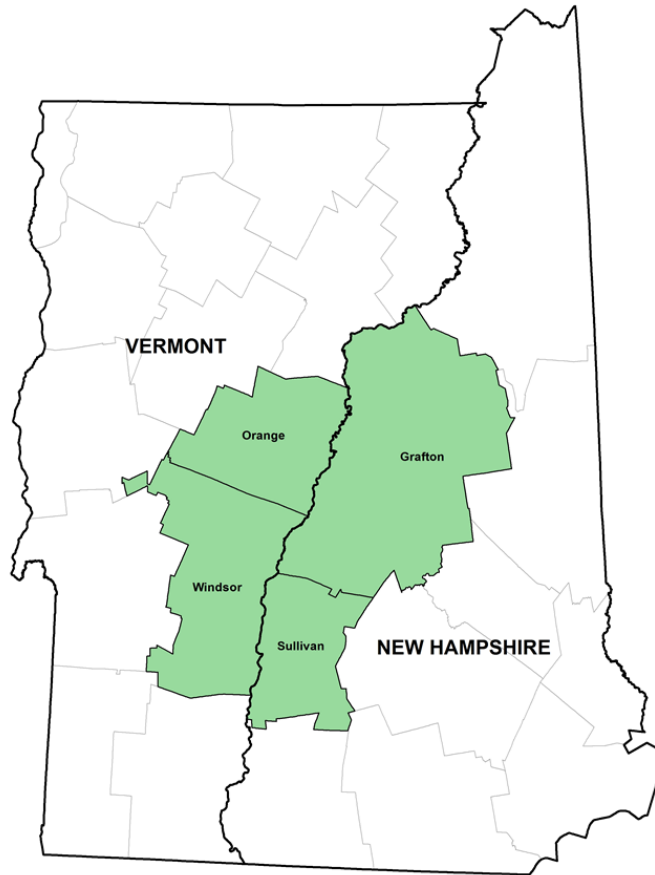


Understanding Early Childhood Education Needs and Opportunities in the Upper Valley



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Executive Summary

This report provides a broad exploration of the Upper Valley of New Hampshire and Vermont to better understand how families and children fare in general, and specifically within the early childhood education and care landscape of the region. The Upper Valley has a typically rural population distribution—that is, marked by a relatively high median age and outmigration of young people—and like its component states, does relatively well on economic, social, labor force, and educational indicators. Generally high incomes and low poverty rates of the Upper Valley are fairly typical of the Northeast, and nearly 80 percent of working-aged adults are in the labor force, including high rates among women with young children.

As in much of the rest of the country, despite a solid base of working families in the Upper Valley, the availability and affordability of child care in the region is not ideal. Although the region has more than 200 licensed providers, the number of licensed slots is inadequate for the number of young children who likely need care. Further, the cost of care for an Upper Valley family with one infant consumes a share of family income (16 percent) that is more than twice what the federal government considers “affordable” (7 percent). While the high share of center-based slots (and the high ratings of many of those providers by each State’s system) suggests that the Upper Valley has some good quality care options, there are not enough slots for all, and incomes are not high enough for families to comfortably afford this investment.

This report concludes with a review of some of the existing policy and practice efforts around expanding accessibility and affordability of child care, and reinforces the need for primary data collection within the Upper Valley to better understand the specifics of family challenges and decision-making around the issue of early childhood education and child care.

About the Data

Data used in this report are drawn from a variety of sources, including from the U.S. Census Bureau's American Community Survey and Longitudinal Employer-Household Dynamics Origin-Destination Employment Statistics, the States of New Hampshire and Vermont, the Bureau of Labor Statistics, the Bureau of Economic Analysis, the National Center for Education Statistics, the Office of Head Start, and the Internal Revenue Service. Notes on sourcing are included throughout as data are presented.

Data for this project were selected with emphasis on transparency, precision, and adherence to the geography of interest. For this work, the Upper Valley is defined as including Grafton and Sullivan Counties in New Hampshire and Orange and Windsor Counties in Vermont. Data from the Census Bureau were available for the four counties of interest under the label "Claremont-Lebanon Micropolitan Area," which is used as a relevant geography whenever possible. In rare places that the data refer to geographies beyond or within the boundaries of the Upper Valley, this is noted.

Where differences between the Upper Valley and other places (e.g., the states of New Hampshire and Vermont) are discussed in the context of survey data, these differences have been tested for statistical significance. Only differences that are statistically significant at the $p < 0.05$ level are reported.

Finally, valuable data assistance for this report was provided by Carsey School of Public Policy staff, including staff researcher Anita Mathur, Ph.D. and research scientist Doug Gagnon, Ph.D.

Section I. Characteristics of the Upper Valley

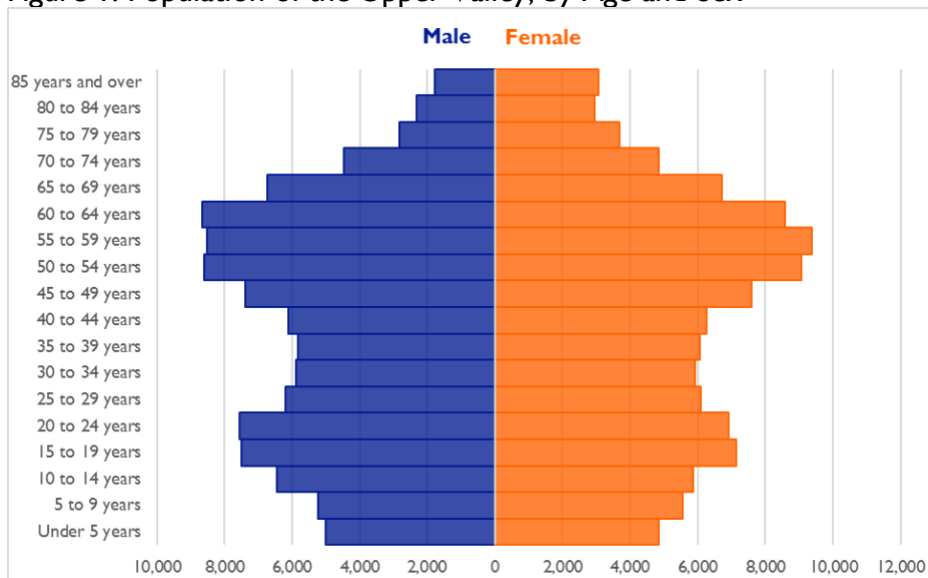
Population Characteristics

Total Population

The Upper Valley had a total population of 216,307 in 2016.¹ The region had a median age of 44.4 years, slightly higher than in either New Hampshire or Vermont overall (42.2 and 42.4, respectively).²

One way of visualizing a population distribution is through the use of a population pyramid. In this kind of figure, the length of horizontal bars represents the number of residents in each age group, with males and females depicted in separate bars. A population that is bell shaped—wider at the bottom than at the top—indicates a healthy share of working-age people and children, while a top-heavy pyramid indicates an aging population. Figure I shows a considerable “hollowing out” of the working- and family-age population in the Upper Valley. However, unlike many rural places, the region does have a considerable number of 15-24 year olds—likely related to the presence of Dartmouth College and Plymouth State University in Grafton County. It is important to note that these populations may be less likely to remain in the region after graduation than those born in the region.

Figure I. Population of the Upper Valley, by Age and Sex



Source: American Community Survey, 2015 5-year estimates, Table B01001

¹ U.S. Census Bureau, 2016 Population Estimates, Table PEPANNRES

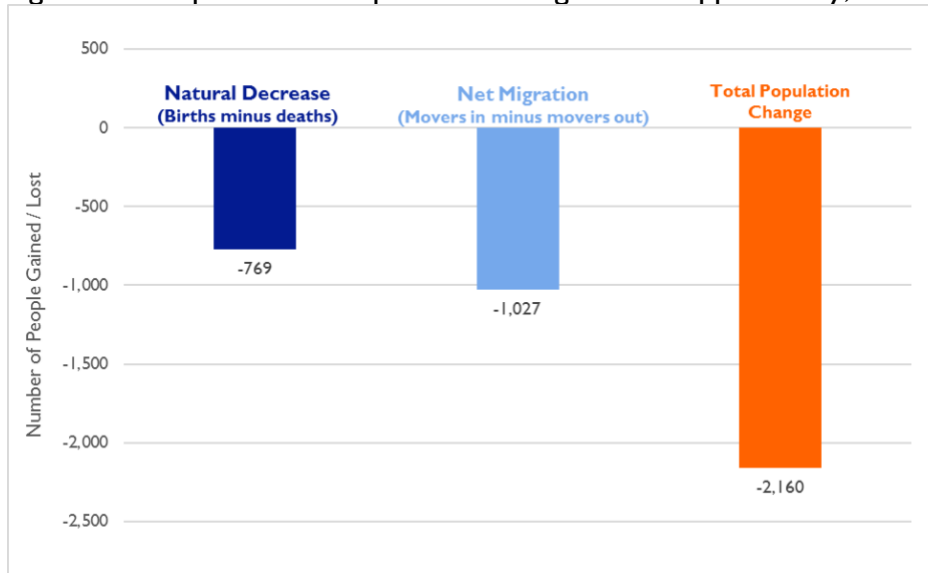
² American Community Survey, 2015 5-year, Table B01002

Components of Population Change

The population of the Upper Valley has a distinct distribution, as shown in Figure 1, above. Similarly, the region has a distinctively rural characteristic to the way its population has changed in recent years. Figure 2 shows that since 2010 (the most recent Decennial Census), the Upper Valley has lost 2,160 residents (orange bar). About 35 percent of that loss is due to what demographers call “natural decrease,” or deaths outpacing births in the region (dark blue bar). An additional 48 percent of the loss is due to net migration, or more people moving out of the region than moving in (light blue bar).³

Further, age-specific migration data reveal that the people leaving the Upper Valley are not random. Those most likely to move out of the Upper Valley are on the younger side: those aged 20-24 in Orange, Windsor, and Sullivan Counties, and those aged 30-34 in Grafton County. (Grafton County, unlike the other counties in the Upper Valley, has high in-migration of people aged 20-24. The distinct patterns in Grafton are likely related to the presence of Plymouth State University and Dartmouth College there). The age distribution is further skewed toward the older side because all across the Upper Valley, out-migration rates are low among people over age 40. In short, aging in the region happens as young people move out, taking with them their young children (or their future children), and older people remain behind.⁴

Figure 2. Components of Population Change in the Upper Valley, 2010-2016



Source: U.S. Census Bureau, 2016 Population Estimates

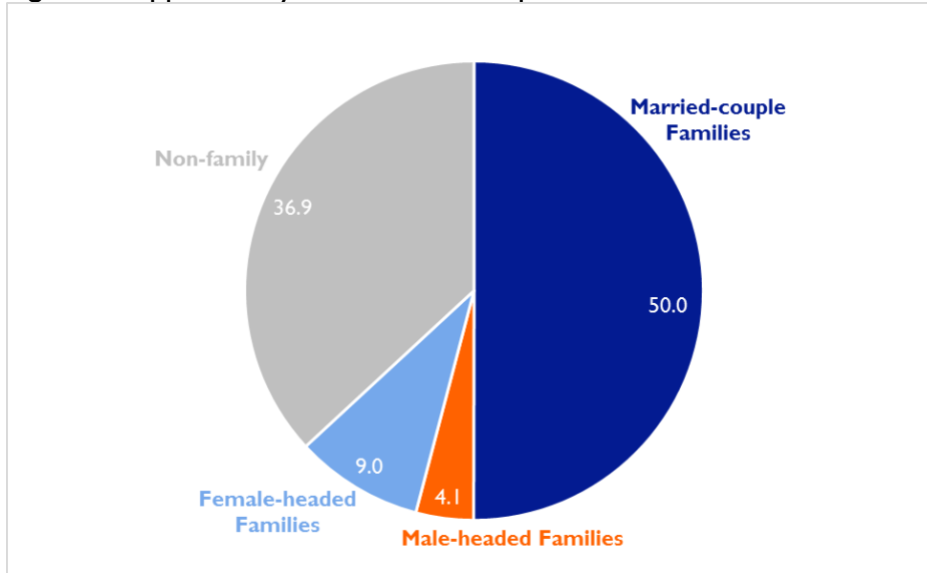
³ Note that about 17 percent of population change cannot be attributed to one reason or another, and thus is included in the total population change bar, but not in the component bars.

⁴ All migration data refer to movement between 2000 and 2010 and are from Winkler, Richelle, Kenneth M. Johnson, Cheng Cheng, Jim Beaudoin, Paul R. Voss, and Katherine J. Curtis. 2013. Age-Specific Net Migration Estimates for US Counties, 1950-2010. Applied Population Laboratory, University of Wisconsin- Madison. (<http://www.netmigration.wisc.edu/>).

Family Composition

Half of all households in the Upper Valley contain a family headed by a married couple. The next most common household type is a non-family household—that is, a housing unit occupied by people who are not related by blood, marriage, or adoption (for example, housemates or cohabiting couples without related children) (37 percent). Less than one in ten households are female-headed family households (9 percent), and less than one in twenty are male-headed family households (4 percent).

Figure 3. Upper Valley Household Composition



Source: U.S. Census Bureau, American Community Survey 2015 5-year, Table S1101

In terms of where children live, the vast majority of the Upper Valley's young children (under age 5) reside in married couple families (70 percent). Twenty-two percent live with a single mother, and just 8 percent live with a single father.⁵ This distribution of family composition in the Upper Valley largely mirrors that in New Hampshire and Vermont more broadly.

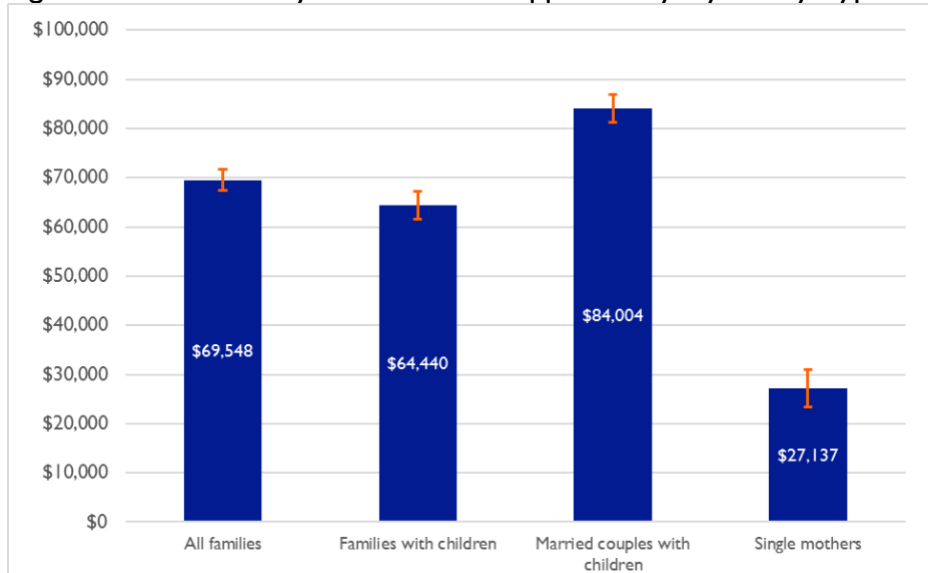
Economic Characteristics of Upper Valley

Income

Across all Upper Valley families, median income is \$69,548 annually, meaning that half of all Upper Valley families earn more than this amount, and half earn less. This number is comparable to median family income in Vermont (\$70,027), although slightly lower than in New Hampshire (\$81,726). Upper Valley incomes vary by family type in the same ways as in other places: that is, families with children have slightly lower incomes than all families as a whole, married couples with children have higher incomes, and single mothers have substantially lower incomes than other kinds of families (see Figure 4). Specifically, in the Upper Valley (as in other places) single mothers' incomes are less than half those of families with children overall.

⁵ U.S. Census Bureau, American Community Survey, 2015 5-year, Table B09002

Figure 4. Median Family Income in the Upper Valley, by Family Type



Source: American Community Survey, 2015 5-year, Tables B19126 & S1903

Note: Orange bars indicate the 95% margin of error around each estimate. Note that families with children are a subset of all families, and married couples with children and single mothers are subsets of all families with children.

Poverty and Low Income Status

To provide a different perspective on the economic landscape of Upper Valley families and children, I also examine the percent of people who live below the poverty threshold—\$24,036 for a family of two adults and two children in 2015. To better understand what poverty statistics can tell us, it is important to understand what the poverty threshold actually captures. The official poverty threshold was created in the 1960s by Mollie Orshansky, a statistician in the Social Security Administration. Using survey data, she determined that families spent about one-third of their incomes on food. Data from the USDA provided a budget for a basic food plan, and so multiplying food costs by three yielded a set of thresholds below which families of different sizes and compositions could not meet their basic needs. Although poverty thresholds are adjusted for inflation each year, the method of calculating the thresholds—that is, food costs times three—has not changed since its development. One of the starkest issues with our current methods of poverty measurement is that families no longer spend one-third of their incomes on food. In recent decades, housing and medical costs have become substantially larger portions of family budgets (33 and 8 percent, respectively), while food represented just one-eighth of family spending in 2016.⁶

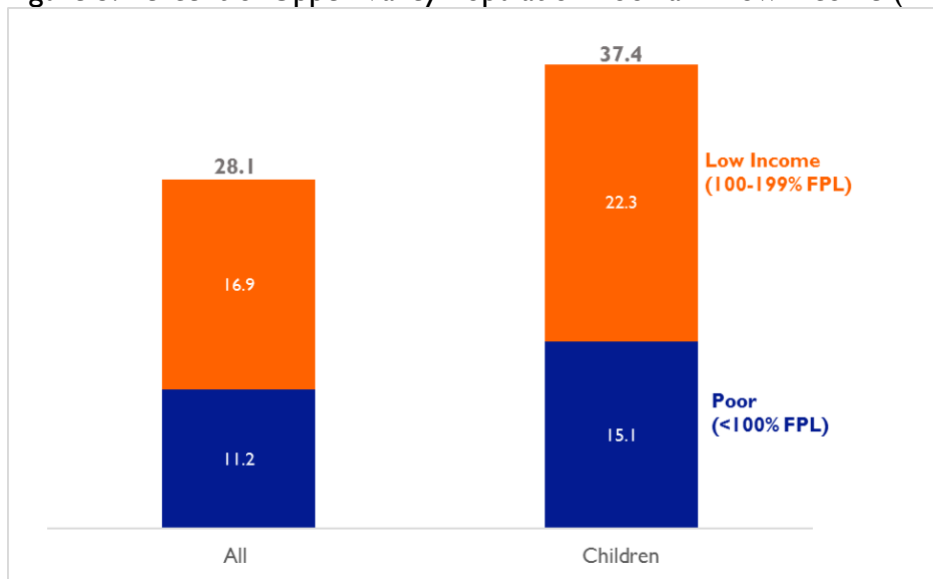
Within the Upper Valley, more than one in ten people (11.2 percent) live below the poverty threshold. Examining the share below twice the poverty threshold —\$48,072 for that same family of four—reveals that more than one quarter of Upper Valley residents (28.1 percent) are “low income” or poor (see Figure 5). Of course, having incomes above 200% of the poverty

⁶ Author’s calculation of data derived from: Bureau of Labor Statistics. 2017. “Consumer Expenditures—2016.” Economic News Release, August 29, 2017 (<https://www.bls.gov/news.release/cesan.nr0.htm>).

line isn't necessarily an indicator of ease in making ends meet. According to a project on the living wage from the Massachusetts Institute of Technology, a family of four in the Upper Valley would need an average income of \$64,973 in order to truly meet all its expenses, a figure that works out to 267% of the poverty threshold for a family of four.⁷

Following established patterns,⁸ rates of poverty and low income status are considerably higher among children than among the general population. Fifteen percent of Upper Valley children are poor, and an additional 22.3 percent are low income, meaning that more than one in three children in the region live below 200% of the poverty line.

Figure 5. Percent of Upper Valley Population Poor and Low Income (All and Children)



Source: American Community Survey, 2015 5-year, Table B17024

As with income patterns described above, the Upper Valley's poverty and low income estimates are quite similar to those found statewide in Vermont, although slightly higher than in New Hampshire. While income data are unavailable for young children in the Upper Valley specifically, statewide data for New Hampshire and Vermont show that children under six are poor at similar rates to children under 18.⁹

⁷ This figure is an average of the living wages across all four Upper Valley counties, but due to data availability is not weighted by county size. The Living Wage Calculator compiles a host of county-specific estimates on individual expenses in order to estimate an overall wage needed to meet family expenses. This calculation accounts for food, child care, medical, housing, transportation, "other," and taxes. Because this measure is more comprehensive than the official poverty measure, it may lend a fuller perspective on true family needs. For the calculator, see (<http://livingwage.mit.edu>), and for more technical details on its methods, see (<http://livingwage.mit.edu/resources/Living-Wage-User-Guide-and-Technical-Notes-2016.pdf>).

⁸ For example see Semega, Jessica L., Kayla R. Fontenot, and Melissa A. Kollar. 2017. "Income and Poverty in the United States: 2016." *Report No. P60-259*. Washington, DC: U.S. Census Bureau. (<https://www.census.gov/library/publications/2017/demo/p60-259.html>).

⁹ Author's calculation using data from the American Community Survey, 2016 1-year estimates, Table B17020. Note that parity in young and overall child poverty rates in New Hampshire and Vermont may be a function of small sample size in these states; in general, young children have slightly higher poverty rates than children overall, and indeed, rates among these groups in New Hampshire and Vermont trend that way, although the margins of

Other Economic Measures

Along with measures of income and poverty, there are a host of additional measures that can shape understanding about the economic wellbeing of Upper Valley children and families. For instance, data from each state's Department of Education show that 37.4 percent of Upper Valley children are eligible for free and reduced price lunch in the 2016-2017 school year, indicating the share of children who have family incomes below 185 percent of the poverty line.¹⁰ This share is lower in New Hampshire as a whole (27.3 percent) and higher in Vermont (44.1 percent).

Educational attainment is another good indicator of a region's economic status, given the clear and well-established relationship between educational attainment and earnings, with evidence that workers with a bachelor's degree earn more than those with a high school diploma, who in turn, earn more than those who did not graduate high school.¹¹ In the Upper Valley, one-third (34.0 percent) of residents aged 25 or older have at least a bachelor's degree, comparable to the shares in New Hampshire (34.8 percent) and Vermont (36.0 percent) on the whole. Fewer than one in ten (8.4 percent) Upper Valley residents lack a high school diploma.

Another indicator of a region's economic landscape is taxpayers' receipt of certain tax credits, including the Earned Income Tax Credit (EITC) and the Child Tax Credit (CTC). These are federal credits available to lower and middle income families intended to "encourage work [and] help offset the cost of raising children."¹² These kinds of tax credits are associated with improved outcomes for children, in terms of physical health, mental health, and education,¹³

error are large enough that differences between the groups are not statistically significant. For more work from Carsey on child poverty by age, see Mattingly, Marybeth J., Jessica A. Carson, and Andrew Schaefer. 2014. "Cause for Optimism? Child Poverty Declines for the First Time since Before the Great Recession." National Issue Brief No. 76. Durham, NH: Carsey School of Public Policy.

¹⁰ Note that free and reduced price lunch (FRPL) eligibility is a good proxy for a region's share of children who are low income, although in this case, it is somewhat coincidental that the FRPL share matches the share of children with incomes below 200% FPL exactly, given that each measure refers to a slightly different time period and a slightly different income threshold (185 versus 200%). Note too that FRPL eligibility rates were missing for five schools (four in Vermont and one in New Hampshire) and suppressed due to low enrollment numbers in one Vermont school, meaning that the calculations here are based on 120 of the region's 126 schools (95.2 percent).

¹¹ A report from the U.S. Census Bureau indicates that the gaps between educational attainment groups are considerable: those with a high school diploma have median annual earnings nearly twice as high as those who dropped out of high school (\$21,569 versus \$10,996), and those with a bachelor's degree earn twice as much as those with just a diploma (\$42,783 versus the \$21,569). See Julian, Tiffany and Robert Kominski. 2011. "Education and Synthetic Work-Life Earnings Estimates." *American Community Survey Reports No. ACS-14*. Washington, DC: U.S. Census Bureau. (<https://eric.ed.gov/?id=ED523770>).

¹² Center on Budget and Policy Priorities. 2016. "Chart Book: The Earned Income Tax Credit and Child Tax Credit." Washington, DC. (<https://www.cbpp.org/research/federal-tax/chart-book-the-earned-income-tax-credit-and-child-tax-credit>).

¹³ See for instance, Baughman, Reagan A. 2012. "The Effects of State EITC Expansion on Children's Health." *Issue Brief No. 48*. Durham, NH: Carsey Institute; Chetty, Raj, John N. Friedman, and Jonah Rockoff. 2011. "New Evidence on the Long-Term Impacts of Tax Credits." *Proceedings, Annual Conference on Taxation and Minutes of the Annual Meeting of the National Tax Association* 104:116-124; Hoynes, Hilary, Doug Miller, and David Simon. 2015. "Income, the Earned Income Tax Credit, and Infant Health." *American Economic Journal: Economic Policy* 7(1):172-

suggesting that higher levels of uptake are positive not only for a family’s economic wellbeing, but also for broader family and child wellbeing.¹⁴

Table I shows the share of tax returns filed in the Upper Valley region (as well as in each state and county) that included each kind of tax credit.

Table I. Percent of Tax Returns with Specified Credits, Tax Year 2015

	EITC	CTC
New Hampshire	11.5	13.1
Vermont	14.1	13.0
Orange County	15.7	14.0
Windsor County	13.7	12.2
Sullivan County	14.6	14.3
Grafton County	12.7	11.8
Upper Valley Average	14.2	13.1

Source: Internal Revenue Service via Policy Map

A final indicator of regional economics is the share of residents who do not have access to a vehicle.¹⁵ In all, 6.1 percent of Upper Valley households have no vehicle available, a similar share to households in New Hampshire and Vermont overall (5.1 and 6.1 percent, respectively).¹⁶ While the Upper Valley is served by several public transportation systems—including Advance Transit, Vermont Translines, and Tri-County Transit—these routes largely serve the region’s most populated places, meaning that access to a vehicle is likely especially important for the region’s most rural residents.¹⁷ Having access to reliable and affordable transportation is a key factor in ensuring that workers are able to participate in the employment and child care options available to them.

211; Milligan, Kevin and Mark Stabile. 2008. “Do Child Tax Benefits Affect the Wellbeing of Children? Evidence from Canadian Child Benefit Expansion.” *NBER Working Paper No. 14624* (<http://www.nber.org/papers/w14624>).

¹⁴ Note that this section was also intended to include the share of tax returns that included the Child Care and Dependent Credit (CDCC). However, upon further consideration, it is less clear how the CCDC relates to measures of economic wellbeing, since research does not suggest it is tied to other family outcomes. Nor does it necessarily reflect the share of families who pay for child care, since families paying for dependent care are also included, and because certain kinds of child care are not considered eligible care under the CCDC. With this said, I still note that in each county in the Upper Valley, between 3.5 and 4.2 percent of tax returns include the CDCC, for an inter-county average of 3.8 percent.

¹⁵ “Access to a vehicle” is defined as “the number of cars, vans, and trucks of one-ton capacity or less kept at home for use by household members” where the number is greater than zero. Definition from IPUMS USA; see https://usa.ipums.org/usa-action/variables/VEHICLES#description_section.

¹⁶ American Community Survey, 2015 5-year estimates, Table B08201

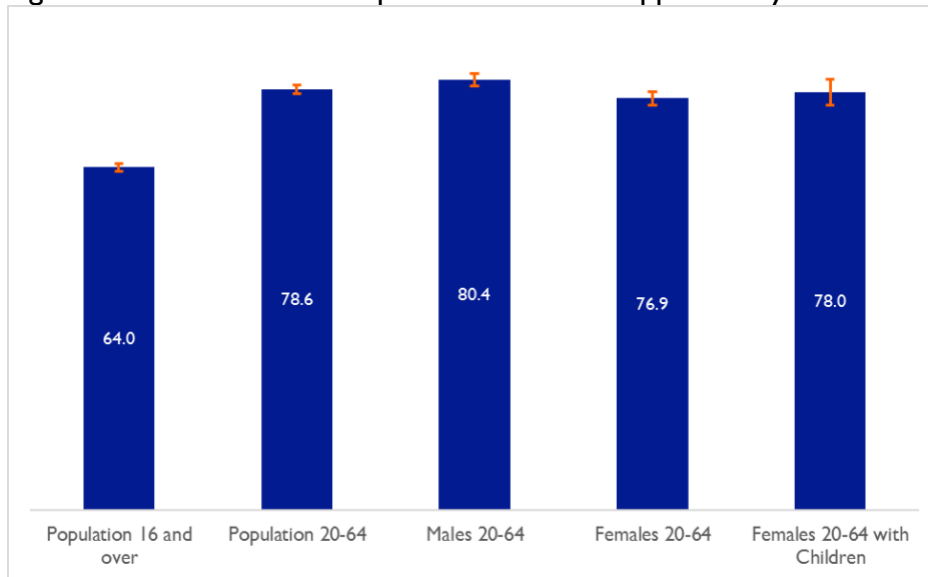
¹⁷ For route maps and service areas for these systems, see <http://www.advancetransit.com/routefinder.htm>, <https://www.vttranslines.com/vermont-bus-routes/>, and <http://www.tricountytransit.org/coverage-map.html>.

Labor Force Characteristics

Documenting the Upper Valley’s labor force characteristics is key to understanding both the region’s economy and its potential child care needs. In this section, I assess labor force participation rates, unemployment rates, industry of employment, and commute patterns. These factors shed light on the kinds of Upper Valley residents who are most likely to work, as well as on the type of jobs they work, and the rhythms of their working lives.

Among Upper Valley residents age 16 and over, 64.0 percent participated in the labor force (see Figure 6). Important to note, labor force participation (LFP) documents the share of the population that is either employed or unemployed; that is, people who are working, as well as people who are jobless but looking for work. People who are neither working nor looking for work are excluded from the labor force, a category that includes people who are retired, who have a disability, “discouraged workers” (those who wanted to work but have given up looking), or those who are parenting at home. Narrowing to “working age” residents—those age 20 to 64—the LFP rate is considerably higher, at 78.6 percent.¹⁸ Although more than three-quarters of Upper Valley working aged adults are in the labor force, this is slightly lower than the rates in New Hampshire and Vermont as a whole (82.0 and 81.0 percent, respectively).

Figure 6. Labor Force Participation Rate in the Upper Valley



Source: American Community Survey, 2015 5-year, Table S2301

Note: Orange bars indicate the 95% margin of error around each estimate.

Also shown in Figure 6, working-age males have a slightly higher LFP rate than same-aged women. Again, however, this rate is slightly lower in the Upper Valley than in either state, as male LFP rates top 86.1 percent in New Hampshire and 83.5 percent in Vermont. However, in the Upper Valley (as in its respective states), working-age women with children under age 18

¹⁸ All differences described in the text are statistically significant ($p < 0.05$). For quick reference, these differences include those between (1) the working age population and the population 16 and over and (2) men and women, but *not* between women aged 20-64 with and without children.

are not less likely to work than their childless counterparts (78.0 percent and 76.9 percent, respectively). For Upper Valley women with young children, estimates are less reliable, although even accounting for the margin of error, estimates suggest that not less than two-thirds of mothers of young children are in the labor force.¹⁹ As will be discussed in greater detail below, this high rate shapes understanding of the region's need for quality child care and education to address working families' needs.

As described above, one component of the labor force is people who are unemployed—that is, people who are not working, but are able and wanting to do so. The unemployment rate describes the share of the labor force that is unemployed (that is, as a percent of all people who are working or who want to work), and excludes people who have given up seeking work because they are unable to find a job (“discouraged workers”). The annual average unemployment rate for the Upper Valley was 2.7 percent in 2016,²⁰ largely similar to the rates in both New Hampshire and Vermont (2.8 percent and 3.4 percent).

To understand the type of work that Upper Valley residents do, Table 2 shows the industry of employed residents. The industry that employs the largest share of residents is education and health services, which includes teachers, health care workers, and those in social assistance (e.g., social workers, child care workers). Given that Dartmouth Hitchcock Medical Center is New Hampshire's largest private employer,²¹ and that the Upper Valley houses Dartmouth College and Plymouth State University, as well as a host of primary and secondary schools, this finding is not surprising. Additionally, significant shares of Upper Valley workers are employed in trade, transportation, and utilities (16 to 17 percent)—an industry that includes retail—and in manufacturing (10 to 12 percent).

Importantly, Table 2 provides data on Upper Valley workers' industry from two sources: the Census Bureau's American Community Survey (ACS), and the U.S. Department of Commerce's Bureau of Economic Analysis (BEA). While the estimates from the two sources are largely similar for most categories, there are significant differences in the estimates between sources for two categories: education and health services, and government workers. It is unclear how this discrepancy arose, although it is possible that individuals responding to the ACS survey classify themselves as in one category, while BEA methodologies (which do not rely on workers' self-reports) classify the same workers in another category.

¹⁹ This measure refers to women aged 20-64 who only have children under six years old in the household. The LFP rate for these women is estimated at 71.6 percent, with a margin of error of +/-5.7, representing a range of 65.88 to 77.32 percent. Note that this is a considerable margin of error and this estimate should be used with caution. The number of women aged 20-64 who only have young children is estimated to be between 4,000 and 5,000 (4,502, +/-496). Of these, around 2,800 to 3,600 are estimated to be in the labor force, including both single and partnered mothers.

²⁰ Note that this rate is calculated to reflect the percent of all unemployed workers in the Upper Valley as a share of the entire Upper Valley labor force, and not as an average of each component county's unemployment rate. As such, these data are a more accurate reflection of the region, given that the size of the labor force varies by county (e.g., Grafton's labor force is more than three times the size of the Orange labor force). Data are derived from the Bureau of Labor Statistics' "Labor Force Data by County" series, using 2016 annual averages.

²¹ New Hampshire Economic and Labor Market Information Bureau. Accessed 2/21/17; updated 10/18/17. (<http://nhnetwork.nhes.state.nh.us/nhnetwork/Employers.aspx?sid=10>). According to the website, Dartmouth-Hitchcock has more than 9,000 employees, although it is not clear how workers are distributed across multiple D-H affiliated sites. (http://www.dartmouth-hitchcock.org/about_dh/our-employees.html)

Table 2. Industry of Upper Valley Workers

	ACS	BEA
Natural Resources & Farming*	2.3	2.3
Construction	7.4	7.3
Manufacturing	11.7	9.8
Trade, Transportation, & Utilities	16.0	17.0
Information	1.8	1.4
Financial Activities	4.2	6.8
Professional & Business Services	8.1	11.2
Education & Health Services	31.2	22.6
Leisure & Hospitality*	9.7	8.2
Other Services*	4.0	0.0
Government	3.6	13.2

Note: Asterisks denote that at least some data from the BEA are suppressed due to small numbers of workers in this category. Therefore, workers in these categories are not included in the denominator used to calculate percentages.

Sources: ACS = American Community Survey, 2015 5-year, Table S2403; BEA = U.S. Department of Commerce, Bureau of Economic Analysis, CA25N

Knowing the kinds of jobs that Upper Valley residents hold can help to paint a picture of the kinds of child care and education that workers in the region might need. For instance, average weekly hours vary by industry, with those in education and health services working about ten fewer hours per week than workers in the utilities field (32.8 versus 42.3 hours in September 2017).²² Further, those in retail trade, and in sales in particular, are especially likely to work irregular hours, have on-call schedules, and work hours that vary week-to-week.²³ These varied work hours and schedules might have implications for workers' need for (and ability to afford) consistent child care week to week. Further, those working odd hours may not have their needs met by child care centers that are open traditional hours.

Along with documenting the kinds of jobs that Upper Valley residents work, it is also helpful to understand the commute patterns of the region's workers and residents. Most Upper Valley residents who are employed work within the Upper Valley (66.6 percent),²⁴ and one-fifth of Upper Valley workers drive less than 10 minutes to get to work.²⁵ However, the most popular destination for Upper Valley workers leaving the region is Merrimack County, representing 17 percent of those who work outside the region.²⁶

²² U.S. Department of Labor, Bureau of Labor Statistics, Economic News Release, Table B-2. October 6, 2017. (<https://www.bls.gov/news.release/empsit.t18.htm>).

²³ Economic Policy Institute. 2015. "Irregular Work Scheduling and Its Consequences." *EPI Briefing Paper #394*. Washington, DC: EPI. (<http://www.epi.org/publication/irregular-work-scheduling-and-its-consequences/>).

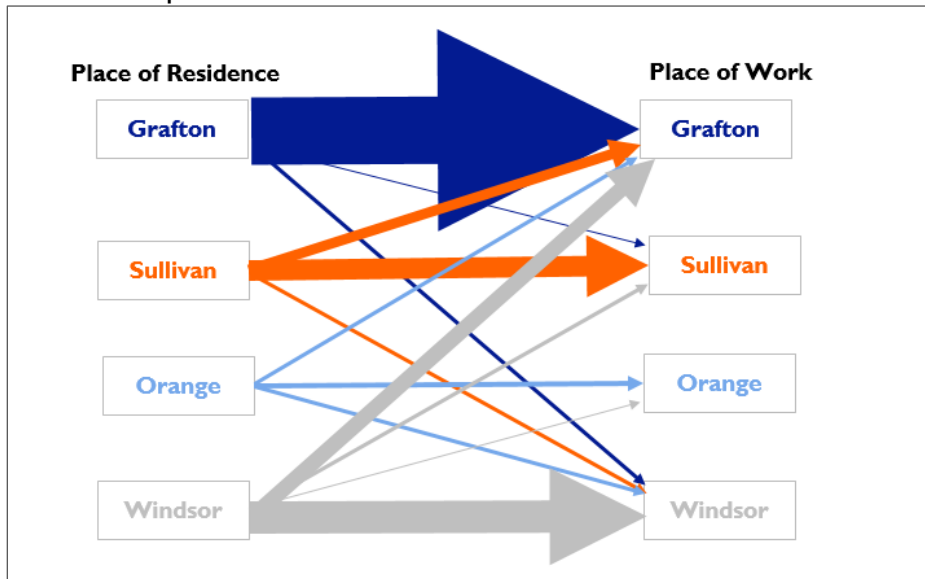
²⁴ U.S. Census Bureau Longitudinal Employer Household Dynamics (LEHD) Origin-Destination Employment Statistics, 2014

²⁵ American Community Survey, 2015 5-year, Table B08303

²⁶ U.S. Census Bureau LEHD Origin-Destination Employment Statistics, 2014

The flow of workers within the Upper Valley is illustrated by Figure 7. The left side of the figure represents workers' county of residence, and the right side represents where workers are employed. The thickness of each arrow is proportionate to the number of workers represented by each "flow." For instance, the largest arrow in the figure—connecting Grafton residents to Grafton jobs—represents 39 percent of all Upper Valley jobs that are filled by Upper Valley residents. This figure also illustrates that (1) high shares of workers are employed within their own county of residence, (2) that Grafton County is the most common destination for Upper Valley workers who leave their own county, and (3) that Orange County in particular draws very few commuters.²⁷ Finally, note that there is a heavier flow of Upper Valley workers into New Hampshire than into Vermont: five percent of Upper Valley workers living on the New Hampshire side of the border work in the Vermont part of the Upper Valley, while 23 percent of Upper Valley workers living in Vermont work in the New Hampshire part.

Figure 7. Commute Patterns within the Upper Valley, with Arrows Proportionate to Share of Workers Represented



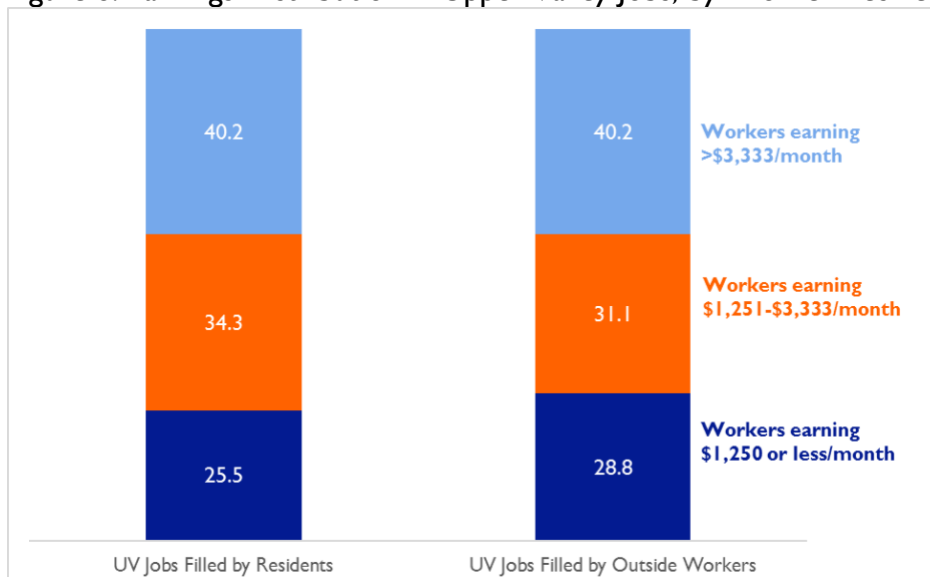
Source: U.S. Census Bureau Longitudinal Employer Household Dynamics Origin-Destination Employment Statistics, 2014

Finally, in contrast with the above assessment of Upper Valley residents, I also examine the distribution of Upper Valley jobs. Specifically, data show while most Upper Valley residents work in the region, the majority of Upper Valley workers are not residents. That is, there are more Upper Valley jobs than there are Upper Valley workers, and of the more than 100,000 jobs in the region, 53 percent are filled by people who live outside of the region. Given the structure of the data, it is unclear from where these workers are commuting, although additional

²⁷ Note that data are only available for the ten most common destinations for each county, with workers commuting to all other destinations lumped into an "other locations" category. As such, while Orange County may actually draw some commuters from Grafton and Sullivan, it is not possible to quantify this, as Orange County is not a top-ten destination for residents of either county. However, given available data, it is possible to note that any commuters to Orange would represent less than 1.5 percent of all Grafton and Sullivan workers.

data suggest that these workers have similar wages to Upper Valley workers who also reside there (Figure 8). This figure also indicates that the lowest wage jobs are generally equally distributed between internal and external residents, suggesting that, for instance, low-paying Upper Valley jobs aren't necessarily filled by people who can't afford to live there.

Figure 8. Earnings Distribution in Upper Valley Jobs, by Worker Residence



Source: U.S. Census Bureau Longitudinal Employer Household Dynamics Origin-Destination Employment Statistics, 2014

Health and Social Indicators

Along with the economic indicators described above, I also provide a host of health and social indicators that inform our thinking on child and family wellbeing in the Upper Valley, including health insurance coverage, occurrences of teen births, child abuse and neglect rates, foster care rates, homelessness, and neonatal opioid exposure rates.

Upper Valley children fare quite well on health insurance coverage: about four percent under age 6 do not have health insurance (a similar share to young children in New Hampshire and Vermont). Still, a share of four percent isn't perfect, translating to several hundred Upper Valley children who are uninsured, and who are at elevated risk for having unmet health care needs.²⁸

In 2014 (the most recent year for which interstate data were available), there were 89 births to women aged 15-19 in the Upper Valley. This translates to an estimated teen birth rate of 13.5, or just over 13 births per 1,000 women aged 15-19.²⁹ This rate is generally similar to the rates per thousand in New Hampshire and Vermont overall (10.6 and 14.4, respectively), and considerably lower than the rates nationwide for the same year (24.2 per thousand). While

²⁸ See, for example, Larson, Kandyce, William L. Cull, Andrew D. Racine, and Lynn M. Olson. 2016. "Trends in Access to Health Care Services for US Children: 2000-2014." *Pediatrics* 138(6). DOI: 10.1542/peds.2016-2176

²⁹ This rate is estimated: births data are made available by each state's vital statistics department, but the total female population aged 15-19 is an estimate derived from the 2014 American Community Survey (1-year data, Table S0101).

teen birth rates have drastically declined over recent years, these statistics can be an important indicator of social wellbeing. For instance, the Centers for Disease Control note that pregnancy and child birth among teens are related to significant taxpayer cost (related to health and foster care costs, as well as longer term effects on children’s eventual incarceration and lowered educational attainment among mothers), and that teen mothers are significantly more likely to drop out high school than their non-childbearing counterparts.³⁰

In terms of child abuse and neglect, it is difficult to create an inter-state rate, due to data differences. However, the State of New Hampshire reports 1,771 accepted assessments in the offices covering Grafton and Sullivan County³¹ in state fiscal year 2017. Of these cases, 1,527 were closed with a complete investigation. Of the closed assessments, 123 (8.1 percent) were closed with a substantiated finding of abuse or neglect. In Vermont, for a slightly different time period (September 2015 through August 2016), data show 501 accepted assessments in Orange and Windsor Counties. Of these cases, 317 were closed with a complete investigation. Of the closed assessments, 70 (22.1 percent) were closed with a substantiated finding of abuse or neglect.³² Relatedly, data suggest that roughly 200 Upper Valley children under age 5 were in foster care around June 2017.³³

Homelessness data for both states indicate that on a single day in January 2016 (the “point in time count”), 121 children were homeless in the Upper Valley.³⁴ New Hampshire provides similar data disaggregated by age: using the New Hampshire distribution, I estimate the share of homeless children who are likely under age 6—about 28 percent. If this same age distribution of homeless children holds true across the Upper Valley, it would suggest that about 34 young children may be homeless in the Upper Valley (28 percent of 121).

³⁰ See Centers for Disease Control and Prevention. “Reproductive Health: Teen Pregnancy.” (<https://www.cdc.gov/teenpregnancy/about/index.htm>).

³¹ The State does not collect child abuse and neglect data on the county level, but instead collects at the District Office (DO) level. Data were provided for the three DOs that provide catchment to Grafton and Sullivan Counties: Claremont, Laconia, and Littleton. Note that these three DOs cover the entirety of Grafton and Sullivan Counties although the Laconia DO also covers parts of Belknap County along with some Grafton County towns.

³² While the state of Vermont does not collect child abuse and neglect data at the county level either, a state employee referred me to the www.fosteringcourtimprovement.com website which does aggregate these data at the county level for a handful of states, including Vermont. That employee suggested that this source had a higher degree of accuracy than the state’s internal reports, since the former data have been screened for quality.

³³ Again, neither state collects foster care data at the county level, so the Upper Valley estimate is based on relevant District Offices (DOs). In Vermont, the relevant DOs include Hartford, Springfield, and St. Johnsbury. Time periods for available data do not precisely align across states: the state of New Hampshire was able to provide data for the state fiscal year and for a single month—June 2017—whereas Vermont data are available only for the quarter spanning April 1, 2017 through June 1, 2017. The estimate of 200 children in care refers to the 100 children in the relevant Vermont districts in care in the April to June quarter as well as the 99 children from the relevant New Hampshire districts in care in June 2017. New Hampshire data indicates relative stability in this measure across the year, as 134 children were in custody *at any point* in state fiscal year 2017.

³⁴ There are multiple methods for measuring homelessness, with the major methods being the point in time count (used here) and data from the Homeless Management Information System (HMIS). However, because HMIS data only capture persons who have come into contact with some kind of homelessness service (e.g., shelters, informational services), and purposely exclude those in contact with domestic violence shelters (for safety reasons), stewards of the data in both states suggested that the point in time count would be most appropriate for these purposes. While these counts attempt to capture those who are sheltered, unsheltered, temporarily doubled up, and in motels, it is almost certainly an undercount of the true homeless population.

Finally, the Foundation also expressed an interest in better understanding the share of local newborns born exposed to opioids in utero. Data from the Director of Operations of the Northern New England Perinatal Quality Improvement Network at Dartmouth-Hitchcock Medical Center suggest that while opioid use is a significant issue facing the region, estimates in the popular press—sometimes reaching 20 percent—significantly overestimate prevalence. Instead, DHMC’s rate of confirmed opioid exposure was around 7.5 percent, averaged across recent years.³⁵ (Note that additional forthcoming research from the Carsey School explores the role that DHMC plays in combatting this issue. This work is expected to be released before the final draft of this paper is complete, and can be summarized and cited here if and when made public before that time).

Educational Indicators

In order to better understand how Upper Valley children are faring, I assess a host of educational indicators. This section not only provides a “snapshot” of the region’s educational outcomes, but also offers a benchmark for future comparisons.

First, I explore fourth grade reading and math proficiency rates. Plentiful research links grade-school proficiency to individual-level outcomes over time, including educational performance generally, which in turn is a predictor of future academic achievement.³⁶ Other work also identifies a correlation between reading skill in third grade and later graduation rates,³⁷ suggesting that these indicators may indeed be useful for understanding long term educational successes for Upper Valley students.

Upper Valley fourth graders fare similarly to those in New Hampshire and Vermont as a whole on reading and math. Figure 9 shows the share of students deemed proficient in reading and math by fourth grade, as determined by each state’s assessment tests, with 56.4 percent of Upper Valley children proficient in reading and 51.4 percent proficient in math. While these shares are comparable to the statewide averages, and well above national averages,³⁸ it is worth acknowledging that this means that nearly half of Upper Valley children are *not* proficient in math, and more than two-fifths are not proficient in reading.

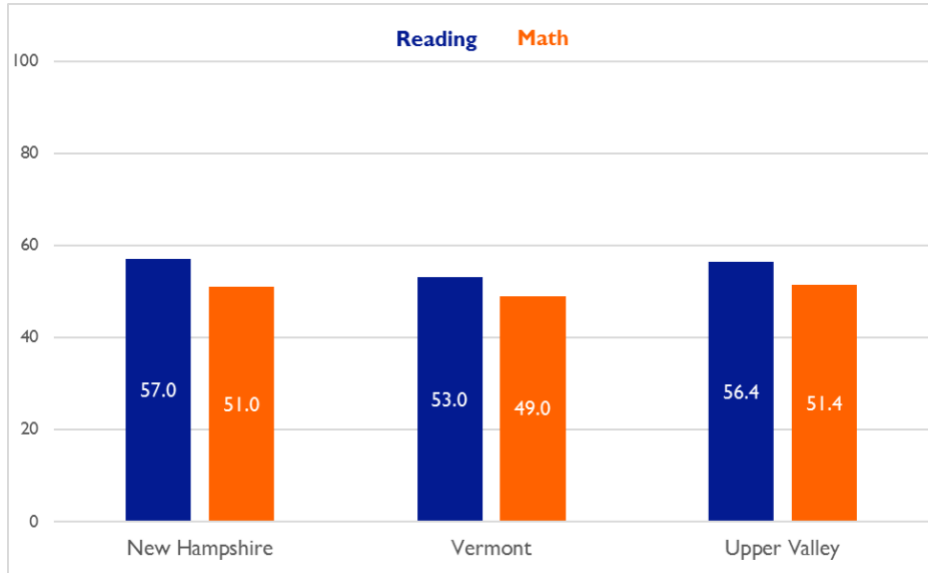
³⁵ Note that data for this indicator were provided on an annual basis, but DHMC staff felt strongly that providing an average range across “recent years” provided a more accurate picture of this issue than would a single statistic for a given year.

³⁶ Stempfel, Caroline. 2013. “Life Course Indicator: 4th Grade Proficiency.” Publication LC-57. Washington, DC: Association of Maternal & Child Health Programs. (http://www.amchp.org/programsandtopics/data-assessment/LifeCourseIndicatorDocuments/LC-57_4th%20Grade-Final_10-28-2013.pdf).

³⁷ Hernandez, Donald J. 2011. “Double Jeopardy: How Third-Grade Reading Skills and Poverty Influence High School Graduation.” *April 2011 Report*. Annie E. Casey Foundation and Center for Demographic Analysis, University at Albany, State University of New York. (<https://eric.ed.gov/?id=ED518818>).

³⁸ For state performance measures as compared with the nation, see The Nation’s Report Card, Data Tools, State Profiles at (<https://www.nationsreportcard.gov/profiles/stateprofile?chort=I&sub=MAT&sj=&sfj=NP&st=MN&year=2015R3>).

Figure 9. Percent of Students Proficient or Above on State Assessments, by Place and Subject



Source: New Hampshire and Vermont Departments of Education

Turning to older Upper Valley students, I assess two measures of educational success: graduation rates and post-secondary transition rates. These measures are key, because as described above, there is a clear relationship between educational attainment and earnings in later life. Across the Upper Valley, graduation rates are high. In the 2015-2016 school year, 89.7 percent of students graduated high school in four years, similar to the 88.2 percent in New Hampshire, and 87.7 percent in Vermont.³⁹

In terms of transitions to post-secondary education, New Hampshire and Vermont collect this indicator under different definitions, meaning that it is difficult to create a uniform rate across the Upper Valley. Specifically, New Hampshire records the share of high school completers who express intentions to attend a postsecondary institution, whereas Vermont tracks the percentage of graduating students who actually enrolled in a postsecondary institution 16 months after graduation.⁴⁰ The rate of students who express postsecondary intentions in New Hampshire is 72.8 percent, and the rate of students who do attend a postsecondary institution in Vermont is 59.9 percent. In the Upper Valley portions of each state, these rates are 68.7 percent and 53.9 percent, respectively, meaning that the Upper Valley falls about 5 percentage points below the respective measures on either side of the border. Overall, especially considering that trends in 4th grade achievement and graduation in the Upper Valley are comparable to state rates, these relatively lower trends in postsecondary intentions/enrollment represent an area that may need additional research.

³⁹ New Hampshire and Vermont Department of Education reports.

⁴⁰ Note that there is a slight variation in this population: New Hampshire's measure refers to high school completers (including those with a GED) while Vermont includes those graduating with a regular diploma. However, the share of GED completers is low, comprising just 1.7 percent of the cohort. Data for both states are derived from Department of Education reports.

To better understand the region's use of supportive services, I assess the share of Upper Valley children who have an Individualized Education Program (IEP). An IEP is a document detailing the supportive services and plan required for each public school child receiving special education services.⁴¹ In the Upper Valley, 16.3 percent of K-12 students have an IEP, fairly similar to 15.5 percent in New Hampshire and 15.7 percent in Vermont. As with all IEP data, it is unclear to what extent need, diagnostics, and funding play roles in IEP designations.

Finally, I explore two measures of absenteeism among Upper Valley students. While chronic absenteeism and truancy are both indicators of missed instructional time, chronic absenteeism measures school time that is missed for any reason—that is, excused and unexcused absences—while truancy measures the share of days missed without a valid excuse. Where truancy might be understood as a compliance issue, chronic absenteeism more broadly encompasses health, family, and community factors that might influence students' ability to attend school.⁴² Both measures can help shed light on student success: according to the Department of Education, “irregular attendance can be a better predictor of whether students will drop out before graduation than test scores.”⁴³

Chronic absenteeism is defined by the Civil Rights Data Collection as missing 15 or more days in a school year (about 8 percent of all school days). In the Upper Valley, 11.3 percent of K-12 students were chronically absent in the 2013-2014 school year (the most recent data available), compared with 11.4 percent in Vermont and 12.9 percent in New Hampshire. Each state measures truancy differently, with New Hampshire reporting the percentage of students who have ten or more *half* days of unexcused absences, while Vermont reports the share who have ten or more *whole* days of unexcused absences. In Grafton and Sullivan Counties, the truancy rate was 8.1 percent in 2013-2014, while this rate was 4.4 percent in Orange and Windsor Counties.⁴⁴ Because of the interstate variation in definitions, it is sensible that the Vermont counties have lower truancy rates than their New Hampshire counterparts, given that it takes ten whole days to be labeled truant in Vermont (rather than just ten half days in New Hampshire). Indeed, on the Vermont side of the Upper Valley, the truancy rate was about half that of the New Hampshire side, suggesting that the two regions of the Upper Valley may have fairly similar rates. It should also be noted that truancy rates on both sides of the border are slightly below their respective state averages.⁴⁵

⁴¹ U.S. Department of Education. “A Guide to the Individualized Education Program.” (<https://www2.ed.gov/parents/needs/speced/iepguide/index.html>). Note that the original request for this measure was “IEP by third grade;” because this measure is not collected by either state, I use percent of students with an IEP as a proxy.

⁴² Attendance Works, Child and Family Policy Center. “What’s the Difference Between Chronic Absence and Truancy?” January 11, 2016. (<http://www.attendanceworks.org/whats-the-difference-between-chronic-absence-and-truancy/>).

⁴³ U.S. Department of Education. “Chronic Absenteeism in the Nation’s Schools.” (<https://ed.gov/datastory/chronicabsenteeism.html>).

⁴⁴ New Hampshire and Vermont Department of Education data reports.

⁴⁵ Note that three measures requested by the Foundation were unavailable for this report. These measures include “SPED referrals by third grade,” “grade retention” or “promotion” rates, and “student mobility (churn) rates.” For the first measure, no data are collected by federal or local sources for either New Hampshire or Vermont from which Upper Valley data could be extrapolated. For the latter two measures, data are only collected in Vermont, and therefore are unavailable for calculation across the entire Upper Valley. However, in Vermont, the

Section II. Early Childhood Education & Care in the Upper Valley

Indicators of Child Care Need

Census data suggest there are around 10,000 children under age five in the Upper Valley (9,841, +/-104), representing less than 5 percent of the Upper Valley's total population.⁴⁶ To verify the accuracy of this survey estimate, I use vital statistics data from New Hampshire and Vermont, which suggest an estimated 9,347 children under 5 in the Upper Valley.⁴⁷ Given the relative similarity in these estimates, it is likely that the share of the population comprised of young children (about 5 percent) is about accurate. Although difficult to further disaggregate this small group of children into infant, toddler, and pre-school age groups, some data suggest that the distribution is generally normal; that is, within the 0-4 age group, about 20 percent of children are less than a year old, 20 percent are one year old, etc.⁴⁸

Of course, not all families who live in the Upper Valley may be seeking paid child care and education arrangements. For instance, one parent may choose to stay home, the family might utilize relative care, or parents may work out split-shift scheduling, especially if child care is unaffordable. In the Upper Valley, there is some difficulty in estimating the share of young children who have “all available parents” in the workforce—that is, those who have two working parents if they live with two and one working parent if they live with one. However, data suggest that it is around 65 percent, with a (large) margin of error of +/-6.5 percentage points. In other words, given the range (58.9-71.9 percent), I can conservatively conclude that at least half, but not more than three-quarters of young Upper Valley children have all available parents in the labor force. Statewide data for New Hampshire and Vermont show that among young children with all available parents in the workforce, 36 percent also have at least one

“promotion” rate—that is, the percentage of students promoted to the next grade level or successfully completing school—was 99 percent in the 2015-2016 school year. Finally, student mobility rates, defined as the percentage of students who changed schools at least once during the 2015-2016 school year (other than a promotional move), stood at 8 percent in Vermont as a whole, and 10.5 percent in Orange and Windsor Counties specifically.

⁴⁶ American Community Survey, 2015, 5-year, Table DP05.

⁴⁷ Both New Hampshire and Vermont make available the number of births to women in each Upper Valley town; by tallying the number of children born to women living in each town in each year between 2012 and 2016, I am able to estimate the number of children under age 5 who live in each town (as of 2016). Of course this method assumes that children born to women in each town still reside in their town. Additional vital statistics data for Grafton and Sullivan Counties (unavailable for Windsor and Orange) suggest that between 2012 and 2016, 78 residents under age 5 died, representing about a 1 percent loss of this population. Census data on residential mobility of young children suggest that about 80 percent of Upper Valley children aged 0-4 had not moved in the past year (an additional 11 percent had moved, but remained in the same county). Overall, this suggests that the births data may vary by approximately 10 percent from the true population values due to deaths and moving, but that these data serve as a reasonable—and indeed, only available—source for town-level estimates of young children in the Upper Valley.

⁴⁸ Recent data at this level of detail are not available for the Upper Valley. However, I am able to derive a sense of this distribution from the most recent Decennial Census, which provides a count of Upper Valley residents in single-year age categories, although these data are old (2010). For a more current estimate, I use five years of American Community Survey “microdata” to estimate single-year age categories within the 0-5 year old group in New Hampshire and Vermont on the whole. This version has the advantage of being more current than the Decennial Census data, but is not as geographically precise. Regardless, data from both sources show a generally similar distribution of children within this age group.

sibling who is also under age 5.⁴⁹ More broadly, it may be useful to note that young children are often clustered in households: in New Hampshire and Vermont, 70 percent of young children have at least one sibling in the house, and 40 percent have a sibling who is also under age 5.⁵⁰

Further, the above estimates also include families with children who are in pre-school or kindergarten. Among three- and four-year-olds in the Upper Valley, about half are enrolled in school (between 45.1 and 53.5 percent).⁵¹ Unreliable data make it impossible to estimate the share of these children who are in public versus private school, given that the sample sizes of school-enrolled young children in the region are very small, and the corresponding margins of error are very high. However, statewide data from New Hampshire and Vermont may be helpful: specifically, among New Hampshire three- and four-year-olds who are enrolled in school, about 40 percent are in public school and 60 percent are in private. In Vermont, these shares are reversed, with 60 percent in public and 40 in private.⁵² These disparate shares are undoubtedly related to Vermont's statewide provision of publicly funded pre-kindergarten education, for which New Hampshire has no equivalent.⁵³

Features of Existing Early Childhood Care & Education

Types & Capacity

Licensing data suggest that there are 218 child care providers in the Upper Valley that deliver care to infants, toddlers, and preschoolers, including 86 in New Hampshire and 132 in Vermont (representing 39 and 61 percent of all Upper Valley providers, respectively).⁵⁴ Figure 10 shows

⁴⁹ Data on the presence of siblings is not available at the Upper Valley level. However, using a different format of the American Community Survey data (2015 5-year microdata), I am able to more flexibly explore family structure, at the expense of precision in geography. I estimate that 66 percent of New Hampshire and Vermont young children have all available parents working—similar to the share estimated using the ACS detailed tables for the Upper Valley specifically. These data also account for the employment status of grandparents among the very small share of children who live with one or more grandparents and have no parent present (less than 1 percent of all NH and VT children under 5). Microdata are extracted from Steven Ruggles, J. Trent Alexander, Katie Genadek, Ronald Goeken, Matthew B. Schroeder, and Matthew Sobek. Integrated Public Use Microdata Series: Version 5.0 [Machine-readable database]. Minneapolis, MN: Minnesota Population Center [producer and distributor], 2010.

⁵⁰ As in the previous note, data on the presence of siblings is not available at the Upper Valley level. Estimates here are derived from the 2015 5-year American Community Survey microdata (Ruggles et al. 2010).

⁵¹ This equates to an estimated range of 1,802 to 2,286 3- and 4-year olds enrolled in school. Note that the American Community Survey form defines school enrollment for this age group as someone who has “at any time in the last 3 months” attended “nursery school, [or] preschool.” (See <https://www2.census.gov/programs-surveys/acs/methodology/questionnaires/2017/quest17.pdf>). As such, it is possible that parents interpret this item in a variety of ways, including attendance in traditional preschool, center-based day care, or other early learning settings.

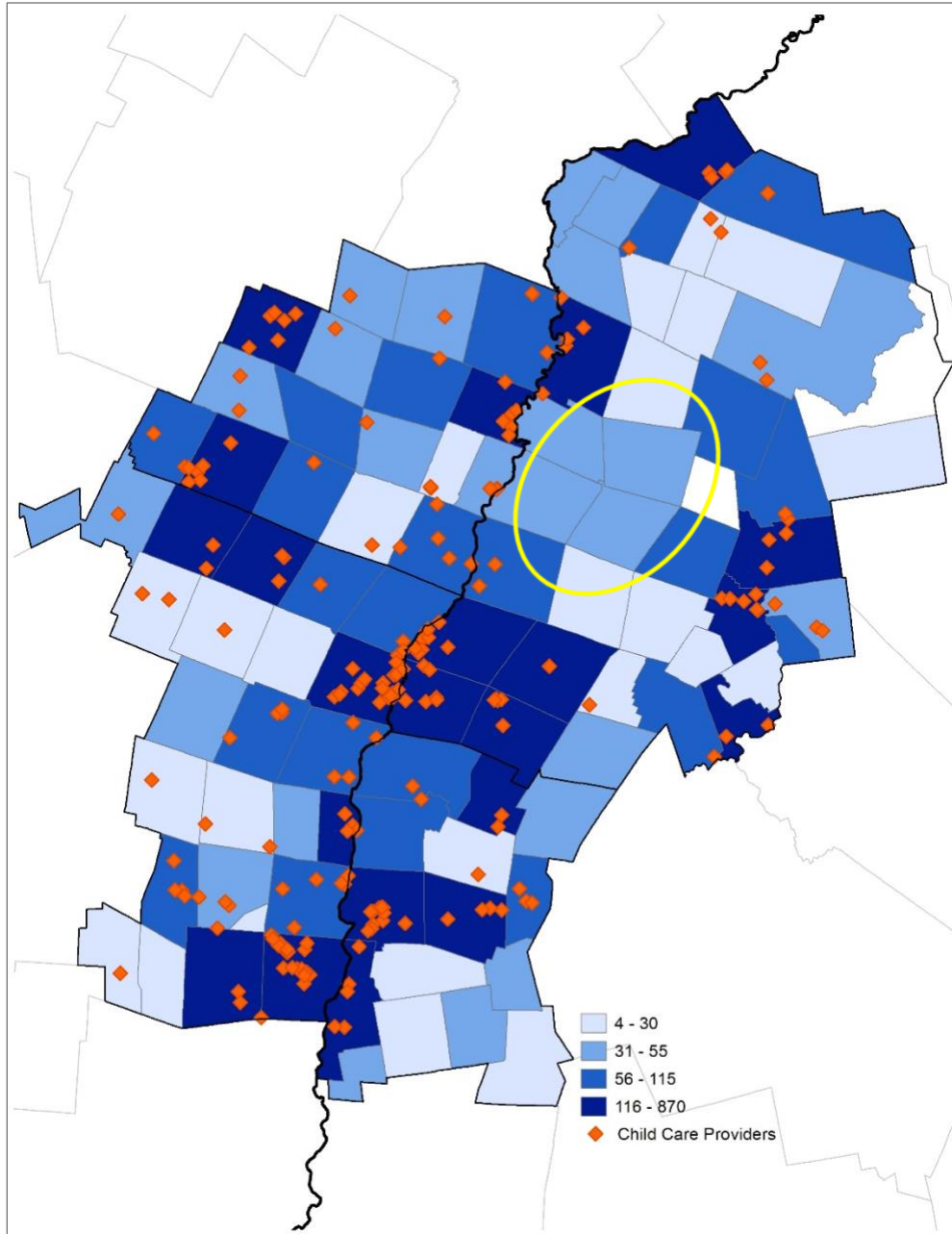
⁵² American Community Survey, 2015 5-year, Table S1401

⁵³ Vermont's Universal Prekindergarten provision (via Act 166 of 2014) provides for universal access for publicly funded prekindergarten. More detail about that Act can be found at State of Vermont, Agency of Education (education.vermont.gov/student-support/early-education/prekindergarten).

⁵⁴ This count omits two child care centers that are licensed in Vermont, given that they provide “non-recurring care” at a resort location (one to vacationing families, and one as a summer camp), and thus are not available to families as usual providers. These providers are Jackson Gore at Okemo Mountain Resort Summer Camp and Okemo Limited Liability Company at Jackson Gore.

the distribution of these child care sites across the region, overlaid with a map of the estimated child population by town. These data, derived from each state's vital statistics (see earlier footnote), indicate how well child care provider locations coincide with pockets of young children across the Upper Valley.

Figure 10. Distribution of Children Age 0-4 and Child Care Providers in the Upper Valley



Source: New Hampshire Child Care Licensing Unit, DHHS; Vermont Department for Children and Families, AHS; New Hampshire Division of Vital Records Administration, Department of State; and Vermont Department of Health

In general, the largest clusters of providers coincide with the largest child populations, with concentrations in the center of the Upper Valley, through Hanover, Lebanon, and Hartford; in

the southern parts of the region through Chester, Springfield, Claremont, Charlestown, and Newport; and in the eastern pockets of Plymouth and Campton. In contrast, pockets in the northeast with fewer children (e.g., through Landaff and Franconia) have comparably fewer options. In yellow, I highlight one region that seems relatively underserved by child care providers, despite having decent numbers of children in Woodstock and Rumney.

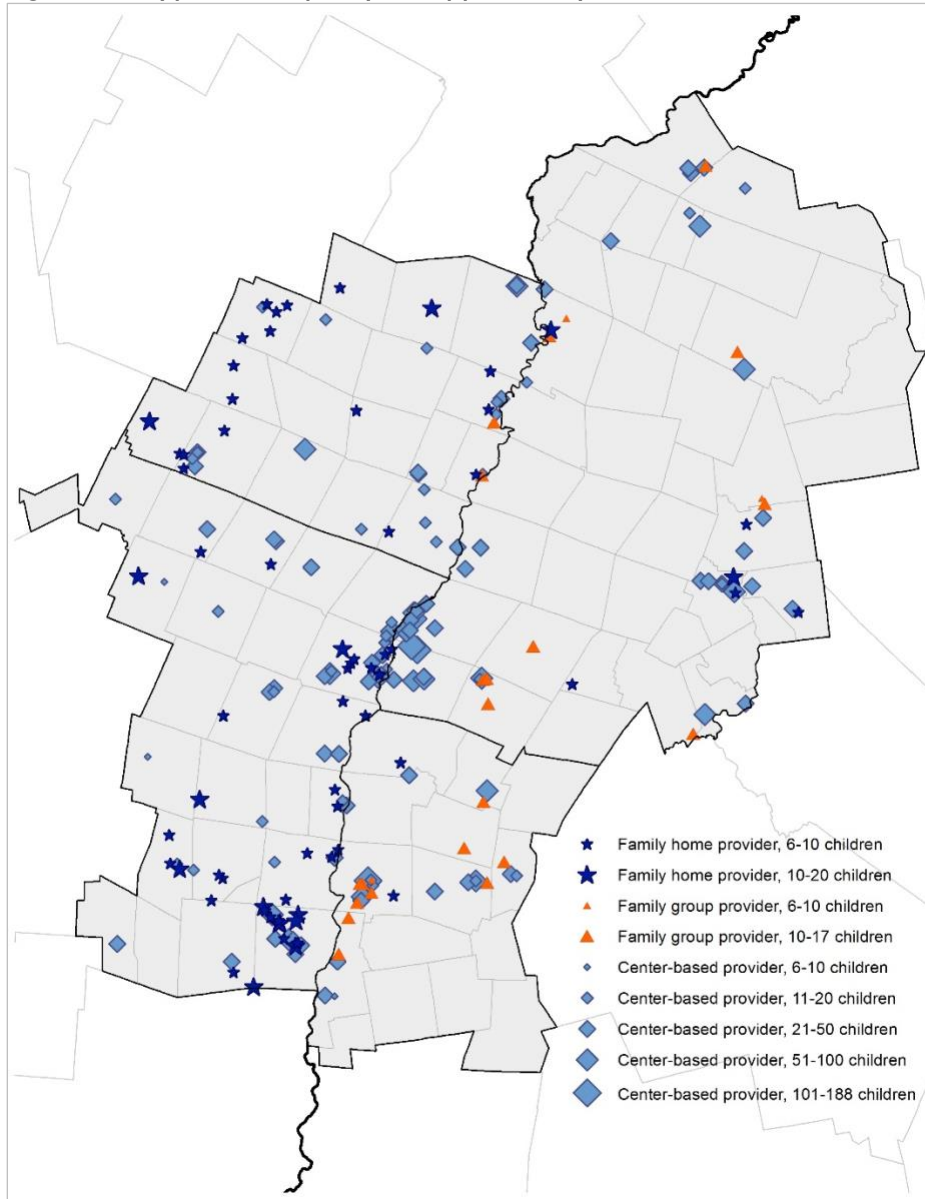
Beyond just the location of child care providers, it is useful to assess the types of providers in the region, in order to better understand the options that are available to families. In the Upper Valley, more than half—57 percent—of these providers are center-based, with the remainder (43 percent) representing home- and family-based providers. Among the region's 125 centers are 13 Head Start sites (serving children age 3 to 5), and according to the Office of Head Start, there are no Early Head Start sites in the region (which would serve children from birth to three).⁵⁵

Figure 11 shows the distribution of center and home-based providers in the Upper Valley, with markers scaled to represent the licensed capacity of each provider. One of the most important patterns in this map is the spatial clustering of center-based providers in certain regions of the Upper Valley. Especially on the New Hampshire side of the border, center-based providers are present in concentrated pockets, largely corresponding to population distribution.⁵⁶ On the Vermont side of the border, center-based providers appear slightly more dispersed, although it is unclear whether this is due to varying demand or other factors.

⁵⁵ Importantly, available data do not indicate the distribution of infant/toddler care versus care for older children across the Upper Valley. Specifically, while the state of Vermont tracks licensed capacity by age group, the state of New Hampshire does not. On July 27, 2017, I wrote to the New Hampshire Department of Health and Human Services' Child Care Licensing Unit's Licensing Supervisor, inquiring whether it was possible to disaggregate providers' licensed capacity into slots reserved for infants/toddlers versus preschoolers. She replied "We don't know the capacity each program chooses for their age ranges. This can change in a program based on need at any given time so this isn't information we collect as we'd have people making constant changes" (full email available upon request). Despite the lack of data from New Hampshire, I can note that on the Vermont side of the Upper Valley, a substantially higher share of slots are reserved for older children than for younger: 69 percent of licensed slots there are for children aged 3 and 4. While this is a disproportionate share of the child care slots, it is also important to consider whether there is some disproportionate need for slots by age as well. That is, while there is almost certainly a shortage of slots for the region's youngest children, it is also possible that parents of children under age two may also be less inclined to seek child care than parent of older children. As such, the exact degree of mismatch between desired and existing slots by age group remains unknown.

⁵⁶ According to town-level data from the 2010 Census, the most recent, reliable population data available for towns, all of the Upper Valley's 10 most populated towns have at least one center-based provider. These towns, in order, include Claremont, Lebanon, Hanover, Newport, Plymouth, Littleton, Springfield, White River Junction (Hartford), Windsor, and Randolph. Population data from U.S. Census Bureau, Decennial Census, Summary File 1, Table P1.

Figure 11. Type and Capacity of Upper Valley Licensed Child Care Providers



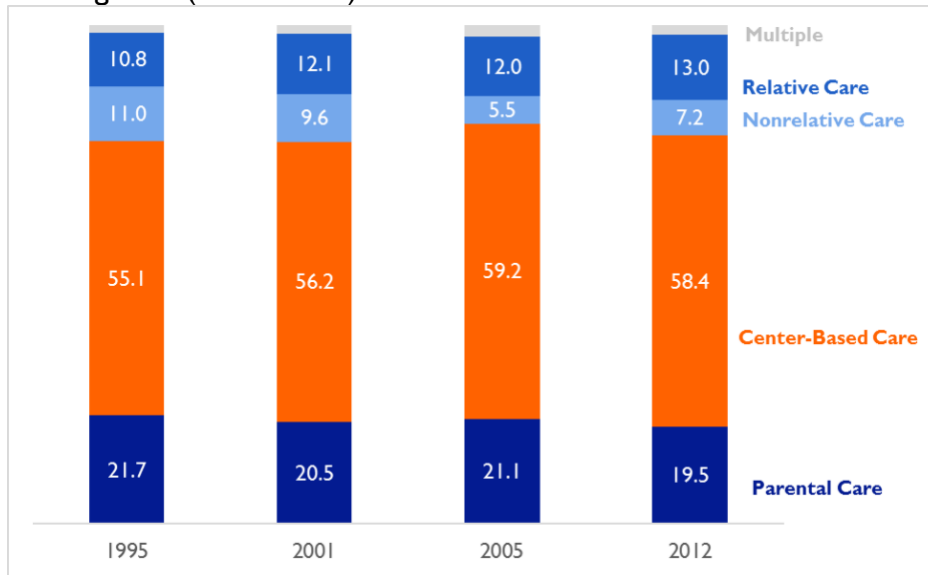
Source: NH Child Care Licensing Unit, Department of Health and Human Services; Vermont Department for Children and Families, Agency of Human Services

Note: Note that “family home provider” and “family group provider” are two slightly different types of licenses under the “home-based provider” umbrella.

That center-based providers comprise the majority of child care providers is unsurprising in a historical context. As an addendum, the Foundation expressed interest in understanding possible trends in the type of care parents are using for their children; specifically, investigating whether, as child care centers struggle with staffing, parents may more often turn to home-based care for stability. While a full trend assessment for the Upper Valley is beyond the scope of the present analysis, I can note several trends in child care at the national and state levels that counteract this intuition.

First, Figure 12 shows child care arrangements for four- and five-year olds who are not yet enrolled in kindergarten. The bars indicate general stability in care types over time, with slight increases in center-based care and relative care, and slight declines in nonrelative care.

Figure 12. Primary Child Care Arrangements of Four- and Five-year-olds Not Yet in Kindergarten (Nationwide)



Source: National Center for Education Statistics, 2016

Regarding the Upper Valley specifically, there is little readily available data on this topic, although New Hampshire-specific press from 2010 identifies a “trend towards larger, more institutional care and...a further decline in family-centered child care.”⁵⁷ A 2013 radio report notes that “increasingly childcare centers are opening and family, home-based operations are closing,” and suggests that “some believe the changing demands of the workplace are part of what’s driving the shift.”⁵⁸ In short, larger centers may experience turnover, but also have the staff volume and infrastructure to offer extended hours, potentially more highly-qualified staff, and a setting that parents may feel better prepares their children for school.

Alongside the types of child care providers in the region, I also assess the capacity of these providers. Across the Upper Valley’s 218 child care providers, there exist 4,995 slots for pre-school-aged children (that is, children younger than school age, rather than children who are at an age for pre-school programming).⁵⁹ Fifty-six percent of these slots are on the New Hampshire side of the border, versus 44 percent in Vermont. While child care centers represent 57 percent of providers, because their licensed capacity is much larger than that of their home-based counterparts, center-based slots account for 86 percent of all pre-school-aged slots in the Upper Valley.

⁵⁷ “The State of New Hampshire’s Child Care.” New Hampshire Business Review, December 17, 2010. (<http://www.nhbr.com/December-17-2010/The-state-of-New-Hampshires-child-care/>).

⁵⁸ Evans-Brown, Sam. 2013. “Workers Vote with Feet, Leave Home-Based Child Care.” *New Hampshire Public Radio*, November 21, 2013. (<http://nhpr.org/post/workers-vote-feet-leave-home-based-child-care#stream/0>).

⁵⁹ Data from New Hampshire Child Care Licensing Unit, Department of Health and Human Services; Vermont Department for Children and Families, Agency of Human Services

In terms of capacity, it is important to note that these child care slots represent the maximum number of children present in programming at any given time.⁶⁰ As a result, the number of children actually enrolled in a program may exceed its number of total slots, since, for example, two part-week attendees could occupy a single licensed slot. Neither Vermont nor New Hampshire reports on actual enrollment numbers, so it not possible to determine from existing data to what degree licensed capacity matches actual enrollment.⁶¹ It should also be noted that licensed care likely accounts for only a fraction of total home-based provider capacity in the region. For example, national data suggest that among all paid, home-based providers, those appearing on state or national lists (i.e., those who are licensed, registered, regulated, etc.) make up just 11 percent of all paid home-based providers. As a share of all home-based providers—paid and unpaid—listed home-based providers account for just three percent.⁶²

Even given these complexities, it seems that the number of available child care slots in the Upper Valley is mismatched with the young child population in the region. For instance, using the Census Bureau’s estimates of the number of children under age 5, the region has full time child care slots for just 51 percent of these children. Using the estimate derived from Vital Statistics data, there exist slots for 53 percent of the region’s children. And as a share of children likely to need care—that is, children under six with all available parents in the labor force—the number of slots only covers two-thirds (67 percent) of this population. With such limited supply of child care, issues of affordability, suitability for families’ schedules, family preference as to type and location, and other issues may fall by the wayside compared to sheer unavailability of slots.

Quality & Cost

In recent decades, there have been considerable efforts to assess and improve the quality of early childhood education nationwide. Since the 1990s, states have been encouraged to develop Quality Resource Information Systems (QRIS) that can help organize these efforts, with a focus on improving quality, informing parents, supporting professional development opportunities, and aligning different parts of the early care and education system (e.g., licensing, training, program standards, subsidies).⁶³

⁶⁰ This interpretation of licensed capacity was confirmed in an email exchange with the Licensing Supervisor of the Child Care Licensing Unit in the New Hampshire Department of Health and Human Services on 10/26/17.

⁶¹ It is beyond the scope of this project to contact each of the region’s 218 providers to inquire about enrollment, but it is important to note that staffing issues (and differences in this experience between home- and center-based settings), configurations of full- versus part-time attendees, and the state’s inability to track enrollment means that this is an important unknown factor in the region’s child care landscape.

⁶² Data derived from the National Survey of Early Care and Education Project Team. 2015. “Fact Sheet: Who is Providing Home-Based Early Care and Education?” *OPRE Report No. 2015-43*. Washington, DC: U.S. Department of Health and Human Services. (<http://www.acf.hhs.gov/programs/opre/research/project/national-survey-of-early-care-and-education-nsece-2010-2014>).

⁶³ For more about QRIS basics, see (<https://qrisguide.acf.hhs.gov/index.cfm?do=qrisabout>).

While most states now have some kind of QRIS,⁶⁴ the system's design can vary considerably between states. Both New Hampshire and Vermont have systems in place: in New Hampshire, this is a three-tier system, which includes basic licensing, Licensed Plus status (which indicates that a program meets higher quality standards), and national accreditation. Vermont's QRIS is the Step Ahead Recognition System, or STARS, which assigns participating providers points across five categories to result in a rating of one to five stars,⁶⁵ with national accreditation addressed separately.

On the New Hampshire side of the Upper Valley, there are 12 Licensed Plus programs and five nationally accredited programs,⁶⁶ representing 20 percent of all licensed programs in Grafton and Sullivan Counties. On the Vermont side of the border, 10 percent of licensed programs are not rated in the STARS program. About one in ten are one- or two-star programs, 27 percent are three star, and 53 percent of all Orange and Windsor County programs are rated 4 or 5 star programs, with nine of these being nationally accredited.⁶⁷ While it is difficult to compare across states, given the differences in quality ratings systems, these data suggest that Vermont might have more high-quality programs from which to choose, both in terms of absolute number of programs and in terms of the share of programs with the highest-quality ratings.

Finally, in addition to the availability and quality, it is key to also assess the cost and affordability aspects of child care in the region. As is true nationwide, the costs of child care are substantially higher for care of the youngest children. In the Upper Valley, the estimated cost of full-time, year-round care for a child under age two is \$10,498,⁶⁸ compared with an estimated \$9,175 for a child aged three through five.⁶⁹

With a median family income of just over \$64,000, having an infant or toddler in full time care would consume about 16 percent of an Upper Valley family's income (14 percent for a child 3-5). Among lower-earning families or single parents, this share would be astronomically higher:

⁶⁴ As of January 2017, one state was still in the pilot stage (Alabama), six states were still in the planning process (Alaska, Connecticut, Missouri, South Dakota, West Virginia, and Wyoming), and one state had no QRIS efforts in progress (Mississippi). See https://www.qrisnetwork.org/sites/all/files/maps/QRISMap_0.pdf.

⁶⁵ For more on the included categories, see (<https://qrisguide.acf.hhs.gov/index.cfm?do=qrisstateinfo&statelid=96>).

⁶⁶ National accreditation data available from the National Association for the Education of Young Children, "Search NAEYC Accredited Programs" tool. Retrieved October 2, 2017.

⁶⁷ National accreditation data available from the National Association for the Education of Young Children, "Search NAEYC Accredited Programs" tool. Retrieved October 2, 2017. Note that no Vermont programs with fewer than four stars are nationally accredited.

⁶⁸ This should be considered an estimate, as while the New Hampshire Child Care Resource and Referral Network furnished county-specific cost data upon request, the state of Vermont (which has no CCR&RN) has not done so to date. As such, the data used to calculate costs on the Vermont side of the border are derived from an existing report, with no opportunity to independently verify the figures for accuracy. However, given those values' similarity to the confirmed values in New Hampshire, it seems likely that they are accurate. Until this draft is final, I will continue to pursue verification from Vermont, following up on contact made on 9/26/17, 10/3/17, 10/18/17, and a response on 10/20/17. As presented here, data for Vermont are derived from the Vermont Blue Ribbon Commission report, from Appendix I, Table 4 (<http://buildingbrightfutures.org/blue-ribbon-commission/>). I assume that the data listed in this report refer to full-time year round care, and that "infant" and "preschool" are defined using the same definitions as the Vermont 2015 Market Rates Survey, cited within.

⁶⁹ While data from New Hampshire allow us to exclude five year olds from this figure, the existing data from Vermont do not. For consistency across state lines, I thus include five year olds here.

for instance, for the Upper Valley’s estimated 5,600 cashiers,⁷⁰ an infant in care would consume nearly half (47 percent) of a worker’s income. In order to meet the affordability threshold laid out by the U.S. Department of Health and Human Services, child care costs should not exceed 7 percent of a family’s income.⁷¹ Among the more than three hundred occupations with wages listed in the Bureau of Labor Statistics data, only three occupations are estimated as having average annual incomes exceeding \$149,000—the amount needed for infant care to consume just 7 percent of income—across both New Hampshire and Vermont regions of the Upper Valley. These occupations are “Physicians and Surgeons, All Other,” “Family and General Practitioners,” and “Chief Executives.”⁷² Of course, affordability is measured on a family level, and is not necessarily based on the earnings of a single worker, but the illustrative point remains that for most Upper Valley workers, it is difficult to earn enough so that child care could be considered “affordable.” Of course, for families with multiple children needing care, costs are magnified and consume higher shares of the family budget.

Finally, with this understanding of child care options and costs throughout the region, it would also be useful to understand the processes by which parents decide on particular kinds of care, and how participation is patterned for different types of families. Unfortunately, these data are difficult to come by at the state level, and do not exist at all for the Upper Valley. However, a broader body of social science literature suggests that higher income and more educated families are more likely to use center-based care than are other kinds of families.⁷³ In addition, research also suggests that deciding on one type of care over another is influenced by a variety of factors, including location, scheduling preferences, perceptions of quality, and affordability.⁷⁴ Greater detail on how these factors are navigated specifically by Upper Valley families might be explored in Phase II of this project.

⁷⁰ Bureau of Labor Statistics, Occupational Employment Statistics, May 2016 Metropolitan and Nonmetropolitan Area Occupational Employment and Wage Estimates. Note that for this data source, the “Upper Valley” is a geographic approximation, comprised of two proxy geographies: the West Central New Hampshire nonmetropolitan area and the Southern Vermont nonmetropolitan area. These areas roughly coincide with the Upper Valley, but exceed its boundaries; see Figure 15 in the appendix for a map.

⁷¹ See Office of Child Care (OCC), Administration for Children and Families (ACF), Department of Health and Human Services (HHS). December 24, 2015. “Notice of Proposed Rulemaking: Child Care and Development Fund (CCDF) Program.” Document 80 RF 80465. Available at (<https://www.federalregister.gov/documents/2015/12/24/2015-31883/child-care-and-development-fund-ccdf-program>).

⁷² Bureau of Labor Statistics, Occupational Employment Statistics, May 2016 Metropolitan and Nonmetropolitan Area Occupational Employment and Wage Estimates. See Figure 15 in the appendix for a map of the applicable geography.

⁷³ See, for instance, Corcoran, Lisa and Katrina Steinley. 2017. “Early Childhood Program Participation, Results from the National Household Education Surveys Program of 2016.” American Institutes for Research / National Center for Education Statistics. (<https://nces.ed.gov/pubs2017/2017101.pdf>).

⁷⁴ See, for instance, Forry, Nicole, Kathryn Tout, Laura Rothenberg, Heather Sandstrom, and Colleen Vesely. 2013. “Child Care Decision-Making Literature Review.” *OPRE Brief* 2013-45. Washington, DC: Office of Planning, Research, and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services. See also Chaudray, Ajay. 2004. *Putting Children First: How Low-Wage Working Mothers Manage Child Care*. New York: Russell Sage Foundation.

Child Care & Education Workforce

Data on early child care and education are particularly lean when it comes to tracking the child care workforce. For estimating the size of the workforce, preferred sources—state administrative data—do not exist in New Hampshire. While a professional registry exists, with intention to track the workforce and its demographic details, participation is voluntary (and once included, is not updated). As a result, any data available there are at best, incomplete, and at worst, misleading.⁷⁵ The state of Vermont does track the size of the child care workforce, via the Department of Children and Families. For Orange and Windsor Counties, this exceeds 1,200 workers in a variety of child care roles, including owners of registered home-based programs, teachers, program staff, and substitutes.⁷⁶

Aside from administrative data, survey data also provide a sense of the size of the child care workforce. Data from the Bureau of Labor Statistics suggest that the number of child care workers in the (approximated) region⁷⁷ is considerably lower than the Vermont state data suggest, even with a considerable margin of error. That is, across the Upper Valley, survey data estimate 660 child care workers (margin of error = +/-210; range 450-870 workers) across the region in both states. In contrast, the number obtained from the State of Vermont alone (1,200) is nearly twice as high as the estimate spanning the entire Upper Valley region. It seems most likely that the State of Vermont classifies child care workers differently than in the survey data—in particular, that administrators, staff, and substitutes may not be considered “child care workers” under the Bureau of Labor Statistics’ occupation codes. In short, there is no good estimate of the size of the child care workforce in the region, and understanding the reach of this group is an area that remains under-investigated.

In a similar vein, neither New Hampshire nor Vermont tracks demographic details of child care workers through the licensing process, nor are programs required to submit details about their employees’ pay or education, or about their individual program’s staffing turnover rates. In New Hampshire, the professional registry contains a field for collecting salary information, but the data steward admits that even among the slim share of child care workers who participate in the registry, most do not provide salary information. In Vermont, in response to a public records request for this information, the Records Officer for the Department for Children and Families writes, “[P]lease accept this letter as certification that the records you requested,

⁷⁵ New Hampshire has plans to shift toward mandatory participation at some point, but even then, it the registry is unlikely to provide complete information, since the main objective is to simply obtain a list of workers in the field, without attempting to extend into collecting demographic detail initially. Per author’s phone conversation with Child Care Improvement Specialist, Child Development Bureau, Department of Children and Families, New Hampshire Department of Health and Human Services (9/20/17).

⁷⁶ Note that substitutes are the largest subcategory of child care workers according to the state breakdown, representing 19 percent of all child care workers in August 2017. Data were obtained via a public records request to the Department of Children and Families, Child Development Division, and extracted via their Bright Futures Information System Record Check Due Extract.

⁷⁷ Bureau of Labor Statistics, Occupational Employment Statistics, May 2016 Metropolitan and Nonmetropolitan Area Occupational Employment and Wage Estimates. See Figure 15 in the appendix for a map of the applicable geography.

educational attainment of the childcare workforce and turnover rates, do not exist and cannot be created.”⁷⁸

Given a lack of education, salary, and turnover information from the state, data from alternate sources again provide some useful substitutes. Survey data from the Bureau of Labor Statistics provide salary estimates for child care workers in the Upper Valley (geography is approximated; see Figure 15 in Appendix). Those data show that child care workers in the region have an annual average income of \$25,281.⁷⁹ This average income is somewhere between that of cashiers (\$22,486) and bartenders (\$28,981) in the region.⁸⁰ For a single mother with two children, a child care worker’s salary would represent 132% of the federal poverty threshold.

Regarding education and turnover, the Bureau of Labor Statistics provides no regional data. However, as a federally funded program, the Office of Head Start provides one source of regularly collected data for a subset of the child care workforce. While it is unclear exactly how Head Start staff’s education and turnover rates compare to those among the broader child care population, it is possible that the strict federal requirements around Head Start staffing and programming⁸¹ result in a workforce that is, at the least, not *less* educated than the general child care workforce.

As earlier described, there are 13 Head Start sites in the Upper Valley, which employed 50 teachers and 46 assistant teachers in the 2015-2016 school year. Of the region’s Head Start teachers, two-thirds had a bachelor’s degree, and 12 percent had a graduate degree, with fewer than one in four holding only an associate’s or a Child Development Associate (CDA) credential (see Figure 13). In terms of assistant teachers, two-fifths had a bachelor’s degree, another approximately two-fifths had an associate’s or CDA, while the remaining fifth had no formal qualifications.

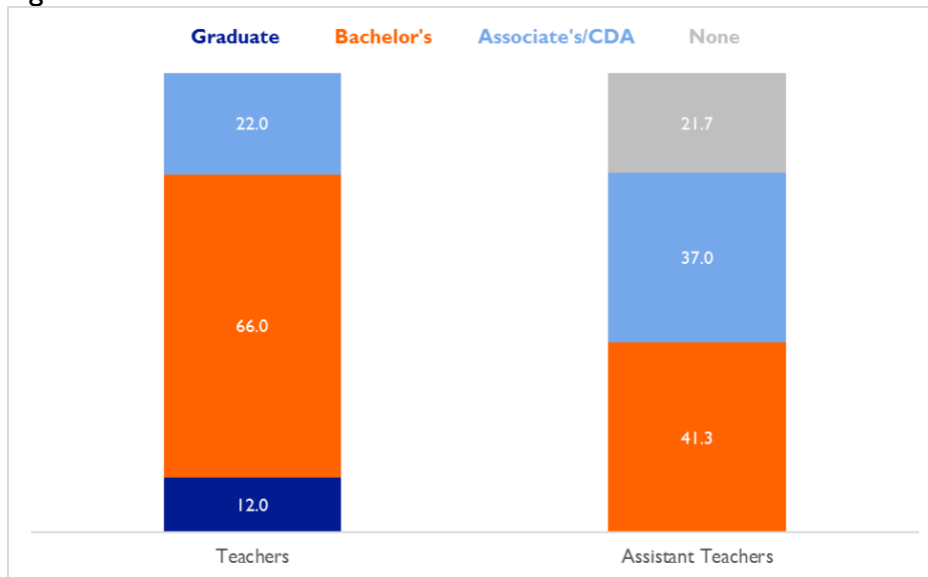
⁷⁸ Excerpted from a letter in response to the author’s 9/20/17 public records request to the Department of Children and Families Child Development Division; response letter dated 10/3/17 and available upon request.

⁷⁹ Calculated as a weighted average across states, so that the state with more estimated child care workers and slightly higher incomes for those workers (Vermont) “counts” more in the calculation of the average across states. Note that the margin of error is still substantial, with a range of about +/- \$3,000. Data derived from the Bureau of Labor Statistics, Occupational Employment Statistics, May 2016.

⁸⁰ Bureau of Labor Statistics, Occupational Employment Statistics, May 2016

⁸¹ For instance, see Office of Head Start, Head Start Policy & Regulations, “Section 1302.91 Staff Qualifications and Competency Requirements.” (<https://eclkc.ohs.acf.hhs.gov/policy/45-cfr-chap-xiii/1302-91-staff-qualifications-competency-requirements>).

Figure 13. Education of Head Start Teachers and Assistant Teachers in the Upper Valley



Source: Office of Head Start, Program Information Report, 2015-2016

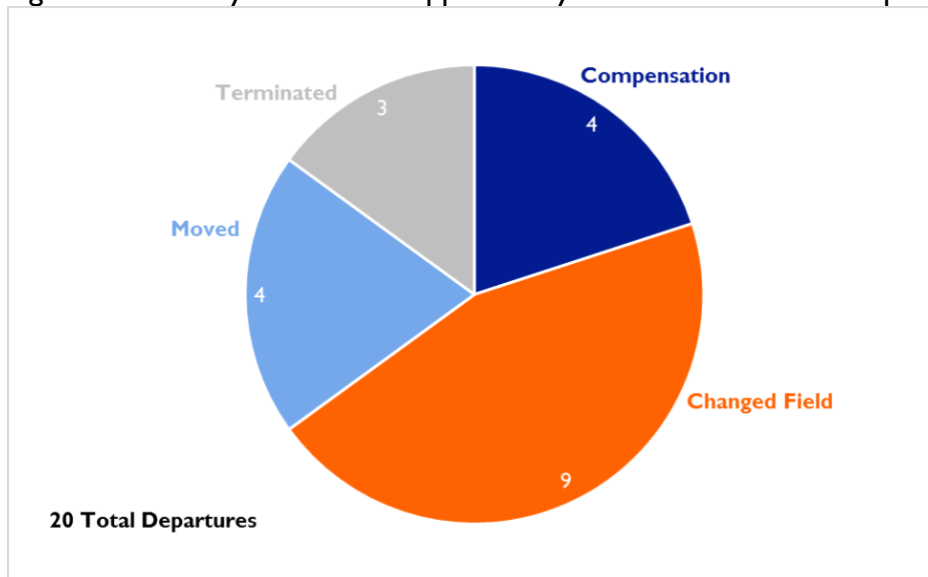
Despite high levels of education, Head Start staff tend to be low paid. Although salary data are unavailable for specific Head Start sites,⁸² data from the U.S. Department of Education reveal that Head Start teachers in New Hampshire and Vermont have median wages identical to other kinds of child care workers (between \$21,000 and \$26,000 in each state).⁸³ Perhaps as a result, Head Start—like many other kinds of early childhood programs—struggles with staff turnover. In the 2015-2016 school year, 20 of the 50 Upper Valley Head Start teachers departed by the end of the year. The Office of Head Start collects data on the reasons for teacher turnover, as shown in Figure 14. Note that while compensation was given as a primary reason for departure in four cases, “changed field” was the most common reason for departing Head Start programming, and it is unclear to what degree this might also be related to compensation. It is also worth noting that teachers who move into the public school system can expect median wages twice those of Head Start teachers and child care workers.⁸⁴

⁸² Salary data are unavailable via the Program Information Report data from which the education and turnover data were derived for this report. Note too that the author submitted a Freedom of Information Act request regarding specific grantees’ teacher salary data for a separate project on April 5, 2017, with a follow up message on June 27, 2017. To date, this request remains unacknowledged.

⁸³ U.S. Department of Education. “Fact Sheet: Troubling Pay Gap for Early Childhood Teachers.” June 14, 2016. (<https://www.ed.gov/news/press-releases/fact-sheet-troubling-pay-gap-early-childhood-teachers>).

⁸⁴ In New Hampshire, Head Start teachers have a median salary of \$21,720, versus \$51,280 for kindergarten teachers. In Vermont, these salaries are \$26,153 and \$53,080, respectively. U.S. Department of Education. “Fact Sheet: Troubling Pay Gap for Early Childhood Teachers.” June 14, 2016. (<https://www.ed.gov/news/press-releases/fact-sheet-troubling-pay-gap-early-childhood-teachers>).

Figure 14. Primary Reason for Upper Valley Head Start Teacher Departure in 2015-2016



Source: Office of Head Start, Program Information Report, 2015-2016

Conclusions

Social and Economic Landscape of the Upper Valley

The Upper Valley is a region that is advantaged on a lot of metrics. Like many residents of other Northeastern states, residents in the Upper Valley are relatively well-educated and high earning. Median age is high, poverty is generally low, and residents seek—and obtain—employment at high rates.

However, statistics that aggregate across an entire region can underestimate pockets of need within communities, and it is important to acknowledge that families with certain characteristics or in certain communities within the Upper Valley may have experiences that are quite different from the average. More than one-third of Upper Valley children live in families with incomes below twice the poverty threshold, and likely face some challenges in making ends meet. As in other regions in New England, it is possible that the more affluent circumstances of families in wealthier regions (e.g., Hanover) obscure the demographics of families in less affluent regions (e.g., Claremont).⁸⁵

⁸⁵ For instance, forthcoming work from the Carsey School of Public Policy explores the experiences of low income families in Carroll County, New Hampshire—a region that has relatively high median income and low poverty rates—and finds that the affluence of retirees and second home owners in the wealthier waterfront portions of the county influences the region’s statistics. A closer examination within the region shows that pockets of lower income residents struggle to make ends meet on the low-paying and inconsistent jobs in the service industry which retirees and vacationers depend upon. See Mattingly, Marybeth J. and Jessica A. Carson. “I have a job...but you can’t make a living”: How County Economic Context Shapes Residents’ Livelihood Strategies.” Under review at *Rural Sociology*, August 2017. Data on incomes in Hanover and Claremont estimated from the American Community Survey, 2015 5-year data, Table S1903, which shows that household income in Hanover is about twice that in Claremont.

Early Childhood Education and Care Landscape in the Upper Valley

Despite the region's generally positive socioeconomic and employment statistics, the Upper Valley faces some significant issues around child care. While these issues aren't unique to the region, they are as relevant there as in other places. For families seeking paid child care arrangements, the matters of moderate family incomes, limited numbers of child care slots, and exceedingly expensive care converge to form a nexus of challenges. Broader research efforts on low income families tell us that families use a variety of strategies for caring for their children. Families may rely on informal care providers (relatives, neighbors, romantic partners), or choose not to work while their children are small—especially for lower income workers, for whom earnings might not exceed the costs of purchasing care. Even for parents who receive some financial assistance—e.g., in the form of child care subsidies—these funds aren't necessarily a panacea, as meeting attached requirements around steady employment and hours can be difficult. Beyond cost, families can face challenges of transportation to child care, a mismatch between workers' schedules and child care availability, or challenges with providers' ability to meet children's special needs.

Identifying strategies to address the challenges of child care is complex. In general, there is an emergent tension between competing goals within the early childhood care and education field: in recent decades, there has been tremendous growth in the recognition of the importance of the early childhood years as a developmentally key period. As a result, researchers, practitioners, and policymakers alike have made efforts to promote high quality early childhood care and education, offering care in a warm and consistent setting, utilizing engaged and educated staff who teach a research-based curriculum. This kind of care—which research identifies as effective from a child development perspective—depends on small child-to-caregiver ratios, consistency in staffing, ongoing professional development opportunities, high quality materials, and other expensive components.⁸⁶ At the same time, the demand for care has risen as women have increasingly entered the workforce, meaning that higher numbers of children now require child care slots. A recent conversation with a Northern New England Head Start director⁸⁷ highlights the “quality versus quantity” dilemma in the early childhood education field:

“Do we want to serve fewer children with higher intensity services or more children with less intensity services? ... There needs to be some sort of reconciliation, and it's been a challenge, because as we've moved forward to push the quality—which clearly, I fully support and believe in—that raises the bar on that side...but it ends up lowering the bar on the number of kids that we can serve.”

⁸⁶ See, for instance, Center on the Developing Child. 2007. “InBrief: Early Childhood Program Effectiveness.” Cambridge, MA: Harvard University. (<https://developingchild.harvard.edu/resources/inbrief-early-childhood-program-effectiveness/>).

⁸⁷ Author's interview with Head Start Director for a separate project, May 2017. For materials related to that project, see Carson, Jessica A. 2017. “Toward a More Equal Footing: Early Head Start in Maine.” *Issue Brief #122*. Durham, NH: Carsey School of Public Policy. (<https://carsey.unh.edu/publication/head-start-me>); and Carson, Jessica A. 2017. “Maine Head Start Report: 2017.” Research Report. Durham, NH: Carsey School of Public Policy. (<https://carsey.unh.edu/publication/maine-head-start-2017>).

Other tensions in the early childhood field include the relatively low pay for staff, the intensity of the work (and relatedly high levels of staff “burnout”), a lack of information about child care options for parents, and significantly, the high costs for parents.

Policy and Practice Efforts around Early Childhood

Some policy efforts exist to address the issues of child care, often on the side of alleviating cost pressures for low income families. The Obama administration expanded the Child Care and Development Fund and expanded the maximum child care tax credit for families with young children.⁸⁸ Child care subsidies, funded through state and federal dollars, can help defray the costs for certain low income families, although research shows that most eligible families do not actually receive subsidies, perhaps due to lack of awareness, application burdens, or stigma.⁸⁹

At the more local level, some practitioners attempt to address child care challenges outside of federal legislation. Developing cross-industry partnerships where multiple stakeholders can collaborate on the issue of child care is an effort that is recently gaining momentum. For instance, workforce development agencies and community colleges have a stake in ensuring parents can participate in (and complete) programming, and therefore, may be amenable to making programmatic changes that support child care needs like providing participants with flexible scheduling or encouraging strategic location of child care services.⁹⁰ Facilitating partnerships between child care providers and statewide resource and referral networks can streamline the flow of information for parents and ensure that these networks can provide up-to-date, individualized recommendations for each family. Finally, state social service providers might more readily provide families with information about subsidies and assistance with the enrollment and verification process. In any case, ensuring multiple stakeholders’ involvement—including business leaders, state service workers, child care providers, parents, educators, philanthropists—may be a promising path forward in addressing these issues.

As described above, data suggest that the Upper Valley faces some child care challenges that are important, but not unique to the region. However, in order to really understand the scope and breadth of the challenges faced by Upper Valley families, it is imperative to allow those families to weigh in. For instance, it is possible that unique features of the region’s economy, its child care providers, or its geography influence parents’ child care choices in a way that is not made clear through existing data. Phase II of this project should considerably clarify the specific contours of these issues in the Upper Valley, and shed light upon possible steps for action.

⁸⁸ The White House. FactSheet: Helping All Working Families with Young Children Afford Child Care.” January 21, 2015. (<https://obamawhitehouse.archives.gov/the-press-office/2015/01/21/fact-sheet-helping-all-working-families-young-children-afford-child-care>).

⁸⁹ See Forry, Nicole, Paula Daneri, and Grace Howarth. 2013. “Child Care Subsidy Literature Review.” *OPRE Brief 2013-60*. Washington, DC: Office of Planning, Research, and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services. Available at

⁹⁰ For more on these types of efforts, see Adams, Gina, Teresa Derrick-Mills, and Caroline Heller. 2016. “Strategies to Meet the Child Care Needs of Low-Income Parents Seeking Education and Training.” *Research Report*. Washington, DC: Urban Institute.

Appendix

Table 3. Summary of Upper Valley Child Characteristics

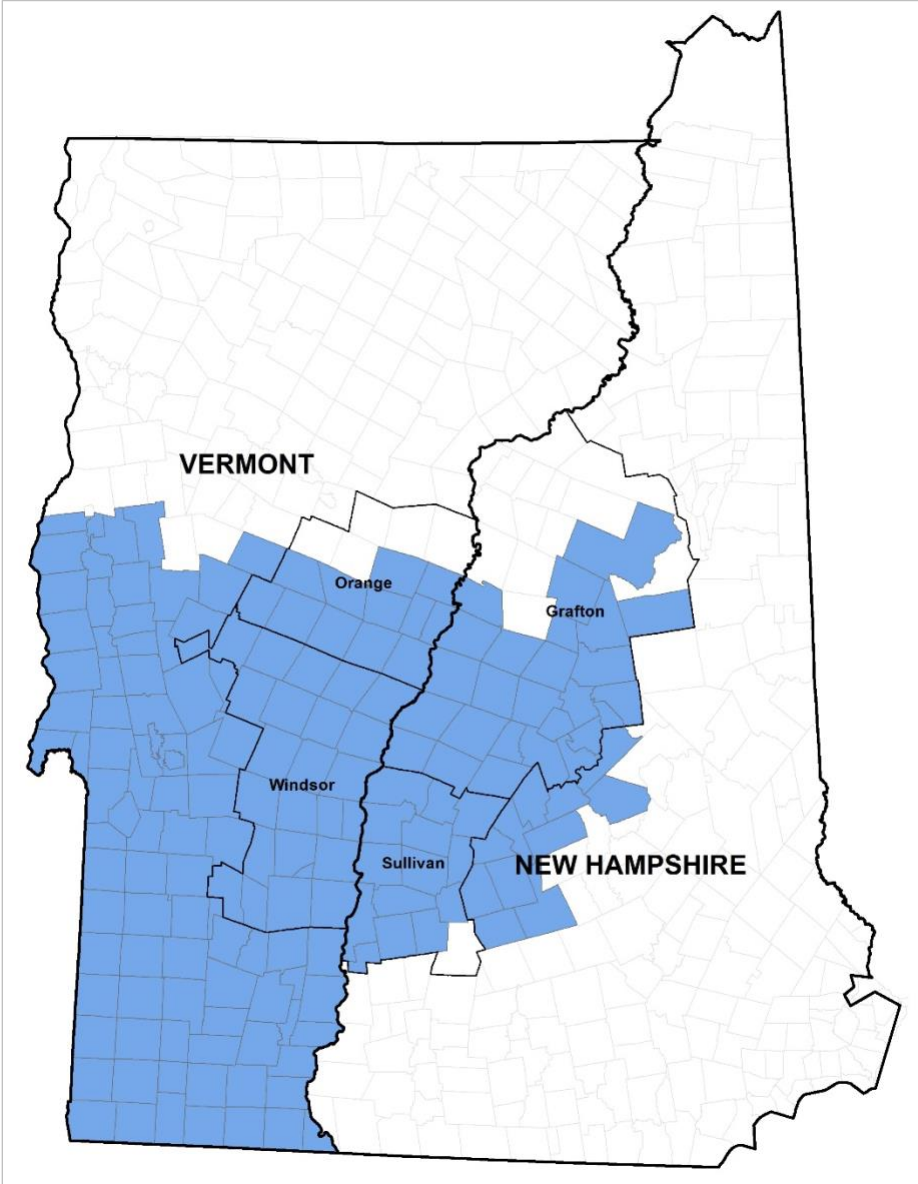
	Estimate	Margin of Error	Range	
			Lower	Upper
Children 0-4				
Number	9,841	104	9,737	9,945
Percent (of total population)	4.5	0.1	4.4	4.6
Children 0-4 Living with a Married Couple				
Number	5,983	427	5,556	6,410
Percent	69.5	1.7	67.8	71.2
Children 0-4 in Single Parent Households				
Number	2,631	388	2,243	3,019
Percent	30.5	4.0	26.5	34.6
Children 0-18 Poor (<100% FPL)				
Number	5,979	783	5,196	6,762
Percent	15.1	2.0	13.1	17.0
Children 0-18 Low Income (<200% FPL)				
Number	14,819	1,154	13,665	15,973
Percent	37.4	2.8	34.6	40.2
Children 0-5 with All Available Parents in Workforce				
Number	7,502	791	6,711	8,293
Percent	65.4	6.5	58.9	71.9
Children 3-4 Enrolled in School				
Number	2,044	242	1,802	2,286
Percent	49.3	4.2	45.1	53.5
Children 5-17 Eligible for Free & Reduced Price Lunch				
Number	8,937	N/A	N/A	N/A
Percent	37.35	N/A	N/A	N/A
Children 0-5 without Health Insurance				
Number	487	192	295	679
Percent	4.1	1.6	2.5	5.7
Children 0-5 in Foster Care				
Number	200	N/A	N/A	N/A
Percent	*	N/A	N/A	N/A
Children 0-18 Experiencing Homelessness				
Number	121	N/A	N/A	N/A
Percent	*	N/A	N/A	N/A

Note: "N/A" indicates where margins of error are not appropriate, as data are drawn from non-survey sources.

Asterisks denote where the calculation of a percent is inappropriate.

Sources: American Community Survey, 2015 5-year; State of New Hampshire; State of Vermont

Figure 15. Map Indicating West Central New Hampshire nonmetropolitan area and Southern Vermont nonmetropolitan area (Upper Valley proxies used in some BLS data)



Source: Bureau of Labor Statistics, Occupational Employment Statistics, May 2016 Metropolitan and Nonmetropolitan Area Definitions

Note: Data that cover this geography are used above in estimating the number of childcare workers in the Upper Valley, in approximating their salaries, and in describing salaries for other particular industries in the Upper Valley (e.g., cashiers).