

AzHHA's Workforce Data Center: Nursing Workforce Website Graphics June 2010

In partial fulfillment of year 1 requirements for the AzHHA's Healthcare
Institute Workforce Center: Data Collection, 2009 – 2011 Workforce Study
Sponsored by the Arizona Hospital and Healthcare Association

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General Notes on Data

For this report, the Center for Health Information & Research (CHiR) abstracted data from its Arizona Health Professions data bases on Advanced Practice Nurse (APNs), Registered Nurses (RNs), and Licensed Practical Nurses (LPNs) with active Arizona licenses. The analysis included demographic comparisons of the 2009 renewals with all 2009 active nurses for each nursing category. Additional comparisons between years 2008 and 2009 were included for trend purposes.

Missing data always poses a concern and may have influenced the results. The missing variables will be described under each nursing category.

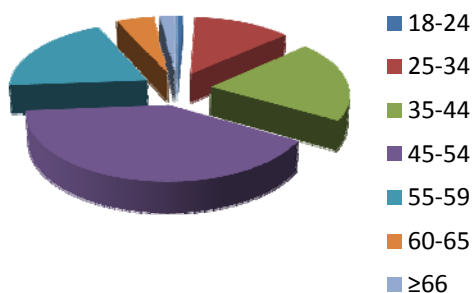
Population estimates were taken from the U.S. Census Bureau. It was assumed that the population per county remained relatively stable between the June 2008 renewals and the June 2009 renewals. There may be a shift in population for the 2010 and 2011 renewals given Arizona's recent immigration reform law; however, this was not in place at the time of the 2008 and 2009 renewals.

I. Advanced Practice Nurses (APNs)

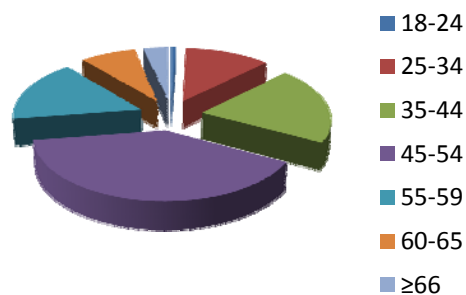
APNs include: Certified Nurse Midwife (CNM), Nurse Practitioner (NP), Certified Registered Nurse Anesthetist (CRNA), and Clinical Nurse Specialist (CNS).

APNs by Age

2009 Renewals Only
(N = 839)



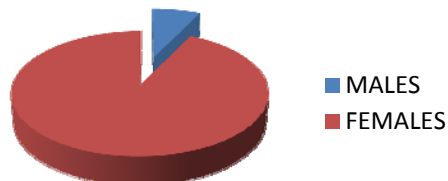
2009 ALL APNs
(N = 3,160)



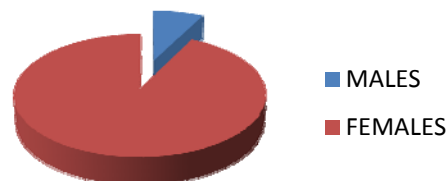
Age	2009 Renewals Only (N = 839)		2009 All APNs (N = 3,160)	
18-24 years	6	0.7%	17	0.5%
25-24 years	107	12.8%	379	12.0%
35-44 years	166	19.8%	643	20.4%
45-54 years	340	40.5%	1,255	39.7%
55-59 years	163	19.4%	515	16.3%
60-65 years	41	4.9%	244	7.7%
≥66 years	16	1.9%	107	3.4%

APNs by Gender

2009 Renewals Only
(N = 839)



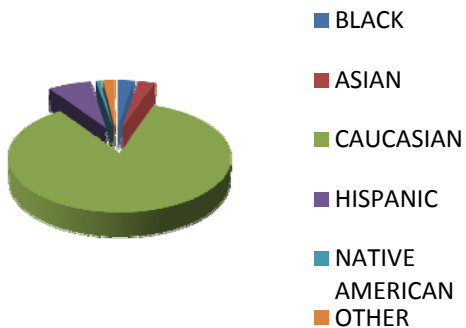
2009 ALL APNs
(N = 3,160)



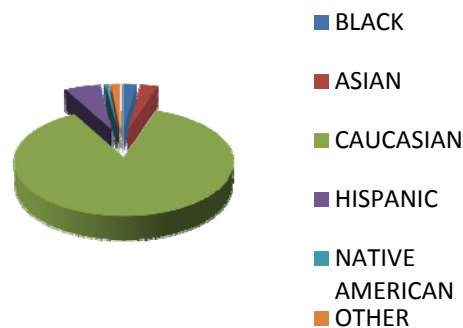
Gender	2009 Renewals Only (N = 839)		2009 All APNs (N = 3,160)	
Males	60	7.2%	235	7.4%
Females	779	92.8%	2,925	92.6%

APNs by Race

2009 Renewals Only
(N = 803*)



2009 ALL APNs
(N = 2,995**)

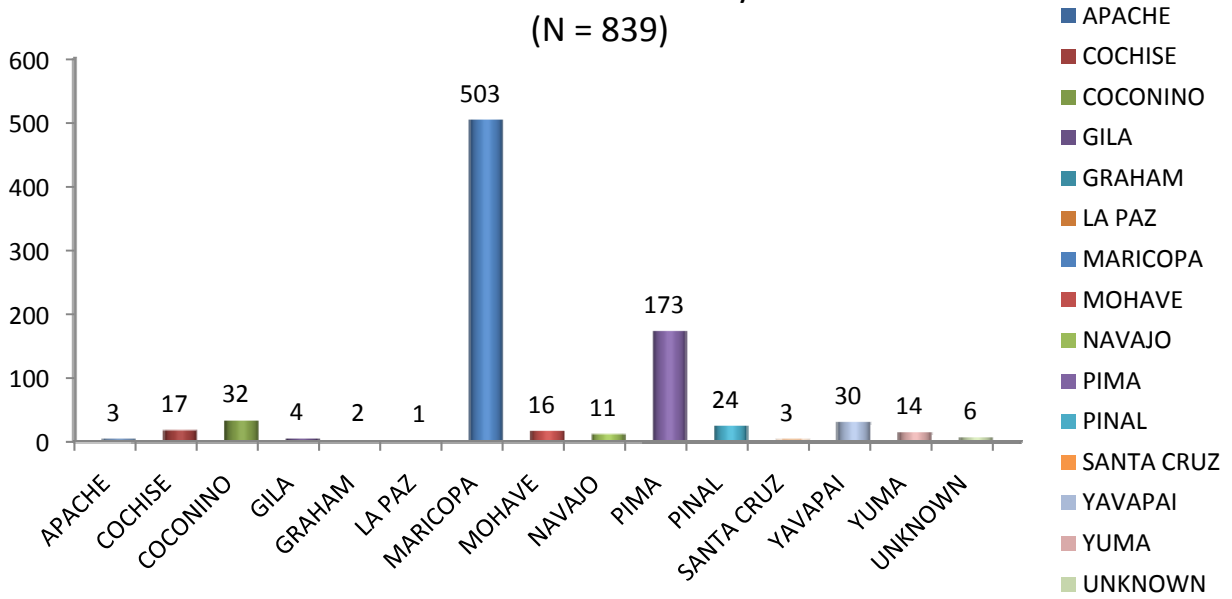


Race	2009 Renewals Only (N = 803)		2009 All APNs (N = 2,995)	
Black	21	2.6%	67	2.2%
Asian	22	2.7%	85	2.8%
Caucasian	683	85.1%	2,603	86.9%
Hispanic	56	7.0%	176	5.9%
Native American	6	0.8%	18	0.6%
Other / Multiple	15	1.8%	46	1.6%

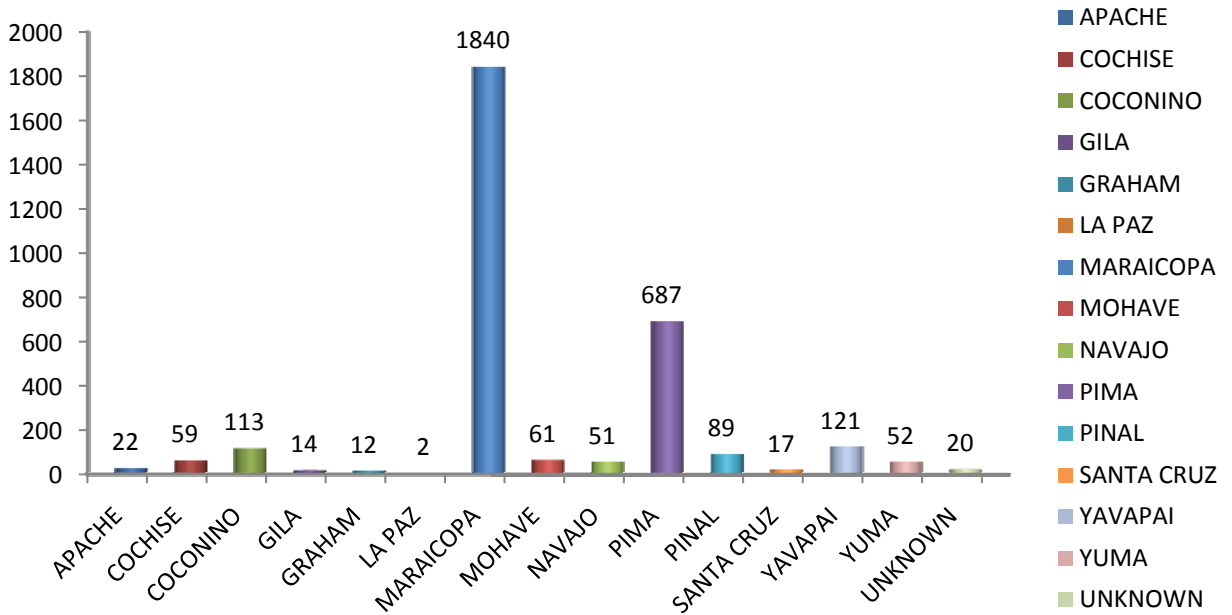
Note: *For the 2009 Renewals, 36 APNs were missing indication of race. **For All APNs, 165 were missing indication of race.

APNs by County

2009 Renewals Only
(N = 839)



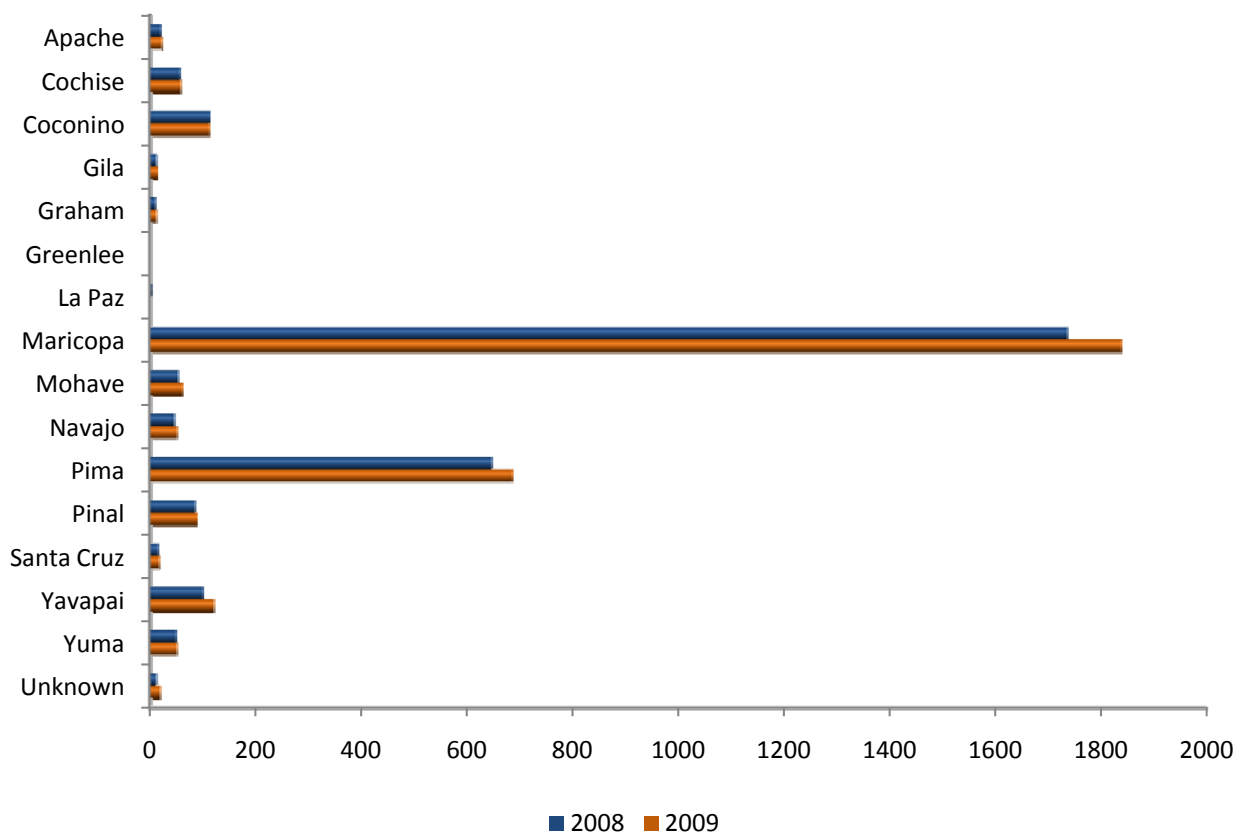
2009 ALL APNs
(N = 3,160)



COUNTY	2009 Renewals Only (N = 839)		2009 All APNs (N = 3,160)	
Apache	3	0.4%	22	0.7%
Cochise	17	2%	59	1.9%
Coconino	32	3.8%	113	3.6%
Gila	4	0.5%	14	0.4%
Graham	2	0.2%	12	0.4%
Greenlee	0	0.0%	0	0.0%
La Paz	1	0.1%	2	0.1%
Maricopa	503	60%	1,840	58.2%
Mohave	16	1.9%	61	1.9%
Navajo	11	1.3%	51	1.6%
Pima	173	20.6%	687	21.7%
Pinal	24	2.9%	89	2.8%
Santa Cruz	3	0.4%	17	0.5%
Yavapai	30	3.6%	121	3.8%
Yuma	14	1.7%	52	1.7%
Unknown / missing	6	0.6%	19	0.7%

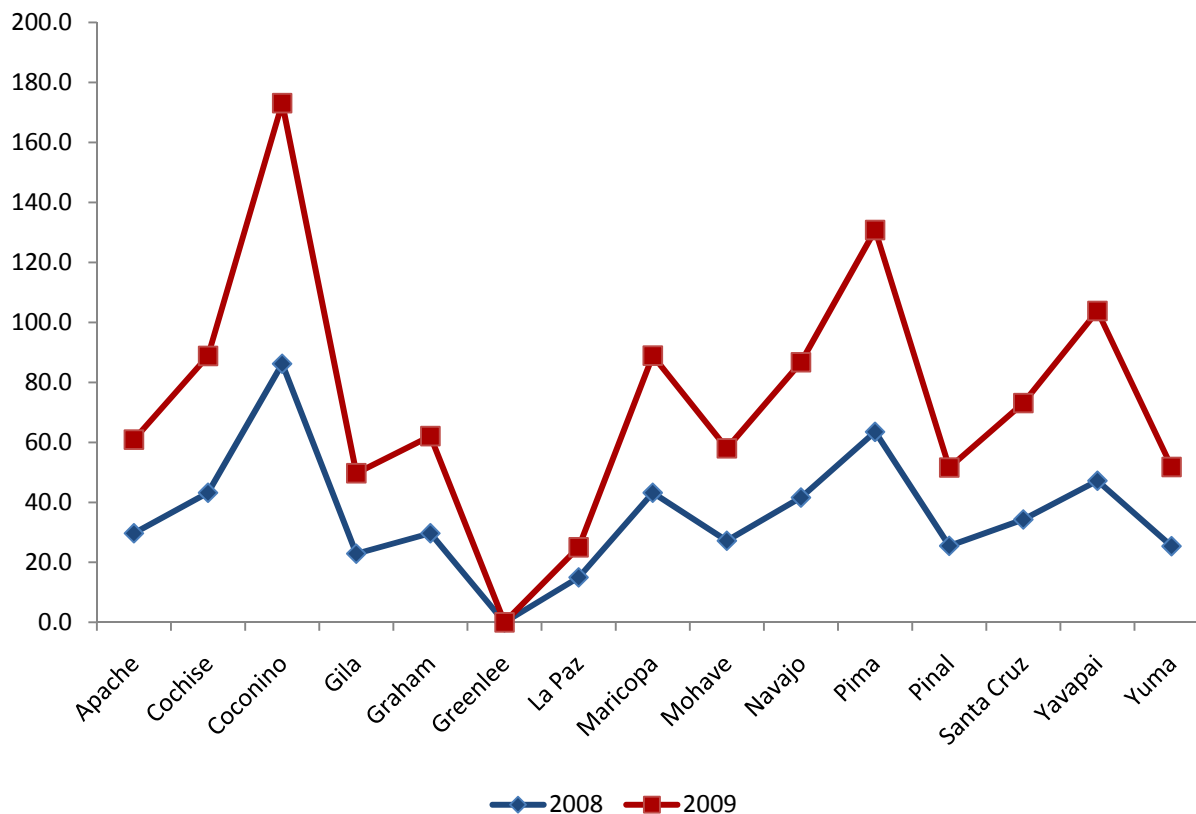
Comparisons of 2009 and 2008 APN Data

APNs by County in Arizona



COUNTY	2009 All APNs (N = 3,160)		2008 All APNs (N = 2,965)	
Apache	22	0.7%	21	0.7%
Cochise	59	1.9%	56	1.9%
Coconino	113	3.6%	112	3.8%
Gila	14	0.4%	12	0.4%
Graham	12	0.4%	11	0.4%
Greenlee	0	0.0%	0	0.0%
La Paz	2	0.1%	3	0.1%
Maricopa	1,840	58.2%	1,738	58.6%
Mohave	61	1.9%	53	1.8%
Navajo	51	1.6%	47	1.6%
Pima	687	21.7%	648	21.9%
Pinal	89	2.8%	86	2.9%
Santa Cruz	17	0.5%	15	0.5%
Yavapai	121	3.8%	101	3.4%
Yuma	52	1.7%	50	1.7%
Unknown / missing	19	0.7%	12	0.3%

APNs per 100,000 of Population by County in Arizona



COUNTY	Estimated Population*	2009 APNs per 100,000	2008 APNs per 100,000
Apache	70,591	31.2	29.7
Cochise	129,518	45.6	43.2
Coconino	129,849	86.9	86.2
Gila	52,199	26.8	22.9
Graham	37,045	32.4	29.7
Greenlee	8,041	0.0	0.0
La Paz	20,012	10.0	15.0
Maricopa	4,023,132	45.7	43.2
Mohave	194,825	30.8	27.2
Navajo	112,975	45.1	41.6
Pima	1,020,200	67.3	63.5
Pinal	340,962	26.1	25.5
Santa Cruz	43,771	38.8	34.3
Yavapai	215,686	56.6	47.2
Yuma	196,972	26.4	25.4

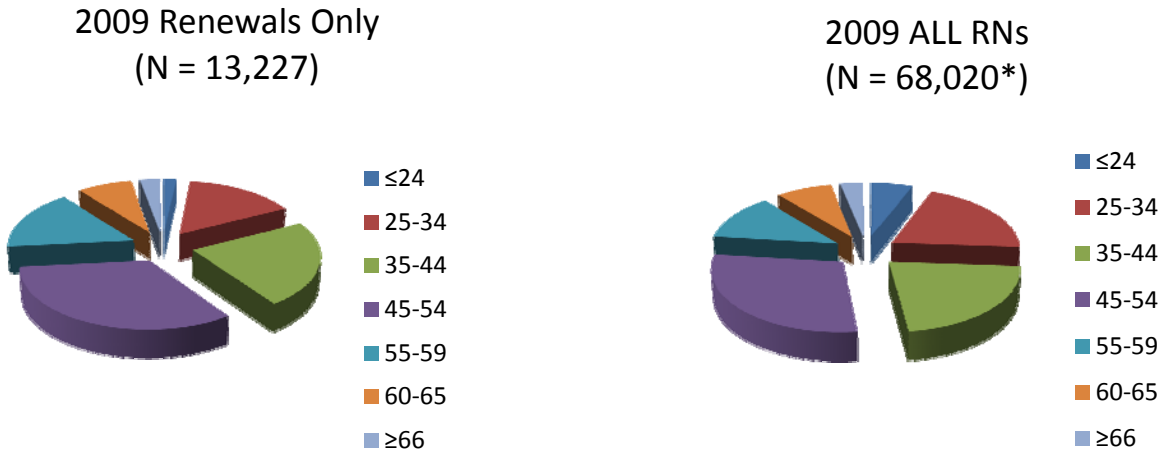
NOTE: *Population estimates from U. S. Census Bureau

APN Observations

- No significant differences were noted in age, gender, race/ethnicity, or county between the 2009 APN renewals and the 2009 total APNs.
- The majority of APNs in Arizona who renewed their license in 2009 continue to be primarily Caucasian at 85%; Asian at 2.7%; Black at 2.6%; Hispanic at 7%; Native American under 1%, and “Other” or “Multiple” comprising the remaining 1.8%.
- The majority of APNs (60%) work in Maricopa County, followed by Pima (20.6%). These two counties account for more than 80% of the APN workforce.
- Missing demographic data for the APNs was minimal. There were no missing data for age or gender; race had a 5% missing rate; and the missing rate for “County” was under 1%.

II. Registered Nurses (RNs)

RNs by Age



AGE	2009 Renewals Only (N = 13,227)		2009 All RNs (N = 68,020*)	
≤24 years	224	1.7%	3,998	5.9%
25-24 years	2,086	15.8%	13,777	20.3%
35-44 years	3,017	22.8%	14,960	22.0%
45-54 years	4,380	33.1%	19,564	28.8%
55-59 years	2,122	16.1%	8,239	12.1%
60-65 years	1,018	7.7%	5,302	7.8%
≥66 years	380	2.8%	2,180	3.2%

Note: *For All RNs, 1 was missing indication of age.

RNs by Gender

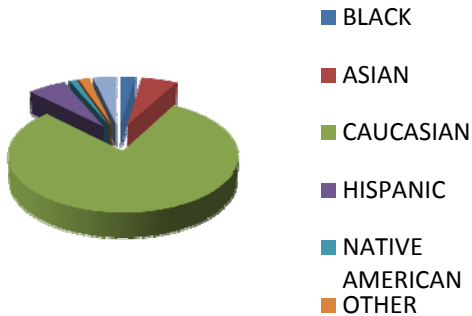


GENDER	2009 Renewals Only (N = 13,221*)		2009 All RNs (N = 67,966**)	
Males	1,207	9.1%	6,945	10.2%
Females	12,014	90.9%	61,021	89.8%

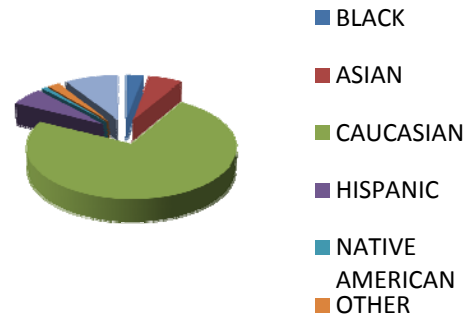
Note: *For the 2009 Renewals, 6 RNs were missing indication of gender. **For All RNs, 55 were of unknown or missing gender.

RNs by Race

2009 Renewals Only
(N = 12,746*)



ALL RNs 2009
(N = 61,889**)

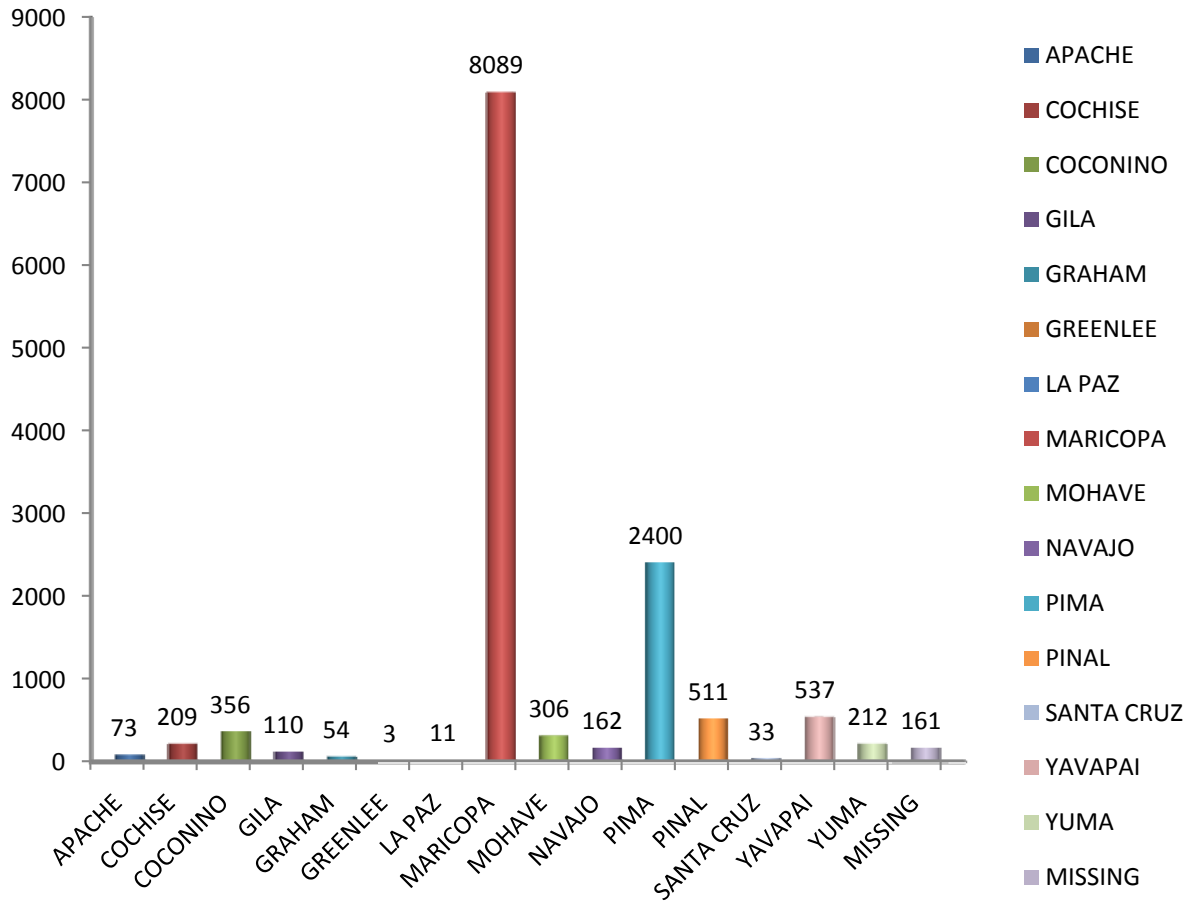


RACE	2009 Renewals Only (N = 12,746*)		2009 All RNs (N = 61,889**)	
Black	312	2.5%	1,929	3.1%
Asian	743	5.8%	3,870	6.3%
Caucasian	10,517	82.5%	50,199	81.1%
Hispanic	800	6.3%	3,917	6.3%
Native American	145	1.1%	608	1.0%
Other / Multiple	229	1.8%	1,366	2.2%

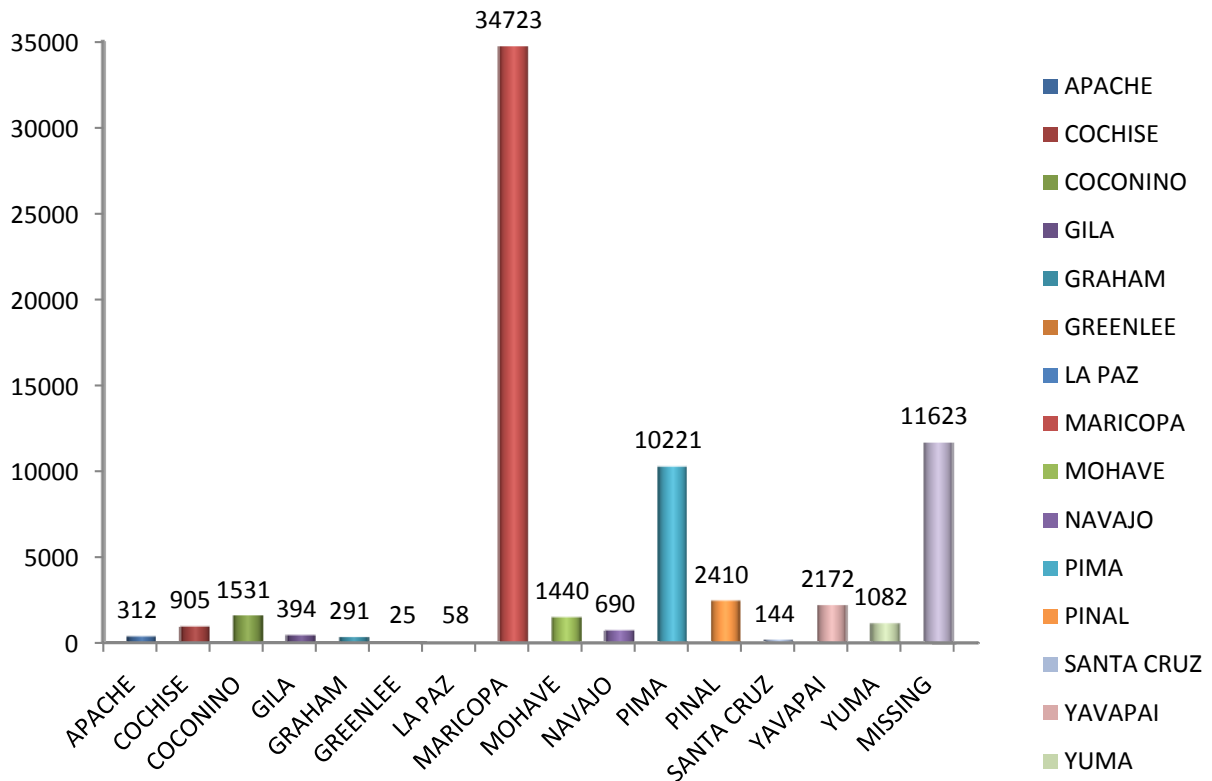
Note: *For the 2009 Renewals, 481 RNs were missing indication of race. **For All RNs, 6,132 were missing indication of race.

RNs by County

2009 Renewals Only
(N = 13,227)



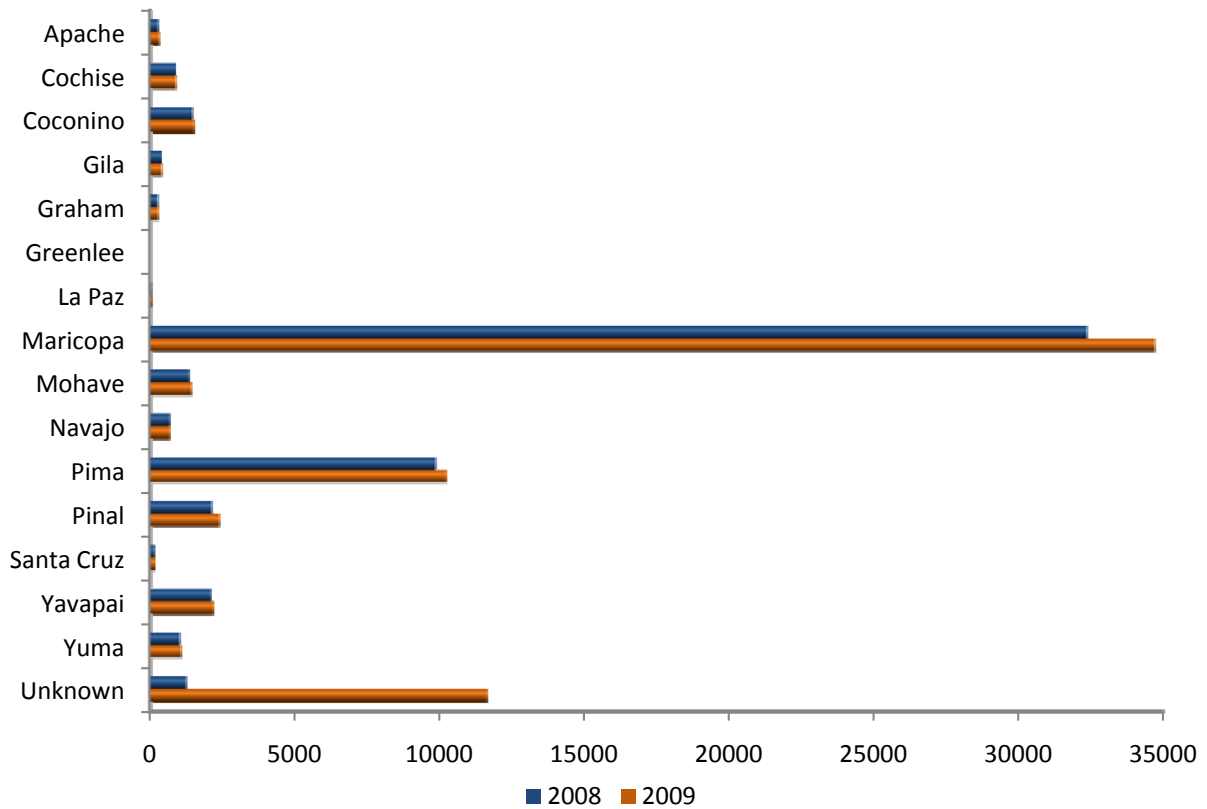
2009 ALL RNs
(N = 68,021)



COUNTY	2009 Renewals Only (N = 13,227)		2009 All RNs (N = 68,021)	
Apache	73	0.6%	312	0.5%
Cochise	209	1.6%	905	1.3%
Coconino	356	2.7%	1,531	2.3%
Gila	110	0.8%	394	0.6%
Graham	54	0.4%	291	0.4%
Greenlee	3	0.0%	25	0.0%
La Paz	11	0.1%	58	0.1%
Maricopa	8,089	61.2%	34,723	51.1%
Mohave	306	2.3%	1,440	2.1%
Navajo	162	1.2%	690	1.0%
Pima	2,400	18.1%	10,221	15.0%
Pinal	511	3.9%	2,410	3.5%
Santa Cruz	33	0.3%	144	0.2%
Yavapai	537	4.0%	2,172	3.2%
Yuma	212	1.6%	1,082	1.6%
Unknown / missing	161	1.2%	11,623	17.1%

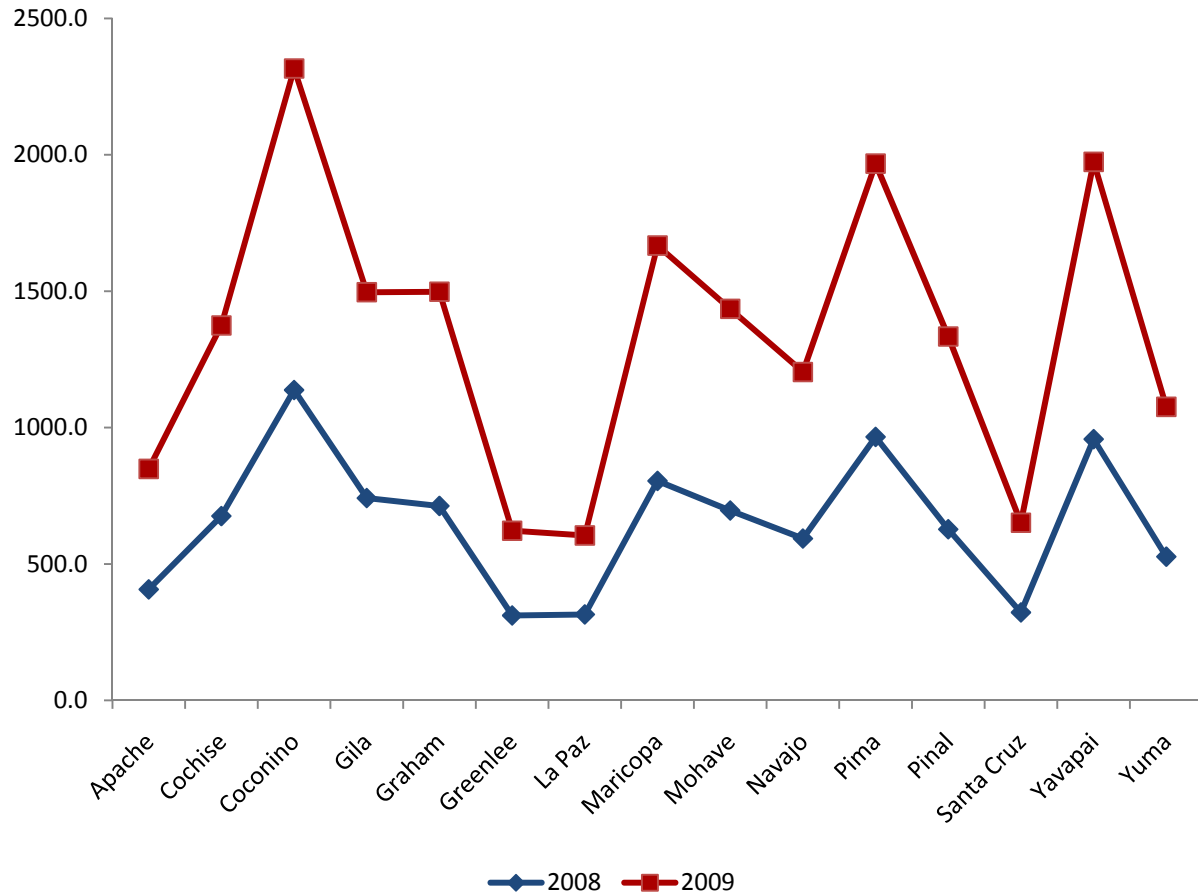
Comparisons of 2009 and 2008 RN Data

RNs by County in Arizona



COUNTY	2009 All RNs (N = 68,021)		2008 All RNs (N = 54,260)	
Apache	312	0.5%	287	0.5%
Cochise	905	1.3%	875	1.6%
Coconino	1,531	2.3%	1,478	2.7%
Gila	394	0.6%	387	0.7%
Graham	291	0.4%	264	0.5%
Greenlee	25	0.0%	25	0.1%
La Paz	58	0.1%	63	0.1%
Maricopa	34,723	51.1%	32,357	59.6%
Mohave	1,440	2.1%	1,356	2.5%
Navajo	690	1.0%	670	1.2%
Pima	10,221	15.0%	9,855	18.2%
Pinal	2,410	3.5%	2,138	3.9%
Santa Cruz	144	0.2%	141	0.3%
Yavapai	2,172	3.2%	2,085	3.8%
Yuma	1,082	1.6%	1,037	1.9%
Unknown / Missing	11,632	17.1%	1,242	2.4%

RNs per 100,000 of Population by County in Arizona



COUNTY	Estimated Population*	2009 RNs per 100,000	2008 RNs per 100,000
Apache	70,591	441.9	406.5
Cochise	129,518	698.8	675.6
Coconino	129,849	1,178.6	1,137.8
Gila	52,199	754.8	741.5
Graham	37,045	785.5	712.6
Greenlee	8,041	310.9	310.9
La Paz	20,012	289.8	314.8
Maricopa	4,023,132	863.1	804.3
Mohave	194,825	739.2	696.1
Navajo	112,975	610.7	593.0
Pima	1,020,200	1,001.8	965.9
Pinal	340,962	706.8	627.1
Santa Cruz	43,771	329.0	322.13
Yavapai	215,686	1,016.4	957.7
Yuma	196,972	549.5	526.6

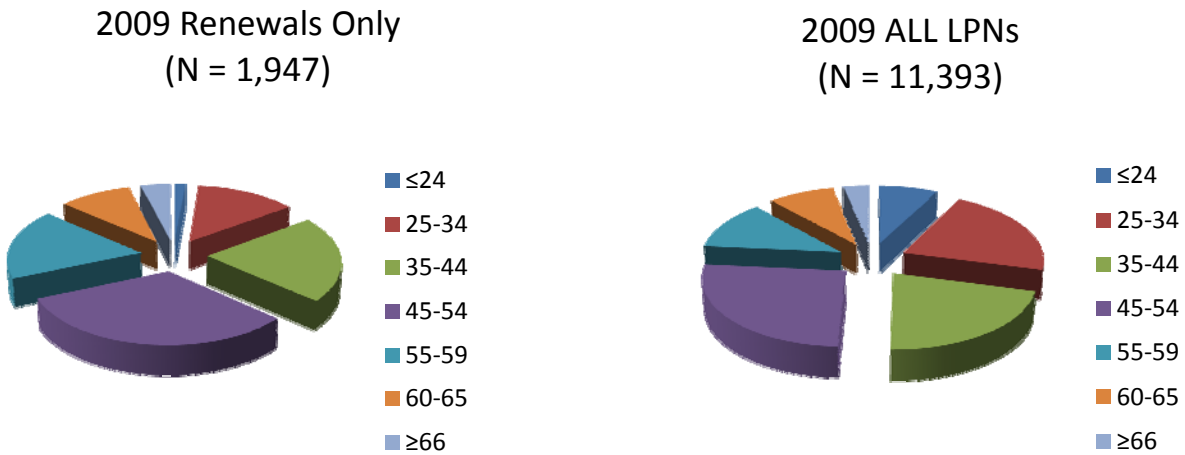
Note: *Population estimates from U. S. Census Bureau

RN Observations

- For the 13,227 Arizona RNs who renewed in 2009, nearly half (49.2%) are between the ages of 45 and 59; and a third (33%) are between the ages of 45 to 54 years of age. This is consistent with a recent report from the Health Resources and Services Administration (HRSA, 2010), who found that nearly 45% of the RNs in the U.S. are 50 or older in 2008, a significant increase from 33% in 2000 and 25% in 1980 (HRSA, 2010). The average age of all licensed RNs in the U.S. has increased from 46.8 years in 2004 to 47.0 in 2008 (HRSA).
- Gender between renewals and ‘all RNs’ was consistent at 10% males and 90% females. Race was stable between renewals only and ‘all RNs,’ with the majority (82.5%) being Caucasian, followed by Hispanic (6.3%), Asian (5.8%), Black (2.5 %), and Native American (1.1%). Although the Arizona RN workforce is gradually becoming more diverse, the state lags being the nation in diversity of workforce, where non-Hispanic Black/African Americans represent 5.4% of the RN workforce nation-wide (HRSA, 2010), but is less than half of that in Arizona. However, Arizona also has fewer Black residents who represent 3-4% of Arizona’s total population compared to 13% of the population nation-wide.
- HRSA estimates that over 444,000 RNs received their first U.S. license between 2004 and 2008 for a new high of 3.1 million registered nurses (HRSA, 2010). It could be that the profound and heightened interest in nursing as a profession (noted since the late 1990s) has continued to grow and, coupled with the recession, may account for the increase of working nurses and the reported difficulties in finding employment in Arizona. Although this same phenomenon of nurses unable to find jobs has been reported elsewhere (ABC News, May 24, 2010), other states are still reporting a robust nursing job market. A recent Utah survey revealed that during the fourth quarter of 2009, the demand for registered nurses remained high. For every 1,000 nursing jobs filled in the greater Salt Lake metropolitan area, there were 3.3 openings which represented more than twice the vacancy rate for jobs overall in the metropolitan area (Utah Department of Workforce Services, as reported by Salt Lake Tribune, May 18, 2010).
- While the majority of all RNs (51%) are from Maricopa County, this number has decreased by nearly 10% since the 2008 renewal cycle and is the most significant change. However the percentage of ‘missing data’ for the county variable in the 2008 data was 2.4%, and the missing county variable in the 2009 data exceeds 17% which may account for the differences noted in county of employment. Little change was noted in other county variables between the 2008 and 2009 renewal.
- It is interesting to note that in examining the number of RNs per 100,000 population by county, with the exception of La Paz County (with only 58 RNs) and Greenlee County (with 25 RNs), every other county had an increase in the number of nurses per 100,000 between the 2008 and 2009 renewals. Significant increases were particularly noteworthy in the state’s four largest counties (Maricopa, Pima, Pinal, and Yavapai), but Graham County also saw a significant increase in 2009.
- The number of missing county variables in the “2009 all RNs” data (11,632 or 17.1%) will most likely influence the results by underestimating the number of nurses in some counties. However, as previously noted, all but two counties demonstrated an increase in RNs per 100,000 from the 2008 to 2009 renewal cycle.

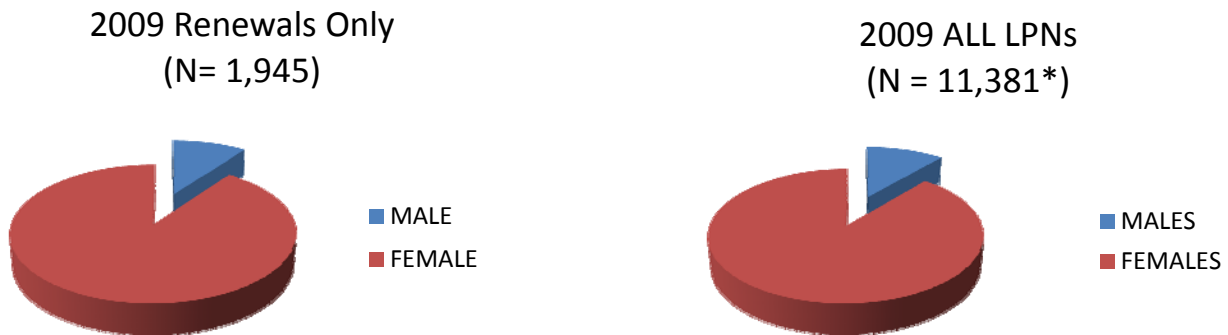
III. Licensed Practical Nurses (LPNs)

LPNs by Age



AGE	2009 Renewals Only (N = 1,947)		2009 All LPNs (N = 11,393)	
≤24 years	27	1.4%	856	7.5%
25-24 years	263	13.5%	2,463	21.6%
35-44 years	421	21.6%	2,432	21.4%
45-54 years	624	32.0%	2,965	26%
55-59 years	346	17.8%	1,348	11.8%
60-65 years	189	9.7%	956	8.4%
≥66 years	77	4.0%	373	3.3%

LPNs by Gender

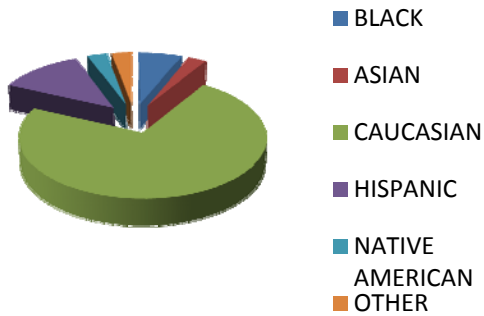


GENDER	2009 Renewals Only (N = 1,945*)		2009 All LPNs (N = 11,381**)	
Males	193	10.0%	1,263	11.1%
Females	1,752	90.0%	10,118	88.9%

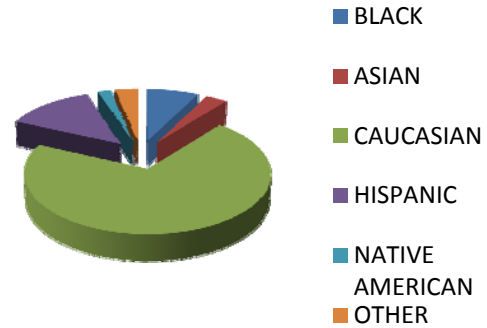
Note: *For the 2009 Renewals, 2 were missing indication of gender. **The “All LPNs” had 12 missing.

LPNs by Race

2009 Renewals Only
(N = 1,852*)



2009 ALL LPNs
(N = 10,135**)

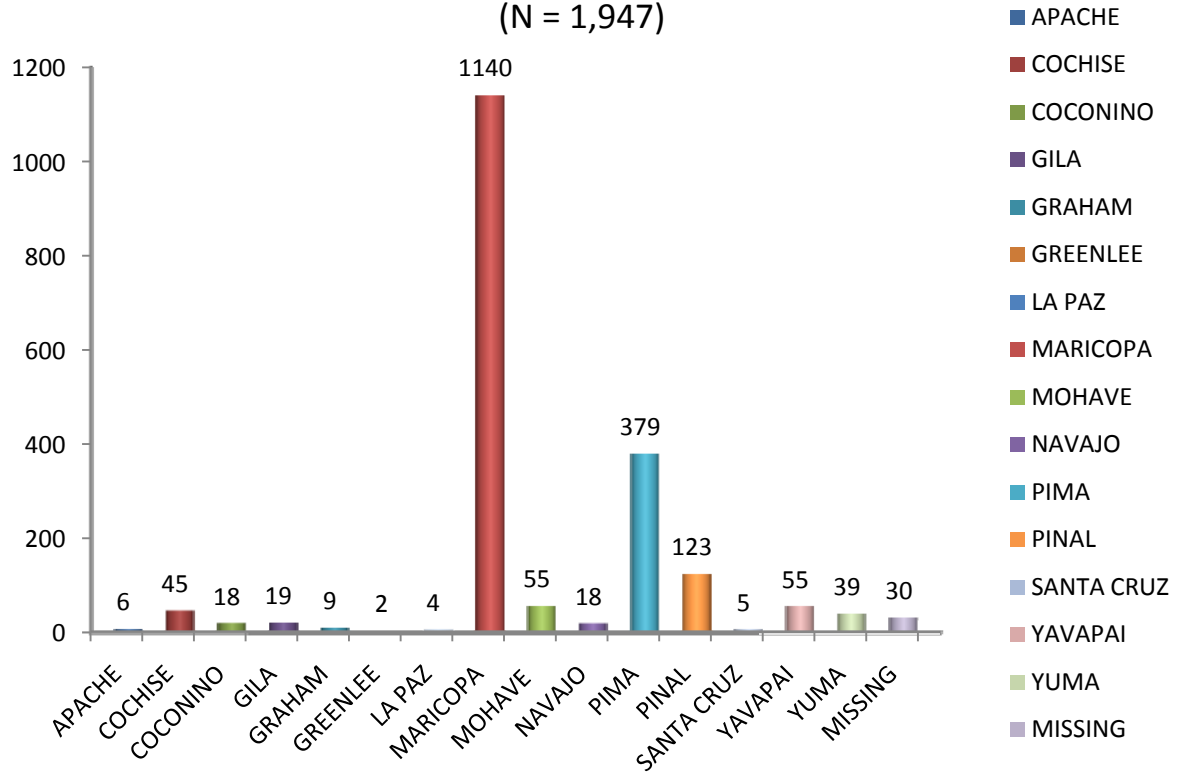


RACE	2009 Renewals Only (N = 1,852*)		2009 All LPNs (N = 10,135**)	
Black	116	6.3%	776	7.7%
Asian	49	2.7%	317	3.1%
Caucasian	1,350	72.9%	7,197	71.0%
Hispanic	231	12.5%	1,322	13.0%
Native American	53	2.8%	192	1.9%
Other / Multiple	53	2.8%	331	3.3%

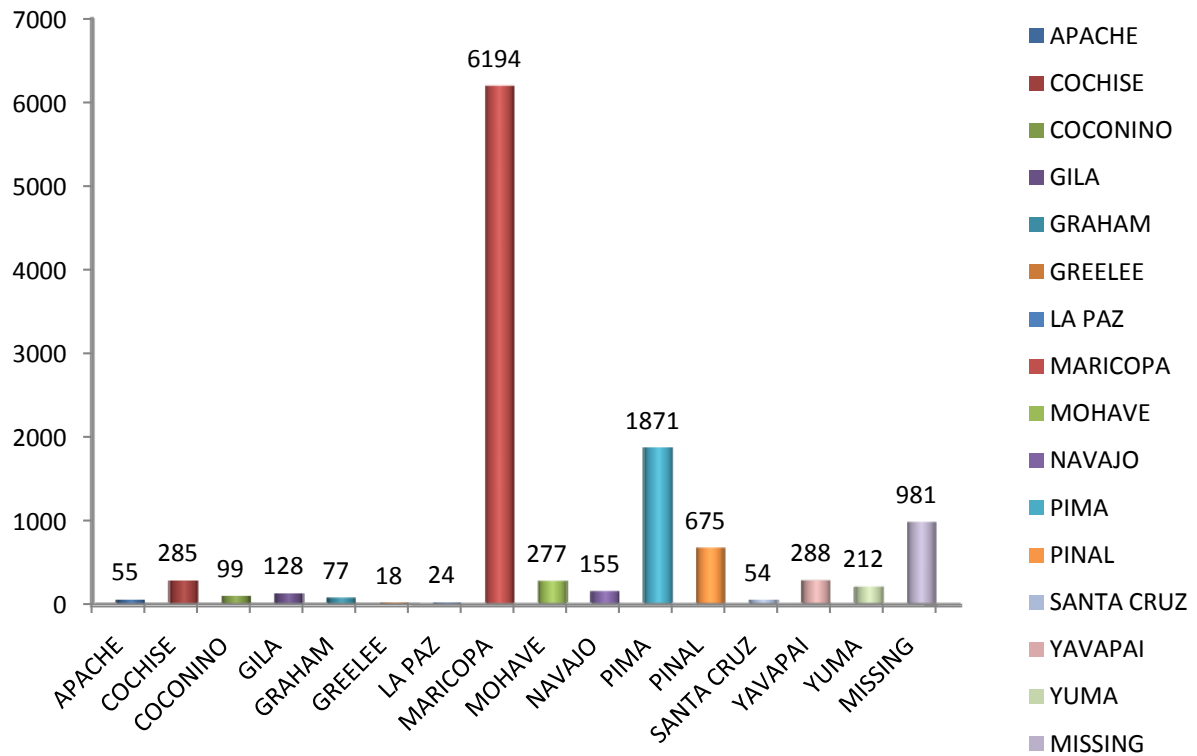
Note: *For the 2009 Renewals, 95 were missing indication of race. For the "All LPNs", 1,258 were missing indication of race.

LPNs by County

2009 Renewals Only
(N = 1,947)



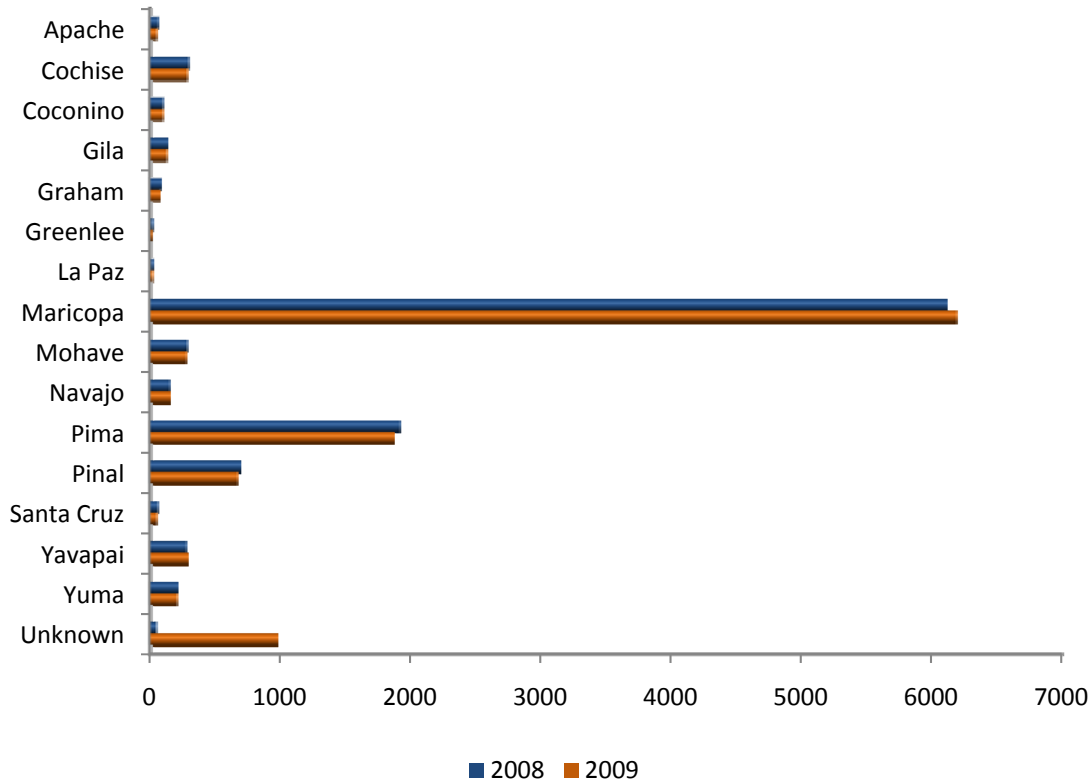
2009 ALL LPNs
(N = 11,393)



COUNTY	2009 Renewals Only (N = 1,947)		2009 All LPNs (N = 11,393)	
Apache	6	0.3%	55	0.5%
Cochise	45	2.3%	285	2.5%
Coconino	18	0.9%	99	0.9%
Gila	19	1.0%	128	1.1%
Graham	9	0.5%	77	0.7%
Greenlee	2	0.1%	18	0.2%
La Paz	4	0.2%	24	0.2%
Maricopa	1,140	58.6%	6,194	54.4%
Mohave	55	2.8%	277	2.4%
Navajo	18	0.9%	155	1.4%
Pima	379	19.5%	1,871	16.4%
Pinal	123	6.3%	675	5.9%
Santa Cruz	5	0.3%	54	0.5%
Yavapai	55	2.8%	288	2.5%
Yuma	39	2.0%	212	1.9%
Unknown / Missing	30	1.5%	981	8.5%

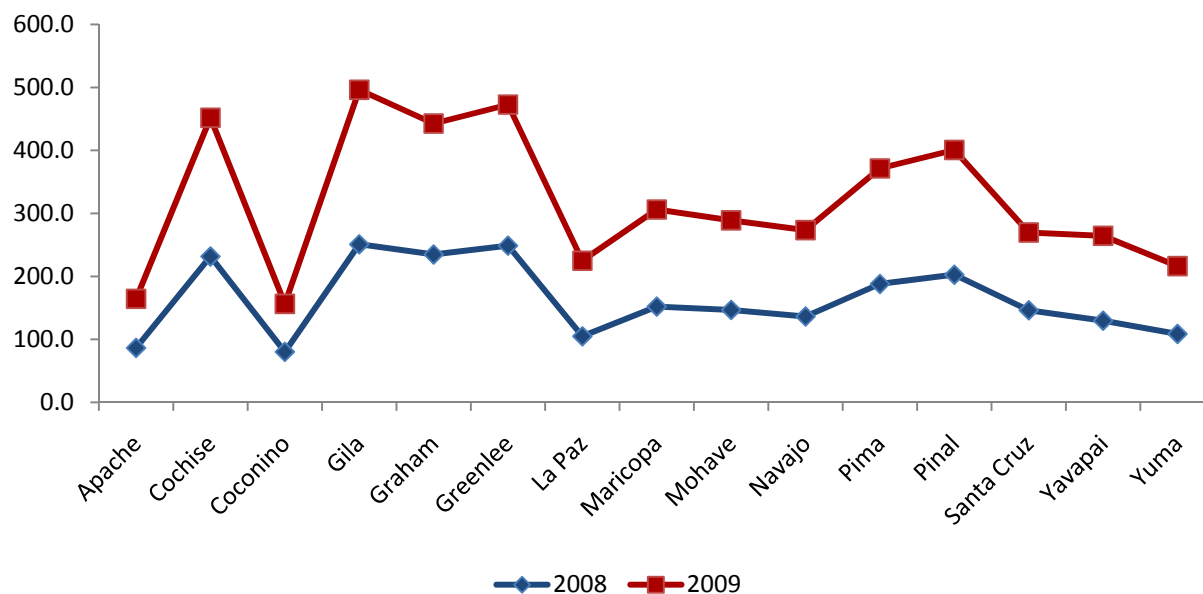
Comparisons of 2009 and 2008 LPN Data

LPNs by County in Arizona



COUNTY	2009 All LPNs (N = 11,393)		2008 All LPNs (N = 10,493)	
Apache	55	0.5%	61	0.6%
Cochise	285	2.5%	300	2.9%
Coconino	99	0.9%	104	1.0%
Gila	128	1.1%	131	1.3%
Graham	77	0.7%	87	0.8%
Greenlee	18	0.2%	20	0.2%
La Paz	24	0.2%	21	0.2%
Maricopa	6,194	54.4%	6,117	58.3%
Mohave	277	2.4%	286	2.7%
Navajo	155	1.4%	154	1.5%
Pima	1,871	16.4%	1,918	18.3%
Pinal	675	5.9%	691	6.6%
Santa Cruz	54	0.5%	64	0.6%
Yavapai	288	2.5%	277	2.6%
Yuma	212	1.9%	214	2.0%
Unknown /Missing	981	8.5%	48	0.4%

LPNs per 100,000 of Population by County in Arizona



COUNTY	Estimated Population*	2009 LPNs per 100,000	2008 LPNs per 100,000
Apache	70,591	77.9	86.4
Cochise	129,518	220.1	231.7
Coconino	129,849	76.2	80.1
Gila	52,199	245.2	251.0
Graham	37,045	207.8	234.8
Greenlee	8,041	223.9	248.8
La Paz	20,012	119.9	104.9
Maricopa	4,023,132	154.0	152.1
Mohave	194,825	142.2	146.8
Navajo	112,975	137.2	136.3
Pima	1,020,200	183.4	188.0
Pinal	340,962	198.0	202.7
Santa Cruz	43,771	123.4	146.2
Yavapai	215,686	134.8	129.6
Yuma	196,972	107.7	108.6

Note: *Population estimates from U.S. Census Bureau

LPN Observations

- The majority of LPNs who renewed in 2009 (N = 1,947) are between the ages of 45 and 54 (32%) and, similar to the RN workforce, nearly 50% of all LPNs who renewed are between 45 and 59 years of age.
- The gender distribution is similar to the RN workforce at 90% female and 10% male.

- The LPN workforce is more ethnically diverse than the APNs and RNs, with 72.9% Caucasian, 12.5% Hispanic, 6.3% Black, and Asian and Native American at approximately 2.7% each.
- The majority of the LPNs work in Maricopa County (54.4%) followed by Pima (16.4%); and Pinal (5.9%).
- The number of missing county variables in the “2009 all LPNs” data (N = 981 or 8.5%) will most likely influence the results by underestimating the number of nurses in some counties.

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