Quality and Productivity Commission

34th Annual Productivity and Quality Awards Program

"Leading with Excellence"

2021 APPLICATION

Title of Project (Limited to 50 characters, including spaces, using Arial 12-point font):

NAME OF PROJECT: DHS LABORATORIES' RESPONSE TO THE PANDEMIC

DATE OF IMPLEMENTATION/ADOPTION: **OCTOBER 2020**

(Must have been **fully** implemented **for a minimum of** at least one year - on or before July 1, 2020)

☒ **CHECK HERE IF THIS PROJECT IS BEING SUBMITTED FOR THE *COVID-19 IMPACT AWARD* ONLY**. (Projects must be implemented on or before December 31, 2020. **Note**: Projects implemented less than one year ago will not be eligible for any other PQA awards. In addition, once a project is submitted, you cannot submit the same project for awards consideration in subsequent years).

PROJECT STATUS: x Ongoing _____ One-time only

HAS YOUR DEPARTMENT PREVIOUSLY SUBMITTED THIS PROJECT? _____ Yes x No

EXECUTIVE SUMMARY: Describe the project in 15 lines or less using Arial 12 point font. State clearly and concisely what difference the project has made.

The SARS-CoV-2 pandemic hit an unprepared USA and Los Angeles county in February 2020. The initial challenge of being able to test the few patients who showed symptoms, quickly grew to the need for testing hundreds of inpatients and outpatients daily. LA County Department of Health (DHS) laboratories' response to the pandemic came in the middle of an enterprise lab integration effort that had started two years previously. This integration effort was key to the DHS network of labs working together quickly and successfully to handle the increasing demand for testing. By implementing several testing platforms the labs succeeded in significantly better patient care by reducing turnaround times from a high of 9 days to less than 4 hours for inpatients and 24 hours for the majority of outpatients. This was also a more economical approach with an estimated savings of over $2 million.

BENEFITS TO THE COUNTY

(1) ACTUAL/ESTIMATED **ANNUAL** COST AVOIDANCE	(2) ACTUAL/ESTIMATED **ANNUAL** COST SAVINGS	(3) ACTUAL/ESTIMATED **ANNUAL** REVENUE	(1) + (2) + (3) = TOTAL **ANNUAL** ACTUAL/ESTIMATED BENEFIT	SERVICE ENHANCEMENT PROJECT
$ 2,000.000	**$0**	**$ 0**	**$ 2,000,000**	☒

ANNUAL = 12 MONTHS ONLY

SUBMITTING DEPARTMENT NAME AND COMPLETE ADDRESS Department of Health Services - Diagnostic Services 313 N. Figueroa St, Los Angeles, CA 90012			**TELEPHONE NUMBER** 213-288-8579
PROGRAM MANAGER'S NAME Holli Mason / Mala Nanda	**EMAIL** hmason@dhs.lacounty.gov mnanda@dhs.lacounty.gov		**TELEPHONE NUMBER** 213-288-8579
PRODUCTIVITY MANAGER'S NAME AND SIGNATURE (PLEASE CALL (213) 893-0322 YOU DO NOT KNOW YOUR PRODUCTIVITY MANAGER'S NAME) Connie Salgado-Sanchez C. Salgado-Sanchez		**DATE** 6/23/21	**TELEPHONE NUMBER** (213) 288-8483 **EMAIL**
DEPARTMENT HEAD'S NAME AND SIGNATURE Christina R. Ghaly, M.D.		**DATE** 6/23/21	**TELEPHONE NUMBER** (213) 288-8483

****ELECTRONIC, WET, OR SCANNED SIGNATURES ARE ACCEPTABLE****

We Support Plain Language

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1st FACT SHEET – LIMITED UP TO 3 PAGES ONLY: Describe the **challenge(s), solution(s), and benefit(s)** of the project **to the County**. What quality and/or productivity-related outcome(s) has the project achieved? Provide measures of success **and specify assessment time frame**. Use Arial 12 point font.

Our county laboratories had begun a reorganization process in 2017. This multi-year project included turning previously siloed, facility-focused laboratories into one laboratory with central oversight operating in 10 locations. The framework already in place was instrumental and key to the success of this program of getting Covid-19 testing for our patients on a much more rapid basis.

In February 2020, DHS leadership met to begin strategizing a response to the impending pandemic. Leaders from Supply Chain, Finance, Human Resources, Medical specialties, Nursing, Laboratory, among other areas all gave input on their needs and how they planned to prepare for the new virus and how they could each assist the other areas. The Laboratory representation included the Microbiology section directors who had already been researching what companies were developing testing for Covid-19 for their laboratory instruments. At that time equipment manufacturer QiaGen indicated that their instrument called QiaSTAT was close to having emergency use authorization (EUA) from the FDA. Approval was given on the spot with engagement from Supply Chain and Finance to purchase the lab instruments in anticipation of EUA approval, in order to provide the acute care hospitals with the earliest possible in-house testing. That EUA was not granted until April and the instruments were shipped shortly afterwards but the test kits were not shipped for several more weeks due to awaiting EUA approval in Germany, the country where the instrument is manufactured.

In the weeks that followed the February meeting, demand for testing of patients coming to the hospital grew as we faced long turnaround times and approval processes to send samples to the Public Health lab. When Quest, a commercial laboratory, announced that they had a laboratory developed test and could begin testing patients without prior authorization we were relieved. That relief was short-lived when we came face to face with two new problems. The swabs used in the collection of Covid-19 samples were in severe short supply as the entire globe bought up all available supplies, and we learned that the majority of all swab manufacture was in Northern Italy, a region hard hit with Covid-19 and on severe lock-down, shutting down production at a time when ramping up was required. The second problem was that Quest, as the only commercial lab in the country with the capability to do Covid-19 testing, was receiving approximately 30 times their daily testing capacity each day. Consequently, the turnaround time for a result on a patient was about 9 days. This caused complications in assigning patients a room where they would not be exposed to other patients who may have Covid. Many were quarantined for days causing patient flow through the emergency departments to be hampered. Also in short supply was personal protective equipment (PPE). Staff had

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no choice but to use more high-level PPE with patients of unknown status in quarantine, further exacerbating the shortages.

It was clear that we needed to improve the speed and access to testing. In order to function as a single lab in 10 locations each of the functional lab sections has formed work groups across the enterprise with representation from each facility in their section work groups. These groups collaborate, evaluate equipment, standardize processes, and solve problems. Recommendations are brought for final approval from the Laboratory Directors who also function as a work group. The Microbiology work group, already in action, dug in and leveraged all of their contacts and evaluated all available testing platforms with EUA or pending EUA. With the Microbiology work group's assistance, lab leadership actively searched for local University laboratories who had begun their own laboratory developed testing to see if our specimens could be run with theirs. Contracts with 3 university laboratories were quickly drafted and we were able to bring the turnaround time down to 24-48 hours. Each of these labs were able to give us a small number of tests that could be done per day. The work group coordinated which labs to send their specimens to and how many based-on location and volume.

By April, test kits became available on existing instruments. The labs validated the Covid-19 test on several platforms at record speed. Projects that would normally take 18 months to evaluate an instrument, test characteristics, sensitivity and specificity, contract for equipment and testing supplies, install, and validate results were completed within weeks of inception. All facility labs worked in concert within the lab groups to accomplish this and share data for a robust validation in the short time span. During this time each of the acute care hospitals was able to do limited in-house testing, but the largest facility LAC+USC had a high throughput instrument, meaning that that site could do higher volume testing and qualify for a larger test kits supply. We began to switch testing from our university lab partners to our largest acute care lab which caused the turnaround time in that lab to improve to 2-3 hours, while the other facilities were able to get results the same day or early the next day. As each of the other acute care labs came on-line with their own smaller version of this platform there was a redistribution of supply from the high-volume lab allowing rapid testing at all 3 hospital labs. Eventually, 5 test platforms were validated for the acute care labs, allowing for diversity of the supply chain and greater ability to do rapid testing. Our laboratory Information Technology (IT) team tabled all of their previous projects and concentrated on building interfaces for instrument platforms and our partner university laboratories. The instrument interfaces were accomplished quickly due to the cooperation of each of the labs through their work group to standardize on all aspects of testing including the order set, drop down menu for indications, and units, reference ranges, and comments for each type of test.

As the ability to provide testing improved, the issue of the poor supply of collection swabs was still problematic. We turned our attention to sourcing swabs from

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wherever we could find them. We spoke with our state supply chain and were able to get swabs that we were unfamiliar with. Once again, the Microbiology team set to work finding out which swabs were compatible with the Covid tests performed by DHS and that could be used for Nasopharyngeal specimens, then validated them and the transport fluid they came with against our instruments to ensure accuracy of the test. For swabs that were not suitable to reach the nasopharynx, new collection sites were evaluated and validated for anterior nasal (front of nose) and oral (back of throat). Through careful inventory across the system including daily reporting of test kits on hand, swabs/collection media, and daily total use we were able to keep each of the testing sites supplied, at times with less than an overall three (3) day supply. Out-patient testing continued being sent to Quest, which began to have a better turnaround time of about 48 hours due to expansion of testing sites and instruments coupled with sites like ours who began to have the ability to test their own specimens. When an EUA for Hologic's Panther was approved we were able to leverage the use of the already existing Panthers at 2 of our sites for high throughput testing and we were able to expand testing to include outpatients who were well enough not to be admitted and did not need rapid testing. We later expanded further to pre-procedure testing days prior to surgery or other procedure. We further began carefully opening rapid testing to all admitted patients in order to catch asymptomatic cases that had the potential to create outbreak situations in the hospital.

Our early Spring 2020 surge was complicated by shortages of all types and the necessity of test development and approval for use by FDA. Our team cooperated and supported each other and managed to pull off a heretofore impossible task. Our laboratory work groups shouldered the heaviest burden, but our IT staff, Supply Chain, Finance, Grants and Contracts, and clinical provider groups also coordinated and cooperated to a remarkable degree. This set the stage for the much larger surge in late Fall/Winter 2020-21. With everything in place and supply improved, we were able to handle the onslaught of increased Covid patient burden with relative ease from a laboratory standpoint. Looking back on where we've been and what we've learned we are certain that had it not been for the collaboration that was begun prior to the emergence of Covid-19, it would have been difficult, if not impossible for many of our facilities to have been able to support their providers with rapid testing. We witnessed many smaller community hospitals completely run out of supply and ask us to loan them test reagents. That certainly would have been the fate of our smaller facilities.

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Linkage to the County Strategic Plan – 1 page only. Which County Strategic Plan goal(s) does this project address? Explain how. Use Arial 12-point font.

This project addresses Los Angeles County Strategic Plan Strategy III.3.2 – Maximizing the use of County assets, guide strategic investments, and support economic development in ways that are fiscally responsible and align with the County's highest priority needs.

The Laboratory County workforce leveraged and maximized the existing work groups within the laboratory structure to make nimble decisions and quickly implement high quality, accurate testing for a novel disease that was sweeping our community. The cooperation in sharing data, resources, expertise, and knowledge allowed all of the DHS facilities to benefit from this work, providing equity to our DHS patients. A scarcity of resources forced a diversification of test platforms and careful management and redistribution of supplies kept all facilities able to meet the needs of the Providers and patients. The high level of quality, accuracy, and relative speed was overall less costly than reliance on a reference laboratory and the faster results had the added benefit of selective use of PPE, a very scarce commodity during the pandemic.

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COST AVOIDANCE, COST SAVINGS, AND REVENUE GENERATED (ESTIMATED BENEFITS TO THE COUNTY): If you are claiming cost benefits, include a calculation on this page. Please indicate whether these benefits apply in total or on a per unit basis, e.g., per capita, per transaction, per case, etc. You must include an explanation of the County cost savings, cost avoidance or new revenue that matches the numbers in the box. Remember to keep your supporting documentation. Use Arial 12-point font

Cost Avoidance: Costs that are eliminated or not incurred as a result of program outcomes. Please indicate whether these are costs to the County or to other entities.

Cost Savings: A reduction or lessening of expenditures as a result of program outcomes. Please indicate whether these were expenditures by the County or by other entities.

Revenue: Increases in existing revenue streams or new revenue sources to the County as a result of program outcomes.

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(1) The focus of this project was to save patients' lives by providing rapid testing. Our approach also saved unnecessary expenditure. A total of $9.9 million in capital and supplies was spent to purchase testing equipment and supplies from March 2020 – February 2021, to enable DHS to test patients with our own equipment and provide rapid results. Instead of testing internally, had DHS sent out tests to the lowest cost reference lab for the same number of tests it purchased supplies for, the expenditure would have been $12 million, and the results would have been delayed, thus impacting patient care and patients' lives. Testing internally saved us just over $2 million. Note that labor costs were not included in the calculations because labor was already present and redirected from other tests to COVID testing.