

DULCE Vermont: Promoting Optimal Health for Children and Families Responding to Social Determinants of Health and Promoting Family Strengths

In 2016, in our search for a solution to the complex problems facing Vermont families, we found the DULCE approach (Developmental Understanding and Legal Collaboration for Everyone)

Many social determinants of health (SDOH)—such as poverty and associated inadequate housing or insufficient food—have both short and long-term effects on the health and well-being of children and their parents. Addressing these issues from the start with babies matters because the earliest life experiences affect brain development, social-emotional development, health, and well-being. Many pediatric primary care providers have recognized the importance of building trust and relationship with families with new babies and to assure early linkages with other community services to support strengths and address risks among families with infants and young children.

DULCE as a solution

The DULCE (Developmental Understanding and Legal Collaboration for Everyone) approach is an evidence-based program—grounded in research by experts in Boston and based at the Center for the Study of Social Policy. DULCE is a universal approach for families with infants 0-6 months, which is offered to all the babies in a participating pediatric primary care practice.

DULCE proactively addresses social determinants of health (SDOH) and mitigates ACES and risk factors *through the combined efforts of pediatric, legal, and early childhood providers.* The team works together using a whole family, two-generation, strengths-based approach to meet the needs of parents and babies. DULCE bolsters family strengths through six-month partnerships with families that include supporting parenting skills and parent-infant relationships, proactively detecting needs, and responding to SDOH. DULCE is accepted by a wide array of families of different marital status, race/ethnicity, and household characteristics. (McCrae et al., 2021)

RCT trial data : Results from the randomized controlled trial published in Pediatrics in 2015 demonstrated:

- DULCE families secured eligible supports at roughly twice the pace of control families
- Better completion rates for well-child visits and immunizations
- Reduced use of emergency room care by DULCE families

DULCE practices also show:

- Successful implementation of Bright Futures guidelines and the Bright Futures health-related social needs requirements
- DULCE clinics report having lower “no show” rates than non-DULCE clinics
- Physicians and staff credit DULCE with improving the work environment and reducing burn-out

Here is the language from the results section of the RCT journal article: Three hundred thirty families participated in the study. At baseline, 73% of families reported economic hardships. Intervention parents had an average of 14 contacts with the family specialist, and 5 hours of total contact time. Intervention infants were more likely to have completed their 6-month immunization schedule by age 7 months (77% vs 63%, P , .005) and by 8 months (88% vs 77%, P , .01). Intervention infants were more likely to have 5 or more routine preventive care visits by

age 1 year (78% vs 67%, P , .01) and were less likely to have visited the emergency department by age 6 months (37% vs 49.7%, P , .03). The DULCE intervention accelerated access to concrete resources (P = .029). National data from the universal article attached: Note: By “risk factors” we mean the families that would have screened into a evidence based program that was not universal. National data 99% of families accept 53% of families with no risk factors had one or more social need identified through DULCE 69% of families with one or more risk factor had one or more social needs identified through DULCE Systems intended to support families with infants in low-resource communities may miss nearly 75% of families with a HRSN if we use targeted approaches exclusively Risk Most prevalent HRSN identified (Natl): Food Insecurity Financial/Employment Maternal Depression Benefits of a universal model results section from article: No risk criteria 29% 34% 16% criteria present 56% 45% 20% DULCE identified 990 families with HRSN, compared to an estimated 274 families, if a risk-targeted approach had been used. More than half of RCA families had HRSN, 11% used resources at enrollment, and 42.5% accessed resources through DULCE. Simultaneously, 68.8% of RCP families had ongoing HRSN although 46.0% used resources at enrollment; 63.9% accessed additional resources through DULCE. Commonly used risk criteria had a sensitivity of 55.3% (95% CI, 52.2%–58.5%), specificity of 61.1% (95% CI, 57.2%–64.9%), positive predictive value of 68.8% (95% CI, 65.4%–72.0%), and negative predictive value of 46.9% (95% CI, 43.5%–50.4%).

DULCE fits with Vermont Medicaid Goals

DULCE is an excellent fit with the current and future goals of Vermont’s Medicaid program.

1. Transformation of Vermont’s Medicaid program to value-based payment arrangements across the full spectrum of Medicaid services that improve outcomes.

- DULCE is grounded in compelling findings from a randomized controlled trial conducted at Boston Medical Center in 2010-13. (Sege et al., 2015) The study showed that DULCE: supports parents and strengthens families, accelerates access to concrete supports when needed, results in better well-child visits and immunization rates, reduces use of unnecessary emergency room care, and detects and responds to maternal depression and interpersonal violence.
- A study of Return on Investment (ROI) for five DULCE sites serving 600 families in another state found that seven related interventions could generate between \$308,000 and \$540,000 short run savings/averted costs in Medicaid. These savings reflect positive impact on: emergency room visits, vaccination rates, early dental care, family planning/birth spacing, maternal depression, breastfeeding, and intimate partner violence. (Manatt Health, 2019)

2. Driving the transformation of delivery care system to Medicaid beneficiaries, promoting the meaningful integration of mental health, substance use disorders, and physical health through coordinated care and case management and a strong focus on social determinants of health (SDOH).

- DULCE is a driver for health care transformation in pediatric practice. In Vermont, a trained DULCE Family Specialist from a Parent Child Center is integrated in a pediatric practice to meet with all families of new babies and remain engaged via well-child visits

in their first six months of life. One role of the Family Specialist is care coordination and case management.

- Research shows that the approach paves the way for families to use other needed services and supports. DULCE sites show positive results in addressing SDOH and providing access to supports (e.g., assistance with food insecurity, housing, utilities, legal barriers, mental health, parenting, intimate partner violence, and income/employment).
- DULCE proactively addresses social determinants of health and mitigates ACES and risk factors through the combined efforts of pediatric, legal, and early childhood providers. The team works together using a whole family, two-generation, strengths-based approach to meet the needs of parents and babies. (Fine & Hampton, 2019)

3. Promotion of public health infrastructure, primary prevention, and early intervention efforts that support the health and well-being of Vermont's children beginning in the first months of life and families raising young children.

- Research and evaluation studies indicate DULCE provides direct support to families to build on their strengths and improve their parenting. Family Specialists are trained in relational approaches to family-centered care, including the Touchpoints program for strengths-based, relational partnerships between providers and parents.
- In Vermont, DULCE aligns with complementary initiatives, including Children's Integrated Services (CIS), home visiting, Help Me Grow, and other community supports. This approach offers the opportunity for communities to knit together the array of services that address SDOH and are best suited to the strengths, challenges, and interests of local families.
- Medicaid agencies can use their option (with a state plan amendment) to reimburse preventive services "recommended by a physician or other licensed practitioner...within the scope of their practice under State law" (42 CFR §440.130(c)). Medicaid can provide reimbursement for preventive services staffed by a broad array of health and related staff, including a DULCE family specialist. (Johnson, 2019)
- Pediatricians experience DULCE as a positive addition that supports their practices and helps to promote workforce preservation.

4. Increase access to quality health care for uninsured, underinsured, and Medicaid beneficiaries.

- 96% of families offered DULCE at our eight existing sites in Vermont accept the support and receive better quality health care and related services as a result.
- A study of QI-supported DULCE expansion sites across the country showed a 50% increase in the proportion of infants who received all recommended well-baby visits and increased the share of those visits that were high-quality, family centered care based on the American Academy of Pediatrics Bright Futures Guidelines. (Arbor et al., 2019)
- Providers with DULCE embedded in their practices demonstrate highly successful implementation of the Bright Futures guidelines not only for well-child care but also for the Bright Futures recommendations for SDOH screening and response.

Data Sources

- U.S. Census Bureau, 2019 American Community Survey 1-Year Estimates. [https://data.census.gov/cedsci/Vermont poverty data Table S1702](https://data.census.gov/cedsci/Vermont%20poverty%20data%20Table%20S1702). Retrieved 2/07/21 from: <https://data.census.gov/cedsci/table?q=s1702&g=0400000US50&tid=ACSST1Y2019.S1702&moe=false&hidePreview=true>
- SHADAC analysis of the National Survey of Children's Health (NSCH) on ACEs. State Health Compare, SHADAC, University of Minnesota, statehealthcompare.shadac.org, Retrieved 2/07/21.
- Child and Adolescent Health Measurement Initiative (CAHMI). 2018-2019 National Survey of Children's Health (NSCH) data query. Data Resource Center for Child and Adolescent Health supported by the U.S. Department of Health and Human Services, Health Resources and Services Administration (HRSA), Maternal and Child Health Bureau (MCHB). Retrieved 2/07/21 from www.childhealthdata.org

Key DULCE Resources (in order of relevance)

- Sege R, Preer G, Morton SJ, et al. Medical-legal strategies to improve infant health care: A randomized trial. *Pediatrics*. 2015;133(1):97-106. doi: [10.1542/peds.2014-2955](https://doi.org/10.1542/peds.2014-2955) Available at: <https://www.ncbi.nlm.nih.gov/pubmed/26034248>
- Center for the Study of Social Policy. DULCE. (Website). 2021.
- Fine A & Hampton P. *DULCE: A review of impacts and insights - Lessons from the field on bringing together health, legal, and early childhood partners to reach families of infants in the first six months of life*. Center for the Study of Social Policy. September, 2019. Available at: <https://cssp.org/wp-content/uploads/2019/06/DULCE-Impact-and-Insights.pdf>
- Arbour MC, Floyd B, Morton S, et al. Linking pediatric primary care and systems: DULCE expansion via quality improvement advances patient-centered care and addresses health-related social needs. *BMJ Open Quality*. 2019; 20(Suppl 2):A1-A51. doi:10.1136/bmjopen-2019-ihl.20. Available at: https://bmjopenquality.bmj.com/content/8/Suppl_2/A32
- Johnson K. *Enhancing Medicaid Financed Primary Care for Babies with DULCE*. Factsheet prepared for the Center for the Study of Social Policy. March, 2019. Available at: <https://drive.google.com/file/d/1jqImFBMnJAOvw0q35WtaLCTpWQmSD-l7/view?usp=sharing>
- Manatt Health. *Potential Medi-Cal Cost Savings Through DULCE*. Analysis prepared for the Center for the Study of Social Policy. February, 2019. Available at: https://drive.google.com/file/d/1o0FqGI3qWBU_q6khcjEwxjNkY12nXGfn/view?usp=sharing
- McCrae JS, Robinson JAL, Spain AK, Byers K, & Axelrod JL. The Mitigating Toxic Stress study design: Approaches to developmental evaluation of pediatric health care innovations addressing social determinants of health and toxic stress. *BMC Health Serv Res* 2021;21(1)71. Available at: <https://doi.org/10.1186/s12913-021-06057-4>
- Chapin Hall at the University of Chicago. *Healthcare and Early Childhood System Integration in Practice*. Evaluating Community Approaches to Preventing or Mitigating Toxic Stress Project. Research Brief 4. January, 2020. Available at: <https://www.chapinhall.org/wp-content/uploads/PDF/Healthcare-and-early-childhood-systems.pdf>

Select Vermont DULCE Resources

- Lamoille Family Center. DULCE. (Website). <https://www.lamoillefamilycenter.org/our-programs/dulce/>
- Northwestern Counseling & Support Services. Early Childhood Support: DULCE. (Website). <https://www.ncssinc.org/children-youth-family-services/parent-child-center-program#Early%20Childhood%20Support>
- The Family Place. Project DULCE. (Website). <https://www.familyplacevt.org/project-dulce/>
- OneCare Vermont (Vicki Loner). *DULCE Report for the Joint Meeting with the House Committee on Health Senate Committee on Health and Welfare*. January 17, 2020. Available at: <https://legislature.vermont.gov/Documents/2020/WorkGroups/Senate%20Health%20and%20Welfare/ACO/W~Vicki%20Loner~OneCare%20DULCE%20Report%20for%20Joint%20Meeting%20with%20the%20House%20Committee%20on%20Health%20and%20the%20Senate%20Committee%20on%20Health%20and%20Welfare%20January%202020~1-17-2020.pdf>