

Utah's Pharmacist Workforce



May, 2009

by

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Utah's Pharmacist Workforce, May 2009

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Utah Medical Education Council

The Utah Medical Education Council (UMEC) was created in 1997 by H.B.141 out of a need to secure and stabilize the state's supply of healthcare clinicians. This legislation authorized the UMEC to conduct ongoing healthcare workforce analysis and to assess Utah's training capacity and graduate medical education (GME) financing policies. In addition, H.B. 141 requires the UMEC to advise on these issues and to provide policy recommendations for achieving state workforce objectives.

Charge to the UMEC

- Determine the number and mix of healthcare professionals needed in Utah and develop strategies to assure that the projected requirements are met.
- Identify ways to protect and maximize existing revenue streams that support GME.
- Obtain and manage federal waiver so that receipt of federal funds is linked to addressing Utah's healthcare workforce requirements.
- Advise on strategies to ensure that Utah has an adequate healthcare workforce.

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Executive Summary

Utah's Pharmacist Workforce, 2009 is a continuation of pharmacist workforce studies begun by the Utah Medical Education Council (UMEC) in 2000. Like the first publication in this series, titled Utah's Pharmacist Workforce 2002, the current report focuses on the pharmacists providing services in Utah, their demographics and practice characteristics. The report also explores capacity of these pharmacists to provide services that are and will be demanded by Utah's growing population and the changing face of the pharmaceutical and health care industries in the United States of America. An electronic copy of all the reports in this series can be downloaded from the UMEC website: www.utahmec.org.

Due to a lack of demand indicators for institutional pharmacists in Utah, the report projects workforce supply and demand for retail pharmacists only. Retail pharmacists constitute 65.4% (1,063 of 1,626) of Utah's pharmacist workforce. Self reported pharmacist demographic data, combined with pharmacist supply data and retail prescription volumes per capita in Utah indicate that the gap between demand for retail pharmaceutical services and supply has considerably narrowed since 2000.

Interestingly, there has been no net growth in the number of retail pharmacists during the period 2000-2005. UMEC attributes this to the productivity gains in the workforce – improved efficiency due to pharmacy technicians, dispensing technology and other prescription dispensing policies. However, the expanding scope of retail pharmacists – vaccination, public health education etc., could offset these gains to some extent. In addition to these productivity gains, an increased supply of pharmacist workforce in Utah will help alleviate Utah's pharmacist workforce shortage in the near future. To ensure that Utah has an adequate pharmacist workforce, UMEC recommends focus on retaining its workforce.

Highlights of the Current Utah Pharmacist Workforce:

- As of 2005, there are 1,626 actively practicing pharmacists in Utah. *(Ref: Pg. 5)*
- In Utah, the 2005 pharmacist-to-100,000 population ratio is 64.3 (Utah Population: 2,528,926). *(Ref: Pg. 5)*
- 83.0% (1,349) of the active pharmacist workforce in Utah practices in the urban counties where 75.6% (1,913,806) of the population lives, suggesting a concentration of pharmacists in the urban areas of the state. *(Ref: Pg. 6)*
- 35.2% (573) of Utah's pharmacist workforce is female; 52.6% (110,589) of the national pharmacist workforce is estimated to be female. *(Ref: Pg. 11)*
- The average age of Utah pharmacists is 45.6 years (median age: 45.0 years). *(Ref: Pg. 11)*
- The average age of retirement for a Utah pharmacist is 63. *(Ref: Pg. 13)*
- Utah will lose about 39 pharmacists per year over the next decade due to retirement. In addition, Utah loses about 36 pharmacists per year for various other reasons, termed as 'attrition'. *(Ref: Pg. 13)*

- The average annual gross compensation of an active Utah pharmacist is \$92,365, compared to the national average of \$98,960. *(Ref: Pg. 16)*
- Pharmacists practicing in one full time position in Utah work an average of 43.2 hours per week, while the mean weekly hours worked by full-time pharmacists in the nation is 43.4 for the year 2004. *(Ref: Pg. 23)*
- In a retail, non-institutional setting, active pharmacists in Utah dispense about 200 prescription drugs per day, compared to 93 per day in 2000. *(Ref: Pg. 23)*
- This translates to about 103 prescriptions per FTE per day (based on a 40 hour work week). *(Ref: Pg. 23)*
- Current Utah pharmacy technician to pharmacist ratio is below 1.6:1; Utah law allows this ratio to be as high as 3:1. *(Ref: Pg. 27)*
- Utah needs about 25 FTE pharmacists per year to accommodate the prescription volume growth in retail settings. This number could be higher when adjusted for non-retail setting prescription volumes. *(Ref: Pg. 34)*
- An estimated 79 pharmacists enter the workforce each year from 2006-2008. This number might gradually increase from 2009 through 2010 to about 120 pharmacists entering the workforce each year. This translates to about 52-79 entering the retail workforce*. *(Ref: Pg. 35)*
- Female pharmacists contribute 0.79 FTE for every male FTE. Based on this, the net FTEs entering the workforce could be lower. This could reduce the incoming workforce to about 48-73 pharmacists per year. *(Ref: Pg. 35)*
- UMEC projects that the supply of pharmacists might catch up with and even overtake demand for retail pharmaceutical services in the near future if attrition from workforce is closely monitored and contained. *(Ref: Pg. 38)*
- There has been no net growth in the number of retail pharmacists providing services in Utah during the period 2000-2005. UMEC attributes this to the drug dispensing efficiency improvements achieved in the retail setting during this time period. *(Ref: Pg. 39)*

* The University of Utah College of Pharmacy has expanded its pharmacy program from 48 to 60 students as a direct result of the analysis done for this Pharmacist Workforce Report.

Recommendations:

The UMEC in conjunction with the Utah Pharmacist Workforce Advisory Committee makes the following recommendations to ensure an adequate pharmacist workforce in Utah:

1. Curb attrition to avoid shortage – DOPL license data suggests that Utah loses about 36 pharmacists a year for reasons other than retirement. The workforce models clearly indicate that Utah can recover from the ongoing shortage of pharmacists by ensuring that these pharmacists are retained in the workforce. For this, UMEC recommends the following steps:
 - a. Promote retention of workforce in Utah
 - i. Organizations like Utah Pharmacists Association (UPhA) and Utah Society of Health–System Pharmacists (USHP) should be involved in promoting retention of workforce in Utah.
 - ii. Employers should encourage Utah pharmacists to remain in Utah.
 - iii. Hosting job postings, with an emphasis on Utah jobs, on their websites is one way to achieve this.
 - b. Keep close track of the pharmacist emigration trend
 - i. UMEC and other concerned organizations should keep close track of the pharmacist emigration trend to assess and prepare for the future status of Utah pharmacist workforce.
 - ii. Further analysis of the causes of attrition should be conducted in order to develop strategies to address it.
2. Utilize the pharmacy technician workforce more efficiently – the UMEC workforce projection model does not account for the current pharmacy technician workforce due to lack of data. However, UMEC recognizes the importance of the pharmacy technician workforce and recommends that this allied workforce cohort be used more effectively to address the ongoing pharmacist shortage. For this UMEC suggests the following:
 - a. Pharmacies should utilize the full capacity of pharmacy technicians for an efficient and safe provision of pharmaceutical care.
 - b. Information on pharmacy technician workload and demographics needs to be assimilated by the UMEC with the help of DOPL, UPhA, USHP and the pharmacy technician training programs in Utah.
 - c. Impact of pharmacy technicians on the pharmacist workload should be studied by the UMEC with the help of DOPL, UPhA, USHP and the pharmacy technician training programs in Utah.
3. Encourage pharmacists to serve in areas with identified shortages in rural and frontier Utah – UMEC recognizes that not all rural and frontier areas can support a pharmacy. However, need for medicine and counseling does exist. A balanced approach to ensure adequate supply of pharmacists in rural areas is necessary. For this, UMEC recommends the following:

- a. Pharmacy schools in Utah should develop rural rotation or training programs and encourage students to participate[†].
 - b. Organizations like UPhA and USHP should promote rural practice among Utah pharmacists.
 - c. The Department of Health should consider loan forgiveness programs for pharmacists who practice in rural and frontier communities of need.
4. Develop and maintain a comprehensive and centralized pharmacy workload/demand tracking system – data on demand for pharmacy services in Utah is not readily available. Given the expanding scope of pharmacists, a measure of prescription volume does not provide an accurate picture of the existing demand. For this:
- a. Develop a measurement system to quantify the workload of retail pharmacists that takes into account productivity gains and expanded scope of work.
 - b. Develop a measurement system to assess the demand for institutional pharmacist services.
 - c. Quantify the affect of prescription plans like 90 day refills, automatic refills, automated drug delivery systems, and mail order prescriptions on pharmacist workload.

UPhA and USHP, along with other organizations interested in the pharmaceutical industry – insurance industry, major retail and institutional employers, pharmacy technician interest groups, pharmacist and pharmacy technician training programs, Utah DOH, Utah DOPL and UMEC, should form a coalition to develop a working model for a comprehensive and centralized pharmacist workload/demand tracking system.

[†] The Utah Medical Education Council is providing funds for a Rural Training Track being developed by the University of Utah College of Pharmacy.

Utah's Pharmacist Workforce, 2008

Introduction

One of Utah Medical Education Council's (UMEC's) prime responsibilities is to determine the number and mix of health care professionals needed to meet Utah's healthcare workforce requirements. For this, the UMEC conducts workforce surveys periodically and helps develop strategies to assure that the health care workforce requirements of Utah are met.

Utah's Pharmacist Workforce, 2009 represents the continuation of pharmacist workforce studies begun by the UMEC in 2000. Like the first publication in this series, titled "Utah's Pharmacist Workforce 2002," the current report focuses on the pharmacists providing services in Utah, their demographics and practice characteristics. The report also explores the capacity of these pharmacists to provide services that are and will be demanded by Utah's growing population and the changing face of the pharmaceutical and health care industries in the United States of America. An electronic copy of all the reports in this series can be downloaded from the UMEC website: www.utahmec.org.

Methodology

The Utah pharmacist workforce data used for this report has been collected using a survey (*Ref: [Appendix B](#)*) designed and conducted by the UMEC. The survey instrument was a questionnaire with pre-structured response categories and is referred to as the "UMEC 2005 Pharmacist Workforce Survey". Microsoft (MS) Access, MS Excel and SPSS (formerly Statistical Package for the Social Sciences) software were used to process and analyze the data.

The questionnaire was mailed to all pharmacists with an active Utah license (2,343) in 2005. The list of licensees was provided by the Utah Division of Occupational and Professional Licensing (DOPL). Having information for all the pharmacists with a Utah license enabled the UMEC to have a census of the entire pharmacist population of Utah. This also eliminated the errors linked with sampling a population.

The United States Postal Service (USPS) forwarded surveys to those pharmacists who have moved but whose addresses were not updated with the Utah DOPL and these addresses were updated in the UMEC database. Three follow-up questionnaires were mailed to non-respondents after a four-month interval. A total of 1,565 pharmacists responded to the survey, giving a 66.8% response rate. Data have been weighted to account for the 778 missing respondents, resulting in a weighting factor of 1.49. All data presented in the report are weighted unless otherwise specified. The number or proportion of the item non-respondents (survey respondents who did not answer a particular item in the survey) has been reported where applicable.

Scope and Limitations of the Report

Data collected from the survey specifically address the make-up of the pharmacist workforce in Utah – its distribution, characteristics and the impact of increasing demand for pharmacist services on the pharmacist workload. The report draws heavily from the 2000 Pharmacist Workforce report published by the Bureau of Health Professions (BHPr) for national level comparison data¹. Demand and supply of the workforce are assessed based on available resources i.e., the population growth estimates provided by the Utah Governor's Office of Planning and Budget (GOPB); prescription volume and sales data from Kaiser Family Foundation (KFF), Intercontinental Marketing Services (IMS) Health and the National Association of Chain Drug Stores (NACDS); data on the retention rates of pharmacist graduates in Utah provided by the University of Utah College of Pharmacy and University of Southern Nevada College of Pharmacy retention estimates; pharmacist retirement data collected using the UMEC 2005 Pharmacist Workforce Survey instrument; and the licensing data provided by the Utah DOPL. The UMEC projects future trends of the retail pharmacist workforce in Utah using demand and supply models based on the aforementioned data. Although data on the workforce characteristics and demographics of institutional pharmacist data is available from the UMEC survey, lack of benchmarks and comparable data impair future projections for this sector of the workforce. As such, the UMEC projects future trends for the retail pharmacist workforce only.

Limitations:

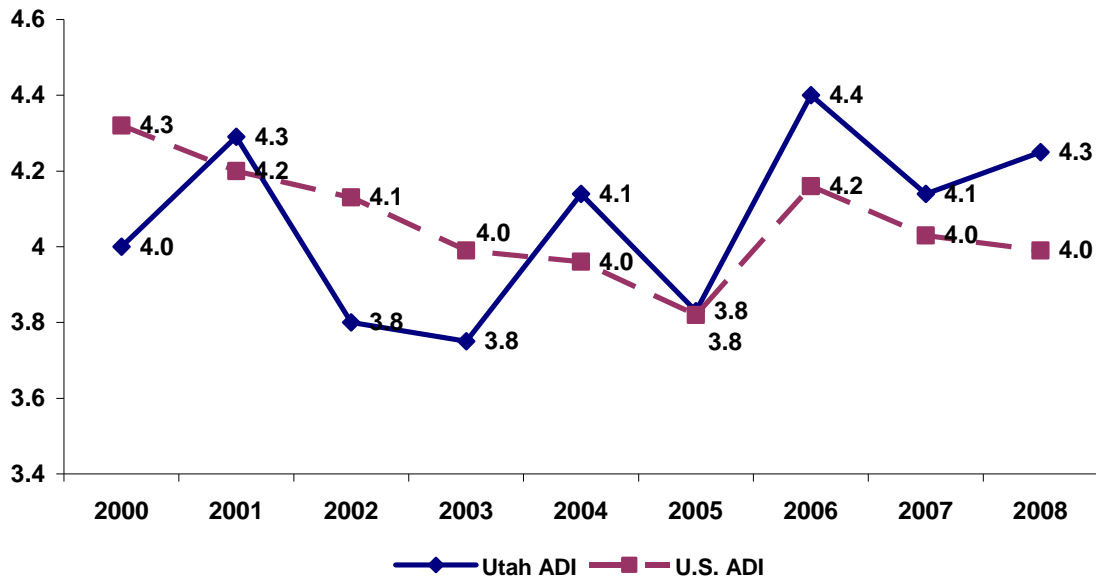
- Most benchmark data are available only for the retail pharmacy industry. Limited information is available for hospital based and other pharmacy categories.
- Data that quantifies demand for pharmacists as a result of expanded scope of pharmacist services is not available.
- Data that quantifies the increase in productivity of a pharmacist as a result of employing pharmacy technicians is unavailable.
- Survey Limitations:
 - Categorization of pharmacies (retail chain, independent retail etc.) is not consistent with national reports.
 - In questions 12 and 13, the choice of percent change ranges provided for the respondents do not define upper limits. As such, the information collected does not facilitate estimation of average percentages in each category.
 - The response to question 10, the average time to fill an open or budgeted position at the pharmacist's location of practice may not reflect actual data because respondents may not have had access to the information.
 - Race and ethnicity were not asked as separate questions. Hispanic ethnicity was included as a race choice.
 - 21.4% (347) pharmacists work in more than one location and/or setting. The data reported by these pharmacists on income, hours, percent time spent in various activities, trends over the past five years etc., reflect the situation in more than one location and/or setting.

Background of Pharmacist Shortage

*“While the overall supply of pharmacists has increased in the past decade, there has been an unprecedented demand for pharmacists and pharmaceutical care services, which has not been met by the currently available supply...”*² –Department of Health and Human Services Bureau of Health Professions (BHP), December 2000.

Although made in 2000, this statement relates to the current pharmacist workforce. Despite the increase in the pharmacist workforce in the past decade, new pharmacist recruits are hard to find across the nation and Utah is no exception³. A snapshot of the Aggregate Demand Index (ADI)ⁱⁱⁱ trend for pharmacists in Utah and U.S. since 2000 is provided in Figure 2.

Figure 2: Pharmacist Aggregate Demand Index in U.S. vs. Utah, July 2000 – July 2008



In line with the ADI measures for Utah, UMEC’s first Utah Pharmacist Workforce report indicated that Utah was experiencing a shortage of pharmacists. According to the report, Utah had 60.2 pharmacists per 100,000 population compared to the nation’s 71.2 pharmacists per 100,000 population⁴. That report suggested that Utah would have a minimum annual shortage of 13 pharmacists based on a conservative prescription growth assumption and not accounting for the expanding role of the pharmacist. That report also

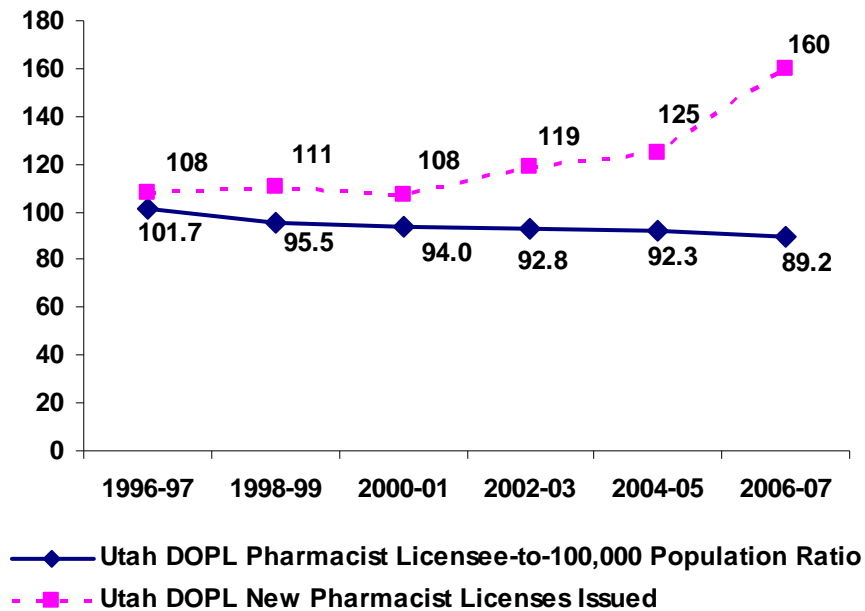
ⁱⁱⁱ Aggregate Demand Index is based on data reported by a panel of pharmacist recruiters representing major geographic and practice sectors of pharmacy practice in the United States. ADI is a part of the Pharmacist Manpower Project and is reported for the nation and the states on a monthly basis. The ADI categories are: **5=High Demand, difficult to fill open positions; 4=Moderate Demand, some difficulty filling open positions; 3=Demand in balance with supply; 2=Demand is less than the supply available; 1=Demand is much less than the pharmacist supply available.** <<http://www.pharmacymanpower.com/index.html>>

revealed that Utah would require 247 additional pharmacists to meet the then national pharmacist-to-100,000 population ratio of 71.2 and would have a higher annual shortage to maintain the same state ratio. By quantifying this information, the 2002 pharmacist workforce report influenced the efforts made for increasing Utah’s pharmacist workforce supply^{iv}. The current report attempts to measure the pharmacist workforce in Utah and see how Utah is coping with the increasing demand for pharmacists.

Current Utah Pharmacist Workforce

Since 1997, Utah DOPL pharmacist license data indicate a trend of an increasing number of new licenses issued. All the pharmacists licensed in Utah, however, do not practice in Utah. On the other hand, the pharmacist licensee-to-100,000 population ratio continues to decline in Utah.

Figure 3: Utah DOPL Pharmacist License-to-100,000 Population Ratio Trend ^v



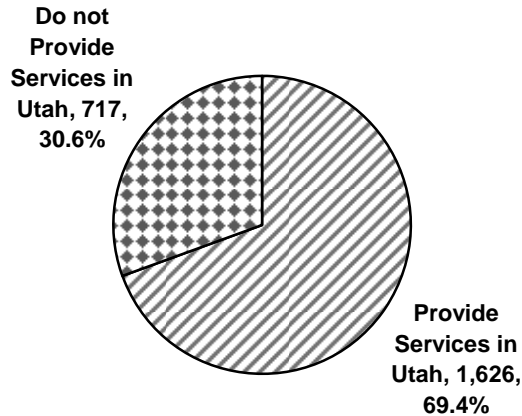
^{iv} The University Of Utah College Of Pharmacy expanded its enrollment from 45 to 48 in 2005. University of Southern Nevada College of Pharmacy opened a campus in Utah in 2006 with a capacity of 52 students; and has expanded to 82 students the following year.

^v Figure 3 is based on all pharmacists who maintain a license in Utah. Many of these pharmacists do not live/provide services in Utah.

Current Workforce Supply

Only 1,626 (69.4%) of the 2,343 licensed pharmacists in Utah provide services in Utah. The remaining 717 (30.6%) licensed pharmacists do not provide any services in Utah.

Figure 4: Licensed Pharmacists in Utah: Distribution By Service Provision -UMEC, 2005



Of these 1,626 pharmacists, 65.4% (1,063) work in retail pharmacies, which include chain and independent pharmacy stores. Further breakdown of the pharmacist work settings in Utah is presented in the Practice Characteristics section of this report.

Pharmacist-to-100,000 Population Ratio

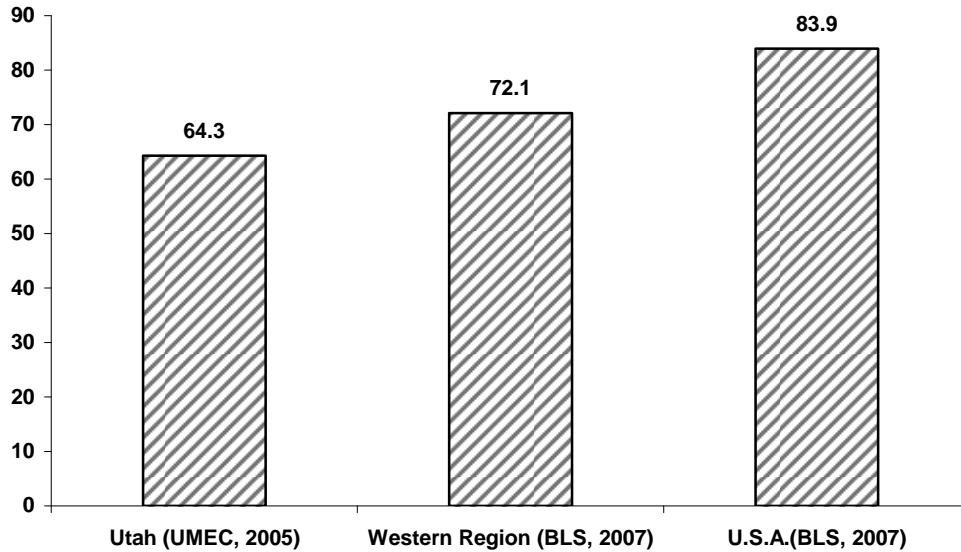
Utah has an actively practicing pharmacist-to-100,000 population ratio of **64.3** (1,626 pharmacists; population of Utah as on July 1, 2006: 2,528,926⁵). This ratio for Utah has improved since the 2002 UMEC Pharmacist Workforce Report, which indicated that Utah had 60.2 pharmacists per 100,000 populations^{4 above}.

The Pharmacist Workforce Report published in December, 2000 by the BHPr indicates that the pharmacist-to-100,000 population ratio in the nation is projected to be **73.1 in 2005 and 74.9 in 2010**⁶.

According to the U.S. Bureau of Labor Statistics (BLS) and the U.S. Census Bureau, the nation has 83.9 pharmacists-to-100,000 population ratio; the Western region has 72.1 pharmacists-to-100,000 population ratio and Utah has 72.7 pharmacists-to-100,000 population ratio as of May, 2007⁷. UMEC's survey based pharmacist-to-population ratio differs from the BLS estimates made for Utah for two reasons. Firstly, this is because the UMEC number is based on the number of pharmacists actually providing services in Utah as opposed to estimating the number of practicing pharmacists based on licensure in Utah. Not all pharmacists licensed in Utah practice in Utah as noted above. Secondly, UMEC reports 2005 data while BLS number corresponds to 2007.

The number of pharmacists reported by various sources might differ from the UMEC's number based on the methodology used. Nevertheless, almost all sources indicate that Utah has a significantly lower pharmacist-to-100,000 population ratio than the nation.

Figure 5: Pharmacist-to-100,000 Population Ratio Comparison: Utah vs. Western Region and U.S.A.



The pharmacist-to-100,000 population ratio does not address factors like productivity, practice scope and methods, allied workforce employed, tele-pharmacy services, and the accessibility of pharmacists to under-served populations. However, it is widely used as a unit to measure the workforce due to its simplicity and comparability across the nation.

Geographic Distribution of Pharmacists in Utah

Traditionally, rural and frontier regions have been affected by shortages of health care workforce more than the urban and suburban regions. The 2005 survey data collected by the UMEC indicate that 22 of Utah's 29 counties (each) employ less than 2.0% (33) of the pharmacist workforce in Utah. Two of these counties, Piute and Wayne, have no practicing pharmacists^{vi}. Figure 6 shows the distribution of pharmacists across the counties in Utah, expressed as pharmacist-to-100,000 population ratios. Only 8 of the 29 counties have a pharmacist-to-100,000 population ratio of 64.3 or greater. According to the UMEC data 83.0% (1,349) of the pharmacists actively providing services in Utah practice in urban counties where 75.6% (1,913,806) of the state population lives, suggesting an increased concentration of pharmacists in the urban counties.

It should be noted that these ratios have been calculated based on the head counts of pharmacists who indicated a practice location in a given county. Full or part time status or hours of pharmacy service reported by the pharmacist are not considered for this analysis. It should also be noted that not all rural and frontier communities can support a pharmacy. The pharmacist-to-100,000 population ratio does not reflect this. On the other

^{vi} None of the survey respondents reported practice locations in Piute or Wayne.

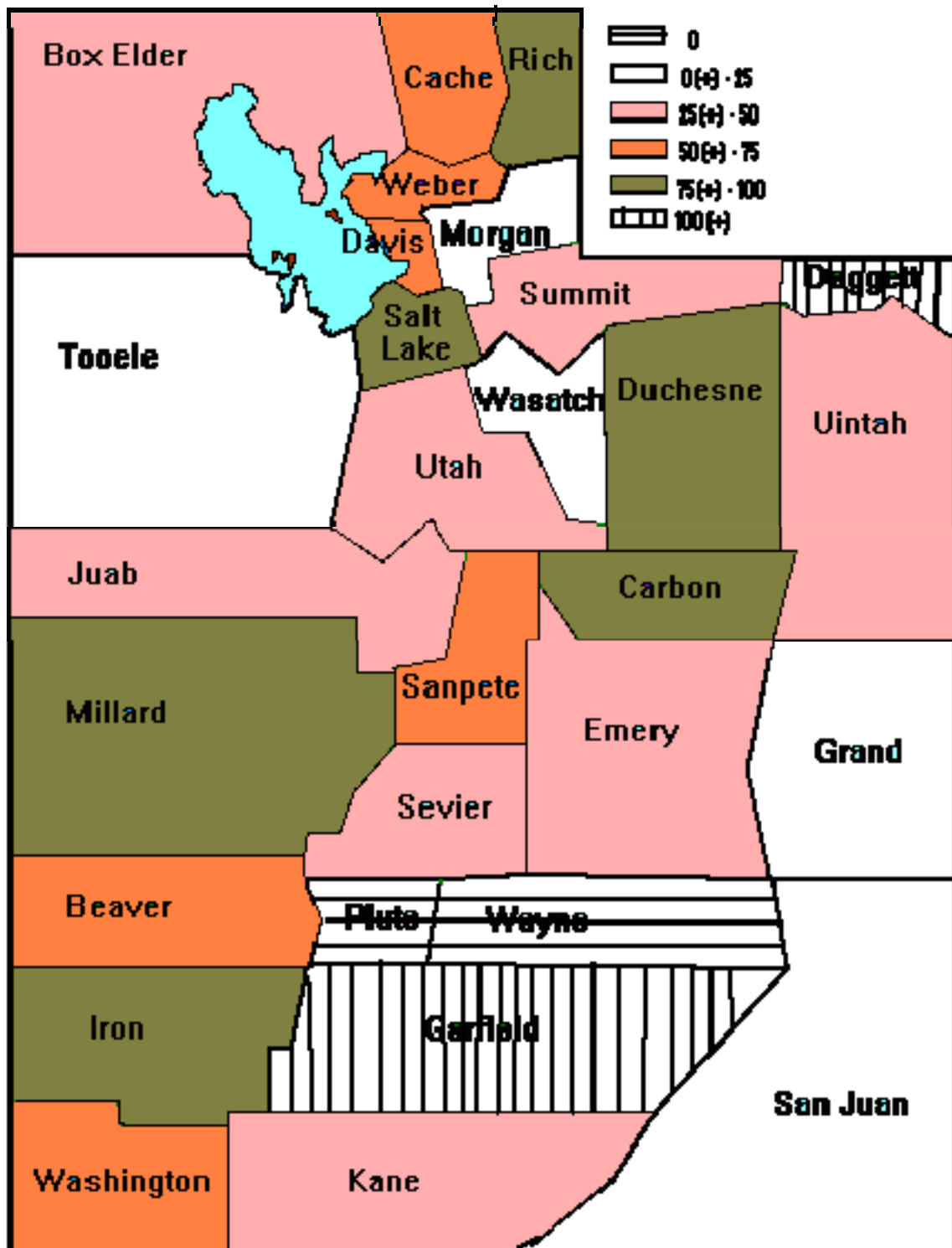
hand, a handful of Utah counties have 100,000 or more population. As such, the reported ratios do not present the most accurate picture of workforce in Utah counties.

Table 1: Pharmacist-to-100,000 Population Ratios across Utah Counties – UMEC 2005

County	Total	2005 Population	Pharmacist-to-100,000 Population Ratio
Beaver	NR*	6,335	NR*
Box Elder	21	45,142	47.0
Cache	58	102,477	56.5
Carbon	18	19,205	95.5
Dagget	NR*	967	NR*
Davis	152	276,374	55.2
Duchesne	13	15,043	83.4
Emery	4	10,492	NR*
Garfield	8	4,645	166.2
Grand	NR*	8,691	NR*
Iron	32	40,212	79.2
Juab	NR*	8,917	NR*
Kane	NR*	6,093	NR*
Morgan	NR*	13,305	NR*
Millard	8	8,525	90.6
Piute	0	1,356	0.0
Rich	NR*	2,086	NR*
Salt Lake	813	970,748	83.8
San Juan	NR*	14,444	NR*
Sanpete	13	25,447	51.1
Sevier	8	19,494	39.6
Summit	17	36,417	47.7
Tooele	9	51,835	16.8
Uintah	12	26,317	44.0
Utah	202	453,977	44.2
Wasatch	NR*	20,138	NR*
Washington	79	125,010	63.3
Wayne	0	2,527	0.0
Weber	135	212,707	63.5
Total Ph.	1,683	2,528,926	64.3

*NR – Non Reportable information.

Figure 6: Pharmacist-to-100,000 Population Ratios across Utah Counties - UMEC 2005



Summary

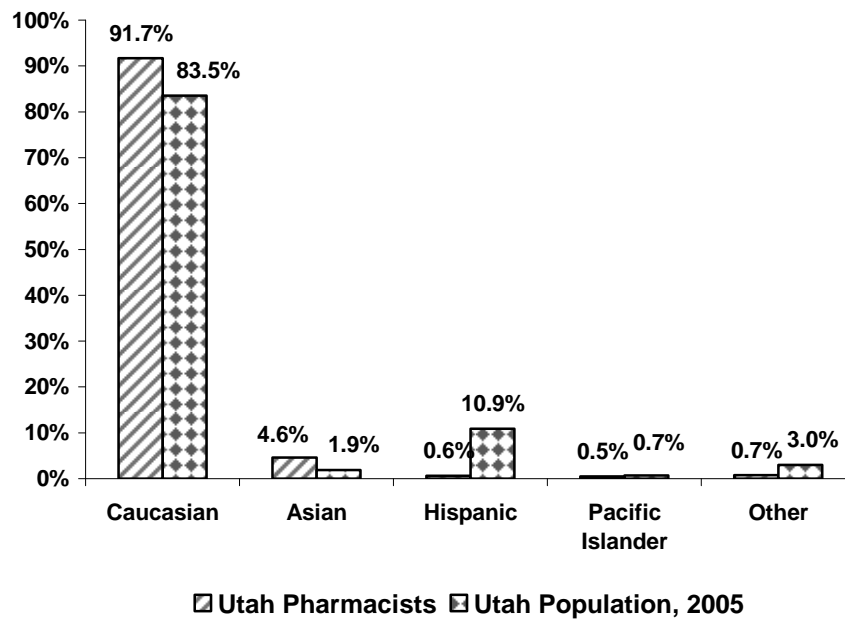
- As of 2005, there are 1,626 actively practicing pharmacists in Utah.
- In Utah, the 2005 pharmacist-to-100,000 population ratio is 64.3 (Utah Population: 2,528,926).
- The pharmacist-to-100,000 population ratio in Utah has improved since 2002 (from 60.2 in 2002 to 64.3 in 2005) but has consistently been lower than the national ratio of 71.2 in 2000 and 83.9 in 2007.
- 83.0% (1,349) of the active pharmacist workforce in Utah practices in the urban counties where 75.6% (1,913,806) of the population lives suggesting a concentration of pharmacists in the urban areas of the state.
- Only 8 of the 29 counties have a pharmacist-to-100,000 population ratio of 64.3 or greater.

Workforce Demographics

Race and Ethnicity

Pharmacist workforce in Utah does not reflect the diversity of Utah’s population. Only 0.6% (10) of Utah pharmacists are Hispanic^{vii} compared to 10.9% of Utah population⁸. About 4.6% (75) pharmacists are Asian. Only 6.5% (105) pharmacists in Utah belong to races other than Caucasian compared to 16.5% of the 2005 Utah population estimate⁸ above

Figure 7: Race - Utah Pharmacists Vs. Utah Population, UMEC 2005



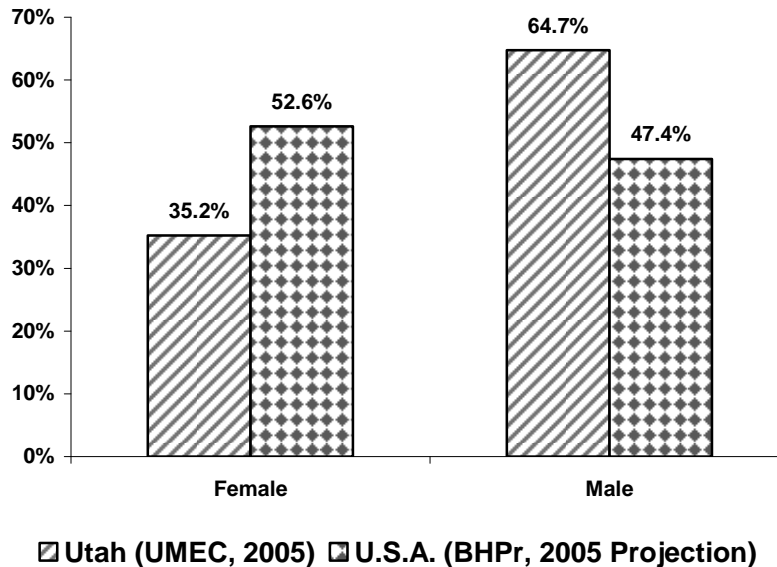
Research indicates that minority patients tend to receive better interpersonal care, superior medical comprehension and exhibit a greater likelihood of keeping follow-up appointments when served by a practitioner of their own race or ethnicity. Furthermore, minority health professionals disproportionately serve minority and other medically underserved populations⁹. Given the scenario where the pharmacist practice scope has been expanded to include disease/patient specific care, patient counseling and education, and immunization activities, while the minority populations are growing at a rapid rate in the state, it is important that Utah focuses on diversifying its workforce.

^{vii} Race and Ethnicity were not separated in the questionnaire – Hispanic ethnicity was listed as a race choice.

Gender

About 35.2% (573) of Utah's active pharmacist workforce is female compared to an estimated 52.6% of the national pharmacist workforce¹⁰.

Figure 8: Pharmacist Gender Distribution, Utah vs. U.S.A 2005



The BHP Pharmacist Workforce Report further estimates that eventually (2010-2020) two-thirds of the pharmacy workforce will be female. The report interprets this trend as a positive aspect in terms of gender equality, but as a potential detriment to the productivity of the pharmacist workforce¹¹. This interpretation is supported by the self reported practice data of Utah pharmacists – 65.3% (130) of pharmacists who work only one part time position in Utah (199) are female pharmacists. Self reported workload data for pharmacists in retail chain and independent settings also indicate that for every male pharmacist working one Full Time Equivalent (FTE, based on a 40 hour work week) a female pharmacist only works 0.79 FTE.

Age

The average pharmacist in Utah is 45.6 years old (median: 45.0); average female pharmacist is 39.6 (median: 38.0) years old and the average male pharmacist is 48.8 (median: 49.0) years old. [Figure 9](#) below show the age distribution of active pharmacists in Utah by gender.

About 50.9% (828) of the active providers in Utah are below 45 years of age. This is an indicator of workforce availability for, at the least, the next twenty years. [Figure 10](#) indicates that there are more female pharmacists than male pharmacists in Utah who are younger than 45 years of age, while there are considerably more male pharmacists than female pharmacists in the 56 and above age group.

As over 31.1% (327) of the male pharmacist workforce aged 56 or more retires through the next decade, Utah will have a predominantly female pharmacist workforce. If the trend of female pharmacists working fewer hours continues, the result will be fewer FTEs despite a consistent or even increasing number of pharmacist head counts in the future. Current and developing trends like telepharmacy services, online order verification from home, increased usage of pharmacy technicians, flexible workshifts and job sharing could offset this possible loss in pharmacist FTEs to some extent.

Figure 9: Age Distribution of Pharmacists in Utah - UMEC 2005

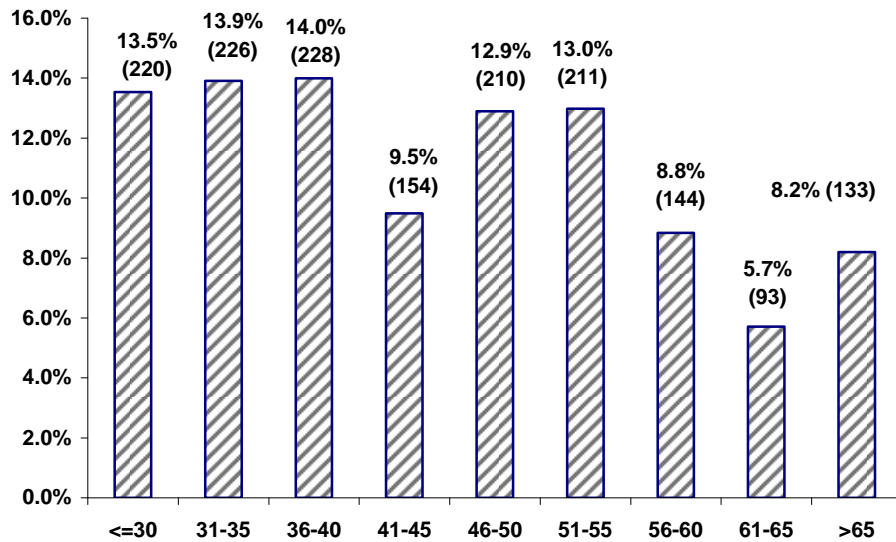
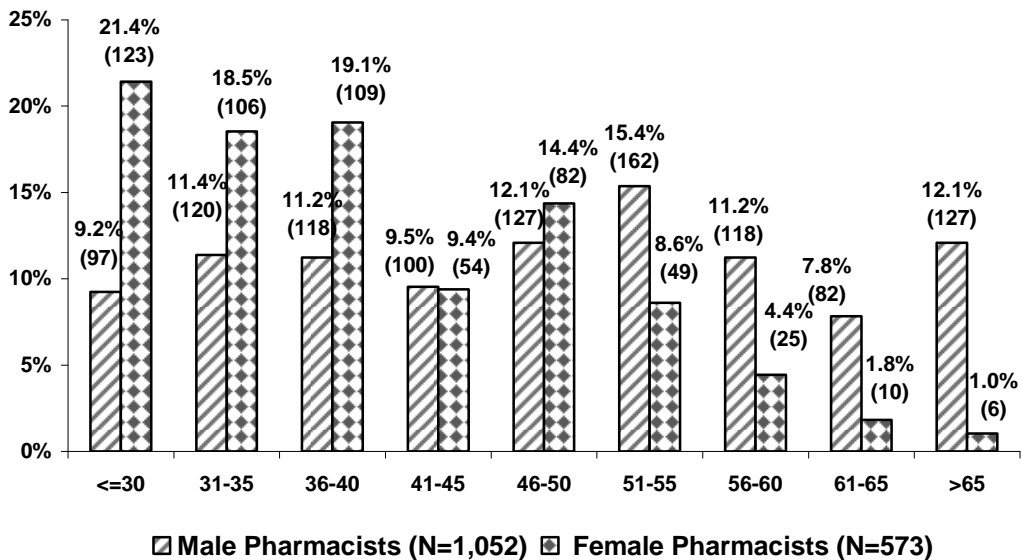


Figure 10: Age Distribution of Pharmacists by Gender - Utah, UMEC 2005

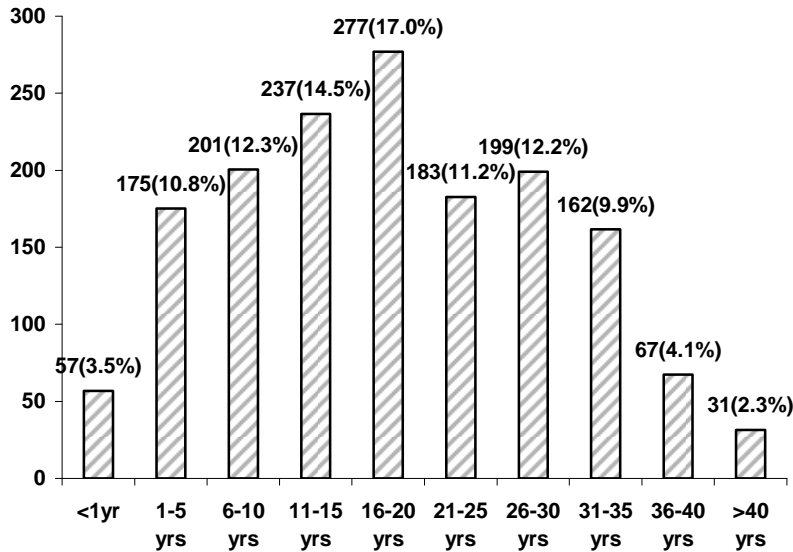


Retirement & Attrition

The average age of retirement of a Utah pharmacist is 63.8 (median: 64.0). UMEC survey data and DOPL license data indicate that anywhere between 39 to 60 pharmacists retire from Utah workforce each year. This translates to an average of about 50 pharmacists retiring per year.

About 26.6% (433) of Utah's pharmacist workforce is planning to retire over the next 11 years (2005-2015). This translates to about 39 pharmacists retiring per year. This information is based on the self-reported retirement plans of Utah pharmacists. The DOPL license data, however, indicates that about 600 pharmacists aged 65 or above let their licenses expire during the period of 1994-2005. This can be interpreted as retirement rate of about 60 pharmacists per year, based on DOPL.

Figure 11: Years to Retirement for Utah Pharmacists - UMEC 2006



In addition, about 36 pharmacists leave Utah workforce each years for reasons other than retirement. The DOPL license database indicates that 517 pharmacists, less than 65 years of age, let their licenses expire during the period 1994-2005. It can be assumed that 69.4%, the percent of Utah's licensed pharmacist workforce that actually provides services in Utah, of the pharmacists who let their licenses expire before they are 65 leave the active Utah pharmacist workforce pool. This translates to about 359 pharmacists over 10 years or 36 pharmacists per year leaving the workforce for reasons other than retirement, termed as 'attrition'. These pharmacists could either be leaving Utah to practice elsewhere, retired early or might have changed careers. In either case, if this trend continues, Utah will have to replace about 75-96 pharmacists per year to account for the 39-60 pharmacists retiring each year and the 36 pharmacists leaving the workforce for other reasons.

Summary

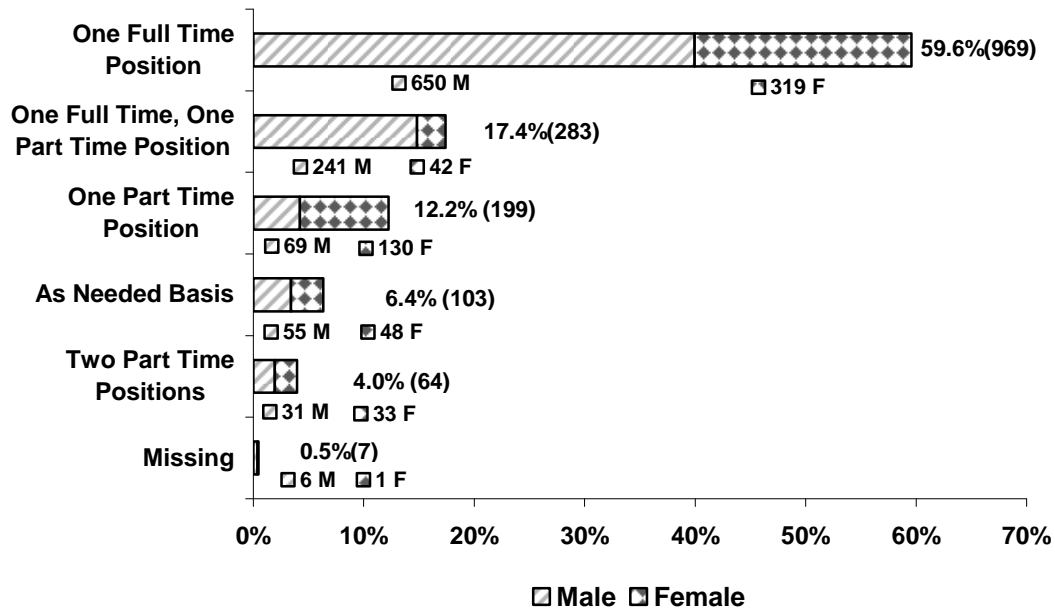
- Racial and ethnic mix of the pharmacist population in Utah is disproportionate to the racial and ethnic mix of Utahns.
 - Less than 1.0% (10) of Utah's pharmacist workforce is of Hispanic ethnicity compared to 10.9% of the 2005 Utah population estimate.
 - 6.5% (105) of active pharmacists in Utah belong to races other than Caucasian compared to 16.5% of the 2005 Utah population estimate.
- 35.2% (573) of Utah's pharmacist workforce is female.
 - 52.6% (110,589) of the national pharmacist workforce is estimated to be female.
 - 65.3% (130) of pharmacists who work only one part time position in Utah (199) are female pharmacists.
 - For every male pharmacist working one FTE (based on a 40 hour work week in retail settings), a female pharmacist only works 0.79 FTE.
- The average age of a Utah pharmacist is 45.6 years (median age: 45.0 years).
 - About 50.9% (828) of Utah pharmacists are under age 45, 35.4% (575) are between the ages of 45-55, and 22.8% (370) are age 55+.
- The average age of retirement for a Utah pharmacist is 63.
- Utah will lose about 39 pharmacists per year over the next decade due to retirement. According to DOPL license database, as high as 60 pharmacists aged 65 and above let their licenses expire each year. This could be interpreted as pharmacists retiring from Utah's workforce.
- In addition, DOPL database indicates that Utah loses about 36 pharmacists per year for various other reasons, termed as 'attrition'.

Practice Characteristics

Work Arrangement and Setting

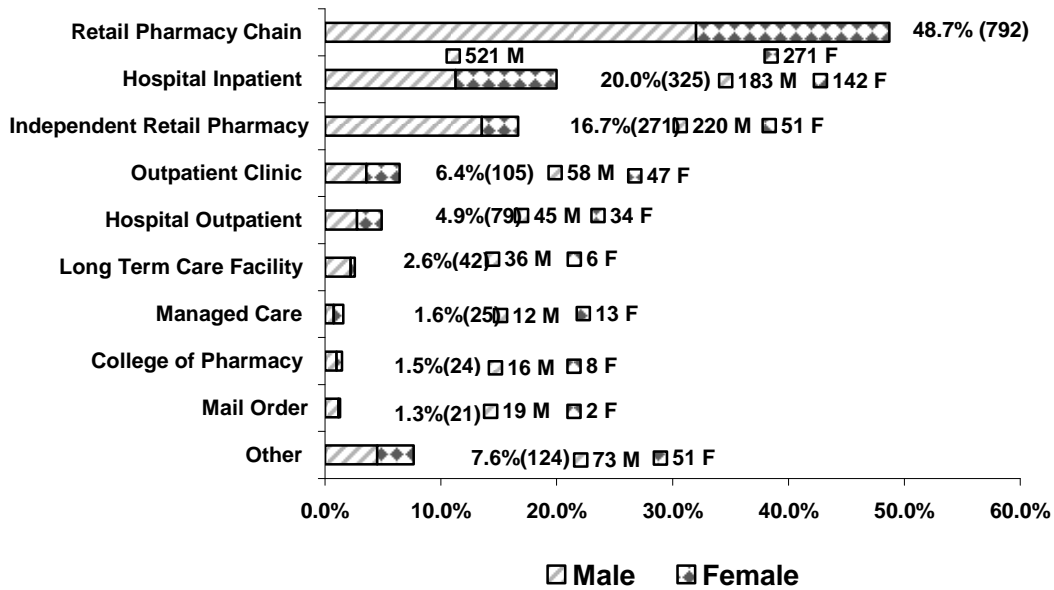
About 21.3% (347) of Utah pharmacists practice in more than one location, while about 17.4% (283) of the pharmacists work more than one full time position per week. About 65.3% (130) of pharmacists who work only one part time position in Utah (199) are female. [Figure 12](#) shows the work arrangement of Utah pharmacists by gender.

Figure 12: Pharmacist Work Arrangement - UMEC 2005



The UMEC survey instrument classified the pharmacist work settings in line with the classification used by the IMS Health, with slight variations. Utah pharmacist work settings data based on the survey categories are provided in [Figure 13](#).

Figure 13: Pharmacist Work Settings by Gender - UMEC 2005



The total in the above figure is more than the total number of pharmacists practicing in Utah (1,626). This is because pharmacists who work in more than one position responded for multiple work settings on the survey instrument.

Gross Compensation

The average annual gross compensation of an active Utah pharmacist is \$92,365 (median: \$96,820), compared to the national average of \$98,960 (median: \$100,480)¹². Based on a 40 hour work week, Utah pharmacists earn about \$44.41 per hour^{viii}, while U.S. pharmacists earn about \$47.58 per hour¹². The distribution of active Utah pharmacists by their self-reported annual gross compensation is shown in [Figure 14](#), while [Figure 15](#) breaks down the annual gross income of active Utah pharmacists by their work settings.

^{viii} 52 weeks * 40 hours/week = 2080 hours per year.

Figure 14: Utah Pharmacists' Annual Gross Compensation - UMEC 2005

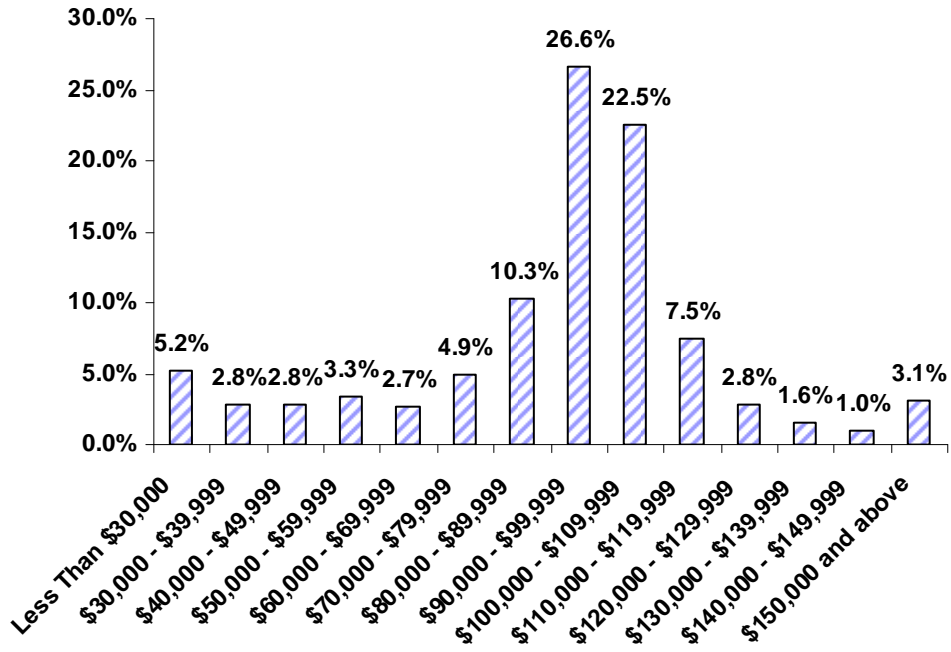
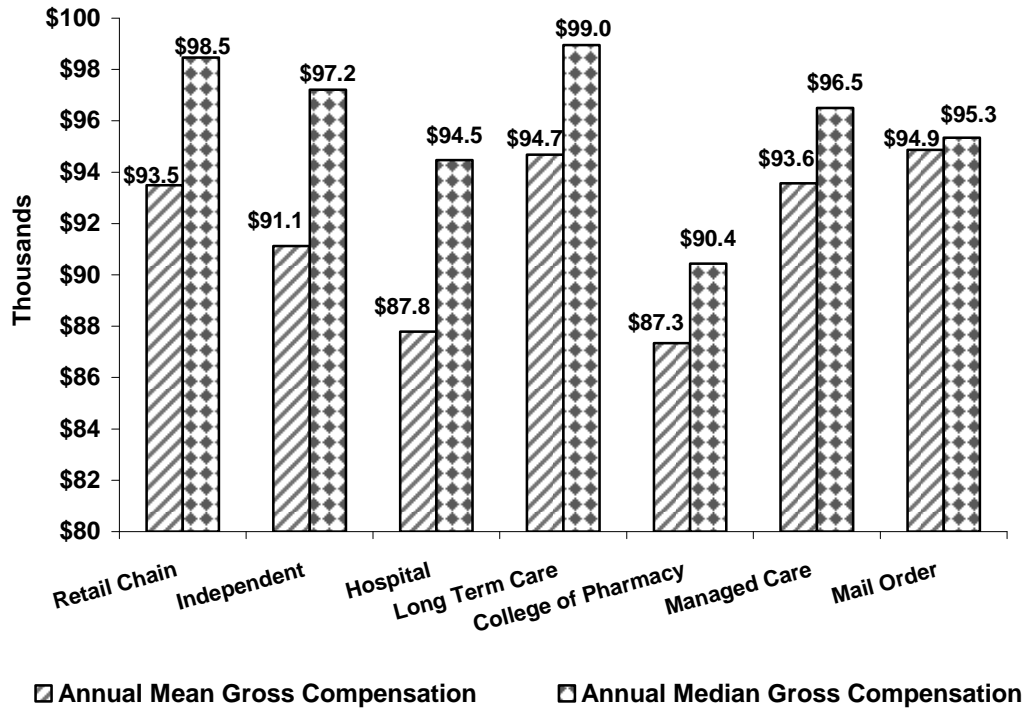


Figure 15: Utah Pharmacist Annual Gross Income, Mean and Median, By Work Setting - UMEC, 2005



Pharmacist Workload

Pharmacy is transforming itself from a primarily product centered profession to a patient-care oriented profession¹³. The scope of services provided by pharmacists has been expanding. At the same time, the volume of prescription drugs over the last decade has been steadily increasing. This section analyses the workload of Utah's active pharmacist workforce in terms of its scope of practice, work hours and prescription volumes handled in a typical work week.

Scope of Practice

Apart from dispensing medications, pharmacists now conduct drug monitoring, disease management for defined conditions, participation in clinical care teams with physicians, nurses and allied health care providers, consultation in drug utilization programs, health services research on outcomes of care. More recently, pharmacists have been involved with promoting healthy lifestyles by educating the public, in conducting early screening for health problems, and in prevention programs like immunizations.

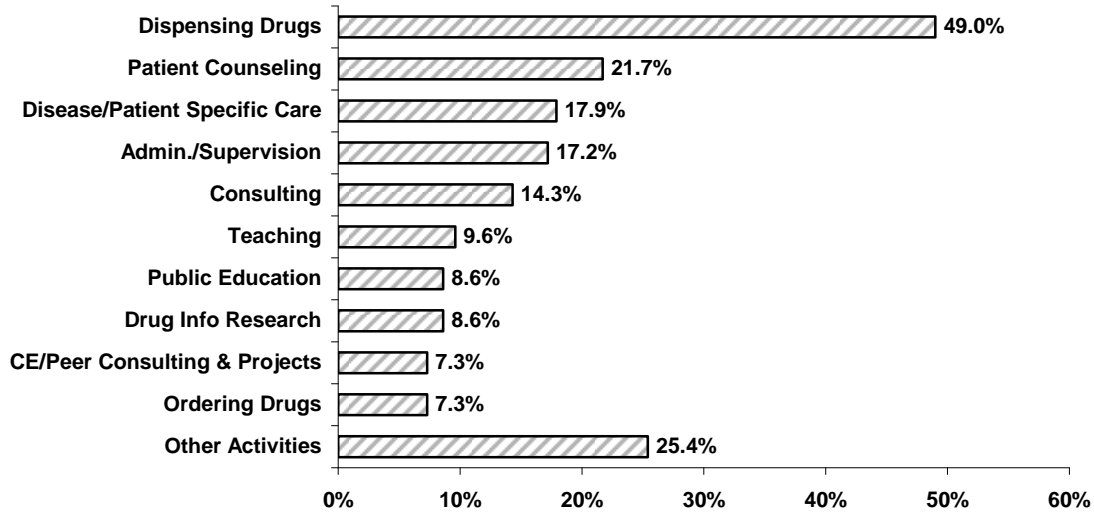
Based on the work setting and scope of services they provide, pharmacists can be classified into two broad categories – retail and health–system (or institutional) pharmacists.

As the name suggests, retail pharmacists primarily operate in retail settings. They fill prescriptions, sell over-the-counter medical products, counsel customers on the use of the same, and work with various insurance and other third party payers to ensure payment for the drugs dispensed. Services like blood pressure monitoring, diabetes screening, and providing vaccinations to the general public have become an integral part of a retail pharmacist's job lately. In addition, retail pharmacists also manage pharmacy technicians and interns. Prescription volume filled is a good estimate of a retail pharmacist's workload and is discussed further in this report. (*Ref: p. 27*)

Institutional or health–system pharmacists on the other hand work in settings like hospitals and long term care centers, providing more patient specific care, ensuring optimum dosage, avoiding drug-interactions with other medications and other side affects. As experts in composition and effects of drugs, the health–system pharmacists often work with physicians and other multi-disciplinary teams in patient care and drug therapies. Health–system pharmacists are becoming more specialized in disease specific and patient specific care. In addition to patient care management, institutional pharmacists are also involved in managing the administration, control and distribution of medications, and assisting in compliance with applicable regulations. The workload of institutional pharmacists is typically measured using the number of patients or beds the pharmacist attends and time spent on developing treatment plans etc. This information is not easily available or quantifiable for Utah. Information like percent time spent in patient specific care has been collected through the UMEC survey instrument. However, since many of these pharmacists work in more than one setting, it is hard to isolate data for institutional pharmacists. As such this report does not discuss the workload of institutional pharmacists further.

Figure 16 shows the percent of time spent in each activity by a pharmacist in a typical work week, while Figure 16 shows the same by pharmacist work setting.

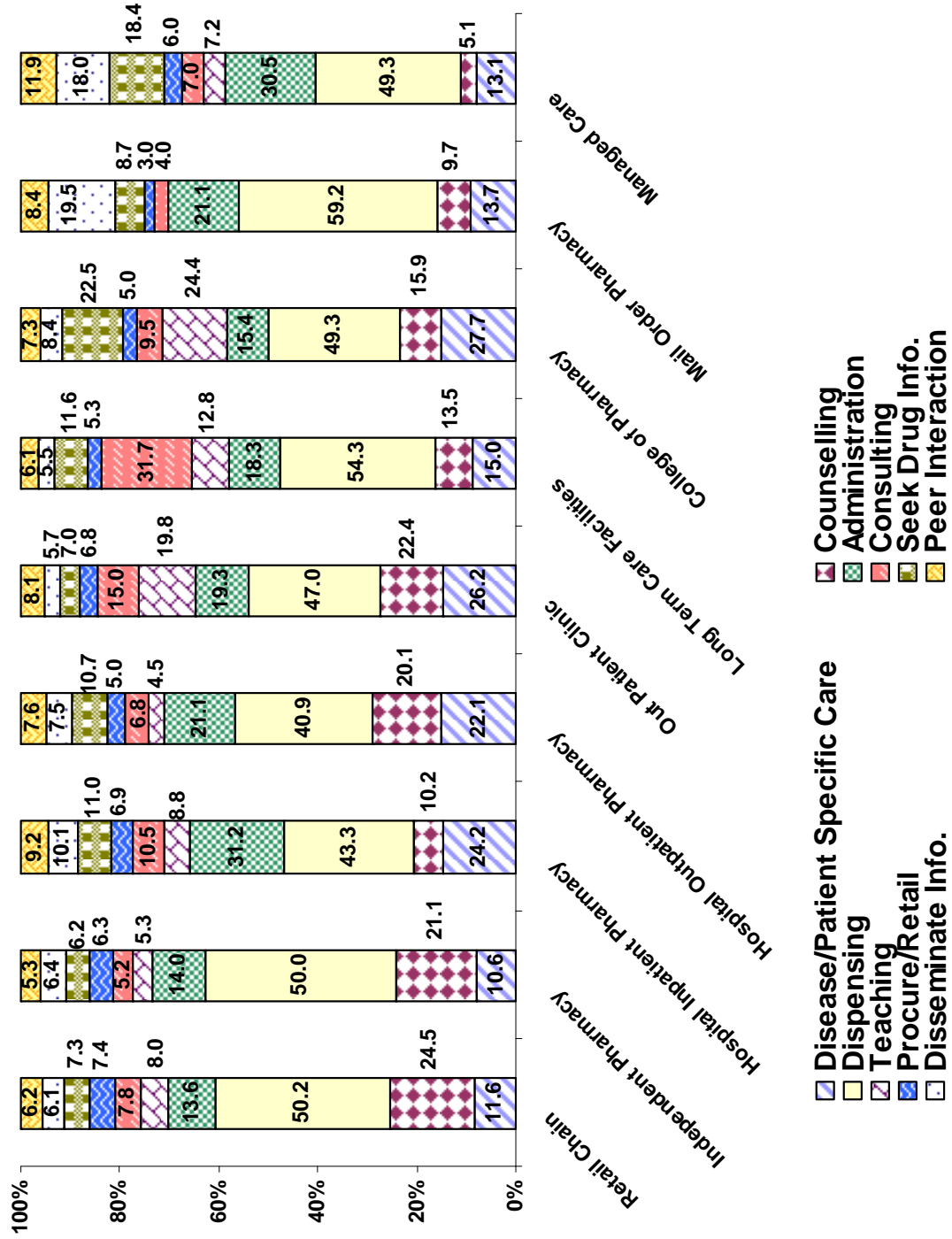
Figure 16: Percent Time Spent in Various Activities in a Typical Work Week - UMEC 2005



Drug dispensing is the major activity for Utah pharmacists, followed by patient counseling, patient specific care and administrative activities respectively. When broken down by work settings, drug dispensing still remains a major activity across the board. In retail settings, hospital pharmacies, out-patient clinics and the college of pharmacy settings patient counseling and disease/patient specific care are the activities that pharmacists spend the most time on after drug dispensing.

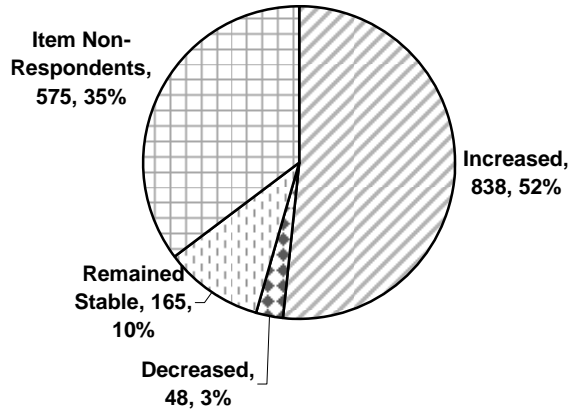
Administration or supervising, defined in the instrument as “Planning, budgeting, personnel management, resolving insurance issues”, is the activity where pharmacists spend about 17.2% of their time per week. However, in managed care, hospital in-patient, mail order and long term care pharmacy settings, administration or supervising activities occupy more time than both patient counseling and patient/disease specific care activities.

Figure 17: Percent Time Spent in Various Activities in a Typical Work Week by Pharmacist Work Settings – UMEC 2005



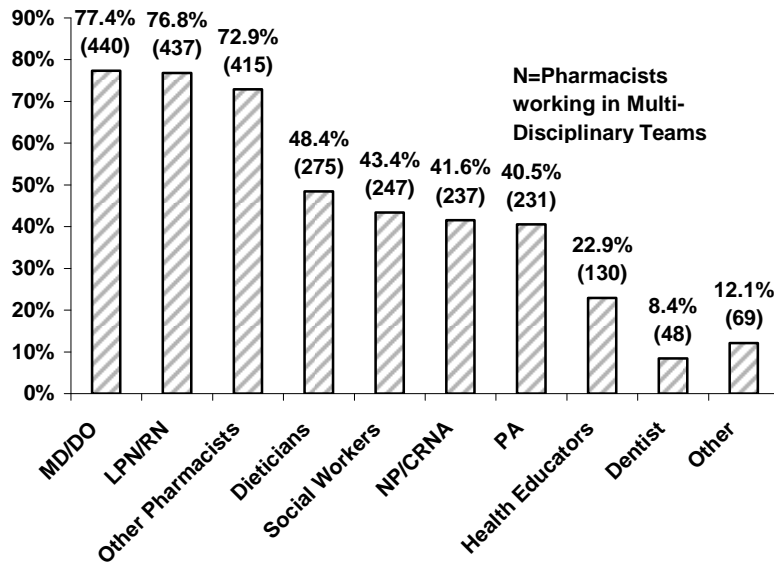
About 51.6% (838) of the pharmacists reported that the percentage of time spent dealing with insurance issues has increased over the past five years. Of the pharmacists who reported an increase in the percent time they spend on insurance issues over the past five years, managed care pharmacists reported the highest increase.

Figure 18: Utah Pharmacists' Perception on Percent Time Spent on Insurance Issues 2000-2005- UMEC, 2005



Participation in clinical care teams also seems to be prevalent among active Utah pharmacists. About 35.0% (569) active Utah pharmacists work in multi-disciplinary care teams. Figure 16 shows the breakdown of pharmacists, by team member, working in multi-disciplinary care teams.

Figure 19: Utah Pharmacists in Multi-Disciplinary Teams by Team Members - UMEC, 2005



Pharmacists in Utah work with a wide variety of personnel ranging from health care professionals (MD/DOs, Dentists etc.) to community workers (health educators, social workers, etc.). This is an indicator for the diversifying scope of pharmacists.

Practice Hours

On average, an active Utah pharmacist works about 40.0 hours per week. Male pharmacists work about 42.5 hours per week compared to the 35.6 hour work week of the female pharmacists. However, females work more hours in the college of pharmacy and managed care work settings than their male counterparts. This is due to the fact that more male than female pharmacists work part time in these settings, resulting in lower average hours per week for the male pharmacists.

Figure 20: Utah Pharmacist Hours per Week by Work Setting - UMEC, 2005

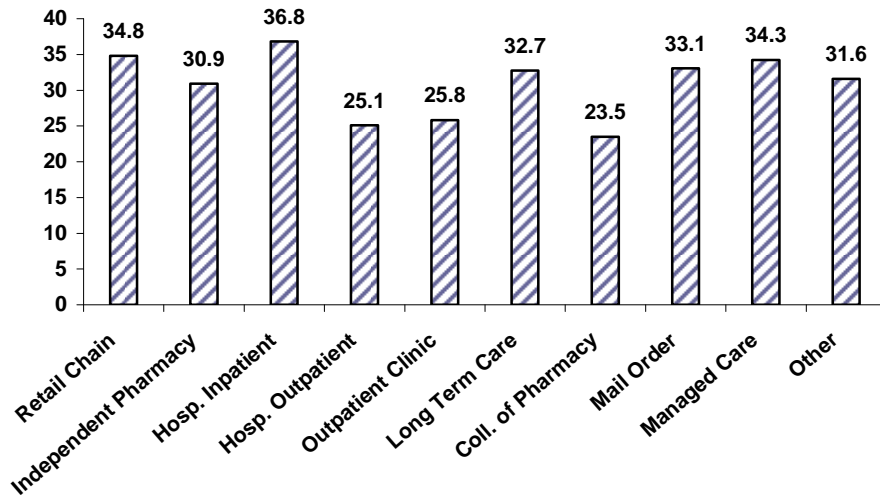
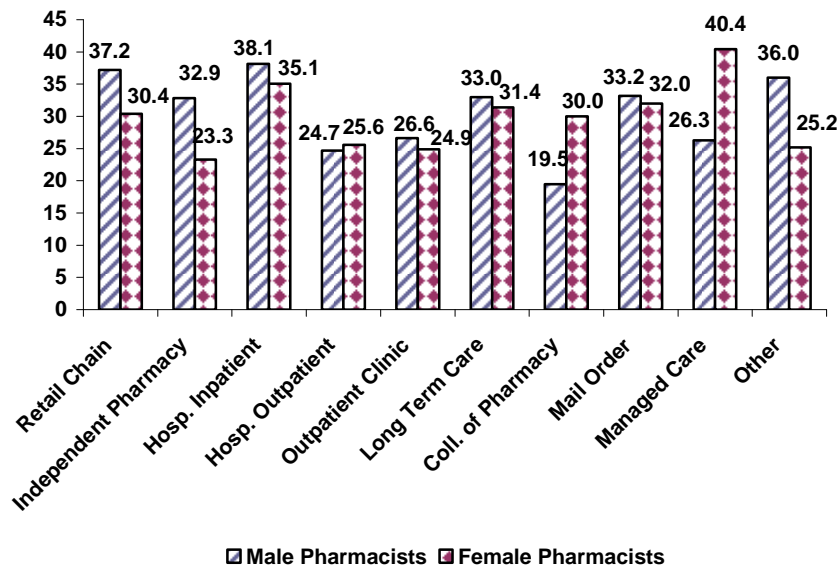
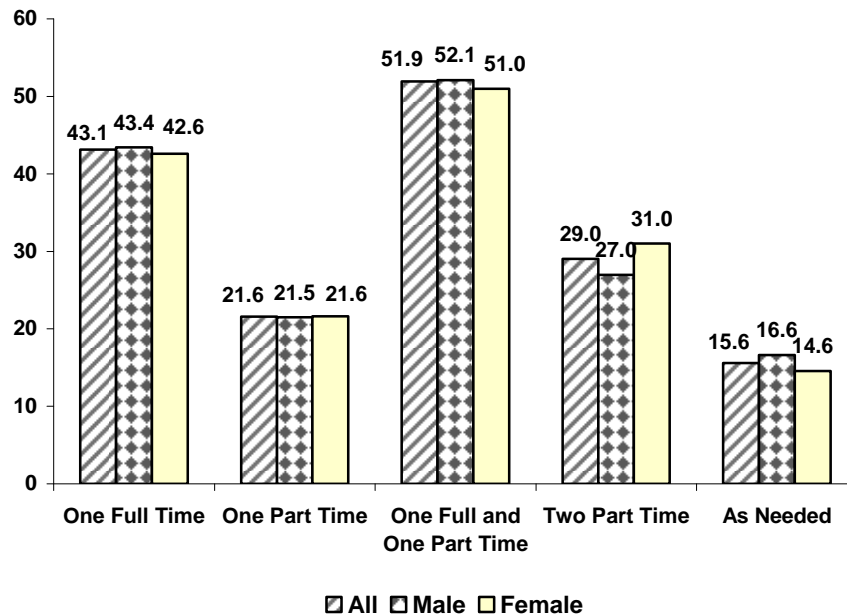


Figure 21: Utah Pharmacist Hours per Week by Work Setting and Gender - UMEC, 2005



Pharmacists practicing in one full time position in Utah work an average of 43.2 hours per week (Male: 43.4, Female: 42.6) while the mean weekly hours worked by full-time pharmacists in the nation is 43.4 (Male: 41.5 hrs/wk, Female: 41.6 hrs/wk) for the year 2004. Pharmacists practicing in a part time position in Utah work an average of 21.6 hrs/wk (Male: 21.5, Female: 21.6) compared to the nation's 20.3 hrs/wk (Male: 18.2, Female: 21.4)¹⁴.

Figure 22: Utah Pharmacist Hours per Week by Work Arrangement and Gender - UMEC, 2005



Pharmacists in Utah seem to be as busy as the pharmacists across the nation. While pharmacist hours are comparable to many professions' typical work week, workload of pharmacists seems to be increasing. The expanding role of pharmacists and continuing growth in prescription volume (*see Prescription Volume*) seem to create demand for these professionals.

Prescription Volume

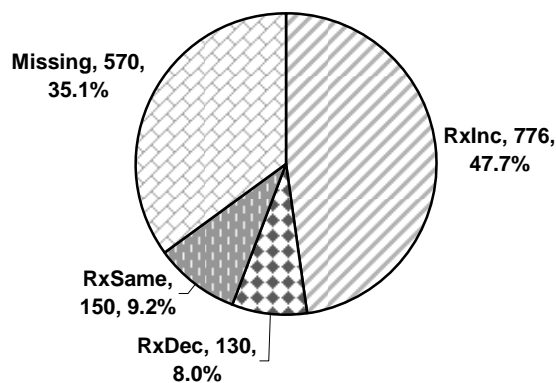
UMEC survey data indicates that in a retail, non-institutional setting, active pharmacists in Utah dispense about 200 prescription drugs per day^{ix}; compared to 93 prescriptions per day in 2000¹⁵. According to KFF, about 24,542,587 retail prescription drugs were filled in Utah in 2007, roughly 0.71% of the volume filled across the nation¹⁶. Using this percentage and the IMS Health's prescription volume data for the U.S. in 2005 (3,279 million), it is estimated that about 23,274,884 prescription drugs were sold in Utah during 2005¹⁷. Based on this data, it is deduced that on average a Utah pharmacist fills about 177 prescription drugs a day.

^{ix}This is the median measure of the pharmacist self reported prescription volume per day. The mean is 231.04. Since the minimum number of prescriptions per day is 15 and maximum is 3500 per day. Various means were calculated after filtering the outliers. In each case the median was consistently 200 prescriptions per day while the 5% trimmed mean was 205.63± 1 prescriptions per day.

When measured in FTEs based on a 40 hour work week in a retail or independent pharmacy setting, for every male pharmacist producing 1 FTE, a female pharmacist produces 0.79 FTE. This is more due to the fact that more females than male pharmacists work less than full-time. This translates to about 103 retail prescriptions per day per FTE.

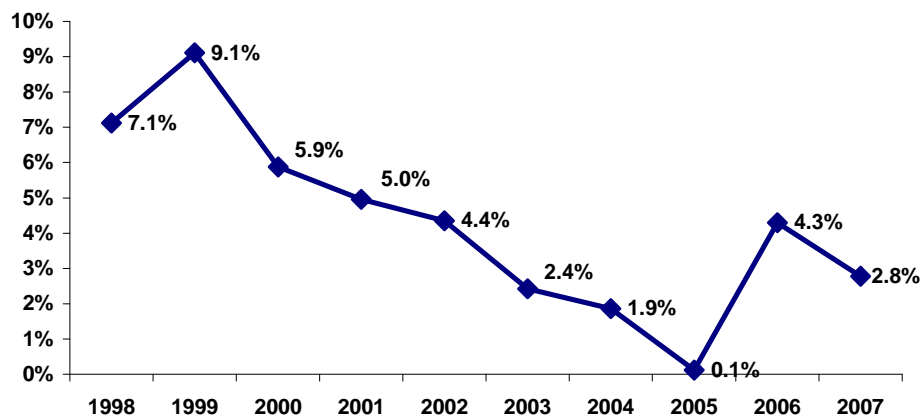
All sources, IMS Health, KFF and UMEC, indicate an increase in prescription volume over the past five years. In support, about 47.7% (776) of active Utah pharmacists indicated that they perceive an increase in the average number of prescriptions they fill per day.

Figure 23: Perception of Change in Number of Prescriptions per Day (2000-2005) - UMEC, 2005



The prescription volumes sold across the nation has been increasing since the last decade; the percentage growth, however, has decreased. Figure 24 below indicates the same.

Figure 24: Percent Increase in Prescriptions Filled, 1997-2007- IMS Health, NACDS



Increasing prescription volume indicates increased pharmacist workload, not only in terms of dispensing the drugs, but also in terms of increased patient counseling, especially given the expanded use and complexity of medications and increased third party payer issues. Use of pharmacy technicians, drug dispensing machines and

centralized prescription databases helps offset the workload to some extent. In addition, the expanding role of pharmacists in educating the public and immunization programs significantly increases the pharmacist workload.

Factors Influencing Prescription Volume

Some of the major factors that influence the prescription volume in Utah are escalating Direct-to-Consumer (DTC) marketing, expanded public and private insurance prescription coverage, Utah's population growth, and expiring patents on brand named drugs.

Population

Utah's population grew an average of 2.4% per year between the years 2000 and 2005, and is expected to grow through 2025 at an average rate of 2.1% per year¹⁸. In addition, populations at the extreme ends of the age spectrum tend to require more services than the rest of the population. Population less than five years old grew at an average rate of 3.3% from 2000-2005 and is projected to continue to grow at an annual rate of 1.5% per through 2025. Also, population greater than 65 years of age has exhibited an average growth rate of 2.2% per year from 2000 to 2005 and is projected to grow at a 3.9% average rate through 2025. This age polarization, along with the growing population, has contributed to the growth of prescription volume in Utah.

Increased Prescription Coverage by Insurance

Private Insurance: Through improvement in general economic situation and growth in personal incomes, insurance coverage for adequate health care has significantly grown. In 2004, the U.S. Census reported that 84.1% of the population in the United States was insured¹⁹. The percentage of prescription drug costs covered by private insurance companies has also grown considerably. In 1990, private insurance companies paid 24.0% of prescription costs; in 2003 this number had risen to 46.0%²⁰. These changes in insurance coverage and policies have largely contributed to the escalation in prescription volume because more people fill prescribed medications when the out-of-pocket expenses are lowered. The impact of the current economic trend on private insurance coverage should be monitored for a more accurate measure of future demand for pharmacists.

Public Insurance: Medicare Part D, a voluntary outpatient prescription drug benefit for people on Medicare, went into effect in 2006. Under this, all 44 million elderly and disabled beneficiaries have access to the Medicare drug benefit through private plans approved by the federal government. Medicare replaced Medicaid as the primary source of drug coverage of beneficiaries with coverage under both programs. This benefit offers help with out-of-pocket drug expenses for people on Medicare with low incomes and catastrophic drug expenses. While some studies projected that Part D implementation will not produce a dramatic increase in prescription volume²¹, others indicated a growth rate of 5.9% in the national prescription volume as a direct result of Part D implementation²². Part D program implementation could be one of the reasons behind the sudden increase in prescription volume growth from 2005 through 2006 (see Figure 23). Also, activities like Part D enrollment and formulary issues, general administration etc., demand more time and attention of the pharmacists in a typical work day, especially in the rural community

pharmacies²³. Thus the implementation of the Part D program might aggravate the demand for pharmacists.

Direct to Consumer Marketing

In the past, pharmaceutical companies advertised only to doctors and relied on their professional opinions and recommendations to drive sales. In the late 1990's, laws regulating the advertisement of prescription drugs dramatically changed. Pharmaceutical companies were allowed to advertise directly to customers by way of television and radio ads as long as they provided possible side effects, warnings and other information. These changes increased sales of not only brand name prescription drugs but generic drugs as well. It is estimated that each dollar spent on direct to consumer (DTC) advertising, on average results in an additional \$4.20 in sales for that drug²⁴. The Government Accountability Office (GAO) estimates that in 2005 4.2 billion dollars were spent on DTC advertising and an additional 7.2 billion dollars were spent on advertising to health care providers²⁵.

The Federal Department of Health and Human Services (HHS) predicts that the spending on public advertising of prescription drugs will continue to grow at rates of about nine to twelve percent annually throughout the next ten years²⁴. People are also becoming more and more conscious of the DTC advertising. The percentage of people claiming they had seen or heard an ad for any prescription grew from sixty-three percent in 1997 to eighty-five percent in 2002²⁴. In 2006, twenty-eight percent of physicians agreed that their patients frequently brought up illnesses and medications that they had heard about from television or radio commercials. Twenty-eight percent of physicians also agreed that patients frequently make inquiries about prescription drugs based on suggestions from friends and family members²⁶. These continuing increases in drug spending, driven by DTC marketing, are likely to remain a major driver in the increasing demand for pharmacists in Utah and the rest of the nation in the coming years. Any change due to the current economic situation should be monitored.

Expiring Drug Patents

Patents for brand name drugs like Ambien (sleeping pill), Fosamax (a drug that slows bone loss), Lipitor (cholesterol lowering drug) etc., are set to expire within the next five years²⁷. Payers like Medicare encourage the use of generic drugs which are relatively cheaper than the brand name drugs. Given that more people fill prescribed medications when the out-of-pocket expenses are lowered, this change might impact the prescription volume across the nation. This impact might be stronger if the status of generic drugs is changed to Over the Counter (OTC) drugs.

90 Day Prescription Refills

Traditionally, most insurance programs limit retail prescriptions to a 30 day refill. More recently, Medicare part D program initiated co-pay incentives to promote 90 day prescription refills²⁸. This shift in prescription refill trend might affect the number of prescription refills, and the demand for pharmacists. As such the 90 day prescription refill trend needs to be quantified and analyzed.

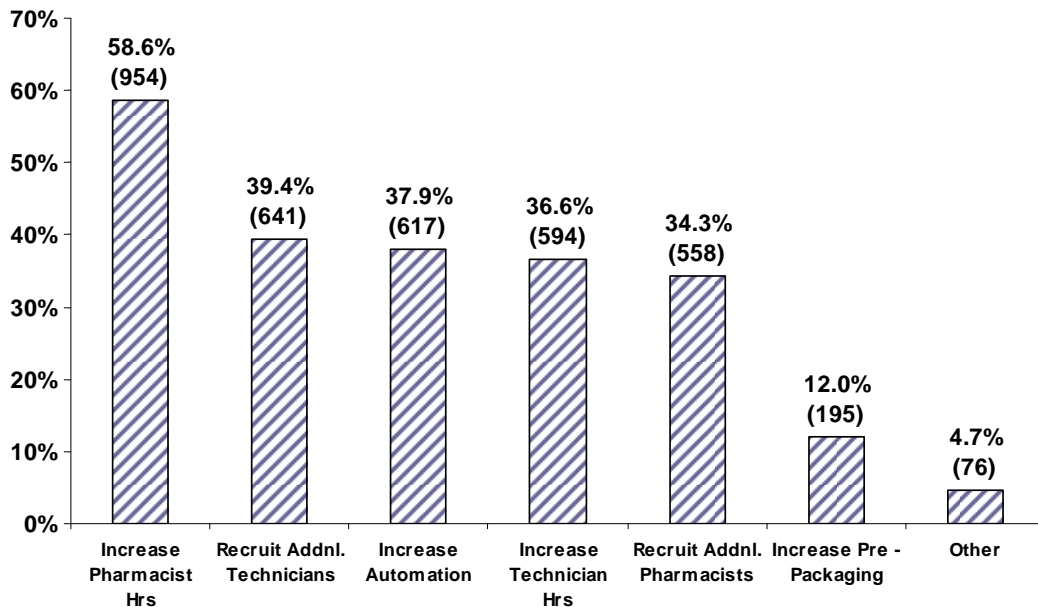
Allied Pharmacist Workforce

The allied pharmacist workforce is primarily constituted of pharmacy technicians. These are individuals who work in a pharmacy under the supervision of licensed pharmacists and assist in a wide variety of pharmacy activities and play a major role in the pharmacist workforce productivity. In Utah, pharmacy technicians are required to have a valid Utah license.

Utah law requires that a pharmacist on duty can, at his/her discretion, provide on-site supervision for up to three pharmacy technicians, who are actually on duty at any one time, and only one of the three technicians can be unlicensed²⁹. According to the 2005 DOPL licensing database, there were about 2,600 actively licensed pharmacy technicians in Utah. Given that all the licensed pharmacy technicians do not provide services in Utah, the active pharmacy technician to pharmacist ratio in Utah is less than 1.6:1, while Utah law allows this ratio to be as high as 3:1.

On the other hand, pharmacists in Utah reported that recruiting additional pharmacy technicians and increasing the technician work hours as major coping techniques used to deal with demand for pharmacy services. This indicates that pharmacy technicians influence the productivity of the pharmacist workforce and offset the demand for pharmacy services to some extent. However, data that quantifies the number of pharmacy technicians working in Utah and their impact on pharmacist productivity is unavailable. This information would be valuable in assessing the capacity and productivity of the pharmacist workforce in Utah.

Figure 25: Coping Techniques to Deal with Increasing Prescription Volumes in Utah* - UMEC, 2005



* Respondents were allowed to choose more than one coping technique. As a result, the total in this chart will be more than the total number of active pharmacists in Utah (1,626).

Summary

- 21.4% (347) of Utah pharmacists practice in more than one location
- 17.4% (283) of the pharmacists work more than one full time position per week.
- 65.3% (130) of pharmacists work only one part time position in Utah (199) are female.
- The average annual gross compensation of an active Utah pharmacist is \$92,365 (median: \$96,820), compared to the national average of \$98,960 (median: \$100,480).
- Pharmacists spend the most time, 49.0% of their typical work hours, in drug dispensing. This is the case when analyzed by work settings.
- In managed care, hospital in-patient, mail order and long term care pharmacy settings, however, administration or supervising activities occupy more time than both patient counseling and patient/disease specific care activities.
- 51.6% (838) of the pharmacists reported that the percentage of time spent dealing with insurance issues has increased over the past five years.
- 35.0% (569) active Utah pharmacists work in multi-disciplinary care teams.
- Pharmacists practicing in one full time position in Utah work an average of 43.2 hours per week (Male: 43.4, Female: 42.6) while the mean weekly hours worked by full-time pharmacists in the nation is 43.4 (Male: 41.5 hrs/wk, Female: 41.6 hrs/wk) for the year 2004.
- Active Utah pharmacists, including one-full and one-part time, one full-time, two part-time, one part-time and as needed basis workforce, works about 40.0 hours per week. Male pharmacists work about 42.5 hours per week compared to the 35.6 hour work week of the female pharmacists.
- In a retail, non-institutional setting, active pharmacists in Utah dispense about 200 prescription drugs per day, compared to 93 prescriptions per day in 2000.
- This translates to 103 prescriptions per FTE per day (based on a 40 hour work week).
- 47.7% (776) of the pharmacists indicated that they perceive an increase in the average number of prescriptions they fill per day.
- Escalating Direct-to-Consumer (DTC) marketing, continuing increases in drug spending, expanded public and private insurance prescription coverage, and Utah's population growth are projected to increase prescription volume in Utah.
- Allied Pharmacist Workforce
 - The allied pharmacist workforce is primarily constituted of pharmacy technicians.
 - Current Utah pharmacy technician to pharmacist ratio is below 1.6:1; Utah law allows this ratio to be as high as 3:1.
 - Recruiting additional pharmacy technicians and increasing the technician work hours are major coping techniques currently used to deal with demand for pharmacy services in Utah.

Utah's Workforce Supply Sources

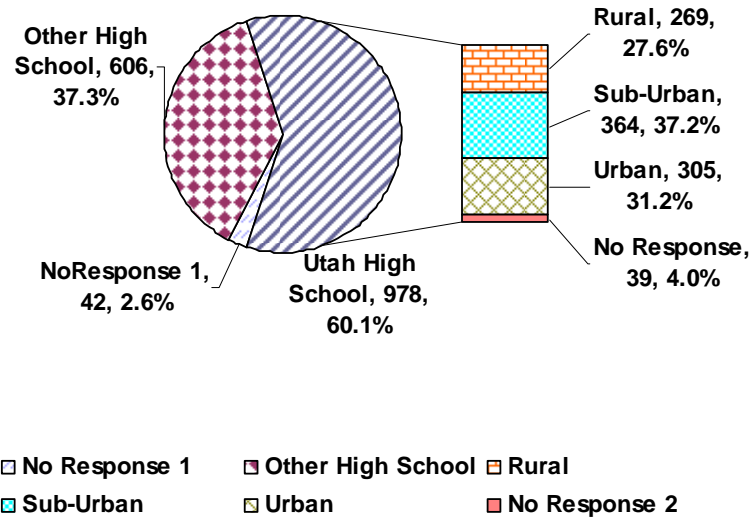
Given the pharmacist shortage across the nation, Utah needs to assess its pharmacist workforce supply sources carefully. Two major pharmacist workforce sources have been identified so far:

- Utah background of pharmacists
- Training programs in Utah

Utah Background of Pharmacists

The UMEC survey indicates that Utah pharmacists tend to return to the state associated with their upbringing and/or undergraduate education. About 60.1% (978) of Utah pharmacist workforce completed high school education in Utah. These pharmacists come from a variety of backgrounds – rural, suburban and urban, with an almost even distribution across the state. Figure 26 shows this distribution.

Figure 26: Upbringing of Utah Pharmacists – State and Local Distribution *



* The percentages reported in the sub-bar graph are based on the number of pharmacists who reported going to Utah high school.

Training Programs in Utah

Since the 2002 UMEC report, the University of Utah College of Pharmacy has expanded its capacity from 45 to 48 students per class^{xi}. Traditionally, with a retention rate of 90% or more, graduates from the University of Utah have been the major supply source for pharmacists in Utah. About 70.9% (1,153) of Utah pharmacists have obtained their pharmacy education from the University of Utah. This is primarily due to the fact that preference is given to Utah residents in the application process and secondarily due to the internship opportunity available through the state DOPL which helps students to gain experience in Utah pharmacies. Despite this steady supply of pharmacists from the University of Utah, Utah imports pharmacists from out of state to meet the demand for pharmacy services in Utah.

In 2006, the University of Southern Nevada (USN) launched a College of Pharmacy in Utah. The beginning class size was 52 in 2006 and has expanded to 82 students in 2007. With their three year PharmD program, the first class is expected to graduate in 2009. About 69.0% of their enrollees (149 of 216) are Utah residents. UMEC makes a conservative estimate that about 50.0% of their graduates will be retained in Utah.

The USN College of Pharmacy plans to further expand its class size to 100 students in the near future. Further expansion of the University of Utah College of Pharmacy is inhibited due to various factors like physical space constraints, inadequate financial support, scarce supply of experienced faculty and preceptors etc.

Faculty shortage is a major concern across the nation. The American Foundation for Pharmaceutical Education (AFPE) reported 417 vacant teaching posts (in 67 schools), averaging more than 6 posts at each school in 2003³⁰. More than 40% (>167) of these vacancies were open longer than six months³⁰. 94.3% (393) of these vacancies were full-time positions while 53.5% (223) are pharmacy practice teaching positions³⁰. Studies conducted by the American Association of Colleges of Pharmacy (AACP) and other independent studies have established that turn-over rate in pharmacy faculty is high and is primarily due to job dissatisfaction caused due to inadequacy of mentors and lack of research exposure in non-tenure track faculty members, pharmaceutical industry and hospital hiring, pharmacy schools competing for faculty and faculty retirement³⁰⁻³². Low interest in pharmaceutical science careers, additional degree and training requirements for teaching, increasing number of new and expanding pharmacy schools will exacerbate this shortage³³. A lack of qualified and quality faculty could translate into a future issue of workforce quality along with quantity. Utah colleges of pharmacy, although currently not faced with a shortage, are concerned about retiring workforce. Losing senior faculty will not only make Utah vulnerable to the prevailing shortage in faculty across the nation, but also hinder the mentoring of junior faculty that Utah is able to attract.

^{xi} The University of Utah College of Pharmacy has expanded its class size to 60 graduates as a direct result of the analysis done for this Pharmacist Workforce Report.

While retention of faculty is a concern, retention of Utah trained pharmacists should also be monitored. According to DOPL, about 52 pharmacists let their licenses expire each year for reasons other than retirement. Utah trained pharmacists could only be a fraction of this attrition; however, it is important to retain every available pharmacist in Utah given the looming national shortages.

Tuition is one of the major factors that attracts students and affects their future choice of practice locations. Tuition for the University of Southern Nevada is about \$108,600 for the accelerated three year PharmD program. Tuition at the University of Utah ranges from \$54,000 for Utah residents to about \$108,000 for non-residents for the four year PharmD program. There is considerable difference in tuition for Utah-resident students, who are traditionally more inclined to practice in Utah, at both institutions. The influence of these tuition differences on the practice location choices of students graduating from the USN College of Pharmacy should be monitored.

Summary

- Utah's major workforce supply comes from:
 - Utah background of pharmacists - About 60.1% (978) of Utah pharmacist workforce completed high school education in Utah.
 - Utah's Training Programs
 - University of Utah College of Pharmacy
 - Graduates 52 students per year. The program has now expanded to 60 students per year as a direct result of the analysis done for this report.
 - About 90% retention rate
 - University of Southern Nevada College of Pharmacy in Utah
 - First class of 52 students graduates in 2009
 - Graduates 82 students per year starting from 2010
 - Estimated retention rate of 50%
- Nationally, there is a severe faculty shortage. Care should be taken before this issue impacts Utah.

Future Utah Pharmacist Workforce

There is evidence of increasing demand for pharmacists in Utah:

- Practice characteristics indicate that the pharmacists in Utah are as busy as their national counterparts.
- Expanded pharmacist roles indicate increased workloads.
- Net growth in prescription volumes due to the growth rate and age polarization of Utah population, escalating DTC marketing, increased prescription drug coverage by private and public insurances – especially Medicare Part D.
- The increase in demand caused by expiration of brand named drug patents, which makes prescription drugs more affordable.
- Increase in patient counseling, insurance issues and drug compounding will increase the pharmacist workload further.

While all this evidence indicates an increasing demand for pharmacists and aides in Utah, it does not pin-point the exact number of pharmacists needed to meet the demand. However, available benchmark and comparison data pertain to the retail pharmacist workforce. As such, the UMEC projects future trends for this group of the workforce only. The UMEC survey indicates that 65.4% (1,063) of pharmacists work in the retail settings.

In order to project future workforce needs, the UMEC designed a demand model based on population growth in Utah and prescription volume estimates. The supply model is designed to assess the net increase in the active provider pharmacists in Utah based on the UMEC survey data and the Utah DOPL license data. The following sections explain the above mentioned demand and supply models in detail.

UMEC Demand Model

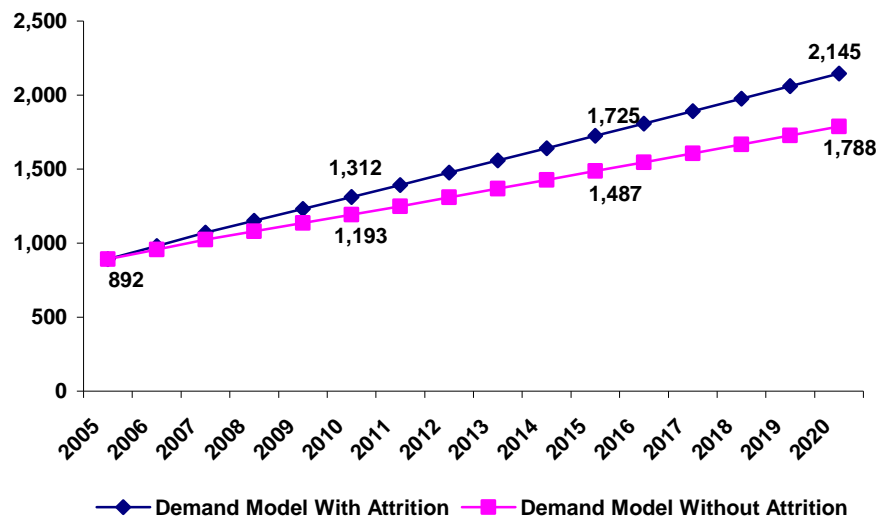
Prescription volume growth and the resultant increase in the pharmacist workload are of primary concern in determining demand for pharmacists. UMEC estimates that Utah will have to replace about 33 retail pharmacists retiring each year and will need an additional 25 pharmacists per year in the retail settings to adjust for the prescription volume growth. The methodology used to determine pharmacist demand is explained below:

- In order to account for all part time and full time pharmacists providing services in the Utah retail pharmacy sector, the model is based on their FTEs. This is accomplished by converting hours reported by retail pharmacists into a 40 hour work week based FTE. This resulted in a workforce of 892 FTEs in 2005.
- According to UMEC survey data, about 39 pharmacists will retire each year. DOPL license database indicates that about 60 pharmacists aged 65 and above let their licenses expire each year, which can be interpreted as retirement. Utah will need about 39-60 pharmacists per year from 2006-2020 to replace the retiring pharmacists and pharmacists who leave Utah's workforce. This results in an

average of 50 pharmacists retiring from the workforce each year. When adjusted for retail settings (65.4%), this translates to an average of 33 pharmacists retiring each year. In addition, DOPL license database indicates that about 52 pharmacists allow their Utah license to expire for reasons other than retirement (age<65) each year. This translates to about 24 pharmacists leaving the active retail pharmacist workforce each year, termed as attrition. It should be noted that this attrition rate has a significant affect on the future workforce trends. Two versions of the demand model are presented in Figure 27 below.

- Utah will need an average of about 25 additional FTE pharmacists per year, from 2006-2020, to accommodate the retail prescription volume growth in Utah. Prescriptions per capita, in retail settings, for Utah population by select age groups are provided by KFF for the year 2007¹⁶. It is assumed that the same per capita prescription rate – 3 per person aged 0-18, 11 per person aged 19-64 and 25 per person aged 65 and above, can be applied for Utah population from 2005 through 2020 to arrive at a prescription volume for Utah^{xii}. The prescription volumes are further adjusted to account for the affect of Medicare Part D prescription plan implementation in 2006 (5.9% growth in 2006-2007)²². However, since these prescription volumes do not include the prescriptions filled in institutional and mail order pharmacies, the need for pharmacists will be higher than that projected here.

Figure 27: UMEC Demand Models - With and Without Attrition



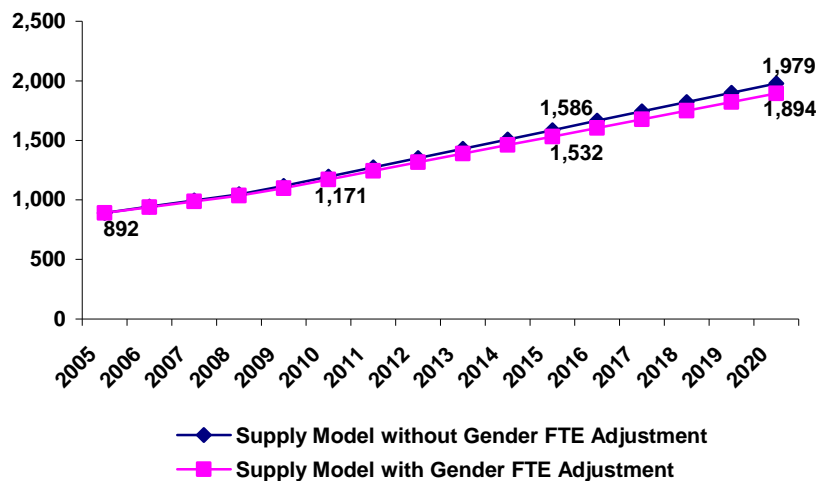
^{xii} The prescription volumes are also checked across the IMS and NACDS national prescription volume data for accuracy.

Utah Supply Model

Utah DOPL license database, UMEC survey data, and graduation information from Utah’s pharmacy training are primary sources of data to assess the supply of pharmacists in Utah. UMEC estimates that about 79 pharmacists enter Utah’s pharmacist workforce each year. In addition to these pharmacists, about 50.0% of the graduating class of University of Southern Nevada College of Pharmacy in Utah will enter the Utah pharmacist workforce starting in 2009. The methodology used to determine pharmacist supply is explained below:

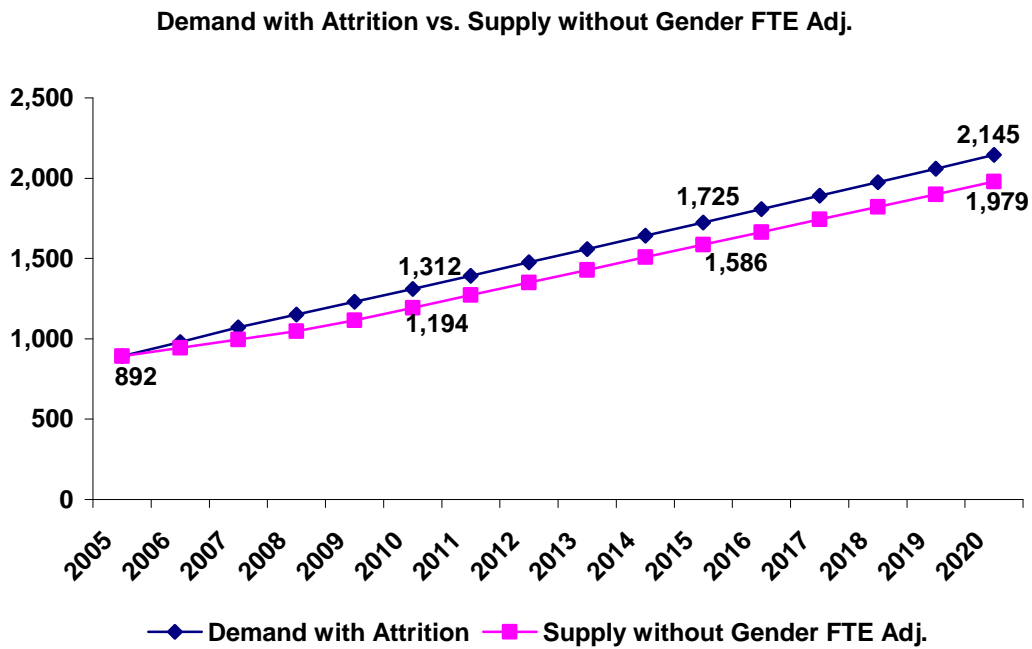
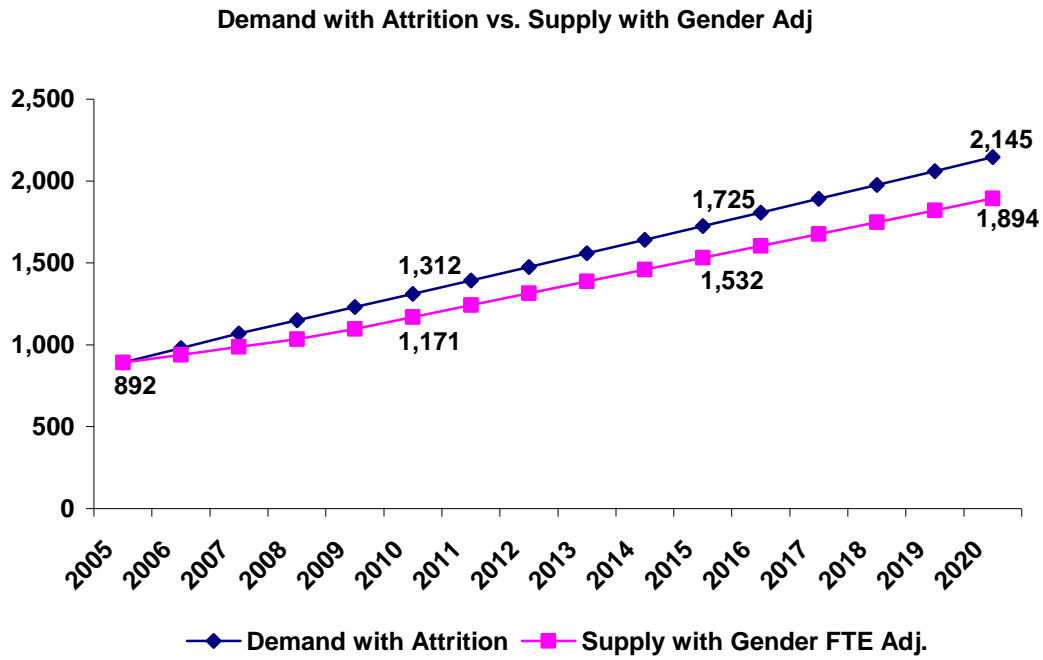
- On average, about 114 new licenses were issued by DOPL each year during the period 1985-2005. UMEC estimates based on the survey data that about 69.4% of these licensees (79 pharmacists) actually provide services in Utah. Of these, 65.4% will enter the retail pharmacist workforce (52 pharmacists). The pharmacists entering Utah’s workforce from University of Utah are reflected in the historical DOPL licensure data. University of Southern Nevada, however, has yet to graduate its first class. This supply source has not been captured in the historical DOPL license data and hence adjustments to reflect the same are made in the UMEC supply model. Other pharmacists imported from out of state are reflected in the license data provided by the DOPL. No separate adjustments are made to account for these pharmacists entering the Utah workforce.
- Since there is no way to determine whether the new incoming pharmacists will choose full time or part time work settings, it is assumed that each incoming pharmacist will be equivalent to 1 FTE.
- UMEC survey data indicates that for every male pharmacist providing 1 FTE of pharmacy services, each female pharmacist provides 0.79 FTE of pharmacy services. DOPL license data indicate that on average, since 2005, there were 37.12% females licensed in the state. Applying this FTE adjustment to the female workforce results in a loss of about 84 FTEs.

Figure 28: UMEC Retail Pharmacist Supply Model - with and without Gender FTE Adjustment

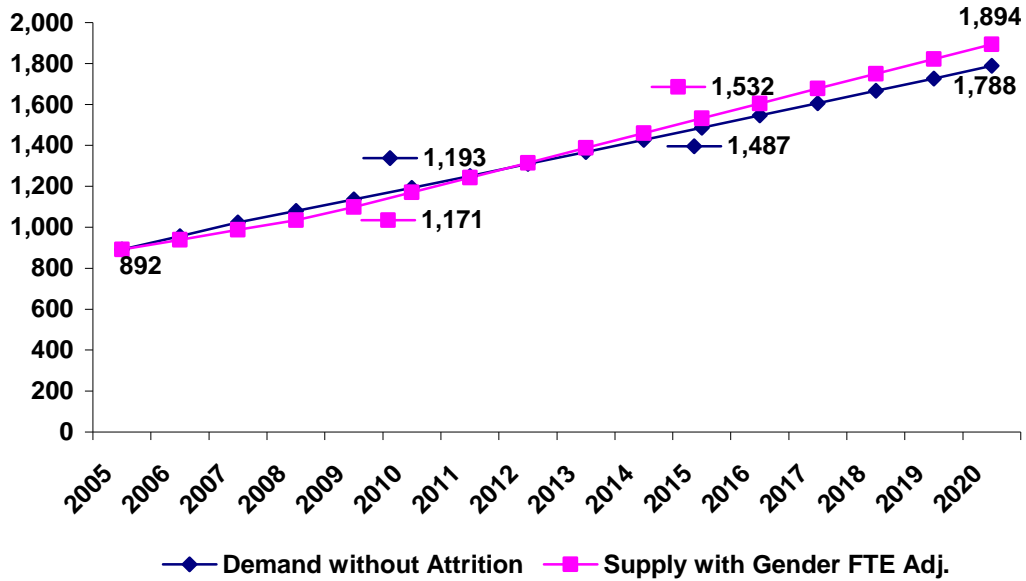


With the two different demand and supply model variations, four scenarios are possible. These are presented below:

Figure 29-31: Projected Demand and Supply of Retail Pharmacists: 2005-2020



Demand without Attrition vs. Supply with Gender FTE Adj.



Demand without Attrition vs. Supply without Gender FTE Adj.

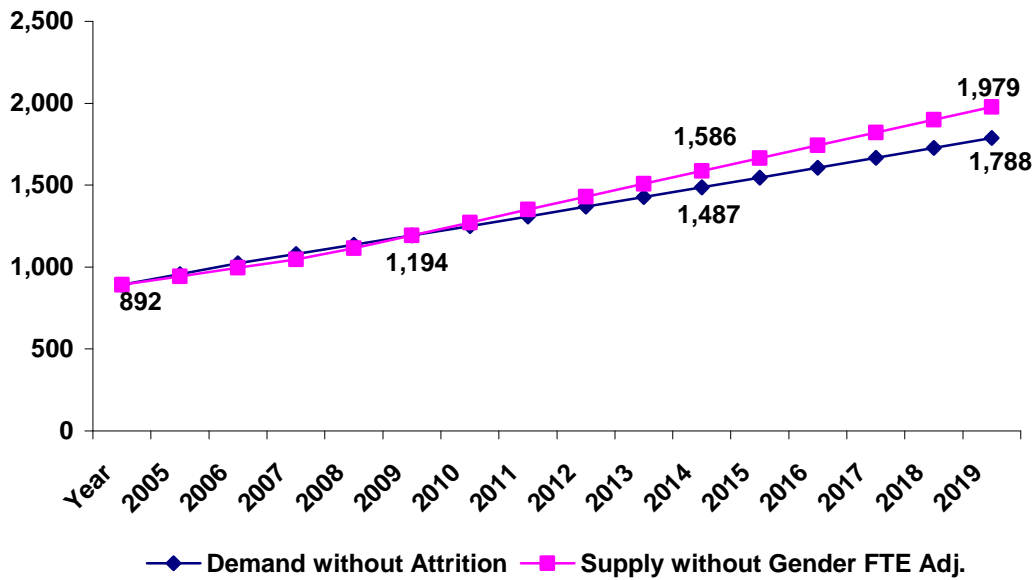


Table 2: Projected Demand - with and without Attrition

UMEC Retail Pharmacist Workforce Demand Model in FTE																
Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Utah Pop. in Thousands	2,529	2,582	2,642	2,704	2,768	2,833	2,900	2,967	3,034	3,101	3,166	3,231	3,296	3,360	3,423	3,486
Rx Growth Adj	-	20	22	23	24	24	25	27	27	26	27	27	27	28	28	29
Part D Rx Growth Adj.	-	12	12	-	-	-	-	-	-	-	-	-	-	-	-	-
Retirement	-	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33
Attrition		24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
Total FTE Need with Attrition	892	980	1,071	1,151	1,231	1,312	1,393	1,476	1,559	1,642	1,725	1,808	1,891	1,975	2,060	2,145
Total Need Without Attrition	892	956	1,023	1,079	1,136	1,193	1,250	1,309	1,368	1,427	1,487	1,546	1,606	1,666	1,727	1,788

Table 3: Projected Supply - with and without Gender FTE Adjustment

Year	2000		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
New Licenses	-		-	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
New USN Graduates	-		-	-	-	-	16	25	25	25	25	25	25	25	25	25	25	25
Total Supply	893*		892	940	987	1,035	1,098	1,171	1,243	1,315	1,388	1,460	1,532	1,605	1,677	1,749	1,822	1,894
UMEC SUPPLY Model Without Gender FTE adjustment																		
Year	2000		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
New Licenses			-	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52
New USN Graduates			-	-	-	-	17	27	27	27	27	27	27	27	27	27	27	27
Total Supply	893*		892	944	995	1,047	1,116	1,194	1,272	1,351	1,429	1,508	1,586	1,665	1,743	1,822	1,900	1,979

*Number of retail pharmacists in Utah workforce in 2000. (UMEC 2000 Pharmacist Workforce Survey)

According to these models, if the attrition from Utah workforce continues, Utah will experience a shortage of retail pharmacists. However, in the absence of this attrition, Utah’s retail pharmacist workforce will successfully meet and even exceed the demand for pharmaceutical services. Action to prevent migration of workforce from Utah is important to ensure an adequate pharmacist workforce in Utah.

This model only addresses the retail pharmacy sector. The non-retail pharmacy sector, institutional pharmacists, mail-order pharmacists and other pharmacists, comprises about 35% of the workforce. A closer look at this sector of the workforce is needed to predict a more accurate model that speaks for the entire pharmacist workforce.

It should be noted that the model does not address factors that affect pharmacist productivity – advancements in technology; role of allied pharmacist workforce; effects of expanded pharmacist scope; and the social and economic factors that might affect demand for and expansion of pharmacist services.

More importantly, it should be noted that in 2000, Utah had 893 pharmacists practicing in retail settings. There has been no net growth in the number of retail pharmacists during the period 2000-2005. UMEC attributes this relatively flat growth in the number of retail pharmacists providing services in Utah to the drug dispensing efficiency improvements achieved during this time period. More analysis in terms of demand for pharmacist services and productivity gains in retail pharmacy workforce is essential to track the pharmacy workforce more accurately.

Summary

- An estimated 39-60 pharmacists retire from the workforce each year from 2006-2020. This translates to about 33 pharmacists retiring from the retail workforce.
- It is estimated that 24 active pharmacists leave the retail pharmacist workforce each year for reasons other than retirement.
- Utah needs about 25 FTE pharmacists per year to accommodate the prescription volume growth in retail settings. This number could be higher when adjusted for non-retail setting prescription volumes.
- An estimated 79 pharmacists will enter the workforce each year from 2006-2008. This number might gradually increase from 2009 through 2010 to about 120 pharmacists entering the workforce each year. This translates to about 52-79 entering the retail workforce.
- Female pharmacists contribute 0.79 FTE for every male FTE. Based on this, the net FTEs entering the workforce could be lower. This is estimated to reduce the incoming workforce to about 48-73 pharmacists per year.
- The UMEC projects that the current retail pharmacist workforce falls short of demand for pharmacy services in Utah. However, the supply of pharmacists might catch up with and even overtake demand for retail pharmaceutical services in the near future if attrition from workforce is closely monitored and contained.
- There has been no net growth in the number of retail pharmacists providing services in Utah during the period 2000-2005. UMEC attributes this to the drug dispensing efficiency improvements achieved in the retail setting during this time period.

Summary of Findings

The pharmacist workforce data collected by the UMEC survey and supporting data lead to the following findings:

Current Utah Pharmacist Workforce

- As of 2005, there are 1,626 actively practicing pharmacists in Utah.
- In Utah, the 2005 pharmacist-to-100,000 population ratio is 64.3 (Utah Population: 2,528,926).
- The pharmacist-to-100,000 population ratio in Utah has improved since 2002 – from 60.2 in 2002 to 64.3 in 2005; but has consistently been lower than the national ratio of 71.2 in 2000 and 83.9 in 2007.
- 83.0% (1,349) of the active pharmacist workforce in Utah practices in the urban counties where 75.6% (1,913,806) of the population lives suggesting a concentration of pharmacists in the urban areas of the state.
- Only 8 of the 29 counties have a pharmacist-to-100,000 population ratio of 64.3 or greater.

Workforce Demographics

- Racial and ethnic mix of the pharmacist population in Utah is disproportionate to the racial and ethnic mix of Utahns.
 - Less than 1.0% (10) of Utah's pharmacist workforce is of Hispanic ethnicity compared to 10.9% of the 2005 Utah population estimate.
 - 6.5% (105) of active pharmacists in Utah belong to races other than Caucasian compared to 16.5% of the 2005 Utah population estimate.
- 35.2% (573) of Utah's pharmacist workforce is female.
 - 52.6% (110,589) of the national pharmacist workforce is estimated to be female.
 - 65.3% (130) of pharmacists who work only one part time position in Utah (199) are female pharmacists.
 - For every male pharmacist working one FTE (based on a 40 hour work week in retail settings), a female pharmacist only works 0.79 FTE.
- The average age of a Utah pharmacist is 45.6 years (median age: 45.0 years).
 - About 50.9% (828) of Utah pharmacists are under age 45, 35.4% (575) are between the ages of 45-55, and 22.8% (370) are age 55+.
- The average age of retirement for a Utah pharmacist is 63.
- Utah will lose about 39 pharmacists per year over the next decade due to retirement. According to DOPL license database, as high as 60 pharmacists aged 65 and above let their licenses expire each year. This could be interpreted as pharmacists retiring from Utah's workforce.
- In addition, DOPL database indicates that Utah loses about 36 pharmacists per year for various other reasons, termed as 'attrition'.

Practice Characteristics

- 21.4% (347) of Utah pharmacists practice in more than one location.
- 17.4% (283) of the pharmacists work more than one full time position per week.
- 65.3% (130) of pharmacists work only one part time position in Utah (199) are female.
- The average annual gross compensation of an active Utah pharmacist is \$92,365 (median: \$96,820), compared to the national average of \$98,960 (median: \$100,480).
- Pharmacists spend the most time, 49.0% of their typical work hours, in drug dispensing. This is the case when analyzed by work settings.
- In managed care, hospital in-patient, mail order and long term care pharmacy settings, however, administration or supervising activities occupy more time than both patient counseling and patient/disease specific care activities.
- 51.6% (838) of the pharmacists reported that the percentage of time spent dealing with insurance issues has increased over the past five years.
- 35.0% (569) active Utah pharmacists work in multi-disciplinary care teams.
- Pharmacists practicing in one full time position in Utah work an average of 43.2 hours per week (Male: 43.4, Female: 42.6), while the mean weekly hours worked by full-time pharmacists in the nation is 43.4 (Male: 41.5 hrs/wk, Female: 41.6 hrs/wk) for the year 2004.
- Active Utah pharmacists, including one full and one part time, one full time, two part time, one part time and as needed basis workforce, works about 40.0 hours per week. Male pharmacists work about 42.5 hours per week compared to the 35.6 hour work week of the female pharmacists.
- In a retail, non-institutional setting, active pharmacists in Utah dispense about 200 prescription drugs per day, compared to 93 prescriptions per day in 2000.
- This translates to 103 prescriptions per FTE per day (based on a 40 hour work week).
- 47.7% (776) of the pharmacists indicated that they perceive an increase in the average number of prescriptions they fill per day.
- Escalating Direct-to-Consumer (DTC) marketing, continuing increases in drug spending, expanded public and private insurance prescription coverage, and Utah's population growth are projected to increase prescription volume in Utah.
- Allied Pharmacist Workforce
 - The allied pharmacist workforce is primarily constituted of pharmacy technicians.
 - Current Utah pharmacy technician to pharmacist ratio is below 1.6:1; Utah law allows this ratio to be as high as 3:1.
 - Recruiting additional pharmacy technicians and increasing the technician work hours are major coping techniques currently used to deal with demand for pharmacy services in Utah.

Utah's Workforce Supply Sources

- Utah's major workforce supply comes from:
 - Utah background of pharmacists - About 60.1% (978) of Utah pharmacist workforce completed high school education in Utah.
 - Utah's Training Programs
 - University of Utah College of Pharmacy
 - Graduates 52 students per year. The program has now expanded to 60 students per year as a direct result of the analysis done for this report.
 - About 90% retention rate
 - University of Southern Nevada College of Pharmacy in Utah
 - First class of 52 students graduates in 2009
 - Graduates 82 students per year starting from 2010
 - Estimated retention rate of 50%
- Nationally, there is a severe faculty shortage. Care should be taken before this issue impacts Utah.

Future Utah Pharmacist Workforce

- An estimated 39-60 pharmacists retire from the workforce each year from 2006-2020. This translates to about 33 pharmacists retiring from the retail workforce.
- It is estimated that 24 active pharmacists leave the retail pharmacist workforce each year for reasons other than retirement.
- Utah needs about 25 FTE pharmacists per year to accommodate the prescription volume growth in retail settings. This number could be higher when adjusted for non-retail setting prescription volumes.
- An estimated 79 pharmacists enter the workforce each year from 2006-2008. This number might gradually increase from 2009 through 2010 to about 120 pharmacists entering the workforce each year. This translates to about 52-79 entering the retail workforce.
- Female pharmacists contribute 0.79 FTE for every male FTE. Based on this, the net FTEs entering the workforce could be lower. This is estimated to reduce the incoming workforce to about 48-73 pharmacists per year.
- The UMEC projects that the current retail pharmacist workforce falls short of demand for pharmacy services in Utah. However, the supply of pharmacists might catch up with and even overtake demand for retail pharmaceutical services in the near future if attrition from workforce is closely monitored and contained.
- There has been no net growth in the number of retail pharmacists providing services in Utah during the period 2000-2005. UMEC attributes this to the drug dispensing efficiency improvements achieved in the retail setting during this time period.

Recommendations

The UMEC in conjunction with the Utah Pharmacist Workforce Advisory Committee makes the following recommendations to ensure an adequate pharmacist workforce in Utah:

1. Curb attrition to avoid shortage – DOPL license data suggests that Utah loses about 36 pharmacists a year for reasons other than retirement. The workforce models clearly indicate that Utah can recover from the ongoing shortage of pharmacists by ensuring that these pharmacists are retained in the workforce. For this, UMEC recommends the following steps:
 - a. Promote retention of workforce in Utah
 - i. Organizations like Utah Pharmacists Association (UPhA) and Utah Society of Health–System Pharmacists (USHP) should be involved in promoting retention of workforce in Utah.
 - ii. Employers should encourage Utah pharmacists to remain in Utah.
 - iii. Hosting job postings, with an emphasis on Utah jobs, on their websites is one way to achieve this.
 - b. Keep close track of pharmacist emigration trend
 - i. UMEC and other concerned organizations should keep close track of the pharmacist emigration trend to assess and prepare for the future status of Utah pharmacist workforce.
 - ii. Further analysis of the causes of attrition should be conducted in order to develop strategies to address it.
2. Utilize the pharmacy technician workforce more efficiently. The UMEC workforce projection model does not account for the current pharmacy technician workforce due to lack of data. However, UMEC recognizes the importance of the pharmacy technician workforce and recommends that this allied workforce cohort be used more effectively to address the ongoing pharmacist shortage. For this UMEC suggests the following:
 - a. Pharmacy should utilize the full capacity of pharmacy technicians for an efficient and safe provision of pharmaceutical care.
 - b. Information on pharmacy technician workload and demographics needs to be assimilated by the UMEC with the help of DOPL, UPhA, USHP and the pharmacy technician training programs in Utah.
 - c. Impact of pharmacy technicians on the pharmacist workload should be studied by the UMEC with the help of DOPL, UPhA, USHP and the pharmacy technician training programs in Utah.

3. Encourage pharmacists to serve in areas with identified shortages in rural and frontier Utah – UMEC recognizes that not all rural and frontier areas can support a pharmacy. However, need for medicine and counseling does exist. A balanced approach to ensure adequate supply of pharmacists in rural areas is necessary. For this, UMEC recommends the following:
 - a. Pharmacy schools in Utah should develop rural rotation or training programs and encourage students to participate^{xiii}.
 - b. Organizations like UPhA and USHP should promote rural practice among Utah pharmacists.
 - c. The Department of Health should consider loan forgiveness programs for pharmacists who practice in rural and frontier communities of need.
4. Develop and maintain a comprehensive and centralized pharmacy workload/demand tracking system – data on demand for pharmacy services in Utah is not readily available. Given the expanding scope of pharmacists, a measure of prescription volume does not provide an accurate picture of the existing demand. For this:
 - a. Develop a measurement system to quantify the workload of retail pharmacists that takes into account productivity gains and expanded scope of work.
 - b. Develop a measurement system to assess the demand for institutional pharmacist services.
 - c. Quantify the affect of prescription plans like 90 day refills, automatic refills, automated drug delivery systems, and mail order prescriptions on pharmacist workload.

UPhA and USHP, along with other organizations interested in the pharmaceutical industry – insurance industry, major retail and institutional employers, pharmacy technician interest groups, pharmacist and pharmacy technician training programs, Utah DOH, Utah DOPL and UMEC, should form a coalition to develop a working model for a comprehensive and centralized pharmacist workload/demand tracking system.

^{xiii} The Utah Medical Education Council is providing funds for a Rural Training Track being developed by the University of Utah College of Pharmacy.

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Appedix B: UMEC Pharmacist Workforce Survey Instrument

1. Do you provide any professional services in Utah? Yes No

If *no*, please list the reasons why you maintain a Utah license:

IF YOU PROVIDE NO PROFESSIONAL SERVICES IN UTAH PLEASE STOP AND RETURN THIS SURVEY.

2. Do you offer language interpretation to your patients?

Yes No If yes, which languages? _____

3. Compared to five years ago has the average number of hours you work per week:

Increased Decreased Remained Stable

4. Please indicate the zip code and hours per week worked for each applicable work setting

	<u>Zip</u>	<u>Hrs/Wk</u>		<u>Zip</u>	<u>Hrs/Wk</u>
Retail Pharmacy					
<input type="checkbox"/> (a) Chain	_____	_____		_____	_____
<input type="checkbox"/> (b) Independent	_____	_____	<input type="checkbox"/> Long Term Care	_____	_____
Hospital Based					
<input type="checkbox"/> (a) Inpatient	_____	_____	<input type="checkbox"/> College of Pharmacy	_____	_____
<input type="checkbox"/> (b) Outpatient	_____	_____	<input type="checkbox"/> Mail Order	_____	_____
<input type="checkbox"/> Outpatient Clinic	_____	_____	<input type="checkbox"/> Managed Care	_____	_____
			<input type="checkbox"/> Other (please specify)	_____	_____
				_____	_____

5. Using the following definitions, please describe your work arrangement:

- **Full-Time:** 36-40 Hours per week or 72-80 Hours per two-week period.
- **Part-time:** Less than 36 hours per week but more than zero or less than 72 hours per two-week period but more than zero
- **As needed:** May be full or part-time with irregular or inconsistent hours. Falls under Per Diem classification.

- I work one full time position. I work two part-time positions.
- I work one full time position and one part time position. I work on an as needed basis.
- I work one part time position.

6. Have you changed work settings within the past two years? Yes No Not applicable

If yes, please indicate first, the work setting you left; then, the work setting you moved To:

<u>Setting Left</u>	<u>Setting Moved To</u>
<input type="checkbox"/> RETAIL PHARMACY	<input type="checkbox"/> RETAIL PHARMACY
<input type="checkbox"/> (a) CHAIN	<input type="checkbox"/> (a) CHAIN
<input type="checkbox"/> (b) INDEPENDENT	<input type="checkbox"/> (b) INDEPENDENT
<input type="checkbox"/> HOSPITAL BASED	<input type="checkbox"/> HOSPITAL BASED
<input type="checkbox"/> (a) INPATIENT	<input type="checkbox"/> (a) INPATIENT
<input type="checkbox"/> (b) OUTPATIENT	<input type="checkbox"/> (b) OUTPATIENT
<input type="checkbox"/> OUTPATIENT CLINIC	<input type="checkbox"/> OUTPATIENT CLINIC
<input type="checkbox"/> LONG TERM CARE	<input type="checkbox"/> LONG TERM CARE
<input type="checkbox"/> COLLEGE OF PHARMACY	<input type="checkbox"/> COLLEGE OF PHARMACY
<input type="checkbox"/> MAIL ORDER	<input type="checkbox"/> MAIL ORDER
<input type="checkbox"/> MANAGED CARE	<input type="checkbox"/> MANAGED CARE
<input type="checkbox"/> OTHER (please specify) _____	<input type="checkbox"/> OTHER (please specify) _____

7. Please check the reason(s) for this change of work setting. Select all that apply:

8. Please indicate the percentage of time you spend each week on the following activities: (The total should be 100 percent):

- | | | |
|---|--|--|
| <input type="checkbox"/> Higher pay | <input type="checkbox"/> Work Responsibilities | <input type="checkbox"/> More Challenging |
| <input type="checkbox"/> Professional Advancement | <input type="checkbox"/> Moved | <input type="checkbox"/> Desire For Change |
| <input type="checkbox"/> Preferred hours | <input type="checkbox"/> Better Work/Education Fit | <input type="checkbox"/> Other _____ |
| <input type="checkbox"/> Personal/Family Reasons | | |

% Time/Week

- _____ PROVIDING DISEASE OR PATIENT SPECIFIC CARE:
(Multidisciplinary care teams; diabetes or other disease-specific education separate from dispensing to individual patients, patient monitoring)
- _____ PATIENT COUNSELING:
(Medication counseling without teaching of students/residents)
- _____ DISPENSING / DRUG DISTRIBUTION:
(Order entry and clarification, drug distribution without patient counseling or teaching students)
- _____ ADMINISTRATION / SUPERVISING:
(Planning, budgeting, personnel management, resolving insurance issues)
- _____ TEACHING:
(Classroom teaching of students or precepting students without patient counseling)
- _____ CONSULTING:
(Nursing homes, home health care, group homes, pharmaceutical companies, etc.)
- _____ PROCURING MEDICATIONS / RETAILING:
(Ordering/Receiving drugs, or other products from wholesalers/pharmaceutical industry)
- _____ SEEKING DRUG INFORMATION:
(Research; Use of drug references, literature review, continuing education, contacting pharmaceutical industry, etc.)
- _____ DISSEMINATING INFORMATION:
(Educating public and/or professional groups, providing literature or other non-prescription related resources to patients, health care professionals, etc.)
- _____ INTERACTING WITH COLLEAGUES:
(Attending continuing education programs, consulting about patient-specific issues, collaborating on projects, etc.)
- _____ OTHER: (please specify): _____

9. The annual number of prescriptions has been increasing significantly over the last 10 years. What steps have been taken, or are in planning, at your site to meet the growing demand for prescriptions? (Select all that apply)

- Increased pharmacist workload/hours
- Recruiting additional pharmacy technicians
- Recruiting additional pharmacists
- Increased Automation
- Increased Prepackaging
- Other (specify) _____
- Increased pharmacy technician workload/hours

10. National studies indicate that many areas are experiencing difficulty recruiting pharmacists. Please indicate the average time to fill an open or budgeted position at your location.

- 0-90 Days
- 91-180 Days
- 181-270 Days
- 271-360 Days
- More than one year

Please answer questions 11, 12, and 13 only if you work in a retail, non-institutional setting. If you work in an institutional setting only, such as a hospital, please skip to question 14.

11. What is the average number of prescriptions you fill each day: _____

12. Over the last five years have the average number of prescriptions you fill each day:
 Increased 0-5% 6-10% 11-15% Over 15%
 Decreased 0-5% 6-10% 11-15% Over 15%
 Remained the Same

13. In the past five years, has the percentage of time you spend dealing with insurance issues:
 Increased 0-5% 6-10% 11-15% Over 15%
 Decreased 0-5% 6-10% 11-15% Over 15%
 Stayed the Same

14. Do you work in a multidisciplinary care team? Yes No

If yes, which health care professionals do you work with?

- MD/DO
- LPN/RN
- PA
- NP/CRNA
- DENTIST
- OTHER PHARMACISTS
- SOCIAL WORKERS
- DIETICIAN
- HEALTH EDUCATORS
- OTHER (please specify) _____

15. Institution where you received your pharmacy degree:

Institution: _____ State: _____ Year of Degree: _____
Degree Conferred: BS PharmD
Other Post-Graduate Degrees Earned: _____ Year _____
Institution: _____

16. In what State/Country did you primarily live while completing high school?
 UTAH, Zip (Utah Only) _____
 OTHER (please specify) _____ State: _____ (or) Country: _____

17. What is the estimated population of the city/town where you spent the majority of your upbringing?

Less than 2,500 50,000 to 149,000
 2,500 to 9,999 150,000 to 249,999
 10,000 to 49,999 250,000 or more

18. If you graduated from a pharmacy program within the last five years, please provide the following information regarding your internship opportunities.

- I have not had an internship opportunity and do not plan on fulfilling one.
 I have not had an internship opportunity but plan to in the future.

Past internship experiences:

State _____	City _____	Sponsor _____
State _____	City _____	Sponsor _____
State _____	City _____	Sponsor _____
State _____	City _____	Sponsor _____

19. Please indicate your racial/ethnic background?

- CAUCASIAN AFRICAN AMERICAN
 HISPANIC NATIVE AMERICAN or ALASKAN NATIVE
 ASIAN PACIFIC ISLANDER
 OTHER, (please specify) _____

20. What is your average gross (before taxes) compensation?

- | | | | |
|---|--|--|--|
| <input type="checkbox"/> Less than \$30,000 | <input type="checkbox"/> \$60,000-\$69,999 | <input type="checkbox"/> \$100,000-\$109,999 | <input type="checkbox"/> \$130,000-\$139,999 |
| <input type="checkbox"/> \$30,000-\$39,999 | <input type="checkbox"/> \$70,000-\$79,999 | <input type="checkbox"/> \$110,000-\$119,999 | <input type="checkbox"/> \$140,000-\$149,999 |
| <input type="checkbox"/> \$40,000-\$49,999 | <input type="checkbox"/> \$80,000-\$89,999 | <input type="checkbox"/> \$120,000-\$129,999 | <input type="checkbox"/> \$150,000 and above |
| <input type="checkbox"/> \$50,000-\$59,999 | <input type="checkbox"/> \$90,000-\$99,999 | | |

21. Compared to five years ago, has your gross income:

- INCREASED DECREASED REMAINED STABLE

22. In how many years do you plan to retire:

- | | | |
|---|---|---|
| <input type="checkbox"/> Less than one year | <input type="checkbox"/> 16 to 20 years | <input type="checkbox"/> 36 to 40 years |
| <input type="checkbox"/> 1 to 5 years | <input type="checkbox"/> 21 to 25 years | <input type="checkbox"/> Over 40 years |
| <input type="checkbox"/> 6 to 10 years | <input type="checkbox"/> 26 to 30 years | |
| <input type="checkbox"/> 11 to 15 years | <input type="checkbox"/> 31 to 35 years | |

Thank You for Your Time.

Please Return the Survey Using the Enclosed Prepaid Return Envelope