A.   Project Narrative
<u>Need and Innovation Selection</u>
1.   Needs Assessment

a.   Describe the characteristics and needs of women, infants, children, and families in the service area. Use data and information from your LHJ.
Deep and persistent inequities in the health of mothers, children, and adolescents -- particularly by race, social class, and economic opportunity, shape a life-course of health and well-being or chronic disease and despair.

In San Francisco, Sonoma and Napa Counties, there are widening disparities in the physical and social environment, and inequitable opportunities for children and families to live, learn, work, and play. These disparities contribute to adverse childhood experiences and are often the result of multiple generations experiencing an accumulation of traumatic experiences impacting the mental health and overall health of individuals and families. **Table 1- Combined Data** includes data for each of the partner agencies in the San Francisco Home Visiting Consortium (SFHVC) and details the consequences of trauma, maternal depression, and the cycle of poverty that our families routinely face. Further, the COVID 19 epidemic has deepened the chasm of disparity, as families experience the trauma of social isolation, high rates of infection, hospitalization and death, displacement from their homes and loss of jobs and income.

Table 1- Combined Data

	Sonoma	San Francisco	Napa	Consortium	State
Our Community					
Total Population [1]	509,831	865,639	142,301	1,517,771	39,613,019
Total Population, African American	7,326	48,097	2,819	58,242	2,252,850
Total Population, American Indian/Alaskan Natives	4212	2022	607	6,841	167,958
Total Population, Asian/Pacific Islander	24,747	304142	11,015	339,904	5,491,993
Total Population, Hispanic	139,318	140,106	49,399	328,823	15,663,806
Total Population, White	334,228	371,272	78,462	783,962	14,978,111
Total Live Births	4,628	8,855	1,456	14,939	466,078
Health Status before Pregnancy-Chronic Condtions					
Asthma [7]	10.7%	6.9%	14.2%	10.6%	7.8%
Nutrition and Weight					
Overweight before pregnancy [7]	24.0%	15.4%	25.7%	21.7%	24.7%
Obese before pregnancy [7]	21.7%	9.1%	20.6%	17.1%	20.3%
Intimate Partner Violence (IPV) and Depressive Symptoms					
Postpartum depressive symptoms [7]	13.7%	12.0%	12.1%	12.6%	13.0%
Hardships and Support during Pregnancy					
Experienced two or more hardships during childhood, Overall [7]	27.2%	17.1%	26.3%	23.5%	25.3%
Experienced two or more hardships during childhood < High School Education [7]	40.1%	41.3%	41.9%	41.1%	35.9%
Experienced two or more hardships during childhood 0-100% FPL [7]	40.5%	30.9%	40.3%	37.2%	33.1%
Woman or partner lost job [7]	13.0%	11.7%	12.5%	12.4%	14.6%
Woman or partner had pay or hours cut back [7]	14.4%	8.2%	13.2%	11.9%	11.8%
Substance Use					
Any smoking, 3 months before pregnancy [7]	13.7%	8.9%	11.7%	11.4%	11.6%
Any alcohol use, 3rd trimester [7]	10.0%	28.1%	12.4%	16.8%	7.6%
Pregnancy Intention and Family Planning					
Mistimed or unwanted pregnancy [7]	26.1%	18.1%	27.1%	23.8%	31.2%
Our Mothers and Babies					
% of women delivering a baby who received prenatal care beginning in the first trimester of their pregnancy [2]	87.5%	87.4%	87.9%	87.6%	83.8%
% of women delivering a baby who had a postpartum visit. [6]	95.8%	93.9%	91.8%	93.8%	87.5%
Number of Medi-Cal births			605		215,200
% of births covered by Medi-Cal [2]	39.3%	25.0%	40.5%	34.9%	43.1%
% of women ages 18-64 without health insurance [3]	7.5%	4.6%	17.8%	10.0%	8.5%
% of women giving birth to a second child within 18 months of a previous pregnancy [2]	22.5%	27.0%	23.0%	24.2%	26.7%
% live births less than 37 weeks gestation [2]	6.6%	7.8%	7.9%	7.4%	8.7%
Gestational diabetes per 1,000 females age 15-44	11.9	10.8	12.8	11.8	9.2
% of female population 18-64 living in poverty (0-200% FPL) [3]	25.4%	20.8%	27.0%	24.4%	30.7%
Substance use diagnosis per 1,000 hospitalizations of pregnant women	32.8	22.7	16.6	24.0	19.9
Our Children and Teens					
% of children, ages 0-18 years living in poverty (0-200% FPL) [3]	32.1%	24.7%	37.9%	31.6%	40.8%

Data sources: [1]CA Dept. of Finance population estimates 2015, [2]CA Birth Statistical Master Files 2013-2015, [3]US Census Bureau - Small Area Health Insurance Estimates 2013-2015, [4]CA Employment Development Dept. 2013-2015, [5]Data from CA Child Welfare Indicators Project, UC Berkeley 2013-2015, [6]Data from CA Maternal, Infant Health Assessment (MIHA) 2013-2014, [7]Data from CA Maternal, Infant Health Assessment (MIHA) 2013-2015.

**Depression is highly prevalent among women of childbearing age and has many
negative short and long-term health impacts for both the mother and her children.**
Approximately 17% of women in the U.S. will experience major depression during their
lifetime. [1] Women are most likely to have their first episode of depression during the
reproductive years, [2,3] and approximately 18% of women with young children are
depressed. [4] Women with depression are at greater risk for obesity, diabetes, other
psychiatric diagnoses, and perhaps even earlier mortality. [5–7] Similarly, maternal
depression is associated with a wide range of adverse outcomes for children including
behavioral difficulties, [8] poor eating habits,[9] and worse trajectories of chronic illness
such as asthma. [10] A recent study found that 76% of mothers with depression reported
difficulties caring for their children compared to 17% of non-depressed mothers. [11]

Maternal depression sets up an intergenerational transmission of negative health
outcomes and disparities. A review of the available literature has linked antenatal
depression to conduct problems and antisocial behavior and conceptualized perinatal
depression as early evidence of a developmental cascade later leading to mental health
problems for both mother and child. [13] Depression, anxiety and high-perceived stress
during pregnancy may also lead to differential health and parenting behaviors. For
instance, depression can lead to maternal risk behaviors including substance use [14] and
non-compliance with prenatal care [15] and there is evidence that Hispanic women are
less likely to breastfeed if they experienced antenatal stress, anxiety or depression. [16]

Maternal depression can negatively impact infant attachment and mothers' perceptions
of their babies. [17–19]

**Depression among childbearing women disproportionately affects low socio-
economic status minority group women.** Women of color, including those who self-
identify as Black or Hispanic, now have most pregnancies in the U.S. These same
women of color have worse outcomes across almost every category of maternal and
child morbidity. [20] Low-income women have rates of depression significantly higher than
those in the general population. [21] In community-based samples pregnant Black women
have higher rates of depression [22] and PTSD[23] than White women; however, Black
women are also more likely to keep their depression secret and less likely to seek
mental health treatment. [23,24] Black and Hispanic women who are experiencing
depression are more likely to report multiple social adversities when compared to White
women with depression. [25]

**Despite a variety of effective treatment options, most women with depression are
not treated.** [26] The barriers to accessing appropriate treatment for depression among
childbearing women are myriad, including individual and systemic barriers. Furthermore,
the risk factors for depression, the cultural experience of stress and mental illness, as
well as provider sensitivity for screening differs across racial/ethnic minority groups.[27]
Disparities persist after a diagnosis of depression is made, with non-White women being
less likely to take antidepressants during pregnancy when compared to their White
counterparts.[28] Women may not seek mental healthcare for themselves because they

do not recognize their distress as a treatable medical condition or may experience competing priorities or stigma.[29] The symptoms of depression, such as decreased energy, lack of motivation, hopelessness, and difficulty with decision-making, also interfere with help seeking. One study involving Community Health Workers identified five categories of barriers for referral to mental health care: (1) practical barriers, i.e. transportation, no child care, cost of mental health care; (2) personal barriers, i.e. lack of motivation, mistrust and fear of the system, no-showing to appointments, de-prioritization of mental health, comorbid mental health and substance use disorders; (3) stigma; (4) system barriers, i.e. lack of services, inhospitable behavior of frontline staff at mental health agencies, waitlists; and (5) internal agency barriers. [30]

The substantial individual and public health burden of maternal depression requires patient and family engagement to move toward innovative, multi-disciplinary and community-based approaches that also address underlying social stressors. For low-income, minority women, perinatal depression often occurs within a context of adversity across the life course. [25,31,5] The expansion of insurance coverage and greater rates of early prenatal care have not resolved the ongoing disparities in maternal mental health and child development. [32] Similarly, evidence for psychosocial interventions that effectively target depression in pregnant women is equivocal. [33] In contrast, interventions that integrate mental health care with primary care, partner with community-based organizations, and address the underlying social determinants of health show more favorable results. [34] Specific examples of promising interventions include a protocol to evaluate the effects of housing support for pregnant women,[35] use of community health workers to refer high-risk moms to a parenting skills group,[36] and several types of groups for pregnant and postpartum women with positive effects on maternal mental health. [36–38]

The mental health care needs are of particular concern for SF Consortium home visiting clients. Publicly insured pregnant and parenting women have increased risk of poor mental health outcomes due to lack of access to racially, culturally, and linguistically concordant mental health services, racism, stigma associated with mental health challenges and lack of affordable housing. Further, those who are experiencing mood and anxiety disorders and are also at high risk for substance use disorder, poor attachment and parenting with subsequent possible child development problems, neglect, and child maltreatment. Many Latinx pregnant and parenting women report fears around reporting or sharing depression and mental health problems with providers for fear of their babies being taken by Child Protective Services. These vulnerable women are not being assessed, diagnosed, referred, or treated. This is due to the lack of trust in providers, and provider guidelines, referral pathways, capacity and support to screen and treat; missed opportunities when staff are unable to make an appointment with the referred service during a visit with the client; and lack of protocol/systems to confirm that a referral resulted in the client receiving services.

Table 1 shows comparative data for all three SF Consortium agencies and compares this data with California State averages. In Table 1, below, we can see that in all three

counties, intimate partner violence (IPV) and depressive symptoms approximate the state average. SF Consortium rates for postpartum depressive symptoms are 12.6% compared to the state rate of 13%. However, the data for experience of two or more hardships during childhood for people with less than a high school education and 0-100% federal poverty level (FPL), are significantly higher for SF Consortium than the State. SF Consortium rates for the population with less than a high school education experiencing two or more hardships during childhood is 41.1% compared with the State rate of 35.9%. For the SF Consortium population 0-100% FPL experiencing two or more hardships, the rate is 37.2%, compared to the State rate of 33.1%. Equally concerning are the high rates of substance use diagnosis per 1,000 pregnant women, with the State rate at 19.9% and SF Consortium at 24.0%. This supports the need for assessment of ACEs and subsequent intervention.

As stated previously, the impact of the COVID 19 epidemic has increased the stress associated with illness, social isolation and the loss of jobs and income. This, combined with the inability to predict an end to this crisis, is leading to major concerns by many leading Mental Health experts and others on the well-being of all, but most especially for our children. The evidence of hardship and trauma in the SF Consortium population can be seen in the percentage of children ages 0-18 living in poverty (0-200%), from 24.7% in San Francisco to 32.1% in Sonoma and a staggering 37.9% in Napa. Additionally, people of color are disproportionately affected by COVID 19. This is evidenced in Sonoma County where there is a large workforce in low paying industries, such as agriculture, tourism, and hospitality, many of whom are Latinx workers. COVID 19 has hit this population hard with the Latinx population representing 25.6% of the entire population, but they have 52% of COVID 19 positive tests. San Francisco is also seeing much higher numbers of COVID positive cases among Latinx people who are 15% of the population but account for 51% of the positive cases. Napa compares with Sonoma and San Francisco with 57% of COVID positive cases in Latinx who are 36 % of the population.

Napa County has similar issues to Sonoma, being a largely rural and agricultural county, whose economy is centered on the wine industry and its related tourism, hospitality, and restaurant businesses. Most of the workforce in these industries are Latinx farm workers and staff who often make minimum wage and cannot meet self-sufficiency standards for themselves and their families. These are also immigrant families, many of whom are undocumented and live in mixed status households. The events of the last several years have disproportionately burdened this vulnerable population and families including devastating fires beginning in 2017, Planned Service Power Shutoffs (PSPS), and now the COVID 19 Pandemic. In addition, the issues surrounding Public Charge and Census 2020 have fueled fears for Latinx families and driven many "into the woodwork" with subsequent reticence and/or discontinuation of needed services including healthcare. Economic impacts have greatly exacerbated disparities with increasing poverty, food insecurity, loss of jobs and income, and increasing mental and physical health problems for children and families.

b.   Describe the current landscape of services and unmet need for home visiting in your LHJ

Although there are existing home visiting programs utilizing different evidence- based or evidence- informed models, none of them include specific interventions to identify and bring awareness to Adverse Childhood Experiences. This is a missed opportunity to build trust and rapport with pregnant and parenting mothers who have experienced ACEs by bringing awareness to how these experiences have affected their lives and the lives of their children. Bringing awareness to ACEs provides context for how to break this negative cycle.

Table 2 shows key community partners and programs that provide supportive services to SF Consortium clients. These partners provide some mental health and supportive human services but also do not specifically assess ACEs nor provide interventions to address these experiences. COVID 19 has also limited the availability of services and the pandemic has worsened the accessibility and navigation of services. All listed community partners and programs in this table serve low-income women and their families to either support healthy pregnancies and birth outcomes, or early child development. They provide empowerment focus groups for African American women (BIH); mental health services including counseling for women with postpartum depression (CPI, Mother Care, UCSF-IPP); parenting education (CAP and home visiting programs); services for children with developmental delays (ELI, Golden Gate Regional); Case management for pregnant and parenting teens (TPC & Teen Parenting and Pregnancy Program), first time moms (NFP) and pregnant women and parents with multiple children under 5 (FN); and residential services for women with substance misuse (WRS,BAART, Epiphany).

Due to the COVID 19 pandemic, home visiting programs have had to adjust to respond to increased needs and numbers of clients who are experiencing changes in housing, income, availability of food and other needed supplies. One significant change in how Home Visiting is provided during the COVID 19 pandemic is via Telehealth. In addition to the increased demand for services for clients and an increase in waitlist, PHNs are reporting an increase in frequency of texting and calls with clients, who may be directly impacted by COVID 19 illness or concomitant challenges.

As previously described, there is greater demand for services than current capacity. This is true in all three SF Consortium counties in terms of limited numbers of skilled home visiting staff and mental health providers. There are also systems barriers for referrals and feedback between providers due to differing agency protocols and data systems that do not share information. While there is a centralized referral system in all three SF Consortium counties for referrals to home visiting, there does not exist a uniform method for determining if clients follow-through on the referrals to mental health and other community support agencies.

Table 2- SF Consortium Partners

San Francisco Consortium Partners and Supportive Services			

Programs	Napa	Sonoma	San Francisco
Home visiting Services	MCAH Field Nursing: Early Head Start: Parents As Teachers	MCAH Field Nursing; Nurse Family Partnership; Early Head Start	MCAH Field Nursing; Nurse Family Partnership; Black Infant Health; Parent as Teachers
Parenting Education & Support	Triple P; Family Resource Centers	Community Action Partnership	Homeless Prenatal; Family Resource Centers (26)
Infant Mental Health	Infant-Parent Mental Health Fellowship; Therapeutic Child Care Center	Child Parent Institute (CPI) Mother's Care	UCSF- Infant Parent Program
Aces Connection	YES	YES	YES
First 5 (includes Family Resource Centers =FRCs)	YES; 2 FRCs	YES; 6 FRCs	YES; 26 FRCs
Developmental Delays/ Children with Special Health Care Needs	CA Children's Services; Napa Infant and Preschool Program; North Bay Regional Center	CA Children's Services; Early Learning Institute	Golden Gate Regional (GGR); CA Children's Services (CCS)
Program for Pregnant/Parenting Teens Services	Part of School District and Adult Education	Teen Parent Connections (TPC)	Teenage Pregnant and Parenting Program (TAPP)
Residential Substance Use Disorder Services for Pregnant Women		Women's Recovery Services	Jelani House; BAART; Epiphany House

c.　　Present your conclusion regarding the gap in services you have identified from assessing your local need and landscape of services

Of the community partner agencies providing services described above, BIH, CPI, ELI and Early Head Start offer limited home visits. Furthermore, CPI and ELI are restricted in their service delivery to address only parenting and developmental concerns, respectively, and Early Head Start can only offer a fraction of their families home visiting

services. The NFP and TPC programs are also restricted to a smaller number of participants due to their strict eligibility requirements (i.e., maternal gestational age and first pregnancy; age of pregnant/parenting teen) and the long duration of the programs. None of these home visiting services specifically identify or address ACEs as an underlying cause of chronic disease and intergenerational trauma.

In contrast, SF Consortium home visiting programs offer trauma- informed, comprehensive nurse case management and have capacity to serve more than 375 families in different stages of pregnancy or early parenting every year when fully staffed. The *Trauma-Informed Approach in Public Health Nursing (TIA- PHN)* was initially developed by Sonoma County Field Nursing; an innovation to specifically address adverse childhood experiences (ACEs) of parents in the home visiting population. This innovative approach described in Section 2, will enable the SF Consortium to bring a promising practice to scale and establish a regional evaluation of the model's efficacy.

The current public health emergency caused by COVID-19 has diverted resources away from public health nurse home visiting programs. For Field Nursing programs specifically, this has left the most vulnerable and high- risk clients without support or advocacy. Adding to the difficulties these families normally face when accessing medical, mental health, and social-support services, newly implemented COVID-19 protocols to service delivery present an even greater barrier. Stress associated with loss of income, COVID related illness, service-cuts due to shelter-in-place orders, and overly burdened safety nets, present often insurmountable challenges for these families, increasing the risk of exposure to toxic stress. Women may not seek regular prenatal/postpartum care and children may have delayed well-child checks due to COVID-related fears and changes to medical protocols. The conditions resulting from this pandemic have made apparent the continued need for home visiting services within the community. It has also highlighted the importance of implementing a trauma informed approach to home visiting in order to best meet the needs of these vulnerable clients, many of whom would not be eligible to receive services offered by the other more restrictive home visiting models. Most importantly, the SF HV Consortium recognizes that while the COVID 19 pandemic has compounded clients' toxic stress, the situation is made worse by their unaddressed adverse childhood experiences. The TIA-PHN model will fill this gap in services, promoting a positive change in the life- trajectory of enrolled families by empowering them to raise their awareness of ACEs and build resilience for themselves and their children.

2. Innovation Selection

a. Describe the proposed home visiting innovation. Briefly describe the evidence that supports your evidence-informed model.

The San Francisco Home Visiting Consortium proposes to launch a new trauma-informed home visiting model based on Adverse Childhood Experiences (ACEs) research with the goal of mitigating toxic stress, encouraging resilience, and optimizing health among enrolled clients. Through our public health home-visiting programs, the

SF Consortium will implement the ***Trauma-Informed Approach in Public Health Nursing (TIA- PHN)—***to all eligible and enrolled clients and their families. By implementing this new model across the three counties, we will be better able to assess and address Childhood Adverse Experiences that negatively affect the mental health, social and medical needs of high risk families in urban, suburban and rural settings, and reach a more demographically diverse population.

Vincent J. Felitti, MD and Robert F. Anda, MD first identified ACEs over two decades ago in a study researching the relationship between childhood abuse and chronic illness and/or dysfunction in adults. Childhood traumas queried in the 10-question instrument not only were common among study participants, they were positively correlated with chronic health conditions observed among these adult respondents[40]. Subsequent research revealed a strong relationship between high ACE scores (i.e., positive responses at 4 or above) and: 1) sexual risk-taking, 2) depression (including postpartum), 3) poor work performance, 4) cardiovascular disease, 5) lung cancer, 6) intimate partner violence and 7) premature death of a family member [41-44]. A significant dose-response relationship was found between the number of childhood exposures and the following disease conditions: ischemic heart disease, cancer, chronic bronchitis or emphysema, history of hepatitis or jaundice, skeletal fractures and poor self-rated health. Additionally, there is compelling evidence that correlates adult mood disorder and developmental delays among children with past childhood trauma experienced by the parent/caregiver[45-46].

Dr. Nadine Burke Harris, California's first Surgeon General, appointed by Governor Gavin Newsom in 2018, announced her priority for addressing toxic stress and the resulting health consequences. Dr Burke stated, "I believe strongly that the issues of Adverse Childhood Experiences and toxic stress are the public health crises of our day, and we have an opportunity to achieve transformative change in terms of outcomes." Dr. Burke Harris also points out that although we understand that health damaging behaviors like smoking and drinking alcohol negatively impact the life course, the research shows that this accounts for half of the risk for negative health outcomes. Studies on Adverse Childhood Experiences show that the more of these experiences you have, the greater the health risk. People who have had four or more categories of adverse childhood experiences show two-and-a-half times the risk of stroke[47].

The SF Consortium asserts that utilizing the TIA-PHN model with the target population— women referred during the perinatal period and/or established parents struggling with the care needs of their children—will increase exposure to high-touch, in-home, family-centered services with the potential to mitigate intergenerational trauma in a population that does not have access to similar local services. Additionally, this model will establish the following practice standards: 1) application of ACEs screening and related education in a home setting; 2) delivery of trauma-informed prevention, early intervention and case management; and 3) a process for building the evidence-base for this model.

The TIA PHN model provides a standardized curriculum covering the following three areas: Lowering Toxic Stress, Brain Development, and Trauma Informed Care during the prenatal and postpartum periods. PHNs trained specifically in the delivery of this curriculum will use a client-centered approach, encouraging self-reflection and resiliency building. Using a multidisciplinary team, the TIA PHN model relies upon Public Health Nurses (PHN), Community Health Worker(s) (CHW) and Social Worker(s) (SW) to complete home visits. PHNs will be the primary case managers for enrolled clients and will refer clients to CHWs for health education and addressing barriers to care, and to the SW for linkages and advocacy in navigating systems and resources.

The model also incorporates a trauma informed approach in the training and support of staff. Supervising PHNs will provide structured, professional guidance using a trauma-informed approach that is both emotionally supportive and relevant for the staff member's individual role. Supervising PHNs will provide reflective supervision at one-and-one meetings scheduled at a frequency decided upon between staff and supervisor but not less than twice per month. Teams will participate in bi-weekly case conferencing, to provide peer support using a trauma-informed approach that is both emotionally supportive and relevant for the staff members' individual and collective roles.

The total number and frequency of home visits is to be established by the client in collaboration with the nurse home visitor to meet the client's individual needs. Through the implementation and evaluation of the TIA- PHN model, we plan to evaluate a dose-response relationship between number and frequency of visits, and a client's ability to achieve their intended outcomes.

The specific components of the TIA- PHN model are as follows:

Voluntary enrollment/participation: The TIA- PHN model will be described to all potential program enrollees, who are also notified that their participation is completely voluntary and that they may discontinue their enrollment at any time.

Assessment of Needs/ Development of an Individual Service Plan: The public health nurse will complete a comprehensive medical/social assessment at enrollment, and every 6 months. They will use a client-centered approach to develop a plan that addresses the needs identified in the assessment, as well as any barriers to services, with a goal of optimizing health and well-being. This plan will be reevaluated and updated as needed, and every 6 months.

Conversation about Adverse Childhood Experiences (ACEs): Public health nurses will have a client- led conversation that includes information about ACEs, including how they can affect brain development and health. Clients will be offered an ACEs questionnaire to complete, with the opportunity to reflect on past experiences if desired.

Conversation about Resilience Factors: Public health nurses will have a conversation with clients that offers information on early brain development, toxic stress, and trauma informed care during pregnancy and postpartum (as needed). This conversation will also include discussion about the following resilience factors: sleep, nutrition, exercise,

mindfulness, mental health, and relationships (these resilience-related themes are reviewed at each visit). Throughout each visit, the public health nurse will encourage clients in self-reflection, and discuss behavioral choices that maximize health and wellbeing while minimizing toxic stress.

Incorporating Trauma Informed Principles Into Practice: Public health nurses will utilize the SAMHSA Framework and adhere to the following principles in order to avoid re-traumatization of clients and staff: safety; trustworthiness and transparency; peer support; collaboration and mutuality; empowerment, voice and choice; cultural, historical and gender issues. TIA- PHN staff will commit to regular training on trauma informed practices and will engage in reflective supervision with their supervisor.

Depression screening: Validated screening tools, the Edinburgh or PHQ9 questionnaires, will be used to screen every primary caregiver adult for depression. When indicated and desired, clients are linked to medical and social support services to address mental health needs. All staff will receive training on the appropriate use of these screening tools.

Developmental screening: Public health nurses will complete a developmental screening on every enrolled child using the ASQ-3 or PEDS & PEDS-DM, validated screening tools. When indicated and with parental consent, children will be referred to early intervention services. All staff will receive training on the appropriate use of these screening tools.

Outcome measures tracking: Using the electronic medical record, public health nurses will track outcome measures at case closure.

b.   Why has your LHJ selected this particular innovation? Explain how this innovation will address the gap specified in the Needs Assessment section.

The San Francisco Home Visiting Consortium has selected the **TIA- PHN innovative model** to better serve our highest risk and most vulnerable families by addressing ACEs and working together to disrupt the cycle of trauma in future generations. The Sonoma County Field Nursing Team developed this model after identifying an increase in unmet needs among clients. In Sonoma County, in fiscal year 2017-2018, families entering the program experienced rates of housing insecurity/homelessness at 34%, intimate partner violence at 29% and substance use at 26%. Additionally, prevalence of mental health concerns was recorded at 41%. These figures increased by 17-28% following the October 2017 wildfire disaster in the county that destroyed more than 5300 homes and significantly impacted the community's overall economy and safety net. Currently, both Napa and Sonoma Counties continue to face the negative impacts and social disruption caused by wildfires. All three counties face unparalleled social and economic impacts caused by the COVID-19 Pandemic.

The compound impact of multi-generational poverty and trauma layered upon by a global pandemic further emphasizes the need for trauma informed services that are strength, empathic and relationally based and tailored to the unique needs of these vulnerable families dealing with both generational and current situational trauma. The 2019 research article, "Innovative Research Methods to Advance Precision in Home

Visiting for more Efficient and Effective Programs", acknowledged that home visiting achieved positive outcomes ranging from positive parenting to healthy child development, however many families failed to benefit from the evidence-based models and dropped out of home visiting after one year[49]. The article suggests a range of models is needed to achieve stronger impacts, and that an active ingredient of successful home visiting programs is a strong relationship between the mother and home visitor and is critical for effective services and outcomes. Our Trauma-Informed home visiting model offers a unique opportunity to serve families in the intimacy and safety of their own homes, diffuse the fears of entering agencies for services, and forming supportive and nurturing professional relationships that both heal trauma and increase resiliency. In addition, for vulnerable families reluctant to enter programs, our model is a shorter term, intensive intervention that allows families flexibility and does not require a didactic program with longer-term enrollment requirements. The TIA- PHN model provides an opportunity to share information about how ACEs can affect individual health and wellness. As described in section 2a, research has demonstrated that negative effects of ACEs can persist into adulthood and can cause circumstances that create toxic environments for generations, thus perpetuating a cycle of toxic stress and ACEs in children.

Families eligible for services through the TIA- PHN model are often ineligible to receive services through Nurse Family Partnership (NFP) due to enrollment criteria only in early pregnancy and limited to first time parents. Additionally, families with a history of trauma, housing insecurity and substance use disorder may have trouble adhering to the rigid visit schedule of programs like Healthy Families America and Parents as Teachers. The TIA- PHN model uses a trauma-informed approach to address the unique needs of families where children are most likely to encounter toxic stress leading to suboptimal brain development and future poor health outcomes. Current and historical trauma can limit a person's ability and/or willingness to engage in available services. Using a trauma informed approach, home visitors will assist families in identifying and lowering toxic stress, thereby preventing adverse childhood experiences in their children. Using this approach, home visitors will also potentially increase their clients' ability to engage in medical and other social support services available in the community.

The TIA- PHN model provides an evidence- informed approach to Field Nursing, an area that has historically lacked an evidence- based practice model. This short term, intensive and relational model addresses the fundamental issues of family dynamics and intergenerational trauma. The model has clearly defined components, as well as a rigorous evaluation plan. It has the potential to be easily implemented in different environments and among different populations. Napa, Sonoma, and San Francisco Counties together encompass urban, suburban and rural communities. By joining together to form the San Francisco Home Visiting Consortium to implement the TIA PHN Model, the three Field Nursing teams will demonstrate how this model can meet the needs of clients living in a variety of geographically and demographically diverse

backgrounds while successfully increasing clients' abilities to access and engage in available services and recognize and develop strategies to mitigate toxic stress.

c.   Describe your experience implementing the proposed innovation and/or other home visiting programs or services for the target population and how that experience will support effective implementation of the proposed project.
San Francisco, Napa and Sonoma counties each have a decades long history of providing home visiting services to low income and vulnerable women who are pregnant, and families who are parenting children up to age 5. They have well established partnerships with community organizations who share the goal of providing social, emotional, and medical support for this vulnerable population.

Over the past 2 years, the Sonoma County Field Nursing team has successfully piloted the TIA- PHN model and has been able to address challenges and problems associated with the program and its evaluation as they arise. As a result, the team developed a comprehensive guidebook that can be used to train and support staff from all three counties that will be implementing the TIA- PHN Model.   Additionally, in August 2019, the Sonoma County Field Nursing team hosted a multi county training on Trauma Informed PHN Visits to Parents and Children. Staff from the Napa and San Francisco Field Nursing Teams participated in this training.   Since then, the three counties have been collaborating in the design and planning of the TIA- PHN model to ensure its successful implementation.

The Sonoma County Field Nursing team will host weekly or biweekly teleconference calls to assist San Francisco and Napa counties in training and supporting their staff, particularly during the first months of program implementation. Additionally, during these calls the SF Consortium team members will review the TIA- PHN approach and process and provide training and technical assistance to ensure adherence to model fidelity. All three counties have staff trained in the use of reflective supervision, which encourages the Nurse Home Visitor to reflect on thoughts, feelings, and personal values that the nurse experiences with clients on home visits. The communication and support between Supervising PHNs and PHNs are used as a model and a guide of reflective practice between PHNs and their clients. Furthermore, reflective supervision may also be used as an organizational model for Home Visiting Agencies thus strengthening the trust and rapport and innovation among staff and supervisors, administrators, and directors. This is the model in practice in the Sonoma, Napa, and San Francisco MCAH sections.

3.   Target Population

a.   Discuss the population that will be served through the proposed innovation project. Explain why this population was chosen.

The San Francisco Home Visiting Consortium's trauma-informed approach serves pregnant women and or/families with children up to age 5 years old, who screen positive for one or more of the following risk factors: 1) current homelessness/housing

insecurity, 2) past or current substance use,3) past or current intimate partner violence,4) past or current mental health concerns, and/ or 5)medical fragility (complex medical needs requiring nurse case management)

Referrals are received from hospitals, clinics, Child Protective Services, and other community agencies in Napa, San Francisco, and Sonoma Counties. Referrals are triaged based on the reason of the referral and prioritized by the severity of risk factors identified. Factors, such as, lack of transportation affecting access to needed services, food insecurity, and difficulty navigating healthcare services are also considered when prioritizing new referrals.

The TIA- PHN model was designed specifically to better meet the medical, mental-health and social needs of this target population. In FY 2018-19, 53% of Sonoma County Field Nursing clients who took the Adverse Childhood Experiences (ACEs) questionnaire (N=96) had a score of 4 or higher, compared to 21.6% in the general population of Sonoma County[50]. Furthermore, 45% of these clients (N=123) had an Edinburgh score of 10 or higher, indicating possible or probable perinatal depression, compared with an accepted 10-15% prevalence of depression in postpartum women[51]. Without access to the TIA- PHN model, many families within this target population would be excluded from the multiple positive benefits provided by home visiting services because of ineligibility or difficulty adhering to program requirements. Home visitors in the TIA- PHN program are in a unique position to focus on the individual needs of the clients, meet them where they are, and maintain flexibility through the delivery of the TIA- PHN curriculum with regards to visit location, visit frequency, and visit topic or theme.

4.   Estimate how many families will be served with the requested funding.
The requested funding will support the San Francisco Home Visiting Consortium in reaching a minimum of 750 families in the 30 months of the grant, with each county reaching a minimum of 50 families in FY 20-21, and 100 families per year in FY 21-22 and FY 22-23. Each TIA- PHN case managing public health nurse will carry an average caseload of 25 primary clients or families. We anticipate having 16 primary case-managing public health nurses utilizing the TIA- PHN model within the San Francisco Home Visiting Consortium, as well as supervising public health nurses, community health workers and social workers. The estimation of total clients served takes in to consideration possible reduction in workforce due to COVID19 deployment

5.   Setting

a.   Describe the setting in which the home visiting services will be provided. If not in the traditional home setting, explain how services may differ or be modified by the proposed setting.
TIA- PHN home visiting services are traditionally provided in person in a variety of settings including a client's home, a community setting such as a library or park, or accompanying a client to an appointment for a social or medical need. Adjustments to

this service provision have been made due to COVID-19. Currently, home visiting services are provided remotely using telephone, text, and video- call to connect with clients, complete screening assessments, provide education and support, and to link to resources. As community rates of COVID decrease, and State and County health officials allow for resumption of in-person home visiting, new safety protocols will be implemented to address health and safety concerns while also accounting for the need to provide an environment that will foster a positive connection between the home visitor and the client. Safety measures will include pre-visit symptom checks of both the home visitor and the client, universal mask use, social distancing, and meeting outdoors when possible.

Implementation Plan

1.   Installation of the Proposed Innovation Project

a.   The plan to hire, train, and equip staff for the project
Each county participating in this tri-county consortium will utilize existing staff from their Field Nursing teams, including Public Health Nurses, Social Workers and Community Health Workers, and will hire additional staff as needed.

Staff using the TIA- PHN model will receive program-specific training within 90 days of hire/starting work on the program. This training will include in person and/or online training covering Trauma-informed Approach, Adverse Childhood Experiences, Cultural Competency, Motivational Interviewing, and Mandated Reporter Responsibilities. Each county participating in this consortium will have one staff member identified as a Master Trainer to provide annual and as needed training on Adverse Childhood Experiences and the Trauma Informed Approach. These Master Trainers will be trained at a Train-the-Trainer session coordinated by the Sonoma County Field Nursing Team and will receive support and resources from the Sonoma County Field Nursing Team throughout the three years of the program. Regular video conferences will be scheduled across the Consortium's three county teams to provide ongoing collaboration and support in the implementation of this program. All participating staff will have access to a written guidebook outlining the specific components of this model and will be encouraged to use the guidebook as needed.

b.   Provide a timeline : See **Attachment 4** Timeline

2.   Implementation of the Proposed Innovation Project:

a.   Who will lead the proposed project? Describe their experience and role(s) in ensuring the successful implementation of the project.
San Francisco City & County will be the lead agency and responsible for the contracts, budget administration, scope of work and deliverables detailed in the CHVP Innovation Grant Proposal. Diane Beetham, MSN, RN, PHN is the Director of Public Health Nursing in the San Francisco Department of Public Health and has more than 20 years

of experience managing and directing Public Health Programs. Ms. Beetham will oversee the execution of the grant.

Maya Vasquez, RN, MSN, PHN, IBCLC, is the Nurse Manager in San Francisco and oversees the MCAH Field Nursing Home Visiting program as well as the Nurse Family Partnership Program. Ms. Vasquez has worked with Sonoma and Napa Counties during 2019-2020 in anticipation of a cooperative agreement and plan to pilot this TIA-PHN model. Maya will provide oversight of the Field PHNs participating in the intervention and will assist with data collection and analysis. Michelle Salas RN, PHN is a Charge nurse for the SF MCAH Field Nursing staff and has been trained in Reflective Supervision. She will use her expertise in Quality Improvement and data analysis to support staff and prepare semi-annual reports. All Field PHNs participating in the TIA-PHN model implementation have extensive experience in home visiting with high -risk pregnant and parenting populations.

Laura Keller, RN, PHN, NP is the Director of Public Health Nursing and the Maternal, Child and Adolescent Health Director, and has 30 plus years of experience in Public Health and Maternal Child Health. Ms Keller has been a Touchpoints trainer for 23 years and is a graduate of the Infant, Parent, Child Mental Health Fellowship, and is the manager who oversees MCAH PHN Home Visiting. Monica Koenig, RN, PHN is the Health Services Nursing Supervisor for MCAH PHN Home Visiting and is also the MCAH Coordinator and Perinatal Services Coordinator. Ms. Koenig has worked as a PHN and PHN Supervisor in Nurse Family Partnership and is trained in reflective supervision. Laurie Harty, MCAH Staff Services Analyst II will oversee data collection and evaluation.

Julianne Ballard, MSN, RN, PHN, has been the Supervising Public Health Nurse for the Sonoma County Field Nursing Team since 2017. Ms. Ballard led the Sonoma County Field Nursing Team in successfully piloting the TIA- PHN model, and writing a guidebook detailing each component of the model. Ms. Ballard was instrumental in developing a multi-county training on trauma informed public health nursing. Additionally, she initiated a multi-county collaboration between Field Nursing teams of different counties to collect, compile and compare data to build an evidence base. Ms. Ballard will continue to supervise and lead the Sonoma County Field Nursing team throughout implementation of the TIA- PHN model as part of the SF- HV Consortium.

The Sonoma County team will be responsible for contracting the University of California, San Francisco (UCSF) School of Nursing to evaluate the TIA- PHN model. Members of the evaluation team will be in frequent contact with the Sonoma County TIA- PHN team to address any areas of concern related to data collection or the evaluation. Evaluation will be conducted by the University of California, San Francisco (UCSF) School of Nursing, led by Carol Dawson-Rose, RN, PhD, FAAN. Dr. Dawson-Rose is Professor and Chair in the Department of Community Health Systems, the mission of which is to promote and sustain health in the community, with particular emphasis on culturally diverse and high-risk populations. Dr. Dawson-Rose has over 20 years of combined

clinical and research experience, with special expertise in adapting interventions to be trauma-informed for populations that include people who use drugs, people living with HIV, sexual and gender minorities, people of color, and individuals experiencing homelessness. She has extensive experience conducting monitoring and evaluation of such programs and disseminating results to other entities and through peer-reviewed publications. Dr. Dawson-Rose will work closely with Yvette Cuca, PhD, MPH. Dr. Cuca has worked closely with Dr. Dawson-Rose on research related to trauma, and also has many years of program monitoring and evaluation experience through work with the International Planned Parenthood Federation / Western Hemisphere Region.

b.   Explain how the organizational structure of the agency will support the home visiting innovation.

The Maternal, Child, and Adolescent Health programs in all three counties participating in the San Francisco Home Visiting Collaborative share a common goal of promoting the physical, social, and emotional health of childbearing women, children, adolescents and their families. Health services for children, teens and women of reproductive age are coordinated through a central referral source for home visiting. The specific goals of these programs are the following:

● All children are born healthy to healthy mothers.

● Eliminate health disparities among racial/ethnic, gender, economic and regional groups.

● Promote a safe and healthy environment for women, children, adolescents, and their families.

● Promote equal access for all women, children, and their families to appropriate and needed care.

● Ensure all children have opportunities to maximize their potential.

To realize this mission, all three counties have systems in place that support ongoing staff training, data collection, analysis, reporting, fiscal management, and overall accountable stewardship of project funding. Organizational charts for all three counties are included as **Attachment 6.**

Data Collection and Reporting:
The Sonoma and the Napa County MCAH Field Nursing teams use the online health services information system Persimmony Electronic Case Management (ECM) for documenting case management activities and Targeted Case Management (TCM) billing. This system securely manages client demographic and healthcare information. Additionally, it automates statistical reporting, such as monitoring households and individuals served over specified periods and tracking outcome performance measures at exit from the program.

San Francisco MCAH Field Nursing utilizes Oracle database for collecting and reporting statistical information and can include outcome measures specifically described for the

TIA-PHN collaboration. SF also anticipates the increased access to EPIC databases sometime in 2021.

c.   Discuss the way in which you will engage with other government agencies and/or community organizations to coordinate and collaborate on the proposed project, both to support the home visiting infrastructure in general, and to support the specific proposed innovation and target population. Provide two letters of support from applicable key partners (Attachment 7); please refer to the Corresponding Attachments section below for additional information.

The three counties participating in the San Francisco Home Visiting Consortium have well established partnerships with the local community organizations and agencies listed in **Section 2-b** and will continue to engage with them throughout the implementation of the TIA- PHN model. New clients will continue to be referred for home visiting services by local hospitals, community clinics, and child protective services, among others. Enrolled clients with specific needs will continue to be referred to local community organizations for services such as individual counseling, developmental support in children, and substance abuse treatment. These organizations support home visiting services by facilitating home visits within their setting, for example, a home visit occurring in the waiting room of a community clinic or within a residential treatment facility. Additionally, staff working at these community organizations and agencies often actively participate in the individual service plan identified for each client through group meetings, and direct collaboration with a client's public health nurse. This team approach between public health nurses and community partners creates an environment that offers greater support in helping a client and PHN to reach their mutual goals.

The TIA- PHN model has been specifically endorsed by our community partner ACEs Connection. ACEs Connection serves to provide education about ACEs science, and to promote community among individuals and groups working to advance ACEs understanding. ACEs Connection supports the work of organizations and initiatives with a common goal of providing a trauma informed approach and improving the lives of people who have been affected by ACEs. Specific to the TIA- PHN model, ACEs Connection will serve as a community partner by helping to disseminate findings from this program, to further add to the growing evidence base around the use of ACEs.

d.   What is your plan for ongoing training/coaching and supervision of staff?

Staff working in the TIA- PHN model will complete training at onboarding, as well as annual training thereafter. Training topics include: the TIA- PHN Trauma- informed Approach, Adverse Childhood Experiences, Cultural Competency, Motivational interviewing, Reflective Supervision and Mandated Reporter Responsibilities. Training will be conducted by supervising staff within each county, either as part of regular mandatory training, or specific to the TIA- PHN model, and by TIA- PHN master trainers in person or via online training across counties as needed. Evaluation of staff knowledge and attitudes related to training is included as part of the process evaluation.

Supervising staff will complete individual meetings weekly or biweekly with all participating staff and will provide reflective supervision to support staff and problem-solve any issues that arise related to the implementation and/or fidelity of the model. Teams from the three counties will meet regularly via telephone or video conference to identify any gaps in training needed among staff. These meetings will occur more frequently during the first two quarters of the model implementation to identify early any unmet needs related to training and supervision. Training needs identified through these meetings will be documented and reviewed as part of the process evaluation.

Regular medical record and data audits will be completed by supervising staff for new hires, as well as for experienced staff, to ensure mandatory data points are being entered appropriately, and that all components of the model are being implemented and documented correctly.

e.   How will program data be collected? For example, will your project use an existing Management Information System (MIS)?
The three counties of the San Francisco Home Visiting Consortium use electronic health record systems. Data specific to the TIA- PHN process and outcome evaluation will be extracted from these systems. The data collection process builds upon the current method of electronic charting of health information and data collection currently utilized by all three counties. Public Health Nurses, Social Workers and Community Health Workers will be responsible for inputting data after every client visit. Electronic data-forms will be utilized to help manage data specific to the program, and dates of data collection.

The Sonoma and Napa County teams use the online health services information system Persimmony Electronic Case Management (ECM) for documenting case management activities and Targeted Case Management (TCM) billing. This system securely manages client demographic and healthcare information. Additionally, it automates statistical reporting, such as monitoring households and individuals served over specified periods and tracking outcome performance measures at exit from the program. San Francisco County currently uses Oracle database and will be changing over to EPIC for their electronic medical records and data tracking.

f.   How will you use evaluative feedback loops to support program implementation? How will the data be collected for CQI or other real time feedback loops? (Note: If the same data collection approach will also be used for the evaluation, discuss the evaluation activities in the Evaluation section in Part II).
A data review will be completed every quarter to identify any data trends that indicate a modification to the model is required. Data collected from the ACEs understanding tool will be reviewed to ensure the model is effectively meeting its goals. If any changes to the model are required, they will be reviewed by all three counties via telephone or video conference.   Additional CQI data and feedback loops are described in the evaluation section.

g. What fidelity measures or standards will be used for the innovation project? Please include fidelity measures or standards that fit your project. Examples of common home visiting measures include staff/supervisor ratios, California Home Visiting Program participant/home visitor ratios, home visit completion rates, caseload, and participant attrition/retention rates.
The following fidelity measures will be used by the San Francisco Home Visiting Consortium when implementing the TIA- PHN model:

1. Caseload: PHN will carry a caseload of 25 primary clients if full time, 20 if 0.8 FTE

2. Supervising PHNs will supervise no more than 6 PHNs

3. Monthly Encounter Rate: A full-time PHN should attempt to complete 55-60 face-to-face encounters in a typical month This translates to approximately 12-15 visits per week.

4. Visit Frequency: At a minimum, a PHN will meet with their client once every 30 days.

5. Adherence to Weekly Staff Meetings: TIA- PHN teams will conduct weekly meetings to allow for case conferencing, and trauma informed support of staff.

6. Adherence to reflective supervision in one-on-one meetings: Supervising PHNs will schedule biweekly meetings with staff for individual reflective supervision .

7. Participant Retention Rate: The number of clients closed due to goal achievement will be measured against those lost to follow up and those unable to reach their goals.

h. Provide a logic model for your innovation project (Attachment 5);

Please refer to the Corresponding **Attachment 5**

<u>Evaluating of the Innovation</u>

**1. Process/Implementation Evaluation Plan
Please describe the plan to evaluate the process/implementation of the proposed innovation. This part of the evaluation may address issues concerning participants, staff, project implementation practices, organization/agency structure or practices, community factors, or multiple levels (e.g. staff and agency practices), as relevant to the proposed innovation.**

Please include enough detail that a reviewer can assess the feasibility, appropriateness (fit of questions and methods), and soundness of the design.
Monitoring and evaluation of the TIA- PHN innovation will occur throughout the implementation. The University of California, San Francisco (UCSF) School of Nursing evaluation team has extensive experience conducting implementation and outcome evaluations in diverse health care settings, as well as expertise in both quantitative and qualitative research methods in community-based settings. The team will evaluate the process of the TIA- PHN implementation, both short- and medium-term outcomes of the

TIA- PHN implementation and will disseminate findings to key stakeholders and other groups.

a. Define the evaluation questions(s)
The goal of the process evaluation is to document and ensure effective implementation of the proposed TIA- PHN model. This process/implementation evaluation seeks to answer the following questions:

1. How many families receive the full TIA- PHN curriculum over the course of the program?
2. How many staff members are trained on the TIA- PHN model? How did their knowledge, attitudes, and practices change following the training and after 12 months?
3. What are the facilitators and barriers to implementation of TIA- PHN in Field Nursing units in three counties?

b. Specify the evaluation design
This is a descriptive longitudinal monitoring and evaluation design. Process evaluation will focus on monitoring delivery of the TIA- PHN curriculum to clients, on the implementation of ACEs conversations, and on training of Field Nurses to deliver services. In addition, the evaluation will be designed to capture facilitators and barriers to implementation of the program.

c. Describe data collection methods. If the data will be collected through the data system described in item 6 in the Implementation section above, please restate any information pertinent to the evaluation.
Client-Level Data: Client-level data will be collected by Field Nurses as they deliver services and will be documented in the electronic health records systems of each county (Persimmony in Napa and Sonoma; Oracle /EPIC in San Francisco). Field Nurses will document numbers of clients served, number of visits per client, number of clients who receive the ACEs conversation and screening and when, number of clients who receive the TIA- PHN Curriculum education (including education about resilience and trauma-informed education specific to prenatal and postpartum care). In addition, Field Nurses will systematically document linkages to medical care and community-based services. Individual service plans will be created and documented for each client. Each county site will have staff (Supervising Public Health Nurses, Health Program Managers, and Analysts) who regularly abstract data from the EHR for review and analysis to ensure effective implementation of the program.

Staff/Training Data: The team will document the number of trainings related to the TIA-PHN model (i.e., Implementation of TIA- PHN; Trauma-Informed Practices; Administration of Screening Tools) and the number of staff members trained in each county. Pre- and post-test surveys of knowledge, attitudes, practices, and satisfaction will also be conducted. Staff-level data will also include the number of reflective supervision sessions conducted, and weekly, biweekly, or as needed technical

assistance (TA) meetings where staff from across sites will participate in monitoring the implementation of TIA- PHN and receive assistance if needed.

Program Implementation Data: The evaluation team will review team meeting notes to trace decision-making processes, particularly as they pertain to modifications and tailoring of the intervention to each site and scale-up from Sonoma County to Napa and San Francisco Counties. This will include information about whether the project was implemented as intended, facilitators and barriers to implementation in these sites, actions to address barriers, and conduct of quarterly all-county team meetings. These data will provide information about the feasibility of expanding the intervention into other public health systems, as well as information about important strategies for effective scale-up.

d. Describe assessment tools and instruments to be used, if any. If this draws from fidelity measures described as routine program support in item 7 in the preceding Implementation Plan section, please restate any information pertinent to the evaluation.

Client Level*:* For the purposes of the process evaluation, client-level data will primarily be collected by Field Nurses, entered into the electronic health record, and abstracted for data analysis. For each enrolled client, an electronic form will be used to track whether and when (date/visit number) the following activities were completed:

1. ACEs conversation.

2. ACEs Screening Questionnaire.

3. Education about the six components of resilience-building: sleep, nutrition, exercise, relationships, mental health, and mindfulness.

4. Trauma-informed education specific to prenatal and postpartum care

5. Development of individual service plan

The electronic health record will also be used to document the number of visits per client, and number of linkages to medical care and social services for clients and children.

Program Level: Program-level data will be collected through notes from trainings, supervisory meetings, and team meetings. This compiled Progress Record will be used to track data including number of trainings, topics of training, numbers of people trained, pre- and post-training assessment results, training satisfaction, etc. In addition, this Progress Record will contain documentation of decision-making processes, progress on the program timeline, whether the project was implemented as intended, facilitators and barriers to implementation, and actions to address barriers.

e. As appropriate to the proposed methods, describe the number of estimated participants and/or sample size(s), sampling plan, and power calculation.

Clients*:* At the client level, data will be collected from enrolled client participants in all three counties. Due to the possibility of the COVID pandemic affecting public health staffing levels, estimates of total families enrolled over the course of the 30 months of the grant are minimums, and are as follows:

FY 20-21: a minimum of 50 families enrolled per county site

FY 21-22: a minimum of 100 families enrolled per county site

FY 22-23: a minimum of 100 families enrolled per county site

Minimum Total Families Enrolled over 30 months in all three counties: <u>750</u>

Data on these clients will be compared to data on a comparable subset of MediCal recipients (women in the same age group) in each county.

Staff: At the staff level, data will be collected from all Field Nursing team members:

Napa (1 Supervising PHN, 3 Home Visiting PHNs, 2 CHWs):   5

San Francisco (2 Supervising PHNs, 8 Home Visiting PHNs, 1 CHW): 11

<u>Sonoma (1 Supervising PHN, 5 Home Visiting PHNs, 1 CHW, 1 SW):   8</u>

                                    Total: 24

f. Describe the analytic methods or analysis plan.

Data will be monitored for achievement of the following program goals: numbers of clients reached, proportion of clients who receive ACEs conversations, proportion of clients who receive ACEs screening, and proportion of clients who receive each portion of the TIA-PHN Curriculum. These data will be compared across sites and will be used as discussion for highlighting challenges that sites face.

Every 6 months, data will be abstracted from each county's EHR for analysis and will be summarized in a report for review by the TIA- PHN team. Because data will be de-identified during the abstraction process, IRB approval will not be required for the process evaluation. These process/implementation data will support timely feedback to the team and will assist in the identification of areas for continuous quality improvement (QI). This includes improvement of direct delivery of services to clients, as well as staff training and supervision. In addition, if data are available, we will compare the proportion of adult TIA- PHN clients screened for ACEs to MediCal clients in each county.

Meeting notes from technical assistance and staff meetings, as well as all team quarterly meetings, will be reviewed to evaluate the overall implementation of the model, facilitators and barriers identified by the teams, and actions to address these barriers. These data will provide information about the feasibility of expanding the intervention into other public health systems, as well as information about important strategies for effective scale-up.

g. Describe how you will apply and disseminate the findings*.*
The San Francisco Home Visiting Consortium will collaborate with the UCSF evaluation team to engage in internal QI activities to build on the lessons learned into the current implementation and evaluation. The Plan-Do-Study-Act[52] framework will be used as part of the process evaluation to guide the 3 counties to implement real time changes to the TIA- PHN model as indicated.

Because the proposed project consists of scaling up the TIA- PHN model in Sonoma County, and replicating it in Napa and San Francisco counties, dissemination of best practices and lessons learned can directly inform scale-up and replication by public health nurses in other counties around the state. This external dissemination will include, but is not limited to, tools and materials that can be used by other field nursing teams that may want to implement this model in their own settings and assess impact. The team will also disseminate findings to partner stakeholders in CA including ACEs Aware, and California Department of Public Health- California Home Visiting Program, and ACEs Connection.

2.   Outcome Evaluation Plan
Please describe the plan to evaluate the outcomes that may be impacted by the proposed innovation. This part of the evaluation should address changes for innovation beneficiaries and, depending on the intervention goals and stage of development of the intervention, may be restricted to only intermediate outcomes such as changes in knowledge, skills, attitudes and/or behaviors.For both 1) the process/implementation evaluation and 2) the outcomes evaluation, please provide the following information. Provide this information separately for the two different types of evaluation:

a. Define the evaluation questions(s)
The outcome evaluation seeks to answer three medium-term outcome questions.

1.   Does implementation of the proposed program result in improved family health?

2.   Is there a difference in Healthcare Effectiveness Data and Information Set (HEDIS) measures between clients who received the TIA- PHN and comparable (gender and age) MediCal recipients in the three counties?

3.   What is participants' experience of the TIA PHN model and the ACEs conversation?

b. Specify the evaluation design.
The evaluation team will employ multiple methods to answer the outcomes evaluation questions, which all focus on client-level data:

Question 1: A quasi-experimental design will be used, comparing family health status data at program intake and exit, and examining change over time.

Question 2: A quasi-experimental design will be used, comparing HEDIS measures of participants who receive the TIA- PHN innovation (treated) to comparable MediCal

clients in the same county with similar age/gender who do not receive the TIA- PHN intervention (untreated). These groups for comparison are not randomized.

Question 3: In-depth qualitative interviews will be conducted with a subset of program participants to explore their experiences of participating in the TIA- PHN model and of the ACEs conversations with TIA- PHN staff. Because such data collection is considered human subjects research, Institutional Review Board approval will be obtained from UCSF's Human Research Protection Program for this portion of the evaluation (FWA00000068). The UCSF evaluation team has extensive experience conducting human subjects research and protecting privacy and confidentiality of research participants.

c. Describe data collection methods. If the data will be collected through the data system described in item 6 in the Implementation section above, please restate any information pertinent to the evaluation.

Questions 1 and 2: The team will make use of existing, standardized data collection processes to reduce the data collection and management burden on staff members in the three counties. Standardized measures (described below) will come from data that are routinely collected by Field Nurses and documented in each county's HER/abase, including intake/exit interviews with clients. HEDIS comparison data from MediCal will be obtained through the MediCal administrator in each county.

Question 3: The evaluation team will conduct qualitative interviews with a subset of adult clients (10-15 per county) to examine their experience of the program and of the ACEs conversations, as well as strengths and weaknesses of the overall program. These qualitative data will be part of documenting the impact of the project from the client perspective. Interviews are expected to last 30-45 minutes and will be audio recorded and transcribed. The UCSF evaluation team will use thematic analysis to interpret data from these interviews. Dr. Dawson-Rose has extensive experience in qualitative research and will oversee these efforts.

d. Describe assessment tools and instruments to be used, if any. If this draws from fidelity measures described as routine program support in item 7 in the preceding Implementation Plan section, please restate any information pertinent to the evaluation.

The measures involved in this evaluation reflect both short and medium-term outcomes. The following tools are employed throughout the family's enrollment, which is an average of six months. All instruments are available in both English and Spanish. (**See Table 1** for more detail).

    1. Adverse Childhood Experiences (ACEs) Questionnaire.[53-54] This 10-item instrument measures a person's experiences of abuse, neglect, or household dysfunction before the age of 18. It has proven reliability and validity in adult populations. Field Nurses will use the ACEs screening to assist parents in reflecting on how a traumatic personal history affects their current life circumstances and possibly their children's future outcomes. The questionnaire will be completed by clients or, if a

client is illiterate, can be read aloud while clients keep track of their scores. Field nurses will explain that responses can be kept private but that sharing their total score is useful for statistical purposes, leaving the option to disclose or not. Questionnaires will be left with the parents and the Field Nurses will document only the total score or "declined to share" in the electronic health record. The ACEs questionnaire will be introduced within the first few visits of the program and is not repeated. Though the TIA PHN team aims to have ACEs conversation with all participants, the ACEs questionnaire is optional. Clients who are unwilling to complete and/or share ACEs questionnaire scores with the PHN will be excluded from the sample. All client information will be deidentified prior to analysis and therefore subjects will not be at risk of a breach in confidentiality because of participation.

2. ACEs Understanding. This 5-item instrument was developed for the current program evaluation, based upon the teach-back strategy.[55] The purpose is to gather information on the client's understanding of what ACEs are, how ACEs affect health outcomes and child development, and how the program affects clients' attitudes toward ACEs, trauma, and resilience.

3. Edinburgh Postpartum Depression Scale (EPDS)[56-57] and **Personal Health Questionnaire (PHQ9)**[58-59] to measure depression. The 10-item EPDS instrument is used to screen for depression during pregnancy and up to 12 months postpartum and produces a positive or negative result. It has been found to have satisfactory sensitivity and specificity, and to be sensitive to change over time. The 9-item PHQ9 is used to screen male clients and female clients beyond 12 months postpartum for depression, providing a standard cut-off score to identify possible major depression. The instrument has been validated in adult populations. The Field Nurse will share positive scores with the PCP. The EPDS and the PHQ-9 are tools that are implemented throughout the program at the discretion of the PHN.

4. Ages & Stages Questionnaire (ASQ3).[60] (Steenis 2015). The ASQ3 is implemented to screen infants and children ages 1-66 months for potential developmental delays. The instrument has been validated and has moderate sensitivity and high specificity. The Field Nurse will share scores indicative of concern with the child's PCP.

5. Health Effectiveness Data and Information Set (HEDIS).[61] HEDIS indicators are routinely collected by Field Nurses and entered into the EHR and have been validated for use in clinical and community settings. The data set includes information on: Tdap in pregnancy, Prenatal care following enrollment in program, Postpartum exam completion, Postpartum uptake of contraceptive within 6 months, Health insurance, Linkage to Medical & Dental home, Child immunizations, Well-child checks, and Breastfeeding. HEDIS data will be compared to a similar MediCal population.

6. Resilience. Data will be extracted from the standardized medical and psychosocial assessment conducted by Field Nurses. This assessment includes six measures that are used as a proxy for the construct of resilience: Nutrition (WIC utilization, maternal diet, maternal prenatal vitamins); Sleep (hours of sleep, fatigue);

Exercise (30 minutes of activity per day); Mental Health (depression/EPDS/PHQ9, history of mental illness, current mental health concerns); Relationships (social support network, family functioning, family dynamic, interpersonal relationships). This health assessment is conducted with all clients during the initial PHN visit and is repeated upon exit from the program.

7. TIA PHN Model Experience. The UCSF evaluation team will develop a semi-structured qualitative interview guide in collaboration with the larger TIA PHN team. This interview guide will include questions and probes related to participants' experience of the program, with specific focus on the ACEs conversation and on strengths and weaknesses of the program.

e. As appropriate to the proposed methods, describe the number of estimated participants and/or sample size(s), sampling plan, and power calculation.
To answer Questions 1 and 2, data will be collected from enrolled client participants in all three counties. As described above (Process Evaluation Sample Size), this will be a minimum of 750 total families enrolled over 30 months in all three counties. To answer Question 3 regarding clients' experiences of participating in the TIA PHN model, the sample will be drawn from individuals who participated in the TIA PHN conversation across the three counties. The goal is to conduct 10-15 interviews per county for a total of up to 45 individual qualitative interviews. While data comparing selected measures at TIA PHN enrollment and exit will be conducted, a power analysis is not indicated[62].

f. Describe the analytic methods or analysis plan.
Descriptive statistics will be used to report demographics of TIA PHN and MediCal populations. Instruments to measure short- and medium-term outcomes will be scored and means will be analyzed. De-identified multi-site EHR data will be submitted to the UCSF evaluators through a secure data portal to be constructed and maintained by UCSF. UCSF will coordinate efforts to assure the privacy and confidentiality of data submitted, collected, and stored. UCSF will be responsible for monitoring and informing the three partner sites of data quality and completeness of submissions. Stata data analysis software will be used to run statistical analyses of quantitative data. Dedoose software will be used to manage qualitative data.

Question 1: Descriptive statistics and bivariate analyses (comparison of mean scores) will determine potential changes in measures from program intake to discharge (average length of time of TIA PHN is six months).

Question 2: Descriptive statistics and bivariate analyses will be used to compare selected HEDIS outcomes of the TIA PHN model participants to the MediCal population.

Question 3: Transcripts of in-depth qualitative interviews will be coded by the UCSF evaluation team. We will undertake a thematic analysis to identify themes related to participation in the TIA PHN model to the ACEs conversation (e.g., their experience, the meaning of the conversation in the context of their family and children), and to strengths and weaknesses of the program.

g. Describe how will you apply and disseminate the findings

Data collection and analyses related to the above outcomes will be utilized in a larger longitudinal evaluation to determine the program effect on disrupting intergenerational trauma within the study population and support the program aim to become evidence-based practice.

This mixed methods approach, which includes quantitative process and outcome data as well as qualitative data, will allow for triangulation of data sources to better understand the context of areas of improvement that are noted. The implementation report will be reviewed every 6 months and a summary report of the discussion with action plan (where relevant) will be created.

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