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Tikesha L. Crump Date

Grant proposal to create a training program that connects caregivers of those suffering from opioid use disorder in the United States to resources that help improve their healthy days.

By

Tikesha L. Crump

Degree to be awarded: Master of Public Health

_____

Grant T. Baldwin, PhD, MPH
Thesis Committee Chair

_____

Michele Hickman, MSHRL
Thesis Field Advisor

Grant proposal to create a training program that connects caregivers of those suffering from opioid use disorder in the United States to resources that help improve their healthy days.

By

Tikesha L. Crump

B.S. Organizational Leadership

Pennsylvania State University

Thesis Committee Chair: Grant T. Baldwin, PhD, MPH

An abstract of a thesis submitted to the Faculty of the Rollins School of Public Health of Emory University in partial fulfillment of the requirements for the degree of Master of Public health in Prevention Science

2021

Abstract

Grant proposal to create a training program that connects caregivers of those suffering from opioid use disorder in the United States to resources that help improve their healthy days.

By Tikesha L. Crump

Opioid misuse and abuse is a serious problem in the United States. In 2019, more than 10 million people misused opioids. Responding to it has been difficult due to the multiplicity of its causes. Caregivers for those suffering from opioid use disorder (OUD) have been identified as an integral part of the recovery process. To maintain the important role that they play, caregiver quality of life must be investigated to provide the necessary physical, financial, and emotional support to their loved ones. This thesis seeks to evaluate caregiver burden and provide a training program that connects them to resources to improve their overall quality of life. The results of the literature review indicate that the caregiver burden is not defined in the context of OUD. Additional research on caregiver burden and health outcomes could further advance our ability to address the overall opioid crisis.

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Acknowledgements

First and foremost, I want to thank God for His perfect timing. I found my greatest joys and appreciation of His goodness through the pain of writing this thesis. I want to thank my children for their encouragement and support over the past two years. My desire is to set the example for each of them. I want to encourage anyone who is currently suffering, or has a loved one that is suffering from opioid use disorder to not give up. Those moments won't last forever. Get support, and stay motivated.

Also, I want to thank Dr. Grant Baldwin for the countless hours and meetings as my Thesis Chair. I appreciate you keeping me focused and reminding me that this is about the learning, so stay encouraged. Your knowledge on this subject is immense, and I couldn't imagine completing this with a different leader. I am grateful for your patience.

I want to thank Michele Hickman that served as my Field Advisor, and provided late night talks on the current methodologies guiding the learning process.

Much appreciation to my volunteer expert reviewers for their assistance in reviewing this document: Dr. Yvonne McLeod, Alfred Moeckel and Tekla D. Smith. Your thoughtful and thorough review provided the necessary insight to improve my proposal.

Last, but certainly not least, I am thankful for the invention of coffee. Could not have done this without it.

Table of Contents

Chapter 1: Introduction

Opioid misuse and abuse is a serious problem in the United States. In 2019, more than 10 million people misused opioids (SAMHSA.gov 2020). The CDC estimates that the total economic burden in the U.S. from opioid misuse is over $504 billion per year, which includes treatment, lost productivity at work, and criminal justice costs (HHS.gov 2018). Opioid misuse and abuse is a form of substance abuse that impacts the entire family. Due to withdrawal symptoms, an individual may need the help of a medical professional and/or caregiver to assist with treatment, and access to other needed services (SAMHSA.gov 2020). The impacts on families is becoming better understood, and is vital to involve them in their treatment plan on their road to recovery. The Substance Abuse and Mental Health Services Administration (SAMHSA) considers the family a part of an interconnected experience that is needed right from the start (SAMHSA.gov 2020).

Caregiving is an important area of science, since the number of people living longer with chronic conditions is growing (Health 2018). Opioids are substances that interact with opioid receptors in the body's central nervous system (John Hopkins Medicine 2020). Abusing opioids can be categorized as opioid-use disorder (OUD), which is a chronic condition (Boudreaux et al. 2020). Opioid-use disorder is a biological brain disease, in which the cause and risk of misuse is driven by genetic and environmental factors (Boudreaux et al. 2020). What defines a "caregiver" varies across literature. Informal caregivers (lay caregivers) are defined as unpaid

individuals (spouses, partners, family members, friends, or neighbors) involved in assisting others with activities of daily living and/or medical tasks (Florence (2013). Caregivers and their families should be open to the options of support groups or family therapy and counseling, which can improve treatment effectiveness by supporting the whole family. It is also important to remember that the unique challenges that come from helping a loved one with a mental or substance use disorder can be taxing, so caregivers should take steps to prioritize their own health as well. However, the stigma that is traditionally associated with substance abuse makes it difficult for some caregivers to seek the help that they need (Volkow 2020). Those suffering with addiction continue to be blamed for their disease, even with data supporting that it is a complex brain disorder with many behavioral components (Volkow 2020). Research shows that social, emotional, financial, and physical effects of being a caregiver can be devastating (Beinart 2012). If caregivers are providing support for someone with a chronic condition such as Alzheimer's, some of those effects were seen even 12 months after care ceased (Beinart 2012).

Little attention has been paid to the relationship between the caregiver burden and opioid use disorder, as the term OUD wasn't updated until the 2013 Diagnostic and Statistical Manual of Mental Disorders was published (APA.org 2013). Prior to that designation, it was categorized as opioid abuse or opioid addiction. OUD is defined as "a problematic pattern of opioid use leading to clinically significant impairment or distress" (APA.org 2013). The new definition requires at least two out of eleven criteria to be met before diagnosis, which has to be observed by a treating physician over a 12-month period (CDC.gov 2020). Even

without a proper diagnosis, patients suffering from OUD can experience symptoms, in addition to negative consequences that impact themselves, as well as their caregivers.

A measurement used to evaluate population health and quality of life is the CDC's Healthy Days survey (CDC 2020). This survey asks four core questions, and measures the improvement or decline in self-reported "healthy days". Several organizations have found this measurement useful in tracking trends and providing enough data to assist in improving health disparities (CDC 2020). Measuring the number of "healthy days" for caregivers of OUD could prove useful for them, so they can understand where their overall health stands. Taking action on that information will allow them to continue to support their loved one through this very devastating disorder.

Problem statement

In the United States, there is a need to connect caregivers of opioid use disorder to resources that could reduce the financial, mental, and physical burden of caring for their loved one, and increase their "healthy days". Insufficient data highlights the need for more work to be done in this area, and that caregiver burden for OUD is unknown. What is known is that caregiver burden for chronic conditions, of which OUD is categorized, can be detrimental to their overall health (Bevens & Sternberg 2012). Education can be part of an intervention strategy to disseminate needed and timely information regarding a health topic. Providing necessary

training and information for caregivers of OUD could reduce their burden, and aid in the recovery of their loved one.

Purpose statement

Develop a training program to help caregivers of persons with OUD in the United States, cope with the financial, physical and mental stress that can accompany this responsibility, and increase their healthy days. The training program would be in response to the National Institutes of Health (NIH) Grant Proposal, which lists the following objectives to be answered:

- Identify, test, and evaluate programs aimed at symptom recognition and assessment in caregivers
- Implement training material aimed at improving provision of care that in turn can prevent or alleviate distressing symptoms in caregivers
- Identify components of technological tools that promote sustained use by caregivers in addressing symptoms

Significance Statement

Evaluating the training needs for caregivers of individuals with OUD will further the research on caregiver health outcomes. Current research focuses on chronic conditions that impact aging adults, but doesn't include the impact of

individuals who care for individuals with any substance abuse disorders. This training can be an effective way to provide the needed information to individuals seeking help to improve their overall health as they support their loved ones through this disease.

Key Terms:

Caregiver – unpaid individuals (spouses, partners, family members, friends, or neighbors) involved in assisting others with activities of daily living and/or medical tasks

Caregiver burden - physical, psychological, emotional, social and financial stresses that individuals experience due to providing care

Opioid - Natural or synthetic chemicals that interact with opioid receptors on nerve cells in the body and brain, and reduce the intensity of pain signals and feelings of pain. This class of drugs that include the illegal drug heroin, synthetic opioids such as fentanyl, and pain medications available legally by prescription, such as oxycodone, hydrocodone, codeine, morphine, and many others. Opioid pain medications are generally safe when taken for a short time and as prescribed by a health care professional, but because they produce euphoria in addition to pain relief, they can be misused.

Substance Misuse - The use of any substance in a manner, situation, amount, or frequency that can cause harm to users or to those around them.

Prescription opioid (or opioid pain reliever) misuse - Use of an opioid pain reliever in any way not directed by a health care professional.

Substance Use Disorder: Occurs when the recurrent use of alcohol and/or drugs causes clinically and functionally significant impairment, such as health problems, disability, and failure to meet major responsibilities at work, school, or home. According to the Diagnostic and Statistical Manual of Mental Disorders (DSM)-5, a diagnosis of substance use disorder is based on evidence of impaired control, social impairment, risky use, and pharmacological criteria.

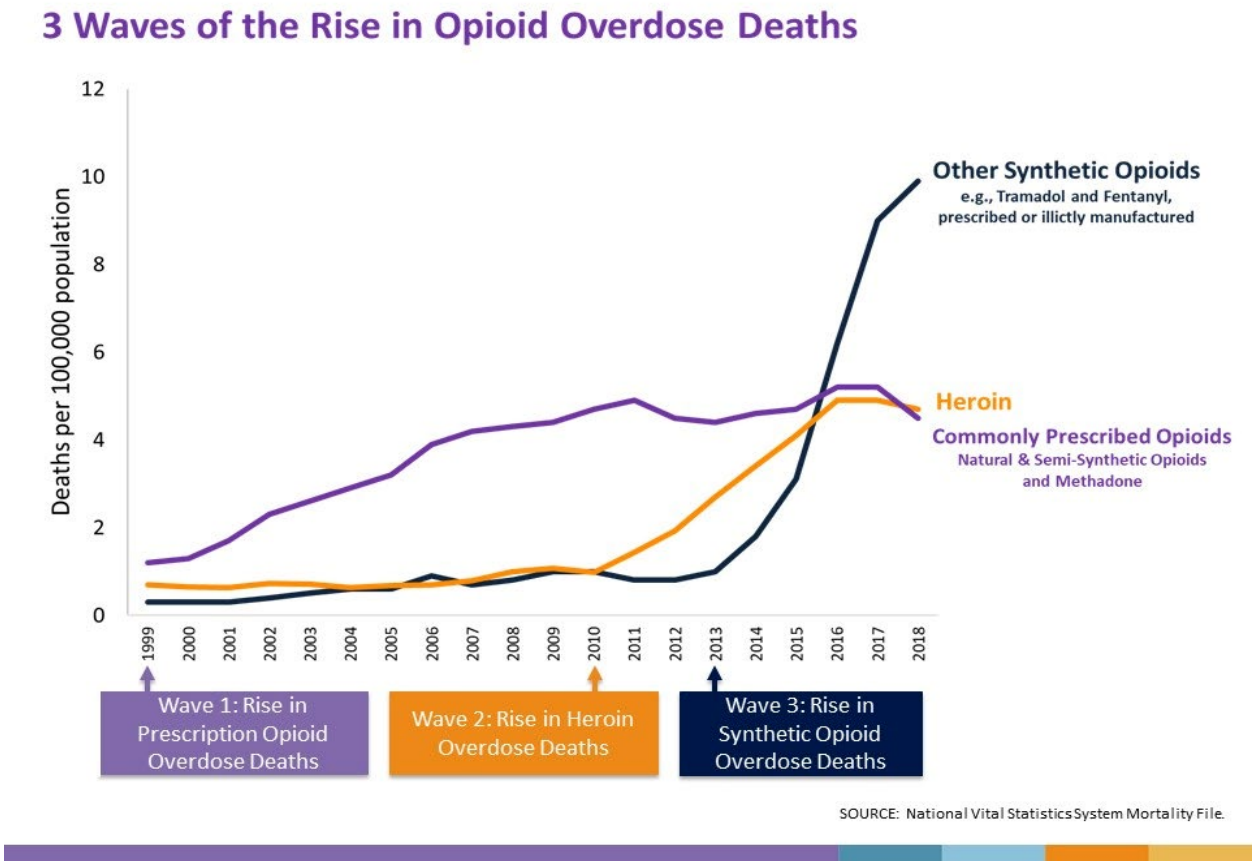
Opioid Use Disorder: A disorder characterized by loss of control of opioid use, risky opioid use, impaired social functioning, tolerance, and withdrawal.

Chapter 2: Literature Review

Opioid Abuse

The opioid epidemic is one the most complex and severe public health crisis in US history. Providing an effective response in reducing more than 130 deaths per day has been difficult (NSDUH 2020). Due to the changing nature of this epidemic, the ranges in health outcomes, and that the drug itself, when used properly, is beneficial. This contributes to the difficulty in helping those suffering within the epidemic because we simply cannot ban the substance.

The United States has outlined the rise in opioid abuse in three different waves:



The first wave, between 1999 and 2010, was categorized as the steady increase in prescription-related opioid deaths (CDC.gov 2021). This was in contrast to the behavior after passage of the Harrison Narcotics Tax Act, which drastically reduced the prescription and distribution of opium in the United States (DrugLibrary.org 1914). What changed between 1914 and 1999? Pain management was considered a significant public health problem, and a moral and professional responsibility of the people in the healing professions (Institute of Medicine 2011). There was also a mistaken belief that patients were no longer at risk for OUD as referenced in the Harrison Narcotics Tax Act, based largely in part by a published letter (Jick &Porter 1980).

On January 10, 1980, the following five-sentence letter was sent to the editor of the New England Journal of Medicine (Jick & Porter 1980):

"Recently, we examined our current files to determine the incidence of narcotic addiction in 39,946 hospitalized medical patients who were monitored consecutively. Although there were 11,882 patients who received at least one narcotic preparation, there were only four cases of reasonably well documented addiction in patients who had no history of addiction. The addiction was considered major in only one instance. The drugs implicated were meperidine in two patients, Percodan in one, and hydromorphone in one. We conclude that despite widespread use of narcotic drugs in hospitals, the development of addiction is rare in medical patients with no history of addiction.

Jane Porter
Hershel Jick, M.D.
Boston Collaborative Drug Surveillance Program Boston University Medical Center, Waltham, MA 02154

Following the letter, aggressive marketing by opioid manufacturers and failure to adequately warn of addiction risks for chronic illnesses spawned the first wave of the epidemic (Haffajee & Mello 2017).

Government interventions to reduce the prescribing practices and hold drug companies accountable drove many patients seeking pain relief to the illicit drug of heroin (CDC.gov 2021). Some states were disproportionately impacted by heroin use, those primarily in the northeast, such as New Hampshire, Maine, Connecticut, and Vermont (CDC Wonder 2020). Predominately affluent communities in those states, and throughout the nation, were not immune to the problem. Heroin became an affordable street option, and deaths from heroin rose from 1,960 in 1999 to 15,469 in 2016 (CDC Wonder 2020). The second wave saw a decrease in heroin deaths as interventions from the first wave resulted in fewer patients exhibiting signs of opioid use disorder (CDC Wonder 2020).

Wave three began in 2013, and was characterized by the manufacturing of synthetic opioids, such as fentanyl and counterfeit pills (CDC.gov 2021). Continued downward pressure on opioid prescribing drove a portion of the at-risk population from opioid pill misuse to even more dangerous forms of fentanyl (Ciccarone 2019). Deaths in wave three went from 3,105 in 2013 to 36,359 in 2019 (Mattson et al 2019).

How the United States has tracked these waves illuminates one side of opioid abuse. The other side encompasses the individuals and families that are struggling through the crisis. This disorder significantly impacts quality of life. The signs and symptoms include drug-seeking behavior (both legal and illegal) as well as a decline in physical and psychological health (Dydyk et al 2020). Opioids are most addictive

when you take them using methods other that what was prescribed, such as crushing the pills to make suitable to be snorted or injected. This alteration causes the drug to rapidly enter your system, which can cause an overdose (Kaye AD, et al 2017). Individuals diagnosed with OUD have a persisting propensity to relapse, which makes recovery difficult (Degenhardt et al 2020).

Diagnosing OUD requires at least two out of eleven criteria be observed within a 12-month period:

1. Opioids are often taken in larger amounts or over a longer period than was intended.
2. There is a persistent desire or unsuccessful efforts to cut down or control opioid use.
3. A great deal of time is spent in activities necessary to obtain the opioid, use the opioid, or recover from its effects.
4. Craving, or a strong desire or urge to use opioids.
5. Recurrent opioid use resulting in a failure to fulfill major role obligations at work, school, or home.
6. Continued opioid use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of opioids.
7. Important social, occupational, or recreational activities are given up or reduced because of opioid use.
8. Recurrent opioid use in situations in which it is physically hazardous.

9. Continued opioid use despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance.
10. Exhibits tolerance
11. Exhibits withdrawal

The phases of Opioid Abuse and Recovery can follow the path below:

- ***Experimentation***: Voluntary use of drugs for any reason other than as prescribed

- ***Regular to Risky Use***: Regular use of drugs outside of how they are prescribed
- ***Dependence***: Persistent usage of a drug, difficulty in stopping and withdrawal symptoms
- ***Addiction***: Treatable, chronic medical disease involving complex interactions among brain circuits, genetics, the environment and an individuals life experiences. People with addiction become compulsive and often continue despite harmful consequences (ASAM 2021).
- ***Recovery Exploration***: Determine if recovery will require professional help or will the person with substance use disorder wean themselves off of the substance
- ***Start Addiction Recovery***: Learning how to survive without using the substance of their choice. Also attempting to mend relationships damaged by their addiction.
- ***Ongoing Recovery and Aftercare***: Although relapses can still occur, this stage requires commitment to transform the body, spirit and mind. You will no longer use, and have developed better coping skills for addiction triggers.

There is no timeline for the recovery process and prevalence of stable abstinence from opioid use is less than 30%, whereas family, social support, as well as employment, facilitates recovery (Hser et al 2015). Support at each stage of this continuum will be instrumental in their success.

Opioid abuse has multiple roots, and despite efforts, the numbers of opioid related death continue to increase. This highlights the need for ongoing support to

educate patients and their caregivers about the risk of overdose and how to respond to it.

Need for OUD Caregivers

As defined earlier, caregivers are needed to provide physical and emotional support for family members, loved ones, suffering from a chronic condition (Bastawrous 2013). Because support plays an integral part in the recovery process, caregivers are a part of the OUD discussion and health crisis. Although the number of caregivers is unknown, over 42,000 opioid overdose deaths between from 1999 to 2019 were the ages of 15-24 (CDCWonder 2020). Individuals in this age range are traditionally still living at home, automatically making the caregiver their parent(s). The number of deaths due to opioid overdose doubled to 106,000 over the same timeframe for the age range of 25-34 (CDCWonder 2020). These numbers only include reported deaths within the three waves of opioid abuse.

Role theory suggests that humans act in predictable ways based on the expectations and conditions of the social role they are assuming (Biddle 1986). Data regarding the gendered nature in caregiving reveals females are more likely than males to assume this role (Stein 2009). Therefore, a quick Internet search will elicit hundreds of stories from mothers who share the story of their child's disorder. A family member's diagnosis of OUD can put the entire family at risk. Due to high relapse rates, and illicit elements of this disorder, the stresses and strain particularly on the parent can increase their overall burden. Other children's needs may be neglected as the parent focuses on the child with the chronic illness (Quittner et a., 1992). Marriage and finances can suffer, as the tragedy of death, or what may feel

like an impending death, takes its toll on the family. Strategies to cope with this type of stress are needed to enable caregivers to meet the demands of this role, as well as others (e.g. paid employment, wife).

Providing care through the different phases of OUD may require substantial responsibility. The *Experimentation* phase could easily lead to death, as fentanyl and heroin are modified with unknown substances, such as ammonia, chloroform, hydrochloric acid, or known household substances, like powdered milk and various sugars (DEA.gov 2018). *Dependence* and *Addiction* phases may drive the individual to seek the drug out though multiple methods, which could lead them to illicit means. Criminal consequences are also a potential burden for caregivers to contend with, as being caught with opioids without a prescription is considered a misdemeanor offense in many states (Phillips et al 2017). Impacts from criminal convictions can follow an individual throughout their life, diminishing income potential and further impacting the livelihood of their caregiver through possible extended financial support (DEA.gov 2018). Over 80% of heroin users began their abuse with opioids, which may trigger a constant oversight to someone in the *Addiction* or *Recovery* phase of treatment (DEA.gov 2018). The phases of OUD, and the caregiving responsibilities associated with each, can lead to increased stress and diminished health outcomes for the caregiver (Bevens & Sternberg 2012).

Although each caregiver will ultimately manage the circumstances of OUD in their own way, and according to their unique needs and family dynamics; health educators can help caregivers develop coping strategies that meet their needs and ensure ongoing support of those fighting with this chronic illness (Major 2003).

Caregiver Training Programs in the United States

Education of caregivers for those suffering with OUD includes the risks associated with the illness, but nothing on coping strategies (AHA.org 2017). Toolkits and caregiver pamphlets include everything from hiding prescriptions, recognizing relapse, and identifying risks (AHA.org 2017). Novel technology in the way of blogs and social media, tell the stories of families going through tremendous suffering and poor health due to the caregiver burden of OUD (Facebook.com Not in Vain 2021). One story in particular details a mother facing her own mortality after she lost her son in April to OUD, and just left visiting her husband in the hospital who is dying of kidney failure believed to have stemmed from alcohol abuse while dealing with the burden of this disease (Facebook.com Not in Vain 2021). There is nothing in the caregiver education that provides guidance on raising grandchildren after the devastating loss of their parents or encouraging words for the working mother (WorkPlayMommy.com 2021).

Summary of Current Problem and Study Relevance

Resources are needed to develop an effective learning solution for our OUD caregiver population. As illness heightens stress on the family, treatment compliance is routinely reduced, which can impact recovery (Major 2003). Utilizing role theory, a six-step process was introduced to assist employed parents of children with chronic illnesses manage their stressors and emotional needs (Major 2003). Caregiving for an aging population, or chronic illnesses that don't have the stigma of addiction, such as cancer, have well-documented caregiving resources (Bastawrous 2013).

Leveraging existing resources, coupled with novel technology, can provide a substantive framework for a learning program.

Chapter 3: Methods

Funding Agency – The National Institutes of Health

The National Institutes of Health is Federal agency in the United States, which focuses on research and development under the parent agency of the Department of Health and Human Services (NIH.gov 2021). The main goals of the agency are:

1. to foster fundamental creative discoveries, innovative research strategies, and their applications as a basis for ultimately protecting and improving health;
2. to develop, maintain, and renew scientific human and physical resources that will ensure the Nation's capability to prevent disease;
3. to expand the knowledge base in medical and associated sciences in order to enhance the Nation's economic well-being and ensure a continued high return on the public investment in research; and
4. to exemplify and promote the highest level of scientific integrity, public accountability, and social responsibility in the conduct of science.

The National Institutes of Health (NIH) was chosen specifically for this public health problem, due to their focus on education and health improvement. Additionally, goals one through three align with the CDC's Healthy Days measurement, which will be utilized to determine the effectiveness of our training program.

Grant Announcement

This grant announcement targets programs that improve caregiver health outcomes. The funding announcement states that in the US, over 40 million individuals undertake daily caregiving for a family member or loved one. While the demographics of caregivers are varied, what remains constant is that caregivers are an at-risk population due to the well-documented psychological and physical strains of caregiving. Caregivers frequently report anxiety, depressive symptoms, loss of energy, sleep disturbance, and irritability. The presence of these symptoms adds to the health burden for those caregivers who must manage their own conditions/illnesses, further impacting the ability to provide care. Additionally, caregivers experience social isolation and a reduced quality of life because of their caregiving responsibilities.

Research Objectives include, but are not limited to, those that:

Identify, test, and evaluate training aimed at symptom recognition and assessment in caregivers – *this proposal will identify current caregivers and provide training that connects them to existing resources*.

Implement training aimed at improving provision of care that in turn can prevent or alleviate distressing symptoms in caregivers – *This proposal will implement a training module that provides a self-evaluation of symptoms and how to cope and alleviate stress*.

Develop and test training that reduce caregiver symptoms or symptom clusters

Assess use of training in varied caregiving situations and capacity of technology to monitor trajectories of symptoms - *This proposal will implement a training module that provides a self-evaluation of symptoms and how to cope and alleviate stress.*

Identify components of training that promote sustained use by caregivers in addressing symptoms – *This proposal will follow caregivers over a three month timeframe to track symptoms for improvement, or provide additional resources.*

External Reviewers for Grant Proposal

The grant proposal was given to five highly skilled external reviewers for their input and suggestions. Each external reviewer was given two weeks to review the proposal in its entirety. An email was sent providing instructions on how to fill out the form and how to return their results. Each reviewer was provided a form that they filled out, along with an open-ended section for comments. Reviewer comments were collected and analyzed for implementation into overall review. Reviews were not shared among reviewers, and each reviewer returned their information electronically to one of the following email addresses: tikeshamoore@gmail.com or tikeshacrump@gmail.com

The following individuals served as expert reviewers for my grant proposal:

Grant Baldwin, PhD, MPH

Dr. Grant Baldwin is the Director of the newly created Division of Overdose Prevention at CDC National Center for Injury Prevention and Control. In this role, he is responsible for monitoring trends in the opioid epidemic and other emerging drug threats as well identifying and scaling up prevention activities to address the evolving drug crisis. This includes supporting local drug-free community coalitions too. Prior to this appointment, Dr. Baldwin served as the Director of the Division of Unintentional Injury Prevention for 11 years where he helped raise the profile of motor vehicle injury prevention, advanced work in older adult fall prevention and traumatic brain injury prevention, and established the initial CDC response to the prescription opioid overdose epidemic. As the scope, scale, and complexity of

America's drug overdose epidemic changed, the Division of Overdose Prevention was created to serve as a necessary and essential focal point to CDC's more expansive and diversified work in the area. Dr. Baldwin has been at CDC for over 20 years. Dr. Baldwin received his PhD in Health Behavior and Health Education at the University of Michigan. He received a MPH in Behavioral Sciences and Health Education from Emory University, and is currently an affiliated professor at Emory University. Dr. Baldwin has given keynote addresses or provided remarks at over 100 state, national and international conferences and meetings, has authored or coauthored more than 50 peer-reviewed publications, and has received awards of excellence for his leadership and teaching.

Dr. Baldwin serves as my thesis chair and brings the necessary experience in unintentional injury, which includes OUD.

Yvonne McLeod DDS, MPH

The University of Michigan School of Dentistry

Emory University Rollins- Rollins School of Public Health

Dentist- Department of Oral Health at Cook County Health and Hospitals System

General dentist for 22 years

Dr. McLeod was chosen as a reviewer due to her extensive work in projects submitted for grant funding, such as BRECHAS.

Michele Hickman, MSHRL

Bachelor of Arts in Psychology – Spelman College

Master of Science in Human Resources Leadership – Sullivan University

Director of Learning Design at Humana

Humana – 17 years

Learning and Development – 20+ years

Michele Hickman serves as my Field Advisor for her experience in implementing effective training programs for population health. Her experience lends itself to identifying the appropriate method for the training module.

Al Moeckel, M.Ed

M.Ed. Mississippi University for Women

B.S. Telecommunications Kutztown University

26 years experience in Learning and Development with roles including facilitation, curriculum design, eLearning development, and virtual training readiness.

Al was chosen as a part of this review committee due to his extensive experience in eLearning solutions and design methodology.

Tekla Smith

Candidate for EMPH at Emory Rollins School of Public Health

Bachelor of Science, Georgia Southern

Senior research specialist and protocol analyst. As a senior research specialist, developed and managed several projects and NIH grants. This work has resulted in several publications in the *Journal of Membrane Biology*, *Journal of Nutritional Biochemistry* and *Gastroenterology* and RO1 renewals.

Tekla's experience with grant funding and grant renewals proved vital in my review and submission of this grant proposal. Citations for all Tekla Smith's published work included in appendix.

Human Subjects

Human subjects will be utilized as a part of the proposed research. NIH guidelines for Human Subjects Protection and Inclusion will be followed. Complete guidelines are located in the appendix section of this proposal.

Chapter 4: Incorporation of Reviewer Comments

I want to thank all external reviewers for their time and attention to this grant proposal. Their feedback and coaching throughout the process provided the necessary guidance to improve my overall submission.

Reviewer 1 didn't fill out the form, but met to provide verbal comments to the following:

Comment 1: Update all words that call out addiction or addicts to terms that don't contribute to the stigma of the disease.

Response to Comment 1: Updated all words throughout the proposal to opioid use disorder or OUD. Utilized the guide from Shatterproof.org that provided alternate words for each item called out.

Comment 2: Missing some of the actual elements to be included in the training material

Response to Comment 2: Added the coping strategies and time of the module to the proposal

Comment 3: Introduce the pilot service area earlier in the proposal

Response to Comment 3: Added New Hampshire in Chapter 1, along with statistics why that area was chosen for the pilot.

Comment 4: Include the Health Days questionnaire

Response to Comment 4: Healthy Days questionnaire added to grant proposal

Comment 5: Amount for pilot seemed too low. Look for a way to incentivize your participants.

Response to Comment 5: Added an incentive for participants of $500 if they completed the program. Also updated the overall budget and direct costs.

Reviewer 2 answered, “strongly agree” to the following statements: The submission is responsive to the call for proposals; The proposal is well thought out and theoretically sound; The proposal makes a compelling case that research/project is necessary; The proposal sets groundwork for future work in this area.

Reviewer 2 comments about suggestions/improvements to be made:

Comment 1: Budget for pilot program should include a higher cost for project manager, and overall budget seems low compared to most projects that will span over at least six months.

Response to Comment 1: Updated project manager salary for the entire six months and updated overall budget to include incentives and marketing costs.

Reviewer 3 answered, “strongly agree” to the following statements: The submission is responsive to the call for proposals; The proposal is well thought out and theoretically sound; The proposal makes a compelling case that research/project is necessary; The proposal sets groundwork for future work in this area.

Reviewer 3 comments about suggestions/improvements to be made: The proposal is well thought-out and thorough. Improving the healthy days for caregivers is a needed action. Education is the key to that improvement.

Comment 1: One area of question is Chapter 1 starts on the same page as the table of contents.

Response to Comment 1: Updated page break after Table of Contents

Reviewer 4 answered, "strongly agree" to the following statements: The submission is responsive to the call for proposals; The proposal makes a compelling case that research/project is necessary; The proposal sets groundwork for future work in this area. **Reviewer 4** answered, "agree" to the following statement: The proposal is well thought out and theoretically sound;

Reviewer 4 comments about suggestions/improvements to be made: All in all, I believe the proposal to be a fine bit of work.

Comment 1: My one concern is if the measurement time is sufficient to see positive results. Much like addiction recovery, the process of potential codependency recovery is not a short- term event (realizing that not all caregivers are codependent). While the "healthy days" metric is warranted, I would assume impacts there to be felt longer term. Within the 3-month time frame for evaluation, I would look to measure program/resource adoption by the caregiver in both an initial and ongoing sense. If program/resource adoption rates are low, the training impact may be considered minimal. If initial program/resource adoption rates are satisfactory (satisfactory being undefined at the moment), one might look at the continuing leverage of these elements by the caregiver as another measure of training success. Then, I would be interested in measuring adoption rates of training content to "healthy days".

Response to Comment 1: Updated the pilot phase to look at adoption rate of the training program within the 3-months, but look at healthy days measurement further out (ie; 6-months). This would require a follow-up survey at that time. The incentive amount would not need to be changed, as it is sufficient for the timeframe.

Reviewer 5 answered, "strongly agree" to the following statements: The submission is responsive to the call for proposals; The proposal is well thought out and theoretically sound; The proposal makes a compelling case that research/project is necessary; The proposal sets groundwork for future work in this area.

Reviewer 5 comments about suggestions/improvements to be made:

Comment 1: Advised that it is customary to use funders' guidelines for Human Subjects

Response to Comment 1: Added the NIH Human Subjects guidelines to the appendix and the overall grant proposal.

Chapter 5: Grant Proposal

Project Narrative

This Thesis Grant Proposal is seeking to receive funding to create a training program that connects caregivers of those suffering from opioid use disorder to resources that help improve their Healthy Days. The following assessment will outline the service area for an initial pilot of the training program, as well as objectives, budget, and target audience for the funding request.

Objectives and Projected Outcomes

Development of a training module that improves the Healthy Days of caregivers to individuals addicted to opioids by connecting them to the resources (i.e.; support groups, therapy, financial support), which can assist in improving their overall health.

Objective #1: Develop the training program by using the A.D.D.I.E model for curriculum design (Durak et al 2016). In order to better inform future caregiver support programs, it is important to understand the factors that lead caregivers to poor health outcomes. Thus, an important part of creating this training program is to also to collect data on caregivers' perceived benefits of existing support programs. Leveraging existing substance abuse treatment centers, and the Family Caregiver Alliance, I will recruit at least 50 (up to 100) caregivers to take the training module. Evaluate their completion of the training module through assessments, and request their feedback through an end of course survey that would provide data on the effectiveness of the course.

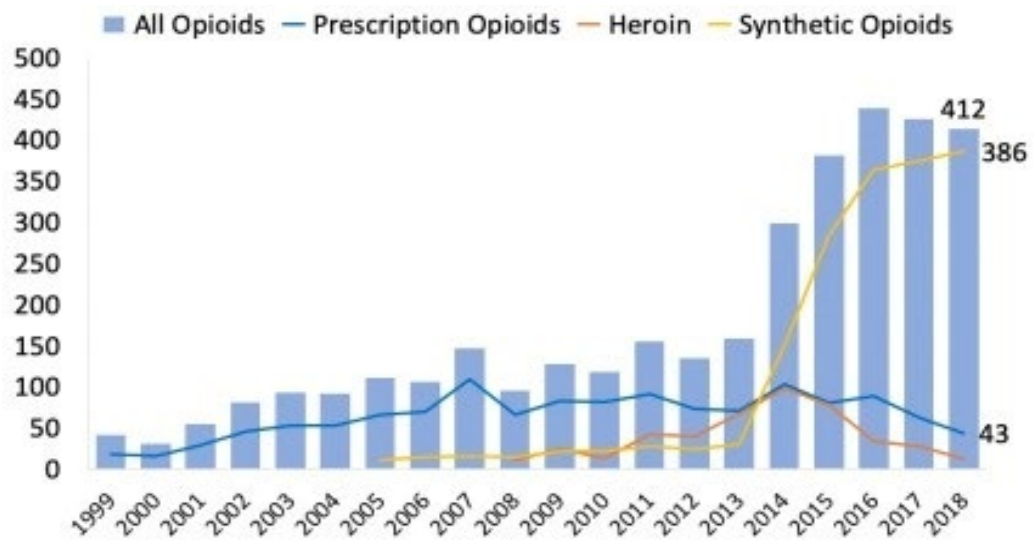
Objective #2: Evaluate this program by using the U.S. Centers for Disease Control and Prevention (CDC) health-related quality of life (HRQOL–4) four-question Healthy Days tool. Upon conclusion of the pilot, we will compare the number of healthy days pre-training, and post-utilization of resources identified in the training module.

Objective #3: Evaluate the program using the adoption and completion rate of the training and any utilization of the available resources.

Service Area

The target area of this grant application will be New Hampshire. Although New Hampshire is ranked one of the healthiest states in the nation, the death rates of OUD rank third in the country - 33.1 per 100,000 (CDCWonder 2020). New Hampshire was an area impacted disproportionately by the opioid epidemic. The escalation of opioid abuse has overwhelmed the community, from law enforcement, to emergency services and child protection services, all of which are at the heart of our research regarding caregiver roles and burden.

Figure: ***Number of drug and opioid-involved overdose deaths in New Hampshire, by opioid category.*** *The 2018 data for heroin is considered unreliable due to low numbers and is not included. Source: CDC WONDER, 2020.*



Services to be Provided

Develop and administer a self-paced training module that outlines the six-step process to manage role conflict, and identifies support resources for specifically for OUD caregivers. The ultimate goal is to develop coping strategies that positively impact the assessment of their healthy days.

The six-step process focuses on the following (Major 2003):

1. Identify caregiver role demands
2. Define role set
3. Recognize resources and barriers afforded by existing roles
4. Negotiate workable roles
5. Work toward role integration
6. Renegotiate roles as necessary

In addition, the training will outline resources available, such as support groups and medical benefits for caregivers.

Actual Persons Served

New Hampshire has a robust site for Alcohol and Drug Treatment centers (NHTreatment.org 2021). Utilizing this site, we will contact specific site locations to provide the virtual training to patient caregivers. Family Caregiver Alliance will also be utilized to identify caregivers in the area to participate in the pilot. Our pilot program will include 50 individuals in multiple OUD phases, over a three-month period. This would include pre-survey, completion of training module, post-survey, follow-up after three-months to determine if healthy days increased based on actions taken to reduce stress and cope with caregiver burden.

Work Plan

Goal: Improve the Healthy Days of caregivers to individuals addicted to opioids by connecting them to the resources (i.e.; support groups, therapy, financial support), which can assist in improving their overall health

By following the A.D.D.I.E model as a guideline for building effective learning experiences, we will track the status of a project in phases. The breakdown below shows the keys steps included in each phase and a rough timeline.

Training Module Design Process

By following the A.D.D.I.E model as a guideline for building effective learning experiences, I tracked the status of a project in phases. The breakdown below shows the keys steps included in each phase and a rough timeline.

Analysis	Design	Develop	Implement	Evaluate
0 – 2 weeks	**1 – 3 weeks**	**1 – 4 weeks**	**1 – 4 weeks**	**1 – 8 weeks**
Establish the specifications of the project. **This includes:** • Identifying the problem we are solving • Pinpointing our target audience • Establishing learning objectives, goals and/or desired outcome • Specify logistics – learning strategy, timeline and project scope	Design our learning strategy. **This includes:** • Designing a course outline and structure • Build storyboard or prototypes for each learning object/module • Determining content related exercises and assessments	Develop each learning object/module. **This includes:** • Full development of each learning object/ module • Peer review and revisions • Facilitator/leader guides, assessment and additional reference materials are created	Prepare and implement training delivery. **This includes:** • Scheduling pilot/UAT sessions • Sharing materials with Delivery team • Facilitating a Train-the-Trainer (T3) session • Provide feedback materials	Collect end-user and performance feedback. **This includes:** • Review assessment outcomes • Gathering survey feedback • Requesting and reviewing performance results

Implementation Timeline

Objective: Development of a training module that improves the Healthy Days of caregivers to individuals addicted to opioids by connecting them to needed resources		
Timeline	**Activities/Action steps**	**Evaluation**
March 1, 2021 – April 1, 2021	• Identify treatment centers that will be utilized for the project pilot	High response rates to contacts from our coordinator
April 1, 2021 – May 30, 2021	• Develop and review screening and surveillance data to measure the burden for caregivers of OUD	We will use the Healthy Days questions to develop the screening survey
Objective: Develop the training program by using the A.D.D.I.E model for curriculum design		
Timeline	**Activities/Action steps**	**Evaluation**
June 1, 2021 – June 14, 2021,	Establish the specifications of the project	Target audience identified
June 14, 2021 – June 30, 2021	Design the learning strategy	Course outline completed
July 5, 2021 – July 30, 2021	• Develop each learning object/module	Consultation process completed
Timeline	**Activities/Action steps**	**Evaluation**
August 1, 2021 – August 27, 2021	Prepare and implement training delivery	Training scheduled with caregivers
September 1, 2021 – October 29, 2021	Collect end-user and performance feedback	Feedback on training and healthy days documented

October 30, 2021 – November 15, 2021	Report data to funding agency	Response rates 80% after three months
November 15, 2021 – December 15, 2021	Review next steps for project	• Project approved for additional funding and expansion beyond the pilot

Evaluation Plan

Quality of life (QOL) is a term that conveys an overall sense of well-being, including aspects of happiness and satisfaction as a whole. Although health is an important domain of quality of life, it is not the only one (CDC.gov 2000). In partnership with other health agencies, the CDC developed a survey that sought to measure health-related quality of life. The assessment is a four question survey that tracks your response to questions regarding your health over a 30-day period (CDC.gov 2000).

HEALTHY DAYS 4-QUESTION SURVEY

1. Would you say that, in general, your health is excellent, very good, good, fair, or poor?
2. Thinking about your physical health, which includes physical illness and injury, how many days during the past 30 days was your physical health not good?
3. Thinking about your mental health, which includes stress, depression and problems with emotions, how many days during the past 30 days was your mental health not good?
4. During the past 30 days, about how many days did poor physical or mental health keep you from doing your usual activities, such as self-care, work or recreation?

By comparing the responses of our Healthy Days survey prior to administering the training module, to the results three months after will assist in our evaluation of the training program. It is understood that chronic illnesses occur over long periods of time, so the continuation of data collection beyond three months may prove useful to future efforts in improving healthy days. The initial three-month observation will provide baseline data regarding immediate changes due to putting the new strategies obtained in the training program into practice. It will also provide necessary information around adoption of the training program among participants.

We will also track survey data related to satisfaction with the training course. This will provide information to improve course content.

Budget and Funding Requested

The budget includes both direct and indirect costs to administer the training program. The direct costs will be comprised of personnel needed to run the program, as well as equipment and supplies needed for curricula designers and overall consultants. Indirect costs will be comprised of administrative expenses such as ancillary positions for back-office administration, including review of data and reporting. The following budget was provided with guidance from TD.org, The Association for Talent Development, which is a validated resource regarding budgeting and expenses for learning and development (2017).

Assumptions:

- 100 individuals to be given the training program
- Training module will be 20 minutes in length

- 50 individuals to agree to be evaluated over the course of three months
- 80% response rate for pilot program

Direct Costs

Coordinator - This person coordinates with the treatment centers to schedule the survey times and set expectations. The coordinator will schedule the initial visit, subsequent follow-up visits, reschedule as needed.

Project Manager – The project manager will ensure timelines are met according to the grant, as well as keeping the project on target for expenses. 0.25 FTE for 3 months (Salary.com 2020)

Lead Consultant/Designer – This individual will consolidate all existing material, utilize the ADDIE model, and provide a training module for caregivers to complete

Office Supplies + Laptop – Retail rate for MacBook around $1,800

Curriculum Design Software – Articulate Storyline 360 has a subscription cost of $1,299 and Vyond video software $371

Data Analysis and Interpretation: Data analysis and interpretation should take about 40 hours @ $100 per hour = $4,000.

Report Preparation – Reporting necessary to determine if pilot is successful and how we will move forward for full implementation

Participant Stipends – Each participant will be paid $500 at the conclusion of the 3-month period (100 x 500 = $50,000)

Indirect Costs

Graphics and Printing – Marketing material needed to advise of the training program. Kits will be ordered from a local printing company. This will also include

the cost for the graphic design of the material for both electronic and print.

Misc Costs – Includes a subscription for survey software to administer necessary surveys to our caregivers.

Budget Item	**Description**	**Cost**
Coordinator	$45,000 salary; 30% benefits; 1 FTE for 3 months	21,940
Project Manager	$100,000 salary, 0.25 FTE for 6 months	16,333
Lead Consultant/ Designer	$100,000 salary, 1 FTE for 1 month	8,166
Office Supplies + laptop	MacBook Air	1,800
Curriculum Design Software	Articulate Storyline 360 and Vyond	1,670
Data Analysis & Interpretation	40 hours @ $150/hour	4,000
Report Preparation	Monthly completion reporting; 8hrs/month $25/hour	1,800
Graphics & Printing	Consent forms and marketing material $26.25 x 100	1,050
Participant Stipend	$500 per participant ($500 x max of 100)	50,000
Miscellaneous Costs		2,000
TOTAL		**$108,925**

The total cost of the pilot program is $108,925. We would request the entire funding amount prior to initiation of consulting services for the training module design work.

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Appendix

Email to grant review committee members

Good Morning _____

I hope you and your family are doing well. As a follow-up to my prior communication, I am reaching out to request your assistance as I finish up my Thesis proposal for my Masters in Public Health Degree at Emory University. My thesis is entitled "*Grant proposal to create a training program that connects caregivers of opioid addicts in the United States, to resources that help improve their Healthy Days*", and my defense date is tentatively scheduled for _____.

The specific action needed is to review the attached thesis, and answer the five-question survey regarding the thesis proposal. Once completed, email your responses to tikeshacrump@gmail.com by_____.

Your knowledge and perspective would be instrumental in my thesis defense. Thank you for your time and consideration.

Note: If you could respond with the following about yourself, this will be included as a bio for your review:
Name, Degree, Colleges Attended, Certifications, and current position. Years of experience in the field.

Regards,

Kesha Crump

Survey for Grant Reviewers

Please mark an X in the box representing your answer to the questions below.

Question	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
The submission is responsive to the call for proposals					
The proposal is well thought out and theoretically sound					
The proposal makes a compelling case that research/project is necessary					
The proposal sets groundwork for future work in this area					

In addition to the questions above, please provide any overall comments about the grant proposal below:

Full Grant Announcement

Section I. Funding Opportunity Description

Background:

In the US, over 40 million individuals undertake daily caregiving for a family member or loved one. While the demographics of caregivers are varied, what remains constant is that caregivers are an at-risk population due to the well-documented psychological and physical strains of caregiving. Caregivers frequently report anxiety, depressive symptoms, loss of energy, sleep disturbance, and irritability. The presence of these symptoms adds to the health burden for those caregivers who must manage their own conditions/illnesses, further impacting the ability to provide care. Additionally, caregivers experience social isolation and a reduced quality of life because of their caregiving responsibilities.

The 2017 NINR-led Summit, “Science of Caregiving: Bringing Voices Together” underscored the need to develop evidence-based interventions to support caregivers of all ages and with varied responsibilities, e.g., caring for a high-needs child or an aging parent with dementia. For these reasons, it is imperative to identify and implement new ways to prevent or mitigate the symptoms that arise because of the caregiving experience.

This FOA encourages research that addresses caregiver symptoms and quality of life through the use of training and technology. Research proposed through this initiative can assess the relative effectiveness of existing strategies or seek to provide more innovative and far-reaching tools. Additional research areas can focus on the

validation of current tools and apply “co-care” models of caregiver-patient communication. Any technological tools proposed should be appropriately tailored to the caregiving situation and symptoms targeted. All strategies should consider age, gender, racial, ethnic, and cultural diversity as these factors may drive the types of communication, support and care needs required of caregivers.

Research Objectives include, but are not limited to, those that:

Identify, test, and evaluate training aimed at symptom recognition and assessment in caregivers

Implement training aimed at improving provision of care that in turn can prevent or alleviate distressing symptoms in caregivers

Develop and test training that reduce caregiver symptoms or symptom clusters

Assess use of training in varied caregiving situations and capacity of technology to monitor trajectories of symptoms

Identify components of training that promote sustained use by caregivers in addressing symptoms

Potential applicants are encouraged to contact the NINR Scientific/Research Contact to discuss proposed research ideas prior to submission of the application.

Interdisciplinary collaborations that include nurse scientists in the project team are strongly encouraged.

Section II. Award Information

Funding Instrument

Grant: A support mechanism providing money, property, or both to an eligible entity to carry out an approved project or activity.

Application Types Allowed

New

Renewal

Resubmission

Funds Available and Anticipated Number of Awards

The number of awards is contingent upon NIH appropriations and the submission of a sufficient number of meritorious applications.

Award Budget

Application budgets are not limited but need to reflect the actual needs of the proposed project.

Award Project Period

The total project period for an application submitted in response to this funding opportunity may not exceed 5 years.

Human Subjects Protection and Inclusion of Women, Minorities, and Children

Guidelines for Review of NIH Grant Applications
Contents

HUMAN SUBJECTS PROTECTION

Requirements for Review

☐ Federal regulations for the protection of human research subjects (45 CFR 46), require that the evaluation of research applications that involve human subjects take into consideration the risk to subjects, the adequacy of protections against risk, potential benefits of the research to subjects and others, and the importance of the knowledge to be gained

☐ The NIH Peer Review regulations (42 C.F.R. 52h) specify that reviewers will take into account, in determining overall impact that the project in the application could have on the research field involved, the adequacy of the proposed protection for humans

☐ Therefore, reviewers must evaluate the proposed plans to protect human subjects from research risks, as appropriate for the research proposed, as one of the review criteria that factor into the evaluation of scientific and technical merit

☐ In addition to federal regulations about the protection of human research subjects, NIH policies require that applications involving Clinical Trials include a data and safety monitoring plan and that NIH-defined Phase III clinical trials also describe a data and safety monitoring board

☐ Data safety and monitoring plans must also be evaluated by peer reviewers.

Reviewer Responsibilities

For applications involving human subjects:

☐ Determine if a claim for exemption is adequately justified in applications that indicate the proposed research is exempt **OR**

☐ Determine whether the involvement of human subjects in the proposed research is justified scientifically; evaluate the proposed plan for the involvement of human

subjects in non-exempt human subjects research; and determine if subjects appear to

be adequately protected from research risks.

☐ For applications that involve a clinical trial, determine if the plans for data and safety monitoring, including the description of a data and safety monitoring board if necessary, are adequate.

For applications that claim no involvement of human subjects but propose the use of existing human data or biological specimens, evaluate if the justification provided for not involving human subjects is acceptable.

☐ Rate the application as Acceptable, Unacceptable, or Not Applicable in terms of human subjects involvement and prepare written comments, including specific comments describing concerns for applications rated as Unacceptable.

For applications that do not involve human subjects or the use of human data or specimens, rate the application as Not Applicable for this criterion. In this case, the Inclusion criterion, as described below, will also be Not Applicable.

Reviewer Comments

Reviewer Comments are required for Protections for Human Subjects (unless Not Applicable). An example follows:

☐ The applicant states that the proposed research involves minimal physical risk; however, genetics research is considered of moderate risk due to the possibility of breaches in confidentiality. Insufficient detail is provided regarding measures to protect against such risk.

INCLUSION OF WOMEN, MINORITIES, AND CHILDREN

Requirements for Review

☐ Public Law 103-43 requires that women and minorities be included in all clinical research studies, as appropriate for the scientific goals of the work proposed.

☐ Additionally, NIH policy requires that women and members of minority groups and their subpopulations be included in Phase III clinical trials in numbers adequate to allow for valid analyses of sex/gender, racial, and/or ethnic differences in intervention effects

☐ NIH policy also states that children (defined as persons under the age of 21) be included in human subjects research supported by NIH unless an acceptable justification for their exclusion is provided

☐ The NIH Peer Review regulations (42 C.F.R. 52h) specify that reviewers will take into account, in determining overall impact that the project in the application could have on the research field involved, the adequacy of plans to include both genders, minorities, children and special populations as appropriate for the scientific goals of the research

☐ Therefore, reviewers must evaluate the proposed plans for inclusion of women, minorities, and children as one of the review criteria that factor into the evaluation of scientific and technical merit.

Reviewer Responsibilities

Evaluate whether the sex/gender, racial, and ethnic characteristics of the proposed sample and the plan for the inclusion of children are scientifically acceptable given the aims of the research.

Rate the application as Acceptable or Unacceptable with respect to the proposed inclusion of Women, Minorities, and Children, assign codes, and include specific comments describing why the plans are acceptable or any concerns for applications rated as Unacceptable.

Reviewer Coding

Three digit alphanumeric codes are used to summarize reviewers' evaluation of inclusion of women, minorities, and children. The three digit code is comprised as follows.

First digit: G, M, or C to indicate gender, minority, or children, respectively

Second digit: A numerical code from 1-5 to identify what groups are included

Third digit: A or U to indicate scientific acceptability, given the stated research aims and the proposed inclusion plans

Each application involving human subjects receives three separate alphanumeric codes, for sex/gender, minorities, and children, respectively. A code should be assigned to each individual project or subproject in an application containing multiple projects or subprojects and involving distinct populations or specimen collections. A single overall code ALSO should be assigned to the entire application. If any project/subproject is found "Unacceptable" (U), the overall code should be U. The overall coding should reflect the acceptability of inclusion for all projects/subprojects even if the proposed inclusion plans vary for different studies.

Sex/Gender Inclusion Codes

☐ **_G1A** = Both genders, acceptable

☐ **_G1U** = Both genders, unacceptable

☐ **_G2A** = Only women, acceptable

☐ **_G2U** = Only women, unacceptable

☐ **_G3A** = Only men, acceptable

☐ **_G3U** = Only men, unacceptable

☐ **_G4A** = gender composition unknown, acceptable

☐ **_G4U** = gender composition unknown, unacceptable

Minority Inclusion Codes

☐ **_M1A** = Minority and nonminority, acceptable

☐ **_M1U** = Minority and nonminority, unacceptable

☐ **_M2A** = Only minority, acceptable

☐ **_M2U** = Only minority, unacceptable

☐ **_M3A** = Only nonminority, acceptable

☐ **_M3U** = Only nonminority, unacceptable

☐ **_M4A** = minority composition unknown, acceptable

☐ **_M4U** = minority composition unknown, unacceptable

☐ **_M5A** = only foreign subjects, acceptable

☐ **_M5U** = only foreign subjects, unacceptable

Children Inclusion Codes

☐ **_C1A** = Children and adults, acceptable

☐ _**C1U** = Children and adults, unacceptable

☐ _**C2A** = Only children, acceptable

☐ _**C2U** = Only children, unacceptable

☐ _**C3A** = No children included, acceptable

☐ _(M4U) Minority representation is unknown. The applicant does not provide sufficient information about the racial and ethnic composition of the study population. The application does not comply with requirements and is unacceptable.

BACKGROUND AND REFERENCES

Human Subjects Protection

Federal Regulations for Protection of Human Research Subjects (45 CFR 46): http://www.hhs.gov/ohrp/humansubjects/guidance/45cfr46.html

More Information

Peer Review Decision Trees for Human Subjects Protections and Inclusion Issues

Definition of Human Subject

A living individual about whom an investigator (whether professional or student) conducting research obtains

1) Data through intervention or interaction with the individual, or

2) Identifiable private information.

☐ _*Intervention* includes both physical procedures by which data are gathered (for example, venipuncture) and manipulations of the subject or the subject's environment that are performed for research purposes. Interaction includes communication or interpersonal contact between investigator and subject.

☐ _*Private information* includes information about behavior that occurs in a

context in which an individual can reasonably expect that no observation or recording is taking place, and information which has been provided for specific purposes by an individual
and which the individual can reasonably expect will not be made public (for example, a medical record). Private information must be individually identifiable (i.e., the identity of the subject is or may readily be ascertained by the investigator or associated with the information) in order for obtaining the information to constitute research involving human subjects.

Research Involving Coded Private Information or Biological Specimens

Research that involves only the use of human specimens or data is not considered human subjects research if:

☐ _All subjects are deceased **OR**

☐ _The data/specimens were not obtained specifically for the proposed research AND none of the investigators involved in the research can ascertain the identity of the subjects, either directly or indirectly.

See http://www.hhs.gov/ohrp/policy/cdebiol.html for more detailed information

Human Subjects Research Exemptions (45 CFR 46.101)

1) Research conducted in established or commonly accepted educational settings, involving normal educational practices, such as
i. research on regular and special education instructional strategies, or
ii. research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.

2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless:

i. information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and

ii. any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

3) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior that is not exempt under paragraph (b)(2) of this section, if:

i. the human subjects are elected or appointed public officials or candidates for public office; or

ii. (ii) federal statute(s) require(s) without exception that the confidentiality of the personally identifiable information will be maintained throughout the research and thereafter.

4) Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects.

5) Research and demonstration projects which are conducted by or subject to the approval of department or agency heads, and which are designed to study, evaluate, or otherwise examine:

i. public benefit or service programs;

ii. procedures for obtaining benefits or services under those programs;

iii. possible changes in or alternatives to those programs or procedures; or

iv. possible changes in methods or levels of payment for benefits or services under those programs. Taste and food quality evaluation and consumer acceptance studies,

i. if wholesome foods without additives are consumed or

ii. if a food is consumed that contains a food ingredient at or below the level and for a use found to be safe, or agricultural chemical or environmental contaminant at or below the level found to be safe, by the Food and Drug Administration or approved by the Environmental Protection Agency or the Food Safety and Inspection Service of the U.S. Department of Agriculture.

Data and Safety Monitoring Plan

For information, visit Data and Safety Monitoring Plan.

Inclusion of Women, Minorities, and Children

NIH Policies Regarding Inclusion of Women and Minorities

NIH Policies Regarding Inclusion of Children

Definitions

Clinical research:

1) Patient-oriented research. Research conducted with human subjects (or on material of human origin such as tissues, specimens and cognitive phenomena) for which an investigator (or colleague) directly interacts with human subjects. Excluded from this definition are in vitro studies that utilize human tissues that cannot be linked to a living individual. Patient-oriented research includes: (a) mechanisms of human disease, (b) therapeutic interventions, (c) clinical trials, or (d) development

of new technologies.

2) Epidemiologic and behavioral studies.

3) Outcomes research and health services research.

Note: Research that meets the criteria for Exemption 4 is not considered “clinical research” as defined by NIH. Therefore the NIH policies for inclusion of women, minorities, and children in clinical research, and planned enrollment reports do not apply to research projects covered by Exemption 4.

Phase III clinical trials research:

Phase III clinical trials research is defined as broadly based, prospective clinical investigations for the purpose of investigating the efficacy of the biomedical or behavioral intervention in large groups of human subjects (from several hundred to several thousand) by comparing the intervention to other standard or experimental interventions as well as to monitor adverse effects, and to collect information that will allow the intervention to be used safely.

Sex/Gender: For the purposes of reporting inclusion data, individuals are classified as either female or male. Sex/gender classification is based on self-report by participants enrolled in the research study. NIH policy does not require that inclusion data be based on sex assigned at birth. Reviewers should be aware that the proposed research may include individuals whose gender identity differs from their sex assigned at birth *Minority group:* A readily identifiable subset of the U.S. population distinguished by either racial, ethnic, and/or cultural heritage. In accordance with OMB Directive No. 15, the currently defined racial groups are American Indian/Alaskan Native; Asian; Native Hawaiian or Other Pacific Islander; Black or African American; White. Currently defined ethnic groups are Hispanic or Latino; Not Hispanic or Latino. It is expected that study participants will be asked to identify their ethnicity and their race(s).

Children: Individuals under the age of 21 years.

Published Citations for Grant Reviewer – Tekla Smith

From: Sent by NCBI <nobody@ncbi.nlm.nih.gov>

Sent: Sunday, March 21, 2021 11:43 PM

To: Smith, Tekla D

Subject: [External] Tekla Smith - PubMed

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PubMed Results

Items 1-16 of 16 (Display the 16 citations in PubMed)

1. Loss of Junctional Adhesion Molecule A Promotes Severe Steatohepatitis in Mice on a Diet

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