## **Evidence Summary**





The HealthySteps approach is supported by a multi-site randomized controlled trial and subsequent sitelevel evaluations

#### Demonstrated positive outcomes for:



#### Children



### **Families**



### **Providers** and Practices

To learn more, visit: healthysteps.org/the-evidence

# HealthySteps Improves the Lives of Young Children and Families

Based on the most recent scientific understandings of how early childhood development works

The early years are important to all of us – the capacities and skills developed during this critical period become the basis of a prosperous society. ZERO TO THREE's HealthySteps program is based on the most recent scientific understandings of early childhood development, and how it can best be supported to ensure individual, family, community, and societal well-being.

The innovative HealthySteps approach promotes nurturing caregiving, which supports families and improves the healthy development and wellbeing of babies and toddlers, preparing them for school and life.

We aim to achieve this goal by weaving together the expertise of a child development and behavioral health prevention and promotion expert, the HealthySteps Specialist, and the pediatric primary care provider. Together, at the time when the brain is developing most rapidly, these experts bring focus to the important skills needed for families to foster healthy child development and life-long well-being: social-emotional development, language and literacy skills, cognitive skills, and perceptual, motor, and physical development.



This icon signifies emerging evidence, which includes research that has not yet been published in a peer reviewed journal or presented at an academic/scientific conference.

### **Child Impacts**



HealthySteps identifies whether children are reaching developmental milestones and addresses any challenges early by successfully connecting families and their children to the services they need.

### SCREENING AND CONNECTION TO SERVICES

- During a one-year period, one HealthySteps site used quality improvement (QI) methodology and increased social-emotional screening from 17% to 51% and two others increased developmental screening from 45% to 76% and from 10% to 78%. i,1,2
- Among children with Medicaid, receipt of any developmental screening was 1.4x higher for HealthySteps children; screening rates for Hispanic and Black HealthySteps children were 1.6 - 1.7x higher than their counterparts.3
  - HealthySteps children were 8x more likely to receive a developmental assessment and had significantly higher rates of developmental and other nonmedical referrals. 4,5,6
  - A network of three HealthySteps sites (two with dedicated community health workers) found nearly 90% of families were successfully connected with needed community services.7
- One HealthySteps site with a dedicated family services coordinator quadrupled its early intervention (EI) successful referral rate after implementing HealthySteps.8
- Among children with Medicaid, HealthySteps children had higher rates El service receipt (14% vs. 9%) which also held true for Hispanic HealthySteps children compared with their counterparts (17% vs. 11%), suggesting HealthySteps may help mitigate disparities in accessing El services.<sup>3</sup>



HealthySteps improves child health and well-being by supporting perceptual, motor and physical development, strengthening early social development, and promoting timely and continued care.

### BREASTFEEDING AND AGE-APPROPRIATE EARLY NUTRITION

- HealthySteps mothers were significantly less likely to prematurely give newborns water or introduce cereal.<sup>4</sup>
- HealthySteps mothers felt significantly more supported to breastfeed and had higher rates of continued breastfeeding (longer than 6 months).9,10
- HealthySteps children "at risk" of social-emotional challenges had significantly lower rates of obesity at age 5 than comparable children not participating in HealthySteps. 11

<sup>1</sup> National rates of social-emotional screening are not available and rates of developmental screening — completed more often than social-emotional screening - remain low at 37%.

### **Child Impacts**

- One HealthySteps site with integrated maternal mental health treatment demonstrated a reversal of concerning infant weight loss.12
- One HealthySteps site serving high proportions of children with Medicaid found a lower prevalence of childhood obesity at age 3 compared to state-level rates.1

### SOCIAL-EMOTIONAL DEVELOPMENT

HealthySteps children whose mothers reported childhood trauma scored better on a social-emotional screening after receiving HealthySteps than comparable children.<sup>13</sup>



### TIMELY AND CONTINUED CARE AND VACCINATIONS

- HealthySteps children were more likely to attend all of the first 10 recommended well-child visits, more likely to attend six or more visits in the first 15 months of life (a key indicator of quality careii), and were twice as likely to attend specific visits, and for visits to be on time. 3,4,10,14,15,16
- Three HealthySteps sites found a reduced disparity between well-child visit attendance and insurance coverage; attendance rates for sites serving high proportions of children with Medicaid were on par with rates for children with commercial insurance.1
- Black and Hispanic HealthySteps children with Medicaid received more well-child visits and were more likely see the same provider during a one-year period than their counterparts.<sup>3</sup>
- Continuity of care with the same provider was significantly better for HealthySteps children and families were nearly twice as likely to remain with the practice through 20 months. 3,17,18
- HealthySteps children were up to 1.6x more likely to receive timely vaccinations and 1.4x more likely to be up to date on vaccinations by age 2.4,10,13

<sup>&</sup>lt;sup>II</sup> More than six well-child visits in the first 15 months of life is a key performance indicator from the Healthcare Effectiveness Data and Informational Set.

### Family Impacts



HealthySteps identifies family needs early and successfully connects families with services.

### SCREENING AND CONNECTION TO SERVICES

- Two HealthySteps sites used QI methodology and increased maternal depression screening from 41% to 92% in just 19 weeks at one site and from 31% to 60% in just 11 weeks at the other. 19,20,iii
- 96% of HealthySteps mothers in one site were screened at least three times for maternal depression by six months postpartum and had a significantly higher rate of screening than mothers not participating in HealthySteps.<sup>6</sup>
- HealthySteps mothers had significantly higher rates of maternal depression referrals and were 4x more likely to receive information on community resources.4
- One HealthySteps site used QI methodology and increased maternal depression referral follow-up from 49% to 67%; another site reported a 70% follow-up visit rate for mothers with maternal depression. 17.21



HealthySteps mothers with Medicaid had higher rates of receipt of family planning services and postpartum care.3



HealthySteps improves family health and supports a child's early learning and overall well-being.

### MATERNAL DEPRESSION

- HealthySteps mothers were significantly more likely to discuss their depressive symptoms and pediatric providers were significantly more likely to discuss postpartum depression with mothers. 4,10,13
- Mothers with depressive symptoms reported significantly fewer symptoms after receiving HealthySteps and that symptoms decreased at a faster rate than comparable mothers. 10,22



iii National rates of postpartum depression screening as reported as part of the NCQA Healthcare Effectiveness Data and Information Set are low-11% for private insurers and 17% for Medicaid.

## **Family Impacts**

#### KNOWLEDGE OF INFANT DEVELOPMENT

- HealthySteps families received significantly more anticipatory guidance on child development topics and reported that the guidance matched their needs. 13,17,23
- HealthySteps families demonstrated a significantly better understanding of infant development.9
- HealthySteps families were significantly more likely to notice behavioral cues and provide ageappropriate nurturing. 4,24

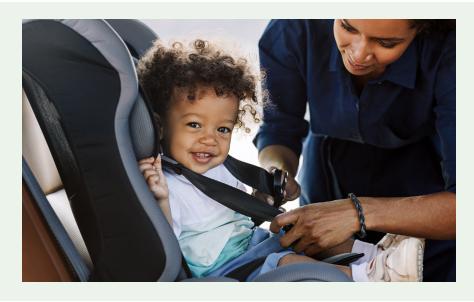
### EARLY RELATIONAL HEALTH

- HealthySteps families were significantly less likely to report harsh punishment (yelling, spanking with hand) and severe discipline (face slap, spanking with objects).4,10
- Two HealthySteps sites found HealthySteps participation was significantly associated with greater security of attachment and fewer child behavior problems.<sup>23</sup>

#### EARLY LITERACY AND SCHOOL READINESS

- HealthySteps families were significantly more likely to share picture books and play with their infants daily.4
- HealthySteps families were significantly more likely to report their child looked at or read books weekly.17
- HealthySteps families were significantly more successful in establishing routines and limiting television time.25





#### CHILD SAFETY PRACTICES

- HealthySteps families were 24% less likely to place newborns on their stomachs to sleep, reducing SIDS risk.4
- HealthySteps families scored higher on an injury control index and were significantly more likely to use stair gates and have access to a number for poison control.9,10
- HealthySteps children were 23% less likely to visit the emergency room for injuries in a 1-year period.4

## **Practice and Provider Impacts**



HealthySteps helps pediatric primary care practices improve patient experience and provider satisfaction while lowering health care costs.

- HealthySteps families were significantly more likely to report practice staff went out of the way for them, that they relied on practice staff for advice (rather than a friend or relative) and that they received needed emotional support.4,23
- HealthySteps families rated their provider as more competent and caring and were significantly more likely to believe that the health plan cared about them and to recommend their clinic to a friend or family member. 9.23
- Physicians reported significantly higher satisfaction with HealthySteps and that they felt emotionally supported by the HealthySteps Specialist. 4,26
- Physicians were over 5x more likely to be very satisfied with the ability of clinical staff to meet children's developmental and behavioral needs.4
- One HealthySteps site used QI methodology and saw improved use of tools to address childhood obesity and significantly increased follow-up visit attendance.<sup>27</sup>
- One HealthySteps site with integrated behavioral care found that families received equitable advice regardless of race, ethnicity or language, suggesting that HealthySteps can help mitigate existing disparities in the quality of pediatric primary care.28
- One HealthySteps site serving a diverse pediatric population found that estimated costs averted exceeded program operating costs (\$641-\$959 compared to \$575 per child).<sup>29</sup>



### **Endnotes**

- <sup>1</sup> Till, L., McCombs-Thornton, K. (2023, Sept 20 23) Strengthening Infrastructure and Processes to Collect and Report Outcome Data: Lessons from Three Primary Care Clinics [Conference Session]. ZERO TO THREE Annual Conference, Minneapolis, MN.
- <sup>2</sup> El-Sherif, A., Mitchell, S., Farley, A., Lujan, E., Smith, K., Wise, T., Green, P., Maslen, P., Buchholz, R. (2023, Oct 20 24) Increasing Comprehensive Pediatric Screening through HealthySteps Implementation [Poster Session]. AAP Annual Conference, Washington, DC.
- <sup>3</sup> Authorship TBD (under review). Using Medicaid claims to estimate the effect of HealthySteps on pediatric preventive services. Submitted to JAMA Pediatrics in June, 2024.
- <sup>4</sup> Guyer, B., Barth, M., Bishai, D., Caughy, M., Clark, B., Burkom, D., Genevro, J., Grason, H., Hou, W., Keng-Yen, H., Hughart, N., Snow Jones, A., McLearn, K.T., Miller, T., Minkovitz, C., Scharfstein, D., Stacy, H., Strobino, D., Szanton, E., & Tang, C. (2003). Healthy Steps: The first three years: The Healthy Steps for Young Children Program National Evaluation. https://ztt-healthysteps.s3.amazonaws.com/documents/139/attachments/2003\_ HS\_National\_Evaluation\_Report.pdf?1539967.
- <sup>5</sup> Hughes, S., Herrera-Mata, L., & Dunn, J. (2014). Impact of Healthy Steps on developmental referral rates. Family Medicine, 46(10), 788-791.
- 6 Chooey, J.W., Scott, M., Patterson, P., Jordan, B., Roy, D.S. & Flake, E. (2022). Military HealthySteps Pilot Program Outcome Study. Military Medicine, 188(9-10). https://doi.org/10.1093/milmed/usac372.
- <sup>7</sup> German, M., Alonzo, J.K., Williams, M., Bushar, J., Levine, S., Cuno, K.C., Umylny, P., & Briggs, R.D. (2022). Early Childhood Referrals by HealthySteps and Community Health Workers. Clinical Pediatrics, 62(4). https://doi.org/10.1177/00099228221120706.
- 8 Rhodes, H., Baylor, R., Hodgkinson, S., Charlot-Swilley, D., Mitchell, S., Hartz-Mandell, K., Beers, L. (2019, April 24-26). HealthySteps Program Taking Steps to Improve Successful Referral to Early Intervention Services in the Primary Care Medical Home [Poster Session]. Pediatric Academic Societies Meeting, Baltimore, MD. Updated results reported in: The HealthySteps National Office. (2020). Embracing Growth: 2019 Annual Report. https://ztt-healthysteps.s3.amazonaws.com/documents/309/attachments/Embracing\_Growth\_2019\_Annual\_Report.pdf?1596829170.
- <sup>9</sup> Johnston, B.D., Huebner, C.E., Tyll, L.T., Barlow, W.E., & Thompson, R.S. (2004). Expanding developmental and behavioral services for newborns in primary care: Effects on parental well-being, practice and satisfaction. American Journal of Preventive Medicine, 26(4), 356-366. https://doi. org/10.1016/j.amepre.2003.12.018.
- <sup>10</sup> Johnston, B.D., Huebner, C.E., Anderson, M.L., Tyll, L.T., & Thompson, R.S. (2006). Healthy Steps in an integrated delivery system: Child and parent outcomes at 30 months. Archives of Pediatrics & Adolescent Medicine, 160(8), 793–800. https://doi.org/10.1001/archpedi.160.8.793.
- <sup>11</sup> Gross, R.S., Briggs, R.D., Hershberg, R.S., Silver, E.J., Velazco, N.K., Hauser,N.R., & Racine, A.D. (2015). Early child social-emotional problems and child obesity: Exploring the protective role of a primary care-based general parenting intervention. Journal of Developmental and Behavioral Pediatrics, 36(8), 594-604. https://doi.org/10.1097/DBP.000000000000212.
- 12 Herbst, R.B, Ammerman, R.T., Perry, S.P., Zion, C.E., Rummel, M.K., McClure, J.M., & Stark, L.J. (2019). Treatment of maternal depression in pediatric primary care. Clinical Pediatrics, 58(13), 1436-1439. https://doi.org/10.1177/0009922819850469.
- 15 Briggs, R. D., Silver, E.J., Krug, L.M., Mason, Z.S., Schrag, R.D.A., Chinitz, S., & Racine, A D. (2014). Healthy Steps as a moderator: The impact of maternal trauma on child social-emotional development. Clinical Practice in Pediatric Psychology, 2(2), 166-175. https://doi.org/10.1037/ cpp0000060.
- <sup>14</sup> Buchholz, M., & Talmi, A. (2012). What we talked about at the pediatrician's office: Exploring differences between Healthy Steps and traditional pediatric primary care visits. Infant Mental Health Journal, 33(4), 430-436. https://doi.org/10.1002/imhj.21319.
- 15 Wolcott, C., Buchholz, M., Ehmer, A., Stein, R., & Talmi, A. (2017, Nov 29 Dec 2) Adversity and well-child visit attendance: The role of a preventative primary care intervention [Poster Session]. ZERO TO THREE Annual Conference, San Diego, CA.
- 16 Ammerman, R. T., Herbst, R., Mara, C.A., Taylor, S., McClure, J.M., Burkhardt, M.C., Stark, L.J. (2022). Integrated Behavioral Health Increases Well-Child Visits and Immunizations in the First Year. Journal of Pediatric Psychology, 47(3). 360-369. https://doi.org/10.1093/jpepsy/jsab104.
- <sup>17</sup> Niederman, L.G., Schwartz, A., Connell, K.J., & Silverman, K. (2007). Healthy Steps for Young Children Program in pediatric residency training: Impact on primary care outcomes. Pediatrics, 120(3), e596-e603. https://doi.org/10.1542/peds.2005-3090.
- 18 Minkovitz, C. S., Strobino, D., Mistry, K.B., Scharfstein, D.O., Grason, H., Hou, W., Ialongo, N., & Guyer, B. (2007). Healthy Steps for Young Children: Sustained results at 5.5 years. Pediatrics, 120(3), e658-e668.
- 19 Valado, T., Davies, D., Till, L., Lee, H. (2020, Oct 24 Oct 28). Using Data and Continuous Quality Improvement Methods to Drive Improvements to Services and Outcomes in Pediatric Primary Care [Conference presentation]. American Public Health Association 2020 Annual Meeting and Expo, virtual.
- <sup>20</sup> Leis, J., Powell, B., Davies, D, Till, L. Ibanez Gomez, L. (2019, Oct 2 Oct 4). Continuous Quality Improvement within HealthySteps: Experiences Across Sites and Efforts in Three Outcome Pilot Sites [Conference presentation]. Zero To Three Annual Conference, Hollywood, Fl, United States.
- <sup>21</sup> Fried, E., Hernandez, C., Ringwood, H., & Tomcho, M. (2019, Oct 2 Oct 5) Creative solutions to postnatal Care: Mom-baby dyad visits in a pediatric setting [Conference Session]. ZERO TO THREE Annual Conference, Hollywood, FL.
- <sup>22</sup> Kearns, M.A., Fischer, C., Buchholz, M., & Talmi, A. (2016, Dec 7 9) More than the blues? Comparing changes in pregnancy related depression symptoms based on enrollment in Healthy Steps [Poster Session]. ZERO TO THREE Annual Conference, New Orleans, LA.

### **Evidence Summary**

- <sup>23</sup> Briggs, R. (2016). Integrated early childhood behavioral health in primary care. Springer.
- <sup>24</sup> Caughy, M.O., Huang, K., Miller, T., & Genevro, J.L. (2004). The effects of the Healthy Steps for Young Children program: Results from observations of parenting and child development. Early Childhood Research Quarterly, 19(4), 611-630. https://doi.org/10.1016/j.ecresq.2004.10.004.
- <sup>25</sup> Piotrowski, C.C., Talavera, G.A., & Mayer, J.A. (2009). Healthy Steps: A systematic review of a preventive practice-based model of pediatric care. Journal of Developmental and Behavioral Pediatrics, 30(1), 91-103. https://doi.org/10.1097/DBP.0b013e3181976a95.
- <sup>26</sup> Davis, A., Vivrette, R., Carter, T., Eberhardt, C., Edwards, S., Connors, K., & Reavis, K. (2021). Impact of an approach to integrated care for young children in low-income urban settings: Perspectives of Primary Care Clinicians. Clinical Practice in Pediatric Psychology, 10(2), 128-138. https://doi. org/10.1037/cpp0000393.
- <sup>27</sup> Herbst, R.B., Khalsa, A.S., Schlottmann, H., Kerrey, M.K., Glass, K., & Burkhardt, M.C. (2019). Effective implementation of culturally appropriate tools in addressing overweight and obesity in an urban underserved early childhood population in pediatric primary care. Clinical Pediatrics, 58(5), 511-520. https://doi: 10.1177/0009922819832088.
- <sup>28</sup> Fields, D., Wolcott, C., Buchholz, M., Xiong, S., Asherin, R., Millar, A. & Talmi, A. (2021, August 12-August 14). HealthySteps toward equity: Addressing health disparities at the 4-month well-child visit. [Poster session] American Psychological Association Annual Conference.
- <sup>29</sup> Buchholz, M., Burnett, B., Margolis, K.L., Millar, A., & Talmi, A. (2018). Early childhood behavioral health integration activities and HealthySteps: Sustaining practice, averting costs. Clinical Practice in Pediatric Psychology, 6(2), 140-151. https://doi.org/10.1037/cpp0000239.