all industry, ambulatory health care services, and nursing and residential care facilities had the two largest annual average monthly earnings in ages 45 to 54 and ages 55 to 64; while males in hospitals had the largest two annual average monthly earnings in ages 55 to 64 and ages 65 to 99. Females in all industry, ambulatory health care services, hospitals and nursing and residential care facilities also had the largest two annual average monthly earnings of the same two age groups of ages 45 to 54 and ages 55 to 64.

In our previous report on (all) Oklahoma health industry groups, males in all four industry groups had the largest two annual average monthly earning in the identical two age groups as their rural Oklahoma industry group counterparts named in the previous paragraph. In the same area, females in all industries, hospitals and nursing and residential care facilities also had the two largest earnings in the same two age groups as their rural Oklahoma counterparts. However, in ambulatory health care services females in (all) Oklahoma had the two largest average annual monthly earning in ages 35 to 44 and ages 45 to 55.

In this section, the four industry groups in rural Oklahoma are also explored for earnings amount change over the 17-year interval from 2001 to 2017 by gender groups. Males in all industry and hospital had the largest amount of earnings change in the two oldest age groups of ages 55 to 64 and 65 to 99. Males in ambulatory health care services and nursing and residential care facilities had the earnings change in ages 65 to 99, the second- largest earnings change is in another age group; ages 25 to 34 in the former and ages 45 to 55 in the latter industry group.

Examining female earnings change in rural Oklahoma, hospitals and nursing and residential care facilities had the two largest earnings changes in ages 45 to 54 and ages 55 to 64. Females in all industries had the two largest earnings change in ages 35 to 44 and in ages 55 to 64; while females in ambulatory health care services had the two largest earnings change in ages 35 to 44 and ages 45 to 54, over the 17-year interval of 2001 to 2017.

Our previous report on (all) Oklahoma health industry groups and gender groups determined that in hospitals and nursing and residential care facilities both males and females had the two largest earnings changes in ages 55 to 64 and ages 65 to 99. In the remaining ambulatory health care services, health industry group, males had the largest earnings change in ages 65 to 99, while females had the largest earnings change in ages 55 to 64. In this same health industry group, males had the second-largest

earnings change in ages 25 to 34, while females had the second largest earnings amount change in ages 35 to 44, over the 17-year interval of 2001 to 2017. In short: considering both (all) Oklahoma and in rural Oklahoma, all four of the health industry groups, and both males and female gender groups, the two largest age groups for earnings amount change, most often fell in the two older of the eight age groups examined.

In Section V, rural Oklahoma four-quarter moving average earnings change rates were also calculated and charted for the four industry groups for each of the eight age groups and for the aggregate of all ages by gender, over the 17 years of analysis. In all industry, ambulatory health care services and hospitals both males and females had the highest earnings rate of change in ages 65 to 99. In nursing and residential care facilities males also had the highest rate of change in ages 65 to 99, females had the second-highest earnings rate of change in the same age group, but had the highest earnings rate change in ages 19 to 21. While males show the second highest earnings rate of change in one of the two youngest of the age groups in hospitals and nursing and residential care facilities, females in these same two health industry groups had the second-highest earnings rate change, over the 17 years of observation.

Comparing earnings rate of change for (all) Oklahoma and rural Oklahoma for the four industry groups, in (all) Oklahoma, females had the highest earnings change in ages 65 to 99 and the second-highest earnings change rate in ages 64 to 65, while rural Oklahoma females had the highest and the second highest earnings change rates in the same two age groups in all industry, and hospitals, with the highest earnings change in ambulatory health care services and the second-highest earnings change rate in ages 65 to 99. Rural Oklahoma females did not have either of the two highest earnings change rates in the latter two industry groups ages 55 to 64.

Doing the same earnings rate of change comparison for males in (all) Oklahoma and rural Oklahoma for the four industry groups, as we previously did for females, reveals the following. Oklahoma males highest earnings change rate occurred in ages 65 to 99 in all industry and hospitals, with the second-highest earnings change rate never occurring in either of the two oldest age groups in any of the four industry groups. Although rural Oklahoma males had the highest earnings change rate in ages 65 to 99 in all four industry groups, they only had the second highest earnings change rate in ages 55 to 64 in all industries. In short, females in both (all) Oklahoma and rural Oklahoma in the four industry groups, more often than males, had one or both of the top two ranked earnings change rate age groups in one of the two older of the eight age groups..

VI. Summary of Major Findings and Conclusions

There were four major findings in this analysis of rural Oklahoma health industry and all industry employment and employment change. First, regardless of gender group, in 2017 rural Oklahoma employment in all industry, ambulatory health care services, hospitals and nursing and residential care facilities had the largest two employment age groups in the three middle age groups of ages 25 to 34, 35 to 44 and 45 to 54. The one exception being the employment of males in hospitals with the largest employment group in ages 55 to 64, by one employee. In this regard, (all) Oklahoma had the two largest employment groups in males and females in the middle ages 35 to 44 and 45 to 54, with the two exceptions of females in ambulatory health care services having the largest employment in ages 35 to 44 and males in hospitals having the largest employment in ages 65 to 99.

Second, while the amounts of female and male employment in ‘all ages’ in rural Oklahoma all industries is relatively small in difference, the ‘all ages’ ratio of females to males in ambulatory health care services is over five and a half and in hospitals the female to male ratio is over four times that of males. A comparison of the same three rural Oklahoma industry groups, with those previously reported (all) Oklahoma determines that the ‘all ages’ female to males ratio is also closer to one to one. However the ratio in nursing and residential care facilities and in hospitals is over three and a half times the number of males, a much lower ratio than in rural Oklahoma. Only in nursing and residential care facilities is the ‘all ages’ female to male ratio about the same in the two areas, with the number of females employed over three times that of males in each of the two areas.

Third, regardless of gender group in all industries, hospitals, and nursing and residential care facilities the two older age groups of 55 to 64 and 65 to 99 always have the two largest amounts of employment increases, usually with several of the four younger age groups decreasing in the amount of employment over 17 years of observance. The largest amount of employment gains for male and female ambulatory health care services workers are also in one of these same two oldest age groups, but the second-largest employment increase for both genders is in ages 25 to 34, with only one age group for each gender decreasing in employment, in this time interval. A comparison of rural Oklahoma and (all) Oklahoma employment change reveals similar patterns of change, for the four industry groups.

Fourth, male employment in ‘all ages’ in all industry, in hospitals, and in nursing and residential care facilities increased more rapidly than females, with females increasing more rapidly than males only in ambulatory health care services.

Fifth, and likely the most important employment finding in this analysis is that for both males and females the employment in the three health industry groups always increased most rapidly in ages 65 to 99 and second-most rapidly in ages 55 to 64; with employment decreasing in several of the younger age groups in all but ambulatory health care services. A similar pattern for rates of employment increases are observed in our previous report on health industry groups in (all) Oklahoma, with two noteworthy differences: hospital males had the second-largest rapid employment increase in the younger ages 35 to 44, while the rapid employment increase in rural Oklahoma is higher in the oldest two age groups than in these two age groups in (all) Oklahoma, over the 17 years of observation.

There are six major earnings and earnings change findings in this analysis of rural Oklahoma health industries and all industries.

First, in almost all gender groups in the four industry groups the age groups with the two largest 2017 earnings are ages 45 to 54 and ages 55 to 64. The two exceptions are males employed in hospitals having the largest earnings in ages 65 to 99 and females employed in ambulatory health care services having the largest earnings in ages 35 to 44. Very similar findings are determined for the highest-earning age groups in our previous report, for (all) Oklahoma.

Second, with the exception of nursing and residential care facilities, males have significantly higher annual average monthly earnings than did their female counterparts; this exception

exhibits much more male to female equalitarian earnings, than in the other three industry groups. This finding was also determined to be true in our previous report on (all) Oklahoma. This finding is true by industry, but higher paid male occupations could explain a significant amount of this male to female difference; an avenue which was not explored in this analysis.

Third, comparing the four industry groups' four older and usually higher earnings age groups, the earnings are significantly lower in rural Oklahoma than in (all) Oklahoma.

Fourth, observing the change in earnings, over the 17 years, the two health industry groups of hospitals and nursing and residential care facilities always had the largest male and female earnings change in the oldest three age groups of ages 45 to 54, ages 55 to 64 and ages 65 to 99. However, females in ambulatory health care services had the largest earnings change in ages 35 to 44. Males in this industry group had the second-largest earnings change in ages 25 to 34. In comparison with our earnings change findings previously reported in (all) Oklahoma, both males and females in that area had their largest amount of earnings change in the two oldest age groups, with also two exceptions. The exceptions are females in ambulatory health care services with the second-highest change in ages 35 to 44 and males in hospitals with the largest earnings change in other slightly younger age groups.

Fifth, in rural Oklahoma over the 17 years of observance, both males and females in all industry have the highest earnings rate change in the two oldest of the eight age groups. Both males and females in all three health industries have one of the two highest earnings change rate in the oldest age group. However males employed in hospitals and nursing and residential care facilities had the second-largest earnings change in the youngest of the eight age groups. Our previous results for (all) Oklahoma determined similar results for females in the three health industry groups, and males having one of the two highest earnings change rates in the youngest of the eight age groups in the same two of the three health industry groups.

Sixth, in rural Oklahoma in two of the health industry groups, the female earnings change rate is faster than their male counterparts, but the male earnings change rate grew faster in all industries and hospitals. In (all) Oklahoma, the female 'all ages' earnings change rate was faster than that of males in all four industry groups, over the 17 years of observation.

This analysis and the findings allow three conclusions. First, females appear to be maintaining their historically higher portion of employment in the health industry than males with 'all ages' experiencing only a tiny less higher employment growth rate than males in hospitals and nursing and residential care facilities and a higher amount more in ambulatory health care services, that is not likely to change anytime soon. Second, and in like manner, females' lower earnings than males will likely continue since the 'all ages' earnings increased a small amount more than males per year in two of the health industry groups and actually increased less than males in hospitals, over the 17 years of observance. Third, although employment in the 55 and older ages in Oklahoma's health industry are not the largest, their portion of employment is growing more rapidly than are younger age groups, with several of the younger actually decreasing in employment. This is especially true in hospitals and residential nursing care facilities with near retirement employment ages growing faster than the U.S., and younger people not choosing to work in some areas of health industry. This signifies potential future health industry employment

shortages. The latter trend appears to be worse in rural Oklahoma than (all) Oklahoma, especially so in hospitals and nursing and residential care facilities.

Endnotes: Full name of report tables and charts, with identifying reference numbers.

¹ Jesse Fuchs, “Oklahoma Health Industry and All Industry Employment and Earnings: A Trend Analysis Comparison of Change by Age and Gender, 2001 to 2017.” January 2019, Oklahoma Employment Security Commission. https://www.ok.gov/oesc/Labor_Market/Labor_Market_Publications/index.html

² **Table 1a, Oklahoma All Industry Annual Average Employment by Age Group - Years 14 to 99**

³ **Chart 1c, Rural Oklahoma: All Industries, Four Quarter Moving Average Employment by All Ages (14 to 99 Years) and Age Groups 14 to 34 Years Old Index: 1st Quarter 2001 = 100**

⁴ **Chart 1a, Oklahoma: All Industry Four Quarter Moving Average Employment by All Ages (14 to 99) and Age Groups 14 to 34 Years Old Index: Q1/2001 = 100**

⁵ **Table 2a, Oklahoma Ambulatory Health Care Services Annual Average Employment by Age Group – Years 14 to 99**

⁶ **Chart 4a, Oklahoma: Ambulatory Health Care Services Four Quarter Moving Average Employment by All Ages (14 to 99) and Age Groups 35 to 99 Years Old Index: Q1/2001 = 100**

⁷ **Chart 3a, Oklahoma: Ambulatory Health Care Services Four Quarter Moving Average Employment by All Ages (14 to 99) and Age Groups 14 to 34 Years Old Index: Q1/2001 = 100**

⁸ **Table 3a, Oklahoma Hospitals Annual Average Employment by Age Group - Years 14 to 99**

⁹ **Chart 6a, Oklahoma: Hospitals, Four Quarter Moving Average Employment by All Ages (14 to 99) and Age Groups 35 to 99 Years Old Index: Q1/2001 = 100**

¹⁰ **Table 4a, Oklahoma, Nursing and Residential Care Facilities, Annual Average Employment by Age Group - Years 14 to 99**

¹¹ **Chart 8a, Oklahoma: Nursing and Residential Care Facilities Four Quarter Moving Average Employment by All Ages (14 to 99) and Age Groups 35 to 99 Years Old Index: Q1/2001 = 100**

¹² **Table 1b, Oklahoma All Industry Average Monthly Earnings by Age Group - Years 14 to 99**

¹³ **Chart 1d. Rural Oklahoma: All Industries, Four Quarter Moving Average Earnings by All Ages (14 to 99 Years) and Age Groups 14 to 34 Years Old Index: 1st Quarter 2001 = 100**

¹⁴ **Chart 1b, Oklahoma: All Industry, Four Quarter Moving Average Earnings by All Ages (14 to 99) and Age Groups 14 to 34 Years Old Index: Q1/2001 = 100**

¹⁵ **Table 2b Oklahoma Ambulatory Health Care Services Average Monthly Earnings by Age Group - Years 14 to 99**

¹⁶ **Chart 4b, Oklahoma: Ambulatory Health Care Services Four Quarter Moving Average Earnings by All Ages (14 to 99) and Age Groups 35 to 99 Years Old Index: Q1/2001 = 100**

¹⁷ **Chart 3d, Rural Oklahoma: Ambulatory Health Care Services, Four Quarter Moving Average Earnings by All Ages (14 to 99 Years) and Age Groups 14 to 34 Years Old Index: 1st Quarter 2001 = 100**

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- ¹⁸ Chart 3b, Oklahoma: Ambulatory Health Care Services Four Quarter Moving Average Earnings by All Ages (14 to 99) and Age Groups 14 to 34 Years Old Index: Q1/2001 = 100
- ¹⁹ Chart 6b, Oklahoma: Hospitals Four Quarter Moving Average Earnings by All Ages (14 to 99) and Age Groups 35 to 99 Years Old Index: Q1/2001 = 100
- ²⁰ Chart 8b, Oklahoma: Nursing and Residential Care Facilities Four Quarter Moving Average Earnings by All Ages (14 to 99) and Age Groups 35 to 99 Years Old Index: Q1/2001 = 100
- ²¹ Chart 7b, Oklahoma: Nursing and Residential Care Facilities Four Quarter Moving Average Earnings by All Ages (14 to 99) and Age Groups 14 to 34 Years Old Index: Q1/2001 = 100
- ²² Table 6a, Oklahoma All Industry Annual Average Employment for Males by Age Group - Years 14 to 99
- ²³ Table 7a, Oklahoma All Industry Annual Average Employment for Females by Age Group - Years 14 to 99
- ²⁴ Chart 16a, Oklahoma: All Industry Four Quarter Moving Average Employment by Ages 55 to 64 and Gender Group Index: Q1/2001 = 100
- ²⁵ Chart 17a, Oklahoma: All Industry Four Quarter Moving Average Employment by Ages 65 to 99 by Gender Group Index: Q1/2001 = 100
- ²⁶ Chart 25a, Oklahoma: Ambulatory Health Care Services Four Quarter Moving Average Employment by Ages 55 to 64 and Gender Group Index: Q1/2001 = 100
- ²⁷ Chart 26a, Oklahoma: Ambulatory Health Care Services Four Quarter Moving Average Employment for Ages 65 to 99 by Gender Group Index: Q1/2001 = 100
- ²⁸ Chart 29c, Rural Oklahoma: Hospitals, Four Quarter Moving Average Employment by Ages 19 to 21 and Gender Index: 1st Quarter 2001 = 100
- ²⁹ Chart 34a, Oklahoma: Hospitals Four Quarter Moving Average Employment by Ages 55 to 64 by Gender Group Index: Q1/2001 = 100
- ³⁰ Chart 35a, Oklahoma: Hospitals 99, Four Quarter Moving Average Employment by Ages 65 to 99 by Gender Group Index: Q1/2001 = 100
- ³¹ Table 16c, Rural Oklahoma: Nursing and Residential Care Facilities Annual Average Employment for Females by Age Group
- ³² Table 15a, Oklahoma Nursing and Residential Care Facilities Annual Average Employment for Males by Age Group - Years 14 to 99
- ³³ Table 16a, Oklahoma Nursing and Residential Care Facilities Annual Average Employment for Females by Age Group - Years 14 to 99
- ³⁴ Chart 43a, Oklahoma: Nursing and Residential Care Facilities Four Quarter Moving Average Employment by Ages 55 to 64 by Gender Group Index: Q1/2001 = 100
- ³⁵ Chart 44a, Oklahoma: Nursing and Residential Care Facilities Four Quarter Moving Average Employment by Ages 65 to 99 by Gender Group Index: Q1/2001 = 100
- ³⁶ Appendix H: Rural Oklahoma Earnings Charts by Industry Group, Age Group and Gender
- ³⁷ Chart 16b, Oklahoma: All Industry Four Quarter Moving Average Earnings by Ages 55 to 64 by Gender

Group Index: Q1/2001 = 100

- ³⁸ **Chart 17b, Oklahoma: All Industry Four Quarter Moving Average Earnings by Ages 65 to 99 by Gender
Group Index: Q1/2001 = 100**
- ³⁹ **Table 9b, Oklahoma Ambulatory Health Care Services Annual Average Monthly Earnings for Males by
Age Group - Years 14 to 99**
- ⁴⁰ **Table 10b, Oklahoma Ambulatory Health Care Services Annual Average Monthly Earnings for Females by
Age Group - Years 14 to 99**
- ⁴¹ **Chart 22d, Rural Oklahoma: Ambulatory Health Care Services, Four Quarter Moving Average Earnings
by Ages 25 to 34 and Gender Index: 1st Quarter 2001 = 100**
- ⁴² **Chart 26b, Oklahoma: Ambulatory Health Care Services Four Quarter Moving Average Earnings for Ages
65 to 99 by Gender Group Index: Q1/2001 = 100**
- ⁴³ **Chart 25b, Oklahoma: Ambulatory Health Care Services Four Quarter Moving Average Earnings by Ages
55 to 64 and Gender Group Index: Q1/2001 = 100**
- ⁴⁴ **Chart 20b, Oklahoma: Ambulatory Health Care Services Four Quarter Moving Average Earnings by Ages
19 to 21 and Gender Group Index: Q1/2001 = 100**
- ⁴⁵ **Chart 22b, Oklahoma: Ambulatory Health Care Services Four Quarter Moving Average Earnings by Ages
25 to 34 and Gender Group Index: Q1/2001 = 100**
- ⁴⁶ **Table 12b, Oklahoma Hospitals Annual Average Monthly Earnings for Males by Age Group - Years 14 to
99**
- ⁴⁷ **Table 13b, Oklahoma Hospitals Annual Average Monthly Earnings for Females by Age Group - Years 14
to 99**
- ⁴⁸ **Chart 28d, Rural Oklahoma: Hospitals, Four Quarter Moving Average Earnings by Ages 14 to 18 and
Gender Index: 1st Quarter 2001 = 100**
- ⁴⁹ **Chart 35b, Oklahoma: Hospitals Four Quarter Moving Average Earnings by Ages 65 to 99 by Gender
Group Index: Q1/2001 = 100**
- ⁴⁹ **Chart 34b, Oklahoma: Hospitals Four Quarter Moving Average Earnings by Ages 55 to 65 and Gender
Group Index: Q1/2001 = 100**
- ⁵¹ **Chart 32b, Oklahoma: Hospitals Four Quarter Moving Average Earnings by Ages 35 to 44 and Gender
Group Index: Q1/2001 = 100**
- ⁵² **Chart 37d, Rural Oklahoma: Nursing and Residential Care Facilities, Four Quarter Moving Average
Earnings by Ages 14 to 18 and Gender Index: 1st Quarter 2001 = 100**
- ⁵³ **Chart 37b, Oklahoma: Nursing and Residential Care Facilities Four Quarter Moving Average Earnings by
Ages 14 to 18 and Gender Group Index: Q1/2001 = 100**
- ⁵⁴ **Chart 38b, Oklahoma: Nursing and Residential Care Facilities Four Quarter Moving Average Earnings by
Ages 19 to 21 and Gender Index: Q1/2001 = 100**
- ⁵⁵ **Chart 43b, Oklahoma: Nursing and Residential Care Facilities Four Quarter Moving Average Earnings by
Ages 55 to 64 and Gender Group Index: Q1/2001 = 100**

⁵⁶ Chart 44b, Oklahoma, Nursing and Residential Care Facilities Four Quarter Moving Average Earnings by Ages 65 to 99 by Gender Group Index: Q1/2001 = 100

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