

Initial Scan: Connecticut Healthcare Workforce Data Brief Report

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This report responds to McKinsey & Company's request for the Center for Public Health and Health Policy to collect and synthesize Connecticut data on healthcare workforce supply and demand by geography, including:

- 1) Current supply of each critical role by county (e.g., number of practicing or if practicing not available, number of licensed professionals);
- 2) Current demand for each critical role by county (e.g., number of practicing plus open positions by role);
- 3) Projected demand (5 or 10 years out) for each critical role by county in current system (e.g., projected need for each critical role).

Critical roles are defined as: primary care physicians (general, family, internal medicine, OBGYN, and pediatrics), primary care physician (PCP) extenders (nurse practitioner, physician assistant, nurses) and behavioral health practitioners (psychiatrist, psychologist, mental health counselor, and drug and alcohol recovery counselor).

The Center for Public Health and Health Policy (CPHHP) completed this review under a tight time schedule, allowing for less than a week to conduct the data review. The data presented should be considered as a start to further study especially given the poor quality of available data. Potential data sources were identified through the HRSA "*Compendium of Federal Data Sources to Support Health Workforce Analysis*" and the CPHHP's previous review of approximately thirty Connecticut healthcare workforce-related reports, studies and surveys. The data synthesis primarily relies upon the Area Resource File and labor data from the US Bureau of Labor Statistics and the CT Department of Labor (Table 1). An added caution is that the method of categorizing health professions also varies across data sources thus complicating side-by-side comparisons of data (For details, refer to Appendix 1).

Table 1: Key Data Sources for Connecticut Healthcare Workforce Assessment

HRSA Area Resource File (ARF, 2011-2012) captures data on major health professions from over 50 sources. Using ARF, CPHHP accessed data from the following:

- **American Medical Association (AMA) Masterfile** (2010) for physicians and psychiatrists;
- **American Academy of Physician Assistants** (2010) for physician assistants;
- **Centers for Medicare and Medicaid** (1/10/2011) **National Provider Identification File** for nurse practitioners and advanced practical registered nurses;
- **US Bureau of Census, Census 2000 Special EEO Tabulation File 1**, for registered nurses (RN, BSN, ASN, MSN) and licensed nurses (LPN, LVN); and
- **National Center for the Analysis of Healthcare Data** via Virginia College of Osteopathic Medicine (2009) for psychologists.

U.S. Bureau of Labor Statistics Occupational Employment Survey (OES). The OES survey is used to generate the State Occupational Employment and Wage Estimates. Data is collected from employers

located in metropolitan and nonmetropolitan areas of the state.

Connecticut Department of Labor Occupation Projections 2010-2020 and Training and Education Planning System (TEPS). This data is used to describe the current and projected demand for the critical healthcare roles. The TEPS includes Connecticut data from the State Department of Labor, Office of Higher Education, and State Department of Education on program completion.

CURRENT WORKFORCE SUPPLY

Data from state licensing, labor surveys, and professional associations are commonly referenced when examining the number of practitioners in the health care workforce. The quality of each of these data sources for healthcare workforce estimates has been questioned. Table 2 illustrates variation across the estimated number of primary care physicians (PCP) in Connecticut through Department of Public Health licensing data, the AMA Masterfile and Bureau of Labor Statistics Occupational Employment Survey (OES) data. Licensing data identifies nearly 4,600 more PCPs than the labor data. The AMA Masterfile and BLS estimates are closer but still differ by 1,400 PCPs.

Licensing (DPH, 2008)	AMA Masterfile (ARF, 2010)	BLS OES (2010)
7014	3838	2430

The AMA Masterfile has been shown to over identify the non-federal, office-based generalist physician workforce. Hing & Burt (2007) found that that approximately 34% of the physicians in the 2003 National Ambulatory Medical Care Survey (NAMCS) sample, which used the AMA Masterfile as a sampling frame, were not actually non-federal, office-based generalist physicians. About twenty percent of them were misclassified, 9.5 percent of them had retired and 3.9 percent of them were otherwise ineligible for inclusion in this category.¹ The CPHHP applied the 34% “out-of-scope” adjustment from the NAMCS report to the AMA Masterfile data for CT PCPs. Using this adjustment, the number of PCPs (2,533) still exceeds but approaches the BLS data. Although the two data sources group physicians differently, the similarity offers some credence to using an adjustment with the Masterfile data. Using the NAMCS adjusted AMA Masterfile data also generates Connecticut estimates that are comparable to recent national level estimates of PCPs per 100,000 residents using 2009-2010 NAMCS data (Figure 1).

¹ Hing, E., and Burt, C., U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics (2007). Vital and Health Statistics, Series 13, no. 164, p. 2.

Figure 1: CT Primary Care Physicians per 100,000 CT residents

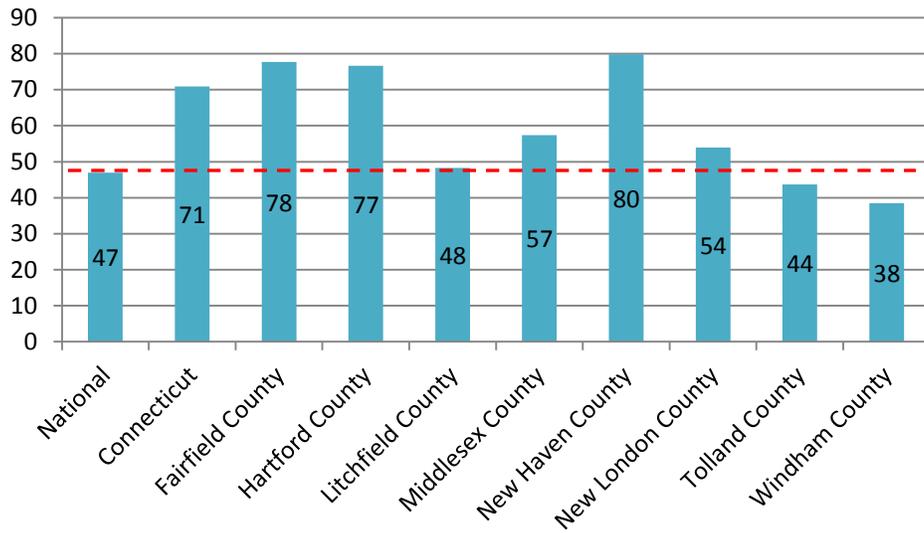


Figure 2: Ratio of CT Residents per Primary Care Physician

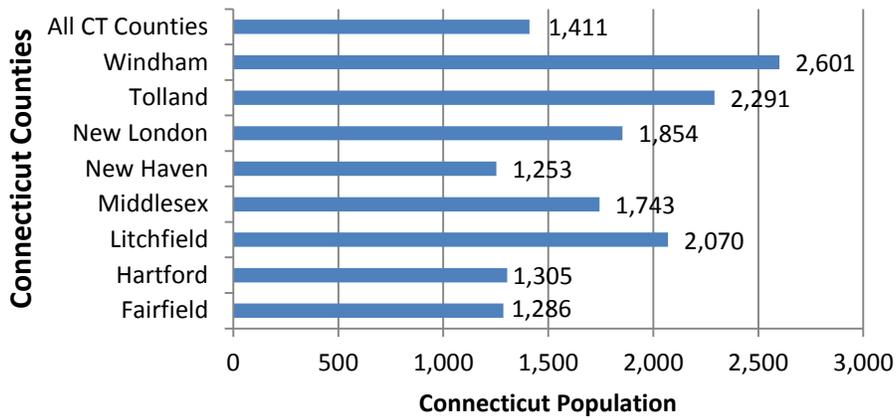


TABLE 3: CRITICAL ROLE PROVIDERS USING THE AREA RESOURCE FILE (2011-2012) and NAMCS adjustment for Physicians^a										
PHYSICIANS (2010)	Statewide	Fairfield County	Hartford County	Litchfield County	Middlesex County	New Haven County	New London County	Tolland County	Windham County	
Primary Care Physicians^b	2533	713	685	92	95	688	148	67	46	
Family Medicine and General Practice	321	68	85	18	29	53	30	23	15	
Internal Medicine & subspecialties	1311	380	339	44	39	397	75	21	18	
Obstetrics and Gynecology	354	103	108	11	13	90	18	6	5	
Pediatrics & subspecialties	546	162	154	18	15	149	25	17	7	
PCP EXTENDERS										
Physician Assistant (2010) ^c	1570	369	433	56	67	515	74	33	23	
Nurse Practitioner (2010) ^d	1810	366	620	50	75	487	132	46	34	
Registered Nurses (2000) ^e	33335	7365	8160	2130	1960	8715	2580	1490	940	
Licensed Nurses (2000) ^e	6,380	1145	1610	415	310	1765	580	310	245	
Advanced Practical Registered Nurse (2011) ^d	2571	509	865	68	98	767	167	54	43	
BEHAVIORAL HEALTH PRACTITIONERS										
Psychiatrist (2010)	836	208	204	27	48	306	32	6	5	
Psychologist (2009) ^f	1598	410	426	51	110	447	60	67	27	
^a Physicians: AMA Masterfile (2010) non-federal, patient care, office-based physician data accessed via Area Resource File decree 34% based on NAMCS study.										
^b Primary Care Physicians refers to the sum of physicians identifying as Family Medicine, General Practice, Internal Medicine, Obstetrics/Gynecology, Pediatrics, and the related subspecialties.										
^c Physician Assistants: American Academy of Physician Assistants (2010)										
^d Nurse Practitioner and APRNs: Centers for Medicare and Medicaid 1/10/2011 National Provider Identification File										
^e Registered Nurses and LPN/LVNs: Census 2000 Special EEO Tabulation File 1, US Bureau of Census										
^f Psychologists: National Center for the Analysis of Healthcare Data, Edward via Virginia College of Osteopathic Medicine (2009)										

TABLE 4: STATE AND MSA/NON-MSA-LEVEL ESTIMATES OF SELECT PRIMARY CARE EXTENDERS AND BEHAVIORAL HEALTH PRACTITIONERS IN CONNECTICUT (Source, Bureau of Labor Statistics, Occupational Employment Survey, May 2012)

PCP Extenders	State Level	Bridgeport-Stamford		Danbury	Eastern CT		Hartford-W. Hartford-E. Hartford	New Haven	Northwest CT	Norwich-New London	Waterbury	
Physician Assistant	1490	320		110	--		520	350	--		80	70
Nurse Practitioner	2090	650	--	--	--		630	570	--		70	70
Registered Nurses ^a	34,820	7470		1430		380	12820	7300		740	2330	1790
Licensed Nurses (LPN/LVN) ^b	8320	1790		340		200	2930	1240		230	730	520
Medical Assistants	6600	1640		430		120	1930	1160		190	560	400
Behavioral Health												
Psychiatrist	780	140	--	--		xxx		90	--		30	40
Psychologist ^c	1970	360		80		40	680	340		30	110	260
Mental Health Counselor	1620	360		160	xxx		330	260		60	170	190
Mental Health and Substance Abuse Social Workers	2360	280	xxx			30	1090	560		50	170	80
Substance Abuse and Behavioral Disorder Counselor	1700	200		30	--		790	240		110	80	190
Healthcare Social Workers	2370	420		60	--		950	510		40	150	120
^a Registered Nurses includes RN, ASN, BSN, MSN												
^b Licensed Practical and Licensed Vocational Nurse												
^c Psychologists include occupation groups: "child, school and behavioral psychologists" and "psychologists, all other."												
xxx- Estimates not released												

CURRENT AND PROJECTED DEMAND

The findings presented for current and projected demand are limited to state-level data. County-level data was not readily available. Please note that the Department of Labor Occupation Projections 2010-2020 base estimate for 2010 differs from 2010 BLS estimates.

Table 5: Estimated Current and Projected Demand for Critical Primary Care Provider Roles in Connecticut

Critical Roles	2010, <i>estimated</i>	2020, <i>projected</i>	Growth, % <i>total</i>	Annual Openings, <i>projected</i>	Annual Openings, <i>projected growth</i>	Current 2013 Demand, <i>estimated*</i>
Primary Care						
Physicians	3158	3932	24.5	140	78	3578
Family and General Practitioners	1081	1335	23.5	46	25	1219
Internists, general	1207	1505	24.7	54	30	1369
Obstetrics/Gynecology	452	568	25.7	21	12	515
Pediatrics, general	418	524	25.4	19	11	475
Physician Extenders						
Physician Assistant	1528	1867	22.2	63	34	1717
Registered Nurses ^a	37,404	44,550	19.1	1,392	715	41580
Licensed Nurses (LPN/LVN) ^b	8806	9931	12.8	347	112	9847
Medical Assistants	6642	8267	24.5	264	162	7434
Behavioral Health						
Psychiatrist	658	761	15.6	23	10	727
Psychologist ^c	3182	3672	15.4	149	49	3629
Mental Health Counselor	2514	3158	25.6	118	64	2868
Mental Health and Substance Abuse Social Workers	2925	3591	22.8	136	67	3333
Substance Abuse and Behavior Disorder Counselor	2389	2813	17.8	93	42	2668
Healthcare Social Workers	2526	3095	22.5	117	57	2877
Sources: CT Department of Labor, Training and Education Planning System (TEPS). http://www.1.ctdol.state.ct.us/TEPS/ ; . CT Department of Labor, Occupational Projections, http://www.1.ctdol.state.ct.us/lmi/projections.asp						
*The 2013 estimate assumes the 2010 estimate for each critical role and increases it by annual openings projected total for three years						
^a Registered Nurses includes RN, ASN, BSN, MSN						
^b Licensed Practical and Licensed Vocational Nurse						
^c Psychologists include occupation groups: "child, school and behavioral psychologists" and "psychologists, all other."						

Table 6: Healthcare Workforce Job Openings and Growth Status and Job Postings

	Top Occupation Designation (CT Dept. of Labor) ^a	Top 30 Healthcare Job Postings/Top 20 Behavioral Health (2010) ^b
Physician Extenders	n/a	
Physician Assistant	n/a	704
Registered Nurses ^c	Openings & Growth	8668
Licensed Nurses (LPN/LVN) ^d	Openings & Growth	738
Nurse Practitioners		600
Medical Assistants	Openings & Growth	712
Behavioral Health		
Psychiatrist	n/a	288
Mental Health Counselor	n/a	504
Mental Health and Substance Abuse Social Workers	Opening & Growth	616
Substance Abuse/Behavioral Disorder Counselor	Growth	211
Healthcare Social Workers	Openings	33

^aDOL website. State of Connecticut Occupational Projections 2010-2020.

<http://www1.ctdol.state.ct.us/lmi/projections.asp>

^bHolm, R., Quimby, S., and Dorrer, J. Connecticut Health Care Workforce Assessment (August 2011). Prepared for the Connecticut Office of Workforce Competitiveness and the Connecticut Employment and Training Commission. Available at, http://www.jff.org/sites/default/files/CTHealthCareWorkforce_081611.pdf

Appendix 1: Health Profession Categorization: AMA Masterfile versus Labor Data		
	AMA Masterfile	Labor Data
General and Family	General Practice & Family Medicine	Family and General Practitioners
Internal Medicine	Internal Medicine Internal Medicine, subspec.	Internists, general
OB/GYN	Obstetrics/Gynecology Obstetrics/Gynecology subspec.	Obstetrics/Gynecology
Pediatrics	Pediatrics Pediatrics, subspec.	Pediatrics, general
Nurses	Registered nurses Licensed Practical and Vocational Nurses Nurse Practitioner Advanced Practical Registered Nurse	Registered Nurses Licensed Practical Nurses and Vocational Nurses Nurse practitioner (occasionally available)
Psychologist	Psychologist	Child, Family Clinical Counseling and School Psychologists Psychologists, all other
Mental Health Counselor		Mental Health Counselor
Drug and Alcohol Recovery Counselor		Substance Abuse and Behavior Disorder Counselor Mental Health and Substance Abuse Social Worker