



Statewide Implementation of COVID Testing for the Massachusetts Early Education and Care Sector: *A Case Study in Systems Building and Innovation*

OVERVIEW

In the fall of 2020, as the COVID-19 pandemic waged on, it became increasingly glaring that the ability to keep early education and care programs open and available to families required more than just greater public financial assistance: it also required inclusion of the early education and care sector in government-coordinated, COVID-19 mitigation initiatives. Specifically, access to comprehensive, proactive COVID-19 testing emerged as an imperative for the sector and its component providers. However, insufficient public administrative infrastructure within the early education and care sector stood as a significant barrier to its incorporation into COVID-19 testing protocols being implemented in other settings, such as the K-12 public education system.

To address this challenge, over 18 months, Neighborhood Villages developed, piloted, and operated a statewide COVID-19 testing program specifically designed for the early education and care sector in Massachusetts. When placed against the backdrop of the pandemic's complete upending of the United States' child care sector, Neighborhood Villages' COVID-19 testing program serves not simply as an example of effective public health administration; rather, it stands as a compelling case study for the critical imperative to build enhanced public administrative infrastructure within the early education and care sector, entirely.



3,000

programs
served



95,000

children
tested



30,000

adult staff
tested

INTRODUCTION

In the early months of the COVID-19 pandemic, much of the United States' economy came to a screeching halt, and changed the nature of work for many. Some sectors, however, had no option but to maintain regular operations: in Massachusetts, the child care sector closed for a very short time before reopening. Indeed, some early education and care (EEC) providers elected to participate in the state's emergency child care program[1] and reopened as early as April 1, 2020. All programs in Massachusetts were encouraged to reopen by June 29, 2020.

To reopen, early education and care providers had to ensure the health and safety of their students and staff, while also delivering core services to children and families. Yet, providers received minimal public financial or administrative supports to promote their doing so. Unlike the K-12 education system, the early education and care field is not a public good undergirded by significant public dollars and an administrative support system that provides centralized services. [2] Rather, it functions as a marketplace of independent businesses that has, traditionally, operated within limited public administrative scaffolding [3]. Thus, while public K-12 schools could access targeted guidance and coordinated support from their districts to prepare to reopen, early education and care providers were largely left to navigate the complexities of operating during a global pandemic independently and at their own expense.[4]

To address this deficiency and to ensure access to COVID-19 public health measures and services for the early education and care sector, Neighborhood Villages, in collaboration with the Massachusetts Department of Early Education and Care and numerous external partners, created a COVID-19 testing program designed specifically for the early education and care sector; a program that, once scaled statewide, came to be known as "Testing for Child Care." The "Testing for Child Care" program stands not simply as a success story in public health administration but, more importantly, as a case study for the necessity and value of building enhanced public infrastructure within and across state early education and care sectors.

THE CHALLENGE: URGENT NEED FOR COORDINATED ACCESS TO COVID-19 TESTING IN A FRACTURED EARLY EDUCATION AND CARE SECTOR

As early education and care providers scrambled to adjust to providing early learning services during a global pandemic, it became clear that access to preventative COVID-19 testing was critical to providers' ability to operate their programs. Barriers to efficient testing were resulting in workforce staffing shortages and, subsequently, program closures. In the early stages of the pandemic, access to COVID-19 polymerase chain reaction (PCR) tests[5] was limited and the return of test results could take up to 14 days, with presumptive-positive staff members necessarily absent during that waiting period.[6]

1 The Governor of Massachusetts [issued an order on March 18, 2020](#) for the suspension of all "normal operations" by child care programs by March 22, 2020; however, the same order also authorized the Department of Early Education and Care to establish emergency child care, resulting in a subset of programs re-opening by April 1, 2020. The suspension was lifted at the end of June 2020 and providers who hadn't been providing authorized emergency care were permitted to reopen on June 29, 2020.

2 The early education and care sector functions as a private market, with early education services mainly provided by private small businesses. Comparatively few public funds are invested in the early childhood sector. Unlike K-12 schools, these private businesses do not receive foundational government support to sustain capacity nor to cover basic operational expenses. When costs rise – such as they did during the pandemic – there is no public funding mechanism that automatically offsets the additional costs.

3 In Massachusetts, the Department of Early Education and Care (EEC) operates largely at the state level; while regional offices conduct activities such as licensing of providers, certification of educators, and processing of public financial assistance dollars, these administrative entities are not analogous to how districts in K-12 public education systems allow for state administration of more localized services and supports. The early education and care sector, at a governance level, has, to date, not been designed to enable government to similarly administrate coordinated, localized support – including public health services – to the diverse and geographically dispersed landscape of providers in the Commonwealth.

4 In the early months of the pandemic, early education and care programs, at their own expense, had to procure personal protective equipment, COVID-19 tests, and other necessary resources without governmental financial or administrative support. Programs were also left to develop independent reopening plans and protocols, with minimal government guidelines.

5 Polymerase Chain Reaction – more commonly known as PCR – tests detect genetic material from organisms, such as the virus that causes COVID-19. If the subject being tested has the virus in their system, the PCR test will yield a positive result. Source: <https://my.clevelandclinic.org/>

6 While the Commonwealth [opened regional testing sites](#) dedicated to the early education and care workforce across the state, it became evident that testing sites alone would not meet the significant need programs had for regular, preventative testing.

In a field already struggling with severe workforce shortages, staff absences due to long wait times for PCR results were causing providers to have to close classrooms and – sometimes – even entire programs, for lack of sufficient staffing. Moreover, early education and care teachers were leaving the field due to concerns about exposure risk. Thus, a comprehensive approach to COVID-19 testing for the early education and care and out-of-school-time (OST) sector emerged as necessary and essential to keeping programs open and protecting the health of staff and children; to maintaining children’s equitable access to education; and to ensuring that working families had the care solutions they needed.

To meet this need, Neighborhood Villages devoted significant resources to standing up a comprehensive COVID-19 testing pilot program for the early education sector; one that could, when ready, be scaled statewide to meet the needs of all licensed early education and care programs across the Commonwealth of Massachusetts.

THE SOLUTION: “TESTING FOR CHILD CARE”

Phase I: Pilot (October 2020-June 2021)

A. Design

To design a COVID-19 testing program for the Commonwealth of Massachusetts, Neighborhood Villages worked to devise a system of weekly testing that would ease staff reservations about returning to work; allow administrators to adequately staff classrooms and maintain mandated adult-to-child ratios; and keep programs open. The goals for the testing program were to:

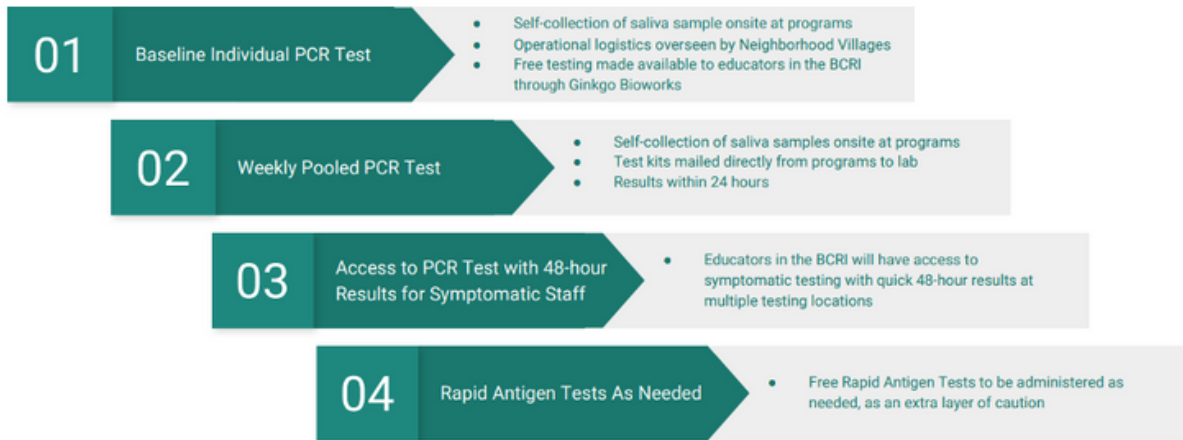
1. Provide high-quality, accurate, and free COVID-19 testing to all licensed early education and care programs in Massachusetts;
2. Deliver accurate, useful training to early education and care providers in a manner tailored to the unique characteristics of the sector; and
3. Offer a source of timely, empathetic support through clear and transparent communication.

To architect a COVID-19 testing pilot that achieved these goals, Neighborhood Villages convened a group of multidisciplinary experts from public health, medicine, economics, and biotechnology. The design team — which included Binal Patel and Sarah Muncey, Neighborhood Villages; Dr. Jon Kolstad, PhD, and Dr. Ned Augenblick, PhD, Hass School of Business, University of California, Berkeley; Dr. Simon Johnson, PhD, Sloan School of Management, Massachusetts Institute of Technology; and Dr. Robyn Riseberg, MD, Boston Community Pediatrics — conceived of a four-pronged, layered COVID-19 defense testing system that was modeled after programs being implemented [in select public K-12 districts](#) and in higher education.

The four-pronged approach was designed to include: (1) baseline individual PCR testing; (2) weekly pooled PCR testing; (3) access to PCR tests with 48-hour results; and (4) rapid antigen tests [7], as available. The program was designed around the unique needs and common practices of early education and care providers, inclusive of both center-based and Family Child Care (FCC) programs, as well as families with young children. (See Figure 1.)

⁷ Rapid antigen tests are immunoassays that detect the presence of a specific viral antigen, such as SARS-CoV-2, which causes COVID-19. Source: cdc.gov

Figure 1. Testing Strategy for Pilot



To execute the pilot, Neighborhood Villages initially partnered in the fall of 2020 with Ginkgo Bioworks, which donated 500 individual PCR tests to enable baseline information collection; Mirimus labs, which facilitated weekly pooled PCR testing services for participating programs; and Boston Community Pediatrics, which offered symptomatic testing to programs participating in the pilot each weekday.

B. Implementation

From the fall of 2020 through 2022, adaptations were continuously made to the COVID-19 testing program, to respond to program implementation dynamics as well as real time feedback from the early education and care field. Over the testing program's lifetime, Neighborhood Villages worked with five different labs^[8] and two electronic portal providers^[9], each time making adjustments intended to better meet the needs of early education and care providers and the families in their care. In its pilot phase, the COVID-19 testing program was ultimately expanded to include program educators, non-teaching staff, and children in the program's care. (Please see Appendix A for a detailed timeline of the pilot's design, launch, and early implementation.)

Key learnings from the pilot phase included:

- **Investment in centralized coordination and operations support was critical.** The pandemic exacerbated the child care workforce shortages, leaving providers with severely limited administrative capacity for coordination and logistics of a testing protocol. Neighborhood Villages' offering of centralized coordination of program onboarding, operations, and logistics was foundational to program success.

8 From 2020-2022, Neighborhood Villages partnered, at various times, with the following labs: Ginkgo Bioworks, Mirimus, JCMA, Veritas, and Eurofins.
9 Over the course of the testing program, the electronic portals were provided by Affinity and Concentric by Ginkgo

- **Identifying and utilizing the optimal type of test was necessary for promoting and sustaining program participation.** From October 2020 - fall of 2021, Neighborhood Villages worked with multiple labs, each of which offered different approaches to saliva-based PCR pooled testing. Feedback from the early education and care providers, however, made clear that saliva-based testing was logistically burdensome and posed physiological challenges, particularly with respect to collecting samples from young children. In September 2021, Neighborhood Villages transitioned to partnering with Eurofins, which offered a nasal-swab testing option, the preferred method of PCR testing for early education and care providers. This adjustment to better meet the practical needs of providers was later complemented by (a) the inclusion of rapid antigen testing and (b) transition to individual (rather than pooled) PCR testing as regular features of the statewide testing program.
- **Communication and technology support played a key role in program success.** Throughout the pilot period and at the statewide level, Neighborhood Villages provided trainings to early education and afterschool providers on process for onsite sample collection, delivery of samples, and testing software, including portals for accessing results.

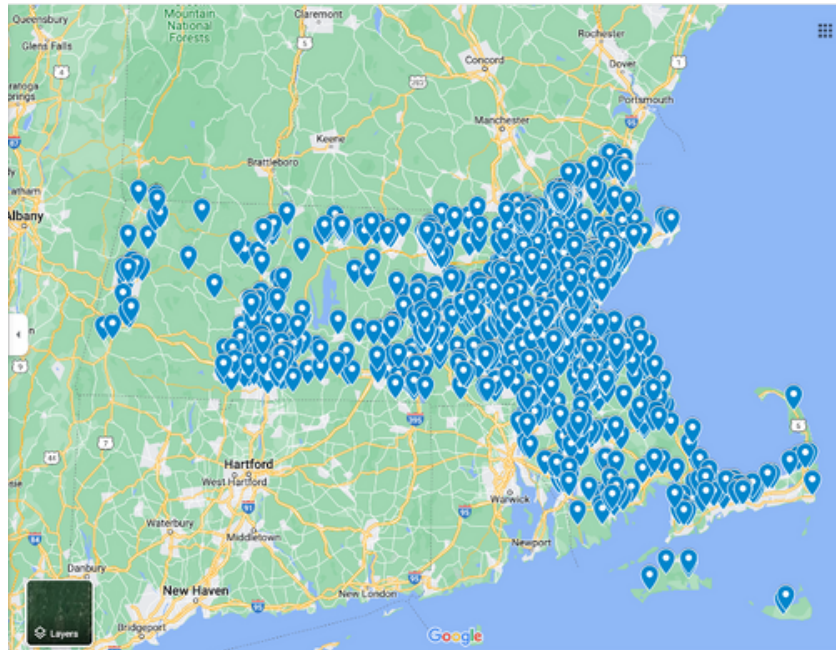
In the summer of 2021, Neighborhood Villages' COVID-19 testing pilot made the transition from a philanthropically funded pilot to a government-backed, publicly funded statewide program. A catalytic factor in propelling the creation of a formal public-private initiative between Neighborhood Villages and the Commonwealth of Massachusetts was Neighborhood Villages' simultaneous partnership with a federal testing program funded by the United States Department of Health and Human Services (HHS), known as "Operation Expanded Testing" (OET). For eligible participating entities, OET rendered PCR COVID-19 tests cost-free. Thus, once approved as an eligible participant for OET, Neighborhood Villages was able to bring significant federal financial support to the table, as it sought to partner with the Commonwealth of Massachusetts to scale testing statewide.

Phase II: Public-Private Partnership for COVID-19 Testing (July 2021-June 2022)

In July 2021, Massachusetts' Department of Early Education and Care awarded Neighborhood Villages a contract to scale its testing program and to operate it statewide; this program came to be called "[Testing for Child Care.](#)" Adapted from Neighborhood Villages' pilot and supported by both federal and state funds, "Testing for Child Care" was made available statewide to all licensed early education and afterschool programs in the Commonwealth.

To operate "Testing for Child Care," Neighborhood Villages acted as an intermediary between the Commonwealth of Massachusetts; OET's federal testing contractor, Eurofins; and participating state-licensed EEC programs. For the early education and care sector, Neighborhood Villages effectively assumed the role that localized governmental bodies (i.e., districts) were playing for K-12 schools. Between July 2021 and June 2022, participation in "Testing for Child Care" grew astronomically; the program ultimately served more than 3,000 early education, Family Child Care, and afterschool programs. Collectively, these programs tested more than 95,000 children and 30,000 adult staff. (See Figure 2.)

Figure 2. “Testing for Child Care” at Scale



At its height, “Testing for Child Care” reached more than 3,000 programs, both center-based and Family Child Care, across the Commonwealth. Each blue pin (above) shows the location of a participating provider.

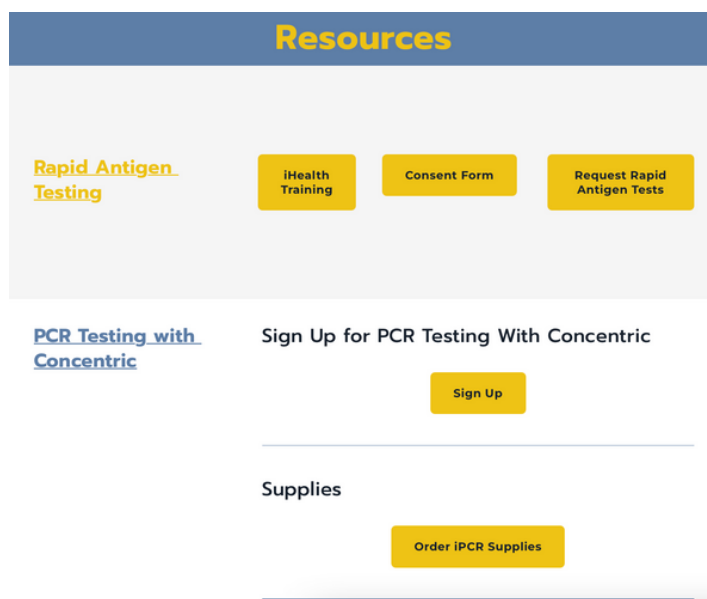
Under “Testing for Child Care,” participating EEC programs had three free testing options, from which they could choose one, two, or all: symptomatic rapid antigen testing; asymptomatic rapid antigen cohort testing (for those with close contacts of someone with COVID-19); and weekly PCR testing. To operate the program, Neighborhood Villages coordinated recruitment of EEC program participants for the testing initiative; program intake and onboarding; supply sourcing and distribution; couriers systems; and other operational logistics that otherwise would have come at significant financial and time expense to independent EEC providers.

For Neighborhood Villages, successful operation of “Testing for Child Care” required:

- **Development of a “Testing for Child Care” operations team at Neighborhood Villages**, to facilitate coordination and implementation of the “Testing for Child Care” program and to field intake, questions, and requests from participating early education and afterschool programs. Neighborhood Villages program staff oversaw statewide program operations, data management, partner management, strategy, and communications. Full-time associates provided support and trainings directly to the EEC providers enrolled in the testing program.
- **Partnership with COVID-19 testing vendors.** As noted, over the duration of the COVID-19 testing program, Neighborhood Village worked with multiple testing laboratories to analyze samples. Indeed, successful operation of the “Testing for Child Care” program required the ability to seek out optimal vendors and even to terminate partnerships, as necessary, in order to identify labs with sufficient capacity to meet the unique needs of the early education and care sector.

- **Establishment of a [centralized web platform](#)**, built and maintained by Neighborhood Villages, to manage intake and provision of trainings and resources.
- **Establishment of an online portal**,^[10] which served as a centralized location for programs to view their enrollment status, order shipping supplies, report on their rapid test usage, and find answers to frequently asked questions.
- **Establishment of a state database**, to house EEC program enrollment data and to streamline the tracking of program participants.
- **Establishment of a public health hotline**,^[11] through contracting with a medical partner, to field questions from EEC providers about what actions to take in the event of a positive COVID-19 case. Through the public health hotline, EEC providers could access immediate answers that would, in some cases, avert unnecessary closures.
- **Establishment of sophisticated courier systems and partnership with distribution vendors.** As “Testing for Child Care” ramped up and the number of participating EEC providers increased, Neighborhood Villages developed a distribution system to support efficient procurement, warehousing, and delivery of supplies to programs and delivery of samples to partner laboratories.
- **Provision of trainings, onboarding, and resource materials** designed for early education and care providers and for families, in multiple languages. (See Figure 3.) Neighborhood Villages was also often called upon to translate government-issued public health guidance.^[12]

Figure 3. Sample Snapshot of Web-Based Resources Available to Programs in “Testing for Child Care”



10 The online portal was operated by Concentric by Gingko, which replaced Affinity as Eurofins' portal provider in November 2021.

11 The hotline, operated by Primary Health, was utilized extensively. Participating programs and families placed more than 500 phone calls and sent more than 300 emails to Primary Health, which answered their medical questions. This supplemented operational support from Neighborhood Villages, whose staff were responding to more than 300 emails and 50 phone calls a day at the height of participation.

12 Ultimately, programs participating in “Testing for Child Care” had a menu of free testing options. Programs who enrolled in “Testing for Child Care” and opted-in to rapid antigen testing received automatic shipments via FedEx of 4 tests per individual aged two and over. These tests could be administered on-site or by families at home prior to dropping their child off for care. Testing of asymptomatic cohorts using rapid tests allowed programs to stay open and children to remain in care, as long as they had no symptoms and took a rapid test every day for five days; prior to that, close contacts had led to shutting down classrooms or entire programs for days at a time. Programs that opted into PCR testing were required to attend a 90-minute training session via Zoom and gather consents from participants. They were sent a one-month supply of test kits and were responsible for reordering kits after their supply ran low.

KEY INSIGHTS: THE “TESTING FOR CHILD CARE” COVID-19 TESTING PROGRAM

In helping EEC providers to remain open, the “Testing for Child Care” COVID-19 testing program resulted in reducing COVID-19 transmission rates and preserving countless days of child care. Those days that parents were able to send their children to receive care translate into an untold number of dollars or economic output, in addition to the developmental support for children.

At the height of the COVID-19 testing program, its key features were:

- **Accessibility.** The program was free to all licensed EEC providers in the Commonwealth, including Family Child Care programs (FCCs), center-based and out-of-school-time programs (known collectively as Group and School Age programs (GSA)), and other approved programs, such as Head Start. Neighborhood Villages supported testing at 15 monolingual Spanish speaking programs with bilingual training, materials and resources in Spanish, and a Spanish-language guide to the English online portal.
- **Choice.** Depending on a program’s needs, capacity, and preferences, they were able to select to participate in PCR testing, receive rapid antigen tests, or both.
- **Inclusivity.** Providers enrolled in the testing program could test all staff, educators, and children aged two and older.
- **Convenience.** Connected to a state portal (LEAD¹³) with which providers were already familiar, “Testing for Child Care’s” online hub allowed EEC programs to report and request rapid antigen testing and to access convenient links for training and resources.
- **Support and Technical Assistance.** A crucial part of the success of the testing program was the ability to connect providers with experts and supports that could address questions. These supports included:
 - Technical trainings for every facet of the testing program – including how to collect samples and use the different types of tests.
 - A dedicated website (www.maearlyedtesting.com) with testing resources, information, and answers to Frequently Asked Questions.
 - Weekly office hours to answer questions from providers, which served as a supplement to a phone line and email service dedicated to addressing non-medical questions about testing.
 - Templates to streamline the enrollment process for programs, including sample letters, explanations, and announcements for families.
 - A dedicated hotline in partnership with Primary Health to answer questions about specific medical scenarios.
 - Communities of Practice to facilitate an exchange of information and best practices among providers.

¹³ The Licensing Education Analytic Database, or LEAD, is a cloud-based system developed by the Massachusetts Department of Early Education and Care (EEC) and is used for program licensing functions.

APPLICATIONS

The COVID-19 pandemic revealed not only the precarious financial position of early education and care providers, it also brought into focus the consequence of insufficient public infrastructure supports for the early education and care sector *generally*. While lack of public administrative infrastructure has long caused inefficiencies, volatility, and access disparities in the sector, the pandemic laid bare just how little public investment has been made in early education and care as a foundational service *delivery system*. Lack of governmental infrastructure for the early education and care system directly resulted in delaying the early education and care sector's access to emergency public health services; services that were being delivered effectively to the K-12 sector, via well-established administrative arteries that simply do not exist in early education and care. While Neighborhood Villages was able to architect a public-private solution to an emergency direct service need, the "Testing for Child Care" case study demonstrates the critical need to build true, sustained systems infrastructure for the early education and care sector.

As is well understood, K-12 public school systems solve for operations imperatives and efficiencies through the establishment of districts and other administrative entities, whose role it is to coordinate key systems functions on behalf of their schools. For early education and care, there is little in the way of tactical administrative scaffolding to promote coordinated, efficient delivery of *any* essential systems supports, including those critical to delivery of core education services (such as, for example, professional development programming; staff benefits and other personnel resources; wraparound services and social supports; and large-scale contracting and procurement of materials).[14] All of the above are evident in the K-12 system and made possible through the establishment of administrative "central offices" that are tasked with key operations and infrastructure-building functions.

The Neighborhood Villages "Testing for Child Care" COVID-19 testing program stands as a case study for how government can build such infrastructure for early education and care and why it should. Indeed, development of "central office"-like administrative bodies is essential, both for delivery of high-quality education and for ensuring that government can be as responsive to stakeholder (family, educator, and provider) needs in the early education and care sector as it is in K-12 and other bedrock social service delivery systems. When such infrastructure is in place, a sector, complete with dedicated people, time, and financial resources, can bring together core stakeholders, isolate specific problems, and design testable, systems solutions to those challenges. Building government-backed infrastructure in early education and care is critical, if we are to ensure that early education and care providers do not just struggle to survive, but thrive.

¹⁴ One can imagine, for example, that in the recent national crisis of a shortage of infant formula, there was a role for government to play in procuring and distributing formula to child care providers serving vulnerable infants and families.

ABOUT NEIGHBORHOOD VILLAGES

Neighborhood Villages pilots, scales, and advocates for innovative solutions that address the biggest challenges faced by early education and care providers and the families who rely on them.

APPENDIX A: “TESTING FOR CHILD CARE:” PROGRAM EVOLUTION AND TIMELINE

October 2020: Pilot Begins with Small Cohort

Neighborhood Villages partnered with AmeriCorps and organizations across Greater Boston to launch the Boston Children’s Relief Initiative (BCRI), a COVID-19 emergency relief initiative supporting early education and afterschool programs. The goal of the BCRI was to respond to the immediate needs of the Boston-based early education and after-school organizations that continued to provide safe, supportive learning environments to children during the hours their parents – many of whom were essential workers – were working. The BCRI prioritized (a) meeting the workforce challenges faced by early education and afterschool programs, many of which were now providing full-day care to school-age children, (b) ensuring family access to wraparound supports, from nutrition to delivery of diapers and other material goods; and (c) protecting the health of early education and afterschool providers and the children in their care, through provision of comprehensive COVID-19 testing services.

Neighborhood Villages began pilot testing saliva-based pooled testing for the BCRI in partnership with Mirimus labs in Brooklyn, NY. The initial providers who were part of the BCRI were: Ellis Early Learning, Nurtury, Horizons for Homeless Children, East Boston Social Centers, Epiphany Early Learning Center, the Boston Chinatown Neighborhood Center; the United South End Settlements; the Boys & Girls Club of Boston Berkshire Blue Hill Club; The Community Group in Lawrence; and For Kids Only.

June 2021: Pilot Expanded

Neighborhood Villages, now in partnership with Veritas, expanded the pooled PCR testing program statewide.

July 2021: COVID-19 Testing Program is Scaled Statewide

Neighborhood Villages is contracted by the Commonwealth of Massachusetts to scale and operate its comprehensive COVID-19 testing protocol.

January 2022: Rapid Tests are Adopted into “Testing for Child Care”

Rapid antigen tests, in addition to pooled PCR testing, become a regular feature of Neighborhood Villages’ COVID-19 testing program. In cooperation with the Massachusetts Department of Early Education and Care, Neighborhood Villages facilitates a multi-pronged testing program, including PCR and rapid tests for staff and all children aged 2 or older.

June 2022 : Massachusetts’ “Testing for Child Care” program comes to a close.

By the beginning of the summer of 2022, “Testing for Child Care” formally winds down. Through October 2022, Neighborhood Villages is contracted to continue with off-boarding and with connecting EEC programs directly with Operation Expanded Testing, with all involvement ending on November 1, 2022.