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Implementation of Trauma Informed Care in a Primary Care Setting Using the Adverse

Childhood Experience as a Screening Tool

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Table of Contents

Abstract

Background: The prevalence of trauma is widely unacknowledged in the primary care setting. Unfortunately, the injury that individuals sustained as children may continue to adversely affect their health as adults in various ways, including having risky health behaviors, early death, chronic health conditions, and low life potential. Prevention of trauma is crucial and can is achieved with consistent public health education. There are available treatments for childhood trauma, and the inclusion of primary care for screening is vital for quality care.

Purpose: The Adverse Childhood Experience (ACEs) is a screening tool that can be utilized to survey adult patients for childhood traumas.

Methods: This quality improvement project was conducted at a primary care clinic and started by assessing the staff member's current level of understanding of trauma informed care. The staff training was then customized to fit the needs of the staff. Trauma informed care was then implemented with patients with at least three visits to the clinic being screened using the ACEs tool. The patients that scored four or more were offered a higher level of care with a mental health provider, medication-assisted therapy, or both.

Results/Implications: Post survey analysis displayed that the instruction was successful based on the response by staff and implementation of TIC. Screened patients were amenable to treatment with mental health providers, but access to these providers in the local area was limited. The project's intent was met with the adequate addition of ACE as a screening tool in this primary care clinic.

Keywords: trauma informed care, adverse childhood experiences, primary care

Introduction

Trauma is a subject that is rarely discussed in primary care. Injury stems from either a single event or a set of circumstances experienced by an individual as physically or emotionally harmful, with lasting adverse effects on the individual's functioning, mental, physical and social well-being (Substance Abuse and Mental Health Services Administration, [SAMHSA], 2014 p. 7). This definition of trauma is aall-encompassing and as such, provides a proper understanding of the depths and far reaches of psychological trauma.

Background

The issue of trauma and its long-term effect has not been satisfactorily addressed in primary care settings. Primary care can be the appropriate place for the identification of injury, and healing can be initiated. The Centers for Disease Control and Prevention (CDC), in association with Kaiser Permanente, conducted the Adverse Childhood Experiences (ACE) study from 1995-1997, enrolling over 17,000 participants (Felitti et al., 1998). This study established the role of exposure to adverse childhood experiences and its negative effect in adulthood. The results showcased the commonality of childhood trauma. The trauma ranged from exposures to childhood emotional, physical, sexual abuse and household dysfunction; 61 percent of the adults surveyed had at least one ACE (CDC, 2016). The trauma sustained can continue to have effects into adulthood and maybe evident by the presence of health disorders such as ischemic heart disease, chronic lung disease, cancer, and liver disease.

The higher a patient score on the ACE screening Appendix A, the higher the chance that the patient will have a chronic health condition (Felitti et al. 1998). The (CDC 2016) estimates the lifetime costs associated with child maltreatment at $124 billion. Life expectancy for people with six or more ACEs is, on average, 20 years shorter than those without ACEs.

Problem statement

There is a risk of long-term health effects from trauma and adverse experiences during childhood that is indicated by poor physical and psychological health outcomes in adulthood. The injury is evidenced by higher rates of cardiac conditions, cancers, and mental illnesses in those with high ACE scores. A lack of screening and early intervention in primary care is a problem that could be solved by using an evidence-based tool to screen for ACE in primary care.

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Literature Review

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The Cumulative Index of Nursing and Allied Health Literature (CINAHL) was used to conduct a review of the literature using the following search criteria, "*trauma informed care*," "*adverse childhood experience,*" and "*primary care*." The search yielded three results. Inclusion criteria were articles with trauma informed approach in a primary care setting. Studies done in a pediatric setting or a mental health clinic were excluded. Two of the materials were studies done in a primary care setting while the third was done in a recovery center; this excluded the last article from inclusion in the search. Search results were modified to *trauma informed care and primary care,* which yielded 23 items, of which two were selected due to relevancy.

In Pubmed, the search terms used were "*adverse childhood experiences*" and "*primary care,"* which yielded 150 search results, using the same exclusion and inclusion criteria as above; three articles were selected. With Google Scholar using the search terms *"adverse childhood experiences and primary care*" yielded 534,00 articles. The rules were modified only to include items from 2019, which produced 9,720 results. The inclusion and exclusion criteria remained the same, and three subjects were chosen based on a quick synopsis of the abstracts or accessibility. In total, ten articles were selected for this paper due to their overall relevancy.

The articles selected for this paper were all peer-reviewed and per the four principles of care for trauma informed care (SAMHSA, 2014), includes having the provider:

- realize the prevalence of traumatic events and the corresponding impact of trauma,

- recognize the signs and symptoms of injury,

- respond by integrating knowledge concerning trauma into policies, procedures and practices, and

- resist re-traumatizing the patient (SAMHSA, 2014).

The fundamental principles of trauma informed care are: safety, trustworthiness and transparency, peer support, collaboration and mutuality, empowerment, voice and choice, cultural, historical, and gender issues (SAMHSA, 2014). Safety – both staff and patients need to feel physically and mentally safe in the space they occupy. Trustworthiness and transparency – the setting has to ensure that information is handled in a manner that elicits trust among patients and staff. Peer support – use of other "trauma survivors," is vital for initiating trust and build on patient and staff collaboration. Collaboration and mutuality – all staff members of an organization need to understand their roles in the trauma informed approach. Empowerment, voice, and choice – Among staff and patients', strengths and experiences are leveraged and encouraged in a manner that promotes recovery. Cultural, historical, and gender issues – the organization responds to past trauma in a way that eliminates biases in cultural, historical, and gender issues.

The Appraisal of Guidelines for Research and Evaluation II AGREE Reporting Checklist, 2017, (Brouwers et al., 2017) was used to assess the quality guidelines used in the literature review. SAMHSA's Concept of Trauma and Guidance for a Trauma-Informed Approach guideline was last updated in July 2014. The level of the evidence and the guide is based on is

Level VII (Melnyk & Fineoult-Overholt, 2011). The proof of best practice for the trauma informed approach in primary care is to screen patients for injury and give appropriate referrals for treatment.

According to the Agency for Healthcare Research and Quality [AHRQ] (2016), there are six domains of healthcare quality and aims for the health care system, which is safe, effective, patient-centered, timely, efficient, and equitable. Patient-centered is a domain of healthcare quality, which is providing care that is respectful and responsive to individual patient preferences, needs, and values and ensures that patient values guide all clinical decisions. The trauma informed approach is in the effectiveness domain because services are based on scientific knowledge to all patients that could potentially benefit, and the reduction of services that might not be beneficial.

Trauma Informed Approach

The following articles support the implementation of a trauma informed approach in the primary care setting. The level of evidence by Melnyk and Fineoult-Overholt, (2011), was used to measure the parameters of the studies and applicability to patient care. According to Purkey, Patel, Beckett, and Mathieu, 2018) (Level V), participants in their research were incessant users of medical services, and their primary care providers had never inquired about their exposure to ACE. The participants believed that their trauma history should be incorporated into their care. Trauma Informed Care (TIC) approach can enhance the experience of the patients. Purkey et al. (2018) concluded that physicians needed to learn to inquire about trauma in the history of their patients and develop a comprehensive approach to patients with a history of trauma. The study conducted by Choi, (2019), (Level VI), the author validated that children seeking care in a primary care clinic can be screened with the Traumatic Events Screening Inventory (TESI). TESI

can be instrumental in predicting a need for behavioral health services due to the negative impact

of ACEs.

In 2017, Pardee, Kuzma, Dahlem, Boucher, and Darling-Fisher, (Level VII) suggested

primary care nurse practitioners are in the premium position to implement the ACEs as a

screening tool through trauma-informed nursing care. The authors concluded that efficient

screening tools for prior, present, and ongoing trauma of youth in primary care that scored high

of the ACE are non-existent. Once the instrument is developed, it needs to be one that can be

used in the time-restricted setting of primary care. By assessing this population early, life-long

negative impacts of the ACEs can be mitigated appropriately. In the study by Goldstein,

Topitzes, Birstler, and Brown, (2019), (level V), they discovered that performing a two-session

motivation treatment for ACEs is feasible in ethnic minorities receiving treatment in primary

care. And could be instrumental in helping patients develop healthy coping strategies, with

positive long-term effects.

In the study by Green et al., (2016), (Level II), the authors demonstrated that after

training providers on the trauma informed approach, patients in primary care rated the providers

higher concerning partnership issues. They also noted that when a patient had a history of trauma

and post-traumatic stress disorder, they are prone to reporting non-favorable provider

interactions. They tend not to see their primary care providers as partners with them on their

journey to wellness. Primary care providers were found to be uncertain about how to respond to

the knowledge of trauma history in their patients. With proper training, primary care providers

can react appropriately to the needs of their patients - especially those that have a history of

trauma.

In the study by Kalmakis, Chiodo, Kent and Meyer, (2019), the authors discovered that nursing students with post-traumatic stress disorder (PTSD) after experiencing ACE eventually perceived higher levels of stress later in life. PTSD can lead to chronic conditions similar to those in the original ACE study. These researchers suggested that healthcare providers were exposed to ACEs themselves, with approximately 56.3 percent of the participants having at least two ACEs. Pletcher, O'Connor, Swift-Taylor, and DallaPiazza (2019), discovered that first-year medical students reported small group case-based discussion afforded the students the best learning environment. The meeting is a means of incorporating ACE into clinical care and the use of a multidisciplinary approach to patient care.

The strategic group of Machtinger, Cuca, Khanna, Rose and Kimberg, (2015), (Level VII), developed a patient-centered approach for trauma informed primary care which included screening, response, foundation and environment. The authors developed four components on how to approach a trauma informed primary care: environment, screening, intervention, and organizational foundation. Environment, the clinical space should provide privacy, community, and confidentiality. Screening, universally screen all patients for trauma. Response, the level of response from the provider after disclosure of injury, is crucial for continued trust. Organizational foundation, staff members must have buy-in into the program for a successful implementation.

In the study by Gaska and Kimerling (2018) (Level V), they advocated for the development of "universal trauma precautions" and continuous education of providers as to patient-centered communication concerning TIC in women veterans. Hauser, Brahler, Schmutzer and Glaesmer (2019), sort for a relationship between ACE and chronic noncancer pain and discovered that the presence of ACE does not correlate to chronic noncancer pain. Resiliency

does not have any protective factors against developing chronic pain noncancer pain, according to the study. The Literature review is available in Appendix B.

<div align="center">**Theoretical Framework/Evidence-Based Practice Model**</div>

The Sanctuary Model is the most precise theoretical framework for the implementation of trauma informed care in a primary care setting using the ACEs because it is based on the premise of trauma informed care and responsiveness. This model aims to educate individuals and organizations on fundamental proficiency for beginning and to maintain peaceful existence and systems and continue to preserve tranquil existence for all humanity (Bloom, 2019). The Sanctuary model has four pillars, which are all scientifically based: shared knowledge, shared values, shared language, and shared practice. The shared knowledge base is the first pillar of Sanctuary rooted in sharing knowledge far and wide on fundamental values and guiding principles to assist in deconflicting ideas.

The first pillar is considered the phase for getting "buy-in" from staff members, and foundational for the project. In component two: shared values are the seven sanctuary commitments, which are growth and change, nonviolence, emotional intelligence, social learning, open communication, social responsibility, and democracy. By accepting to be trained in trauma informed care, staff members committed to the sanctuary commitments. Pillar three: Shared language, the framework is conceptualized in Safety, Emotions, Loss, and Future (S.E.L.F). The actual value of this pillar cannot be fully realized in the short span of this project. The S for safety is in effect and as per the principles of trauma informed care. Finally, pillar four: Shared Practice, this is the sanctuary tool kit that encompasses practical skills to assist the individual and community in dealing with stressful situations (Bloom, 2019) effectively. The

four pillars were constructed to support all the healthcare providers in being grounded in a model of trauma informed care and possess a commonality.

Goals and Objectives

Goals and objectives for the program implementation were discussed and approved by the executive director of the clinic. The DNP student accomplished the following:

Goal I: Obtained staff buy-in to the trauma informed care approach. Assessed staff's level of trauma informed care using a questionnaire, distributed via email to all staff members, volunteers, and students Appendix C. This was completed in the first month, October 2019.

Objective 1: Developed appropriate questions to ask staff members by using surveys developed by the APRN student and sent via email to all staff members. This objective gave an understanding of staff knowledge of trauma informed care.

Objective 2: Administered staff survey and then collate answers.

Outcome – Staff increased their level of understanding of TIC, which was measured by an increase in the level of knowledge as reported by staff and obtained using qualitative analysis.

Goal II: Trained staff in the classroom environment from available literature to ensure uniformity of information provided in the trauma informed approach and secured a clear understanding of roles in the implementation of trauma informed care—goal II, completed in November 2019.

Objective 1: DNP student-developed TIC training material using information from SAMHSA and the National Council for Behavioral Health websites.

Objective 2: Trained staff, volunteers, and students in the trauma informed approach, with coordination from the director, set aside time for at least an hour and a half to ensure time for training and questions and answer session.

Outcome – All stakeholders were trained uniformly and measured by reports from post-course assessments, quantitative analysis.

Goal III: Implemented use of the ACE for patients with at least three visits to the project site. The ACE screening is administered with the intake paperwork. Patients tracked via medical records, implemented in November 2019.

Objective 1: Educate patients before screening, completed before they visited with the provider, the screenings are given to the patients by health technicians and nurses.

Objective 2: Screened patients by giving hard copies of the ACEs to patients to fill out. The patients were identified at morning huddles.

Objective 3: Identified affected patients (ACE score of four or higher), provider and offered referral to the appropriate level of care and referred patients if consented.

Outcome – Program maintenance by clinic staff.

Goal IV: Evaluation. Program evaluation at three months, March 2020.

Objective 1: Requested feedback from staff members to understand the effectiveness of the program.

Objective 2: Identified areas that need readjustment and continuity of the program.

Outcome – Measured program progress and adjusted as needed for continuity of the program, as evidenced by the completed data tool.

Project Site and Population

The project site was a nonprofit organization that provides healthcare to uninsured and medically underserved adult residents of the Southeastern part of the United States with assistance from volunteer providers. The site is located in an area with a population of 207,269. Of the community, 15.7% are 65 years or over, 49.3% of the people are females, 22.2% of the people are under 18 years of age, 91.6% of the population are high school graduates or higher, 13.5% of the people are without health insurance, and 10.5% of the people are in poverty. Nearly 58% of the population are in the civilian labor force (United States Census Bureau, 2017). The clinic had over 4,300 encounters; in 2017, 15% of the patients seen at the project site were for mental health counseling. Before the implementation of this project, the site did not use the trauma informed approach, and due to the demographics of the population that is served, implementing a trauma informed care in primary care is prudent.

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Methods

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The method for this program was a combination of the CDC's Guide to Program Evaluation in Public Health (CDC, 2012), and this author's evaluation design was observation, with a prospective orientation.

Step 1: Engage Stakeholders

The stakeholders were identified as the nurses since they are the front line personnel collecting the results of the ACEs. They might have to read the questions to patients that were illiterate or blind. Each of the stakeholders have a peculiar role in the implementation process. Nurses and providers are working collaboratively with the project site's executive director on increasing access to mental health care for the primary care clinic.

A four-question survey was sent out to all stakeholders to assess the current level of understanding of the trauma informed care (Appendix C). Planning sessions occurred with the executive director of the clinic, and questions were disseminated to staff members, and results collated.

Step 2: Description of Program

The purpose of this program was to give health care providers a screening tool to assist in the identification of historical trauma. It was targeted at staff of the primary care clinic that is examining patients and patients that are willing to seek a higher level of care. The primary care clinic actively monitors patients that have built a rapport with the free clinic.

The desired outcome is to affect the quality of life of patients that were willing to seek a higher level of care. Educated patients on possible care options and referred to mental health professionals if needed. Before the screening, patients were advised on completing the selection, a nurse/medical technician is available to answer questions regarding the testing. The provider is aware of the patient's willingness to complete the ACEs questionnaire, know scores, and ready to answer and possible questions before consultation with the patient.

The expected outputs were clinical care improvement, a higher level of collaboration between patients and providers, facilitation of healthy recovery, and cultural sensitivity. The primary issue for nursing staff was the extra time administering the questionnaire, educating the patient, and referring to a higher level of care. All other components such as privacy for patients, materials for screening are detailed in the cost analysis in Appendix G. The program is now in the maintenance stage of achievement with patients still being screened with the ACEs.

Step 3: Implementation

The program implementation was done in phases.

Phase One - accessed the level of understanding of staff members on the trauma

informed care model.

Phase Two - reviewed literature and tailored training of staff.

Phase Three - developed goals and objectives to include policy enactment.

Phase Four - implemented the trauma informed care model,

Phase Five - evaluated the progress of the project

Phase Six - compiled and presented results.

ACEs screening was implemented in a manner to ensure that the six principles of trauma

informed care from SAMHSA were incorporated into the program.

Step 4: Evaluation

The purpose of the evaluation was to determine the impact of implementing trauma

informed care in a primary care setting versus a behavioral health care setting and its overall

effect on a patient's health outcomes. The program was monitored starting when the screening

was completed until partners saw the patient in the community. All patients that were screened

with the ACEs were tracked in the Electronic Health Record (EHR). Initial evaluation of the

program was conducted at the three-month mark, to ensure the program was progressing as

anticipated and improve any processes that have been in place.

Step 5: Gather credible evidence

The evidence is based on recommendations from SAMHSA and the National Council for

Behavioral Health. The initial patients to be screened were the veteran patients with at least three

visits to the clinic. The pre-assessment data strongly suggests that training all staff was needed,

with an internal consistency of 0.89. The post-assessment data for training was overwhelmingly

positive with all staff members understanding TIC and their role in the program. Providers have

been referring patients to a higher level of care as needed.

Measurement Tool

The Logic Model Appendix E was used for program evaluation, which has three main

parts: inputs, outputs, and outcomes (AHRQ, 2014). Ensuring that questions were

understandable to all staff members yet short enough to ensure that the staff did not lose focus

helped with the reliability.

Data Collection

Data were collected at three points in the project to meet goals and objects. Goal one

assessed the staff's current knowledge of trauma informed care. Goal two assessed the staff's

level of understanding after training. Goal four evaluated the number of patients with at least

three visits that were screened with ACEs. Survey Monkey was used to collect responses, and an

Excel Spreadsheet was used to organize the data. Two data sets were collected, the pre-survey

data from 15 staff members, categorized as permanent, volunteer and student. Each question on

the pre- and post-survey was coded as one for *yes* and two for *no*. A data tool was used to

measure compliance with screening located in Appendix F.

Ethical Consideration/Protection of Human Subjects

The University of Massachusetts, Amherst (UMass) Internal Review Board (IRB)

approval was obtained prior to initiating the DNP Project. The official IRB Determination Form

was submitted as soon as the proposal is approved. Trauma informed care is a model of care that

has been established in mental health clinics, psychiatry inpatient, but the hub of patient care,

which is primary care, has not been involved in the scope of trauma informed care. This DNP

project was done as part of a process that the primary care clinic was in the process of starting.

All participants were protected by the Health Insurance Portability and Accountability Act of

1996 (HIPAA),which guarantees protection of patient's private health information. Adult patients

of the clinic are educated on the ACE screening and have the option of filling out the screening

or can decline.

The *Standards of Care* for the primary care office were followed by the practice. The

results of the ACE screening for each patient have remained in the project sites' EHR. The only

information shared was how many patients took the survey in the project timeline and how many

continue treatment to a higher level of care. Potential patient identifiers were not collected as part

of the project. The overall risks to participants in the project were not different than any other

patient receiving standard primary care.

<p align="center">**Results**</p>

The 15 employees that took the survey were all permanent employees, volunteers, and

students. The employees included the receptionist, medical assistants, nurses, nurse practitioners,

physician assistants, and administrative staff. Pre-course evaluations were given to assess the

level of understanding. Post-course assessments were obtained to determine improvement in

knowledge of the program to be implemented.

Analysis includes the number of patients that took the screening, scores on the testing,

and if there was a follow-up on care for trauma such as mental health care, medication, a

combination of mental health care and medication use, and the presence of a chronic condition.

The mean level of knowledge of trauma informed care (TIC) of the employees is shown in Table

1.

Table 1. Staff members pre-training on Trauma Informed Care

Personnel		Level of TIC knowledge	
	n	*M*	*SD*
Staff	15	1.7	0.88

The results indicated a need for training with little variability in the answers given, especially the question regarding knowledge level among all respondents. All respondents answered *NO* to question two, "Have you been trained in trauma informed care?" The lack of trauma informed care knowledge was evident among all levels of employees. The pre-training survey also inquired if participants have ever heard of trauma informed care and only two employees have ever heard of it.

Table 2 illustrates the relationships between the variables in answers given by employees on the survey with more highly trained employees in medical fields having more knowledge.

Table 2 Staff members pre-training related to education level

Test		Chi-Square Tests	
	Value	*Df*	*Asymptotic Sig*
Pearson Chi-Square	2.019	2	0.364
Likelihood Ratio	2.783	2	0.249
N of valid cases	15		

On the survey questions one and two, *yes* was rated as one, and *no* was rated as two. Any answer to questions three and four were ranked as one, and no response was measured as two. The sample size was a consideration for choosing the Pearson Chi-Square test. Only two staff members knew TIC, and there was no evidence of formal training based on participant reports. As an initial step, training was organized to give basic knowledge of TIC to all staff members.

Training was completed in a classroom environment, using PowerPoint with an amalgamation of educational information from SAMHSA and CDC. The training session was completed in an hour and a half. Topics covered in training included the meaning of trauma, what trauma informed care was, meaning of ACEs and why TIC is essential, and the roles of employees in the implementation process. A sample of the ACE screening was handed out to each employee during the training for familiarization.

A post-training survey was conducted after TIC implementation, and 100% of staff members had improved knowledge of TIC. All employees were aware of their role in TIC implementation. One staff member reported that she had a patient that she had to read the questions on the survey. The patient spoke English but couldn't read it.

The adverse childhood experiences screening was only given to patients with at least three prior visits to the primary care clinic identified by the nursing staff. The receptionist advised the patient that they can fill out the ACEs while in the waiting area or could wait for the nursing staff if there are any questions concerning the questionnaire. A disclaimer is on the intake form advising the patient that their responses to ACEs are being collected and that no patient identifiers will be released.

Thirty-one patients were screened with the ACE between November 2019 and March 2020. Screening was completed before the provider saw the patient by the nurse or the medical assistant and results were given to the provider. The provider then discussed potential treatment options with the patient—the ACE scores tally all the different components of the screening.

The standard scores on ACEs ranges from zero to ten. Scores below four denotes that the individual is at risk for developing chronic conditions later in life. Scores from four and above means that the patient is at an increased risk for chronic conditions in adulthood, CDC, (2012).

When a patient scores four of higher, physical chronic conditions are more likely to be present, CDC, (2012). Almost half (14) of the 31 patients scored four on the screening, and their scores are presented in Table 3.

Table 3 ACEs Scores

ACE Score	ACE scores	
	%	*(n)*
1	3.22	1
2	0	0
3	3.22	1
4	45	14
5	9.67	3
6	12.9	4
7	12.9	4
8	3.22	1
9	9.67	3
10	0	0

As noted above, in table three, 29 of the 31 respondents scored four and above, and is significant and illustrates the commonality of ACEs. Of the 31 participants, three scored nine, which was the highest score in this population sample. Only two scored below four, which represents the lowest risk of developing chronic conditions based on their exposure to ACE.

This project was implemented successfully because staff members have continued to screen patients with the ACEs and have adapted the standard operating procedure that was developed by the author. Some variability was expected in the ACE scores, but the scores were

on the high side in this project. In the original ACE study had 61% of the population surveyed

had at least one ACE. Whereas in this project, all the patients surveyed had at least one ACE.

Table 4 below demonstrates a breakdown of the patients screened with ACEs from Nov

2019 to March 2020 by conditions that were present at the time of screening.

Table 4. Other factors present at time of screening

	Condition of patients during screening	
	M	*SD*
ACE score	5.2	1.9
Mental Health Care	0.19	0.4
Medication Adjustment	0.9	0.3
Mental health & Medical	0.06	0.2
Chronic Conditions	0.2	0.4

Note: This data only includes patients that consented to screening. The margin of error is .421.

The mean score on the ACEs for all patients was 5.2. Nothing was excluded; it was in the

standard range. Most of the patients had a high ACE score. The ACE score is centered, and the

data is approved. Six patients were involved in mental health care at the time of screening, and

only three patients were on medications for chronic conditions. There might be a more

significant issue of financial constraints, and the patients might not be able to afford their

medication. Of the thirty-one patients, only two were prescriptions for mental health and already

involved in mental health care. Seven patients had chronic conditions (non-mental health)

including high blood pressure, diabetes, and chronic obstructive pulmonary disease.

A detailed cost analysis of the program is in Appendix G. Of note is the absence of

construction costs. Each patient has the option of filling out the screening in the waiting area or

exam room. The waiting area was constructed to ensure patient privacy before project

implementation. Exam rooms in the clinic are situated in a manner that ensures patient privacy

and safety. For example, staff can leave the exam room door open if the patient requests without

their privacy being violated.

Discussion

Identification of trauma and its eventual treatment has always been and continues to be a

function of mental health. If screening for trauma can be adequately done by primary care, then a

wider net can be cast for testing, and hence more adult patients can potentially get treated for an

injury sustained while young. If treatment were implemented early enough, then chronic

conditions could be averted. If the patient already has chronic diseases, then possibly the

intensity can be reduced.

The project was initiated by measuring the staff's level of understanding. Training

provided was done to introduce the team to trauma informed care. Full staff participation was

achieved because time was set aside for the training to occur. The immense success of the staff

training was unexpected. The initial training demonstrated that staff members are open to

training on TIC and the future success of the program. More staff training will be needed in the

future to cement the concept of TIC. Gaska and Kimerling (2018), advocated for the

development of "universal trauma precautions" and continuous education of providers as to

patient-centered communication concerning TIC in women veterans. The care providers at the

clinical site have developed trauma precautions into the care given to each patient, which will

ultimately enhance communication with the patient population served.

From November 2019 to March 2020, a total of 31 patients were screened using the

ACEs. Of the 31 patients, 29 scored four or above, and 2 scored three or below. Seven had

chronic conditions (physical), and one consented to counseling. Eleven were clinically

depressed. Of the 11, 3 were being followed by a mental health clinic; two agreed to consult with

the in-house social worker. The mean score of 5.2 in the ACE scores connotes that for this

population of patients, ACEs are high, and the success of the training is beneficial in responding

to patient needs. The expectation was that more patients would have chronic conditions, but only

16 or 51% had significant physical and mental health. More patients did not consent to treatment

as expected, possibly due to time constraints on the patient's part to attend more appointments.

There are numerous studies to showcase the evidence that ACE influence overall

adulthood health. In the study by Iniguez and Stankowski (2016), all self-reported measures of

increased health risk and poor health outcomes are associated with increased ACE scores, and

emotional abuse was the most commonly reported ACE. Machtinger, Cuca, Khanna, Rose, and

Kimberg (2015), developed a patient-centered approach for trauma informed primary care,

which included screening, response, foundation, and environment. Four components were

designed on how to approach a trauma informed primary care. Environment—the project site

was in a setting that elicited trust from the patients. Screening—Patients were getting screened

once after at least three visits to the clinic. Response—the project site was ready to assist the

patient should the patient be interested in seeking further care. Organizational foundation—staff

members are driven to help patients in all ways; the screenings were not mandated. The clinical

space provided privacy, community, and confidentiality.

Rebbe, Nurius, Ahrens, and Courtney (2017) discovered that among youths aging out of

foster care, there was a relationship between social and economic marginalization, maltreatment,

and placement in foster care. ACE was present, and involved adversity youths were less likely to

be black and more likely to be white, and they reported homelessness and depressive symptoms.

The study by Gouin, Caldwell, Woods, Malarkey, and Malarkey (2017), suggests that clustering resources across multiple resiliency domains may buffer the association between adverse childhood events and adulthood systemic inflammation. SAMHSA (2015) has started a program that discusses the Trauma Informed Approach and Trauma Specific Interventions. The interventions proposed have been on the tertiary level.

All the pillars of the Sanctuary model were applied succinctly to this project because knowledge of TIC was not only concentrated with medical providers; all staff members were trained with the same material. The plan was foundationally sound because, at all levels of interaction with the patient, TIC knowledge is in use. The staff shared the same values in caring for patients by attending the training and committed to screening patients universally. The team have a shared language for screening and are all practicing TIC. The sanctuary model is evident from the receptionist that greets and welcomes the patient to the provider that goes over the patient's plan of care; all understand how prevalent ACE is and how to assist the patient. ACE is rampant, as evident with the population from this project.

The limitations of this project was the time constraints and the small subject size. If more patients were screened, then possibly, the outcome could be different. The time for the project was short, and more patients would've been tested and perhaps a more diverse sample size. The project did not differentiate between race, age, or gender of the patients. This project did not assess patient's resiliency, which could explain why the percentage of patients with chronic conditions were low.

This project proves that knowledge of TIC among health care providers is lacking, and training is needed. The results of this project demonstrate health care providers can be trained

successfully to screen for ACE and refer appropriately. The project also indicates that TIC can be implemented in a primary care clinic with the buy-in of staff members.

Setting Facilitators and Barriers

The primary facilitator was the project sites' leadership's total investment in the project and individual staff member's commitment to the success of this project. The project site was primed for the addition of the ACE screening because their model of practice is shifting towards the primary medical home model.

Some unanticipated barriers to full implementation existed in the initial phase of the project. This author had anticipated that a lack of trust could have been a barrier, but an employee level of confidence in administering the screening was an initial barrier. The nursing staff had low levels of confidence in delivering the screening; hence they were not completing the testing. A second educational session was held with just the nursing staff, and this forum was used to evaluate and adjust implementation accordingly. From this forum, it was decided that during chart reviews, the patients that need screenings should be selected and discussed at morning staff huddles before patient visits.

Access to behavioral health professionals was a barrier that was not fully anticipated. The project site has a partnership with a behavioral medicine center in the local area. Unfortunately, the allotted appointment times were reduced for the site, which limited access to behavioral health services. For patients that were willing to seek a higher level of care, this was a significant barrier. The site was only able to get two hours per week from the behavioral health center through telehealth for all patients. Telemedicine was useful in many ways because the patient was able to attend behavioral health in the primary care provider's office, a space that they trust.

Conclusion

The concept of introducing trauma informed care in the primary care setting is a relatively new idea, and one that is starting to gather momentum. If this model can be implemented in its full totality, then the care of the average primary care patient will be exponentially better because the patient is heard and understood, there is value-added to the attention given to the patient. Health care for each individual can be maximized; the full spectrum of the possibilities for the attention of the patient is realized.

An essential part of the project was leveraging the positive attribute of willingness of staff to enhance daily interactions with their patient population. Overall this quality improvement project was a success that can be possibly replicated in other primary care clinics. The adverse childhood experiences that the patient has been holding on to can be acknowledged, and proper professional health care can be afforded to the patient if the patient chooses to pursue further treatment. Health care professionals will be mindful of unintended adverse effects that they might be having on the patient.

References

Agency for Healthcare Research and Quality (AHRQ) (2016). The Six Domains of Health Care

Quality. Retrieved from https://www.ahrq.gov/professionals/quality-patient-

safety/talkingquality/create/sixdomains.html

Agency for Healthcare Research and Quality. (2014). A Guide to Real-World Evaluations of

Primary Care Interventions: Some Practical Advice. Retrieved from

https://pcmh.ahrq.gov/page/pcmh-evaluation-guide#secI

Bloom, S. L. (2019). The Sanctuary Model. Retrieved from http://sanctuaryweb.com/Home.aspx

Brouwers, M. C., Kho, M. E., Browman, G. P., Burgers, J. S., Cluzeau, F., Feder, G., . . .

Zitzelsberger, L. (2017). AGREE II Instrument: The AGREE Next Steps Consortium,

May 2009. Retrieved from https://www.agreetrust.org/wp-

content/uploads/2017/12/AGREE-II-Users-Manual-and-23-item-Instrument-2009-

Update-2017.pdf

Centers for Disease Prevention and Control (2012). Program Evaluation for Public Health

Programs: A Self-Study Guide. Retrieved from

https://www.cdc.gov/eval/guide/index.htm

Centers for Disease Prevention and Control. (2016). Adverse Childhood Experiences: Looking at

How ACEs Affect Our Lives and Society. Retrieved from

https://vetoviolence.cdc.gov/apps/phl/resource_center_infographic.html

Centers for Disease Prevention and Control. (2016) BRFSS Adverse Childhood Experience

(ACE) Module. Retrieved from

https://www.cdc.gov/violenceprevention/acestudy/pdf/BRFSS_Adverse_Module.pdf

Choi, K. R. (2019). Validation of the Traumatic Events Screening Inventory for

ACEs. *Pediatrics*, *143*(4), 1–10. https://doi-

org.silk.library.umass.edu/10.1542/peds.2018-2546

Felitti, V.J., Anda, R. F., Nordenberg, D., Williamson, D.F., Spitz, A. M., Edwards, V., Koss, M,

P., and Marks, J, S. (1998). Relationship of Childhood Abuse and Household

Dysfunction to Many of the Leading Causes of Death in Adults: The Adverse Childhood

Experiences (ACE) Study. *American Journal of Preventive Medicine.*

doi:10.1016/S0749-3797(98)00017-8.

Gaska, K. A., Kimerling, R. (2018) Patterns of Adverse Experiences and Health Outcomes

Among Women Veterans. Retrieved from https://www-sciencedirect-

com.silk.library.umass.edu/science/article/pii/S0749379718321287

Green, B. L., Saunders, P. A., Power, E., Dass-Brailsford, P., Schelbert, K. B., Giller, E., …

Mete, M. (2016). Trauma-Informed Medical Care: Patient Response to a Primary Care

Provider Communication Training. *Journal of Loss & Trauma*, *21*(2), 147–159.

https://doi-org.silk.library.umass.edu/10.1080/15325024.2015.1084854

Goldstein, E., Topitzes, J., Birstle, J., & Brown, R. L. (2019). Addressing adverse childhood

experiences and health risk behaviors among low-income, Black primary care patients:

Testing feasibility of a motivation-based intervention. Retrieved from https://www-

sciencedirect-com.silk.library.umass.edu/science/article/pii/S0163834318303189

Gouin, J., Caldwell, W., Woods, R., Malarkey, W., & Malarkey, W. B. (2017). Resilience

Resources Moderate the Association of Adverse Childhood Experiences with Adulthood

Inflammation. *Annals of Behavioral Medicine*, *51*(5), 782-786. doi:10.1007/s12160-017-

9891-3

Hauser, W., Brahler, E., Schmutzer, G., Glaesmer, H. (2018). The association of adverse

childhood experiences and resilience with chronic noncancer pain in the German adult

population – A cross-sectional survey. Retrieved from

https://onlinelibrary.wiley.com/doi/abs/10.1002/ejp.1329

Iniguez, K. C., & Stankowski, R. V. (2016). Adverse Childhood Experiences and Health in

    Adulthood in a Rural Population-Based Sample. *Clinical Medicine & Research*, *14*(3/4),

    126-137. doi:10.3121/cmr.2016.1306

Kaiser Family Foundation. (2017). Health Costs. Retrieved from

    https://www.kff.org/search/?s=&fs=search&orderby=&tab=&layout=&facets[start_date]

    =&facets[end_date]=&facets[category][]=health-costs

Kalmakis, K. A., Chiodo, L. M., Kent, N., Meyer, J. S. (2019). Adverse Childhood Experiences,

    Post-Traumatic Stress Disorder Symptoms, and Self-Reported Stress Among Traditional

    and Nontraditional College Students. Retrieved from

    https://www.tandfonline.com/doi/abs/10.1080/07448481.2019.1577860

Machtinger, E. L., Cuca, Y. P., Khanna, N., Rose, C. D., & Kimberg, L. S. (2015). From

    Treatment to Healing: The Promise of Trauma-Informed Primary Care. *Women's Health*

    Issues, *25*(3), 193–197. https://doi-org.silk.library.umass.edu/10.1016/j.whi.2015.03.008

Melnyk, B. M., Fineout-Overhold, E. (2011). Evidence-Based Practice in Nursing and

    Healthcare: A Guide to Best Practice. 2nd Edition. Retrieved from

    http://file.zums.ac.ir/ebook/208-Evidence-

    Based%20Practice%20in%20Nursing%20&%20Healthcare%20-

    %20A%20Guide%20to%20Best%20Practice,%20Second%20Edition-Be.pdf

Pardee, M., Kuzma, E., Dahlem, C. H. (Gina) Y., Boucher, N., & Darling-Fisher, C. S. (2017).

    Current State of Screening High-ACE Youth and Emerging Adults in Primary

    Care. *Journal of the American Association of Nurse Practitioners*, *29*(12), 716–724.

    https://doi-org.silk.library.umass.edu/10.1002/2327-6924.12531

Pletcher, B. A., O'Connor, M., Swift-Taylor, M. E., & DallaPiazza, M. (2019). Adverse

      Childhood Experiences: A Case-Based Workshop Introducing Medical Students to

      Trauma-Informed Care. *MedEdPORTAL : The Journal of Teaching and Learning*

      Resources, *15*, 10803. doi:10.15766/mep_2374-8265.10803

Purkey, E., Patel, R., Beckett, T., & Mathieu, F. (2018). Primary Care Experiences of Women

      with a History of Childhood Trauma and Chronic Disease: Trauma-Informed Care

      Approach. *Canadian Family Physician*, *64*(3), 204–211. Retrieved from

      http://silk.library.umass.edu/login?url=http://search.ebscohost.com/login.aspx?direct=tru

      e&db=ccm&AN=128585495&site=ehost-live&scope=site

Rebbe, R., Nurius, P. S., Ahrens, K. R., & Courtney, M. E. (2017). Adverse childhood

      experiences among youth aging out of foster care: A latent class analysis. *Children &*

      Youth Services Review, *74*108-116. doi:10.1016/j.childyouth.2017.02.004

Substance Abuse and Mental Health Services Administration. (2014). SAMHSA's Concept of

      Trauma and Guidance for a Trauma-Informed Approach. Retrieved from

      https://store.samhsa.gov/product/SMA14-4884?WT.mc_id=EB_20141008_SMA14-4884

Substance Abuse and Mental Health Services Administration (2015) Trauma Informed Care and

      Alternatives to Seclusion and Restraint. Retrieved from

      https://www.samhsa.gov/nctic/trauma-interventions

The National Council for Behavioral Health. (2015). Why Trauma Matters in Primary Care.

      Retrieved from https://www.thenationalcouncil.org/topics/trauma-informed-care/

The National Council for Behavioral Health. (2018). Bill Encouraging Trauma-Informed Care

      Introduced. Retrieved from https://www.thenationalcouncil.org/capitol-

      connector/2017/03/bill-encouraging-trauma-informed-care-introduced/

United States Census Bureau. (N.D). Okaloosa County, Florida. Retrieved from

https://www.census.gov/quickfacts/fact/table/okaloosacountyflorida#

Appendix A

BRFSS Adverse Childhood Experience (ACE) Module

Prologue: I'd like to ask you some questions about events that happened during your childhood. This information will allow us to better understand problems that may occur early in life, and may help others in the future. This is a sensitive topic, and some people may feel uncomfortable with these questions. At the end of this section, I will give you a phone number for an organization that can provide information and referral for these issues. Please keep in mind that you can ask me to skip any questions you do not want to answer. All questions refer to the time period before you were 18 years of age. Now, looking back before you were 18 years of age---.

1. Did you live with anyone who was depressed, mentally ill, or suicidal?

2. Did you live with anyone who was a problem drinker or alcoholic?

3. Did you live with anyone who used illegal street drugs or who abused prescription medications?
4. Did you live with anyone who served time or was sentenced to serve time in a prison, jail, or other correctional facility?

5. Were your parents separated or divorced?

6. How often did your parents or adults in your home ever slap, hit, kick, punch or beat each other up?

7. Before age 18, how often did a parent or adult in your home ever hit, beat, kick, or physically hurt you in any way? Do not include spanking. Would you say—

8. How often did a parent or adult in your home ever swear at you, insult you, or put you down?

9. How often did anyone at least 5 years older than you or an adult, ever touch you sexually?

10. How often did anyone at least 5 years older than you or an adult, try to make you touch sexually?

11. 1How often did anyone at least 5 years older than you or an adult, force you to have sex?

<div align="center">Response Options</div>

Questions 1-4	Question 5	Questions 6-11
1=Yes	1=Yes	1=Never
2=No	2=No	2=Once
7=DK/NS	8=Parents not married	3=More than once
9=Refused	7=DK/NS	7=DK/NS
	9=Refused	9=Refused

Appendix B

Literature Review

Citation	Sample and Location Research/Study was performed	Design	Outcomes/Results of the Intervention and/or objectives of the study	Strengths and Weaknesses	Evidence Level	Evidence Class
Purkey et al	26 women in a family health clinic,	Qualitative study	The objective of the study was to understand the	Strength: This study was done in a primary	V	I A

	Kingston, Ontario		primary care experiences of women who have a history of childhood trauma and chronic disease Participants were frequent users of health care services. Participants believed that their history of ACEs was essential to their health and that providers should ask about childhood experiences.	care facility, a setting, a new area of implementation of trauma informed care. Weakness: This study was only done on homogeneous women in terms of age that were high utilizers of the health care system and were willing to participate, might not be a true representative of the population at large since the		
Pardee et al	Six screening tools	Review	Review of current assessment tools used in assessing high-ACE youth and emerging adults in primary care. Clinically efficient tools for screening and assessment are lacking	Strengths: Current screening tools were critiqued, and new tool proposed. Weakness: This review suggested that nurse practitioners should be screening patients, but other healthcare professionals, such as registered nurses and health	VII	IVd

				technicians, can administer the screening.		
Green et al	Primary care providers, 30 in 4 sites, and 400 patients.	Randomized	Evaluate the feasibility of trauma, informed medical care and preliminary efficacy. Primary care providers were rated significantly higher after training	Strength: This study was done using pre and post-testing models to evaluate the effectiveness of the training rendered. Weakness: The sample size of primary care providers used in the study is small.	II	Ia
Machtinger, et al		Strategy group	Review the evidence linking trauma to health and provide practical guidance to clinicians.	Strength: Proposal of the framework for trauma informed primary care. Weakness: This strategic group only reviewed issues relating to women and not the entire population.	VII	IV
Choi et al	261 children in Chicago	Cross-sectional descriptive study	The objective was to validate the traumatic events screening inventor (TESI). 3 ACE groups were identified, high ACE, maltreatment and low ACE.	Strength: Large sample size is done in an area where the is the presence of violence. Weakness: ethical concerns about mapping by zip code	VI	1A
Goldstein et al	40 adult patients in Milwaukee, Wisconsin	Prospective cohort, experimental	To test the feasibility of implementing a two-session	Strength: the study was done on an ethnic	V	1

		(pre-post) design	intervention to address ACE	minority population Weakness: lack of a comparison group		
Gaska et al	>6,000, nationally	Data analysis	Examined distinct patters of adversity from childhood through military service and their relationships with adult health	Strength: the study was focused on women and the interaction of historical trauma and military experience Weakness: potential for bias for recalling past trauma	V	1A
Kalmakis et al	236 nursing students	Correlation design	Investigate the relationships between ACE, post-traumatic stress disorder and stress	Strength: sample size was sufficient Weakness: this study was done in subjects that were already experiencing stress and judgment and recall might be cloudy	III	1A
Pletcher et al	535 first-year medical students	Didactic Lecture	Educational objectives: learner should be able to describe how TIC can benefit patients	Strength: this lecture was given to medical students and needed to continue Weakness: the time allotted for the course was too short	VII	1
Hauser et al	2,425 adult German	Cross-sectional survey	Positive association of ACE with chronic	Strength: large sample size Weakness: multiple	IV	1

			noncancer pain (CNCP)	screeners were used, with a potential for human error		

Appendix C

Pre-training Survey

Name:

Current position:

Do you know what trauma informed care is?   YES   NO

Have you been trained in trauma informed care?   YES   NO

If yes, when?

If you answered NO to the above two questions, please STOP. Thank you for your time.

What do you believe to be your role in the trauma informed approach?

_____
_____
_____
_____

What are the main internal challenges to trauma informed approach?

_____
_____
_____
_____

Thank you for taking the time to fill out this survey.

Appendix D

Post-training Survey

Name:

Current position:

The instructor presented information on trauma informed care in an organized manner
YES   NO

The instructor has increased my knowledge of trauma informed care   YES   NO

The instructor was readily available during the trauma informed care class   YES   NO

The trauma informed care class was organized in a manner that helped me learn. YES   NO
After the class, do you have a better understanding of your role in the trauma informed
approach?

_____
_____
_____
_____

What areas of the course do you think can be improved?

_____
_____
_____
_____

Thank you for taking the time to fill out this survey.

Appendix E

LOGIC MODEL

Public Health Problem: Trauma Informed Care Protocol among staff and volunteers in a free clinic
Public Health Program Name: Trauma Informed Care Initiative
Public Health Population Target: Providers for the Uninsured adults
Public Health Pyramid Focus: Direct Health Care Services

Inputs Problems Sub-Problems	Outputs		Outcomes -- Impact		
	Activities	*Participation*	*Short*	*Medium*	*Long*
Program staff

Volunteers

Board of Directors

Local Resources

Time

Problem: Currently, there is no protocol for trauma informed care in the clinic. | Needs assessment among program staff

Create a timeline for implementation and tracking of trauma informed care

Implement evidence-based - protocols for trauma informed care

Educate all stakeholders on proper trauma informed care etiquette | Patients

Local resources | Patient safety

Increase identification of trauma

Patient empowerment | Clinical care improvement

Collaboration

Facilitate healthy recovery

Cultural sensitivity | Cohesive care among providers

Peer support

Increase trust inpatient and provider relationship |

Assumptions
The patient has to repeat the traumatizing experience to every provider providing care.

The (incident) trauma happened a long time ago, and the patient might have gotten over the event. |

External Factors
Patients might have lack of trust
Unhealthy coping ability

Appendix F

Data Tool

Table 1

Patient ID	Patient's Name	Staff that completed the screening	Encounter date	Questionnaire name	Total Score	Questionnaire type	Screening guidelines	Notes

APPENDIX G

Budget

Trauma Informed Care Implementation using the ACE

Below is year one project budget form, with budget justification.

Budget Form

Project Year 1

	Line Item Description	Grant Request	Matching Funds Applicant	Matching Funds Partners	Match Totals	Project Totals
1	Personnel	$555,536	$29,000	$57,909	$86,909	$642,445
2	Fringe	$166,660	$8,700	$17,373	$26,073	$192,733
3	Travel	$15,000				$15,000
4	Equipment					
5	Materials and Supplies	$9,800				$9,800
6	Contractual			$4,000		$4,000
7	Construction					
8	Other					
9	Total Direct Costs	$837,905	$37,700	$79,302	$112,982	$950,887
10	Indirect Costs	$164,572				$164,572
11	Total Costs	$1,002,477	$37,700	$79,302	$117,002	$1,119,479

Budget Justification:
1. Personnel	**$555,536**
Project Director	$102,500

Salary range for this location for a person with the required education and experience is $102,000 to $103, 000.

Assistant project director	$87,500

Salary range for this location for a person with the required education and experience is $75,000 to $100,000.

Administrative assistant	$51,177

Salary range for this location for a person with the required education and experience is $37, 354 to $65,000.

Medical Doctor	$165,325

Salary range for this location for a person with the required education and experience is $155,650 to $175,000.

Nurse	$59,227

Salary range for this location for a person with the required education and experience is $45,258 to $73,196.

Medical Assistant	$31,898

Salary range in our location for a person with the required education and
experience is $30,521 to $33,274.

Social worker	$57,909

Salary range in our location for a person with the required education and
experience is $55,410 to $60,408.

Personnel Total	$555,536
Applicant matching funds	$29,000
Maintenance 1 @ $29,000	
Personnel total (applicant matching funds)	$29,000
Partner matching funds	$57,909

Partner 1 – one person at 50% involvement with $57,909 = $28,955
Partner 2 – one person at 50% involvement with $57,909 = $28,955

Personnel total (partner matching funds)	$57,909
Personnel total matching funds	$86,909
2. Fringe	$166,660

Fringe rate = 30%
Fringe = 30% of $555,536

3. Travel	$15,000

This amount is for the travel, lodging, and meals

4. Materials and supplies	$9,800

Funds for purchase of materials and supplies to include:

Training materials	$1,500
Copy paper	$3,000
Toner	$5,000
Pens	$100
Clipboards	$200

5. Contractual services	$4,000

2 contractors at an average of $2,000 each
The evaluator will be a volunteer.

6. Total direct costs	$837,905

Total direct cost is the sum of line items 1 through 8

7. Indirect costs	$164,572

Indirect rate = 20%
Indirect costs = 20% of $822,861 (total direct cost)

8. Training stipend costs	$5,000
9. Total	$1,119,479

Total is the sum of line items 9 to 11.