"Life Skills Training" Prescription Drug Abuse Prevention Among Youth in Bell County, Kentucky

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University of Kentucky

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“LIFE SKILLS TRAINING”
PRESCRIPTION DRUG ABUSE PREVENTION AMONG YOUTH IN BELL COUNTY, KENTUCKY

CAPSTONE PROJECT PAPER

A paper submitted in partial fulfillment of the requirements for the degree of Master of Public Health in the University of Kentucky, College of Public Health

By

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Lexington, Kentucky
06/27/2016

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ABSTRACT

Prescription Drug Abuse (PDA) has become a serious public health concern and a major epidemic in the United States (U.S.). According to the 2014 National Survey on Drug Use and Health (NSUDH), approximately 15 million people (aged 12 or older) used prescription drugs in the past year and 6.5 million in past month. Out of these, 2 million Americans (aged 12 or older) either abused prescription drugs or were dependant on them. Almost 5% of adolescents (1.1 million) between the age group 12-17 abused prescription painkillers in 2014. Nationally, Kentucky is among the top five states with highest age-adjusted overdose death rates due to prescription pain killers, with an increase of more than 1,000 deaths per year over the past decade. Drug overdose deaths due to opioids are elevated in eastern Kentucky; specifically, the highest death rates are in Bell County, followed by Clay, Floyd, Johnson, and Knox Counties according to 2013 Kentucky Injury Prevention Research Center (KIPRC) data.

In response to the Centers for Disease Control and Prevention (CDC) funding announcement, the Bell County Health Department (BCHD) proposes to implement a community-focused school-based strategy called Life Skills Training (LST) to be implemented among youth in Bell County. LST is an evidence-based educational program specifically designed for youth/teenagers to prevent drug abuse and develop behavioral, self-management, and social skills. The classroom-based intervention will be implemented in three high schools: Bell County High School, Middlesboro High School, and Pineville High School. It will be implemented at two Levels (i.e., Level 1 in Year 1 with a total of 15 sessions and Level 2 in Year 2 with a total of 15 sessions). All project activities are coupled with an extensive evaluation plan and targeted local and state results dissemination. In sum, BCHD and its team of committed collaborators are strategically poised to make meaningful decreases in PDA among youth in Bell County and eventually across the Commonwealth of Kentucky.
A. TARGET POPULATION & NEED

Prescription drug abuse (PDA) has become a serious public health concern and major epidemic for over a decade in the United States (U.S.).\textsuperscript{1} PDA is the use of medications without a prescription from a healthcare provider or in a different manner than actually prescribed, either intentionally or unintentionally by obtaining it from different sources including peers, friends, or family members.\textsuperscript{2} The number of overdose deaths due to prescription drugs have increased more than deaths due to other substances. Prescription drugs (including benzodiazepines, sedatives, amphetamines, depressants, and opioid painkillers) are the most commonly abused drugs, more so than other drugs, excluding alcohol and marijuana. Prescription drugs commonly used for abuse include methadone, oxycodone (OxyContin), hydrocodone (Vicodin), and Percocet (acetaminophen, oxycodone).\textsuperscript{1,2,3} The rate of drug overdose deaths has increased 200\% due to prescription drugs, mainly opioids (narcotic pain relievers).\textsuperscript{4} According to the 2014 U.S. National Survey on Drug Use and Health (NSDUH), approximately 15 million people (aged 12 or older) used prescription drugs in the past year and 6.5 million used them in the past month.\textsuperscript{3} Also, in 2014 approximately 2 million Americans (aged 12 or older) either abused prescription drugs or were dependent on them.\textsuperscript{5} The sales of prescription painkillers and number of deaths due to prescription painkillers quadrupled in the U.S. between 1999 and 2013 according to the Centers for Disease Control and Prevention (CDC).\textsuperscript{5} A report by NSDUH (2014) indicates that the majority of new illegal
drug users start their drug abuse habit using prescription painkillers.\textsuperscript{3} According to the CDC, there were approximately 47,055 deaths due to drug overdose in the U.S. in 2014 and a 1-year increased rate of drug overdose deaths from 13.8 to 14.7 per 100,000 persons from 2013 to 2014.\textsuperscript{4} Out of the 47,055 deaths in 2014, 18,893 deaths were linked to prescription pain relievers and 10,574 deaths were due to heroin.\textsuperscript{6} PDA in the U.S. has led to serious consequences with an increase in abuse-related emergency department and treatment admissions, overdose deaths, fractures, and injection drug use which has resulted in risky and negative outcomes such as the spread of infectious diseases, including HIV and Hepatitis C.\textsuperscript{3}

According to the 2014 NSDUH, specific population groups are more vulnerable to abusing prescription drugs than others based on gender and age. Current rates indicate that 2.6\% of men and 2.3\% of women in the U.S. are using prescription drugs non-medically.\textsuperscript{7} Non-preservation use among youth has increased nationwide in the past few years according to NSUDH data. In 2014, 4.7\% of adolescents (1.1 million) between the ages of 12-17 abused prescription painkillers.\textsuperscript{8} The rate of nonmedical painkiller use was 6.2\% among youth aged 12-17 years old and young adults aged 18-25 were more likely to abuse prescription drugs than older adults. During the past year, an average of 6,000 adolescents used prescription pain killers for the first time non-medically.\textsuperscript{7} Among youth aged 12-17 years old, emergency department visits due to prescription/non-prescription painkillers amounted to 74 visits (maximum) in a single day, more so than other commonly abused drugs, including anti-depressants (32 visits), and benzodiazepines (31 visits).\textsuperscript{7,9} One in four teens abuse or misuse prescription drugs in the U.S. and perceive prescription drugs to be safer than other drugs. About 10\% of
teens have abused prescription medications in the past 6 months.\textsuperscript{10} According to 2009 NSDUH data, the prevalence of PDA is higher among youth aged 12-17 than among young adults 18-25 years old (15.9\% among youth as compared to 12.7\% among young adults).\textsuperscript{11} In 2014, there were approximately 467,000 adolescents characterized as current users of pain relievers, out of which 168,000 were addicted to prescription painkillers.\textsuperscript{6}

According to recent 2014 CDC state data on drug overdose deaths, \textbf{Kentucky} is among five states (including West Virginia, New Mexico, New Hampshire, and Ohio) with the highest age-adjusted overdose death rate due to prescription painkillers. In Figure 2, the darkest-colored states are those with the highest rates of prescription drug overdose deaths, and the lighter ones have fewer prescription drug overdose deaths.\textsuperscript{12}

With an increase of more than 1,000 deaths/year over the past decade, Kentucky remained the second highest in age-adjusted drug overdose deaths due to pharmaceutical opioids in 2013 with 23.7 deaths per 100,000 population which exceeded the national rate of 13.8 per 100,000 population.\textsuperscript{13,14} A total of 1,087 residents and non-residents died in Kentucky in 2015 due to overdose as compared to
1,010 in 2013.\textsuperscript{14} Data from 2009-2013 shows a higher prevalence of drug overdose hospitalizations due to prescription opioids in eastern Kentucky represented in red in Figure 3.\textsuperscript{14} In examining 2013 data for each county in Kentucky, the rates of drug overdose deaths due to pharmaceutical opioids are elevated in eastern Kentucky, specifically Bell, Clay, Floyd, Johnson, and Knox Counties (Table 1, 2011-2013 data).\textsuperscript{13}

Bell County is located in the Eastern Coalfield Region of Kentucky, and borders Tennessee and Virginia. The county includes the Cumberland Gap which is both a historical landmark for the Appalachian region and a major transportation thoroughfare. Bell County covers a land area of 361 square miles with a population of approximately 30,000. The two main cities in Bell County are Middlesboro and Pineville with a population of approximately 10,000 and 2,000, respectively. Middlesboro is the largest city in Bell County.\textsuperscript{15} According to 2014 U.S. Census data, the majority of the population in Bell County is White, non-Hispanic (95.2%). Only 10.8% of Bell County residents have a Bachelor’s degree (age 25+) and 33.5% of the population lives below the federal poverty level compared to 19.1% of Kentucky residents.\textsuperscript{16} The 2010-2014 median household income (\textit{half of the households have income above that level and half below}) in Kentucky was $43,342 compared to

\scriptsize

<table>
<thead>
<tr>
<th>County (FIPS code)</th>
<th>Total number of drug overdose deaths involving pharmaceutical opioids, 2011-2013</th>
<th>Annual age-adjusted rate per 100,000 population</th>
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<tr>
<td>1 Bell County, KY (21013)</td>
<td>48</td>
<td>55.4</td>
</tr>
<tr>
<td>2 Clay County, KY (21051)</td>
<td>36</td>
<td>56.6</td>
</tr>
<tr>
<td>3 Floyd County, KY (21071)</td>
<td>59</td>
<td>53.3</td>
</tr>
<tr>
<td>4 Johnson County, KY (21115)</td>
<td>30</td>
<td>46.3</td>
</tr>
<tr>
<td>5 Knox County, KY (21197)</td>
<td>35</td>
<td>40.2</td>
</tr>
</tbody>
</table>

\textit{Table 1: Top 5 Kentucky counties by rate of drug overdose deaths due to opioids, 2011-2013.}\textsuperscript{13}

\textit{Figure 5 (a, b): Poverty and median household income in Kentucky counties.}\textsuperscript{16}
Bell County which was $24,976. As evident from Figure 5 (a & b), the entire Appalachian region of Kentucky experiences notably higher rates of poverty and lower median household income compared to other parts of the state according to U.S. Census data.

Importantly, eastern Kentucky is the most economically distressed area in the 13-state Appalachian region, and Bell County is among one of the Appalachian’s distressed counties, as shown in Figure 6. Kentucky has also been declared as one of the 10 states with the largest rural and small town populations in the U.S.

Drug abuse and socioeconomic status are directly associated with education level, race, parental substance abuse, poverty, and genetics. Surveys conducted among school students show a significant decline in drug abuse among students whose parents are more educated compared to those parents who have lower levels of education (36.7% vs. 23.7%, respectively). The study also shows that attaining education lowered drug abuse among high school students. Parental drug abuse is also a risk factor for increased chances of abuse among children. Evidence shows that about 9% of all American children live with one parent who abuses drugs/alcohol. Genetics also plays a role in increasing chances of drug abuse as it is responsible for 40%-60% of the predisposition an addict carries towards abusing drugs. According to a 2005-2008 NSUDH survey conducted among 37% of substance abusers in a total of 73,000 youth surveyed, evidence suggests that race is factor for drug abuse, contributing to increased number of white youth (9%) involved in drug abuse compared to African
American youth (5%).\textsuperscript{22} Poverty also has a significant association with drug abuse, as 20% of people on welfare in America have reported using some kind of illicit drug.\textsuperscript{23}

The impact of geographic location on the prevalence of PDA is also well documented in the literature. According to Figure 4, eastern Kentucky is the most affected area for drug abuse overdose deaths. Many of the factors contributing to the PDA problem in Appalachian includes ease of drug availability; few jobs/unemployment; difficulty coping with stress and peer pressure; and/or cultural acceptance of drug abuse.\textsuperscript{24}

Nationwide, teens are at risk of abusing prescription drugs for which there are many different reasons. The two main reasons for drug abuse among teens are that teens think that these drugs are “safe to be high” as these are doctor-prescribed drugs and much safer than street drugs, for instance, and easy to acquire from peers/friends or family. The reasons also include studying for long hours or to enhance performance at school, to cope with school stress, to get high, and/or peer pressure.\textsuperscript{25} Studies also show that rural teens are 26% more likely to abuse prescription drugs than their urban peers, although no differences were observed among rural and urban youth for all other substances.\textsuperscript{26} According to a research based on 2008 NSDUH data among a total of 17,872 participants aged 12-17, 13% of rural youth indicated that they used prescription drugs for non-medical reasons compared to 10% of urban youth.\textsuperscript{26}

Among adolescents, 8.6% rural, 8.1% small town, and 6.5% large urban youth were engaged in prescription opioid misuse as reported in 2014 according to Rigg and Monnat.\textsuperscript{8,27} The study also showed that rural and small urban-residing teens are at 35% and 21% greater odds of past year prescription opioid misuse, respectively, compared to urban teens. The main reasons for higher odds among rural teens include, but are
not limited to: criminal activity, lower perceived substance abuse/prescription drug misuse risk, and greater use of emergency medical treatment.$^{27,28}$

One of the big concerns in Kentucky discussed by high school principals is that PDA has become a growing issue of concern among teenagers. For example, in 2012, approximately 13,000 suspensions were made in Jefferson County schools alone due to the teenagers found possessing, distributing or under the influence of prescription opioids. A principal from another school mentioned that before eating breakfast, at the bus stops or on the bus, students are found taking prescription drugs.$^{29}$

To prevent PDA in Kentucky, several programs were started with a focus on teenagers, young adults, and their parents, including Operation UNITE, Keep Kentucky Kids Safe, and Partnership for Drug-Free Kids, and other programs that provide parental education through websites. Operation UNITE was started to train high school students regarding the adverse consequences of drug abuse, so that they can teach younger students about the same. It included parental teaching about how to talk to their kids about drug abuse and hiding medications so that children don’t have access to medicines.$^{30}$ Keep Kentucky Kids Safe is a program launched in 2010 by Former Attorney General Jack Conway with other partners, including the Justice Cabinet and Office of Drug Control Policy, Kentucky Pharmacists Association, National Association of Drug Diversion Investigators, Operation UNITE, and two mothers from Morehead, KY who lost their daughters to PDA. They travel to schools across the state to teach students about the devastating consequences of PDA. Through this program they also urge parents to monitor their kids at home and their access to prescription pills at home.$^{31}$ Partnership for Drug-Free Kids is another initiative nationwide to reduce drug abuse in teenagers.
with family support and direct involvement with teens.\textsuperscript{32} They work with communities nationwide and educate parents about how to deal with the situation, communicate with kids about PDA, and safeguard medications at home. The Kentucky Office of Drug Control Policy collaborated with the Partnership for a Drug-Free America in 2008 by bringing local media together to produce messages to strengthen communities and deepen the media’s efforts for drug prevention. The mission of the program in Kentucky was to “unsell” drugs to communities, particularly teenagers.\textsuperscript{33} Preventpromote.Org: Prevent promote is another organization which focuses on preventing substance abuse among youth in communities’ nationwide.\textsuperscript{34}

**Other Programs Addressing PDA In Kentucky:** There are other intervention programs available in Kentucky to improve substance abuse rates, including programs run by KY-ASAP (Kentucky Agency for Substance Abuse Policy).\textsuperscript{35} This is a unique local board which was created by the Office of Drug Control Policy in 2000 to reduce the prevalence of substance abuse (alcohol, tobacco and other drugs) among adolescents and adults in Kentucky. They have been working on policy change, which include smoke-free environments and programs to educate youth in schools about drugs and other substances. KY-ASAP is currently used in many communities, incorporating comprehensive drug education, prevention, and treatment of substance abuse.\textsuperscript{35} There are several other interventions available to the population, including programs such as NPLEX (National Precursor Log Exchange) which is a log system for cold and allergy medication restrictions used by pharmacies to track the sales of over-the-counter medications.\textsuperscript{36} Another intervention to reduce substance abuse is the institution of Prescription Drug Disposal locations by KY-ASAP; many communities host a “Drug
Take Back Day” each year. Notably, Kentucky has collected 11,095 pounds of unused or unwanted drugs from 55 counties at 80 different locations. Figure 7 shows data on the number of drugs collected from 2011 to 2014 in Kentucky. Another program named KASPER (Kentucky All Schedule Prescription Electronic Reporting System) has been implemented in Kentucky to track the dispensing of controlled prescriptions statewide. It is used to track prescription information for practitioners, pharmacists, and for the investigation agency. All of these programs are effective, but are policy- and/or enforcement-related. We are focusing on prevention of PDA among youth as our main objective. Adolescence is a major intervention time point to reduce current and future risky behavior related to drug use. Because age-specific data on PDA is not available at the county level, a potential proxy measure we can examine is county-level data on overdose deaths and age-specific data from Kentucky overall as discussed earlier.

According to the data presented, we are strategically focusing on Bell County as our primary intervention community due to the dire need of reducing overdose deaths due to prescription drugs among teens. One of the concerns is that as adults and children’s parents may be involved themselves in abusing prescription drugs, it will be best to teach students in schools about adverse consequences of PDA and to train them in life skills to prevent PDA.

Therefore, we have chosen to implement the Life Skills Training (LST) intervention to prevent PDA among teenagers in Bell County, Kentucky. LST is an evidence-based
The Bell County Health Department (BCHD) will serve Bell County residents with our evidence-based LST PDA prevention program which will focus on adolescents who are the most vulnerable population as behaviors and life decisions made in adolescence may predispose individuals to drug abuse during young adulthood. Our prevention program will focus on high school students (Grades 9 and 10); we will administer the program in three high schools. Our comprehensive approach focused on prevention and evaluation will help adolescents gain knowledge, implement behavior change, and improve attitudes related to all aspects of PDA.

LST to prevent substance abuse is a classroom-delivered, multi-component evidence-based program to prevent illegal drug (prescription drugs and others), alcohol abuse, tobacco use, violence, and other risk behaviors. LST addresses behavioral factors, social, psychological, cognitive and attitudinal factors which can lead to PDA. The LST program if used and implemented in an efficacious and effective way, can reduce drug use to up to 75%, alcohol use to 60%, and tobacco use to approximately 85% among teenagers. The curriculum is designed to improve self-management skills, social skills including behavioral skills, drug awareness, and resistance techniques among 9th and 10th grade students. Because research suggests LST is effective in rural white populations, our primary intervention will occur in Bell County.

This program has proven to be effective in different populations nationwide to reduce and prevent drug abuse. The LST program has been implemented in Pennsylvania.
among middle school students and approximately 4,800 students have received the training so far in 2015 and it is to be continued in the schools over the next two years.\textsuperscript{42} Evidence suggests that LST has been applied in multiple school settings with successful results. A report from the National Registry for Effective Prevention Program (NERPP) and Excellence in Prevention project has shown sufficient evidence on success of LST program among 13-17 year old youth, including validity and reliability of the program.\textsuperscript{43}

Most of the studies conducted nationally are randomized controlled trials (RCT) such as a RCT for 24 middle schools in rural Iowa, 57 middle schools in New York in rural or suburban areas, and two RCT for 33 public schools in Midwest from 1993-2004 to study long term effects of universal preventive incentives on methamphetamine use among adolescents. The LST approach is based on the theoretical foundation of two theories: Social Learning Theory by Bandura (1977) and the Problem Behavior Theory by Jessor & Jessor (1977).

All students studying in 9\textsuperscript{th} and 10\textsuperscript{th} grades in Bell County high schools will be our target population (N=650) including Bell County High School, Middlesboro High School, and Pineville High School (Table 2). Bell County High School is a public school with grades 9-12 and an estimated total enrollment of 800 students; we will focus on grades 9-10 equating to 400 students.\textsuperscript{44} Middlesboro High School has an estimated enrollment of 400 students for grades 9-12,
therefore, 200 students will be included for our intervention. Pineville High School includes 235 students in grades 7-12; again, we will focus on 9th and 10th grade students (50 students) in our prevention program. The strategies to implement the LST program is conducive to school and classroom settings. The bi-weekly class sessions will be 45 minutes each and will be delivered in 15 sessions in the first year (Level 1) and 15 sessions in the second year (Level 2). The curriculum will have a manual for the teacher as well as student copies for each session.

We will have a Parents’ Informational Meeting (PIM) before the start of the program to stress the importance of the prevention program. If needed, parents will be provided with transportation assistance or gas cards to attend the PIM. Although the curriculum will be offered to all students, 95% participation is anticipated, because some students may opt out due to their parents not willing to include them in the program. To retain the students in the program, we will have incentives and volunteer activities to motivate and involve students in program implementation allowing them to have a leadership role; they will also be able to encourage their peers to be actively involved. We will also include quizzes for students and give monthly gifts/rewards for those who receive the maximum points after the short quizzes in class. This will encourage students to participate in the program and learn.

B. PROGRAM APPROACH

WORK PLAN (see Appendix):

Bell County Health Department (BCHD) is going to implement the LST program in three high schools in Bell County according to the demonstrated need. LST is an evidence-
based program proven to prevent substance abuse, including risky behaviors related to all substances/prescription drugs. It focuses on three main components, including development of self-management skills, social skills, and drug resistance skills and helps students develop high self-esteem and confidence to deal with such issues. LST also helps students develop behavioral skills to reduce or prevent risky behaviors. Some of the examples of the content/curriculum include core life skills such as self-confidence, respecting self and others, interpersonal skills (empathy and compassion), managing emotions (anger, anxiety), personal responsibility, positive attitude, self-motivation, teamwork, critical thinking and decision making.

Topics covered in the curriculum include development of skills such as knowledge of effects of substance/drug abuse, knowledge of media influences to use tobacco/alcohol/drugs, belief in normative nature of peer drug abuse, importance of self-image, good decision making, task persistence, understanding of anxiety and its effects, relaxation skills, and communication skills. LST is an innovative substance abuse prevention program based on more than 30 years of peer-reviewed scientific research. It also holds the distinction of being the top research-based substance abuse prevention program in the country, and is recognized by an array of government agencies such as the U.S. Department of Education, the National Institute on Drug Abuse (NIDA), the U.S. Department of Justice, NREPP, the Office of Juvenile and Delinquency Prevention, and the CDC.

LST was developed by Gilbert J. Botvin, Ph.D., who is a professor of Public Health and Psychiatry at Cornell University and director of Cornell’s Institute for Prevention Research. He also created National Health Promotion Associates (NHPA) as the
national training center to train and support providers to deliver the program. Students who participate in the LST intervention program are more likely to resist risky behaviors in their lifetime compared to students who do not participate in the program. It has also been shown to be effective in a majority white rural population of students, which is our target population.

Our main goal is to reduce PDA among high school students (9th and 10th graders) in three high schools in Bell County during the following time period: 2016-2019. The LST program will be implemented in two levels: Level 1 (15 sessions, 1st year) and Level 2 (15 sessions, 2nd year). Each session from each level includes an in-class bi-weekly lesson, 45 minutes in duration, and administered by the school teachers. Our main SMART objectives include:

Objective 1: By the end of 3-year intervention period, reduce PDA among youth in Bell County by 25%.

Objective 2: By the end of each year, 90% of the intervention participants will have increased knowledge about PDA and life skills compared to earlier assessment.

In our current proposal, there is a minor adaptation to the program: we are changing Botvin’s LST high school intervention and implementing LST in 2 levels for high school students (9th and 10th grades). The curriculum for high school students will remain the same but it will be divided in multiple lectures (Level 1: 15 sessions and Level 2: 15 sessions). Another adaptation will include minor changes to the session on substance abuse to include a focused session on PDA and more comprehensive education on prescription drugs. We will make these changes by including a chapter on PDA and
exercises and quizzes to engage students to learn about PDA and its consequences.

Our PDA specialist will develop material on PDA which will include topics such as extent of the problem; core messages about PDA for students such as “It is not okay to share prescription drugs with peers or others, prescription drugs can lead to addiction; general information about PDA including questions such as what are prescription drugs?, most commonly used and available prescription drugs without prescription, what is PDA?, street names and brand names of prescription drugs, myths about PDA, signs of PDA; impact on behavior; and consequences of PDA.

Our intervention to reduce PDA focuses on the community level (schools) of the socio-ecological model, but it really is not just the schools which will change the behavior of the youth. All the other levels of the model shape the behavior of the adolescents, including peers, parents, and teachers at the relationship level as well as programs and services offered by community-based organizations. PDA prevention is addressed if we focus on a multi-level prevention approach such as LST which is a comprehensive educational program delivered in schools and focuses on development of individual’s behavioral and societal skills to prevent and reduce PDA.

**Year 1 Plan, Academic Year 2016-17:**

We will start with 6 months (May-October 2016) of pre-planning and enhancing readiness to implement the program in the three settings. These 6 months will be devoted to engaging community partners to assist with program implementation. In the
first month, we will hire staff to implement the program including research assistants, and a statistician. The LST trainers will be twelve teachers to deliver the program (i.e., four teachers from each of the three schools; two teachers will represent the 9th grade and 2 teachers will represent the 10th grade for their respective school). Additionally, we will form a **Community Advisory Group (CAG)**. The first few months will also be devoted to prepare/order study materials, prepare pre- and post-test surveys, develop a fidelity checklist for quality improvement, and design data collection methods. After meeting with the CAG, we will plan and schedule all of the events within the students’ weekly curriculum, adjusting all of the 15 sessions to be delivered in the first year in a bi-weekly format from November 2016 to May 2017. Key informant interview will be conducted to obtain information about the pressing issue in community from the community experts such as health professionals, school teachers, youth organizations, counselors, behavior experts, and safe school representatives. This will help the project team further understand the extent of the adolescent PDA problem. We will gather data from the community needs assessment first and subsequently determine the target population and brainstorm about possible key informants. The next step will be to develop a qualitative interview guide to conduct the interviews. We will conduct face-to-face interviews with the key informants and document their responses accordingly.

Focus groups with students and teachers will also be conducted to get their perspective on the extent of problem. The focus group will consist of 6-10 participants; there will be limited number of questions for students and teachers about the problem. The data will be recorded, and this data from both key informant interviews and the focus groups will help us to understand the extent of problem from each perspective, barriers to
reduction, and what needs to be addressed. We will also conduct a community needs assessment on drug abuse in Bell County and collect data through a community survey that will include youth, young adults, and adult respondents. This will help us to better understand community needs and readiness for prevention. In addition, an important component to be accomplished during the first 6 months is the LST teachers’ training (TOT-Training of Teachers) which will be conducted by NHPA at the regional center. LST teachers’ training will include a detailed 2-day workshop on implementation of the program. For Level 1, training will be provided in Year 1, and training for Levels 2 will be provided subsequently in Years 2. LST trainers from all three schools will be trained together, and the training will include sessions on delivery of each unit, monitoring student participation, and incorporating activities related to the text and collecting data on responses.

The 12 LST trainers from the three schools will be responsible for implementing the program in classroom settings. To deliver the program, we are using Botvin’s LST guide which includes a comprehensive teacher’s manual, student guide, and a companion website for activities. To make sure the program is implemented with high fidelity, using a fidelity checklist, the Project Coordinator will conduct observatory sessions in the classroom to determine if the program is implemented in the way it is supposed to be, with the lectures delivered in right way.
While implementing the program, if there are any incidents where a student needs critical healthcare services, the school nurse and counselor will deal with each case individually, but if there is an immediate need, we will have clinical services available at the ARH Middlesboro Hospital and behavioral health services from Cumberland River Behavioral Health in Middlesboro and Pineville.

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Timeline</th>
<th>Activities</th>
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<tbody>
<tr>
<td>1</td>
<td>May - October 2016</td>
<td>First 6 Months</td>
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<tr>
<td>2</td>
<td>November 2016-May 2017</td>
<td>7 Months</td>
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<td>3</td>
<td>June – September 2017</td>
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<td>4</td>
<td>October 2017-May 2018</td>
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<tr>
<td>5</td>
<td>June-September 2018</td>
<td>4 Months</td>
</tr>
<tr>
<td>6</td>
<td>October 2018-April 2019</td>
<td>7 Months</td>
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*Table 3: Implementation of each Session divided over the 2 years (2 Levels)*

*Table 4: Timeline of the activities in 3-year period.*
Our continuous effort to implement the program yearly will include maintaining a Facebook page to circulate the information on the success of the program to families, organizations in Bell County, and to raise community awareness about the initiative. Text messages will be sent to parents about the implementation of program and at the end of every year, we will have our research assistant develop a report on the findings from pre- and post-tests; the report will be disseminated in the schools and to parents.

Year 2 and 3 Plan, Academic Years 2017-19: The program will be implemented in the second year (Level 2, 15 sessions) and third year will be mostly devoted to conducting a follow-up survey assessing students’ knowledge and drug resistance skills. To maintain the program after the third year, we will apply for more grants/funding so that we can continue the LST program as part of the school curriculum and implement it in additional school settings.

We will also assess whether or not the KY Department of Education and schools are ready to implement the program as a compulsory part of the curriculum to ensure sustainability. Data will be collected on number of participants/candidates in each session, annual pre- and post-test measures, fidelity checklist results, and the number of meetings held in a year with corresponding meeting minutes. The data will be used to ensure the program is implemented correctly. We will also conduct process and outcome evaluations by observing how the program is implemented and also by pre- and post-test surveys. Table 4 shows the timeline of the activities that we will implement over the 3-year period.

Our CAG includes the Bell County Public Health Director, Project Coordinator (BCHD Prevention Program Specialist), Bell County Safe Schools Coordinator, three
representative LST Trainers, a clinician from Middlesboro ARH Hospital, a behavior specialist from Cumberland River Behavioral Health, a representative from Kentucky Law Enforcement Council, and a member of Kentucky Pharmacist Association (KPhA), and a former drug user who is a peer student leader.

The CAG will be responsible for meeting once quarterly across all three years to discuss the implementation of the program, programmatic progress over the academic year, challenges and limitations, quality of implementation, response from students about the program, evaluation results, and assess future implications. LST Trainers/School teachers are a very important part of the CAG as they will be able to obtain students’ feedback about the program, monitor participation rates, and identify challenges to program implementation. Although not directly a part of CAG, there are several individuals who can help to achieve the success of the program, including Director of KY Department of Education and Director of KY School Board who may be able to guide dissemination of the results of the prevention program, and to advocate for implementation of the program in other schools. The school principals from the selected schools and the school nurses will be able to help with implementation of the program according to the school schedule and can help with reported cases of drug abuse among 9th and 10th graders. The representatives from FRYSC and KYA will be helpful to help engage youth in the school to be leaders and train the next generation to be PDA prevention advocates in their communities. This can be done by including short projects such as drug abuse education expos, and peer to peer education among the Student Youth Organization in the schools.
A clinician from the Middlesboro ARH Hospital will be able to help in case of severe drug abuse cases and/or emergency referrals. The member/pharmacist from the KPhA and the KY Law Enforcement Agency will be able to help with updated information on the sale or robberies of prescription drugs in that area.

As the current academic curriculum doesn’t include LST as a part of their curriculum, with positive response and cooperation of the Kentucky Department of Education (KDE) and the high schools in Bell County, we will incorporate the 45-minute sessions bi-weekly throughout the academic calendar. We will make sure that these 45-minute sessions do not affect the overall academic schedule of the students.

To assure quality assurance of the program, we will have the Program Coordinator and co-investigators make frequent visits to the classroom sessions and observe the delivery of the program by the LST Trainers in all three school settings. We will have a Fidelity Checklist for the observer (see Appendix) which will help to monitor the implementation of the program. A quality check will be performed at each level of program implementation, and it will include the following elements: delivery of the lectures and detail assessment of each component of the sessions, total number of sessions at each level in both grades, participation of the students, provider logs, setting of implementation, and program materials used. To address potential project challenges, we will discuss all issues in the CAG meetings, including:

- Inclement weather resulting in snow-days for students. Keeping that in mind, we have designed the classroom sessions in a way that we will have half of the sessions before the winter break and remainder of the sessions can be adjusted to March/April as needed.
• Participation of the students can be an issue, and we will make sure that we retain students in the program by giving away small gifts (e.g., gift cards, iPods) to students.

**C. PROGRAM EVALUATION**

Given the relatively high rates of PDA in Bell County, it would be beneficial to use the LST evidence-based intervention in all three high school settings in Bell County. During the formative evaluation phase of the project, we will conduct key informant interviews with health officials in the area, safe school representative, behavior experts, counselors, and youth organizations to determine what is already being done to combat PDA among teens in the area, who will be key partners in gaining community buy-in, and ideal strategies for program implementation. Secondly, we will conduct focus groups with students and staff to determine if any changes should be made to the materials or delivery of the LST program, or to the pre- and post-surveys obtained from Botvin’s LST modules. All of the data obtained during the implementation of intervention will be used to track students throughout the program. The focus groups will also be used to assess initial attitudes and self-efficacy towards PDA among each school’s student groups. This all will be done in the initial 6 months of the project period. Sample questions for the student focus group may include:

• Do you think student’s taking prescription drugs illegally is a problem at your school?
• Why do students take prescription medications?
• Where do students get prescription medications?
• What kinds of prescription medications are students using?
• What do the people in your life and the media tell you about drug use?

Performance measures will include data from key informant interviews, focus groups, pre- and post-tests, logged data on implementation of the intervention which will include data on attendance of students, lectures delivered bi-weekly, performance of students in class sessions, total number of participants, fidelity checklist on observatory sessions, bi-weekly delivery of sessions, and CAG meetings.

In addition to conducting focus groups, we will distribute a pre-test survey adapted from Botvin’s LST survey for high school students. We will modify the language to make it more applicable to students if needed. We will deliver it before the intervention starts in order to get a baseline reading of PDA and self-efficacy among the students. The pre-test survey has 51 questions divided into four sections, Sections A-D which includes demographics, LST knowledge test, anti-drug attitudes, and life skills assessment. We will modify the anti-drug attitudes section specifically to prescription drugs and their misuse. For example, instead of using other substances like alcohol and cocaine, we will include questions on prescription drugs such as using prescription drugs will make you look cool or peers who take prescription drugs have more friends.

During the intervention, we will collect data on performance of all students through quizzes and discussions conducted during class sessions. Students who perform the best on quizzes and in-class discussions each month will be entered into a drawing for a $25 gift card. These incentives will help to retain students and encourage class participation. For performance measures throughout the duration of the intervention, we will conduct random class visits in order to ensure fidelity to the program. This will be done by observatory sessions on the delivery of the program in the class, making sure
that in each class, all the necessary topics are covered to ensure quality delivery. The observatory sessions will be conducted in every other class session by our evaluation expert (co-investigator) and project co-ordinator. The fidelity checklist will include detailed monitoring on each unit being delivered properly and ensuring each topic is covered (see Appendix).

Finally, after delivery of the intervention in the first year, we will have a post follow-up survey for outcome evaluation using the Botvin’s LST high school survey in order to track longer-term changes in students’ prescription drug use, knowledge, self-efficacy and behavior. The post-survey will help establish information on the effectiveness of the program. We will also conduct a post-intervention focus group. This will allow us to gauge student and teacher attitudes about the way the program was delivered, and their knowledge and self-efficacy towards prescription drug use. Conducting post-intervention focus groups will also allow the participants to help us interpret any anomalies in the results of the intervention that may be attributed to local events or cultural differences that we might not be familiar with that could have affected the results.

As mentioned above, we would use Botvin’s pre- and post-test surveys for high school students. With minor changes in the survey (focusing on PDA) we will use the same survey. It includes four sections and is designed to give us information on health knowledge, attitudes and behaviors of the students. It specifically includes sections on demographics, LST knowledge, anti-drug attitudes, and life skills assessment.

We plan to add several questions, including items related to self-assessment and knowledge about reasons to start using drugs, frequency, how did they get to know about prescription drugs, and age when started. Some of the questions include:
• Have you ever thought about trying prescription drugs in an unintended manner?
• How often have you used prescription drugs in the past 15 days?
• How did you learn about drugs?
• What was your age when you tried prescription drugs for the first time without a prescription?
• Have you ever thought about getting treatment for this?
• Do you know of any prevention/treatment programs offered in your state?
• Have you ever tried to contact a local health department to be part of a treatment or prevention program?
• Did your parents ever mention or discuss drugs at home?

To have an effective program outcome, we will first ensure that the program is implemented correctly. The fidelity of program implementation is important and we will make sure to monitor our program implementation throughout all 15 bi-weekly delivery of the curriculum in the first year and consequently in the next two years. Program implementation sometimes is not done in a right way due to which the overall outcome is not good and the evaluation results may not be proper. In such an event, we will ensure that we collect and retain the data properly. We will assign special ID numbers to all the students from the three schools and we will make sure that after the implementation of the program we collect the data properly for all the IDs. This will also help to maintain each student’s confidentiality.

We will have both pre- and post-surveys to evaluate participants’ LST outcomes. The surveys will evaluate knowledge and other skills like attitude and beliefs towards PDA, and it will also include elements to address their confidence and self-esteem. The
data from the pre-test will be used to guide quality improvement of the program.

Evidence shows that the LST program, if used and implemented correctly, will reduce drug use to up to 75%, alcohol use to 60%, and tobacco use to approximately 85%.

Long term use of this program has shown very effective results in different communities. The obstacles to collection of performance measures could be unwillingness to participate or student drop-outs. Students' parents may refuse permission for their children to participate and be a part of the class and may not be willing to participate themselves, too.

D. CAPACITY AND EXPERIENCE OF THE APPLICANT ORGANIZATION

In order to address the PDA problem prevalent in Bell County, BCHD has proposed that the LST program be implemented in three high schools. BCHD became an independent department in July 2012. The mission of BCHD is to promote and protect health, and prevent disease, injury, disability and to reduce health disparities in Bell County. Our vision is to make Bell County a healthy community with a safe and clean environment and equal access to high quality health care services for all community members. There are myriad protection and prevention services provided by the department, some of which includes: family planning, WIC Program, cancer screening, STIs, HIV testing and counseling, nutrition counseling, immunizations, tobacco prevention and control, HANDS, health education, and environmental health services. The department has been successful in implementing several prevention programs in Bell County and has shown improvement in population health outcomes.

One of our most successful programs includes the Team 4 Health Initiative program. BCHD was awarded the Kentucky Department of Public Health (KDPH)
“Commissioner’s Award for Innovation” for the outstanding performance in development of the Team 4 Health Initiative. This initiative is called “Microclinic International” and Team Up 4 Health in Bell County in which the power of small groups was used to improve health outcomes specifically for type 2 diabetes and obesity. The program manager, Ms. Leigh Ann Baker, asserts that when people are in groups they do better. The director of BCHD, Ms. Judy Lefevers, said that “this is contagious health.” Our department has done very well in this small area (Bell County) and has set a standard for other areas in U.S.\textsuperscript{49}

Another successful program is Health Access Nurturing Development Services (HANDS) which was recognized for its excellent performance. We have also been working with Kentucky Youth to increase physical activity awareness to prevent obesity among adolescents. We were nationally-funded for this school-based program which included collaboration with the Kentucky Board of Education and schools in Bell County. The program included comprehensive education on healthy diet and behavioral skills. We have been successful promoting physical activity and have observed changes in eating patterns after healthy eating education was provided to the students. We have also started a raised-bed community garden for the Bell County community, which is a part of Team up 4 Health and school-based obesity program. We have also been working to improve health through our WIC program and cancer screening services. We have been doing regular breast cancer screening sessions for women aged 40-64.

Addressing the need in Bell County, we have increased our focus on PDA prevention and protection of the community. We have been distributing posters on safe use of prescription drugs, and how to keep drugs safe and away from children at home.
Through this grant, we will be able to introduce the LST program to high school students to help prevent and reduce PDA in Bell County. The grant money will be used efficiently and effectively to curb the existing problem. We have adequate staff to manage program of this size and the staff involved in this project are trained to conduct school-based interventions. BCHD has been working in different areas including clinical services, environmental services, and community-based interventional services. Our organizational chart includes all of the following positions:

![Organizational chart of BCHD](image)

The public health director will serve as the Project Director for the LST program implementation in the schools. The Prevention Program Specialist will serve as the Project Coordinator in this project. We have already worked with the Kentucky School Board Association (KSBA) and KDE as partners and have good relations in terms of implementing prevention programs. Our experience as a local health department in implementing the substance/PDA prevention program is minimal, though we have been working with KY-ASAP (an existing agency to curb substance/drug abuse in Kentucky) to prevent the drug abuse in Bell County with the various programs KY-ASAP is working
on. The advantage for the implementation of this intervention is that our department has already gained experience implementing a school-based prevention program; we are aware of the challenges and limitations in a school-based program. We have also been maintaining a Facebook page and updating our departmental activities to make people aware of the services offered by the department.

Our organization effectively and efficiently manages staff performance. Our staff is well trained and qualified to conduct all activities; they are evaluated on communication, accuracy in work, organizational awareness, performance, position knowledge, leadership, productivity, quality, and teamwork. The evaluation is conducted twice yearly and a final annual evaluation. Regular feedback is given to employees on their work and areas of improvement are addressed. We also give away small rewards for the employees who are doing well in their work. This is a motivation for all the employees to work hard and effectively. We also host monthly get-together to meet and greet all staff members and play team-building games to make them learn to be good team members and leaders.

BCHD has been constantly working hard to make Bell County a healthy community. We have conducted a community needs assessment for different health issues and the data collected over past years have been very helpful in designing programs according to community needs. Our staff has been collecting data on various issues like obesity, diabetes, nutrition and diet, physical activity, cancer and other health behaviors of Bell County residents. The data is analyzed by a statistician hired by the department from the University of Kentucky; the results have been very helpful in initiating programs such as HANDS, WIC, obesity prevention program, and the Team Up 4 Health initiative.
BCHD expressly prohibits discrimination and harassment on the basis of race, ethnicity, color, religion, sex (including sexual harassment, pregnancy, gender identity, and sexual orientation), national origin, age (40 years of age or over), disability (physical or mental), family medical history, or genetic information. It also is HHS policy to prohibit discrimination based on political affiliation, status as a parent, marital status, military service or any other non-merit based factor. These protections extend to all members of the community, program beneficiaries, and BCHD employees. Each are protected by federal laws, Presidential Executive Orders, and other directives and policies.\(^{50}\)

**E. PARTNERSHIP & COLLABORATION**

BCHD is implementing the proposed project in collaboration with potential partners who have been contributing to the welfare and development of Bell County residents. We are partnering at multiple levels (e.g., individual, family, community, and school). Our partners in Kentucky who will work with us on the existing disparities of PDA are:

- Kentucky Agency for Substance abuse Policy (KY-ASAP)
- Kentucky Department of Public Health (KDPH)
- Kentucky Department of Education (KDE)
- Schools in Bell County
- Kentucky Law Enforcement Council (KLEC)
- Kentucky’s Youth Advocates (KYA)

These partners will be providing us with the necessary help to prevent PDA in Bell County. Our partners have worked with diverse populations in Kentucky.
Our CAG includes the Bell County Public Health Director, Project Coordinator (BCHD Prevention Program Specialist), Bell County Safe Schools Coordinator, three representative LST Trainers, a clinician from Middlesboro ARH Hospital, a behavior specialist from Cumberland River Behavioral Health, a representative from Kentucky Law Enforcement Council, and a member of Kentucky Pharmacist Association (KPhA), and a former drug user who is a peer student leader. The roles and responsibilities of all partners include the following:

- **KY Agency for Substance Abuse Policy**: KY-ASAP is a board created in 2000 to develop a plan to reduce the prevalence of alcohol, tobacco and other drug (ATOD) use among youth and adults in Kentucky. They have been working in Kentucky on the approach of prevention, treatment, and law enforcement. Collaborating with them will help us secure funding and sustain the program as a key concept of KY-ASAP is policy change. The success of our program will help us to disseminate information through KY-ASAP and implement the program in other areas in Kentucky.

- **Kentucky Department of Public Health (KDPH)**: The KDPH vision is to improve health of all communities in Kentucky. They will help us to get funding and sustain the program by continuing it in the schools and also implementing it in other communities as well.

- **Kentucky Department of Education (KDE)**: KDE is one of our most important partners to help us with the implementation of the program. They will help us with incorporating the prevention program in the school curriculum and secure the buy-in from the school teachers who will deliver the curriculum in classes.
• Kentucky’s Youth Advocates (KYA): KYA has been working for children so that they can live healthier lives. They have been working on collecting data on overall well-being of children in Kentucky, including their socioeconomic status, security, education, health and family and community strength. We will collaborate with them to provide us data on child health and work with us to encourage the youth in the schools to be leaders and encourage them to prevent the problem. Youth from Bell County schools will conduct various drug awareness campaigns to make community residents more aware of the problem and its consequences.

• Kentucky Law Enforcement Council (KLEC): We have partnered with law enforcement to be on the advisory committee and serve as a partner in educating our school children on the consequences of PDA.

Our partnerships exist at the school-level and we have partnered with KDE and discussed the on-going issue to implement the prevention program. Through the department of education, we have collaborated with the schools to help to deliver the LST in the schools. They have shown tremendous interest in the prevention program because of the emerging drug abuse issue which usually starts at young age.

F. PROJECT MANAGEMENT

To run the program effectively, our Project Coordinator (Prevention Program Specialist) will oversee the program. Dr. Arveen Kaur will be responsible for overseeing program implementation and delivery of the LST in the three Bell County Schools. Dr. Judy
Lefevers, Public Health Director, will be responsible for overall monitoring for effective implementation of the program. Dr. Kaur has experience working with schools for implementation of prevention programs, and has a good working relationship with the School Board and KDE. Dr. Kaur (Project Coordinator) will also be responsible for managing day-to-day operations and will ensure that project goals are met with proper data collection and reporting. Due to the overall complexity of the program, the program coordinator will make sure that everything is implemented correctly and will meet the partners on a time to time basis to discuss the implementation and monitoring of the program. When issues arise (some of which may include snow holidays or low student participation), we will meet with the partners and staff members to address the issue and come up with a solution. The three potential challenges which we may face includes: Low participation rate: For retention of students in the program, high performing students will be entered into monthly prize drawings; Snow holidays: a follow up conversation with school authorities (principal and school teachers) will focus on a potential day to makeup the session.

The Program Coordinator will be responsible for tracking the progress of project annually. The Project Coordinator will develop a spreadsheet to track the implementation of the program which will include number of hours devoted by the staff weekly which will help to manage the budget, list of assigned duties to staff per week, and checkmarks on completion of duties, and expenses if any. The Program Coordinator will do a monthly quality check on all the activities and data collected (e.g., checking one of the data variables, or student ID numbers) to make sure they are correct and a report will be prepared. Quality check of the delivery of the program will
also be done by having monthly meetings with the staff and discussing the progress. In the monthly meetings, other than the progress of the project, any limitations or challenges will be discussed which can be addressed in the next step and notes will be taken. The data collected from participants (before/after intervention-through pre and post surveys) will be entered by the staff regularly into the database, and will be analysed by the statistician.

The project team includes the Project Director Dr. Judy Lefevers, the Project Coordinator Dr. Kaur, an evaluation expert (co-investigator) Ms. Samantha Rolling, PDA expert, Dr. Rajat Thakur, 12 LST educators from the three schools, statistician Dr. Phil Zee, and a Research Assistant. The Project Coordinator will report to the Project Director about progress and will be updated monthly. The LST educators will work under the supervision of Dr. Kaur, the Project Coordinator. The evaluation expert Ms. Samantha Rolling will randomly attend sessions of LST and create reports about implementation of the program. The data from the sessions will be entered into the database by the Research Assistant. Program evaluation through pre- and post-test surveys will be conducted before and after the intervention implementation, along with fidelity check for quality improvement and the program implementation will be monitored throughout to track any challenges or limitations by the Project Coordinator.

Dr. Kaur has been working with BCHD since the start and she has experience implementing school-based interventions in other areas of public health. She has maintained good relations with the community partners, and has worked on large projects in the community. One of the examples includes obesity prevention in teenagers through educating middle and high school students. The school teachers are
trained through the 2-day training workshop conducted before implementing LST in classroom setting in Bell County high schools. Dr. Zee is highly experienced in his field of biostatistics and works with the University of Kentucky; we have hired him to assist with the statistical analysis.

BCHD ensures that we maintain supportive and friendly work culture and environment. With every achievement, we give accolades to the staff for their work and conduct a periodic professional lunch to celebrate the achievements together. We also ensure that professional development of the staff is on-going and all the staff members work like a family in a team.

G. **BUDGET AND BUDGET JUSTIFICATION**

For our LST PDA prevention intervention, according to the work plan, our budget is as follows:

- **Personnel Salaries and Wages**: This will be implemented for all 3 years, **May 2016 to April 2019**.

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<th>Position Title and Name</th>
<th>Annual Base Salary</th>
<th>Percent Effort on the Project</th>
<th>Amount Requested (Annually)</th>
<th>Total Amount Requested across all 3 Years</th>
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<td>Total Personnel</td>
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<td>$159,500</td>
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**Budget Justification for Personnel Salaries:**

**Project Coordinator.** Arveen Kaur, PhD, MPH (100% /12.0 Calendar months, Years 1-3): Dr. Kaur is the *Community health and Prevention Program Specialist* at the BCHD. She has been serving the community for 10 years and is well known in the community and among its residents. She will be serving as the Project Coordinator on the LST intervention to prevent PDA. She has worked previously with school prevention programs to address other public health issues like obesity which has been proven to be effective and has developed and maintain a good infrastructure to conduct school-based intervention programs.

**Project Director.** Judy Lefevres, PhD, CHES (20%/2.4 Calendar Months, Years 1-3): Dr. Lefevers is the *Public Health Director* of the BCHD. She has been serving the Department for the last 12 years and has also been working in collaboration with the University of Kentucky and KY-ASAP in programs such as Drug Take Back Day. She has an extensive track record working with the Bell County community. She will be devoting 20% effort for LST prevention program and will be monitoring the progress of the work from administrative to scientific level. She will be a part of several work sessions and monthly meetings to track the progress.

**Co-investigator.** Samantha Rolling, DrPH (30%/3.6 Calendar Months, Year 1-3): Dr. Rolling will be our evaluation expert; she is an Assistant Professor at the University of Kentucky in the College of Public Health. She has experience conducting evaluation studies in different areas of public health and she will be working with us to conduct process/outcome evaluation during the project period. She will be devoting 30% effort for LST prevention program.
Co-investigator. Rajat Thakur, Pharm.D, MPH (30%/3.6 Calendar Months, Year 1-3): Dr. Thakur is a pharmacy and public health professor at the University of Kentucky and has experience working in different areas focused on PDA. He will assist with PDA adaptation of changing the LST session on substance abuse to specifically prescription drugs with 30% effort for this intervention project.

Statistician. Phil Zee, PhD. (20%/2.4 Calendar Months, Years 1-3): Dr. Zee is an associate professor in biostatistics at the University of Kentucky and has been working with the university for eight years. He is an expert in statistical analysis and has developed a novel statistical methodology to analyse interactions in the data. He has been working with us on other BCHD projects; he will be serving 1.2 calendar months with us in this project for statistical analysis.

Research Assistant. Patty Huong, MPH (30%/3.6 Calendar Months, Years 1-3): Ms. Huong has been hired as a Research Assistant. She has expertise in conducting community-based programs and has specialized trainings in outcome evaluation. She will be serving 1.2 calendar months with us for all three years.

- Training Costs:

LST includes 2-day training of trainers (TOT) by Life Skills trainer from NHPA at the regional center for all the staff members (teachers from each school, project coordinator, and co-investigators) which will cost $1,070 per participant. This training will enable the community to develop their own capacity to train instructors. The 2-day training will be conducted only in the first year, and subsequently a 1-day review training or booster training in the 2nd year. The training will be offered to 12 LST trainers (school
teachers), project coordinator, and co-investigators summing up to a total of 15 participants and cost of $16,050. Training also includes a booster training workshop in the 2nd year at a cost of $3,500. Travel expenses will be included to travel to the regional site for the 2-day training, plus hotel accommodations which may sum up to $2,500 per person and a total of $37,500. The grand total for first year is $53,550 and second year is $41,000.

- **Curriculum and Material for LST (Supplies):**

The curriculum for LST typically will be $8 per student per session for high school students and the teacher’s manual is $250 each * 12 teachers’ (Total of $3,000 per level and total of $6,000 for 2 Years). For all three years, total number of sessions (Level 1, 2) is 30 sessions and approximately 45-60 minutes to deliver each session. Grades 9 and 10 will have two teachers’ from each school to implement the training (total of 12 teachers) and a total of approximately 650 students from the three high schools.

Level 1 has 15 sessions and Level 2 has 15 sessions to deliver in classrooms. The total cost for all levels will be $156,000 for training material (650 students * $8 per copy for 30 sessions). Other printing material for administering quizzes and pre- and post-test surveys may include another $3,000 each year. Rewards and incentives for students would sum up to about $5,000 for first and second year and $2,000 for third year.

- **Equipment:**

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<td>Total</td>
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The computer workstation will be used by the Project Coordinator for generating reports, collecting data, and routine correspondence or electronic communications. The computers will be given to each school for data collection and electronic communication, and to the co-investigators and research assistant for conducting related research activities.

- **Travel Expenses:**

The Project Coordinator will travel to the schools to monitor program implementation which will include approximately 30 trips and a total cost of $5,000 for 2 years ($2500 per year for 15 sessions/trips) for travelling. It will also include travel expense for attending the annual regional training and conference to be held in Washington, DC. Two to four members of the team will attend the conference in the third year, adding $10,000 ($2500 per person *4) to the travel expenses. An additional $2,000 will be allocated for other travel purposes in Year 3 summing up to total of $12,000.

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<th>S.No.</th>
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<th>YEAR 2</th>
<th>YEAR 3</th>
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</tr>
<tr>
<td>4.</td>
<td>Equipment costs</td>
<td>$24,900</td>
<td>$0</td>
<td>$0</td>
<td>$24,900</td>
</tr>
<tr>
<td>5.</td>
<td>Printing</td>
<td>$3,000</td>
<td>$3,000</td>
<td>$3,000</td>
<td>$9,000</td>
</tr>
<tr>
<td>6.</td>
<td>Travel costs</td>
<td>$2,500</td>
<td>$2,500</td>
<td>$12,000</td>
<td>$17,000</td>
</tr>
<tr>
<td>7.</td>
<td>Incentives</td>
<td>$5,000</td>
<td>$5,000</td>
<td>$2,000</td>
<td>$12,000</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td><strong>$329,450</strong></td>
<td><strong>$292,000</strong></td>
<td><strong>$176,500</strong></td>
<td><strong>$797,950</strong></td>
</tr>
</tbody>
</table>
## APPENDIX

### 1. PLANNING COMMITTEE WORKSHEET

<table>
<thead>
<tr>
<th>S.No.</th>
<th>CONTACT PERSON</th>
<th>CONTACT INFORMATION</th>
<th>EXPERTISE, SKILLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>For example: Bell County High School Principal (Mr. X)</td>
<td>Bell County High School, Bell County, Kentucky</td>
<td>Scheduling class sessions, meetings, implementation of the program.</td>
</tr>
<tr>
<td>2</td>
<td>Middlesboro High School Principal (Mr. R)</td>
<td>Middlesboro High School, Bell County, KY</td>
<td>Scheduling class sessions, meetings, implementation of the program</td>
</tr>
<tr>
<td>3</td>
<td>Pineville High School Principal (Ms. U)</td>
<td>Pineville High School, Pineville, Bell County, KY</td>
<td>Scheduling class sessions, meetings, implementation of the program</td>
</tr>
<tr>
<td>4</td>
<td>Director Bell County Health Department (Dr. JL)</td>
<td>Bell County Health Department (BCHD)</td>
<td>Project Director/Principal Investigator</td>
</tr>
<tr>
<td>5</td>
<td>Prevention program specialist-BCHD (Dr. AK)</td>
<td>Bell County Health Department (BCHD)</td>
<td>Project Coordinator, coordinating all activities and implementation</td>
</tr>
</tbody>
</table>

### 2. FIDELITY CHECKLIST: For 9th and 10th Grade: (Level 1, 2 and 3)

<table>
<thead>
<tr>
<th>S.No.</th>
<th>FIDELITY CHECKLIST (9th and 10th Grade)</th>
<th>YES</th>
<th>NO</th>
<th>NOTES</th>
</tr>
</thead>
</table>
| 1     | Delivery of Lectures 3 high school settings  
- Bell County High School  
- Middlesboro High School  
- Pineville High School | □ | □ | |
| 2     | Dosage  
Total number of lectures delivered  
Length of each lecture  
Details on each unit covered (see Appendix)  
Every week session | □ | □ | |
| 3     | Setting (High School-9th and 10th Grades)  
- Bell County High School  
- Middlesboro High School  
- Pineville High School | □ | □ | |
| 4     | Material (LSTS) Module  
- Level 1 (15 sessions, Year1)  
- Level 2 (10 sessions, Year2)  
- Level 3 (5 Booster sessions, Year3) | □ | □ | |
| 5     | Target Population  
Data collected on Demographics of students | □ | □ | |
| 6     | Provider Qualifications  
LST Trainers (High school teachers) | □ | □ | |
3. **COMMUNITY ADVISORY GROUP (CAG) CHECKLIST**

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Community Advisory Group Members</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Director, BCHD</td>
<td>☐</td>
<td>□</td>
</tr>
<tr>
<td>2</td>
<td>Prevention program specialist, BCHD</td>
<td>☐</td>
<td>□</td>
</tr>
<tr>
<td>3</td>
<td>Director, Bell County Schools Board</td>
<td>☐</td>
<td>□</td>
</tr>
<tr>
<td>4</td>
<td>Safe School Coordinator, Bell County Schools</td>
<td>☐</td>
<td>□</td>
</tr>
<tr>
<td>5</td>
<td>LST Trainers or School teachers</td>
<td>☐</td>
<td>□</td>
</tr>
<tr>
<td>6</td>
<td>Clinician, Middlesboro ARH Hospital</td>
<td>☐</td>
<td>□</td>
</tr>
<tr>
<td>7</td>
<td>Representative, KY Law Enforcement Council</td>
<td>☐</td>
<td>□</td>
</tr>
<tr>
<td>8</td>
<td>Member, Kentucky Pharmacist Association (KPhA)</td>
<td>☐</td>
<td>□</td>
</tr>
<tr>
<td>9</td>
<td>Former adolescent drug user</td>
<td>☐</td>
<td>□</td>
</tr>
</tbody>
</table>
4. WORK PLAN-LIFE SKILLS TRAINING AMONG HIGH SCHOOL STUDENTS IN BELL COUNTY, KY

(From May 2016 through April 2019)

WORK PLAN YEAR 1

Grantee Name: Dr. Judy Lefevers

Funds Requested: $329,450 Per annum

WORK PLAN LIFE SKILLS TRAINING (LST YEAR 1)

GOAL 1: Reduce PDA among Youth in Bell County, Kentucky.

SMART OBJECTIVE 1: Reduce the PDA among High School students (9th and 10th Graders) in three school settings in Bell County, Kentucky in Academic school year 2016-17.

RATIONALE FOR OBJECTIVE 1: Life Skills Training (LST) for High School Students

Life Skills Training (LST) to prevent PDA is a classroom-delivered, multi-component evidence-based program to prevent illegal drug (prescription drugs, and others), alcohol abuse, tobacco use, violence, and other risk behaviors. LST is designed in a way that it addresses behavioral factors, social, psychological, cognitive and attitudinal factors which can lead to PDA. LST program if used and implemented in a right and effective way, will reduce drug use to up to 75%, alcohol use to 60%, and tobacco use to approximately 85% among teenagers. The curriculum is designed to improve self-management skills, social skills including behavioral skills, drug awareness, and resistance techniques among 9th and 10th grade students. Because research suggests LST is effective in rural White populations, our primary intervention will occur in Bell County.

MEASURES OF ACCOMPLISHMENT FOR OBJECTIVE 1: Cognitive and Behavioral Skills

- Develop Drug Resistance Skills
- Develop Self-Management Skills
- Develop Social Skills

ACTIVITIES IN SUPPORT OF OBJECTIVE 1 | PERSON OR AGENCY RESPONSIBLE FOR ACCOMPLISHING ACTIVITIES | ACTIVITY TIMELINE
--- | --- | ---
1.1 Conducting LST Training for School teachers within the first 6 months before | Project Coordinator Dr. Kaur is responsible for training the staff or school teachers to | Dr. Kaur will be conducting the LST workshop for school teachers
<table>
<thead>
<tr>
<th><strong>Implementing the program in classroom setting.</strong></th>
<th>Implement the program through NHPA within the first six months from May-October 2016.</th>
<th>and principal in first 6 months before October 2016.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1.2 Managing the Community Advisory Group</strong></td>
<td>3 monthly CAG meetings will be held and one of the Co-investigators will be responsible for managing the hours and conducting the meeting.</td>
<td>Three times in an academic year.</td>
</tr>
<tr>
<td><strong>1.3 Conducting the Level 1,2 and 3 sessions</strong></td>
<td>LST trainers from all 3 schools will be responsible to implementing the classroom sessions.</td>
<td>Level 1, 15 sessions in year 1, one classroom session bi-weekly from November 2016 to May 2017.</td>
</tr>
<tr>
<td><strong>1.4 Data collection and evaluation of the program</strong></td>
<td>Project Coordinator and Co-investigators will make sure that they have the data collected in a timely manner and bi-weekly evaluations will be conducted in the classroom setting to measure quality of delivery.</td>
<td>Bi-weekly observational evaluation sessions by Project coordinator or one of the Co-investigators.</td>
</tr>
<tr>
<td><strong>1.5 Data analysis and report dissemination</strong></td>
<td>Data analysis will be done by the statistician and a report will be created at the end of academic year.</td>
<td>At the end of academic year from June-August 2017.</td>
</tr>
</tbody>
</table>
5. LST PROGRAM LOGIC MODEL

Funding from various sources (State, federal, or other sources)

Community member’s participation which include: Bell County health department, 3 targeted high schools including:
- Bell County High School
- Middlesboro High School
- Pineville High School

LST Trainers, Kentucky Youth Advocates (KYA)
Primary and Secondary Data (Research)
Technical assistance

Recruiting participants:
High school students (9th and 10th Grade)
Training staff:
Classroom teachers-LST Trainers
Classroom Training:
Level 1 (15 sessions Year 1)
Level 2 (10 sessions Year 2)
Level 3 (5 sessions Year 3)

Drug Resistance skills development
Personal Self-management skills development
General social skills development

Classroom sessions – once weekly divided over the year
Total number of students trained.
LST Trained staff
Measurement of training through survey’s conducted at starting and end of training: Pre and post surveys.

Process and Outcome Evaluations.

Develop social competency skills to build resilience
Skills training in drug resistance skills
Personal self-management skills
Generate understanding of skills training necessity in youth

Reduction in prescription drug use among school students in 3 high schools in Bell County

Primary prevention
Decrease in use of prescription drugs among youth
Secondary prevention through education/skills training
Increased parental awareness

State wide policy and implementation of LST in all schools
Overall decrease in rate of PDA in youth after implementation of LST.
References:


Aimed-at-Reducing-Drug-Use-Available-to-All-Middle-School-Students.aspx#.V1Hph5ErK01