

AN ANNOTATED BIBLIOGRAPHY OF SELECTED HEALTH PROFESSIONS

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This annotated bibliography is part of the effort of the Michigan Center for Health Professions to assemble and organize information on selected health professions. The information presented in the annotated bibliography will help forecast the supply of and demand for certain health professionals and vacancies in selected health professions in Michigan regions and the state as a whole. In addition to the first section on general studies of the health professions, this bibliography covers, in alphabetical order, the following health professions:

- Clinical laboratory practitioners
- Dental hygienists
- Dentists
- Occupational therapists
- Pharmacists
- Physical therapists
- Physician assistants
- Radiological technologists
- Respiratory therapists

Bibliographic entries from these professions are divided into three categories: general (studies and articles about the profession as a whole, especially supply and demand), education, and workplace (studies on working conditions).

Federal Bureau of Labor Statistics Occupational Outlook profiles for several other health professions appear at the end of this document:

- Health services manager
- Nursing/home health aide
- Medical records and health information technicians

NOTE: Quoted material in the following entries is taken from the source cited.

General Studies of the Health Professions

GENERAL

- Michigan Department of Labor and Economic Growth. October 2004. *Health Care Workforce Development in Michigan, Final Report*. Prepared by Public Policy Associates. [Online, accessed 11/20/06.]

Available: http://www.michigan.gov/documents/Healthworkforcereport_109249_7.pdf.

This report analyzes the importance of health care to Michigan's economy, the opportunities it provides to improve the state's workforce, and the outcomes of the Health Care Workforce Development in Michigan Project, and provides lessons learned and recommendations.

- Partnership for Michigan's Health. June 2006. *The Economic Impact of Health Care in Michigan*, 3d ed. Lansing, MI: Partnership for Michigan's Health.

Appendix B of this report "quantifies and explains the substantial economic impact of the demand for health care services and jobs in the state."

- U.S. Bureau of Labor Statistics, Office of Occupational Statistics and Employment Projects. *Occupational Outlook Handbook* (OOH), 2006–2007 ed. Washington, DC: U.S. Bureau of Labor Statistics. [Online, accessed 11/20/06.]

Available: <http://www.bls.gov/oco>.

For hundreds of different occupations, the *Occupational Outlook Handbook* provides information on the training and education needed, earnings, expected job prospects, what workers do on the job, and working conditions. It also contains job search tips and links to information about the job market in each state.

- U.S. Department of Health and Human Services, Health Resources and Service Administration, Bureau of Health Professions, National Center for Health Workforce Information & Analysis. December 2000. *The Michigan Health Workforce: Highlights from the Health Workforce Profiles*. [Online, accessed 11/20/06.]

Available:

<http://www.bhpr.hrsa.gov/healthworkforce/reports/statesummaries/michigan.htm>.

Selected findings:

- "There were over 404,000 people employed in the health sector in Michigan in 2000, 8.8% of Michigan's total workforce, equal to the national rate. Michigan ranked 27th among states in per capita health services employment.

- Health services employment in Michigan grew 32% between 1988 and 2000, while the state's population grew by 8% during that period, resulting in a net per capita growth of 22% in health services sector employment, comparable to the national growth rate of 21%.”

- U.S. Department of Health and Human Services, Office of Minority Health and the Health Resources and Service Administration, Bureau of Health Professions. March 2006. *An Annotated Bibliography: Evaluations of Pipeline Development Programs Designed to Increase Diversity in the Health Professions*. [Online, accessed 10/6/06.]

Available: <http://bhpr.hrsa.gov/healthworkforce/pipelinebibliography.htm>.

“This document provides an annotated bibliography of a comprehensive review of the research literature that evaluates the effectiveness of health career oriented pipeline programs for minority students. This bibliography covers articles (published and unpublished) that document studies of interventions to improve educational performance of minorities in programs designed to increase the numbers of minorities entering the health professions.”

EDUCATION

- Baldwin, Alphonso, and Augustine O. Agho. 2003. Student Recruitment in Allied Health Educational Programs: The Importance of Initial Source of Contact. *Journal of Allied Health* 32(2): 65–70. [Online, accessed 11/21/06.]

Abstract available:

<http://www.ingentaconnect.com/content/asahp/jah/2003/00000032/00000002/art00002>.

“This article examines the effect of initial source of information about allied health career opportunities on students’ decisions to select and enroll in allied health programs.”

- Maddahian, Ebrahim, and Lourdes Barrera. January 2003. *A Longitudinal Evaluation of the Medical-Counseling Organizing and Recruiting (MED-COR) Program’s Effort to Improve Minority Students’ Postsecondary Educational Opportunities and Health Career Participation: Eight Grade Observation Study*. Los Angeles, CA: Los Angeles Unified School District, Program Evaluation and Research Branch Planning, Assessment and Research Division Publication No. 139.

Available:

http://notebook.lausd.net/pls/ptl/docs/PAGE/CA_LAUSD/FLDR_ORGANIZATIONS/FLDR_PLCY_RES_DEV/PAR_DIVISION_MAIN/PERB/PUBLICATIONS/REPORTS/MEDCOR2002.PDF.

This study “evaluates the impact of the Med-COR program by concentrating on three factors pertaining to program graduates: current education, student opinions, and

socioeconomic status. The 2001 class, made up of 106 students, was surveyed via mail with specific questions about their current higher education status, opinions about the program's impact, and their family size and income."

- Padula, Cynthia A., Marie M. Leinhaas, and Kathleen A. Dodge. June 2002. Linking Minority and Disadvantaged High School Students with Health Professions Training: A Win-Win Situation for Students and Older Adults. *Educational Gerontology* 28(6): 529–47. [Online, accessed 11/20/06.]

Abstract available:

[http://taylorandfrancis.metapress.com/\(q0xk4m55ht4xt5v4pih22455\)/app/home/contribution.asp?referrer=parent&backto=issue,7,9;journal,45,73;linkingpublicationresults,1:102440,1](http://taylorandfrancis.metapress.com/(q0xk4m55ht4xt5v4pih22455)/app/home/contribution.asp?referrer=parent&backto=issue,7,9;journal,45,73;linkingpublicationresults,1:102440,1)

"This article describes a pilot project designed to encourage career interest by minority high school students in health professions in geriatrics and gerontology."

- Steinert, Yvonne. 2000. Faculty development in the new millennium: Key challenges and future directions. *Medical Teacher* 22: 44–50. [Online, accessed 9/22/06.]

Abstract available:

[http://taylorandfrancis.metapress.com/\(ovn4z1fbxvxtw3q10clkbvr2\)/app/home/contribution.asp?referrer=parent&backto=issue,10,21;journal,47,59;linkingpublicationresults,1:101208,1](http://taylorandfrancis.metapress.com/(ovn4z1fbxvxtw3q10clkbvr2)/app/home/contribution.asp?referrer=parent&backto=issue,10,21;journal,47,59;linkingpublicationresults,1:101208,1)

"Faculty development initiatives in the year 2000 will need to respond to changes in medical education and health care delivery, to build on the achievements and accomplishments of the past, and to continue to adapt to the evolving roles of faculty members. To remain at the forefront, faculty development programs will need to broaden their focus, consider diverse training methods and formats, conduct more rigorous program evaluations, and foster new partnerships and collaborations."

WORKPLACE

- Hansen, Mary Mincer. August 2004. Issue Brief: Health Workforce Projections 2002–2012. [Online, accessed 11/20/06.]

Available:

<http://www.ihcs.msu.edu/LTC/Workgroups/D/Workgroup%20D%20BLS%20projections.pdf>

"The Department of Labor's Bureau of Labor Statistics (BLS) provides an important source of information about the United States (U.S.) workforce.... One significant aspect of their work is projection of future job growth by industry and occupation that includes the major health-care professions and support occupations. This report extrapolates the BLS's 2002–2012 projections for these workers."

- The New York Center for Workforce Studies. October 2006. *The United States Health Workforce Profile*. Rensselaer, NY: The Center for Workforce Studies. [Online, assessed 11/21/06.]

Report available:

http://www.albany.edu/news/pdf_files/U.S._Health_Workforce_Profile_October2006_11-09.pdf.

“This report presents a variety of data from 2004 related to the health workforce in the U.S. Estimated numbers of workers are presented to indicate the size of the nation’s workforce. Per capita ratios are also used for comparisons among state and regions, and with the nation as a whole.”

Clinical Laboratory Practitioners

GENERAL

- Health Resources and Services Administration (HRSA) Bureau of Health Professions. July 2005. *The Clinical Laboratory Workforce: The Changing Picture of Supply, Demand, Education, and Practice*. Merrifield, VA: Health Resources and Services Administration (HRSA) Bureau of Health Professions.

“Summary of major findings

1. Qualitative and quantitative data suggest a shortage of clinical laboratory workers in the past several years although the most recent data indicate that the shortages may be easing at least for some types of workers and in some settings and geographic areas.
2. Increasing wages and the use of sign-on bonuses indicate that the market is responding to a shortage of clinical laboratory workers. The increased use of per diem and contract workers and overtime may conceal the severity of the current shortage.
3. Though the pipeline to employment in the clinical laboratory sciences has deteriorated—mostly due to closures in hospital-based training programs—student interest is rising. Local or regionally driven efforts to restart training programs, or develop new ones, in locations currently experiencing labor shortages, have capitalized on renewed student interest to meet local workforce demand.
4. New and developing technology, including the automation of many common tests, will have an impact on the demand for clinical laboratory workers; yet much of that change is emerging more slowly than once predicted.
5. Medical technologists (MTs) will not move into consultative roles on clinical teams without a strategy to make this happen.”

- U.S. Department Bureau of Labor Statistics, Office of Occupational Statistics and Employment Projections. 2006–07. *Clinical Laboratory Technologists and Technicians*. Washington, DC: *Occupational Outlook Handbook*. [Online, accessed 11/27/06]

Available: <http://www.bls.gov/oco/ocos096.htm>.

- “Faster than average employment growth is expected as the volume of laboratory tests continues to increase with both population growth and the development of new types of tests.
- Clinical laboratory technologists usually have a bachelor’s degree with a major in medical technology or in one of the life sciences; clinical laboratory technicians generally need either an associate degree or a certificate.
- Job opportunities are expected to be excellent.”

- Steward, Coletta A., and Nancie N. Thompson. August 2006. ASCP 2005 Wage and Vacancy Survey of Medical Laboratories. *Labmedocone* 37(8): 465–69. [Online, accessed 11/20/06.]

Available:

<http://www.ascp.org/Certification/ForProgramDirectors/research/documents/wvac2005.pdf>.

“The American Society for Clinical Pathology conducts biannual surveys to assess trends in wages and position vacancies across the U.S....The most recent report indicates a vacancy rate on average in the 6–7% range. Laboratory managers report that it takes two months or more to fill vacant positions.”

EDUCATION

- Beck, Susan, and Rebecca Laudicina. 2001. Mentoring Tomorrow’s Leaders in Education. *Clinical Laboratory Science* 14(1): 38–44.

“Directors of accredited clinical laboratory science and technician programs were surveyed regarding faculty hiring. Among all program directors, 36% reported difficulty in hiring. This figure reached 53% among university program directors due to the need to hire faculty with advanced degrees faculty.”

WORKPLACE

- Beck, Susan, and Kathy Doig. 2005. Laboratory Managers’ Views on Attrition and Retention of Laboratory Personnel. *Clinical Laboratory Science* 18(4):238–47.

“Between 1998 and 2002], “5% of employees left their jobs annually. Over 60% of laboratory employees who left did so in the first five years of practice. The top five reasons that employees left their jobs were: 1) new laboratory job, 2) moved/family obligations, 3) retirement, 4) left the field entirely, and 5) employee was fired.”

- Doig, Kathy, and Susan Beck. 2004. Factors Contributing to the Retention of Clinical Laboratory Personnel. *Clinical Laboratory Science* 18(1):16–27.

“Committed practitioners believe that salaries comparable to nurses are needed to improve retention of staff. Respondents said that being appreciated by hospital administrators, nurses, and physicians would also contribute to improved retention.”

Dental Hygienists

GENERAL

- American Dental Association. 2004. *Workforce Needs Assessment Survey: Dental Hygienists*. Chicago, IL: ADA Press.

“The report contains information on workforce levels of and anticipated needs for dental hygienists. Included are dental hygienists’ salaries and benefits most frequently offered on a regional level.”

- American Dental Hygienist’s Association (ADHA). 2001. *Access to Care Position Paper, 2001*. Chicago, IL: ADHA. [Online, accessed 11/20/06.]

Available: http://www.adha.org/profissues/access_to_care.htm.

“It is the position of the American Dental Hygienists’ Association that oral health care—a fundamental component of total health care—is the right of all people. Lack of access to oral health care is a critical issue in the United States due to disparities in the health care delivery system. Dental hygienists must play a vital role in the solution to eliminate these disparities and assure quality oral health care for all.”

- American Dental Hygienist’s Association (ADHA). 2003. *The Future of Oral Health. Trends and Issues*. Chicago, IL: ADHA.

“This eight-page page, tri-fold information piece includes issues such as health promotion, disease prevention, fluoride, sealants, self-regulation, barriers to care, managed care, and “oral health is indivisible from total health.”

- U.S. Department Bureau of Labor Statistics, Office of Occupational Statistics and Employment Projections. 2006–07. Dental Hygienists. Washington, DC: *Occupational Outlook Handbook*. [Online, accessed 11/7/06.]

Available: <http://www.bls.gov/oco/pdf/ocos097.pdf>.

“Significant points:

- Most dental hygiene programs grant an associate degree; others offer a certificate, a bachelor’s degree, or a master’s degree.
- Dental hygienists rank among the fastest growing occupations.
- Job prospects are expected to remain excellent.
- More than half work part time, and flexible scheduling is a distinctive feature of this job.”

EDUCATION

- Blanchard, Steven B., and Jane S. Blanchard. May 2006. The prevalence of mentoring programs in the transition from student to practitioner among U.S. dental hygiene programs. *Journal of Dental Education* 70(5): 531–35. [Online, accessed 11/17/06.]

Abstract available: <http://www.jdentaled.org/cgi/content/abstract/70/5/531>.

“A survey was sent to all U.S. dental hygiene program directors to determine the prevalence of mentoring programs in the dental hygiene curriculum that utilize practicing dental hygienists as mentors to facilitate the transition from student to practitioner. Results showed that less than 30 percent of dental hygiene programs are using this type of student mentoring.”

- Garvin, Jennifer. October 2004. Dental Workforce: What’s the solution? *Academy of General Dentistry Impact* 33(9). [Online, accessed 11/20/06.]

Available: <http://www.agd.org/library/2004/oct/garvin.asp>.

This article discusses the question of whether there are enough dental hygiene workers to go around and possible solutions to the problem.

- Holt, Marianne P. July 2005. Student retention practices in associate degree, entry-level dental hygiene programs. *Journal of Dental Hygiene* 79(3). [Online, accessed 11/17/06.]

Available: <http://puck.ingentaconnect.com/vl=11769564/cl=24/nw=1/rpsv/cgi-bin/linker?ini=adha&reqidx=/cw/adha/15530205/v79n3/s6/p6>.

“The main purpose of this study was to investigate student retention strategies and practices implemented in associate degree, entry-level dental hygiene programs. Included are student attrition issues, academic standards, re-entry policies, and clinical remediation strategies.”

- Nunn, Patricia J., Cynthia C. Gadbury-Amyot, Ann Battrell, Stephen I. Bruce, et al. March 2004. The Current Status of Allied Dental Faculty: A Survey Report, *Journal of Dental Education* 68(3): 329–44. [Online, accessed 11/20/06.]

Available:

<http://www.jdentaled.org/cgi/reprint/68/3/329?maxtoshow=&HITS=10&hits=10&RESU LTFORMAT=&author1=Nunn&andorexactfulltext=and&searchid=1&FIRSTINDEX=0&sortspec=relevance&resourcetype=HWCIT>.

“[T]he ADEA Board of Directors created a task force to investigate the current status of allied dental faculty, including the degree of cultural diversity, and to identify whether current and/or potential future shortages of educators exist. A survey was sent to all

accredited allied dental program directors. Results indicated that a current faculty shortage exists for dental assisting and dental hygiene programs, with a projected greater future shortage for all allied dental education disciplines, primarily as a result of retirement of current faculty members.”

WORKPLACE

- Brown, Jackson L., Donald R. House, and Kent D. Nash. 2005. *The Economic Aspects of Unsupervised Private Hygiene Practice and Its Impact on Access to Care*. Chicago, IL: ADA Press. [Online, accessed 11/20/06.]

Available: http://www.ada.org/prof/resources/topics/report_hygiene.pdf.

“This article reports on a study that analyzed the economic aspects of unsupervised private hygiene practice and its impact on access to care.”

- Jevack, Julia E., Rebecca S. Wilder, Ginger Mann, and Ronald J. Hunt. Summer 2000. Career satisfaction and job characteristics of dental hygiene master’s degree graduates. *Journal of Dental Hygiene* 74(3): 219–29.

“The primary objectives of this study were to assess career and degree satisfaction as well as job characteristics of individuals graduating from programs awarding the Master of Science in dental hygiene or dental hygiene education degree.”

- Rowe, Dorothy J., Jane A. Weintraub, Sara Shain, Judy Yamamoto, et al. January 2004. Outcomes assessment related to professional growth and achievements of baccalaureate dental hygiene graduates. *Journal of Dental Education* 68(1): 35–43. [Online, accessed 11/20/06.]

Available:

<http://www.jdentaled.org/cgi/reprint/68/1/35?maxtoshow=&HITS=10&hits=10&RESULTFORMAT=&andorexactfulltext=and&searchid=1&FIRSTINDEX=0&sortspec=relevance&volume=68&firstpage=35&resourcetype=HWCIT>.

“The objective of this study was to evaluate whether the goals of the [entry-level baccalaureate dental hygiene (DH) program at the University of California, San Francisco] were being achieved by assessing the professional growth and achievements of the graduates.”

GENERAL

- Academy of General Dentistry. October 1, 2004. Dental Workforce: Are There Enough Workers To Go Around? Chicago, IL: Academy of General Dentistry. [Online, accessed 11/20/06.]

Available: <http://www.agd.org/media/2004/oct/workforce.asp>.

This article examines whether there is a workforce shortage in the oral health care industry.

- American Dental Association. January 21006. Adequacy of Current and Future Dental Workforce. Chicago, IL: ADA Press.

“The American Dental Association has undertaken a comprehensive study of the dental workforce supported by a grant from the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (DHHS). The resultant reports are published in two companion volumes.”

- American Dental Association. (n.d.) American Dental Association Dental Workforce Model. Chicago, IL: ADA Press.

The American Dental Association, “annually performs a long-term projection of the U.S. dental workforce using statistical transition models for retirements, occupation change, location choice, specialty education, and death, using data gathered from previous Distributions of Dentists and Surveys of Dental Graduates.”

- American Dental Association. (n.d.) *Distribution of Dentists in the U.S. by Region and State*. Chicago, IL: ADA Press.

“Annual reports are the result of an annual census of dentist, conducted by the ADA. Report data represents ADA member and nonmember dentists, professionally active dentists, and dentists who are retired or no longer in private practice.”

- Byck, Gayle R., Hollis Russinof and Judith A. Cooksey. June 2002. *Wisconsin Dentist Workforce Report 2001*. Wisconsin Primary Health Care Association, Illinois Regional Health Workforce Center.

Available: <http://www.uic.edu/sph/irhwc/wi%20dental%20wf%20rev.pdf>

“In early 2001, the State of Wisconsin conducted a survey of licensed dentists to learn more about their dental workforce. This survey was required by state statute. The

Wisconsin primary health Care Association contracted with the Illinois Regional Health Workforce Center to analyze and assess the survey in terms of the supply, distribution, and characteristics of Wisconsin dentists as well as their participation in Medicaid, volunteer work, and retirement plans.”

- U.S. Department of Health and Human Services. 2000. *Oral Health in America: A Report of the Surgeon General*. National Institute of Dental and Craniofacial Research, Rockville, MD: National Institute of Health.

Executive summary available:

<http://www.nidcr.nih.gov/AboutNIDCR/SurgeonGeneral/ExecutiveSummary.htm>.

“The report elaborates on the meaning of oral health and explains why oral health is essential to general health and well-being.”

- U.S. Department Bureau of Labor Statistics, Office of Occupational Statistics and Employment Projections. 2006–07. Dentist. Washington, DC: *Occupational Outlook Handbook*. [Online, accessed 11/20/06]

Available: <http://www.bls.gov/oco/pdf/ocos072.pdf>.

“Significant points:

- Most dentists are solo practitioners
- Dentist usually complete at least 8 years of education beyond high school
- Employment is projected to grow about as fast as average, and most job openings will result from the need to replace the large number of dentist expected to retire
- Job prospects should be good”

EDUCATION

- American Dental Association. (n.d.) *Survey of New Dental Education Series*. Chicago, IL: ADA Press.

Based on an annual survey of all dental schools and educational programs accredited by the Commission on Dental Accreditation, this series of five volumes of reports deals with general information, student and graduate data, curriculum, and financial management of dental schools in the U.S. and Puerto Rico.

- American Dental Association. (n.d.) *Survey of Dental Graduates*. Chicago, IL: ADA Press.

“Provides information on dental school graduates one year out of dental school. Often compared to other recent dental graduate information.”

- American Dental Association. April 2006. *2004-05 Survey of Dental Education – Volume 1: Academic Programs, Enrollment and Graduates*. Chicago, IL: ADA Press.

“This report provides statistical information on academic programs, admission requirements, enrollment and graduate levels, tuition costs, and faculty.”

- DePaola, Dominick P., and Harold C. Slavkin. November 2004. Reforming Dental Health Professions Education: A White Paper. *Journal of Dental Education* 68(11): 1139–50. [Online, accessed 11/21/06.]

Available: <http://www.jdentaled.org/cgi/reprint/68/11/1139>.

This article advances an argument and a national strategy that can enable major reforms in the oral health education system and suggests that major revisions can result in an outcome-based education system that prepares oral health professionals to meet both the needs of patients/families/communities and the requirements of a changing health system.

- Haden, N. Karl, Phyllis L. Beemsterboer, Richard G. Weaver, and Richard W. Valachovic. September 2000. Dental School Faculty Shortages Increase: An Update on Future Dental School Faculty. *Journal of Dental Education* 64(9): 657–73. [Online, accessed 11/20/06.]

Available: <http://www.adea.org/DEPR/associationreport.pdf>.

“The 1999 publication of the American Association of Dental Schools (AADS) Presidents Task Force on Future Dental School Faculty revealed a crisis in the shortages of dental school faculty. ...The American Dental Education Association (ADEA), formerly AADS, gathered additional data through a new survey of dental school deans to elucidate the current state of faculty shortages.”

- Haden, N. Karl, Richard G. Weaver, and Richard W. Valachovic. September 2002. Meeting the Demand for Future Dental School Faculty: Trends, Challenges, and Responses. *Journal of Dental Education* 66(9): 1102–13. [Online, accessed 11/20/06.]

Available:

<http://www.jdentaled.org/cgi/reprint/66/9/1102?maxtoshow=&HITS=10&hits=10&RES ULTFORMAT=&andorexactfulltext=and&searchid=1&FIRSTINDEX=0&sortspec=relevance&volume=66&firstpage=1102&resourcetype=HWCIT>.

“This report presents data from ADEA’s 2001–2002 survey of vacant budgeted. faculty positions and examines challenges likely to exacerbate faculty shortages in the immediate future.”

- Russinof, Hollis, Judith Cooksey, Indru Punwani, Zakaria Messieha, et al. March 2000. *Plans of Dentist Completing Advanced Training in Illinois*. Chicago, IL: Illinois Center for Health Workforce Studies, University of Chicago.

Available: <http://www.uic.edu/sph/ichws/plans%20of%20dent%20hr.pdf>.

“This study examined the plans of dentists completing training in advanced general dentistry (general practice residency, GPR, or advanced education in general dentistry, AEGID) and pediatric dentistry programs in Illinois in 1999. The purpose of the study was to describe the trainees and their practice plans, and to assess how the trainees judged their preparation to provide care to various groups of patients.”

- Shepherd, Kathi, Patricia Nihill, Ronald W. Botto, and Melanie W. McCarthy. September 2001. Factors Influencing Pursuit and Satisfaction of Academic Dentistry Careers: Perceptions of New Dental Educators. *Journal of Dental Education* 65(9): 841-48. [Online, accessed 11/20/06.]

Available:

<http://www.jdentaled.org/cgi/reprint/65/9/841?maxtoshow=&HITS=10&hits=10&RESULTFORMAT=&searchid=1&FIRSTINDEX=0&sortspec=relevance&volume=65&firstpage=841&resourcetype=HWCIT>.

“New dental educators (n = 280) with zero to five years full-time teaching experience were surveyed to ascertain their perceptions regarding salary, work environment, and workload to determine the impact of these factors on faculty recruitment and retention.”

- Weaver, Richard G., Karl Haden, and Richard W. Valachovic. November 2001. Dental School Vacant Budgeted Faculty Positions: Academic Year 2000–2001. *Journal of Dental Education* 65(11): 1291–302. [Online, accessed 11/20/06.]

Available:

<http://www.jdentaled.org/cgi/reprint/65/11/1291?maxtoshow=&HITS=10&hits=10&RESULTFORMAT=&author1=Weaver&andorexactfulltext=and&searchid=1&FIRSTINDEX=0&sortspec=relevance&resourcetype=HWCIT>.

“The 1999 Report of the AADS President’s Task Force on the Future of Dental School Faculty (1) drew attention to the situation dental schools are experiencing in attracting and retaining faculty.... The year 2000–2001 ADEA survey of vacant budgeted positions indicates a further four percent increase in vacant budgeted positions”

- Weaver, Richard G., N. Karl Haden, and Richard W. Valachovic. December 2002. Annual ADEA survey of dental school seniors: 2002 graduating class. *Journal of Dental Education* 66(12): 1388–404. [Online, accessed 11/20/06.]

Available:

<http://www.jdentaled.org/cgi/reprint/66/12/1388?maxtoshow=&HITS=10&hits=10&RESULTFORMAT=&author1=Weaver&andorexactfulltext=and&searchid=1&FIRSTINDEX=0&sortspec=relevance&volume=66&firstpage=1388&resourcetype=HWCIT>.

“The American Dental Education Association (ADEA) conducts an annual survey of graduating seniors to obtain information about their financing of dental education, graduating indebtedness, practice and postdoctoral education plans following graduation, decision factors that influenced postgraduation plans, and impressions on the adequacy of time directed to various areas of predoctoral instruction.”

WORKPLACE

- American Dental Association. (n.d.) 2002 Survey of New Dentist Financial Issues. Chicago, IL: ADA Press.

“Covering those dentists who have graduated within the last ten years, the report includes income, educational debt, and career satisfaction issues for new dentists in private practice as well as those working on dental school faculties; as government or hospital employees; in the armed forces; or in graduate school.”

- American Dental Association. (n.d.) Studies of Dental Workforce. Chicago, IL: ADA Press.

“The workforce monograph is the end-result of a two-year collaboration process among well-known experts in the fields of dentistry and economics.... Each author (or groups of authors) presents excellent analyses within an area of expertise and interest in an effort to supply interested parties with the best available information on U.S. dentist workforce issues and policy...”

- Mertz, Elizabeth, Gena Anderson, Kevin Grumbach, and Edward O’Neil. July 2004. *Evaluation of Strategies to Recruit Oral Health Care Providers to Underserved Areas of California*. San Francisco, CA: Center for California Health Workforce Studies.

Available:

http://www.futurehealth.ucsf.edu/pdf_files/Dental%20Strategies%20Full%20Final%20Report.pdf.

“This report evaluates the impact of the multitude of programs in California to recruit and retain oral health care providers in underserved areas in California who are serving underserved populations.”

- Walton, Surrey M., Gayle R. Byck, Judith A. Cooksey, and Linda M. Kaste. May 2004. Assessing differences in hours worked between male and female dentists.

Journal of the American Dental Association 135(5): 637–45. [Online, Assessed 11/20/06.]

Available: <http://jada.ada.org/cgi/reprint/135/5/637?ck=nck>.

“This study examines the impact of sex, age and other demographic characteristics on dentists’ work force participation and on hours worked from 1979 through 1999.”

Occupational Therapists

GENERAL

- Brandenburger-Shasby, Sharon. January/February 2005. School-Based Practice: Acquiring the Knowledge and Skills. *American Journal of Occupational Therapy* 59(1).

“The purpose of this descriptive study is to investigate the perceptions of occupational therapists working in school-based settings regarding their level of preparation for practice.”

- Dunbar, Sandra Barker, Orit Simhoni, and Lori T. Anderson. 2002. Classification of Fieldwork Experiences for the New Millennium. *Occupational Therapy in Health Care* 16(1).

“Innovative activities in a variety of settings are increasingly used by educational programs to provide fieldwork experiences for students. Descriptions and definitions of these new types of experiences will provide a format for consistent terminology and further enhance optimal involvement in newer arenas.”

- Fisher, Gail, MPA, OTR/L, Judith Cooksey, MD, MPH, Michele Reed, MPH, and Catherine McClure, BS. September 2002. The Occupational Therapy Workforce in Illinois and National Workforce Trends. *Illinois Regional Health Workforce Center*. [Online, accessed 11/20/06.]

Available: <http://www.uic.edu/sph/irhwc/ot%20wf%20gf.pdf>.

“This report presents an overview of the profession and a brief analysis of national trends in OT personnel, educational programs, and work settings through the 1990s. These national data provide a context for examining Illinois data and more detail state level information on the workforce distribution across regions of the state, marketplace demand, and hiring trends.”

- Powell, Janet M., Sonya L. Griffith, and Elizabeth M. Kanny. January/February 2005. Occupational Therapy Workforce Needs: A Model for Demand-Based Studies. *The American Journal of Occupational Therapy* 59(1): 467–74.

The purpose of this article is “to provide a model for assessing occupational therapy workforce needs by using a demand-based approach to determine current workforce status in the Northwest region. Regional information may have implications for addressing national occupational therapy service needs.”

- Smith, Roger O. May/June 2000. Technology and Occupation: Contemporary Viewpoints: The Role of Occupational Therapy in a Developmental Technology Model. *The American Journal of Occupational Therapy* 54(3).

This article discusses the intimate relationship occupational therapy and technology have had for 80 years and the substantial effect technology has had on defining the role of occupational therapy practitioners.

- The American Occupational Therapy Association. (n.d.) *Your Career in Occupational Therapy. Workforce Trends in Occupational Therapy*. Bethesda, MD: The American Occupational Therapy Association.

This article examines the current and projected demand for occupational therapy services.

- The American Journal of Occupational Therapy. November/December 2001. The Foundation—Introducing the Institute for the Study of Occupation and Health. *The American Journal of Occupational Therapy* 55(6).

This article discusses the American Occupational Therapy Foundation (AOTF), which reviewed the foundation's programs and accomplishments since its inception in 1965 as a 501(c)(3), nonprofit, charitable, scientific, literary, and educational society. The corporation aims to advance the science of occupational therapy and to increase the public knowledge and understanding thereof by encouraging the study of occupational therapy.

- U.S. Department Bureau of Labor Statistics, Office of Occupational Statistics and Employment Projections. 2006–07. Occupational Therapists. Washington, DC: *Occupational Outlook Handbook*. [Online, accessed 11/7/06/]

Available: <http://www.bls.gov/oco/pdf/ocos078.pdf>.

“Significant points:

- Employment is projected to increase much faster than the average, as rapid growth in the number of middle-aged and elderly individuals increases the demand for therapeutic services.
- Beginning in 2007, a master's degree or higher in occupational therapy will be the minimum educational requirement.
- Occupational therapists are increasingly taking on supervisory roles, allowing assistants and aides to work more closely with clients under the guidance of a therapist, in an effort to reduce the cost of therapy.
- More than a quarter of occupational therapists work part time.”

EDUCATION

- Breines, Estelle B. July/August 2002. Technology and Occupation: Contemporary Viewpoints—Occupational Therapy Education in a Technological World. *The Journal of Occupational Therapy* 56 (4).

“Curricula across the country are grappling with how to teach technology in occupational therapy professional education programs. Although the Standards for an Accredited Educational Program for the Occupational Therapist...stipulate the inclusion of technology content, this requirement does not provide guidelines of what to include or a framework for pedagogy.”

- Copolillo, Albert E., Elizabeth Walker Peterson, and Christine A. Helfrich. 2001. Combining Roles as an Academic Instructor and a Clinical Practitioner in Occupational Therapy: Benefits, Challenges, and Strategies for Success. *Occupational Therapy in Health Care* 15(1/2): 127–43.

“Objectives of this article were to describe rewards and challenges of adjunct teaching and suggest strategies for successfully negotiating adjunct roles. The article summarizes findings from needs assessments undertaken to develop adjunct faculty programs.”

- Crist, Patricia, Jamie Phillip Munoz, Anne Marie Witchger Hanson, Jeryl Benson, et al. 2005. The Practice-Scholar Program: An Academic-Practice Partnership to Promote the Scholarship of “Best Practices.” *Occupational Therapy in Health Care* 19(1/2): 71–93.

“The purpose of this paper is to report the evolution of a new program, called the Practice-Scholar Program at Duquesne University. The goal was to develop new partnerships between practice and our department to support mutual interests in teaching, research and service focusing on the scholarship of occupational therapy ‘best practices’ in a variety of settings.”

- Gallew, Heather A. 2005. Students teaching Students: Learning Through Doing, Being, and Becoming. *Occupational Therapy in Health Care* 19(3).

“This paper describes a creative teaching strategy that may be used by occupational therapy educators. The strategy is illustrated through the learning experience of five occupational therapy students in Pi Theta Epsilon (PTE) who participated in a project which involved teaching first year occupational therapy students.”

- Hammel, Joy, Marcia Finlayson, L. Gary Kielhofner, Christine A. Helfrich, et al. 2001. Educating Scholars of Practice: An Approach to Preparing Tomorrow’s Researchers. *Occupational Therapy in Health Care* 15(1/2): 157–76.

“This article describes an educational strategy for preparing scholars of practice whose work will contribute to building a knowledge base that examines and enhances practice. The strategy is based upon social learning theory, employs principles of situated learning and cognitive apprenticeship, and involves students as members of an ongoing community of scholars.”

- Simons, Dianne F., Julie A. Baron, Kristi S. Knicely, and Judy S. Richardson. 2001. Online Learning: Perspectives of Students and Faculty in Two Disciplines—Occupational Therapy and Teacher Education. *Occupational Therapy in Health Care* 14(2): 21–52.

“Researchers from two disciplines collaborated to assess the efficiency, effectiveness, and satisfaction with online learning. The mixed method study gathered quantitative data from pretest and posttest questionnaires and qualitative data from focus groups and faculty interviews....Qualitative analysis resulted in nine assertions about online learning that have implications for faculty designing online learning.

- Suarez-Balcazar, Yolanda, Joy Hammel, Christine Helfrich, Jennifer Thomas, et al. 2005. A Model of University-Community Partnerships for Occupational Therapy Scholarship and Practice. *Occupational Therapy in Health Care* 19(1/2): 47–70.

“This paper presents a framework of seven characteristics that are typical of successful partnership endeavors, such as building a relationship based on trust and mutual respect. We illustrate how this model can be used to promote praxis between theory, research and practice with two examples of ongoing community partnerships that involve an educational community practicum for all entry-level OT students.”

- The American Journal of Occupational Therapy. November/December 2001. Listing of Educational Programs in Occupational Therapy. *The American Journal of Occupational Therapy* 55(6).

This article contains list of accredited educational programs published annually by the Accreditation Council for Occupational Therapy Education of the American Occupational Therapy Association, the officially recognized accrediting agency for entry-level educational programs for the occupational therapist and occupational therapy assistant in the United States and its territories.

- Titiloye, Victoria Moji, and Anne Hiller Scott. 2001. Occupational Therapy Students’ Learning Styles and Application to Professional Academic Training. *Occupational Therapy in Health Care* 15(1/2): 145–55.

“If occupational therapy educators know the students’ learning styles at the onset of their training, teaching can be designed to enhance students’ optimal learning throughout their

education. This study determined learning styles of 201 junior students ...enrolled in an urban occupational therapy program from 1990 to 1999.”

WORKPLACE

- Long, Paula J., and Lynnda J. Emery. 2000. Continuing Education: A Clinician’s Guide to Monitoring and Promoting Competence, *Occupational Therapy in Health Care* 12(4).

“The purpose of this article is to describe three themes related to continuing education and competence that emerged in a review of the professional literature. These three themes are elements of competence, monitoring competence and methods to promote competence to assist clinicians in their own professional development.”

- Rugg, Sue. March 2006. Junior occupational therapists' continuity of employment: what influences success? *Occupational Therapy International* 6(4): 277–97.

“This article details a study that investigated the influence of selected personal and environmental variables on British occupational therapists’ continuity of employment one year post-qualification.”

- Schaber, Patricia L. 2001. Qualitative Evaluation of a Management Course Project: Creating New Job Possibilities for Occupational Therapy. *Occupational Therapy in Health Care* 15(1/2):177–92.

“A qualitative analysis of a ten-step management course project in occupational therapy education demonstrates the students changed perception of future job possibilities. The assignment, designed using a student-centered approach, bridges individual skills and interests with the creation of an occupational therapy position in an emerging market.”

- Scheerer, Carol. 2001. The Partnering Model: Occupational Therapy Assistant and Occupational Therapy Students Working Together. *Occupational Therapy in Health Care* 15(1/2): 193–208.

“Establishing a partnering relationship between the occupational therapy assistant (OTA) and the occupational therapist (OT) is imperative in order to create an optimal working environment and deliver effective client care. A developmental model that provides students with opportunities to practice such a relationship has been used by an OTA and OT program in southwestern Ohio.”

- Randolph, Diane Smith, and Steven P. Johnson. January/February 2005. Predicting the Effect of Extrinsic and Intrinsic Job Satisfaction Factors on Recruitment and

Retention of Rehabilitation Professional. *Journal of Healthcare Management* 50(1): 49–60.

“The purpose of this study was to ascertain which extrinsic and intrinsic job satisfaction areas are most predictive of rehabilitation professionals’ career satisfaction and desire to stay on the job.”

- Simhoni, Orit, and Lori T. Anderson. 2002. Fieldwork: A Road to Employment. *Occupational Therapy in Health Care* 16(1).

“While the goal of occupational therapy fieldwork education is to prepare entry level practitioners, over time, it has been linked to various professional concerns.... In light of these issues and the current changes in the health care arena, the authors explored the relationship between fieldwork and employment of an OT program’s graduates.”

- Wyrick, J. M., and E. B. Stern. March 1997. The recruitment of occupational therapy students: A national survey. *American Journal of Occupational Therapy* 41(3): 173–78.

“This national survey was designed to study selected characteristics of entry level occupational therapy students and to compare recruitment variables in technical and professional students.”

GENERAL

- Department of Health and Human Services, Health Resources and Services Administration, Bureau of Health Professions. December 2000. *The Pharmacist Workforce: A Study of the Supply and Demand for Pharmacists*. [Online, assessed 11/20/06.]

Available: <ftp://ftp.hrsa.gov/bhpr/nationalcenter/pharmacy/pharmstudy.pdf>.

“The evidence [documented in the report] clearly indicates the emergence of a shortage of pharmacists over the past two years. This shortage is considered a dynamic shortage since it appears to be due to a rapid increase in the demand for pharmacists coupled with a constrained ability to increase the supply of pharmacists. The factors causing the current shortage are of a nature not likely to abate in the near future without fundamental changes in pharmacy practice and education.”

- Gershon, S. K., J. M. Cultice, and K. K. Knapp. November/December 2000. How many pharmacists are in our future? The Bureau of Health Professions Projects Supply to 2020. *Journal of the American Pharmaceutical Association* 40 (6): 757–64.

The objective of this article was “to describe a Bureau of Health Professions model for estimating the numbers and selected demographic characteristics of active pharmacists in the United States and to relate the model's findings.”

- Knapp, David A. 2002. Professionally Determined Need for Pharmacy Services in 2020. *American Journal of Pharmaceutical Education* 66: 421–29.

Available: <http://www.ajpe.org/legacy/pdfs/aj660414.pdf>.

“Two dozen experts in the procession of pharmacy met for three days to discuss drug-related health care problems in the population and system failures in the delivery of pharmaceutical care services. They considered changes in the demographics of the population, drug use trends, advances in information technology, the evolution of drug therapy, and the direction of health care organization and financing. Estimates were made of the need for pharmacists in medication order fulfillment, primary patient care, secondary and tertiary care, and non patient care areas.”

- Knapp, Katherine K., Ryan M. Quist, Surrey M. Walton, and Laura M. Miller. 2005. Update on the pharmacist shortage: National and State Data through 2003. *American Journal of Health-System Pharmacy* 62 (5): 498–99.

In this article, “Aggregate Demand Index (ADI) survey results were used to describe the severity of the pharmacist shortage at the national and state levels and by practice site and impact on the U.S. population.”

- Knapp, K. K., F. G. Paavola, L. L. Maine, and B. Sorofman. March/April 1999. Availability of primary care providers and pharmacists in the United States. *Journal of the American Pharmaceutical Association* 39 (2): 122–35.

The objective of this study was “to determine the rural distribution of primary care providers (primary care physicians, physician assistants, nurse practitioners, and nurse midwives) and pharmacists.”

- Michigan Department of Community Health, *Survey of Pharmacists 2005*. Prepared by Public Sector Consultants, 2005.

“Public Sector Consultants Inc. (PSC) conducted a survey of licensed pharmacist in 2005 to gather information about their employment characteristics, education, and work environment.”

- Mott, David A., Bernard A. Sorofman, David H. Kreling, Jon C. Schommer, et al. 2001. A Four-State Summary of the Pharmacy Workforce. *Journal of the American Pharmaceutical Association* 41(5):693–702.

The objectives of this study were “to create a profile of licensed pharmacists in terms of workforce variables in four states in the Midwest region of the United States and to compare profiles of male and female licensed pharmacist to examine difference in workforce variables by gender.”

- U.S. Department Bureau of Labor Statistics, Office of Occupational Statistics and Employment Projections. 2006–07. Pharmacists. Washington, DC: *Occupational Outlook Handbook*. [Online, accessed 11/20/06/]

Available: <http://www.bls.gov/oco/pdf/ocos079.pdf>.

“Significant points:

- Very good employment opportunities are expected for pharmacists.
- Earnings are high, but some pharmacists work long hours, nights, weekends, and holidays.
- Pharmacists are becoming more involved in making decisions regarding drug therapy and in counseling patients.
- A license is required; the prospective pharmacist must graduate from an accredited college of pharmacy and pass a state examination.”

- Walton, Surrey M., Judith A. Cooksey, Katherine K. Knapp, Ryan M. Quist, et al. November/December 2004. Analysis of pharmacist and pharmacist-extender workforce in 1998–2000: assessing predictors and differences across states. *Journal of the American Pharmacist Association* 44 (6): 673–83.

The objective of this study was “to examine the impact of supply and demand factors on filled positions for pharmacists and pharmacist extenders (pharmacist technicians and aides) and assess differences across states through analysis of state-level pharmacist labor market data.”

EDUCATION

- Austin, Zubin, and Wendy Duncan-Hewitt. 2005. Faculty, Student, and Practitioner Development within a Community of Practice. *American Journal of Pharmaceutical Education* 69(3): 381–89. [Online, accessed 8/17/06.]

Available: <http://www.ajpe.org/aj6903/aj690355/aj690355.pdf>.

“Building upon the tradition of diversity and innovation in pharmacy education, this paper provides an outline of a model curriculum, and highlights the ways in which a community of practice may facilitate professional socialization, enhance intra-faculty member collaboration, improve student learning, optimize practitioners’ continuous professional development, and advance patient care.”

- Cooksey, Judith A., Surrey M. Walton, Todd Stankewicz, and Katherine K. Knapp. 2003. Pharmacy school graduates by state and region: 1900–1999. *Journal of the American Pharmacists Association* 43: 463–69.

The objective of this study was “to describe the distribution of pharmacy schools and graduates (first professional degree) at the state, divisional, and regional levels during the 10-year period from 1990 through 1999, as well as enrollment patterns by residential status.”

- Hanning, Lyn, Gareth Price, Justine Scanlan, Jennifer Silverthorne, et al. August 2002. A New Approach to Clinical Pharmacy Practice Teaching in the Four-year Degree Course. *The Pharmaceutical Journal* 269. [Online, accessed, 11/20/06.]

Available: http://www.pjonline.com/pdf/articles/pj_20020803_newapproach.pdf.

“This article describes a new approach to clinical pharmacy practice teaching for undergraduate students using a clinical tutor model at the school of pharmacy and pharmaceutical sciences at the University of Manchester. The results of an evaluation of the first year of the course are also reported.”

- Lee, Mary, Marie A. Abate, Nancy Fjortoft, and Ann Linn. 1995. Report of the Task Force on the Recruitment and Retention of Pharmacy Practice Faculty. *American Journal of Pharmaceutical Education* 59. [Online, accessed 11/20/06.]

Available: <http://www.ajpe.org/legacy/pdfs/aj5904S28.pdf>.

The Task Force was charged to (1) develop strategies to encourage pharmacy students to select academia as a career path, especially tenure track positions; (2) address difficulties in recruiting qualified candidates for post-doctoral specialty residencies and fellowships; (3) explore ways that could be used to help retain qualified pharmacy practice faculty in academia; and (4) review the pharmacy literature and that from other health professions.

- Meyer, Susan M., and Jennifer M. Patton. 2001. The Pharmacy Student Population: Applications Received 1999–2000, Degree Conferred 1999–2000. Fall 2000 Enrollments. *Journal of Pharmaceutical Education* 65. [Online, accessed 11/20/06.]

Available: <http://www.ajpe.org/legacy/pdfs/aj6504S21.pdf>.

“This report presents data that describe the 1999–2000 pharmacy application pool, degrees conferred in 1999–2000, and fall 2000 pharmacy program enrollments.”

- Schumann, Wynefred, David P. Moxley, and William Vanderwill. May 2004. Integrating Service and Reflection in the Professional Development of Pharmacy Students. *American Journal of Pharmaceutical Education* 68 (2): article 45. [Online, accessed 11/20/06.]

Available: <http://www.ajpe.org/view.asp?art=aj680245&pdf=yes>.

“This paper illustrates how social workers can partner with pharmacy faculty members to strengthen the psychosocial and interpersonal content of the pharmacy curriculum.”

WORKPLACE

- Cooksey, Judith A., Katherine K. Knapp, Surrey M. Walton, and James M. Cultice. September/October 2002. Challenges to the Pharmacist Profession from Escalating Pharmaceutical Demand. *Health Affairs* 21 (5): 182–88. [Online, accessed 9/26/06.]

Available: <http://content.healthaffairs.org/cgi/reprint/21/5/182>.

This article discusses the effect that unexpected growth in medication use has had on demand for pharmacists and responses to the increased need. It also examines the need to address barriers, particularly in community and retail pharmacies, to improve the medication-use process.

- Schommer, Jon C., Craig A. Pedersen, William R. Doucette, Caroline A. Gaither, et al. May-June 2002. Community Pharmacists’ Work Activities in the United States during 2000. *Journal of the American Pharmaceutical Association* 42(3):399–406.

The objectives of this study are “to describe community pharmacists’ work activities in the United States during 2000 and to investigate the effects of position, pharmacy type, and prescription volume on work activities.”

Physical Therapists

GENERAL

- American Physical Therapist Employment Survey. 2005. *Executive Summary*. Alexandria, VA: American Physical Therapy Association. [Available only to members].
- Brissette, Sue. 2006. Demographics: Shaping the Future of Physical Therapy. American Physical Therapy Association. [Online, accessed 8/21/06.]

Available:

<http://www.apta.org/AM/Template.cfm?Section=Home&TEMPLATE=/CM/HTMLDisplay.cfm&CONTENTID=8471>.

This article examines how demographic shifts in the American population are affecting PTs, their patients, and their clients.

- U.S. Department Bureau of Labor Statistics, Office of Occupational Statistics and Employment Projections. 2006–07. Physical Therapist. Washington, DC: *Occupational Outlook Handbook*. [Online, accessed 11/10/06/]

Available: <http://www.bls.gov/oco/pdf/ocos167.pdf>.

“Significant points:

- Employment is expected to increase much faster than the average, as growth in the number of individuals with disabilities or limited functioning spurs demand for therapy services.
- Job opportunities should be particularly good in acute hospital, rehabilitation, and orthopedic settings.
- After graduating from an accredited physical therapist educational program, therapists must pass a licensure exam before they can practice.
- Nearly 6 out of 10 physical therapists work in hospitals or in offices of physical therapists.”

EDUCATION

- Andrews, A. Williams, Charity Johansson, Susan A. Chinworth, and Duane Akroyd. 2005. Cognitive, Collegiate, and Demographic Predictors of Attrition in Professional Physical Therapist Education. *Journal of Physical Therapy Education* 19(3).

“Attrition in professional physical therapist education is problematic for students, educational programs, and society. The purpose of this study was to determine the ability of different admissions variables to predict successful completion of physical therapist education in a timely manner.”

- Burgess, Ruth M., Michael K. Ponton, and Mark D. Weber. 2004. Student Recruitment Strategies in Professional Physical Therapist Education Programs. *Journal of Physical Therapy Education* 18(2): 22–30.

“The purpose of this study was to identify recruitment practices utilized by professional (entry-level) physical therapist education programs.”

- Curbow Wilcox, Kim, Mark Weber, and Dona Lee Andrew. 2005. Factors Influencing Minority Students’ Choice of Physical Therapist Education Programs. *Journal of Physical Therapy Education* 19(2).

“The purpose of this study was to analyze factors influencing minority student choice of professional (entry-level) physical therapist education programs.”

- Foord-May, Lynn. February 2006. A Faculty’s Experience in Changing Instructional Methods in Professional Physical Therapist Education Program. *Physical Therapy* 86(2): 223–35.

“The purpose of this study was to describe a physical therapists program faculty’s experience in transitioning from traditional instruction to problem-based instructional methods.”

- Giles, Scott, Ellen Wetherbee, and Stephanie Johnson. 2003. Qualifications and Credentials of Clinical Instructors Supervising Physical Therapist Students. *Journal of Physical Therapy Education* 17(2).

“The purpose of this study was to describe the qualifications and credentials of CIs supervising physical therapist students.”

- Haskins, Awilda R., and Neva Kirk-Sanchez. January 2006. Recruitment and Retention of Students from Minority Groups. *Physical Therapy* 86(1): 19–29.

“The purpose of this study was to examine current practice in recruiting and retaining students from minority groups.”

- Hicks, Ramona, Paige Cook, Tracy Dulas, and Janelle Clem. 2004. Demographics of Physical Therapy Practice: Implications for Education. *Journal of Physical Therapy Education* 18(2).

“The purpose of this study was to determine demographic and diagnostic characteristics of physical therapy patients in the United States in order to more fully describe physical therapy practice.”

- MacKinnon, Joyce L., and R Dennis Leighton. 2002. Physical therapist student interest in full-time faculty positions. *Journal of Allied Health* 31(2): 70.

“This study focused on physical therapists for the purposes of: (1) determining student physical therapist interest in full-time faculty positions at some point in their professional careers, (2) identifying factors that might influence student interest in full-time faculty positions at some point in their careers, and (3) being able to suggest ways in which students might be encouraged to consider academic careers in the future.”

- Mohr, Thomas, Debbie Ingram, Sherrill Hayes, and Zuru Du. 2005. Educational Program Characteristics and Pass Rates on the National Physical Therapy Examination. *Journal of Physical Therapy Education* 19(1).

“The purpose of this study is to examine the effect of educational program characteristics on NPTE pass rates.”

- O’Loughlin, Karen, Vanina Dal Bello-Haas, and Mary Milidonis. 2005. The Professional Development and Lifelong Learning in Professional (Entry-Level) Physical Therapist Students. *Journal of Physical Therapy Education* 19(2).

“This paper describes one academic program’s systematic efforts to encourage professional development and lifelong learning as an integral part of the professional (entry-level) curriculum, and the evaluation results of these efforts.”

- Page, Catherine G., and Ian A. Ross. 2004. Instructional Strategies Utilized By Physical Therapist Clinical Instructors: An Exploratory Study. *Journal of Physical Therapy Education* 18(1).

“The purposes of this exploratory study were to examine which instructional strategies of the Cognitive Apprenticeship Mode (CAM) physical therapist CIs utilize while providing instruction to physical therapist students and to consider the effect of certain demographic variables on that utilization.”

- Pagliarulo, Michael A., and Ann Lynn. 2002. Needs Assessment of Faculty in Professional-Level Physical Therapist Education Programs: Implications for Development. *Journal of Physical Therapy Education* 16(2): 16–23.

“The purpose of this study was to determine the perceived job-related needs of faculty in professional-level physical therapist education programs, their workload, and preferences for faculty development activities.”

- Pagliarulo, Michael A., and Ann Lynn. 2004. Priorities and Benchmarks for New Faculty in Physical Therapist Education Programs: Perceptions of Programs Directors. *Journal of Allied Health* 33(4): 271–77.

“The purpose of this study was to establish development priorities, ideal workload and performance levels, and preferred faculty development activities for new faculty in professional-level physical therapist education programs.”

- Peterson, Cathryn A. 2003. Management, Faculty, and Accreditation Outcomes: A Survey of Physical Therapy Faculty and Program Directors. *Journal of Physical Therapy Education* 17(2).

“The purpose of this study was to identify which faculty variables—a more participative management style, faculty participation in accreditation, faculty support of the Commission on Accreditation in Physical Therapy Education (CAPTE) accreditation process, and faculty commitment to implementing the plans delineated in the accreditation documentation—were associated with accreditation outcome.”

- Peterson, Cathryn A., and Judith Haymore Sandholtz. 2005. New Faculty Development: Scholarship of Teaching and Learning Opportunities. *Journal of Physical Therapy Education* 19(3).

“The purpose of this article is to provide insight into the recently expanded concept of scholarship which CAPTE [Commission on Accreditation in Physical Therapy Education] has embraced and to present perspectives on scholarship of teaching within a framework that acknowledges the challenges faced by faculty.”

- Peterson, Cathryn A., and Darcy A. Umphred. 2005. A Structured Faculty Development Process for Scholarship in Young Faculty: A Case Report. *Journal of Physical Therapy Education* 19(3).

“This case report shares how one institution used an external accreditation requirement as a stimulus for program enhancement.”

- Silwinski, Martha Macht, Kathleen Schultze, Ruth Lyons Hansen, and Shauna Malta. 2004. Clinical Performance Expectations: A Preliminary Study Comparing Physical Therapists Students, Clinical Instructors, and Academic Faculty. *Journal of Physical Therapy* 18(1): 50–57.

“This study was designed to determine if academic physical therapist faculty (AF), clinical instructors (CIs), and PT students differed regarding expected CPI performance ratings at the conclusion of the first, full-time clinical education experience.”

- Van Duijn, Arie J., and Sharon Irish Bevins. 2005. Clinical Performances of Physical Therapist Students in Problem-Based, Mixed-Model, and Traditional Curricula. *Journal of Physical Therapy Education* 19(2): 15–21.

“The purpose of this study was to determine whether differences existed between the clinical performance of physical therapist students in PBL curricula, mixed-model PBL curricula, and traditional curricula, as measured by the Physical Therapy Clinical Performance Instrument (CPI).”

- Wolf-Burke, Melissa. 2005. Clinical Instructors’ Descriptions of Physical Therapist Student Professional Behaviors. *Journal of Physical Therapy Education* 19(1).

“The purposes of this study were to identify the behaviors that CIs expect, to describe appropriate and inappropriate behaviors, and compare these behaviors to those cited in the literature.”

WORKPLACE

- Blau, Rosemary, Sarah Bolus, Terrence Carolan, and Daniel Kramer. July 2002. The experience of providing physical therapy in a changing health care environment. *Physical Therapy* 82(7): 648–57.

“The purpose of this ... study was to describe the experience of staff physical therapists during a time of systemic change within a large urban academic medical center.”

- Lopopolo, Rosalie B. October 2002. The relationship of role-related variables to job satisfaction and commitment to the organization in a restructured hospital environment. *Physical Therapy* 82(10): 984–99.

“In this study, the relationship between changes in physical therapist role behaviors following hospital restructuring and two work-related outcomes—job satisfaction and commitment to the organization—was studied. The influence of stress and occupational commitment on these outcomes also was examined.”

- Marcoux, Beth, Amy Barlage, Rachel Davies, and Megan Heller. 2004. Professional Use of the Internet by Physical Therapists in Michigan. *Journal of Physical Therapy Education* 18(2).

“The purpose of this descriptive study was to evaluate Web sites and professional use of the Internet by physical therapist in Michigan.”

Physician Assistants

GENERAL

- American Academy of Physician Assistants (AAPA), Division of Data Services and Statistics. January 2004. *Trends in the physician assistant profession 1991–2003*. Alexandria, VA: AAPA. [Online, accessed 11/20/06.]

Available: <http://www.aapa.org/research/91-03trends-report.pdf>.

“This document accompanies and describes a set of charts depicting trends in the PA profession and provides some insight as to where the profession is likely headed.”

- American Academy of Physician Assistants (AAPA), Department of Government and Professional Affairs. February 2004. *Hiring a PA: The Benefits for Physicians and Practices*. Alexandria, VA.: AAPA, Office of Government and Professional Affairs. [Online, accessed 11/17/06.]

Available: <http://www.aapa.org/gandp/issuebrief/hiring.pdf>.

This article discusses the benefits for physicians and their practices of hiring physician assistants.

- Browne, Richard H. November 2000. The Sinister Side of PA Supply and Demand, Sounding Board. *Journal of the American Academy of Physician Assistants* 11: 85–86. [Online, accessed 11/20/06.]

Available: <http://www.jaapa.com/issues/j20001101/articles/soundingbdbrow.html>.

“This article discusses the effect of various aspects of supply and demand on jobs for PAs.”

- Cawley, James F. October 2002. The Profession in 2002 and Beyond. *Journal of the American Academy of Physician Assistants* 15(10): 7–15. [Online, accessed 11/20/06.]

Available: <http://www.jaapa.com/issues/j20021001/articles/cawley1002.html>.

“This article reviews the factors that have brought PAs to their present position and examines the trends that may shape the future.”

- Cawley, James F. August 2005. PA Supply and Demand. *Journal of the American Academy of Physician Assistants* 18(8): 11–12. [Online, accessed 11/20/06.]

Available: <http://jaapa.com/issues/j20050801/articles/guestedit0805.htm>.

This editorial discusses whether we will need more physician assistants in the health care workforce of the future.

- Dehn, Richard W., and James F. Cawley. November 2000. Looking Into Tomorrow. Health Workforce Issues Confronting Physician Assistants. *Journal of the American Academy of Physician Assistants* 13(11): 29. [Online, access 11/20/06.]

Available: <http://www.jaapa.com/issues/j20001101/articles/workforce.html>.

“In this article, [the authors] review and discuss: (1) workforce data on physicians, PAs, and nurse practitioners and (2) projections of the number of these clinicians who will be trained in the future. [They] then analyze: (1) data that describe the past 11 years of PA education and (2) data that address the experience of recent graduates of PA education programs who have sought employment.”

- Hegmann, Theresa. May 2006. The Shortage of Physicians and the Implication for PAs. *Journal of the American Academy of Physician Assistants* 19(5): 16–17. [Online, accessed 11/20/06.]

Available: <http://www.jaapa.com/issues/j20060501/pdfs/guestedit0506.pdf>

This editorial discusses the possible impending shortage of primary care physicians and the role of physician assistants and other nonphysician clinicians (NPCs) in addressing that shortage.

- Hooker, Roderick S., and Linda E. Berlin. 2002. Trends in the supply of physician assistants and nurse practitioners in the United States. *Health Affairs* 21(5): 174–81.

While the roles of physician assistants (PAs) and nurse practitioners (NPs) in providing comparable physician services are similar; they differ in that NPs work predominantly in primary care, while PAs are divided between primary and specialty care. This article discusses future implications of this difference.

- McCann, J. L., R. S. Phillips, E. H. O’Neil, G. R. Ruddy, et al. 2005, October 1. Physician Assistant and Nurse Practitioner Workforce Trends. *American Family Physician* 72(7): 1176. [Online, accessed 11/21/06.]

Available: <http://www.graham-center.org/x589.xml>.

This article discusses the supply of PAs and NPs and their contributions to primary care and interdisciplinary teams.

- Phillips, R. L., L. A. Green, G. E. Fryer, and S. M. Dovey. November 1, 2001. Uncoordinated growth of the primary care work force. Kansas City, MO: *American Family Physician* 64(9): 1498.

Available: <http://www.graham-center.org/x163.xml>.

This article discusses the need for family physicians, nurse practitioners and physician assistants to work together despite the fact that their clinical training is distinctly different.

- Strand, J. October 2002. Anticipating the Profession's Future. *Journal of the American Academy of Physician Assistants* 15(10): 51–54.

“This article considers the future of the physician assistant (PA) profession in light of trends in the US health care system. A bright job outlook is highlighted, and potential new professional roles are discussed.”

- U.S. Department Bureau of Labor Statistics, Office of Occupational Statistics and Employment Projections. 2006–07. Physician Assistants. Washington, DC: *Occupational Outlook Handbook*. [Online, accessed 11/21/06.]

Available: <http://www.bls.gov/oco/pdf/ocos081.pdf>.

“Significant points:

- Physician assistant programs usually last at least 2 years; admission requirements vary by program, but many require at least 2 years of college and some health care experience.
- All states require physician assistants to complete an accredited education program and to pass a national exam in order to obtain a license.
- Physician assistants rank among the fastest growing occupations, as physicians and health care institutions increasingly utilize physician assistants in order to contain costs.
- Job opportunities should be good, particularly in rural and inner city clinics.”

EDUCATION

- Opacic, Deborah A. 2003. The relationship between self-efficacy and student physician assistant clinical performance. *Journal of Allied Health* 32(3): 158–66.

“The purpose of this study was to investigate the predictive relationship between student self-efficacy beliefs, achievement expectations, perceived outcome values, and subsequent clinical performance.”

- Whitman, Neal, and William Wilson. 2002. Evaluation of a Model Clinical Therapeutics Curriculum for Physician Assistant and Nurse Practitioner Education in the United States. *Pharmacy Education* 1(3): 141–44.

This article addresses the findings of a consortium formed to construct a clinical therapeutic model curriculum in response to the “broadly increased prescription privileges of physician assistants and nurse practitioners in the United States, and the need for training programs to effectively teach and document the competencies of their students in clinical therapeutics.”

Radiological Technologists

GENERAL

- American Society of Radiologic Technologist (ASRT). May 2005. *Career Pathways Taken by Radiologic Technologists*. Albuquerque, NM: ASRT. [Online, accessed 11/21/06.]

Available: <http://www.asrt.org/media/pdf/research/careerpathways.pdf>.

Executive summary available:

<http://www.asrt.org/media/pdf/research/careerpathways.pdf>.

“In the fall of 2003 health Careers Futures (HCF), a supporting organization of the Jewish Healthcare Foundation (JHF, Pittsburgh, PA) embarked on a focused research initiative to obtain a better understanding of how and why health care professionals enter their chosen careers. The data collected through this effort were intended to drive targeted interventions to increase interest, and ultimately new entrants, in health careers. The initial focus of this research effort was on high-demand therapist and technician/technologist occupations that typically require two years of trainings.”

- American Society of Radiologic Technologist (ASRT). Fall 2005. *Survey of the Future of Radiologic Technology*. Albuquerque, NM: ASRT. [Online, accessed 11/21/06.]

Available: <http://www.asrt.org/media/pdf/research/FutureScan060515.pdf>.

Executive summary available:

<http://www.asrt.org/media/pdf/research/FutureScan060515.pdf>.

“Many respondents accepted the invitation to describe their personal experiences with the various trends: 44% reported on experiences with trends in R.T. education; 24%, workforce trends; 17%, standards trends; and 12%, personnel supply & demand trends.”

- American Society of Radiologic Technologists (ASRT). July 2004. *Radiologic Technologist Wage and Salary Survey 2004*. Albuquerque, NM: ASRT. [Online, accessed 11/21/06.]

Available: http://www.asrt.org/media/pdf/WSS2004_FullRept.pdf.

Executive summary available:

http://www.asrt.org/media/pdf/WSS2004_ExecSumm.pdf.

“The objective of this tracking study was to measure income, benefits, satisfaction and other demographics of radiologic technologists at the national level. The primary purpose of this study was to monitor changes in compensation for the radiologic technologist over time.”

- American Society of Radiologic Technologist (ASRT). November 2001. *Comparative Analysis of the 1997 and 2001 Radiologic Technologist Wage and Salary Surveys*. Albuquerque, N.: ASRT. [Online, accessed 11/21/06.]

Available: http://www.asrt.org/media/pdf/comparative_analysis.pdf.

Executive summary available:

http://www.asrt.org/media/pdf/comparative_analysis_exsummary.pdf.

“The primary objectives of the 2001 ASRT Wage and Salary Survey were to provide the most accurate possible demographic profile of the population of radiologic technicians [sic.] and to track changes in that profile from 1997 to 2001 in the:

- Employment of radiologic technicians
- Wages and salary of radiologic technicians
- Demographics of radiologic technicians”

- American Society of Radiologic Technologist (ASRT). (n.d.) *The Radiologic Technology Work Force: Demographic Information and Work Force Distribution Data*. Albuquerque, NM: ASRT. [Online, accessed 11/21/06.]

Available: http://www.asrt.org/media/pdf/work_force1.pdf.

This article is “a demographic sketch of the R.T. profession provided by the American Registry of Radiologic Technologists and [an analysis of] a salary survey conducted in 2001 by the American Society of Radiologic Technologists.”

- American Society of Radiologic Technologist (ASRT). (n.d.) *The Personnel Crunch: A Crisis in the Radiologic Technology Work Force*. Albuquerque, NM: ASRT. [Online, accessed 11/21/06.]

Available: http://www.asrt.org/media/pdf/shortage_overview.pdf

“Part I of this document takes a look at each of the four factors contributing to the personnel shortage. It includes national supply and demand data and survey research. Part II of the document explores short- and long-term solutions to the work force crisis.”

- American Society of Radiologic Technologists (ASRT). July 2004. *Radiologic Technologist Wage and Salary Survey 2004*. Albuquerque, NM: ASRT. [Online, accessed 11/21/06.]

Available:

<http://www.asrt.org/content/RTs/SurveyResults/WageandSalarySurvey/WageSalSurvey2004.aspx>. Click on PDF of full report.

“The objective of this tracking study was to measure income, benefits, satisfaction and other demographics of radiologic technicians at the national level. The primary purpose

of this study was to monitor changes in compensation for the radiologic technologist over time.”

Executive summary available:

http://www.asrt.org/media/pdf/WSS2004_ExecSumm.pdf.

- U.S. Department Bureau of Labor Statistics, Office of Occupational Statistics and Employment Projections. 2006–07. Radiologic Technologists and Technicians. Washington, DC: *Occupational Outlook Handbook*. [Online, accessed 11/21/06/]

Available: <http://www.bls.gov/oco/pdf/ocos105.pdf>.

“Significant points:

- Job opportunities are expected to be favorable; some employers report difficulty hiring sufficient numbers of radiologic technologists and technicians.
- Formal training programs in radiography range in length from 1 to 4 years and lead to a certificate, an associate degree, or a bachelor’s degree.
- Although hospitals will remain the primary employer, a greater number of new jobs will be found in physicians’ offices and diagnostic imaging centers.”

EDUCATION

- American Society of Radiologic Technologists (ASRT). August 2006. Support for R.T. CE Highly Variable and Generally Low, ASRT Survey Shows. Albuquerque, NM: ASRT. [Online, accessed 11/21/06.]

Available:

<http://www.asrt.org/content/RTs/SurveyResults/OtherSurveys/CEPoliciesForRTs.aspx>.

This article outlines the results of a survey of radiology managers, conducted by the American Society of Radiologic Technologist, regarding continuing educational needs of radiologic technologists.

- American Society of Radiologic Technologists (ASRT). 2006. Policies Toward Continuing Education for Radiologic Technologists. Albuquerque, NM: ASRT. [Online, accessed 11/22/06.]

Available: <http://www.asrt.org/media/pdf/research/CEPoliciesForRTs.swf>.

Executive summary available:

<http://www.asrt.org/media/pdf/research/CEPoliciesForRTs.swf>.

This report details three themes: great variability in “policies toward and levels of support for continuing education for medical imaging technologists and radiation therapists,” a

low absolute level of support for RT continuing education, and differing levels of support in private physician practices and free-standing clinics, compared to other facilities.

- American Society of Radiologic Technologists (ASRT). (n.d.) *Faculty Development Needs Assessment Summary of Data: Part 1 Demographics*. Albuquerque, NM: ASRT. [Online, accessed 11/21/06.]

Available: <http://www.asrt.org/media/worddocs/governance/FNASummary1.doc>.

This is the first series of survey results of a three part report, conducted by the ASRT Education Department of educators in the radiologic sciences, in an “attempt to identify strategies for improving ASRT resources and services to educators and students. This section focuses on demographics of the educator population: gender, age, marital status, ethnicity, years of experience and projections of years until retirement.”

- American Society of Radiologic Technologists (ASRT). (n.d.) *Faculty Development Needs Assessment Summary of Data: Part 2 Education and Program Details*. Albuquerque, NM: ASRT. [Online, accessed 11/21/06.]

Available: <http://www.asrt.org/media/worddocs/governance/FNASummary2.doc>.

“This is the second of three summaries of survey results. This report addresses recognition of differences among program types, numbers of full-time and part-time/adjunct faculty, trends associated with program applicants, salaries, academic achievement and weighting of part-time/adjunct role in annual evaluations.”

- American Society of Radiologic Technologists (ASRT). (n.d.) *Faculty Development Needs Assessment Summary of Data: Part 3 Faculty Development Needs*. Albuquerque, NM: ASRT. [Online, accessed 11/21/06.]

Available: <http://www.asrt.org/media/worddocs/governance/FNASummary3.doc>.

“This is the third summary of survey results conducted by the ASRT Education Department. This report addresses personal development activities, as well as needs, wants and desires expressed by educators to enhance student learning experiences and personal career development.

- Joint Review Committee on Education in Radiologic Technology (JRCERT). April 2005. *2004 Annual Report*. Chicago, IL: JRCERT. [Online, accessed 11/21/06.]

Available: http://www.jrcert.org/pdfs/annual_04.pdf.

This report provides, among other information, information on the number of radiologic technology programs by state and by degree/certificate granted, as well as trends in radiography and radiation therapy education programs.

- Legg, Jeffrey S., D. K. Pollard, and T. L. Fauber. March/April 2005. Professional profile of radiologic technology educators. *Radiologic Technologist* 76(4): 269–76.

“Full-time radiologic technology educators were surveyed to determine their demographic characteristics and professional profile.”

- Rutz, Anne. 2004. Predicting RT Students Clinical Performance. *Radiologic Science & Education* 9(1). [Online, accessed 11/21/06.]

Available: <http://www.aers.org/Spring%2004.pdf>.

This article discusses a study performed to determine admission criteria for students in radiologic technology programs.

- Strickland, Gloria Deal. 2005. Program administrators' perceptions of the American Society of Radiologic Technologists' sponsored baccalaureate curriculum. *Dissertation*, Georgia Southern University.

“The primary purpose of this study was to conduct a nationwide study of Joint Review Committee on Education in Radiologic Technology (JRCERT) accredited baccalaureate radiography and radiation therapy degree programs to determine the level at which the American Society of Radiologic Technologists (ASRT) proposed baccalaureate curriculum was currently employed and to ascertain program administrators' perceptions of the extent to which each content area should be emphasized in the program of study.”

- Swafford, Larry, and Jeffrey S. Legg. 2001. Clinical Competencies in Accredited Radiation Therapy Programs. *Association of Educators in Radiological Sciences, Inc* 6(1): 4–8. [Online, accessed 11/21/06.]

Available: http://www.aers.org/Vol6_1.pdf.

“This study determines the status of clinical competency examinations in radiation therapy programs accredited by the Joint Review Committee on Education in Radiologic Technology, including the types of required competencies, level of student involvement and the evaluating personnel.”

WORKPLACE

- American Society of Radiologic Technologists (ASRT). February 2004. *ASRT's Environmental Scan of the Radiation Therapist's Workplace*. Albuquerque, NM: ASRT. [Online, accessed 11/21/06.]

Available: <http://www.asrt.org/Media/Pdf/RTTScanFinal.pdf>.

Executive summary available: <http://www.asrt.org/Media/Pdf/RTTScanFinal.pdf>.

This report collects information on radiologic therapists' workplace attributes and their workplace preferences; "the relationship (if any) between type of radiation therapy education program and skill levels of graduates; the impact of technological developments on... the quality of patient care; and demographic information.

- American Society of Radiologic Technologists (ASRT). February 2002. *ASRT's Environmental Scan of the Radiographer's Workplace: Technologist vs. Administrator Perspectives, 2001*. Albuquerque, NM: ASRT. [Online, accessed 11/21/06.]

Available: http://www.asrt.org/media/pdf/environmental_scan.pdf.

Executive summary available: http://www.asrt.org/media/pdf/es_summary.pdf.

"The objectives of the assessment were to:

- Gain a broad understanding of the workplace as perceived by radiologic technologists compared with administrators' perceptions of the workplace.
- Identify factors and attributes that drive job and career satisfaction.
- Gain an understanding of the general working conditions of radiologic technologists/
- Explore the details behind what is considered 'best' and 'worst' of class.
- Define the various workplace segments as perceived by technologists and relate those workplace segments to the segments into which technologists fall."

- American Society of Radiologic Technologists (ASRT). June 2002. *ASRT's Environmental Scan of the Radiographer's Workplace: Phase 2*. Albuquerque, NM: ASRT. [Online, accessed 11/21/06.]

Available: http://www.asrt.org/media/pdf/environmental_scan2.pdf.

Executive summary available: http://www.asrt.org/media/pdf/environmental_scan2.pdf.

"Objectives of Phase 2 were to:

- Obtain a better understanding of the factors and attributes driving satisfaction and dissatisfaction that were identified in Phase 1.
- Identify and describe potential drivers of career, job and workplace satisfaction and dissatisfaction that might not have been identified in Phase 1."

- American Society of Radiologic Technologists (ASRT). June 2003. *Environmental Scan of the Radiographer's Workplace: Phase 3, Subgroups of Radiographers and Workplace Types*. Albuquerque, NM: ASRT. [Online, accessed 11/21/06.]

Available: http://www.asrt.org/media/pdf/es3_EnvScanPhase03.pdf.

Executive summary available:

http://www.asrt.org/media/pdf/es3_EnvScanPhase03.pdf.

“The third phase of the environmental scan combined information gathered in the first two phases and attempted to:

- Describe staff radiographers and their workplace environments using a larger sample than previous phases and a smaller, less redundant set of 27 workplace attributes selected from among first and second phase results...
- Define the various segments (types) into which a range of workplaces fell as perceived by technologists and the various clusters (subgroups) into which technologists fell
- Determine the relationship between technologist subgroups and workplace types”

- American Society of Radiologic Technologists (ASRT). 2006. *The Radiology Department/Facility Staffing Survey 2006*. Albuquerque, NM: ASRT. [Online, accessed 11/21/06.]

Available: <http://www.asrt.org/media/pdf/research/staffingsurvey2006.swf>.

Executive summary available:

http://www.asrt.org/media/pdf/researchstaffingsurvey2006_Intro.swf.

This survey “was intended to be the second in a biennial series of radiology facility staffing surveys and to thereby provide information regarding whether the downward trend in vacancy rates and the consequences of a shortage of radiologic technologists have continued.”

- Lockett, D. R. September/October 2000. Recruitment and retention topics for a changing environment in medical imaging. *Radiology Management* 22(5): 32–37.

This article discusses the current shortage of radiologic technologists and tight labor market, which require administrators to use all avenues to improve their departments, retain valuable employees, and offer the most attractive salary and benefit packages to qualified applicants.

- Olivi, P. November/December 2002. The staffing shortage: AHRA responds. *Radiology Management* 24(6): 36–41.

“The AHRA Board of Directors formed a Long-Term Staffing Task Force to study the question, ‘Should AHRA become involved in the resolution(s) of the current staffing crisis, and if so how?’”

- Ryan, Mary Jane. May/June 2005. The Predictable Swarm: Staying on Top of Radiology's Cyclical Staffing "Bug." *Radiology Management*: 14–32. [Online, accessed 11/21/06.]

Available: <http://www.ahra.com/ConfEd/Education/2005MayJune/2005MayJune.pdf>.

Executive summary available:

<http://www.ahra.com/ConfEd/Education/2005MayJune/2005MayJune.pdf>.

This article describes a “grow your own” strategy” for workforce development that “offers financial incentives and other means of support to attract new medical imaging students and encourage them to matriculate into local colleges and eventually... employment as radiologic technologists.”

Respiratory Therapists

GENERAL

- Mathews, Paul, Lois Drumheller, and John Carlow. March 2006. Respiratory care manpower issues. Model and Workforce. *Critical Care Medicine. Interface of Public Policy and Critical Care Medicine* 34(3). [Online, accessed 11/21/06.]

Abstract available:

<http://www.ccmjournal.com/pt/re/ccm/abstract.00003246-200603001-00006.htm;jsessionid=FpQFqwy3725PL0VvzH4RPlfhcymQYsHJ8GhKyXp2jwhL45KRxl dv!424277612!-949856144!8091!-1>

This article “explores the respiratory therapy manpower needs and activities designed to fulfill those needs in critical care practice.”

- Pierson, David J. July 2001. The future of respiratory care. *Respiratory Care* 46(7): 705–18. [Online, accessed 11/21/06.]

Abstract available: <http://www.rcjournal.com/contents/07.01/07.01.0705.asp>.

“The term respiratory care has more than one meaning, referring both to a subject area within clinical medicine and to a distinct health care profession. In the light of several fundamental transformations of health care during the 20th century, this article reviews the history of respiratory care in both of these contexts and offers 10 predictions for the future.”

- U.S. Department Bureau of Labor Statistics, Office of Occupational Statistics and Employment Projections. 2006–07. Respiratory Therapist. Washington, DC: *Occupational Outlook Handbook*. [Online, accessed 11/21/06.]

Available: <http://www.bls.gov/oco/pdf/ocos084.pdf>.

“Significant points:

- Job opportunities will be very good, especially for therapists with cardiopulmonary care skills or experience working with infants.
- All States (except Alaska and Hawaii), the District of Columbia, and Puerto Rico require respiratory therapists to obtain a license.
- Hospitals will continue to employ the vast majority of respiratory therapists, but a growing number of therapists will work in other settings.”

EDUCATION

- Arzu, Ari, Lynda Thomas Goodfellow, and Joseph L. Rau. 2003. Quality of Instruction and Teaching Effectiveness in Clinical Respiratory Care Education. *Respiratory Care Education Annual* 12. [Online, accessed 11/21/06.]

Available: <http://www.aarc.org/resources/rcea/rcea03.pdf>.

“Procedures for measuring teaching effectiveness and quality of clinical instruction vary among respiratory therapy schools. The purpose of this study was to investigate determinants of teaching methods on quality of instruction in clinical respiratory therapy education.”

- Cullen, D. L. September 2005. Clinical Education and Clinical Evaluation of Respiratory Therapy Students. *Respiratory Care Clinics of North America* 11(3): 425–47.

This article examines the clinical education received by respiratory therapy students and determines what skills promotes success, based on evaluation received by clinical instructors

- Gardner, D. D., and D. L. Vines. September 2005. The Next Generation of Respiratory Therapist: Students Recruitment and Selection. *Respiratory Care Clinics of North America* 11(3): 355–69.

This article discusses the need for “the faculty of respiratory care education programs to recruit and select candidates who will complete the educational program and develop the technical and critical-thinking skills needed to pass the advanced level credentialing examinations and succeed in the respiratory care profession.”

- Johnson, Patrick L., Jr. Spring 2001. The Extent to Which Factors Relevant to Program Function Influence Effectiveness of Respiratory Care Education. *Respiratory Care Education Annual* 10: 15–32. [Online, accessed 11/21/06.]

Available: <http://www.aarc.org/resources/rcea/rcea01.pdf>.

“This study was designed to examine whether a variance in student and faculty credentials and fiscal expenditures were associated with program performance on the 1997 Certificate for Respiratory Therapy Technician Examination (CRTTE).”

- LeGrand, Terry S., and David C. Shelledy. Spring 2002. Factors Associated with Respiratory Care as a Career Choice. *Respiratory Care Education Annual* 11: 1–10. [Online, accessed 11/21/06.]

Available: <http://www.aarc.org/resources/rcea/rcea02.pdf>.

“The purpose of this study was to determine factors associated with the choice of respiratory care as a career and important factors students consider when choosing a school or program using career choice survey instruments developed at our institution.”

- Shelledy, David C. Fall 2003. Promoting Advance Levels of Education for Respiratory Therapist. *Respiratory Care Education Annual* 12. Editorial. [Online, accessed 11/21/06.]

Available: <http://www.aarc.org/resources/rcea/rcea03.pdf>

This editorial suggests a collaborative approach to advance both undergraduate and graduate degree respiratory care programs.

- Shelledy, David C., and C. P. Wiezalis. September 2005. Education and Credentialing in Respiratory Care: Where Are We and Where Should Be Headed? *Respiratory Care Clinics of North America* 11(3): 517–30.

This article illustrates the continued effort to develop the profession by “advancing the education and credentialing needed [so that respiratory specialists can] function as ‘physician extenders.’”

- Shelledy, David C., and Terry S. LeGrand. Spring 2002. Student Recruitment: Marketing Respiratory Care Educational Programs. *Respiratory Care Education Annual* 11: 11–21. [Online, accessed 11/21/06.]

Available: <http://www.aarc.org/resources/rcea/rcea02.pdf>.

Respiratory care educational program directors were surveyed to assess the numbers of applicants, current enrollment, numbers of students graduating, job placement, and recruitment techniques.

- Tissue, Mike, Joseph L. Rau, Lynda Thomas Goodfellow and David E. Martin. Spring 2000. Survey and Analysis of Faculty Salaries in Respiratory Care Programs in the United States. *Respiratory Care Education Annual* 9. [Online, assessed 11/21/06.]

Available: <http://www.aarc.org/resources/rcea/rcea00.pdf>.

This survey addresses faculty salaries in respiratory therapy (RT) programs in the United States, and answers the question: “What is the current status of salary levels for faculty in RT programs in the United States?”

WORKPLACE

- Mishoe, Shelley. May 2003. Critical Thinking in Respiratory Care Practice: A Qualitative Research Study. *Respiratory Care* 48(5): 500–16. [Online, accessed 11/21/06.]

Available: <http://www.rcjournal.com/contents/05.03/05.03.0500.pdf>.

The purpose of this study is to, “identify and describe the critical thinking skills and traits of respiratory therapist, using a qualitative, descriptive research methodology.”

- Stroller, James K., Douglas K. Orens, and Lucy Kester. March 2001. The impact of turnover among respiratory care practitioners in a health care system: frequency and associated costs. *Respiratory Care* 46(3): 238–42. [Online, accessed 11/21/06.]

Abstract available: <http://www.rcjournal.com/contents/03.01/03.01.0238.asp>.

The purpose of this study is to, “determine the rate of RT turnover and the costs related to training new staff members.”

- Walker, David H. May 2004. Staff training and computers in respiratory care. *Respiratory Care* 49(5): 489–96.

This article discusses the role of computer-based training in continuing education for RTs and how that training “can help meet education challenges, promote safe and effective patient care, improve patient outcomes, and improve employee satisfaction, which may improve RT recruitment and retention, while decreasing the cost of staff training.”

Bureau of Labor Statistics Occupational Outlook Profile

- U.S. Department Bureau of Labor Statistics, Office of Occupational Statistics and Employment Projections. 2006–07. Nursing, Psychiatric, and Home Health Aides. Washington, DC: *Occupational Outlook Handbook*. [Online, accessed 11/21/06/]

Available: <http://www.bls.gov/oco/pdf/ocos165.pdf>.

“Significant points:

- Home health aide is projected to be the fastest growing occupation through 2014.
- Numerous job openings and excellent job opportunities are expected.
- Most jobs are in nursing and residential care facilities, hospitals, and home health care services.

- U.S. Department Bureau of Labor Statistics, Office of Occupational Statistics and Employment Projections. 2006–07. Medical and Health Services Managers. Washington, DC: *Occupational Outlook Handbook*. [Online, accessed 11/21/06/]

Available: <http://www.bls.gov/oco/pdf/ocos014.pdf>.

“Significant points:

- Rapid employment growth is projected; job opportunities will be especially good in offices of health practitioners, general medical and surgical hospitals, home health care services, and outpatient care centers.
- Applicants with work experience in health care and strong business and management skills likely will have the best opportunities.
- Earnings are high, but long work hours are common.
- A master’s degree is the standard credential for most positions, although a bachelor’s degree is adequate for some entry-level positions in smaller facilities and in health information management.”

- U.S. Department Bureau of Labor Statistics, Office of Occupational Statistics and Employment Projections. 2006–07. Medical Records and Health Information Technicians. Washington, DC: *Occupational Outlook Handbook*. [Online, accessed 11/21/06/]

Available: <http://www.bls.gov/oco/pdf/ocos103.pdf>.

“Significant points:

- Employment is expected to grow much faster than average.
- Job prospects should be very good; technicians with a strong background in medical coding will be in particularly high demand.

- Entrants usually have an associate degree; courses include anatomy, physiology, medical terminology, statistics, and computer science.”
- This is one of the few health occupations in which there is little or no direct contact with patients.
- Modest entry requirements, low pay, high physical and emotional demands, and lack of advancement opportunities characterize this occupation.”