

Assessment of the Strengths and
Needs of the Maternal and Child
Health Population

Created for the FY11 MCH Title V Block
Grant Application

Submitted to:
Maternal and Child Health Bureau



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1. PROCESS FOR CONDUCTING A STRENGTHS AND NEEDS ASSESSMENT

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1.1 Goals and Vision:

Historically, Vermont has submitted a Title V needs assessment using a traditional population health needs and organization capacity assessment approach. However, discussions with the MCH community and burgeoning research has opened the discussion for examining population based health issues from a strengths based approach in addition to needs. The approach of knowing both strengths and needs allows for a full and complete assessment of the women, children and families who are within its citizenry.

Vermont began this assets approach with its 2005 assessment and has made some progress in the last five years in adhering to this broad philosophy. In addition, Vermont has been adding the model of the Lifecourse Approach to Health and examining the effects of social determinants on population health. A key document that reflects this approach is the recently produced report, *The Health Disparities of Vermonters* (www.healthvermont.gov) which examines health conditions according to social determinants of health. In addition, the Division of MCH is planning for more training and use of Lifecourse theory in public health programming and planning. (A staff training is planned for November, 2010 via an MCHB grant and using faculty from BUSPH and the Boston Public Health Commission.) There are seven asset questions in the Vermont YRBS (one question is the Title V State performance measure of “In my community, I feel like I matter to people.” YRBS analyses for “risk taking behaviors” are analyzed according to these assets and give information that is more amenable to public health interventions. Also, the VDH is embarking on new initiative with the Department of Education to enhance school health programs statewide, using assets and Lifecourse as planning approaches. In addition, VDH is preparing a preconception health report that will analyze data allowing application of Lifecourse theory.

In addition, Vermont tested this asset/strengths thinking when re-evaluating the MCH Ten Priority Needs for action for the period of 2010-2015. In discussion with MCH leadership and with our partners in both state government and community organizations, the feedback was to keep the focus on strengths and the broad goals that were chosen in 2005. As in 2005, we chose to call this listing for action a list of Priority *Goals*, not *Needs*.

Therefore, this information gathering and analysis process was carried out under the vision of a Vermont Maternal and Child Health Strengths and Needs Assessment – not *just* a population-based needs assessment. Vermont was interested in attempting to apply recent and historical “assets” research to the process of a population health assessment. Assets literature has described methods of describing strengths within an individual, a family, or a community as a key approach for promoting strengths and empowerment. The persons are considered in control of their own health or community and traditional service providers should look to methods of empowering those who are served, instead of “fixing their problems.” Emphasis is on the social

connectedness within a group that creates “community” and can be used to build on common strengths. The resulting document reflects this approach, but must be considered only a beginning for guiding public health theory and action within a strengths promotion context for the next five years.

1.2 Leadership

The overall guidance for the Title V Strengths and Needs Assessment was provided by the MCH Leadership Team with representation from VDH Local Health Services, EPSDT, WIC, School Health, Family Planning, Injury Prevention, and Title V. Dr. Breena Holmes, MCH Director, provided leadership for the SNA process and will work with the Leadership Team to provide follow up for the issues identified in this assessment and also planning for addressing the Ten Priority Goals.

The 2010 Strengths and Needs Assessment consisted of several information gathering processes, such as a review of the literature and secondary source material, a review of national and state qualitative and quantitative data, and a series of key informant interviews with Vermont’s MCH stakeholders representing obstetricians, policy makers, advocates, family services providers, home health agencies, and state program administrators. The population data was then analyzed according to the three population groups of pregnant women and infants, children and adolescents, and children with special health needs. The organizational capacity information was critiqued according to the four MCHB pyramid levels of direct health services, enabling services, population based services, and infrastructure building services.

The MCH Leadership Team, which provides ongoing guidance and support for MCH program within VDH, reviewed the data and feedback from MCH stakeholders. The Team chose to continue with the 2005 Ten Priority Goals which are intended to reflect a strengths based approach to public health planning. The process for choosing these Goals involved a qualitative iterative discussion using agreed-upon topic areas and guidelines. The related performance measures are intentionally worded to reflect a combination of both the traditional approach of program evaluation or “deficit” wording and also the newer approach of strengths-based wording. Measures were chosen to reflect the existing work of VDH programs or to begin measurement of initiatives that are in the beginning stages of implementation. The Advisory Committee chose overall goals and performance measures that reflect the broad scope of MCH public health – hence the array of VDH programs such as environmental, CSHCN, physical activity, behavioral health, oral and medical homes, women’s health and early childhood. Some measures are population based and some are specific for program data or Medicaid data. Also, measures were chosen to reflect emerging issues or Vermont specific issues, and not to reiterate what might already be monitored via Title V-required national performance measures or outcome data. The MCH Leadership Team will meet monthly throughout the 2010-2011 to further refine the array of SPM’s. Three new measures will be created, reflecting health issues of behavioral health, the work of the ACA grant funded programs (such as evidenced based home visiting,) and the work of the CSHN SIG program. The other role for the ongoing activities of the MCH Leadership Team will be to provide a forum for communication among the stakeholders to help in coordinating state and local activities that will influence progress toward achieving of the Ten Priority Goals.

1.3 Methodology

In preparing for the gathering and analysis of the data needed for the Title V SNA, the VDH Davison of MCH relied heavily on support from the Division of Health Statistics and the large amount of quality data that is available from the research statisticians employed in that unit. Much of this valuable data has been able to be created due to the capacity building enabled by the funding and TA provided via the SSDI Program over the past ten years. For a detailed accounting of the quantitative data sources, see Section 1.4.

Vermont is fortunate to have a strong maternal and child health community composed of a diverse group of committed partners. The Vermont Department of Health (VDH) has benefited from this commitment, and over the past several decades has nurtured this relationship and built from it a sound MCH foundation and system. This foundation enabled the successful implementation of a strengths-based approach to the 2005 and now the 2010 assessment processes. In preparing for gathering the qualitative data needed for the SNA, the Division of MCH used the strengths-based philosophy as an opportunity to engage partners and value their unique perspectives, contributions and assessment of the state of MCH in Vermont.

In order to gather comprehensive quality data, (both qualitative and quantitative) VDH contracted with JSI, Inc. to conduct an assessment consisting of three main components: 1.) a review of the literature and secondary source materials; 2.) a review of state and national data; and, 3.) a series of key informant interviews and focus groups with MCH stakeholders.

Focus Groups with MCHC's: In preparation for the Title V SNA research, qualitative data collected during a focus group interview with Vermont Department of Health (VDH) Maternal and Child Health Coordinators (MCHCs) on May 21, 2009. The interview was conducted to provide stakeholder input for the federal 2010 Title V Maternal and Child Health Bureau's Strengths and Needs Assessment (SNA). In Vermont, the MCHCs are the front-line public health workers who attend to the health needs of the MCH population and it may be argued, are best equipped to understand the needs and strengths of this segment of Vermonters. Thus, MCHCs are considered an important stakeholder in framing and guiding the 2010 Title V SNA process. The researcher utilized a focus group interview methodology to gather data for this research. An initial meeting was held with leadership from VDH's maternal and child health division, VDH's research and statistical unit, and the Department for Children and Families, Child Development Division to identify key areas for investigation. Several topic areas were identified during these initial discussions, which guided development of the research questions and discussion topics. Findings were grouped into five central themes: 1) Identification of Maternal and Child Health Issues and Needs; 2) Limitations of Current Practices and Changing Realities; 3) Promising Strategies to Address the Issues and Needs Identified by MCHCs; 4) Strengths of the MCH Population; and 5) Trends and Gaps in Services.

Birth Information Network Focus Groups: In early 2010, three focus groups of parents whose children were born with birth defects were conducted by the VDH, the American Academy of Pediatrics, Vermont Chapter, and the Vermont Birth Information Network, which is funded by CDC to support birth defects surveillance and tracking. The purpose of these focus groups was to obtain information about parents' experiences with the system of referrals, clinical services, and

programs offered to them because of their child's condition. Results of these focus groups are discussed in Section 3.3.

Professional stakeholders were consulted. Representatives from the American Academy of Pediatrics, Vermont Chapter, the Vermont Child Health Improvement Program, and the Vermont Chapter of the Academy of Family Practitioners were approached with a listing of potential priority goals and measures and their input was considered in the final selection of the state performance measures by the MCH Leadership Team. In addition, parents within the Department of Children and Families and also the Office of Drug and Alcohol Abuse Programs were consulted.

1.4 Data Sources

Data related to describing birth outcomes and MCH indicators: The Vermont Department of Health (VDH) has ready access all current and past vital statistics data, including births, deaths, fetal deaths, and abortions. These data include demographics, geographical residence by town, maternal and pregnancy risk factors, birth outcomes, and causes of perinatal and infant deaths. Each quarter the VDH issues an internal report detailing provisional rates of such measures as low birth weight, LBW for singleton births, preterm delivery descriptors, month of entry into prenatal care and adequacy of prenatal care, infant mortality, prenatal smoking, teen pregnancy by age groups, and births to single mothers who are aged less than 20 years of age and with less than a high school education. These data are available by Health Department District and by county.

VDH, under contract to the VT Banking, Insurance, Securities, and Health Care Administration (BISHCA,) maintains the Uniform Hospital Discharge Dataset. Data include reason for admission, length of admission and principle procedures performed for all outpatient, emergency department and inpatient admissions of Vermont residents at Vermont, New Hampshire, Massachusetts, and New York Hospitals.

Approximately 40% of Vermont children 0-19 years old are enrolled in Medicaid or SCHIP, and approximately 40% of deliveries to Vermont women are paid by Medicaid. Detailed information is available for this subpopulation on demographic, income, medical services provided, diagnoses, and other health care measures such as which facility was used and the cost incurred.

VDH participates in the Behavioral Risk Factor Surveillance System (BRFS) which collects data on key health risks for adults, such as tobacco, alcohol and drug use, exercise, diet, mental health, social stressors, and access to health care. These data can be analyzed by sex, income, geographic location, educational level, race, and ethnicity.

In 2010, VDH produced the report, the Health Disparities of Vermonters, with data analysis by county. Key indicators such as birth outcomes, income, education level, housing, built environment, access to health care, stress and depression, and race/ethnicity are analyzed.

Data describing Families with Children who have special health care needs includes a VDH maintained registry of children born with selected birth defects. Recent focus group interviews of parents of children in the registry found unmet needs in the area of care coordination. Additional information about the impact of CSHCN children on families is contained in the National Survey of Children with Special Health Care Needs, published by HRSA. Additional CSHN data is available from program specific data sets, especially for the Child Development Clinic services.

The Pregnancy Risk Assessment Monitoring System (PRAMS) survey provides data on the proportion of live births that result from unintended pregnancies. In addition to demographics, the survey collects information on insurance status before pregnancy, financial, emotional and other stressors before pregnancy. We are also examining whether the woman was using birth control before she became pregnant, and if not what her reasons were for not using birth control, and whether she is currently (3-6 months postpartum) using birth control. Information is also collected and analyzed for other risks and behaviors such as tobacco and alcohol use, body weight pre and post pregnancy, depression, access to health care, infant feeding, and so forth.

Vermont's Department of Mental Health compiles data on use of community mental health centers using parameters such as age, insurance coverage, diagnosis, client's ability to be employed, type of clinical service provided, work experience placements, etc. The Vermont Mental Health Performance Indicator Project (PIP) supports data-based decision making within and across statewide public sector systems of behavioral health care. PIP reports are created by the Department of Mental Health Research and Statistics team. Weekly PIP reports are created on a wide variety of topics such as the age/gender of children with Attention Deficit Disorders, youth with mental health diagnoses and subsequent employment, analyses of children and youth as admitted to inpatient services, and so forth.

WIC (Women, Infants and Children) program data is valuable in that 60% of Vermont's pregnant women and infants are eligible for WIC. WIC data reports contain information on such data elements as weeks entry into prenatal care, tobacco use, and infant feeding and breastfeeding rates.

Aggregated data from the statewide Title X family planning centers is available to describe reproductive health needs of low income women and their partners.

Data describing poverty: Income data are available by sex, age, and town of residence in the BRFSS data and in the U.S. Census Bureau decennial census data. Detailed poverty data for Burlington, the largest urban center in Vermont, are available in the American Community Survey. Poverty data by county and by urban/rural classifications are also available from the economic research services of the United States Department of Agriculture (USDA). Average personal adjusted gross income per person, by town, is available through Vermont income tax returns.

For data describing homeless populations, point-in-time census estimates of the number of homeless families with children are carried out annually by the Vermont Coalition to End Homelessness in partnership with the Chittenden Homeless Alliance. The census is conducted according to standards developed by the U.S. Housing and Urban Development (HUD).

Data describing crime: The Vermont Department of Public Safety tracks crime via the Crime Index as developed by the FBI as an indicator to measure changes in the total amount of crime in a jurisdiction. The Crime Index is a remnant of an older format for crime reporting known as Summary Reporting which Vermont discontinued in 2005 in favor of the newer National Incident Report System (NIBRS). In Vermont the new NIBRS format is known as Vermont Crime On-Line or VCON. Crimes are reported by county, type of offence, type of victim, age, race/ethnicity and gender of victim, type of offender and relationship between the offender and victim.

Juvenile delinquency and crime data is published annually in the Juvenile Justice Sourcebook by the Department for Children and Families. Data on the number of individuals under the supervision or custody of the Vermont Department of Corrections is available on a daily census, by town of residence.

Data describing domestic violence: Hospital data captures admission and ED visits that are described as injuries due to domestic violence. Data on Interpersonal Violence can be obtained from questions on the BRFSS. Data on bullying and physical violence in middle/high school aged children can be gathered from the Youth Risk Behavior Survey (YRBS). PRAMS asks about threatened or actual domestic violence experienced during or after pregnancy.

Data describing rates of high school drop outs and other educational indicators: Data are available by school, in the Vermont Public School Dropout and High School Completion Report, published by the Vermont Department of Education, The YRBS, carried out biennially at a randomly selected sample of 40 public schools, provides weighted population data on 9th through 12th school children. Available data include drug, alcohol and tobacco use, sexual behavior, diet, exercise, exposure to violence/bullying, gang activity, and level of social or emotional support received at home and at school.

Data describing substance abuse: Vermont's Office of Alcohol and Drug Abuse Programs (ADAP) oversees drug and alcohol services across a wide variety of treatment settings. ADAP combines Medicaid and federal Substance Abuse Block Grant funds (SAPT) to offer services to those who are struggling with an addiction issue. The uninsured client in Vermont can access block grant funds for treatment provision. ADAP requires that all providers who are in the Preferred Provider system use an evidenced-based assessment tool to determine the appropriate modality for treatment. Currently providers are using the Addiction Severity Index (ASI) or the Global Assessment of Individual Needs (GAIN). They require all preferred providers to use the ASAM placement criteria in combination with the above tools to determine the appropriate treatment level. The SAPT Block Grant requires services be delivered outside of a waiting list to specific populations. The population rising to the top of this priority list are pregnant using mothers. They are to be offered services within 48 hours of contact at any clinic regardless of treatment modality. All preferred providers need to answer the following elements in the National Outcome Measure (NOMS). Some of the various fields that need to be answered are as follows: date of admission, sex, race/ethnicity, educational level, employment status, primary use, primary use on admission, frequency of use, social connectedness, living arrangements, and number of times arrested in 30 days

Programs providing treatment to pregnant women using illegal drugs have seen a sharp increase in their caseloads; however the programs involved are only seeing women seeking treatment. The Medicaid database and the uniform hospital discharge data provide information on adult and maternal drug use and on infants diagnosed with neonatal drug abstinence syndrome. The Vermont ICON project (Improving Care for Opioid Exposed Newborns) of the Vermont Department of Health and the Vermont Child Health Improvement Program (VCHIP) of the University of Vermont, collects data on the number, demographic characteristics, and geographic distribution of opioid dependent new mothers in Vermont, and tracks their infant's medical conditions.

The Vermont Prescription Drug Monitoring System helps track the prescribing and dispensing of controlled substances — those drugs most likely to lead to abuse, addiction or patient harm if they are not used properly. The purpose of the database is to provide timely and useful information to both licensed prescribers and pharmacists. The VPMS will also help health care providers identify patients who may need treatment for drug abuse or addiction. Only licensed health care providers and pharmacists, registered with the U.S. Drug Enforcement Agency, and registered with the VPMS, will have access to information in the database. Individuals can also receive a copy of their own database information upon request.

Data describing unemployment and labor indicators: Unemployment rates, by county and by town, are published monthly by the Vermont Department of Labor. The percentage of households subsisting on public assistance and food stamps, by county, is available in the American Community Survey dataset.

Data describing child maltreatment: Vermont's Department for Children and Families gathers data on potential and substantiated child maltreatment via a statewide centralized phone reporting system. This data can describe child abuse reporting by town and county, age, gender, type of family situation, and other parameters. Data on the incidence of child neglect, physical and sexual abuse, by age and gender of child, and by county or health district, are reported annually by the Vermont Department for Children and Families (Child Abuse and Neglect in Vermont Report). Vermont submits Adoption and Foster Care Analysis and Reporting System (AFCARS) reports twice annually. Vermont does not have a statewide automated child welfare information system (SACWIS), however DCF uses an automated systems that capture SACWIS reporting requirements. The Vermont Child Fatality Review Team performs an in depth review of all child deaths, including those possibly due to maltreatment and abuse.

1.4.1. Discussion of Gaps in Data

Gaps in data describing birth outcomes and mch indicators: Presently the Immunization Registry contains data for 88% of Vermont children under age 18. The registry's goal is to continue to add children's immunization records to achieve 100%. The Newborn Screening data and the Newborn Hearing data are presently being connected to the Immunization registry via a secure web interface within the VDH SPHINX database so as to be available to clinical providers.

An analysis of the data systems for the CIS (Children's Integrated Services) was performed by a consulting firm this past spring. CIS is the initiative designed to integrate home and community based services for families, involving the programs for MCH, early education and emotional health, and IDEA Part C. As this process moves forward, it is evident that the existing system is a patchwork of home grown and "siloed" systems and manual processes that cannot communicate with each other in an integrated or automatic fashion. Examples of issues that need to be resolved are the limited availability of information on current or past service history on new referrals, redundancy of paperwork between programs, limited ability to track common client information and case milestones across programs, and other difficulties encountered in managing large scale data systems for historically separate statewide service programs. Plans are being formulated to streamline this data system for CIS and also including the ECCS services. The resultant integrated data system would be better able to serve individuals in the CIS program and also allow Vermont to better track progress on the six quantifiable benchmarks as required in this grant funded program.

Gaps in data describing poverty: In general, the calculation for federal poverty level is not reflective of the true costs of living in relation to income. Methods to calculate a livable wage are more accurate in determining true income and ability for families to survive economically. A livable wage is the hourly wage or annual income sufficient to meet a family's basic needs plus all applicable federal and state taxes. Basic needs include food, housing, child care, transportation, health care, clothing, household and personal expenses, insurance, and 5% savings.

Gaps in data describing crime: Data is not readily available on the number of women incarcerated in Vermont correctional facilities who have infants and young children in their immediate families.

Gaps in data describing domestic violence: Injuries from domestic violence, if treated in the hospital setting, may not be reported as such by the patient or recognized as such by hospital personnel. Thus, many incidences of domestic violence remain unreported by women or are incorrectly coded if the woman seeks medical treatment from a physician or emergency department.

VDH has no domestic violence program other than the Domestic Violence Advisory Group (DVAG), formed in collaboration with the Department of Mental Health. A DVAG goal is to establish a viable domestic violence surveillance system. Other than the BRFS IPV module, most Vermont-specific DV data are not population based: the most widely disseminated Vermont data are those collected by the Vermont Network Against Domestic and Sexual Violence. These data are based on reports of domestic violence victims who have made contact with a Network member DV service agency. Such anecdotal DV data undercount its prevalence due to victims' under-reporting and health and human services providers' failure to identify its presence.

Vermont collects population-based data on domestic violence reported by women who have given birth and participated in PRAMS. However, this subset of women is a relatively small proportion of Vermont women.

Gaps in data describing drop out rates and educational indicators: Determination of the high school drop out rate has become more precise over the past years. However, it is still difficult to get statewide data on high school-aged students activities after leaving high school, whether as a drop out or as a graduate.

Gaps in data describing substance abuse: Data is available for specific treatment programs, by Medicaid reimbursement codes, and by statewide surveys such as PRAMS, BRFSS and YRBS, but there is no data source that enables an accurate estimate of the extent of alcohol and drug abuse in populations statewide.

Gaps in data describing unemployment: In general, employment indicators count persons applying for unemployment benefits, however they do not capture those who are seeking employment without registering as officially unemployed or those who are unemployed or not making a livable wage.

Gaps in data describing child maltreatment: Much of child maltreatment remains uncounted. Children who are abused may not be “noticed” by teachers or other professionals and thus not reported or brought into the treatment service system. Child injuries may not be recognized as a result of abuse and thus not reported. The DCF system of counting substantiated events of child abuse is only able to recognize those event that are reported, and may miss the cases of abused children who remain outside the system.

In 2009, VDH added to the BRFSS the CDC module on Adverse Child Experiences. These questions deal with childhood event such as living with adults with a mental illness or addiction or experiencing verbal or physical abuse. This data will give a fuller picture of the child hood experience of abuse by Vermont adults and the data can be analyzed for associations with adult health such as chronic disease.

1.4.2. Capacity to Assemble Data

Over the past ten years, the continued funding from the MCHB SSDI program has enabled greater capacity to gathering and analyze MCH related data for Title V services and also for other MCH-related population health needs.

A key limitation is state agency staffing and funding – capacity has been reduced over the past two years due to budget shortages and staff cutbacks. Limited staff capacity has lead to competing priorities for data support and, although work is prioritized by public health need, certain data projects are necessarily delayed.

Limitations in information technology systems hamper capacity to assemble and analyze data. For example, there will be a need to gather and use data related to home visiting systems to inform programming, analysis of outcomes, and quality improvement efforts. Vermont was one of six states to receive a technical assistance grant from the National Governor’s Association through their initiative: *Ready States: A Project to Develop Key Components of State Early Childhood Infrastructure*. This ten month project, ended in December, 2010. The project goals

are to organize data collection so as to efficiently gather data from Vermont's early childhood systems so as to inform overall policy and systems development.

1.5. Linkages between Assessment, Capacity and Priorities

The MCH strength and needs assessment will inform several planning efforts at VDH and also will be useful to VDH partners both in state government and in non-state and local community organizations. For example, VDH is preparing the 2010 Injury Prevention Plan - action steps in this plan will reflect population injury prevention issues as detailed in the Title V assessment. In addition, several Affordable Care Act grant applications are presently being prepared will use the findings of the Title V assessment for program planning and serving special populations. The assessment will provide information on program, staff, and other organizational capacity which will be useful to these grant planning efforts in addition to over all strategic planning for both MCH and other VDH departments. Capacity for action will be determined by such factors as the information contained in this assessment, existing programs and their funding and effectiveness, programs and initiatives managed by other stakeholders (so as to complement efforts and not duplicate) and an examination of emerging health issues.

1.6. Dissemination

The final Strengths and Needs Assessment document will be available via the VDH District Offices and the VDH website. It will be distributed by mail and electronically to the stakeholders who contributed to its creation. This document is also being used as reference for the grant applications for programs for home visiting and supporting pregnant and parenting teens as funded by the 2010 ACA federal legislation. In addition, ongoing CIS and CSHN planning efforts will use this document as a reference.

1.7. Strengths and Weaknesses of Process

The State of Vermont is very fortunate to have a strong public health surveillance system however, the process of assembling the 2010 Vermont Title V Strengths and Needs Assessment called further attention to the State's departments and agencies increasingly limited capacity to collect and disseminate primary data. Vermont continues to benefit from a diverse, committed and engaged MCH community that makes the completion of this assessment possible. See additional comments in section 1.4.1

2. PARTNERSHIP BUILDING AND COLLABORATION EFFORTS

The MCH Leadership Team provided oversight of the needs assessment process and the creation of the final assessment document. Partners within state government are the Department for Children and Families, Medicaid, the Department of Mental Health, and the Department of Education. Community and statewide groups are numerous and include such organizations as VCHIP, University of Vermont, Fletcher Allen Health Care and community based birth hospitals, the Farm Health Task Force, the Child Fatality Review Team, the Domestic Violence Fatality Review Team, Parent Child Centers, Community Health Clinics, Home Health Agencies, Prevent Child Abuse Vermont, Vermont Chapters of AAP and AAFP, Planned Parenthood of Northern New England, Safe Kids Vermont, and Vermont Family Network.

3. STRENGTHS AND NEEDS OF THE MATERNAL AND CHILD HEALTH POPULATION GROUPS AND DESIRED OUTCOMES

Vermont is primarily a rural state. This fact strongly influences the way in which communities with poor MCH outcomes are defined. Vermont's overall population is 621,760 (US Census, 2009) with the 2000 decennial census estimating that 62% of Vermont's population live in rural settings and only 28% of the population living in a metropolitan area. Fewer than 40,000 people live in inner-city urban areas and only one city in Vermont, Burlington, has a population greater than 20,000. However, residents of rural areas tend to have lower incomes, fewer years of education, use public health insurance or have no insurance, and live farther from health care resources than their urban counterparts.¹ Women living in rural areas also experience higher rates of unintentional injury, motor vehicle related deaths, suicide, cigarette smoking, obesity, and heavy alcohol consumption.

Vermont's small population makes it necessary to recognize significant health related trends only after analyses of data over periods of three, five, or even ten or twenty years time period. However, a review of certain specific MCH measures from the Title V MCH Block Grant application illustrate certain trends that can be considered significant. For the Vermont MCH population, Vermont's teen pregnancy rate (PM#08, 15-17 year old) showed a slight increase in 2007, but this was not sustained in 2008, and the rate continues with a slow but steady decline in the rate. For PM#12, 2008 showed the first decline since records began 12 years ago in the percent of babies born in VT hospitals who had their hearing tested before discharge; 95.5% of babies were tested in 2008 down from 96.3% in 2007. A noticeable downward trend continued in 2008 in the percent of VT women who entered prenatal care in the first trimester of pregnancy (PM# 17, as measured by both the old and new NCHS definitions), down to 82.5% (by new definition) in 2008 from a high of 84.2% in 2004. An examination of HSCI #5a-5d, the comparison of births paid by Medicaid to non-Medicaid births for both 2007 and 2008 (using principle payer field from birth certificate) showed highly significant differences ($p < 0.001$) for (a) percent of low birth weight (<2500 g); (b) entry into prenatal care in first trimester; and (c) adequacy of prenatal care as measured by the Kotelchuck index. Medicaid-paid birth outcome measures were found not to be significantly worse than non-Medicaid births only in terms of infant mortality -- and this finding was probably in part due to small numbers. The rate of reported *Chlamydia* cases in VT women continued to show an upward trend in 2008 (HSI #5a, #5b). The reported rates have more than doubled in ten years, from 7.0 per 1000 in 1998 to 14.7 in 2008 for 15-19 year olds, and from 1.8 per 1000 in 1998 to 5.8 in 2008 for 20-44 year olds. It is felt that this increase is due to more screening of women and their partners, and also more incidence of disease.

3.1. Pregnant Women, Mothers and Infants

3.1.1. *Social & Economic Determinants of Health*

Employment¹

¹Wage gap analysis was provided by the Vermont Commission on Women, The Status of Women and Girls in Vermont, 2009.

Vermont has smaller proportions of people living in poverty than the nation however the state's rural areas experience high rates of unemployment among a population that is less educated. 2008 estimates from the US Census Bureau indicate a poverty rate of 10.8% exists in rural Vermont, compared to 9.6% in urban areas of the state. Data also indicate an increase in the number of families and individuals living below 100% of the federal poverty level (FPL). Although Vermont currently ranks better than the United States average, a corresponding upward trend of increasing poverty across family types and age cohorts is expected. The 2009 poverty level for one person is \$10,830 in annual income and \$22,050 for a family of four. In Vermont for 2005 to 2007, the median income per person was \$26,223 and the median household income was \$49,382. By 2008, Vermont's median household income increased slightly to \$52,111. The state's minimum wage of \$8.06 is higher than the Federal minimum wage.

Given the relationship between higher unemployment and lower education with poorer health access and health status rural areas are increasingly seeing the pressure of a down-turned economy. Vermont has the lowest unemployment rate in New England yet wages continue to be below regional standards. Over the past year, Vermont has seen a slow decline in unemployment rates. In May 2010, Vermont's seasonally adjusted unemployment rate was 6.2% compared to the national average (seasonally adjusted 9.7%). Although the state has worked to preserve an above federal level minimum wage, "good paying" jobs (manufacturing and information) are few, challenging the state's ability to attract and retain a young workforce.

Vermont struggles with a wage gap between women and men. In 2006 the median wage for a man was \$16.08/hour while the median wage for a woman was \$13.82/hour resulting in almost \$5,000 less a year for the typical Vermont family to take care of basic needs. Vermont's wage gap is smaller than some other states because Vermont has fewer manufacturing jobs and fewer minority women who historically have been paid only 50 to 60% of what men make. According to the *Institute for Women's Policy Research*, the wage gap is even larger if one looks at the ratio of women's to men's median annual earnings, as opposed to the median weekly earnings reported above, because women tend to work fewer hours per year. However, the wage gap has remained essentially unchanged for the past nine years. In addition, women's and men's real (inflation- adjusted) annual earnings have fallen for the third consecutive year.

While the median household income has climbed steadily over the past decade, both in the state and nationally, there are still many Vermonters struggling to make ends meet. From 2005 to 2007 in Vermont 7% of all families reported their past year's income to be below the poverty level; 13% of families with children under the age of 5 reported their past year's income to be below the poverty level; and, 40% of families with a single mother and children under the age of 5 reported their past year's income to be below the poverty level. In Vermont, a family of four would have to earn over \$10,000 more than the same size family elsewhere in the U.S. to have equal purchasing power. Due to the higher cost of living here, many Vermonters may not qualify for the help they need.

The proportion of people in poverty is increasing across Vermont. The disproportionate distribution of health care resources in urban versus rural areas challenges the state to meet the increasing needs of Vermonters in poverty in rural remote regions.

Housing. Vermont's housing costs continue to run beyond many Vermonters' ability to afford them, and as the current economic problems continue, more Vermonters will either lose jobs or have their hours reduced, making their financial situations even more uncertain. The causes of homelessness are many and complex, but essentially reflects people not having enough money to pay for what they need. The rising cost of fuel and housing, property taxes, and the unstable economic climate prevent many of the lowest income Vermonters from having safe and stable housing. The state's women and families with young children are significantly affected.

Education

Education and occupation combined with income provide a measure of socioeconomic status and are strong predictors of health. Vermonters are slightly more educated than people in the rest of the country: Nearly 90% of Vermont adults have a high school education or more, compared to 84% for the U.S; and, 33% hold a bachelor's degree or more, compared to 27% for the U.S. Educational attainment varies across the state with Chittenden and Washington counties having higher levels of educational attainment, and Vermont's northern counties having lower levels. However, of those Vermonters with less than a high school education, 42% earn an income below the federal poverty level while only 5% of those who have a college degree earn so little. Five percent of Vermonters who had less than a high school diploma were unemployed, as compared to 2% of those who had a college degree or more.

Among Vermont women, 96.1% of those 35-44 years of age are a high school graduate or higher and 35.5% hold a bachelor's degree or higher. For women 25-34 years of age, the numbers are similar, 95.1% are a high school graduate or higher and 36.2% hold a bachelor's degree or higher. Women 18-24 years of age, 78.3% are a high school graduate or higher and 11.6% hold a bachelor's degree or higher.¹

Access to Care

In late 2009, 47,460 Vermont residents lacked health insurance coverage. Vermont residents aged 18 to 24 had the highest uninsured rate at 17.4% (10,839), a significant decline from the 21.5% observed in 2008. The next highest uninsured rate occurred among those aged 25 to 34 at 16.1% (11,133). Among this group, the uninsured rate has increased since 2008, when 13.4% residents in this age cohort were uninsured. Only 2.8% (3,626) of children aged 0 to 17 lacked health insurance coverage in 2009 compared to 2.9% in 2008.

Nearly half (49.8%) of the uninsured residents of Vermont had been without health insurance coverage for a year or less, while 23.8% have lacked coverage for five or more years. At the end of 2009, 76.9% or 2,787 uninsured children aged 0 to 17 met eligibility requirements for Medicaid or Dr. Dynasaur. This is comparable to the percentage observed in late 2008. About 839 or 23.1% uninsured children were not eligible for any state health insurance program.

At the end of 2009, 58.8% of Vermont residents (365,452) were covered by private insurance (including Catamount Health), including those who have private insurance in addition to other sources of comprehensive health coverage. Nearly all (91.5%) Vermont residents with private health insurance had coverage provided through employer related sources. Most private health insurance coverage (90.7%) included a prescription drug benefit. Over half of those with private health insurance coverage (51.8%) had seen premiums increase during the past year. Even if all eligible children and adults enrolled in Green Mountain Care, there are still approximately 850 children and 20,000 adults who are uninsured, but not eligible for any state health insurance program or premium assistance. These Vermonters may find the medical care they need at one of 10 free primary health care clinics associated with the Vermont Coalition of Clinics for the Uninsured. In 2008, the clinics served 6,188 people. Of those served, 78 percent were not insured and 76 percent reported that, if not for the free clinics, they would have delayed care because they couldn't afford medical services.

More than two-thirds of the privately insured respondents (69.8%) reported that out-of-pocket medical costs for their families exceeded \$1,000 over the previous twelve months, an increase from 56.0% observed in 2008. More than one-fifth (21.0%) of the privately insured respondents lived in families where someone experienced problems paying medical bills, comparable to 2008 (23.5%).

In general, most MCH stakeholders who participated in the key informant interviews believed that overall access to care is “pretty good” in Vermont. One key informant commented that progress has been made, noting that access to healthcare used to be a significant barrier especially for those with low-incomes and/or no insurance. The key informant continued to say that insurance coverage as a barrier to access has been effectively overcome or erased with Vermont's new public options such as Dr. Dinosaur. Yet the barriers still defined often by socioeconomic status such as lack of transportation to healthcare are ever present. While another key informant commented that there are barriers that have prevented populations to secure *consistent* and *continuous* access as indicated by Vermont's room for improvement in the areas of well-child visit rates and our immunization rates.

Health Care Barriers. In late 2009, about one in every five residents (18.5% or 115,135 individuals) lived in families that paid more than \$5,000 out of pocket for health care. In 2009, about a quarter (24.8%) of residents lived in families with someone who had problems paying medical bills and 17.0% of families reported being contacted by a collection agency about unpaid medical bills. These percentages have remained relatively constant since 2008. The percentage of residents forgoing needed medical care due to cost was unchanged between 2008 and 2009. The most common care not received due to cost was dental care which was not sought by 11.5% of Vermonters due to cost while less than five percent did not seek needed medical care, recommended diagnostic tests, and mental health care due to cost.

Physicians accepting new Medicaid patients. Based on the 2008 physician survey, fewer primary care physicians are accepting new patients compared to 10 years ago. In 1998, 87% of physicians were accepting new patients overall, compared to 80% in 2008. In 1998, 81% of physicians were accepting new Medicaid patients, compared to 69% in 2008.

Intimate Partner Violence²

Sixty-four percent of all Vermont homicides in '07 were domestic violence related. Fifty percent of all Vermont homicides during the 13 years from 1994-2007 were domestic violence related; and, 95% of 2006 violent crimes involved intimate partners, family members or acquaintances. In June 2007, 1,272 persons were under the supervision of Corrections for domestic violence related offenses. Also in 2007, 15,259 hotline calls were made and 8,184 children were exposed to domestic violence in their homes. From 2006-2007 there was a 27% increase in bed occupancy in domestic violence shelters and crisis centers.

3.1.2. Health Behaviors & Conditions

MCH public health surveillance data primarily draws upon vital statistics, BRFSS and Pregnancy Risk Assessment Monitoring System (PRAMS). The PRAMS data included in this assessment is based on a sample of Vermont women with live births since 2001. This assessment uses data available for calendar year 2007 in Vermont and compares Vermont's data with that of 28 other participating PRAMS programs. Drinking is defined as any alcohol use during a specific time period. The PRAMS survey specifies two time periods for alcohol use: the 3 months before they got pregnant and the last 3 months of their pregnancy. The following summary presents PRAMS, vital statistics and BRFSS data.

Alcohol Use. PRAMS data shows that the percentage who stated they drank during the past two years (4 out of 5) has remained statistically unchanged during the five year period (Q38). For the entire population (women having recently given birth), drinking at least one drink (in an average week) during the three months before pregnancy exceeded 70% in 2008, but the increase does not represent a statistically significant upward trend over the five-year period. For the entire population (women having recently given birth), binge drinking during the three months before pregnancy (page 5) was reported by over 25 percent of subjects in 2008, but the increase does not represent a statistically significant upward trend over the five-year period.

In 2007, 68.7% of PRAMS respondents reported that they drank alcohol during the period 3 months before they became pregnant, the second highest prevalence of any state. The percentage ranged from 21.5% in Utah to 71.1% in Wisconsin. When the same comparison is restricted to cases where the mother's race and ethnicity indicated non-Hispanic white, Vermont's prevalence (69.3%) still ranks it in the top third for drinking before pregnancy, but several states exceed 70%. Also in 2007 as in past years, Vermont's drinking rate of 12.7% during the *last three* months of pregnancy was the highest among all other PRAMS states reporting this measure. When restricted to cases where the mother's race and ethnicity indicated non-Hispanic white, the rankings show Vermont's prevalence is no longer the highest, but is still in the top 7 for drinking during pregnancy.

² Source: 2008 Domestic Violence Fatality Review Commission Report, State of Vermont

Tobacco Use. Low income Vermonters are more likely to smoke than the states general population. Smoking is still the leading killer, causing or aggravating asthma, cancer, heart disease, lung disease, stroke, pneumonia, low birth weight and infant death. Twice as many low income women (as represented by enrollment in WIC) have inadequate prenatal care, compared to other women. Seven times as many low income women (as represented by enrollment in WIC) smoke during pregnancy, compared to other women. And, while rates of smoking during pregnancy have decreased over the last decade among Vermont women not in WIC, smoking rates have stayed the same among low income women (as represented by enrollment in WIC).

For the federal fiscal year ending September 30, 2009, Vermont's Vital Statistics indicate that 23.1% of births were to women who smoked before pregnancy. Of the women who smoked before pregnancy or during the first trimester, 27.2% quit smoking for the second and third trimester. Among PRAMS respondents, the percentage of women smoking before, during or after pregnancy has not changed significantly over the past five years. Second hand smoke exposure for infants had declined each year from 2005-2007 before increasing in 2008. There has been a significant increase in the percentage of PRAMS respondent households not allowing smoking anywhere in the house after pregnancy. The increase in households not allowing smoking during pregnancy is not significant.

Opioid use. Opioid use and dependence during pregnancy continues to be a significant public health problem. Data from the National Survey on Drug Use and Health (NSDUH) indicate that the rate of heroin use by pregnant women has increased somewhat over time and there has been a 33% increase in non-medical use of analgesics in this population in the past decade.³ Heroin (diacetylmorphine), a semi-synthetic opioid with a rapid onset of action and a short half life, is one of the frequently used opioids during pregnancy. Although it is typically injected, an increasing number of users are inhaling or smoking heroin. The use of other opioids, including oxycodone, hydrocodone, and the controlled-release form of oxycodone (OxyContin®) has escalated in recent years.

Acute use of heroin and other opioids stimulate the opiate receptors in the brain resulting in a constellation of symptoms including euphoria, respiratory depression, analgesia, and nausea. Chronic use of opioids is associated with tolerance; higher doses of the drug are required to obtain the same effect. Tolerance leads to dependence, whereby the neurochemical balance in the central nervous system is altered and absence of the drug leads to a withdrawal syndrome. In Vermont it is very difficult to estimate the number of alcohol/drug-exposed and affected infants. Accurate, population-based, available data sources are limited and often combine episodic use of alcohol and drugs with chronic addiction.

The Vermont Pregnancy Risk Assessment Monitoring System (PRAMS) data for 2007 includes data that 12.7% of Vermont women drank alcohol during the last three months of pregnancy and

³ Substance Abuse and Mental Health Services Administration (SAMHSA) National Survey on Drug Use and Health, 2003, 2004, 2005, 2006, Table 7.51B. 2006.
<http://oas.samhsa.gov/NSDUH/2k6NSDUH/tabs/Sect7peTabs48to03.htm>

that 17.5% of mothers continued to smoke tobacco during the last three months of their pregnancy.

Each year the numbers of opiate exposed newborns born in Vermont has continued to rise. While data can be collected on birth weight, # of days in hospital, % of infants treated for neonatal abstinence syndrome and breast feeding status, no good data exists for health outcomes measures that be tracked at one year post delivery. It would be important to quantify what % of mothers remain in substance abuse counseling and/or treatment up to one year post delivery, what % of infants are readmitted for hospital care, % that keep well child appointments, etc.

A needs assessment conducted by the Vermont Child Health Improvement Project (VCHIP) in 2010 in hospital service areas of Vermont revealed that community based counseling and prescription providers, along with obstetrical and pediatric staff identified case management of these families with substance dependence as their top priority.

Prenatal Counseling and Maternal Weight Gain. The rate for entry into prenatal care in the first trimester was 83.1%, up from the preliminary 2008 rate of 82.5%. The percent of women with adequate prenatal care utilization (as defined by the Kotelchuck Index) was 86.6%, up from the preliminary 2008 rate of 86.2%. Twice as many low income women (as represented by enrollment in WIC) have inadequate prenatal care, compared to other women.

PRAMS data show that 83% of mothers indicated that a prenatal health care worker had talked with them about how much weight they should gain during pregnancy. This percentage did not vary significantly between pre-pregnancy BMI categories. From 2004-2008, only 33% of Vermont PRAMS respondents achieved the Institute of Medicine (IOM) recommended weight gain, with 46% exceeding the weight gain recommendations and 21% gaining too little weight. PRAMS respondents reporting prenatal weight gain discussion were no more likely to achieve the IOM recommended weight gain than women who did not report a weight gain discussion. First time mothers were significantly more likely to have a weight gain discussion with a prenatal care provider than mothers who had previously had a live birth (89% to 77%). Despite the higher rate of weight gain discussion, first time mothers were still significantly less likely than mothers who had a previous live birth to achieve the IOM recommended weight gain, with more than half of first time mothers exceeding the IOM weight gain recommendation.

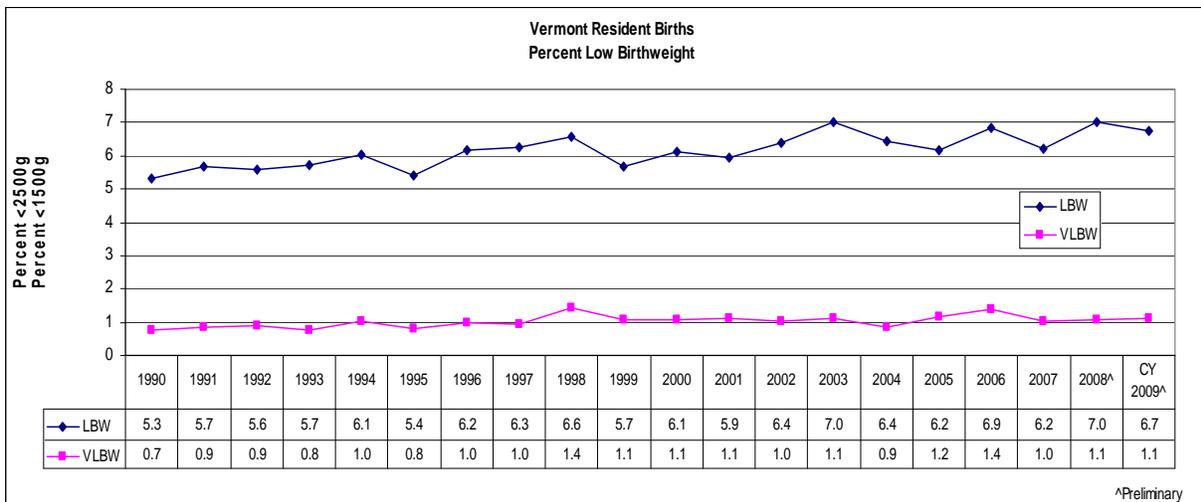
Low Birth Weight Babies. Between October 1, 2008 and September 30, 2009 the low birth weight (<2500g) rate was 6.6%, representing a decrease since the end of calendar year 2008. It remains significantly worse than the 2010 goal of 5.0%. The very low birth weight rate (<1500g) was 1.1%. By comparison to the overall low birth weight rate, the very low birthweight rate appears to have remained relatively constant since the mid 1990's. The rate remains above the 2010 goal of 0.9%. The low birthweight rate for singleton births was 5.3%, down 0.1% since the last quarter. Although somewhat less clear than the overall low birthweight trend, the singleton low birthweight rate also seems to be increasing slightly.

In 2007, pregnant women in Vermont with Medicaid insurance had higher rates of low birth weight babies, compared to women with other types of insurance. 8% of low income women (as

represented by enrollment in WIC) have low birth weight babies, compared to 5.5% of other women.

The preterm delivery rate (<37 weeks gestation) was 8.8% for the year ending September 30. This is down from the preliminary 2008 rate of 9.5%. The percentage of small for gestational age (SGA) **singleton** births was 9.5% for this twelve month period, up from the preliminary 2008 rate of 9.2%. The rate of large for gestational age (LGA) **singleton** births was 11.4% for this reporting period. SGA is defined as birthweight below the 10th percentile for gestational age. LGA is defined as birthweight above the 90th percentile for gestational age. Birthweight percentiles used are those established by Oken et al; <http://www.biomedcentral.com/1471-2431/3/6>.

Figure 1.



Breastfeeding. There is a 3% increase in breastfeeding initiation between 2004 and 2008, a trend upward that is statistically significant. Breastfeeding for at least four weeks and at least eight weeks has remained steady at around 73% and 66%, respectively. Those reporting their hospital gave them a gift pack with formula has dropped from 43% in 2004 to 34 % in 2008. This is a statistically significant downward trend. Other smaller changes from 2004 to 2008, were also found to be statistically significant trends:

- Increase in the proportion who reported that their baby was in the same hospital room with them (89.4% up to 92.8%);
- Increase in the proportion who breastfed their baby in the hospital room (80.4 % up to 83.4%);
- Increase in the proportion who breastfed their baby in the 1st hour after birth (61.3% up to 66.4%);
- Increase in the proportion who reported that hospital staff told them to breastfeed whenever their baby wanted (77.1% up to 80.6%).

69% of pregnant women enrolled in WIC said they planned to breastfeed, while 91% of women not in WIC said they intended to breastfeed.

Mental Health. Over ninety percent of PRAMS respondents reported discussing “baby blues” or postpartum depression with a healthcare worker. There have been no significant changes in any of these indicators over the five year period. Among BRFSS adult respondents 22% report depression or anxiety; 31% of 18- to 24-year-olds report being depressed, compared to 16% of adults age 65 and older; and, 24% of adult women report depression, compared to 20% of adult men.

3.1.3. Special Populations

Incarcerated Women

The criminal justice system responds to social issues as well as public safety. This is particularly true with women inmates, who are generally less violent than male inmates, but pose a risk to themselves or their children’s welfare. As communities are becoming more concerned about issues such as mental health and substance abuse, they increasingly seek a criminal justice response. In Vermont the women’s prison population has been growing faster than any other segment and continues to grow at twice the rate of men. There were 172 women in prison in November, 2006, up from fewer than 50 in FY1999. The Agency of Human Services has identified reduction of growth in women’s incarceration as a major objective with all AHS field sites are implementing comprehensive plans to build partnerships increasing availability of community-based interventions for women coming out of prison. Issues confronting women reentering the community include housing, employability, substance abuse treatment, and mental health services, and services which cross traditional department and agency lines.

Minority Populations

Twenty years ago in 1990, the United States Census estimated Vermont’s racial and ethnic minority populations to be about 2 percent of the total population and by 2007 that figure had doubled to 4 percent, representing about 24,500 Vermonters. While these numbers are still proportionally small compared to the rest of the U.S., Vermont’s racial and ethnic populations are growing at a much faster rate than the population overall. Between 1990 and 2007, Blacks or African Americans have been the fastest growing population in Vermont with their numbers more than tripling in the past 18 years. The second fastest growing racial group in Vermont is Asians, including Native Hawaiian and other Pacific Islanders—with populations increasing from 0.5 percent of the total population in 1990, to 1.2 percent in 2007.

In 2006 through 2008, 5% of Vermont residents at least 5 years of age spoke a language other than English at home. Of Vermonters speaking another language at home, about one-third spoke French and one-fifth spoke Spanish. Health care for these individuals may suffer unless translation services are readily available, but the diversity of languages spoken by small numbers of new Vermonters is challenging. Several of Vermont’s Federally Qualified Health Centers purchase phone interpretation services.

Refugee Populations

In 2008, Vermont's Refugee Resettlement Program welcomed 353 people from countries throughout Africa and Asia. Since 1994, more than 4,000 refugees have resettled in the state. As part of public health direct services, health evaluations take place within 30 days of arrival and are conducted by community health centers and private health care providers. In order to build health care infrastructure, the Department of Health recruits and orients primary care providers for assessment, treatment, and ongoing management of refugee health needs. The Refugee Health Coordinator, the State Coordinator, and the Vermont Department of Health District Office staff work closely with the Vermont Refugee Resettlement Program, the Office of Minority Health, and private providers to assure that care is available, accessible, and culturally appropriate. The women who are new arrivals to Vermont represent a variety of cultures presenting a challenge and also an opportunity for developing new strategies for delivering family planning and general health care services to best fit the needs of these women and their families.

In 2009, at the start of the novel influenza A H1N1 pandemic, basic health information in 11 languages in addition to English was required to try to communicate with all Vermonters. These included: Arabic, Burmese, Chinese, French, Nepali, Russian, Serbo-Croatian, Somali, Spanish, Swahili and Vietnamese.

Migrant Farm workers

Vermont has seen a large influx of undocumented migrant farm workers in recent years. In 2006, the Department of Health reported that undocumented migrant farm workers are one of the fastest growing populations in Vermont with an estimate from the Department of Agriculture is that about 2,500 are working on dairy farms throughout the state, with the greatest concentration being in Franklin, Grand Isle, and Addison Counties." Migrant workers present special challenges because they do not tend to seek preventive care due to their undocumented status. Although most of these workers are men, several have brought their wives and children with them to Vermont, and thus will need obstetric or family planning and reproductive health care.

In May 2009, through HRSA, Federal Office of Rural Health Policy, Vermont's Primary Care Association (PCA) received an outreach grant to increase access to services for this vulnerable population. In collaboration with the PCA, the grant currently is being implemented by a free clinic and a Federally Qualified Health Center. Both facilities provide comprehensive care services for all women including obstetric and gynecological care.

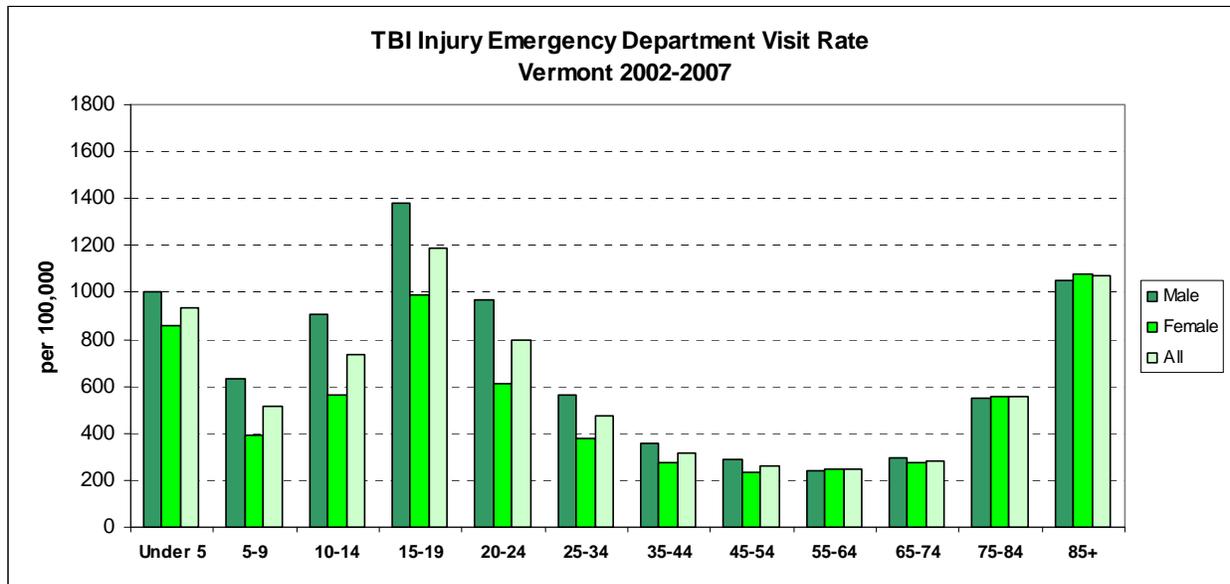
3.2. Children and Adolescents

3.2.1. Childhood Injury

Falls

While the death rate, hospitalization, and emergency room visit rate for fall-related injuries is considerably lower for children compared to seniors, falls are still the leading cause of injury nationally for those under 14⁴. In Vermont from 2003-2007, 41% of all the hospitalizations for individuals under 18 were from recreational falls (e.g. snowboarding, skiing, skateboarding, non-motorized scooters, playground equipment, etc).⁵ In Vermont between 2002-2007, boys were slightly more likely than girls to visit an emergency room or be hospitalized due to falls.

Figure 2.



Childhood Poisoning

Normal childhood behavior puts children at risk; consider that in 2007, the NNECP reported that 45% of all Vermont poisonings involved children five and under.⁶ Children are likely to put their hands or other objects into their mouth that may contain or have come into contact with hazardous substances, lead dust, cleaning products, personal care items, etc. Children may also ingest medicines or other substances while exploring or imitating behaviors of older children and adults. As a result, medication poisoning (excluding abuse and recreational use) is twice as common a reason for children’s emergency department visits as poisoning from other household

⁴ Office of Statistics and Programming, National Center for Injury Prevention and Control, Centers for Disease Control and Prevention for 2007.

⁵ Vermont Health Department – Caroline numbers.

⁶http://www.fletcherallen.org/services/emergency_department/specialties/emergency_room/patient_resources/emergency_poison/

products (such as cleaning solutions and personal care products).⁷ The important thing to remember is that childhood poisoning injuries are preventable largely by proper storage and usage of medicines and household products and supervising of children around them.

3.2.2. Economically vulnerable children

Vermont is a leader in providing health care assistance to children and families. While a family of three loses eligibility for Reach Up, the state's Temporary Aid to Needy Families (TANF) program, when their income reaches approximately \$12,000 a year, the adults will be eligible for transitional Medicaid until their annual income reaches \$31,764 and their children remain eligible for Dr. Dynasaur until the family's income tops \$51,510 (or higher, if the family pays for child care).

Reach Up provides an essential safety net for many of Vermont's vulnerable families. When Vermont began the Reach Up program and came into full compliance with TANF on July 1, 2001, there were 5,500 families on assistance. An indicator of Reach Up's success in moving families toward self-sufficiency and achieving better outcomes for their children is the number of families who have left the program as a result of increased income. Between state fiscal year 2002 and state fiscal year 2007, Vermont has seen a decrease of 17 percent in this indicator. The monthly average number of children who received assistance through Vermont's Reach Up (Temporary Assistance to Needy Families) program from October 2006 through September 2007 was 7,685. Around 27 percent of these children are under age 3; 20 percent are between the age of 3 and 6; and, 53 percent are over the age of six.

3.2.3. Child Maltreatment

Overall the morbidity data numbers for child maltreatment in Vermont are small in comparison with morbidity data for other injuries. The majority of the hospitalizations were diagnosed as child physical abuse, followed by the shaken baby diagnostic code, and child-nutritional neglect. There were almost two times as many child maltreatment ED discharges as hospitalizations, the majority of which were diagnosed as physical abuse, followed by sexual abuse, and with 2-3 hospitalizations diagnosed as assault, unspecified, and nutritional neglect. There were only three maltreatment deaths found in the vital statistics data, maltreatment by unknown person in two deaths, and assault by unspecified means for one death. Vermont's Department for Children and Family Services (DCF) data show a 29 percent decrease in the number of substantiated child maltreatment cases from 2004 to 2008 (1144 vs. 820). The numbers and percents of each form of abuse remain somewhat stable. The leading average percent of form of abuse was sexual abuse 38.4%, followed by risk of harm, 37.8% followed by physical abuse, 18.2% and neglect/emotional abuse, 5.8%.

Figure 3.

⁷ Schillie SF, Shehab, N, Thomas, KE, Budnitz DS. Medication overdoses leading to emergency department visits among children. *American Journal of Preventive Medicine* 2009;37:181-187.

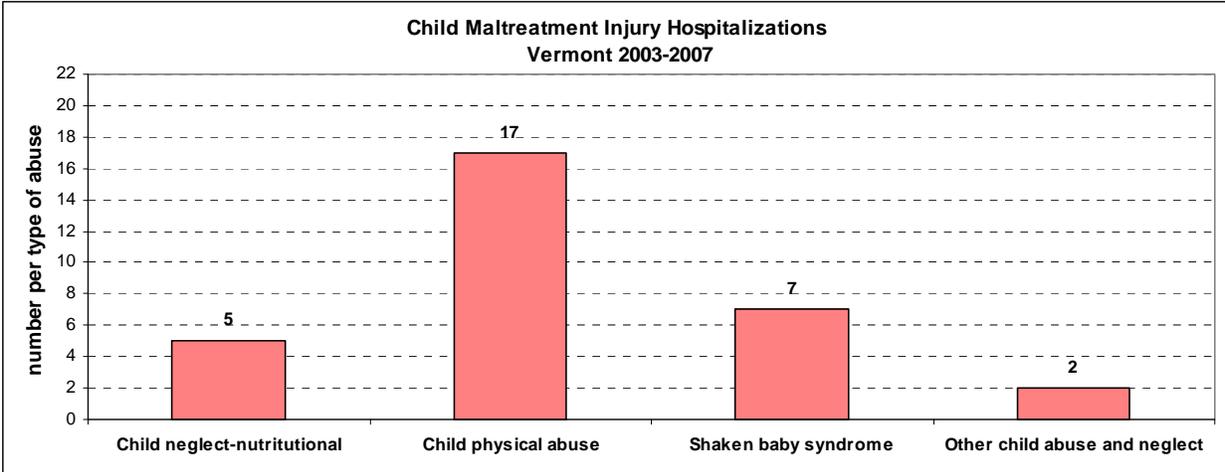


Figure 4.

	2004		2005		2006		2007		2008	
	#	%	#	%	#	%	# *	%	# *	%
Physical Abuse	198	17%	190	19%	171	19%	153	18%	148	18%
Sexual Abuse	468	41%	383	38%	364	39%	322	38%	292	36%
Risk of Harm**	431	37%	397	39%	324	35%	324	38%	327	40%
Neglect/Emotional	58	5%	38	4%	63	7%	57	7%	53	6%
	1155		1008		922		856		820	

** Risk of harm means a significant danger that a child will suffer serious harm other than by accidental means, which harm would be likely to cause physical injury, neglect, emotional maltreatment or sexual abuse

*45 pending

*53 pending

Over the past several years, a number of changes have been made to Vermont’s child protection system (Family Services Division of the Department for Children and Families (DCF)) including:

Creation of a Centralized Intake Service. Concerned citizens and professionals now call one toll free number to report suspected child abuse or neglect. This service began in September of 2008. During the last quarter of 2008, calls regarding child abuse and neglect rose by 10% over the same time period in 2007. The number of accepted reports rose by over 40% over the same period. This increase has impacted the annual numbers shown in this report.

Increased Focus on Less Adversarial Interventions with Families. To protect children and prevent more serious issues down the road, we are increasing our use of early intervention strategies and focusing on new ways of engaging families and extended families. This approach may be reflected in the increased use of family assessments in response to reports alleging child abuse and neglect: more than twice as many family assessments were carried out in 2008 than in 2007.

Increased Due Process around the Child Protection Registry. In 2003, employers were first given access to the Child Protection Registry when screening potential employees who will work with children. Because of this increased access to the registry, new legislation was passed in 2007 adding additional due process requirements. This has improved the integrity of the registry. It may have also contributed to a reduction in formal substantiations in 2008. This issue will continue to be closely monitored over the coming years.

Teen pregnancy

Vermont teen pregnancy rates have been declining over the past 20 years, although for the past 5 years this trend has been fairly flat. Three of Vermont's counties, Bennington, Franklin and Orleans, had teen (15-19 years of age) pregnancy rates that were fairly consistently higher than the State average.

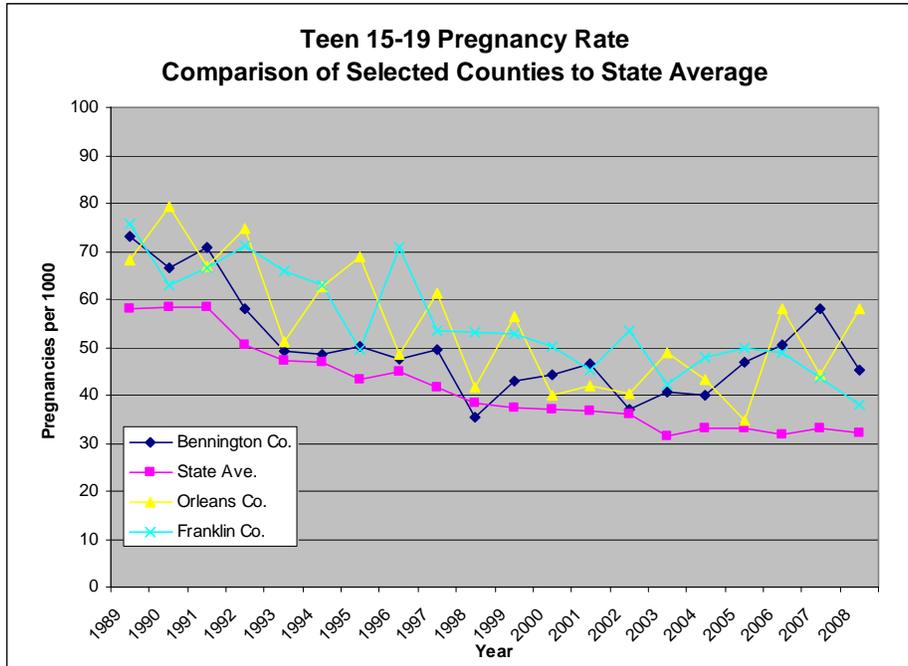
The rate for Bennington County has really only been significantly elevated relative to the rest of the State for the four most recent years (2005-2008). In contrast, Orleans County located in one of Vermont's most rural and economically depressed areas has been significantly higher than the rate for the rest of the State, about half the time over the past 20 years. The teen pregnancy rate for Franklin County, however, stands out as being significantly higher than the rest of the State three quarters of the time over the past 20 years.

Chittenden County has by far the highest (absolute) number of teen pregnancies: 146 in 2008, compared with 60 in Franklin Co, 57 in Bennington and 48 in Orleans counties in the same year. The next highest (absolute) number of pregnancies is in Rutland County: 85 in 2008. However, these counties (Chittenden and Rutland) have larger populations, which accounts for the lower rates.

Young teen (<18 yrs). Births for this population accounted for 1.5% of total births, similar to the previous quarter. Births to single mothers aged less than 20 years with less than a high school education accounted for 5.1% of the first births, down from the previous quarter.

Older teens (18-19 years of age). There is one other twist which is not addressed in this analysis. It appears that a higher proportion of the teen pregnancies in Franklin and Orleans Co occur in older teens (18-19). In 2008, for example, Windham, Caledonia and Bennington Counties appeared to have higher teen (15-17) pregnancy rates than Franklin and Orleans.

Figure 5.



Youth Behaviors

According to the 2007 Vermont Youth Risk Behavior Survey, 37 percent of Vermont students reported having had sexual intercourse. Furthermore, more than one-quarter of Vermont students are sexually active (28 percent of students reported having had sex during the past three months). Overall, male students have sex earlier than females and are twice as likely to have had sex prior to age 13 (8% vs. 4%). Female students tend to exhibit less risky behaviors than their male counterparts; however, female students remain at risk of other social pressures. Vermont’s Youth Behavior Survey reports that:

- Of all students, 11% have ever been touched against their wishes or forced to touch someone else, and 5% have ever been forced to have sexual intercourse. Females were significantly more likely to report these issues than males.
- In the past 30 days, 17% of students were bullied and 20% of students bullied someone else. Females were significantly more likely to have been bullied and significantly less likely to bully someone else. Students in 8th or 9th grade were significantly more likely to have been bullied or to report being bullies themselves than students in 12th grade.
- Of all students, 15% reported being bullied electronically, such as through chat rooms, instant messaging, Web sites, or text messaging, in the past 12 months. Females were significantly more likely than males to report being electronically bullied. There were no significant differences by grade. [This question is new in 2009.]

- Suicide plans and attempts are down since peaking in 1995. In 1995, 22% reported making a plan to attempt suicide and 10% reported actually attempting suicide. Females were significantly more likely than males to feel sad or hopeless almost every day for at least two weeks, to purposely hurt themselves, to make a plan on how to attempt suicide, and to actually attempt suicide. There were no significant differences by gender in attempted suicides that required medical treatment.
- While some people are, by nature, more vulnerable to stress, persistent and long-term chronic stress can put anyone at risk for extreme anxiety, emotional difficulties and depression. Depression begins to affect Vermont's adolescent girls at an early age and continues through adulthood. Among eighth through 12th graders 20% report feeling so sad or hopeless almost every day in the past two weeks that they stopped their usual activities; and, 27% of girls report being depressed compared to 14% of boys.

3.3. Children and Youth with Special Health Care Needs

For those enrolled in publicly funded health insurance programs, coverage can still be precarious as a result of many reasons including failing to pay monthly premiums, documents filed late, and fluctuations in family income. At the end of 2008, about 3,000 uninsured children from birth to 17 years old met eligibility requirements for Medicaid or Dr. Dynasaur.

Assessment of this population's strengths and needs were primarily informed by key informant interviews with providers of the population. Key informants reported that nearly every family served has a primary care physician—even to the level of a medical home—for their children and very few have allied with alternative practitioners (naturopaths). Some families with CSHCN were described as being between primary care providers often because they are looking for someone who seems more comfortable with their child's special need. Of those families who access services with Chittenden County, Vermont's most populated county, it is estimated that few are seen by family practitioners. One provider speculates that children with developmental disorders who receive their primary care from a family practitioner or family nurse practitioner are referred later to early intervention and later to Child Development Clinic (CDC).

In terms of preventive care, CSHCN were observed to be well immunized—with one specific exception that one might anticipate: when parents are worried already that their child may have an ASD, or there is an older sibling with an ASD, they may decline some of the immunizations. Lastly, a key informant commented on how well families do in incorporating recreation into the lives of their CSHN.

Healthcare Financing Challenges for CSHCN

Without adequate health care financing resources (insurance, Medicaid) for coverage, without recognition that traditional medical necessity criteria do not fit the continuing needs for therapy of many children, even excellent screening and prescription of treatment are ineffectual in

improving children's health and development. The VT legislature is eager to require insurance to cover all treatments necessary for children with autism as have quite a few states; a well-intended but categorically narrow approach to bringing health insurances to full partnership in the assurance of the provision of treatment for some (but not all) children with special needs. In addition, in disciplines in which there are shortages of qualified providers, inadequate reimbursement for necessary services becomes perversely synergistic. Professional training programs may have difficulty recruiting students for under-resourced fields of practice. Historically isolated from each other, health care and educational systems continue willingly to shift costs out of their own system and into the other, through the vehicles of medical versus educational necessity. The drive to expand case management services as a solution reflects not the difficulty in choosing among appropriate services, but the difficulty of finding services from which to choose in the first place. Part C mandates are designed to obviate the differences between medically- and educationally- or developmentally-necessary, utilize transdisciplinary models of care, wrapped in service coordination-but find their own fiscal safety net as payer of last resort highly stretched as other payers drop out.

Consumer Perspective

Focus groups with parents of children with birth defects revealed important information about these families' needs for support by the health care systems. Many families talked about the confusion at the time of the birth of their child, especially if the birth defect was first detected at the item of birth. Some parents reported the hospital staff as insensitive and sometimes incompetent. However, others reported that the home services needed by their infants were well coordinated before discharge from the hospital. The data indicate that if there was a diagnosis of a potential birth defect made before delivery, the coordination of services was much more effective and satisfying for the parents. In general, parents felt there was good communications between their family practitioner/pediatrician and their child's specialists, but they said it would be easier if their primary care physician had a better understanding of their child's condition. In addition, the parents discussed the adjustments they had to make in their personal lives, such as cutting back on work hours, or leaving the work force to care for their child. The main feedback from these parents for improving services was to have available a well-educated case manager who could provide accurate information on special services, resource, and financial assistance. The parents also stated the need for more flexibility and financial help for families and assistance in navigating complex insurance systems, especially for needs such as out-of-network physicians, alternative foods and formulas, and billing disputes. They parents spoke of the need to educate parents to enable them to be their own advocates and to be able to make their own decisions.

4. MCH PROGRAM CAPACITY BY PYRAMID LEVELS

4.1. Direct Health Care Services

4.1.1. Access to Primary and Specialty Care Services

While workforce shortages exist across Vermont, rural health systems are not able to recruit and retain health professionals at the same rate causing the shortage gap to increase as compared to their urban counterparts. Almost 28,700 people were employed in a health care profession in 2000, representing approximately 9.7% of Vermont's total workforce. In that year, the state ranked 12th in the nation in per capita health services employment and saw a per capita growth rate of 35% in health services sector employment.

The 2008 Vermont physician licensing survey, administered by the Department of Health, found that there were 1833 physicians providing patient care in the state, with 634 working mainly in primary care, and 1199 working mainly in specialty care. Although Vermont ranks 7th in the nation for physicians per capita, there is uneven distribution within the state. The ratio of primary care physician to population ranges from a low of 1.2 Full Time Equivalent (FTE) primary care physicians per 100,000 persons in Grand Isle County to a high of 150.3 FTEs per 100,000 persons in Chittenden County with the second highest being Windsor County with 47.3 FTEs per 100,000. Workforce disparities exist between rural and urban areas. According to this same survey the primary care physician FTE to population ratio is 27.3% lower in rural areas of the state (92 FTE per 100,000 persons urban, 72 FTE per 100,000 rural).

Similar trends exist in many health care professions within Vermont. While mental health workforce shortages fall below desired levels, Vermont still exceeds the national averages of psychiatrists, psychologists and social workers per capita. Dentists, while exceed national averages are rapidly aging in rural remote Vermont communities and are maldistributed between rural and urban regions of the state (the primary care dentist FTE to population ratio is 32% lower in rural areas; 42.5 FTE per 100,000 urban, 32.2 FTE per 100,000 rural). Finally, per capita Licensed Practical Nurses, Nurses Aids and Pharmacists all fall well below national averages, ranking 32nd, 35th, and 47th in the nation respectively.

4.1.2. Area Health Education Centers⁸

The Vermont Area Health Education Centers (AHEC) Program, in collaboration with many partners, improves access to quality healthcare through its focus on workforce development. This includes: pipeline programs in health careers awareness and exploration for youth in communities across the state; support for and engagement of

⁸ The Vermont Primary Care Workforce 2009 Snapshot. Vermont Area Health Education Centers (AHEC) Network. January 2010.

health professions students at the University of Vermont and residents at Fletcher Allen Health Care; and recruitment and retention of the healthcare workforce in Vermont. AHEC efforts focus on achieving a well-trained healthcare workforce so that all Vermonters have access to quality care, including those who live in Vermont's most rural areas and Vermont's underserved populations. In addition to workforce development, AHEC brings educational and quality improvement programming to Vermont's primary care practitioners and supports community health education across the state.

AHEC believes that success in healthcare innovation, transformation, and reform depends on an adequate supply and distribution of well-trained healthcare professionals. Annually, each of the three community-based Area Health Education Centers surveys all primary care practices in its region to get a snapshot of the supply and distribution of primary care practitioners. This inventory guides AHEC's program development to address needs of the current workforce, as well as identifies emerging workforce shortages.

The primary care workforce includes family medicine (FM), general internal medicine (IM), obstetrics/gynecology (OB/GYN), and general pediatrics (PED). When analyzing the supply and distribution of primary care practitioners and changes across time, counts of practitioners are reported in Full-Time Equivalents, or FTEs, rather than counts of individual people, to standardize workforce measures and determine adequacy and shortfalls. There are 545 physicians and 239 advanced practice registered nurses (APRNs), certified nurse midwives (CNMs), and certified physician assistants (PA-Cs), for a total of 784 individual primary care practitioners and a total of 220 primary care practices. The supply of primary care practitioners falls short of an adequate supply statewide. Combining *all* primary care specialties, there is a total shortfall of 42 primary care practitioner FTEs: 27 primary care physician FTEs and 15 APRN, CNM and PA-C FTEs. It is estimated that 55 individual practitioners are required to meet this shortfall, given the part-time nature of some clinical positions due to teaching, administrative, and research responsibilities; reduction in hours for those approaching retirement or meeting family or personal health needs; and that some clinical positions are only part-time in small, rural practices.

Supply and distribution vary by region and primary care specialty. There is an overall shortfall of 56 internal medicine physician FTEs. The internal medicine physician shortfall affects access to primary care for adults in every county of Vermont. The supply of family medicine physicians, who serve both adults and children, is at the adequate level statewide, but varies by county. Combining the efforts of both internal and family medicine physicians, there still continues to be a need for adult primary care physicians in every region of the state. Half of all family and internal medicine physicians in Vermont report that they have limited or closed their practice to new patients.

4.2. Enabling Services

Vermont enjoys a strong network of state and community services that are considered enabling for all Vermonters, especially those of lower income, have young children, or

have families who are headed by pregnant or parenting teens. The system of Community Health Centers (FQHC, RHC) provide extensive enabling services such as social support, language translation, and transportation. The system of family planning services offered by Planned Parenthood of Northern New England provide family planning education for youth and their parents. WIC offers prescribed monthly food packages and also education and opportunities to access healthy foods in the family's community, such as farm-family programs. The Vermont Child Lead Poisoning Prevention Program offers the tools to families for removing lead from their homes and education as to how to avoid lead exposure in the future. The CSHN programs assist families with medical services and respite care financing strategies. The state's system of fifteen Parent Child Centers provide supports for families with young children such as parent education groups, early child education, and formal GED opportunities. The Building Bright Futures initiative (ECCS) works with early education systems on a population based level but also provides family enabling services in each geographic area. These systems, though extensive, are always limited in effectiveness due to lack of capacity to expand their programs to more geographic areas or to more families within their catchment areas. For example, the Parent Child Centers offer a "Learning Together" family support program - this program is only partially phased in to about half of the counties. Funding opportunities are needed to create an expansion to all areas of the state (funding being applied to HRSA via 2010 ACA legislation.) Please see other sections of this assessment for discussion on initiatives that seek to support these community organizations who offer enabling services, such as CIS and the Blueprint for Health. Several of these initiatives, such as CIS, Blueprint, Building Bright Futures, and CSHN NFI activities, are designed to link medical services, and care coordination services in ways that reduce "silos," enhance efficiency of care, and create a seamless system for Vermonters who use these systems.

Training

The Department for Children and Families, Economic Services Division (ESD), with the help of community resources and organizations, works with participants to get them the transportation they need. Case managers help participants to obtain licenses, registration, insurance, and vehicle repairs. Reach Up supports community-based organizations that provide participants with on-demand transportation services, reliable vehicles, and help toward gaining or repairing credit so they are able to purchase vehicles. Case managers encourage and assist participants to explore alternative transportation options such as public transportation, car pooling, ride sharing, and relocation.

ESD continues to work closely with Vermont Adult Learning (VAL) to enhance the new Making It Work Program (MIW). This program offers adults the opportunity to gain both life and job-readiness skills. Through its continuing partnership with Vermont Department of Labor (VDOL) and VAL, ESD ensures that all Reach Up participants receive a thorough and timely employability assessment. These assessments help participants define realistic employment goals, develop clear career paths, and identify the steps needed to gain and retain employment in their field of interest. Based on the assessment results, participants may be enrolled into one or more of five components including problem-solving, money management, and job-readiness skills. As needed, participants may also be referred to

services related to living and job skills. MIW operates statewide through a grant to VAL which subcontracts with local providers.

Housing

The needs of individuals and families for affordable, temporary and emergency housing remains significant. In 2006 and 2007, over 50% of Field Services direct service dollar allocations went to support the immediate housing needs of families to prevent displacement, re-incarceration, child custody and a negative impact to the overall health and well being of families. Direct service dollars prevented many families from becoming homeless and requiring more intense and costly intervention from AHS. Additionally, Field Services is developing General Assistance (GA) pilot projects to test innovations that mitigate poverty and serve applicants more effectively than those currently served with the same amount of general assistance funds.

4.3. Population-Based Services

4.3.1. Building Bright Futures

Vermont has been working for more than a decade to build a unified, early care, health and education system. Even though many of the components needed to support such a comprehensive system have been developed, the current delivery system is still a patchwork of services. Vermont has made the commitment to develop a comprehensive system through the advancement of Building Bright Futures (BBF).

BBF is an innovative public/private partnership comprised of private sector providers, families, business leaders, community members and state government decision makers designed to create a unified, sustainable system of early care, health, and education for young children and their families to ensure that all Vermont children will be healthy and successful. BBF is a new way to fund and deliver services for Vermont's children and their families. As a statewide partnership, BBF will coordinate early care, health and education services for Vermont children and their families. A BBF Regional Council in each district of the state brings together parents, service providers, employers, and others at the community level to implement their BBF Regional Plan for comprehensive early childhood services. These plans will inform funding decisions.

Over the past thirty years programs and services for this age group have changed considerably. Today it is estimated that 18,000 children under the age of 6 are in over 1900 registered or licensed child care programs at least part time. Parent fees are the primary funding source for these programs. Other children are in out of home care of family members, neighbors and friends. Over 10,000 children are involved with a program through the Department of Education. Thousands of children are served by programs through the Child Development Division and the Department of Health.

These numbers, however, do not represent individual children who fall neatly into one system or another. Instead, they represent children who may be at home and receive Head Start and health services or who attend a child care program and also go to a Parent/Child Center playgroup. In Vermont, over 70% of mothers with children under the age of 6 are in the workforce. The sheer number of children involved in programs, or families looking for services, demands the serious attention of all Vermonters. Yet, prior to Building Bright Futures, there was no entity which attempted to plan across departmental lines or look comprehensively at the relationship between these public and private systems. This prevents the development of integrated approaches to issues.

As a result, service availability varies widely around the State and there is no coordinated way to address identified gaps in resources or access to services. Families are often faced with a confusing and disjointed system which requires multiple stops and inquiries to receive information and support. Building Bright Futures (BBF) is the thread connecting all services for young children, both public and private, in order to improve information, access, policy, funding and coordination. What is currently described as a system of “unconnected patches” will be sewn together, creating a quilt unique to the individual needs of each child and family, but seamless in its appearance.

On the public front, Building Bright Futures information will make services for children with special needs, services for families, early care and education services, health information and general parenting information all available in an easy to access and integrated manner. Already, a license plate which supports loans to child care providers and the state child care site bear the Bright Futures name. By unifying all efforts to distribute information to families with young children under one banner, the message will be clear and coordinated. In so many ways, by creating a public/private partnership, Building Bright Futures offers a unique opportunity to build a system to support the needs of the very youngest Vermonters.

Strengthening Collaborations and Partnerships

As expressed in the initial goals of the Early Childhood Comprehensive Systems (ECCS) grant, activities were to integrate a stronger maternal and child health focus within the overall early childhood system and in the process develop a comprehensive and unified early care, health and education system. At a grantee meeting in March 2008, the focus was how ECCS can take a new, broader direction towards a “truly integrated, multi-agency effort”. On a local level the BBF Regional Plans will direct action. On the state level BBF will continue to work on expanding partners’ involvement through Building Bright Futures. The sections below describe key areas of work that will be more integrated into BBF and the partners that will be added to the work of creating a comprehensive early childhood system in Vermont.

Integrated Mental Health and Home Visiting Services. The Substance Abuse and Mental Health Services Administration funded grants for Project Launch (Linking Actions for Unmet Needs in Children’s Health). Project LAUNCH is grounded in the public health

approach, working towards coordinated programs that take a comprehensive view of health, addressing the physical, emotional, social and behavioral aspects of wellness. The goal is to create locally based networks for the coordination of key child-serving systems and the integration of behavioral and physical health services. The State of Vermont considered applying for a Launch grant with the Vermont Department of Health (VDH), Maternal and Child Health Division taking the lead in reviewing the application and working with the Child Development Division (CDD) to consider a possible proposal. However, the basis for Project Launch in Vermont is work that is currently going on in the Children's Integrated Services Program. Expectations for LAUNCH are similar to CIS, which is to implement a range of evidence-based programs including:

- Mental Health consultations;
- Developmental assessments across a range of settings;
- Integration of behavioral health programs into primary care;
- Family strengthening and parenting skills training; and
- Home visitation

Children's Integrated Services. The Agency of Human Services (AHS) reorganization in 2004 directly impacted the coordination among programs. The reorganization resulted in aligning all the child development services that had been in multiple departments within AHS into a single division, The Child Development Division (CDD), within the Department for Children and Families.

The CDD includes all child care functions including the subsidy program and licensing, early intervention services including Part C of IDEA known as the Family, Infant and Toddler Program (FITP), Early Childhood and Family Mental Health and the Healthy Babies, Kids and Families Program (MCH), and many primary prevention and system development initiatives including ECCS, Healthy Child Care Vermont and the Head Start Collaboration Office (HSSCO). Bringing these services and initiatives together under one division created the opportunity to combine funding and policy to ensure a true continuum of services for all children, from primary prevention through treatment for those children needing more targeted, therapeutic services.

One way of improving the delivery of early childhood services meant moving beyond coordination to integration of services. The CDD responded to the AHS reorganization by reaching this higher standard of integration by developing a framework called the Children's Integrated Services Program (CIS). These efforts provide a continuum of prevention and early intervention services for eligible prenatal/postpartum women, infants and children birth through six and their families throughout Vermont. The goals of the CIS program are: to provide holistic services which result in positive child and family outcomes; to ensure families have easy access to an array of services; and to eliminate duplication and silos within state programs.

CIS integrates three CDD programs that provide prevention and early intervention services for pregnant women, young children and their families. These programs are:

- Healthy, Babies, Kids and Families (prenatal, child and family healthy development) program;
- Children’s Upstream Services (CUPS - Early Childhood and Family Mental Health) program;
- Family, Infant and Toddler Program (Part C); and

The CIS Program offers families expertise in the following areas: social work and family support; maternal/child health and nursing; child development and early intervention; early childhood and family mental health; other specialties, e.g. nutrition, speech and language therapy, occupational therapy. The program also provides practical information about: pregnancy; breastfeeding; parenting (including how to manage challenging behaviors); potential delays in a child’s development; and other concerns about a child.

A CIS Intake team is the contact point for all CIS referrals. This small team of multi-disciplinary professionals receives and reviews the confidential universal screening and referral forms and obtains additional information as needed to determine, with the family, the most appropriate response for those family services. The team can provide services and/or make referrals, and help the family through any transitions to other community services. Once service needs are clear, families work with one point person, usually a direct service provider, to help manage their care. The family and the direct service provider also have the support of a customized child/family team to help develop one plan which includes all services needed or desired by the family. The plan will encompass health, mental health and well-being, family support, and specialized intervention services needed by a child and family.

Accomplishments of the CIS Program to date include:

- Local CIS Intake and Review, Consultation, and Policy and Administration teams are in place in every AHS district, staffed by a CIS Coordinator
- Common referral and intake forms have been developed and are in use by local CIS teams
- Confidentiality agreements have been developed that allow for different agencies to participate in a shared planning process
- The “One Plan” – an inclusive planning and case management document – has been drafted and is being finalized
- Funding structure issues have been identified and work is ongoing to develop more flexibility to better serve families
- Outreach is being conducted to community partners, health care providers, and parents about CIS and its services: Early Intervention (formally FITP), Nursing and Family Support (formerly HBKF), and Early Childhood and Family Mental Health (formerly CUPS)
- Cross-department and cross-agency commitment to CIS is being fostered through formal grant and contract language
- Approximately 6600 children and families were provided services by CIS in FY08

CIS is poised and ready to rapidly move forward to achieve the goal of a multi-disciplinary, community-based and fully integrated system that is responsive to the health and developmental needs of pregnant and postpartum women, young children and their families.

Planned Parenthood of Northern New England (PPNNE). The partnership between PPNNE and the Department of Health was identified as a major strength of the MCH system in Vermont by an MCH key informant. PPNNE serves as the sole Title X family planning delegate agency for the state of Vermont, as well as provides STD testing and treatment and HIV counseling, testing and referral services through grant agreements with the Vermont Department of Health at all of their Health Centers state wide.

4.3.2. Healthy Childcare Vermont

Since the inception of the HCCVT initiative in 1996, a strong partnership between the Vermont Department of Health Department (VDH) and The Department for Children & Families, Child Development Division (CDD) supported this work. To support the continuation of HCCVT, the goals and objectives of HCCVT were embedded into state Early Childhood Comprehensive Systems plan and Building Bright Futures. Strong connections with public health were maintained through the Title V Director at the Vermont Department of Health (VDH).

- Previously, each of the twelve regions in the state was served by a child care health consultant in the local VDH district offices. The public health nurses had up to eight hours per week to carry out child care health consultation activities. Due to budget cuts in 2009, the positions of the child care health consultants were removed from the VDH district offices, leaving the HCCVT program with no trainers or consultants for child care providers in the state. The Child Development Division, with support from the ECCS grant, is in the process of entering into a grant agreement with the Northern Lights Career Development Center to continue the work of HCCVT.

4.4. Infrastructure-Building Services

Since passing its 2006 landmark health reform legislation, Vermont has maintained an intensive commitment to comprehensive health reform that includes universal coverage, a novel delivery system built on a foundation of medical homes and community health teams, a focus on prevention across the continuum of public health and health care delivery, a statewide health information exchange, and a robust evaluation infrastructure to support ongoing improvement with quality and cost effectiveness as guiding principles. Vermont's Blueprint for Health is guiding a statewide systems based approach to reform health services. As an agent of change, the Blueprint program is designed to:

- Implement a model that improves access to well coordinated preventive health services, centered on the needs of patients and families.
- Establish a functional continuum of services across sectors that are commonly not well integrated (e.g. healthcare delivery, mental health & substance abuse services, social & economic services, public health services).
- Guide multi insurer payment reform that supports a well integrated approach to preventive health services, while reducing barriers for patients and families.
- Improve the rate that the general population receives recommended health assessments, adheres with preventive therapies, adapts effective self management skills, and engages in healthy lifestyles.
- Reduce avoidable complications from chronic conditions through improved disease control and prevention, and coordinated access to the range of support services that target common contributors to poorly controlled disease.

Advancements in strengthening the safety-net system and services for the underserved have been strong in Vermont. While Vermont experiences low uninsured rates, high Medicaid participation by primary care physicians, dentists and behavioral health professionals and a strong rural hospital, free clinic, Rural Health Center and Federally Qualified Health Center community, we are still working to reach the access and health outcome goals outlined in Healthy Vermonters 2010⁹. Health planning to expand the safety-net and support underserved Vermonters, quality improvement initiatives, workforce development to reduce the disparities in primary care distribution and program development to assure that our most vulnerable populations have access to programming that will improve health status will be a significant focus of the state for some years to come.

Assumptions about the utilization of the healthcare system, particularly as they relate to those who may be dependent upon its safety net, frequently comes from quickly drawn conclusions about urban centers and their respective “crowded emergency rooms at public urban hospitals.”¹⁰ Conversely, however, literature has documented a more accurate understanding of rural populations, being:

- they may have significant health care needs and encounter access barriers that are “no less substantial” than their urban counterparts;
- typically they are older, poorer, and have lower levels of education;
- hospitals and physicians are fewer in number in rural communities; and,
- travel times to healthcare providers are longer; complicated by the lack of public transportation.

⁹ <http://healthvermont.gov/pubs/hv2010/hv2010.pdf>

¹⁰ Osmond BA, Zuckerman S, Lhila A. Rural/Urban Differences in Health Care Are Not Uniform Across States Posted to Web: May 01, 2000, www.urban.org

At a time when state and federal deficits will hinder increases in Medicaid and Medicare rates, putting states at risk of cutting the scope of services or populations covered under Medicaid, the work of Vermont's State Office of Rural Health and Primary Care Flex Program to support these constituents is imperative. Ongoing collaboration between key community leaders, health care leaders and the states network of Critical Access Hospitals to assure that they can access programs that will improve their ability to serve the health needs of Vermonters must continue over the next several decades. Eight Vermont hospitals have received Critical Access Hospital designation. As that is the expected maximum for the state, emphasis for our small rural hospitals is changing to quality improvement and sustainability. Improving the stability of first responder and emergency medical services is also a high priority for the program.

4.4.1. Healthcare Infrastructure

There are a total of 1530 state licensed acute care hospital beds. Actual capacity however, is estimated to be no more than 1200 beds (these figures do not include Dartmouth Hitchcock Medical Center in Lebanon, NH which is a provider to Vermont residents). Thirteen hospitals operate emergency departments in Vermont and are relatively small community hospitals. Two (Fletcher Allen Healthcare and Dartmouth Hitchcock Medical Center) are academic medical centers that offer a broad array of tertiary services including American College of Surgeons verification as Level I trauma centers. Eight of the nine hospitals eligible for the Critical Access Hospital (CAH) Program have converted. Given that recent analysis indicates that the ninth and final hospital exceeds the standards for average length of stay, Vermont does not anticipate its conversion to a CAH in the foreseeable future.

All fifteen hospitals accept ambulance patients, and all are involved in the oversight of Emergency Medical Services (EMS) through both off-line and on-line medical direction. The hospitals in Vermont have well-established agreements for the purposes of patient transfers.

Out-patient Facilities. Vermont has approximately 254 primary care practices statewide including seven that have been designated as Federally Qualified Health Centers and 21 designated as Rural Health Clinics. There are also 9 free clinics, half of which are integrated models (integrated into existing health systems) with the remainder independent stand alone models.

EMS Systems. Vermont has a statewide EMS system that includes 92 ambulance services, 79 first responder services, 15 hospitals that operate emergency departments, and about 3000 certified EMS personnel. The state has one helicopter air ambulance based at the Dartmouth Hitchcock Medical Center in New Hampshire that provides service throughout Vermont. For EMS administrative purposes, mutual aid, training, medical direction and similar functions, Vermont is divided into thirteen EMS districts. Each district is centered around one or two resource hospitals that represent the most likely transport destination for ambulances within the district.

Most ambulance services in Vermont are community-based organizations that are configured in one of the following ways: non-profit corporations, for-profit corporations, fire-affiliate, or municipal service. Many of the ambulance services rely heavily on volunteer personnel for staffing although there has been a trend in recent years to mixed career and volunteer staffing models. Most ambulance services operate only one or two ambulance vehicles. The overwhelming majority of ambulance services provide EMT-Intermediate level service and a minority provides EMT-Paramedic level service.

First responder services tend to be based in the state's smaller communities and are more heavily dependent upon volunteer staffing than ambulance services. These organizations respond to EMS calls to provide faster access to emergency medical care than a responding ambulance crew. Most first responder services operate at the EMT-Basic or EMT-Intermediate levels.

4.4.2. Healthcare Workforce Recruitment¹¹

There is significant activity underway in Vermont to address the recruitment and retention of the primary care workforce:

- AHEC provides health career exploration programs for youth (i.e., the next generation healthcare workforce) in middle and high schools throughout Vermont.
- AHEC provides support for and engagement of health professions students at the University of Vermont and residents at Fletcher Allen Health Care.
- 41% of the primary care physicians practicing in Vermont have received their training from the University of Vermont College of Medicine and/or Fletcher Allen Health Care Residency Programs.
- 54% of the primary care physicians practicing in Vermont have had their educational debt reduced in exchange for a service commitment through support from the Vermont AHEC Program which administers the Vermont Educational Loan Repayment Program for Primary Care Practitioners and the UVM College of Medicine Freeman Medical Scholars Program.

Challenges to primary care in Vermont are due to the growing numbers of elderly Vermonters and the accompanying increases in chronic illnesses, the aging of the workforce itself, and the smaller supply of new primary care physicians affecting the nation as a whole. Vermont must continue to focus on fostering an adequate supply of primary care practitioners to ensure access to high quality health care for all Vermonters.

4.4.3. Vermont's Designated Mental Health Agencies

¹¹ The Vermont Primary Care Workforce 2009 Snapshot. Vermont Area Health Education Centers (AHEC) Network. January 2010.

The economic conditions in Vermont continue to erode the system of mental health services, lowering access for our neediest residents.

State law specifies that Vermont's publicly-funded community services system for individuals of all ages with developmental disabilities and mental health disorders be provided through Vermont's Designated Agencies. The Designated Agencies are private nonprofit community provider agencies who are contracted by the Department of Mental Health for mental health services and the Department of Disabilities, Aging, and Independent Living for developmental services. The mental health programs within the Designated Agencies are more widely known as the Community Mental Health Centers (CMHCs).

Vermont has ten Designated Agencies and one Special Service Agency providing mental health services across all fourteen counties. While the mental health services offered can vary by agency, there are a set of core service functions including, but not limited to:

- outpatient services including psychiatry
- individual, group and family counseling
- outreach
- crisis, and support services including community skill development
- respite
- psycho-education for children and families

A number of the CMHCs are also the primary providers of substance abuse treatment services in their communities, and have contracts with both the Department of Health, Division of Alcohol and Drug Abuse Programs. Many of the CMHCs also hold contracts with the Department of Corrections, the Department for Children and Families (Family Services Division and Child Development Division), and the school districts in the form of school-based mental health services. Vermont has structured its program to ensure the highest level of federal financial participation through the State's Medicaid program.

In State Fiscal Year 2009 the CMHCs served 6,448 individuals in their adult mental health outpatient treatment services; 9,665 in their children's services programs; 3,073 in their community rehabilitation programs; and, 4,536 in their substance abuse programs. Sixty-three percent of the clients accessing adult mental health outpatient services were women and 34% of the clients accessing substance abuse services were women.

In state fiscal year 2009 (SFY09) adult services provided by the CMHCs realized cuts to staffing in management and direct care positions and additional cuts for children's services. This resulted in approximately twenty seven full time equivalent positions eliminated within the 11 agencies. In SFY 2010 the proposed budget plan includes cutting additional funds from the state's Community Rehabilitation and Treatment program. Cuts to adult patient care will eliminate all state funding for that program.

4.4.4. Health Information Technology

Vermont lacks widespread use and adoption of health information technology (HIT) across urban and rural areas of the state. Approximately 38% of primary care practices have an Electronic Health Record (EHR) or anticipate implementing one in the next 12 months. This figure is comparable to national data; however we would expect that solo and rural practices will have additional barriers to adopting such technology. In 2009, Vermont's Primary Care Association (Bi-State) worked with health center members on a competitive grant proposal to Health Resources and Services Administration (HRSA) of the Department of Health and Human Services (HHS). On June 3, 2010 HHS Secretary announced that Bi-State would receive a grant award of \$2,226,278. The funds are part of the \$2 billion allocated under the American Recovery and Reinvestment Act of 2009 to expand health care services to low-income and uninsured individuals through its health center program.

Vermont's association of Community Mental Health Centers, Behavioral Health Network (BHN), has entered its initial phase of the Behavioral Health Network Telehealth Network (BHNTN). BHN signed Purchase and Sale Agreement with York Telecom who will provide each member agency with a Polycom 42-inch screen unit and cart. The unit will enable each agency to have four-way multi-point connectivity to be used for telecommunication, clinical sharing, education and more. The equipment will be installed in July 2010 and each member will receive individual assistance from York Telecom for installation and training. BHN staff is diligently working to secure funding for the BHNTN Bridge which will enable the telehealth equipment to be used for distance learning applications and coordination with key partners outside the BHN network. This type of education and collaboration will fundamentally improve the quality of care being provided and will have a positive impact on some of the recruitment and retention issues that exist in rural Vermont. A Bridge will allow for continued medical education and coordinated trainings across the system, increasing employee skills and qualifications and saving money to be used to improve direct services. Employees will be supported in their careers and the quality of care being provided will be more uniform and continuously improving.

A Bridge will also allow for multipoint communication between BHN member agencies and key partners such as primary care providers, hospitals and schools, promoting increased collaboration and integration and thus enabling broader telehealth applications in the future. Multipoint technology and bridging services are being used to combat geographic, financial and other barriers in many states and BHN is using national models to develop its own unique application of telehealth within rural Vermont. Business planning around telehealth and training will take place as soon as the funding for the Bridge is secured. The range of mental health services provided to rural consumers over a telehealth network is virtually limitless and includes all of the same services that can be provided in person.

In February 2010 Vermont Information Technology Leaders, Inc. (VITL) received \$6.8 million federal grant to help more Vermont health care providers improve patient care by using electronic health records and other information technology. VITL was designated

as a Health Information Technology Regional Extension Center. VITL is one of 32 centers designated nationwide, assisting health care organizations to computerize medical records and use the technology to provide better care. Health Information Technology Regional Extension Centers like VITL are funded under the American Recovery and Reinvestment Act of 2009 (ARRA). VITL is offering Vermont physician practices a package of services, including educational programs, onsite consulting, and project management. VITL has developed its programs over the last several years under funding from the state of Vermont and the Vermont Health IT Fund has begun working with additional physician practices. VITL is a 501(c)(3) non-profit organization that operates as a partnership between the public and private sectors. VITL's mission is to collaborate with all stakeholders to expand the use of secure health information technology to improve the quality and efficiency of Vermont's health care system.

4.5. Vermont's Commitment to Quality

Vermont is committed to a system-wide approach to improving quality while understanding that to fulfill this commitment requires a reduction in undesired variability of care and increased consistency through evidenced-based practices, as well as an investment in information regarding effectiveness and cost-effectiveness, and the linkage of payments for care to measures of quality. A 2006 report to Congress titled "Improving the Medicare Quality Improvement Organization Program – Response to the Institute of Medicine Study" noted several areas in which dramatic change has occurred in the quality improvement landscape of healthcare over the past decade, including:

1. Gaps in healthcare quality are more widely recognized by policymakers, consumers, and provider organizations;
2. The need for more fundamental changes in health care processes and systems to deliver consistent high-quality care; and,
3. The momentum that has now developed toward consumer choice in healthcare, through public reporting of provider performance and, more recently, performance-based provider payment."

The importance of quality spans the entire field of health and over the past several decades the role of evidence-based practice has helped quality improvement initiatives navigate what would otherwise be very complex waters. The challenge however lies in the dissemination of these practices as well as training opportunities that will support adaptation and integration of best practices ongoing. Network development and collaborative partnerships between relevant organizations to facilitate dissemination of best practices, standardize care and institute common monitoring activities to ensure continuity of high quality care are some of the strategies that will join diverse professions at varying skill levels, spread across a large geography.

Many professions in Vermont struggle with the issue of ensuring high quality care as the young workforce slowly diminishes because of out-migration yet the demands for care increase as our population ages and the prevalence of chronic diseases become more

pronounced. The 2003 IOM report Health Professions Education: A Bridge to Quality identifies five core competencies that all health care professionals should master to provide high-quality care:

1. Provide patient-centered care
2. Work in interdisciplinary teams
3. Employ evidence-based practice
4. Apply quality improvement
5. Utilize informatics

As rural communities and small primary care and hospital providers are a major source of care for many Vermonters we have to recognize that much of the current research and standards for quality are based upon urban, large-scale studies and models. As a result, core components of a quality initiative, including the application of evidence based practices and utilization of safety and quality measures must be redefined for application to comparatively low volume providers. Similarly, given the relative size and diversity (in skill) of rural providers we cannot expect that the resources and infrastructure available to support a quality initiative exist at the extent of larger urban counterparts.

5. SELECTION OF STATE PRIORITY NEEDS

The VDH MCH Leadership Team, under the direction of Dr. Breena Holmes, MCH Director, provided the main guidance for the consideration and decision making for the final MCH priority listing. The Leadership Team considered input from all stakeholders (such as AAP Vermont Chapter, community MCH Coalition Leaders, VDH District Office Leadership, Leadership from Division for Children and Families, etc.) when reviewing the list of potential priority goals.

As described in Section 1, the MCH Leadership Team chose to continue with the Ten Priority Goals as used in the 2005 TV SNA. The Team felt that these Goals are still applicable to Vermont in 2010 and are used by other key state planning initiatives. Thus it was felt appropriate to continue using this list for MCH planning into the next five years. It was decided that six state performance measures would be continued for the next five year planning period. One new performance measure was created and three performance measures will be developed over this next year. The measures will be tied to key developing public health program initiatives and will be described in the FY12 Title V application.

The Ten Priority Goals are broadly worded and reflect the vision of a healthy MCH population for Vermont. In addition, they allow flexibility for planning within each goal. These goals were first created in 2002 via a goal-setting process facilitated by the planning unit of the Vermont Agency of Human Services. At that time, VDH began using the concept of goal setting and asset promotion for Title V planning. These goals continue to be useful for Vermont state government. For example, they are included in the recent Challenge for Change legislation that was created to streamline systems in state government. Use of these goals when streamlining programs to decrease program “silos” will be useful to maintain overall goals for both AHS, our partners at DCF and Mental Health, and also for MCH planning. In addition, these goals are used in the annual reporting of the CAPTA program activities.

Specific criteria were set forth to guide the MCH Leadership Team in choosing the measures. The related state performance measures are worded to reflect an effort to veer from the traditional approach of program evaluation or “deficit” wording to a newer approach of strengths-based wording. Measures were chosen to reflect the existing work of VDH programs or to begin measurement of initiatives that are in the beginning stages of implementation. It was desirable to include measures that reflected the broad scope of MCH public health – hence the broad array of VDH programs such as environmental, CSHCN medical home, physical activity and the built community, etc. The measures also reflect partners in the wider aspects of MCH, such as mental health and early childhood. Some measures are population based and some are specific for program data or Medicaid data. Also, measures were chosen to reflect a new aspect of MCH programming, and not to reiterate what might already be monitored via Title V-required national performance measures or outcome data. Many aspects of the described programs (and also reflected in the priority goals) are founded on the theme of supporting the assets of the individual, communities, and populations – those groups who can be considered recipients of a

service. However, the capacity assessment can also be viewed in the light of understanding the strengths and deficits in the specific program or systems under review. Several initiatives in this report have been described – initiatives intended to build on the strengths of existing clinical systems or programs and also to enhance their efficacy. For example, the Vermont Department of Health’s Blueprint gives tools to individual clinicians and practices to develop assets within their own offices systems and procedures to improve services. The VDH’s Blueprint also serves to empower “patients” by encouraging client self-management in personal health care. In addition, the Agency of Human Services is working on efforts to streamline services and thus is enabling AHS districts to be more self-governing and less centrally administered. Thus, this framework of asset promotion can assist individuals and families and communities - also the philosophy can be expanded into supporting the strengths of existing public health systems and encourage research and use of best practices that support the assets of the community or population in order to achieve the vision of a healthy population.

In selecting the goals and measures, Vermont Title V used input from a wide variety of sources. The traditional quantitative data sources used have grown in their scope and sophistication during the past five years, some in part from the SSDI funded projects, and also due to the availability of several new data sources and electronic systems for analysis. Also, new or updated qualitative data from surveys was available – such as PRAMS, YRBS, National Survey, ABRFS, etc. A close relationship with the Office of Research and Statistics enables the latest data information to be shared with MCH planners and program staff. The Division of MCH staff at VDH (including Title V and CSHN) routinely work with a variety of partners – those within VDH for MCH public/community health issues (Health Promotion, Alcohol and Drug Abuse Prevention, Local Health, Environmental, EMS) and other state partners such as Division of Mental Health, Department for Children and Families (early child hood, child care, and social services,) and the Department of Education. These partners are a wealth of information and resources for collaborative planning on issues covering the broad spectrum of health and social determinants of families’ well-being.

The targeted approach devised specifically for the creation of the Strengths and Needs Assessment involved a variety of processes. A formal querying of the twelve MCH Coalition Coordinators via a day long focus group was conducted to get community based information from local leaders. Feedback was solicited from the Vermont Chapters of the AAP and the AAFP and also from the Vermont Child Health improvement Program. Formal interviews were held with key MCH informants who represent a variety of state and local organizations that deal with the many facets of maternal and child health. This information gathering and analysis process was carried out under the vision of a Vermont Maternal and Child Health Strengths and Needs Assessment – not just a population-based needs assessment. Vermont was interested in attempting to apply recent and historical “assets” research to the process of a population health assessment.

The Ten Priority Goals and State Performance Measures are as follows:

1. Pregnant women and young children thrive:
SPM #1: Increase the percent of women who indicate that their pregnancies are intended.
2. Children live in stable, supported families
SPM #2: This measure will be finalized for the July 2011 Title V Grant submission.
3. Youth choose healthy behaviors and will thrive.
SPM #3: The percent of youth in grades 8-12 who do not binge on alcoholic beverages.
4. Women lead healthy and productive lives.
SPM #4: The percent of women ages 18-44 who report eating at least five or more servings of fruits and vegetables per day.
5. Youth successfully transition to adulthood.
SPM #5: The percent of youth who feel like they matter to people.
6. Communities provide safety and support for families.
SPM #6: The percent of youth grades 8-12 who report always wearing a bicycle helmet when riding a bicycle.
7. All children, including CSHN, receive continuous and comprehensive health care within a medical home.
SPM #7: This measure will be finalized for the July 2011 Title V Grant submission.
8. All children receive continuous and comprehensive oral health care within dental home.
SPM #8: Percent of children using Medicaid who use dental services in one year time period.
9. Children and families are emotionally happy.
SPM #9: This measure will be finalized for the July 2011 Title V Grant submission.
10. Children and families live in healthy environments.
SPM #10: Increase the percent of one-year olds tested for lead poisoning.

As description of the Ten Priority Goals and State Performance Measures are as follows (see attached Table of Goals and Measures)

1. Pregnant women and young children thrive: SPM #1: Increase the percent of women who indicate that their pregnancies are intended.

According to data from the National Survey of Family Growth (NSFG), in the United States, approximately half of all pregnancies across the age spectrum are “unintended” and may be associated with social, economic, and medical costs. Although a pregnancy may be reported as unintended, most children at birth are welcomed and nurtured. However, the social costs of unintended births can include reduced educational attainment and employment opportunity, greater dependence on welfare, and increased potential for child abuse and neglect, with a greater impact noted for adolescent mothers. In general, women who lack preparedness for pregnancy are less likely to receive timely prenatal care, and their infants are more likely to lack sufficient resources for healthy development (Healthy People 1010 Progress Review, Family Planning, December, 2004.)

This measure reflects the Lifecourse approach, in that as women and their partners have children with planning and intent, they are more able to prepare for a healthy birth outcome. Attention can then be given to the woman’s health and to the financial, social, and economic situation. The measure reflects the work of many services at all levels of the pyramid, such as family planning clinical services (DS, ES) and planning and coordination between clinics and community referral services (PBS.) Efforts between systems coordination (IB) will also be undertaken. For example, the new ACA Legislation reforms on allowing women to use Medicaid reimbursement for contraception services will allow families more resources for family planning. Although there are several nation performance measures that deal with birth outcomes and infant health, this purpose of this SPM is to specifically measure family planning resources and effectiveness.

2. Children live in stable, supported families: SPM #2: The previous SPM dealing with percent of child care centers who have on-site health consultation has been discontinued, as funding cuts have reduced the capacity of VDH districts to provide site visits for health care consultation. VDH and DCF will work in the future to increase funding opportunities to re-build this program, and, at the time of this writing, specific program initiatives are being considered by CDF. However, for creating a measure related to the goals of stable and supported families, the MCH Leadership Team plans to investigate possible measures from the upcoming home visiting grant program as funded from the 2010 ACA legislation. This grant will provide support for an evidenced based home visiting program for families determined to have certain risk factor that might hinder their health and welfare. As planning for the grant gets underway in the fall of 2010, VDH, in partnership with DCF will be determining benchmarks for measuring the effectiveness of the proposed home visiting program. These benchmark will also be considered for a Title V measure for Goal #2. It is anticipated that this measure will related to the PBS or IB level of the MCHB pyramid.

3. Youth Choose Healthy Behaviors and Thrive: SPM #3: The percent of youth who do not binge on alcoholic beverages. This SPM is being continued, as the issue of youth and binge drinking continues to be a concern for public health in Vermont and nationally.

In Vermont, 20% of students reported binge drinking during the past 30 days in 2009. The perceived acceptance of drug-using behavior among family, peers, and society influences an adolescent's decision to use or avoid alcohol, tobacco, and drugs. The perception that alcohol use is socially acceptable correlates with the fact that more than 80% of youth nationally consume alcohol before their 21st birthday, whereas the lack of social acceptance of other drugs correlates with comparatively lower rates of use. Similarly, widespread societal expectations that youth will engage in binge drinking may encourage this highly dangerous form of alcohol consumption (HP2010, CDC.) For this measure, Vermont is testing the approach of using assets-based wording to measure the absence of binge drinking in youth, so as to emphasize the social and cultural changes that must take place for youth to understand that binge drinking can become the antithesis to the social norm. Interventions such as school based education programs and media campaigns for both students and parents are mainly linked to the DHC and ES levels of the pyramid. Efforts to enforce underage drinking are also considered PBS. VDH contains both the Alcohol and Drug Abuse Programs and the Injury Prevention Program, both of which have teen drinking reduction as key program objectives. The recent "Parent Up" media campaign by VDH is geared toward parents of teens to educate about the dangers of underage drinking and the legal responsibilities of adults.

4. Women lead healthy and productive lives: SPM #4: The percent of women ages 18-44 who report eating at least five or more servings of fruits and vegetables per day.

This SPM is being continued, as the issue is still of concern for Vermont and little progress has been able to be measured via the BRFS for the past 5 years, both in Vermont and nationally. New state programs are being implemented and a new support from the federal government on healthy nutrition programs will add energy to efforts to influence this measure. A healthy diet for women of child bearing age is related to goals of healthy birth outcomes and the Lifecourse approach to preconception health and generational health. In addition, BRFS data shows that women who report an intake of the recommended amount of fruits and vegetables are also those who are of a recommended healthy weight. So this measure can be viewed as a proxy for following women's health and weight on a population level. Also, concern is rising about the negative health consequences for high birth weight babies and their relation to mothers who are overweight or obese. Interventions are at all levels of the pyramid, such as increasing the fruits and vegetable offerings in the WIC food package (DHC) promotion of community gardens (ES) reduction in food "deserts" around the state (PBS) and improving nutrition labeling on processed foods (IB.) Related NPM are those of increasing breastfeeding and WIC children's BMI.

5. Youth Transition Successfully to Adulthood: SPM #5: The percent of youth who feel like they matter to people. This SPM is being continued, as it is an important asset measure for youth as they perceive support from their communities as they transition from childhood into adulthood. Many school and community based programs for building self esteem are in place, reflecting the DHC and ES levels of the pyramid. Related efforts to deal with risk taking behaviors as measured by the YRBS (such as bullying, drug and alcohol use, drinking and driving) are being approached though all pyramid levels.

Significance: Assets research for adolescents is demonstrating an association between healthy youth behaviors and certain defined assets. In response to this research, Vermont added five asset questions to the YRBS in 2001 in order to gather information on youth assets in relation to youth risk taking behavior. Choosing a youth asset indicator for Priority Goal #5 is viewed as a strategy to operationalize the assessment of youth assets in addition to analyzing youth risk-taking behavior. A recent example of using assets in examining youth health-related behavior is found in the analysis of “screen time” (use of computer or video games for fun) on the YRBS. In 2009, the data show that students who reported three or more hours of screen time were significantly less likely than students who reported less than three hours of screen time to endorse the youth assets of: 1) Gets grades of A’s or B’s, 2) Talk with parents talk about school at least weekly, 3) Feel as if they help decide what goes in their school, 4) Feel as if they matter to people, 5) Volunteer one or more hours on average school day, 6) Participate in clubs outside of school for one or more hours on an average school day, 7) Have a meal with most or all of their family, and 8) Have an adult to turn to for help or advice. Further analyses using risk behaviors and assets such as SPM #7 will be used for planning by both VDH and also the Department of Education.

6. Communities provide safety and support for families: SPM #6: The percent of youth grades 8-12 who report always wearing a bicycle helmet when riding a bicycle.

This is a new SPM, replacing the measure dealing with physical activity programs in Vermont towns. The CDC funded program that encouraged development of community physical activity programs shifted focus to an emphasis on infrastructure support (such as built environment) rather than creating specific programs for towns. Also, the MCH Leadership Team has become concerned about the increase in bicycle ridership and the evidence indicating low bicycle helmet use by youth. This measure has a focus on injury prevention, safe communities, and physical activity promotion. It measures the asset based behavior of wearing a bicycle helmet (versus *not* wearing a helmet.) Interventions can be classified at pyramid levels such as community education programs (DHC and ES), and legislation requiring the bicycle helmet use (IB.)

Helmet use when riding a bicycle can substantially prevent injury or death if the rider is involved in a crash. In Vermont’s 2009 YRBS, $\frac{3}{4}$ of students in grades 8-12 rode bicycles in the past 12 months. However, 63% - over 17,000 students – reported rarely or never wearing helmets. In fact, riders were most likely to report *never* wearing helmets: 48% never, 15% rarely, 11% sometimes, 13% almost always, and 13% always. Males, older students, and students from racial or ethnic minority groups were more likely to report rarely or never wearing helmets. The percent of bicycle riders reporting that they rarely or never wore helmets decreased for several surveys, but has since increased. In 1993, 82% of riders reported rarely or never wearing helmets, compared to 50% in 2001 and 55% in 2007. In 2009, there was a sharp increase in the percent of riders, particularly females, who reported rarely or never wearing helmets. In 2009, students who rarely or never work helmets were more likely to report other risky behaviors, such as not wearing a seatbelt, fighting, driving a car under the influence, and alcohol, cigarette, and marijuana use, even after controlling for demographic differences. However, students

who rarely or never wore a helmet were *not* significantly more likely to have exercised every day in the last week than those who always or almost always work helmets (26% v. 24%.)

7. All children, including CSHN, receive continuous and comprehensive health care within a medical home: previous SPM#7: The previous measure for this goal was intended to promote efforts to support physicians to create Medicaid reimbursable care plans for children who are eligible for SSI benefits. Unfortunately, the systems to support the coding of care plans were very complex and capacity within VDH and Medicaid was not sufficient to make a difference in the systems that relate to this measure. Efforts to achieve this care improvement are continuing, but the measurement itself lacks connection to the goal. A new measure will be developed by the MCH Leadership Team, likely a composite measure including well child visits for CSHN or a reliably identifiable subset thereof, in comparison to other children, to look for disparities in access to a key component of the medical home, the non-acute, planned visit in which enough time is planned to review comprehensive status with a child and family.

8. All children receive continuous and comprehensive oral health care within dental home: SPM #8: Percent of children using Medicaid who use dental services in one year time period. This measure is to be continued. It is related to both NPM #9 and HSCI #7B, however, the MCH Leadership Team and also the Director of the Oral Health Program prefer this measure as it provides an assessment of access to dental care by all low income children. The data for 2009 show that about 53% of Vermont low income children used dental services as paid for by Medicaid in the past year. This number has not significantly increased since 2005 and needs continued attention. VDH's newly hired Oral Health Director is beginning a statewide oral health planning process that will delineate programs and initiatives designed to positive influence this measure at all levels of the MCHB pyramid.

9. Children and families are emotionally healthy: The previous measure of increasing the percent of children with emotional, developmental, or behavioral problems who received mental health services was taken from the National Survey of Children's Health. However, it is felt that a new measure should be developed that reflects more readily quantifiable benchmarks of Vermont specific programs that are improving the mental health clinical and infrastructure services. The measure will be finalized by the MCH Leadership team. The most effective strategy—not only from a public health perspective, but also individually—is primary prevention of factors linked causally to conditions. These factors are societal, even generational and epigenetic, as suggested by the Lifecourse model of health. However, *secondary prevention*--early identification and intervention, are also practical (and, more importantly, achievable) strategies. The VCHIP/VDH effort to increase the performance of developmental/behavioral/emotional screening at key well child visit ages, and to link children to early intervention (Children's Integrated Services) and diagnosis (such as Child Development Clinic) resources is a measurable strategy both at the PCP performance level, and also reflected in referral rates and ages to CIS and CDC.

10. Children and families live in healthy environments: SPM# 10: Increase the percent of one-year olds tested for lead poisoning. This measure is to be continued, as it measures an important clinical and public health outcome and reflects a major public health environmental concern. The 2009 data show that nearly 80% of one year olds in Vermont were screened for blood lead poisoning. Efforts are continuing at many levels of the MCHB pyramid, such as community education and lead paint removal practices (ES) and also with policy and legislation at the infrastructure building level. Lead is a highly toxic metal that has been and still is used in household and industrial products. Lead exposure can increase the risk of miscarriage, premature birth, stillbirth, or low birth weight. Lead enters the body by inhaling or ingesting the lead directly, most often as lead dust. In a pregnant women, lead can cross to the placenta. Children are most vulnerable to lead poisoning when they are under six years old, and especially at ages one and two when they normally exhibit hand-to-mouth behavior. Lead poisoning can cause permanent damage to a child' brain and kidneys. Even small amounts of lead can cause serious learning and behavior problems. The CDC has recommended that all children be screened for lead poisoning at ages one and two years. Vermont has the second oldest housing stock in the nation with about 60% built before 1978, the year lead paint was banned. Most Vermont children who become lead poisoned have ingested lead dust or lead from soil that has been tracked into their home.

In summary, assets literature has described methods of describing strengths within an individual, a family, or a community as a key approach for promoting strengths and empowerment. The persons are considered in control of their own health or community and traditional service providers should look to methods of empowering those who are served, instead of "fixing their problems." Emphasis is on the social connectedness within a group that creates "community" and can be used to build on common strengths. Vermont felt the challenge to apply these concepts of assets to the state MCH population or certain sub-populations when conducting the Title V needs assessment. The resulting document reflects this approach, but must be considered only a beginning for guiding public health theory and action within a strengths promotion context for the next five years.

Table 1. Vermont Title V State Performance Measures July 2010

Vermont State Priority Goal	State Performance Measure for 2005 and SPM for 2010	Attribute	Population Group	Asset/Deficit	PH Discipline	Data Source
1. Pregnant women and young children thrive	Increase the % of women who indicate that their pregnancies are intended.	Lifecourse approach to improve birth outcomes	Pregnant Women and Women of childbearing age	Asset	Preconceptual and women's health, women's reproductive health	PRAMS
2010 SPM 1: Maintain existing SPM of Intendedness						
2. Children live in stable and supported families	Increase the % of licensed child care centers serving children B-5 years who have on-site health consultation	Systems development, collaboration with DCF, Region 1 measure	Children aged birth -6	Asset	Childcare and center accreditation	DCF
2010 SPM 2: Develop measure from ACA Home Visiting/CIS						
3. Youth choose healthy behaviors and thrive	The % youth who did not consume alcohol in the last 30 days (YRBS: 2005-63%)	Social norming, teen behavior, community programs, mental health	Adolescent	Asset	Adolescents, Mental health	YRBS
2010 SPM 3: Maintain existing SPM of youth binge drinking						
4. Women lead healthy and productive lives	Increase the percent of women ages 18-44 who report eating at least five or more servings of fruits and vegetables per day.	Objective for state planning, preconceptual health	Women of childbearing age	Asset	OB/GYN/Family Practice, Women of childbearing age	BRFS

Vermont State Priority Goal	State Performance Measure for 2005 and SPM for 2010	Attribute	Population Group	Asset/Deficit	PH Discipline	Data Source
2010 SPM 4: Maintain existing SPM of women and F&V consumption						
5. Youth successfully transition to adulthood	Increase % of youth responding yes to “In my community, I feel like I matter to people” Also measured by Maine Title V (YRBS)	New England Region 1 measure. Presently being measured by Maine YRBS.	Adolescents	Asset	Adolescent development	YRBS
2010 SPM 5: Maintain existing SPM of youth feel like they matter						
6. Communities provide safety and support for families	Increase % of Vermont cities and towns (with a population of 2,000 or more) who have at least one organized physical activity program in place that is open to all and promoted as a family activity.	Statewide community programs	Families (adults and children)	Asset	Community and environment	Reports from community grant recipients for Vermont Obesity Plan and Blueprint for Health
2010 SPM 6: New measure of youth wearing bicycle helmets: The percent of youth grades 8-12 who report always wearing a bicycle helmet when riding a bicycle.						
7. All children, including CSHN, receive continuous and comprehensive health care within a medical home.	Increase % of children with SSI who receive an annual care plan (Care coordination code from Medicaid)	Systems development	CSHN	Asset	Physicians and health/social work professional who work with CSHN	Medicaid

Vermont State Priority Goal	State Performance Measure for 2005 and SPM for 2010	Attribute	Population Group	Asset/Deficit	PH Discipline	Data Source
2010 SPM 7: Develop measure from CSHN SIG/NFI						
8. All children receive continuous and comprehensive oral health care within a dental home.	Increase the % of low income children who use dental services in one year period (Medicaid)	Dental systems development	Children	Asset	Dentists and health professionals who work in oral health	Medicaid
2010 SPM 8: Maintain existing measure of low income children using dental services						
9. Children and families are emotionally healthy.	Increase % children with emotional developmental, behavioral problems who received mental health care in the past year	Mental health, systems development	Children	Asset	Health and Mental Health professionals who work with children and families	National Survey – Children’s Health
2010 SPM 9: Develop measure from developmental screening in medical home project						
10. Children and families live in healthy environments	Increase the % of one yr olds tested for blood lead levels	Systems development, Injury	Children aged one year old	Asset	Health and Environmental professionals	Lead program/Lab data
2010 SPM 10: Maintain existing measure of one year olds and Lead testing						

6. OUTCOME MEASURES

Vermont continues to work toward goals of promoting a comprehensive system of care for its MCH population which includes access to care for both clinical health care and population based services. Along with this goal comes the responsibility to build a comprehensive system of care that is of a high quality and responsive to the needs of the population. VDH has promoted the medical home concept for both medical and dental health care needs. To this end, VDH has worked to establish strong relationships with a myriad of organizations, such as professional groups, hospitals, community-based organizations, home health agencies, schools, and so forth. The VDH's Blueprint for Health (Chronic Care Model) is a specific action plan for these long-standing goals by enhancing the quality of health care and promoting client self-management.

Examples as cited above are overall intended to reflect the pyramid level work on the various state MCH Title V related services. This work is designed to include the specific performance measures as determined by their relationship to the over all 10 Priority Goals. Although not specifically articulated as such, the NPM are also related to the Vermont ten 10 broad goals as chosen by the MCH Leadership Team. As is shown by historic public health research, work on these specific measures eventually can influence population based outcomes, such as those included in the Title V outcome measures. For example, The collaborative efforts addressing birth outcomes, such as CIS (HBKF), WIC, quality improvement projects and enhanced surveillance capacity address the broad measures of perinatal health and also the Title V outcomes.

Recent research is delving into how the Title V outcome measures reflect events that are influenced by a broad array of social determinants of health, such as social and economic status, education levels and also genetic heritage. VDH plans to continue exploration of how to incorporate these concepts into planning at all levels of the pyramid (A TA session for VDH staff and partners from the Lifecourse team at Boston University School of Public Health is planned for October, 2010.)

As Vermont strives to build a comprehensive system of care that is of a high quality and responsive to the needs of the population we recognize that in order to do so, we must implement a second quality assurance strategy that involves the MCH stakeholder community. For this assessment, eleven MCH stakeholders were invited to participate in an in-depth interview regarding the strength's and challenges facing Vermont's MCH system. Themes from these interviews were documented and will be revisited over the next five years. The themes are presented as follows.

Access to Care

- Key informants identified well-child visit rates and immunization rates as indicators of opportunity for improvement. However, access to prenatal care was recognized as one of Vermont's strong indicators.

- Understanding the state of the refugee population continues to challenge Vermont. One key informant noted that Burlington, Vermont's largest metropolitan area, has one of the highest concentration of refugees who are able to access culturally competent healthcare providers. However, what remains unknown is how well this subpopulation is doing, particularly the children, as they become absorbed into the community.
- The need to identify better assess children's emotional well-being and subsequently helping providers understand where to refer. Ideally, one key informant noted that the system would benefit from having child psychologists available for pediatricians to consult if as needed.

Status of Vermont MCH Populations

- Vermont in many areas, is doing very well however several key informants noted the considerable health disparities due to poverty, education, and socioeconomic status that challenge the states current strategies to improve the health of its MCH population. For example, obesity and tobacco use among youth and pregnant women require a well coordinated public health response calling on strong MCH leadership and presence across Vermont's state department programs. Presence across agency and department programs will facilitate a better understanding of population-based health services, a concept that one MCH key informant commented is not well understood nor is the appreciation of preventive practices. This key informant added that public health is often "taken for granted—until it is broken that is or there is a major threat."
- Obesity was identified several times as a public health issue that Vermont's MCH community needs to place more concerted effort at addressing.

Health Behaviors

- Vermont's rate of smoking during pregnancy was noted as a significant challenge. Several key informants noted that the MCH system should be doing more to address the behaviors that public health has a track record of successfully addressing. In addition to addressing smoking during pregnancy, drinking and inadequate weight gain should not be overlooked in order to ensure better health outcomes for pregnant women, fewer low birth weight babies, fewer preterm births, fewer kids with fetal alcohol syndrome, and fewer children with the health and cognitive effects.
- Breastfeeding duration rates in Vermont was identified as an area to be addressed with one key informant noting that Vermont has good initiation rates but poor stamina from mothers.

- Promote the “good science” behind WIC and share with Vermont’s home visiting providers and obstetricians to better align and reinforce a consistent message to promote the benefits of longer breastfeeding.

System Capacity and Infrastructure

- The MCH system capacity and its population-based services could be strengthened by a re-examination of how resources have been historically allocated. Vermont’s capacity is limited by its current structure.
- Vermont’s home health system could be improved with a better understanding of prevention, maternal health and population-based health services. The system is currently configured to address high risk children or high needs but not other segments of the population.
- Vermont lacks a strong base of experienced baccalaureates of science in nursing (BSN). This corps of professionals are particularly in demand among the home health agencies who struggle to recruit enough professionals to meet the service demand. For those BSNs who are in the field, many lack MCH training.
- Key informants are concerned about the increase in Hepatitis B, Hepatitis C and Chlamydia and questions Vermont’s system’s capacity to address this issue.
- The condition of the state budget was identified as the most significant challenge to all health and social systems in Vermont.
- The need to change the role of the CYSHCN program to that of monitoring and surveillance of population health needs, services that are being provided, and the outcomes of those services. This concern was raised by key informants that challenged the Department’s MCH program to implement strategies that will be effective in reaching desired public health outcomes. One key informant suggested a targeted market assessment identifying what is available and what is effective.
- While Vermont has implemented its blueprint for health, standardizing best practices for pediatricians, the blue print does not fully address maternal health.
- Vermont does well at supporting families where there is potentially child maltreatment or domestic violence however, the state’s home visiting system has not provided adequate training for its providers in identifying domestic violence. Training on screening and assessment could be improved throughout the entire system. Training and/or consultation—developing partnerships with the local domestic violence program for consultation would strengthen the system.
- Vermont’s home visiting system could benefit from a more population-based approach.