

# 2010 Indiana Registered Optometrists Re-Licensure Survey Report

Produced by:

The Indiana Center for Health Workforce Studies

Bowen Research Center, Department of Family Medicine  
Indiana University School of Medicine

In collaboration with the:

Indiana Area Health Education Centers Program

June 2011

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**Barbara McNutt**, General Counsel, Indiana Optometric Association

**Natalie Olinger**, OD, Indiana Optometry Board

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## **Executive Summary**

### ***Introduction***

The 2010 Indiana Optometrists Re-licensure Survey was administered by Indiana Professional Licensing Agency under a contract with the Indiana State Department of Health. This report summarizes the responses to the 2010 Indiana optometrists re-licensure survey.

### ***Methods***

The survey instrument included items to address current work status, major specialty, average hours worked in direct patient care, acceptance of Medicare or Medicaid, monthly hours providing free care, degrees obtained, location of optometry degree obtainment, location of residency training and fellowship training, as well as demographic information. A total of 801 optometrists who were active in the state of Indiana were included in the analyses shown in this report.

### ***Results: Demographics of Survey Respondents***

Approximately 20 percent of the respondents were under the age of 35, while slightly more than 30 percent were 55 years of age or older. There were almost twice as many male (65.4%) as there were female (34.6%) respondents. Additionally, almost 60 percent of those under the age of 35 were female, while the majority of those at or near retirement age were male. A majority of the respondents were white (96.0%), non-Hispanic (98.5%).

### ***Results: Academic Characteristics***

A majority (98.7%) of the respondents reported holding a Doctor of Optometry degree alone or in combination with another degree. Over four-fifths (83.3%) of the respondents completed their degree in the state of Indiana. Nearly 28 percent of the survey respondents completed residency training and of those who completed residency training, 57 percent did so in Indiana. Slightly more than 8 percent of the respondents reported completing a fellowship program and of those who reported completing a fellowship, almost 80 percent completed it in Indiana.

### ***Results: Workforce Characteristics***

Almost all (97.0%) survey respondents held active licenses in 2010. Of those included in the analyses, a majority (93.8%) were actively seeing patients. The three most common specialties were primary care (66.1%), contact lenses (15.5%) and ocular disease (9.6%). As expected, the majority (75.0%) of respondents spent between 30 and 49 hours each week in direct patient care activities, on average. Of those individuals working between 10 and 29 hours per week in direct patient care, approximately 66 percent were women. Sixty percent of the respondents indicated they saw or accepted patients with Medicaid insurance and over 85 percent saw or accepted patients with Medicare insurance. Almost 70 percent of respondents provided some free services to indigent patients, and nearly 7 percent reported having hospital privileges. One-half (50.9%) of the respondents 65 or older were anticipating retiring in 4 to 9 years, and almost 90 percent of respondents aged 55 to 64 were anticipating retirement in 4 or more years.

### ***Results: Maps***

Graphic information system (GIS) maps illustrated that, as expected, the counties with the highest populations also had the most optometrists. These counties include Allen, Clark, Hamilton, Lake, Marion, Monroe, St. Joseph, Tippecanoe, Vanderburgh, and Vigo. However, the ratio of optometrists per population map revealed that some counties with the largest populations, like Marion, had fewer optometrists per 10,000 residents than counties with smaller populations.

### ***Conclusions***

This report included only the optometrists who renewed their license on-line and completed the survey. A total of 1,302 optometrists participated in the survey. However, only 801 active Indiana optometrists met the inclusion criteria.

The majority of respondents indicated they were white and non-Hispanic. There were almost twice as many males as there were females. Approximately 20 percent of the respondents were under the age of 35, while slightly more than 30 percent were 55 years of age or older. Females comprised sixty percent of those 35 years of age and younger, while the majority of the respondents at or near retirement age were male.

A majority of the respondents held a Doctor of Optometry alone or in combination with another degree. The three most common specialties were primary care, contact lenses and ocular disease. A majority of optometrists provided 1 to 9 hours per month of free services to indigent patients, and saw or accepted patients with Medicare and Medicaid insurance. Almost 90 percent of respondents aged 55 to 64 were anticipating retirement in 4 or more years.

## Chapter 1: Introduction

Understanding the personal and professional characteristics of optometrists licensed in Indiana is essential for the development and management of programs that effectively recruit and retain optometrists where they are most needed in the state. Quality data about optometrists in Indiana helps policymakers and other stakeholders make better-informed decisions regarding the optometry workforce in our state. The purpose of this report is to provide those data. The findings from this report may be used to identify optometrist shortage areas and develop more effective recruitment and retention strategies.

The Indiana State Department of Health (ISDH) and the Indiana Professional Licensing Agency (IPLA) collaborated in implementing the 2010 Indiana optometrist re-licensure survey. All optometrists who renewed their licenses on-line were asked to complete a voluntary survey instrument. This report summarizes the responses to the 2010 Indiana optometrist re-licensure survey.

### Methods

The data used for this report were extracted from the 2010 Indiana Optometrist Re-licensure Survey data files provided by the Indiana State Department of Health and included responses to questions designed to collect information regarding current work status, major specialty, average hours worked in direct patient care, acceptance of Medicare or Medicaid, monthly hours spent providing free care, degrees obtained, location of optometry degree completion, location of residency and fellowship training, and demographic information. The dataset included only those optometrists who renewed their licenses electronically.

The re-licensure dataset was filtered initially to identify all optometrists who held “Active” Indiana licenses and listed Indiana as their principal practice location. A majority (97.0%) of respondents held active licenses (refer to Table 1.1). Of those holding an active license, 801 (86.3%) respondents were from Indiana. Please note 345 respondents did not indicate the state of their primary practice location.

**Table 1.1 Current License Status and Primary Practice Location**

License Status	Indiana	Other States	Total	Percent
Active	801	127	928	97.0
Expired	8	3	11	1.2
Inactive	0	18	18	1.8
Total	809	148	957	100.0
Missing			345	
Total			1302	

The dataset was further refined to include only those optometrists who were currently practicing optometry with an Indiana license. Optometrists who indicated seeing patients, not seeing patients but active in optometry, temporarily substituting for another optometrist, working in an academic setting for research or teaching, or training in a residency or fellowships were considered to be active. Optometrists who held expired or inactive licenses, were retired, temporarily inactive, or practicing outside of Indiana were excluded from the study. A total of 801 optometrists (i.e., 61.5% of all respondents) were selected for inclusion.

**Table 1.2 Inclusion and Exclusion of Indiana Optometrists\***

<b>Study Participants</b>	<b>Number</b>	<b>Percent</b>
<b>Included in Study</b>		
Optometrist active in optometry, locum tenens ONLY	1	0.1
Optometrist active in optometry, not seeing patients	3	0.2
Optometrist actively seeing patients	751	57.7
Optometrist in academic setting (research/teaching)	21	1.6
Optometrist in training (resident/fellow)	25	1.9
<b>Total Included in Study</b>	<b>801</b>	<b>61.5</b>
<b>Excluded from Study</b>		
Optometrist licensed in Indiana but not practicing	127	9.8
Optometrist with expired license	11	0.8
Optometrist with inactive license	18	1.4
Missing state of primary practice location	345	26.5
<b>Total Excluded from Study</b>	<b>501</b>	<b>38.5</b>
<b>Total</b>	<b>1302</b>	<b>100.0</b>

*\*These numbers represent survey respondents only*



Although only active Indiana optometrists were included in the analysis portion of this report, the denominator used for determining the response rate was based on **the total number of optometrists who renewed their licenses electronically** (refer to Tables 1.1 and 1.3). The numerator for those included in the response rate (renewed electronically & responded to at least one question) also included all optometrists who renewed electronically, not just those who practiced in Indiana (refer to Table 1.3). The response rate for the survey was 86.6 percent.

**Table 1.3 Response Rate of Survey\***

<b>Optometrists</b>	<b>Number</b>	<b>Percent</b>
Renewed electronically & responded to at least one question	1128	86.6
Did not respond to any questions on the survey	174	13.4
Total	1302	100.0

*\*These numbers represent electronic survey respondents only*

Frequency and cross-tabulation analyses were performed to describe the characteristics of optometry professionals within Indiana. The data were coded in Microsoft Excel 2007 and analyzed using SAS 9.1 and PASW Statistics 18. Graphical information system (GIS) maps were developed to illustrate the number of optometrists per Indiana county, as well as the ratio of optometrists per 10,000 residents. The estimated number of optometrists per county was based on the respondents' principal practice location. The number of optometrists in each county was then adjusted (weighted) using the survey response rate (86.6%). Thus, the counts of optometrists are *estimates* of the actual number of optometrists in each county and not the number of respondents in each county. The GIS maps were designed in ArcGIS™ 9.3.

## Chapter 2: Responses to the 2010 Optometrist Re-Licensure Survey

The results in this chapter reflect the personal and professional characteristics of only those optometrists licensed in Indiana who responded to the 2010 optometrist re-licensure survey. Caution should be taken when making generalizations about all Indiana optometrists. Since optometrists who renewed their license by paper, as well as those who did not respond to the electronic survey are not included in these results, the data shown may *not* be representative of all licensed optometrists in Indiana. Each table shows the number of valid and missing responses to each survey item and the percentage of valid responses. The text describes the responses to the survey.

### Demographic Composition

Demographic characteristics shown are age, gender, race and ethnicity of survey respondents. The data provided by the Indiana State Department of Health included date of birth for all licensed optometrists who are practicing in Indiana. Age was calculated using March 20, 2010 as a reference point since surveys were completed from January to March 2010.

The age distribution of active Indiana optometrists who responded to the electronic survey when renewing their license in 2010 is shown in Table 2.1. Approximately one-half (48.4%) of the respondents were between 35-54 years of age. Nearly one-third (31.2%) of the respondents were at or near (55 and older) retirement age.

**Table 2.1 Age of Active Indiana Optometrists\***

Age Groups	Number	Percent
Under 35	163	20.5
35-54	385	48.4
55-64	191	24.0
65 and older	57	7.2
Total	796	100.0
Missing	5	

*\*These numbers represent survey respondents only*

The gender distribution of respondents is shown in Table 2.2. There were almost twice as many males (65.4%) as there were females (34.6%) actively practicing in Indiana. However, females make up almost 60 percent of optometrists 35 years of age and younger (refer to Table 2.3). Conversely, males comprise the majority of optometrists at or near retirement age (refer to Table 2.3). This pattern indicates a shift in gender composition within this profession, with more females than males entering the field.

**Table 2.2 Gender\***

<b>Gender</b>	<b>Number</b>	<b>Percent</b>
Female	276	34.6
Male	522	65.4
Total	798	100.0
Missing	3	

*\*These numbers represent survey respondents only*

**Table 2.3 Gender by Age Groups\***

<b>Age Groups</b>	<b>Male</b>		<b>Female</b>		<b>Total</b>	
	<b>Number</b>	<b>Percent</b>	<b>Number</b>	<b>Percent</b>	<b>Number</b>	<b>Percent</b>
Under 35	68	42.2	93	57.8	161	100.0
35 to 54	229	59.5	156	40.5	385	100.0
55 to 64	164	86.3	26	13.7	190	100.0
65 and older	56	98.2	1	1.8	57	100.0
Total	517		276		793	
Missing					5	

*\*These numbers represent survey respondents only*

The distributions of race and ethnicity are displayed in Tables 2.4 and 2.5 respectively. A majority (96.0%) of the respondents were white and only 1.5 percent were of Hispanic origin.

**Table 2.4 Race\***

<b>Race</b>	<b>Number</b>	<b>Percent</b>
White	763	96.0
Black/African American	8	1.0
Asian/Pacific Islander	11	1.4
American Indian/ Native Alaskan	0	0.0
Multi-racial	3	0.4
Other	10	1.3
Total	795	100.0
Missing	6	

*\*These numbers represent survey respondents only*

**Table 2.5 Ethnicity\***

<b>Hispanic Origin</b>	<b>Number</b>	<b>Percent</b>
Yes	12	1.5
No	782	98.5
Total	794	100.0
Missing	7	

*\*These numbers represent survey respondents only*

## Academic Characteristics

Academic characteristics of the respondents include degrees held and location of where their degree was obtained, as well as location of their residency and fellowship training. A majority (98.7%) of the respondents held a Doctor of Optometry (O.D.) degree by itself or in addition to other graduate level degrees. This question was asked to determine how many active Indiana optometrists would be available to teach in optometry programs throughout the state. An additional question was asked on the survey instrument about interest in teaching in an optometry program (Appendix 1, question 12). However, the data was corrupt, which prevented analysis of that question.

**Table 2.6 Degrees Held by Optometrists**

<b>Degrees Held</b>	<b>Number</b>	<b>Percent</b>
Doctor of Optometry	731	91.9
Doctor of Optometry and Master of Science	44	5.5
Doctor of Optometry, Master of Science, and PhD	4	0.5
Doctor of Optometry and Other Doctorate	3	0.4
Doctor of Optometry and PhD	3	0.4
Master of Science	9	1.1
PhD	1	0.2
Total	795	100.0
Missing	6	

*\*These numbers represent survey respondents only*

Retention of Indiana graduates to practice in Indiana is a significant concern among training program administrators and policy makers. Therefore, it is important to track where the optometry professionals practicing in Indiana are completing their education and training. Of the respondents that are currently practicing in Indiana, over four-fifths (83.3%) also completed their degree (O.D.) in the state of Indiana.

**Table 2.7 Location of Optometry Degree Completion**

<b>Location</b>	<b>Number</b>	<b>Percent</b>
Indiana	647	83.3
Other U.S. State	129	16.6
Other Country (not U.S. or Canada)	1	0.0
Total	777	
Missing	24	

*\*These numbers represent survey respondents only*

The locations of the respondents' residency and fellowship training are shown in Tables 2.8 and 2.9 respectively. Respondents were allowed to *select more than one* location for each question, if applicable. Over one-fourth (27.5%) of the survey respondents completed residency training. Of the 27 percent who completed residency training, 57.1 percent completed their residency in Indiana. Nearly one-tenth (8.1%) of the survey respondents completed fellowship training, and of those who did complete fellowship training, almost 80 percent completed their fellowship in Indiana.

**Table 2.8 Residency Location\***

<b>Location</b>	<b>Number</b>	<b>Percent</b>
Indiana	125	15.7
Other U.S. state	91	11.4
Other country (not U.S. or Canada)	3	0.4
I did not complete residency training	577	72.5
Total	796	
Missing	18	

*\*These numbers represent survey respondents only*

**Table 2.9 Fellowship Location\***

<b>Location</b>	<b>Number</b>	<b>Percent</b>
Indiana	50	6.4
Other U.S. state	13	1.7
I did not complete fellowship training	724	92.0
Total	787	
Missing	16	

*\*These numbers represent survey respondents only*

## Practice Characteristics

In order to better understand the practice characteristics of the Indiana optometry workforce, the survey instrument included questions regarding: major specialty, number of hours worked in direct patient care per week, possession of hospital privileges, acceptance of Medicare and Medicaid patients, number of hours per month spent providing free services, number of years to expected retirement, and reasons for leaving the profession. In addition, the data presented in this section display the results of cross-tabulation analyses to identify basic associations between demographic, practice, and professional variables.

Table 2.10 shows the distribution of major specialties reported by the survey respondents. The top three specialties were primary care (66.1%), contact lenses (15.5%) and ocular disease (9.6%). Almost 2 percent of the respondents indicated “Other” as their specialty. Respondents were not asked to specify the “Other” specialty.

**Table 2.10 Major Specialty \***

Major Specialty	Number	Percent
Binocular vision	22	2.8
Contact lenses	121	15.5
Epidemiology	1	0.1
Health care informatics	1	0.1
Low vision and rehabilitation	15	1.9
Occupational optometry	1	0.1
Ocular disease	75	9.6
Other specialty	15	1.9
Pediatrics	13	1.8
Primary care	517	66.1
Sports vision	1	0.1
Total	782	
Missing	19	

*\*These numbers represent survey respondents only*

Due to the small sample size of some specialties, it was necessary to combine those specialties with the “Other Specialty” category in order to discover any meaningful associations between specialty and age or gender. As indicated in Table 2.11, over 70 percent of optometrists working in the primary care specialty were under the age of 55, and over 75 percent working in ocular disease were under the age of 55, while only 55.4 percent of those working in contact lenses were under the age of 55. Please note that the sample size of most specialty categories was still small after reclassification, so caution should be used in making any conclusions about the data.

**Table 2.11 Optometrists' Specialty by Age\***

Specialty	Under 35		35 to 54		55 to 64		65 or older		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Binocular vision	2	9.1	4	18.2	11	50.0	5	22.7	22	100.0
Contact lenses	10	8.3	57	47.1	39	32.2	15	12.4	121	100.0
Low vision and rehabilitation	4	26.7	6	40.0	4	26.7	1	6.7	15	100.0
Ocular disease	16	21.3	42	56.0	16	21.3	1	1.3	75	100.0
Pediatrics	6	46.2	6	46.2	1	7.7	0	0.0	13	100.0
Primary care	119	23.2	250	48.7	113	22.0	31	6.0	513	100.0
Other Specialty	1	5.6	11	61.1	4	22.2	2	11.1	18	100.0
Total	158		376		188		55		777	
Missing									24	

*\*These numbers represent survey respondents only*



As shown in Table 2.12, the percentage of males is greater than females in every specialty except pediatrics (61.5% female).

**Table 2.12 Optometrists' Specialty by Gender**

Specialty	Male		Female		Total	
	Number	Percent	Number	Percent	Number	Percent
Binocular vision	19	86.4	3	13.6	22	100.0
Contact lenses	90	74.4	31	25.6	121	100.0
Low vision and rehabilitation	10	71.4	4	28.6	14	100.0
Ocular disease	49	66.2	25	33.8	74	100.0
Pediatrics	5	38.5	8	61.5	13	100.0
Primary care	326	63.2	190	36.8	516	100.0
Other specialty	10	52.6	9	47.4	19	100.0
Total	499		261		760	
Missing					19	

*\*These numbers represent survey respondents only*

Table 2.13 shows the average number of hours per week spent on performing direct patient care activities. The majority of respondents (75.0%) spent, on average, between 30 and 49 hours each week in direct patient care activities. A cross-tabulation was performed to highlight any specialties that may require more time spent on direct patient care activities; however, no notable differences were indicated. Therefore, that table was not included in this report.

**Table 2.13 Average Number of Hours per Week Working in Direct Patient Care\***

Average Number of Weekly Hours	Number	Percent
1-9	29	3.7
10-19	28	3.5
20-29	65	8.2
30-39	276	34.8
40-49	319	40.2
50-59	49	6.2
60 or more	19	2.4
I do not provide direct patient care	8	1.0
Total	793	100.0
Missing	8	

*\*These numbers represent survey respondents only*

Cross-tabulations were also performed to highlight any potential relationship between hours spent in direct patient care and age group or gender. Approximately two-thirds of the respondents working less than 30 hours per week in direct patient care were under the age of 55 (refer to Table 2.14).

**Table 2.14 Optometrists' Age Groups by Number of Hours Worked\***

Average Number of Weekly Hours	Under 35		35 to 54		55 to 64		65 and older		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1-9	5	17.2	13	44.8	7	24.1	4	13.8	29	100.0
10-19	5	17.9	14	50.0	4	14.3	5	17.9	28	100.0
20-29	12	18.5	34	52.3	13	20.0	6	9.2	65	100.0
30-39	55	20.0	129	46.9	65	23.6	26	9.5	275	100.0
40-49	75	23.7	148	46.7	80	25.2	14	4.4	317	100.0
50-59	8	16.3	29	59.2	11	22.4	1	2.0	49	100.0
60 or more	3	16.7	11	61.1	3	16.7	1	5.6	18	100.0
I do not provide direct patient care related services.	0	0.0	3	37.5	5	62.5	0	0.0	8	100.0
Total	163	20.7	381	48.3	188	23.8	57	7.2	789	100.0
Missing										7

*\*These numbers represent survey respondents only*

Given that the number of males was almost twice the number of females in this sample, it would be expected that the percentage of males in each category of hours worked would be greater than the percentage of females. This was true for all categories except 10-19 and 20-29 hours per week. Seventy-one percent of optometrists working between 10 and 19 hours per week were female and 63.1 percent of those working between 20-29 hours per week were female (refer to Table 2.15).

**Table 2.15 Average Weekly Hours in Direct Patient Care and Gender\***

Average Number of Weekly Hours	Male		Female		Total	
	Number	Percent	Number	Percent	Number	Percent
1-9	15	53.6	13	46.4	28	100.0
10-19	8	28.6	20	71.4	28	100.0
20-29	24	36.9	41	63.1	65	100.0
30-39	173	62.7	103	37.3	276	100.0
40-49	240	75.7	77	24.3	317	100.0
50-59	38	77.6	11	22.4	49	100.0
60 or more	13	68.4	6	31.6	19	100.0
Total	511		271		782	
Missing					8	

*\*These numbers represent survey respondents only*

The number and percent of optometrists' who provided free services to indigent patients is shown in Table 2.16. A majority (63.2%) of the respondents indicated spending 1 to 9 hours per month providing free services to indigent patients. Cross-tabulations were performed to note any potential relationships between the number of free hours provided per month and specialty, age group, or gender. Since the majority of respondents either did not provide free services or indicated that they provided 1-9 hours of service, comparisons between hours of service and specialty, gender, and age group did not reveal any notable relationships. Therefore, those tables were not included in this report.

**Table 2.16 Number of Hours per Month Providing Free Services to Indigent Patients\***

Estimated Monthly Hours	Number	Percent
1-9	498	63.2
10-19	27	3.4
20-29	4	0.5
30-39	1	0.1
I do not provide free services	258	32.7
Total	788	100.0
Missing	13	

*\*These numbers represent survey respondents only.*

An important component of workforce composition is determining the number of providers that see or accept Medicare and Medicaid patients. Sixty percent of the respondents either saw or accepted patients with Medicaid insurance and over 85 percent saw or accepted patients with Medicare insurance (refer to Tables 2.17 and 2.18 respectively). Equally important is determining the number of optometrists with hospital privileges. Nearly 7 percent of the respondents reported having hospital privileges (refer to Table 2.19).

**Table 2.17 See or Accept Medicaid Patients**

<b>See/Accept Medicaid Patients</b>	<b>Number</b>	<b>Percent</b>
Yes	478	60.0
No	319	40.0
Total	797	100.0
Missing	4	

*\*These numbers represent survey respondents only*

**Table 2.18 See or Accept Medicare Patients**

<b>See/Accept Medicare Patients</b>	<b>Number</b>	<b>Percent</b>
Yes	672	85.1
No	118	14.9
Total	790	100.0
Missing	11	

*\*These numbers represent survey respondents only*

**Table 2.19 Have Hospital Privileges**

<b>Hospital Privileges</b>	<b>Number</b>	<b>Percent</b>
Yes	54	6.9
No	730	93.1
Total	784	100.0
Missing	17	

*\*These numbers represent survey respondents only*

Another important component of the workforce report is to determine the number of years to expected retirement. Table 2.20 shows that one-half (50.9%) of the respondents 65 or older were anticipating retiring in 4 to 9 years, and almost 90 percent of respondents aged 55 to 64 were anticipating retirement in 4 or more years. Cross-tabulations were also performed between the years to expected retirement and specialty, or gender, but no potential relationships were noted. Therefore, those tables were not included in this report.

**Table 2.20 Age Categories by Active Indiana Optometrists' Anticipated Year of Retirement\***

Years	Age									
	Under 35		35-44		45-54		55-64		65 or older	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Less than 1 year	0	0.0	0	0.0	0	0.0	2	1.1	1	1.8
2-3 years	0	0.0	0	0.0	2	1.1	17	9.0	20	36.4
4-9 years	0	0.0	1	0.5	15	8.2	84	44.7	28	50.9
10 or more years	160	100.0	198	99.5	166	90.7	85	45.2	6	10.9
Total	160	100	199	100	183	100	188	100	55	100
Missing	3		1		2		3		2	

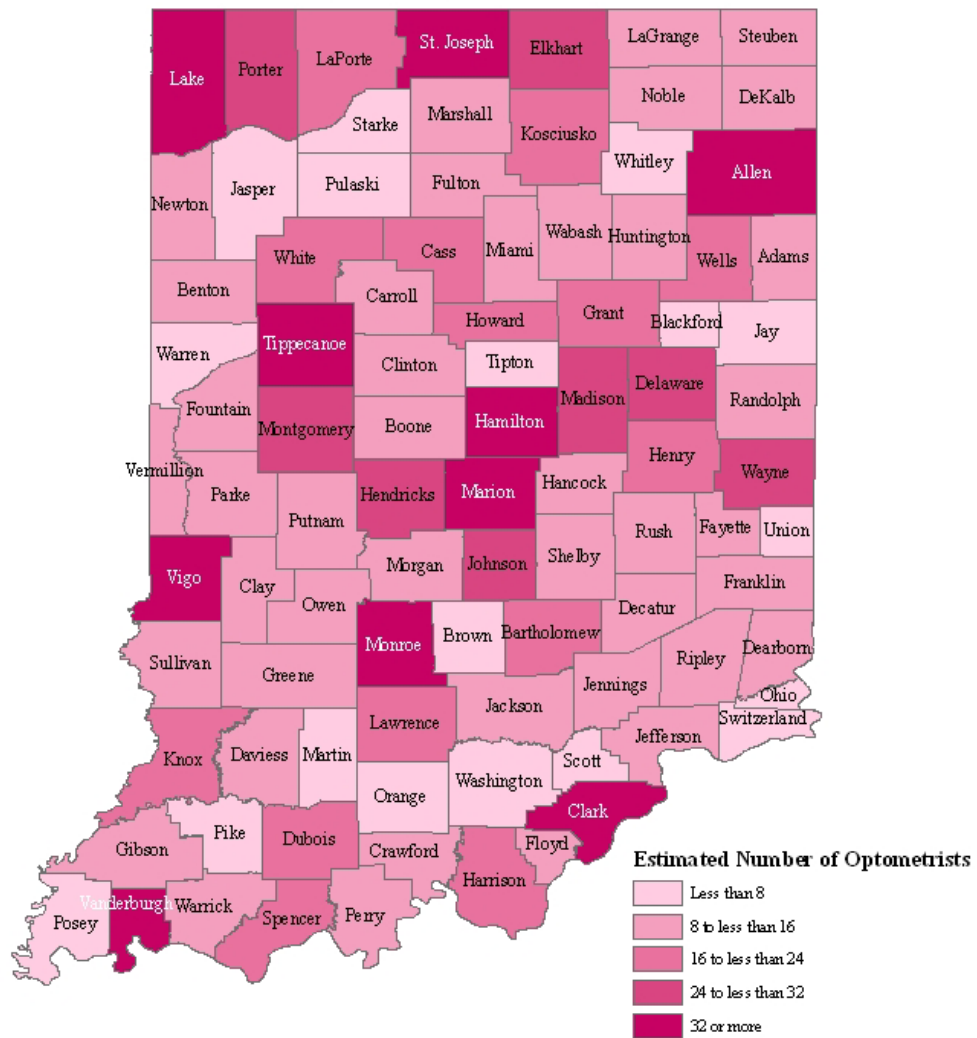
*\*These numbers represent survey respondents only.*

### Chapter 3: Location of Optometrists by County in Indiana

The following maps display the estimated number of optometrists by county and the ratio of optometrists per 10,000 residents based on the respondents' principal practice location. In order to illustrate the data as representative of the actual optometrist population in each county, the number of optometrists in each county was adjusted (weighted) per the response rate (86.6%) for the 2010 optometrist re-licensure survey. *Thus, the counts of optometrists and ratio are estimates of the actual number of optometrists in each county and not the number of respondents in each county.*

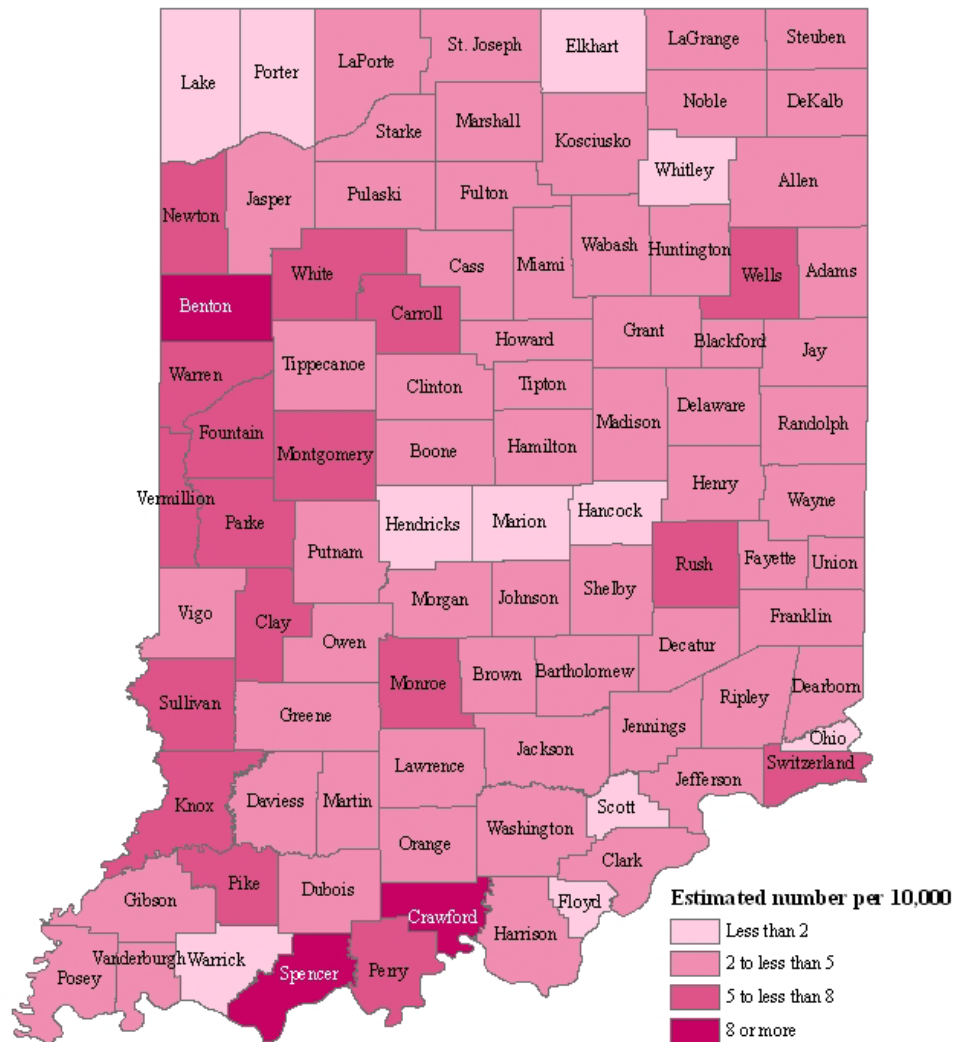
Map 3.1 shows that the number of optometrists in Indiana counties is distributed roughly by population. As expected, the counties with the largest populations have the greatest number of optometrists. These counties include Allen, Clark, Hamilton, Lake, Marion, Monroe, St. Joseph, Tippecanoe, Vanderburgh, and Vigo.

Map 3.1 Estimated Number of Optometrists by County, 2010



Map 3.2 shows an estimated number of optometrists per 10,000 population by county in Indiana. Although it seems counter-intuitive, the map illustrates that some of the most populous counties like Marion, Hendricks, Hancock, Warrick, Whitley, Elkhart, Porter and Lake have fewer optometrists per 10,000 residents than some of the counties with smaller populations. Ratios of optometrists were higher in the following counties: Benton, Crawford, and Spencer.

Map 3.2 Estimated Number of Optometrists per 10,000 Population by County, 2010



**Table 3.1 Estimated Number of Optometrists by County and per 10,000 Population, 2010\***

<b>COUNTY</b>	<b>Frequency</b>	<b>Weighted</b>	<b>Population</b>	<b>Ratio/10000</b>
Adams	13	15.0	34,387	4.4
Allen	96	110.9	355,329	3.1
Bartholomew	18	20.8	76,794	2.7
Benton	8	9.2	8,854	10.4
Blackford	4	4.6	12,766	3.6
Boone	11	12.7	56,640	2.2
Brown	4	4.6	15,242	3.0
Carroll	9	10.4	20,155	5.2
Cass	16	18.5	38,966	4.7
Clark	35	40.4	110,232	3.7
Clay	12	13.9	26,890	5.2
Clinton	10	11.5	33,224	3.5
Crawford	8	9.2	10,713	8.6
Daviess	7	8.1	31,648	2.6
Dearborn	7	8.1	25,740	3.1
Decatur	9	10.4	42,223	2.5
DeKalb	10	11.5	50,047	2.3
Delaware	24	27.7	117,671	2.4
Dubois	18	20.8	41,889	5.0
Elkhart	25	28.9	197,559	1.5
Fayette	7	8.1	24,277	3.3
Floyd	12	13.9	74,578	1.9
Fountain	8	9.2	17,240	5.4
Franklin	7	8.1	23,087	3.5
Fulton	9	10.4	20,836	5.0
Gibson	13	15.0	33,503	4.5
Grant	18	20.8	70,061	3.0
Greene	12	13.9	33,165	4.2
Hamilton	48	55.4	274,569	2.0
Hancock	11	12.7	70,002	1.8
Harrison	14	16.2	39,364	4.1
Hendricks	21	24.2	145,448	1.7
Henry	19	21.9	49,462	4.4
Howard	15	17.3	82,752	2.1
Huntington	8	9.2	37,124	2.5
Jackson	13	15.0	42,376	3.5
Jasper	6	6.9	33,478	2.1
Jay	6	6.9	21,253	3.3
Jefferson	7	8.1	32,428	2.5
Jennings	10	11.5	28,525	4.0
Johnson	25	28.9	139,654	2.1
Knox	20	23.1	38,440	6.0
Kosciusko	20	23.1	77,358	3.0
LaGrange	8	9.2	37,128	2.5
Lake	69	79.7	496,005	1.6
LaPorte	20	23.1	111,467	2.1



**Table 3.1 Estimated Number of Optometrists by County and per 10,000 Population, 2010 (Contd.)\***

<b>COUNTY</b>	<b>Frequency</b>	<b>Weighted</b>	<b>Population</b>	<b>Ratio/10000</b>
Lawrence	14	16.2	46,134	3.5
Madison	25	28.9	131,636	2.2
Marion	138	159.4	903,393	1.8
Marshall	11	12.7	47,051	2.7
Martin	3	3.5	10,334	3.4
Miami	10	11.5	36,903	3.1
Monroe	63	72.7	137,974	5.3
Montgomery	21	24.2	38,124	6.4
Morgan	12	13.9	68,894	2.0
Newton	9	10.4	14,244	7.3
Noble	13	15.0	47,536	3.2
Ohio	1	1.2	6,128	1.9
Orange	5	5.8	19,840	2.9
Owen	7	8.1	21,575	3.7
Parke	9	10.4	17,339	6.0
Perry	9	10.4	19,338	5.4
Pike	6	6.9	12,845	5.4
Porter	27	31.2	164,343	1.9
Posey	6	6.9	25,910	2.7
Pulaski	5	5.8	13,402	4.3
Putnam	10	11.5	37,963	3.0
Randolph	9	10.4	26,171	4.0
Ripley	12	13.9	28,818	4.8
Rush	9	10.4	17,392	6.0
Scott	4	4.6	24,181	1.9
Shelby	12	13.9	44,436	3.1
Spencer	16	18.5	20,952	8.8
St. Joseph	55	63.5	266,931	2.4
Starke	6	6.9	23,363	3.0
Steuben	8	9.2	34,185	2.7
Sullivan	11	12.7	21,475	5.9
Switzerland	5	5.8	10,613	5.4
Tippecanoe	33	38.1	172,780	2.2
Tipton	6	6.9	15,936	4.3
Union	3	3.5	7,516	4.6
Vanderburgh	62	71.6	179,703	4.0
Vermillion	9	10.4	16,212	6.4
Vigo	33	38.1	107,848	3.5
Wabash	10	11.5	32,888	3.5
Warren	4	4.6	8,508	5.4
Warrick	9	10.4	59,689	1.7
Washington	6	6.9	28,262	2.5
Wayne	24	27.7	68,917	4.0
Wells	15	17.3	27,636	6.3
White	14	16.2	24,643	6.6
Whitley	5	5.8	33,292	1.7

\*These numbers are adjusted for the response rate.

## Chapter 4: Conclusions

This report summarized responses to the 2010 optometrist re-licensure survey for active Indiana optometrists. Individuals holding an active Indiana license and who were currently practicing in Indiana were included in this report. A total of 801 respondents met the inclusion criteria.

Analyses revealed some interesting insights regarding the demographic composition and practice characteristics of Indiana's optometry workforce. Approximately 20 percent of the respondents were under the age of 35, while slightly more than 30 percent were 55 years of age or older. This pattern suggests that fewer individuals are entering the practice of optometry in Indiana than those that are at or near the age of retirement. Additionally, there were almost twice as many males as there were females. Nevertheless, females made up nearly 60 percent of optometrists younger than 35 years of age. Conversely, males comprise the majority of optometrist at or near retirement age. This may indicate a possible shift in gender composition, with more females than males entering the profession.

The majority of respondents spent, on average, between 30 and 49 hours each week in direct patient care activities. Of those individuals working between 10 and 29 hours per week in direct patient care, approximately 66 percent were women.

Retention of Indiana graduates is a significant concern among health care professionals and policy makers. For that reason, it is important to track where optometry professionals complete their education, as well as where they choose to practice. Of the respondents in this report that are practicing in Indiana, the majority also completed their degree in the state of Indiana. Over one-fourth of the survey respondents completed residency training which is not a requirement for licensing and practice of optometry; of those completing their residency, the majority did so in Indiana. Likewise, of the few respondents who completed fellowship training, most completed their fellowship in Indiana.

The three most common specialties were identified as primary care, contact lenses and ocular disease. Interestingly, the percentage of males is greater than females in every specialty, except pediatrics. Please note that the sample size in this specialty is very small, so caution should be used in making any conclusions about the data.

Outside of normal optometry practice, charitable work was measured by the question providing free services to indigent patients. The majority of optometrists indicated spending 1 to 9 hours per month providing free services to indigent patients. Regarding insurance acceptance, the majority of the respondents indicated they saw or accepted patients with Medicaid insurance and Medicare insurance. Nearly one-tenth of the respondents reported having hospital privileges.

## Appendix 1

### 2010 Indiana Optometrist Re-Licensure Survey

**Your answers to these questions will help the Indiana State Department of Health to identify health professional shortages and geographic shortage areas. The survey is voluntary and will not affect the status of your license.**

**Thank you very much for your help.**

1. What is your current work status in optometry? Consider yourself active in optometry if you are engaged in direct patient care, administration, teaching, or research. **Please select only one response.**  
DROP-DOWN LIST  
Optometrist actively seeing patients  
Optometrist in training (resident/fellow)  
Optometrist in academic setting (research/teaching/administration)  
Optometrist active in optometry, locum tenens ONLY  
Optometrist active in optometry, not seeing patients  
Retired from active optometry practice  
Inactive in optometry
2. What is your major specialty? **Please select only one response.** If you are retired or temporarily inactive, please select the specialty in which you are most experienced.  
DROP-DOWN LIST  
Binocular vision  
Contact lenses  
Epidemiology  
Health care informatics  
Low vision and rehabilitation  
Occupational optometry  
Ocular disease  
Pediatrics  
Primary care  
Sports vision  
Other specialty
3. How many hours per week on average do you spend in direct patient care related activities in optometry (including the paperwork associated with providing care)? **Please select only one response.**  
DROP-DOWN LIST  
1-9  
10-19  
20-29  
30-39  
40-49  
50-59

60 or more

I do not provide direct patient care related services.

4. Do you currently see (or accept) Medicaid patients?  
DROP-DOWN LIST  
Yes No
5. Do you currently see (or accept) Medicare patients?  
DROP-DOWN LIST  
Yes No
6. How many hours per month do you spend providing free services to indigent patients?  
1-9  
10-19  
20-29  
30-39  
40-49  
50-59  
60 or more  
I do not provide free services to indigent patients.
7. Do you currently have hospital privileges?  
DROP-DOWN LIST  
Yes No
8. What degrees do you hold? **Please select all that apply.**  
DROP-DOWN LIST  
Doctor of Optometry  
Master of Science  
PhD  
Other Doctorate
9. Where did you complete your optometry degree? **Please select all that apply.**  
DROP-DOWN LIST  
Indiana  
Other U.S. state  
Canada  
Other country (not U.S. or Canada)
10. Where did you complete your residency training? **Please select all that apply.**  
DROP-DOWN LIST  
Indiana  
Other U.S. state  
Canada  
Other country (not U.S. or Canada)  
I did not complete residency training.

11. Where did you complete your fellowship training? **Please select all that apply.**  
DROP-DOWN LIST  
Indiana  
Other U.S. state  
Canada  
Other country (not U.S. or Canada)  
I did not complete fellowship training.
12. Would you be interested in teaching in an optometry program? If you answer “Yes,” the Indiana University School of Optometry may contact you using your PLA contact information.  
DROP-DOWN LIST  
Yes No
13. What is your gender?  
Male  
Female
14. Which of the following best describes your race?  
DROP-DOWN LIST  
White  
Black/African American  
Asian/Pacific Islander  
American Indian/Native Alaskan  
Multi-racial  
Other
15. Are you of Hispanic origin?  
DROP-DOWN LIST  
Yes No
16. How soon do you anticipate retirement?  
DROP-DOWN LIST  
Less than 1 year  
2-3 years  
4-9 years  
10 or more years
17. If you are currently not working in optometry, HOW LONG has it been since you stopped working as an optometrist? **Please select only one response.**  
DROP-DOWN LIST  
Never worked as an optometrist  
Less than 1 year  
2-3 years  
4-9 years  
10 or more years  
I am currently working in optometry

18. If you are currently not working as an optometrist, what is the PRIMARY REASON(s) you do not actively practice? **Please select all that apply.**

DROP-DOWN LIST

- I have never worked as an optometrist
- Burnout/stressful environment
- Career advancement/promotion to a non-optometry position
- Disability/illness
- Family obligations
- Pursuing a career in a different field
- Relocated
- Retired
- Other
- I am currently working as an optometrist.

- 19a. Please enter the STREET ADDRESS of your principal practice location (where you work the most hours as an optometrist). [TEXT BOX]
- 19b. Please enter the CITY of your principal practice location. [TEXT BOX]
- 19c. Please enter the 2-character STATE CODE (example: IN) for your principal practice location. [TEXT BOX]
- 19d. Please enter the 5-character ZIP CODE for your principal practice location. [TEXT BOX]
- 
- 20a. Please enter the STREET ADDRESS of a secondary practice location. [TEXT BOX]
- 20b. Please enter the CITY of the secondary practice location. [TEXT BOX]
- 20c. Please enter the 2-character STATE CODE (example: IN) for the secondary practice location. [TEXT BOX]
- 20d. Please enter the 5-character ZIP CODE for the secondary practice location. [TEXT BOX]
- 
- 21a. Please enter the STREET ADDRESS of a third practice location. [TEXT BOX]
- 21b. Please enter the CITY of the third practice location. [TEXT BOX]
- 21c. Please enter the 2-character STATE CODE (example: IN) for the third practice location. [TEXT BOX]
- 21d. Please enter the 5-character ZIP CODE for the third practice location. [TEXT BOX]

**That was the last question. Thank you for responding.**

## **Appendix 2**

### **Proposed Changes to the 2012 Indiana Optometrist Re-licensure Survey**

The advisory committee met in May 2011 to discuss recommendations to the 2012 Indiana optometrist re-licensure survey. Few additional questions were suggested to capture information on the following:

1. Type of practice
2. Satisfaction with the number of hours worked
3. Number of days spent on charitable care