

New Hampshire Primary Care Demand Projections 2010 – 2030

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Promoting and Improving Health

Background:

The New Hampshire Citizen's Health Initiative and the University of New Hampshire (UNH) Institute for Health Policy and Practice are engaged in an ambitious project, titled "Map NH Health", with the goal of projecting the future profile of the state's health status and health care delivery system, and to engage stakeholders, including policy makers, consumers and business/community leaders, in proactively addressing the challenges identified. As primary care access and workforce needs are key areas of interest for this process, UNH contracted with John Snow, Inc. (JSI) to develop projections of the relative changes in primary care demand expected based on changes in the size and age/gender demographics of the population through 2030.

The project relied on methods developed by JSI for recent federal primary care analysis projects, adapted to reflect the demographics and health profile of New Hampshire's population. The basic approach involved creating a matrix of primary care utilization rates, stratified by specified age and gender groupings, based on observed primary care utilization patterns. In order to produce estimates that best reflect 'organic' need, and avoid biases in utilization resulting from a range of potential barriers to care, the analysis focuses on a 'Barrier Free' sub-sample extracted from 2 years (2009-2010) of the Agency for Healthcare Research and Quality's (AHRQ's) Medical Expenditure Panel Survey (MEPS), comprised of those individuals most likely to have unfettered access to the health care system. This data is combined with an analysis of the New Hampshire Behavioral Risk Factor Surveillance Survey (BRFSS) covering the same timeframe (2009-2010), to adjust the results to reflect health status in the state within each age/gender group. The results were then applied to population projections within the age/gender strata for years 2010, 2020, and 2030, developed by the Applied Population Laboratory at the University of Wisconsin. Data were provided for each Hospital Service Area (HSA) and Minor Civil Division (MCD) in the state, and county and state rates were also calculated by combining MCD data. The resulting data permits comparison of the change in total population counts to the change in primary care need resulting from the shifting demographic mix by age and gender.

Methods Detail:

MEPS Barrier Free Primary Care Demand:

Primary care visit rates were derived from an analysis of AHRQ's MEPS data from 2009 and 2010 combined to increase sample size. The analysis combines the results of the MEPS Household Component and Office Based Visit files. As noted, the approach relies on a 'Barrier Free' analysis of the data, in which the utilization of individuals free from most of the characteristics associated with barriers to care are the focus. This approach was developed by JSI as part of the Negotiated Rulemaking Committee (NRMCM) process for revising the federal Health Professional Shortage Area (HPSA) and Medically Underserved Area/Population (MUA/P) regulations. The approach was presented to the committee¹ and ultimately incorporated in its final report on recommendations to the Secretary of the Department of Health and Human Services². JSI's approach was a modified version of the initial Barrier Free concept, developed by Dr. Tom Ricketts et.al. as part of an earlier effort to modify the HPSA/MUA/P regulations in 2008.³⁴

¹ <http://www.hrsa.gov/advisorycommittees/shortage/Meetings/20101013/index.html>

² <http://www.hrsa.gov/advisorycommittees/shortage/nrmcfinalreport.pdf>

³ Ricketts TC, Goldsmith LJ, Holmes GM, Randolph RM, Lee R, Taylor DH, Ostermann J. Designating places and populations as medically underserved: a proposal for a new approach; J Health Care Poor Underserved. 2007 Aug;18(3):567-89.

To select the visits that best reflect primary care utilization, the following parameters were used to select visit records from MEPS for this analysis:

- Office based , In-person visit with a provider type of:
 - MD in Family Practice, General Practice, Ob./Gyn., Internal Medicine, or Pediatrics
 - Non-Physician provider: Midwife, NP, or PA

- Purpose of visit (best category for care received):
 - General check-up
 - Diagnosis or treatment
 - Follow-up or post-operative visit
 - Immunizations or shots
 - Maternity care (pre or post-natal)
 - Well child exam

Note that individuals with no visit records in the data set were also retained in order to produce community level rates that incorporate those individuals that do not utilize primary care in any given year.

To select the Barrier Free sample of individuals to focus on, the following parameters were applied at the person level:

- Race/ethnicity: Non-Hispanic White
- Poverty level: Income >200% of FPL
- Education: HS+ education (or younger than 18 years)
- Usual source of care: Has a usual provider
- Insurance: Full year insured under Medicare or Private insurance
- Language: Language spoken at home = English

The Barrier Free sample of individuals meeting the above criteria consisted of 12,901 people.

Health Status Adjustment:

For the purposes of this analysis self-reported overall health status is used to categorize the health of individuals in the sample. Adjustments to the health status of the population reflected in the visit rates was accomplished by reweighting the records in the sample based on the categorization of health status as either “Fair” or “Poor” vs. “Good”, “Very Good”, or “Excellent”. The reweighting for health status is done for two reasons. First, while the Barrier Free subset of individuals is the focus of the analysis, based on their largely unfettered access to the health care system, it is also observed that this sub-set has notably healthier than the average population based on self-described health status. Failure to correct for this would produce falsely lower utilization rates than what one would expect in a population of average health status. Second, as New Hampshire is consistently ranked one of the healthiest states, it was considered important to adjust health status to match the health profile of the state’s population. Because MEPS is not intended to provide state level data, the analysis utilized the NH Behavioral Risk Factor Surveillance Survey (BRFSS) to obtain the health status values for NH. BRFSS 2009-2010 data was analyzed to obtain the percent of the population reporting

⁴ <http://www.gpo.gov/fdsys/pkg/FR-2008-02-29/pdf/E8-3643.pdf>

“Fair” or “Poor” health in each of the age/gender cells to be estimated. The following table shows the rates to which the data was adjusted:

Weighted % fair/poor health for adults in NH, used to adjust visit rates

NH	20-29	30-39	40-54	55-64	65-74	75+	Total
Male	9.00%	6.95%	10.24%	14.82%	19.23%	24.16%	11.96%
Female	8.49%	6.40%	10.99%	13.30%	17.99%	24.96%	12.25%
Total	8.75%	6.66%	10.61%	14.06%	18.58%	24.65%	12.11%

Note that MEPS does not report health status for individuals under 18 years of age and BRFSS does not focus on this population. Health status adjustment for this population is not considered to be a major parameter for the analysis as this population has considerably lower rates of Fair/Poor health. The National Survey of Children’s Health reports that less than 4% of children are considered to have Fair/Poor health status.

Results:

The analysis produced a table of mean primary care visit rates by age/gender group, for individuals of average health status in NH for that age and gender, but with seemingly unfettered access to the health care system. This can be compared to ‘crude’ visit rates obtained for the total population in MEPS as seen in the following tables and charts.

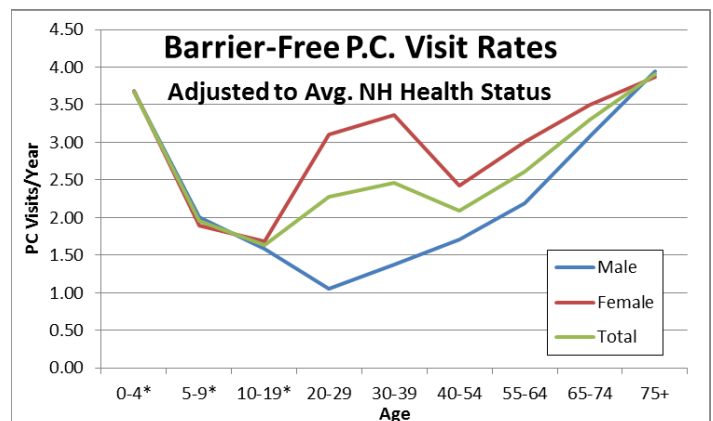
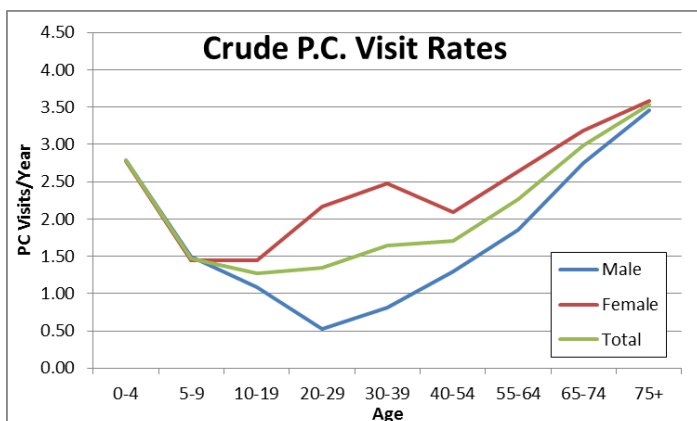
Crude mean primary care visit rates (including 0 visits) for total population

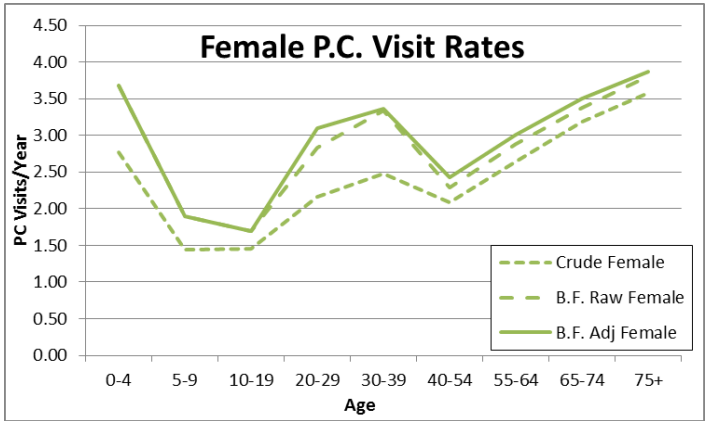
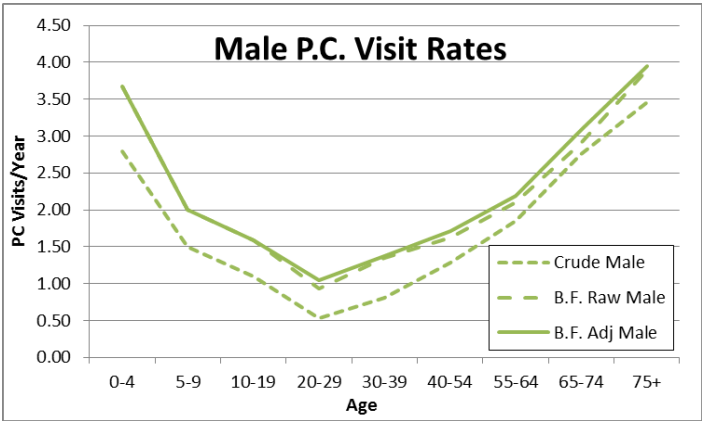
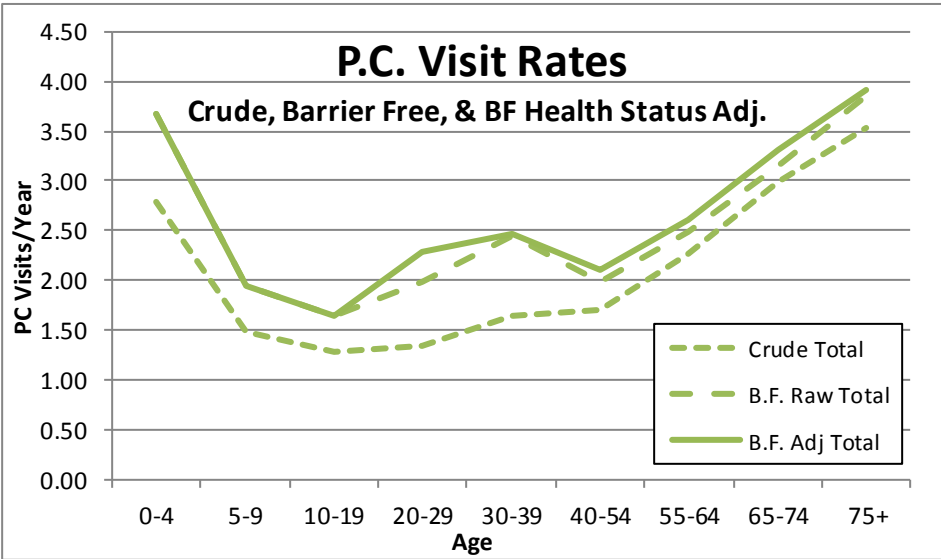
	National	0-4	5-9	10-19	20-29	30-39	40-54	55-64	65-74	75+
Crude Male	Male	2.79	1.50	1.09	0.53	0.81	1.29	1.85	2.75	3.46
Crude Female	Female	2.77	1.44	1.45	2.16	2.48	2.09	2.64	3.19	3.58

Mean Barrier Free primary care visit rates (including 0 visits), adjusted for NH health status

	National	0-4*	5-9*	10-19*	20-29	30-39	40-54	55-64	65-74	75+
B.F. Adj Male	Male	3.67	2.00	1.58	1.05	1.38	1.71	2.19	3.08	3.94
B.F. Adj Female	Female	3.68	1.90	1.69	3.10	3.37	2.43	3.01	3.50	3.86

* Self-reported health not available for individuals <18 in MEPS.





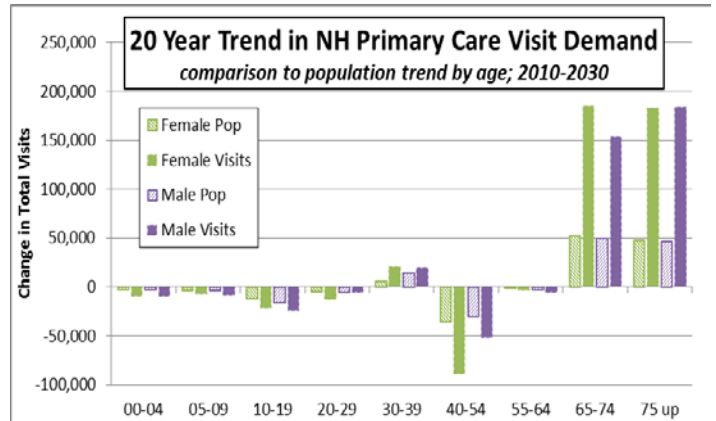
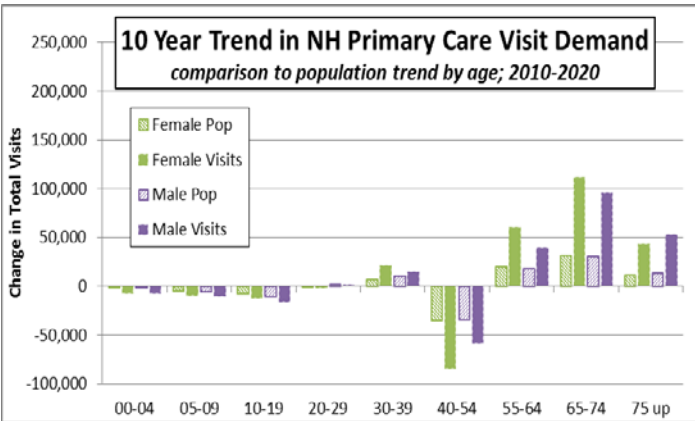
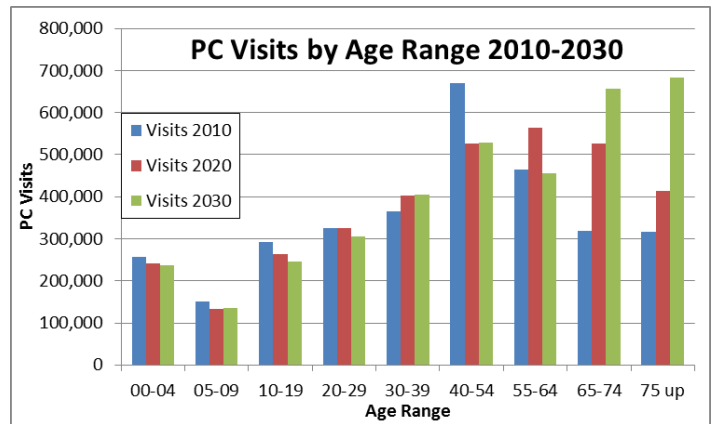
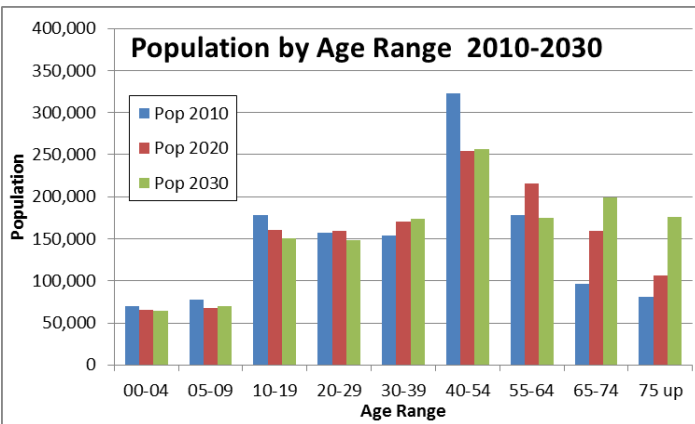
Findings:

The Barrier Free visit rates were applied to the population projections from the University of Wisconsin to examine the impact of changes in population size and demographics over a 20 year period in the state, covering 2010 to 2030. The results were produced at the town (MCD) level and aggregated up to the county and state level, and data were also produced for the Hospital Service Areas based on separate data estimates provided. Local level data will permit geographic patterns in population and demand shift to be examined more closely, while this summary will focus on state level observations and general sub-state patterns

Estimated Population and Barrier Free primary care visit trends, 2010 through 2030

	Pop 2010	BF visits 2010	Pop Trend 10 yr	Visit Trend 10 yr	Pop 2020	BF visits 2020	Pop Trend 20 yr	Visit Trend 20 yr	Pop 2030	BFvisits 2030
New Hampshire	1,316,470	3,159,905	3.3%	7.4%	1,359,825	3,394,258	7.3%	15.7%	1,412,011	3,656,789

Detail of population and Barrier Free primary care visit trends by age group, 2010 through 2030



- The population in the state will increase by 7.3% between 2010 and 2030. Based on differential population trends by age and gender only, the demand for primary care will grow at a rate more than double the change in total population, equating to a 15.7% increase in overall demand for primary care in that 20 year timeframe.

- The growth in demand for primary care will come primarily from those over 55 in the 2010-2020 timeframe, while 20 year growth in primary care will come almost entirely from those age 65 and older.
- There will be net decreases in populations under age 30 and a notable decrease in those age 40-54 during the 20 years following 2010. These decreases will be more than offset by the growth in the elderly population, and utilization of primary care overall will increase fastest based on the higher utilization of care in these age ranges.
- While geographic variation in demand will be more fully explored once the data is mapped (not part of the scope of this project), the overall patterns of population and visit change by HSA suggest that the fastest growth will take place in the southern and central parts of the state while the most rural parts of the state are expected to experience a net decrease in total population. The population served by Weeks Medical Center, Androscoggin Valley Hospital, and Upper Connecticut Valley hospital are expected to see decreases of 9%, 8%, and 5% respectively. Due to the aging of the population in these areas, however, total demand for primary care is expected to remain relatively flat or increase slightly. These changes can be compared to the anticipated changes in the Portsmouth area, which is expected to show the fastest growth of 22% in population and 35% in primary care demand.