

**Quality and Productivity Commission**  
**34<sup>th</sup> 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: MANAGING OUTBREAKS FOR COVID-19 PANDEMIC RESPONSE**

**DATE OF IMPLEMENTATION/ADOPTION: JUNE 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:**  Ongoing  One-time only

**HAS YOUR DEPARTMENT PREVIOUSLY SUBMITTED THIS PROJECT?**  Yes  No

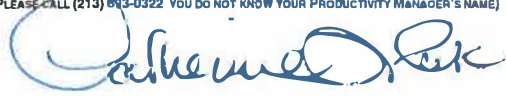

**EXECUTIVE SUMMARY:** Describe the project in 15 lines or less using Arial 12 point font. State clearly and concisely what difference the project has made.

1 The Community Field Services division in the Department of Public Health (DPH)  
 2 established an Outbreak Management Branch (OMB) structure as part of Public  
 3 Health's coordinated response to the COVID-19 pandemic. The Division's new  
 4 operations were expanded with additional staffing; extensive collaboration with other  
 5 DPH programs, such as the Acute Communicable Disease Control Program,  
 6 Environmental Health, the Division of Chronic Disease and Injury Prevention, and the  
 7 Office of Health Assessment and Epidemiology, to develop new systems such as data  
 8 management infrastructure, quality assurance in outbreak investigation and  
 9 management; and strengthening of internal communications. These strategies helped  
 10 optimize COVID-19 outbreak management, which resulted in OMB managing over  
 11 5,600 COVID-19 outbreaks to date (which includes the surges experienced during past  
 12 Winter 2020-21) and avoiding an economic loss burden estimated to be at least  
 13 \$252,000,000.00 from COVID-19.  
 14  
 15

**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
\$ 252,000,000.00	\$ 0	\$	\$ 252,000,000.00	<input type="checkbox"/>

**ANNUAL = 12 MONTHS ONLY**

<b>SUBMITTING DEPARTMENT NAME AND COMPLETE ADDRESS</b> Los Angeles County Department of Public Health 313 N. Figueroa Street, Los Angeles CA, 90012		213-288-8117
<b>PROGRAM MANAGER'S NAME</b> Jan King and Frank Alvarez      EMAIL <a href="mailto:jking@ph.lacounty.gov">jking@ph.lacounty.gov</a> <a href="mailto:falvarez@ph.lacounty.gov">falvarez@ph.lacounty.gov</a>		<b>TELEPHONE NUMBER</b> 323-568-8701 661-287-7054
<b>PRODUCTIVITY MANAGER'S NAME AND SIGNATURE</b> <small>(PLEASE CALL (213) 693-0322 YOU DO NOT KNOW YOUR PRODUCTIVITY MANAGER'S NAME)</small> 	<b>DATE</b> 6-25-21	<b>TELEPHONE NUMBER</b> 213-288-7240 <b>EMAIL</b> <a href="mailto:cmak@ph.lacounty.gov">cmak@ph.lacounty.gov</a>
<b>DEPARTMENT HEAD'S NAME AND SIGNATURE</b> Barbara Ferrer 	<b>DATE</b> 6/25/21	<b>TELEPHONE NUMBER</b> (213) 288-8117

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

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**1<sup>st</sup> 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.

The emergence of the COVID-19 pandemic in 2020 brought extraordinary challenges, suffering, and devastation felt around the world. As stewards of public health, the Los Angeles County Department of Public Health (LACDPH) mounted an all-hands-on deck response to intervene and stop the spread of COVID-19. On March 4, 2020, Los Angeles County (LAC) declared a public health emergency and activated an incident command structure (ICS) to position LACDPH’s resources to respond to the unfolding crisis, which was at its height during the Winter of 2020.

Within the Department’s ICS, the regional Community and Field Services (CFS) Division was tasked to manage complex COVID-19 outbreaks throughout LAC. This was a fitting task given that the Division’s workforce is comprised of physicians, public health nurses, public health investigators, and other service providers. The Division’s experience was also invaluable to this work as its personnel served as the frontline staff for managing communicable diseases prior to the pandemic.

CFS recognized early in the COVID-19 response that the volume, workload, and complexity of the pandemic would be different from prior disease outbreaks. The existing infrastructure was outmatched and more resources, collaboration with other DPH programs, and new processes would be essential to effectively meet this new challenge. As the pandemic unfolded, CFS implemented several new strategies to address the surge of COVID-19 outbreaks: CFS temporarily redesigned its infrastructure with additional staffing; increased its collaboration with other LACDPH programs/divisions to design and implement new systems and processes; and increased its level of internal communication with the newly expanded OMB staff.

**1. Establishing the Outbreak Management Branch**

By June 2020, CFS established a new unit within ICS called the Outbreak Management Branch (OMB). The OMB structure was designed to meet a large number of projected outbreaks (approximately 2,500 outbreaks) at any given time in LAC. Comprised of a multi-disciplinary workforce, the Public Health Nurses working directly in the field became “Outbreak Investigators” and the highly specialized communicable disease control providers or “Physician Specialists” provided oversight for OMB’s investigations. To further increase its outbreak management capacity, OMB also deployed Public Health Investigators as “Outbreak Investigators,” deployed other DPH nurses and physicians to OMB, and temporarily hired registry staff. Further, other DPH programs including Health Facilities Inspection Division, Children’s Medical Services, and Environmental Health provided additional support with completing essential activities such as conducting site visits. At its peak, the OMB workforce was comprised of almost 500 staff (permanent and temporary), and

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managed hundreds of outbreaks on a daily basis across LAC.

OMB is currently led by two Regional Health Officers, the LACDPH Nursing Administration’s directors, and a Chief Compliance Officer. This leadership team worked collaboratively with other key LACDPH programs including the Acute Communicable Disease Control Program, Environmental Health, and ICS’s planning and policy teams. Additionally, teams of health program analysts, administrative aids, and the Nursing Administration’s staff supported OMB’s daily operations and administrative processes, including hiring and training the newly expanded workforce.

Lastly, OMB also established a Data Science Team (DST) comprised of roughly 100 epidemiologists and data monitors who became a critical and integral part of OMB. Led by a Data Science Officer and Chief Epidemiologist, from LACDPH’s Chronic Disease and Injury Prevention Division and the Office of Health Assessment and Epidemiology, the DST worked to govern, manage, analyze, and assure quality for the large amounts of data that were generated and used to inform real-time decisions among the leadership team and the outbreak investigation teams. DST also worked to document lessons learned and best practices.

**2. Collaborating with other DPH programs to modify processes and systems**

With a reorganized and expanded OMB workforce, new systems were developed and existing workflows were modified to improve OMB’s efficiency and effectiveness. Within OMB, the outbreak investigation teams began to develop specialized knowledge in working with different sectors and subsequently developed or adapted specific protocols to assist with managing outbreaks. Specialized outbreak investigation teams began to emerge among specific settings and included sectors such as Skilled Nursing Facilities, congregate residential settings, shelters and encampments for persons experiencing homelessness, childcare, schools, and institutes of higher learning, places of worship, worksites, and food-related settings.

However, the most significant transformations within OMB’s processes came through the DST, which began to develop or refine existing workflows to manage large sets of data. Dashboards, metrics, and protocols were developed to assist OMB leaders and outbreak investigation teams with the information needed to make strategic decisions and real-time decisions. One example was the establishment of a data analytics (Epi-Curve) unit that plotted “epi curves” for the outbreak investigation teams. This DST function provided critical information in outbreak management, especially for the Education sector and in high profile cases such as those involving shipping and delivery services and the airlines. The epi-curves were generated to provide daily, 3-day average, 7-day average, or customized charts as needed. To date, the Epi-Curve unit has created 250 epi-curves with an average turnaround time of less than one business day (7 hours and 44 minutes) to complete.

Another example of modifying existing systems to improve OMB’s workflow

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can be found with the DST’s partnership with the Acute Communicable Disease Control (ACDC) Program. The two units worked to refine its daily process of downloading data generated by ACDC’s database (IRIS), which holds information on COVID-19 cases and outbreaks. By working with ACDC, the DST reduced redundancies in generating multiple daily reports but still provided the outbreak investigation teams with the data needed to inform their field operations.

**3. Increasing Communication and Trainings**

As OMB’s workforce rapidly expanded, frequent communication was needed to exchange critical information such as updates, protocol changes, and new developments. To facilitate this process, OMB implemented several strategies: daily virtual meetings/teleconferences with OMB leaders, managers and supervisors for sector-specific updates; meetings with key staff from other LACDPH units as needed; and the dissemination of an “*OMBee*” weekly staff newsletter to highlight changes, updates, and staff successes for work completed in the field.

OMB also hosted multiple training opportunities to keep the staff education and knowledge levels current. The LACDPH Nursing Administration organized trainings/in-services for OMB staff as needed as well as orientations for new hires; the Medical Leads organized learning sessions/round tables regarding current topics of the week; and the DST managed its own data-related trainings. For example, OMB worked with experts from Emory University and the Centers for Disease Control and Prevention to develop and launch a 16-session weekly Grand Rounds series for all staff, extending beyond a typical physician-based audience. Series attendance rate averaged 188 participants per session. Additionally, a Population Health Digest, a biweekly/monthly series of succinct notes on the latest scientific discoveries and research in COVID-19, was developed and shared with staff. This ongoing project was partly supported by the UCLA Clinical and Translational Science Institute and the Medical Student PRIME-LA Program at the UCLA David Geffen School of Medicine.

As the OMB model evolved, teams were sized up to manage the surge of outbreaks. During a six-month sample period between October 2020 to March 2021, OMB’s investigation teams implemented mitigation strategies at over 300 sites including military/defense, state/local government, private sector industries, and education/college athletics. To date, OMB has managed over 5,600 COVID-19 outbreaks, which includes those that emerged during the surge in the winter of 2020-2021. Based on an article from the Journal of the American Medical Association, *The COVID-19 Pandemic and the \$16 Trillion Virus*, regarding the economic burden from COVID-19, it can be roughly estimated that OMB’s efforts in managing over 5,600 outbreaks helped prevent further spread among families and helped LAC avoid an economic loss burden of \$252,000,000.00. This level of intervention from LACDPH not only protected LAC residents from COVID-19, but also helped protect Los Angeles County from further economic devastation.

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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.

Over the past year, LACDPH’s Outbreak Management Branch (OMB) worked to intervene, control, and mitigate the spread of COVID-19 by managing outbreaks across all regions of Los Angeles County, including settings in communities disproportionately affected by COVID-19. In order to meet these challenges, LACDPH received additional resources that allowed OMB to expand its capacity, refine its systems and processes, and collaborate with other key DPH programs and partners to respond to outbreaks and work with organizations and businesses to implement infection control strategies and public health measures that would stop the spread and reduce the impact of COVID-19 among the community.

While the Los Angeles County’s strategic plan was written prior to the emergence of COVID-19, OMB’s work directly addresses Goal II of the County’s Strategic Plan: Foster Vibrant and Resilient Communities. Under this goal, Strategy II.2.3 states the County’s effort to “strengthen the County’s capacity to effectively prevent, prepare for and respond to emergent environmental and natural hazards and reduce impacts to disproportionately affected communities.”

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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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\$ 252,000,000.00	\$	\$	\$ 252,000,000.00	<input type="checkbox"/>

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Based on an article from the Journal of the American Medical Association, *The COVID-19 Pandemic and the \$16 Trillion Virus*, regarding the economic burden from COVID-19, we estimated that a family of 3 has an economic loss burden of about \$150,000 per family from lost income, premature death, long-term health impairment, or mental health impairment. If the Outbreak Management Branch managed 5,600 outbreak cases and 30% of those investigations were able to reach a site to have an impact on the spread of the virus leading to at least 1 family of 3 avoiding COVID-19, then the projected economic loss burden avoided would be 5600 OBs x .3 impact x 1 family x \$150,000 per family = \$252,000,000.00. This number is estimated as a conservative projection.