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Choosing and Maintaining Programs for Sex Education in Schools: The CHAMPSS Model

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Background

Although the teen birth rate in Texas is one of the highest in the nation (63 per 1,000 females ages 15-19), solutions to reduce the rate exist. Other states, such as California, have been successful in dramatically reducing the teen birth rate over the past two decades through strategies such as implementing comprehensive, age-appropriate, and medically accurate sex education, increasing access to contraceptive services, and involving private foundations to fund teen pregnancy prevention efforts by state and community agencies.[1] In 1991, the California teen birth rate was among the highest in the nation (73.8 per 1,000 females age 15-19 years). After implementing these strategies, California reduced its teen birth rate by nearly half (38.8 per 1,000) in 2005, making it the nation's steepest decline in teen births.[2]

California's successful strategies, specifically implementation of comprehensive sex education, have caught the attention of all who strive to prevent teen pregnancy, including policymakers and funders. Between 2007 and 2009 policymakers in six states adopted new requirements that sex education be both medically accurate and age appropriate. In June 2009, roughly half of all U.S. states declined to apply for funds under the federally funded Title V abstinence-only program because few eligible programs were evidence-based.[3] Further, in 2010, the White House Administration released a Teen Pregnancy Prevention Initiative that allocated $75 million exclusively for implementation of evidence-based programs (EBPs).[3]

EBPs are important for two reasons. First, they have been rigorously evaluated, and have demonstrated effectiveness in changing behavior.[4, 5] EBPs have been designed to reduce the teen pregnancy rate by reducing risky sexual behaviors (e.g. early sexual initiation, lack of condom/contraceptive use, multiple sexual partners) and increasing positive behaviors (e.g. delayed sexual initiation, increased use of condoms/contraceptive, reduced number of sexual partners). When widely implemented, EBPs can delay sexual initiation and reduce risky sexual behaviors, ultimately reducing the teen birth rate in a community.[6] Second, implementing EBPs is an effective use of limited resources. Because EBPs are "proven" approaches that have demonstrated effectiveness over time,[4] funders can be assured that their resources are

being invested wisely. Implementation of EBPs saves time and energy that would normally go into developing a program, or implementing a program that has not been proven effective.

More than 50 effective or promising curriculum-based teen pregnancy prevention programs have been developed,[4] yet 94% of Texas schools are not utilizing any of these programs.[7] This is cause for concern and could partly explain why Texas has the third highest teen birth rate in the nation.[8] Currently, Texas is in the midst of a budget crisis, with an estimated $4 billion proposed budget cut to education.[9] Teen births cost Texas tax-payers $1 billion annually.[10] Therefore, it is important to invest in EBPs that prevent teen pregnancy. EBPs in public schools would have a ripple effect on students' health and the economy. As a result of widespread school-based implementation of EBPs, students might engage in fewer risky sexual behaviors. This would result in decreased teen pregnancies and school dropouts, increased higher educational attainment, and an increased number of higher paying jobs attained by students, saving Texas tax-payers billions of dollars.

There are many reasons why Texas public schools do not implement evidence-based pregnancy prevention programs. School personnel lack knowledge of where to find EBPs,[11] some personnel perceive lack of support from administrators and parents for sex education,[11,12-14] schools devote very little time to sexual health education because of competing priorities,[14-16] teachers lack sexual health training,[14,15,17] and many school districts do not realize that some sexual health programs have strong evidence for their success.[16] Complicating the situation is the fact that adolescent sexual health is a controversial topic and districts differ in their ideologies on how best to approach the issue.[12,13] Subsequently, district and school staff often limit sexual health education to minimize or avoid controversy.[14] These barriers suggest that school districts lack the guidance needed to successfully implement an evidence-based sexual health program in their district. School districts need support from the beginning to end of the adoption and maintenance or institutionalization process.

Although models/frameworks have been developed to aid communities through the process of program adoption and implementation,[18-22] to our knowledge, there are no published models that

have been developed specifically for school districts. Community-based models may not be applicable to school districts that have their own unique challenges. For example, community-based organizations might have the support to implement an EBP but face the challenge of engaging and retaining youth in their program. School-districts, on the other hand, face the challenge of obtaining approval from district administrators to begin implementing a sexual health program. Additionally, current models heavily emphasize adaptation of EBPs to meet the needs of the community. The adaptation process involves tailoring curriculum content to fit the target population's needs, pretesting program materials, making revisions based on the pretest, pilot testing the newly adapted program, making revisions based on pilot tests, and conducting an evaluation to determine if the adaptation was successful in changing behavior.[18, 20] This process is unrealistic for school districts. In Texas, and across the U.S., school personnel are burdened with many school- and policy-related tasks and they are forced to accomplish these tasks in a short period of time. Thus, community-based models that stress adaptation are not feasible for school districts. School districts often lack the expertise, time, and resources to correctly follow this process. Models that target school-based settings are greatly needed.

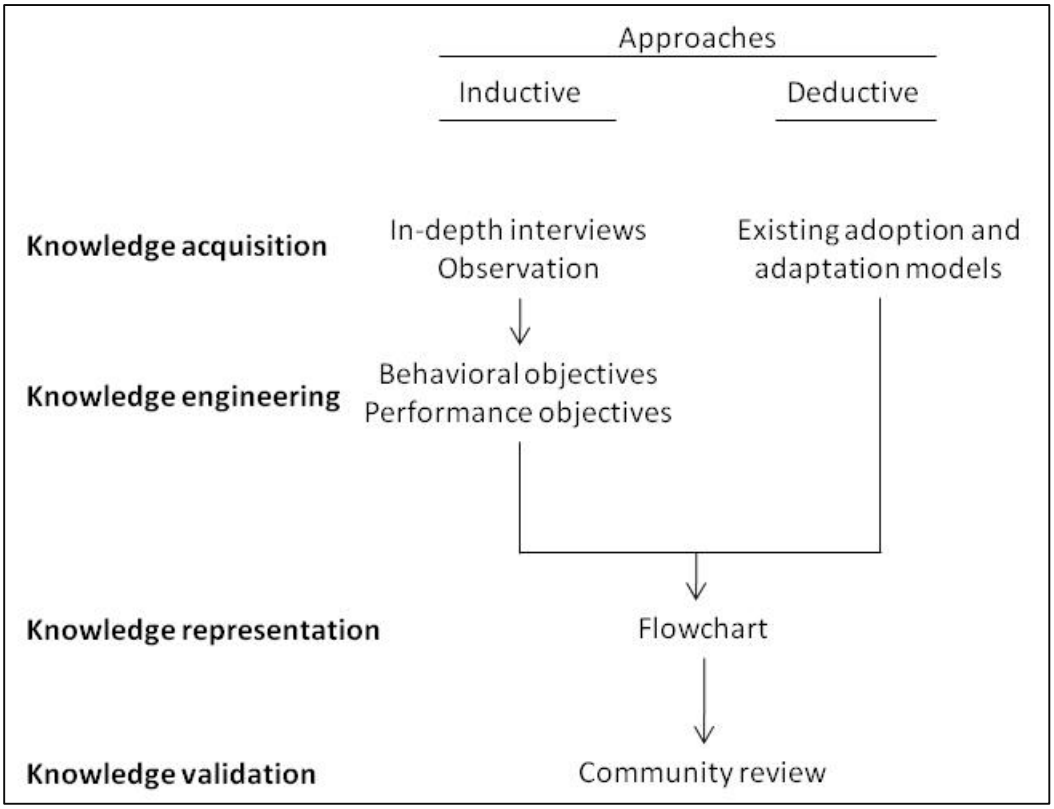
The purpose of this report is to present and describe the CHoosing And Maintaining Programs for Sex education in Schools (CHAMPSS) Model. The CHAMPSS Model is a realistic and practical framework for school districts that facilitates the adoption and implementation process of EBPs that prevent teen pregnancy in school-based settings. Currently, there is no set of established best practices for school districts to adopt and replicate EBPs. This report will be the first to provide a systematic framework for school districts to increase the probability of adoption, implementation, and maintenance of EBPs.

Methods Used in the CHAMPSS Model Development

Intervention Mapping (IM) was used to develop the CHAMPSS Model. IM is a detailed process that provides program planners a systematic approach for decision-making at each phase of the program development process.[23] IM has been previously used to develop effective interventions for various health topics including obesity,[24] teen pregnancy and sexually

transmitted diseases,[25-27] hearing loss,[28] asthma,[29] breast and cervical cancer,[30,31] and colorectal cancer.[32] Model development occurred in four phases[33] using the core processes of IM:1) knowledge acquisition; 2) knowledge engineering to develop behavioral and performance objectives; 3) knowledge representation to develop the conceptual framework of the model; and 4) knowledge validation (Figure 1). Details of each phase are described below. This study was approved by the University of Texas Health Science Center Committee for Protection of Human Subjects (HSC-SPH-09-0414).

Figure 1: Summary of methods used in the CHAMPSS Model development



Adapted from Shegog et al. 2004[33]

Knowledge Acquisition

We conducted a needs assessment to ensure the CHAMPSS Model was based on a thorough understanding of school districts' barriers, facilitators,

and decision-making processes for adoption and implementation of EBPs in schools using inductive and deductive approaches. A literature review (deductive) was first conducted to identify the internal and external factors that influence adoption and implementation, as well as, current adoption or adaptation models of EBPs targeting teen pregnancy.

Semi-structured in-depth interviews (inductive) with key stakeholders from school districts in Southeast Texas were conducted in spring 2010 to identify barriers and facilitators of the adoption and implementation process. Key stakeholders included: school board members, superintendents, district wellness/health coordinators, parents, and School Health Advisory Council (SHAC) [i] members. Participants were recruited through a local school health leadership group, which consisted of representatives from each school district in the county in which the study was conducted. Representatives from seven school districts volunteered to participate. Participants were asked to describe the approval or adoption process of health programs in their district or school, perceived barriers to implementation, perceived support from school staff and the community regarding sexual health education, and current strategies that were being used to prevent teen pregnancy in their district/school. All interviews were conducted in a private room at the key-informants' respective school district by trained research staff and were audio recorded. Audio recordings were transcribed and transcripts were coded for themes by a research team member.

To understand the decision-making processes of program adoption, we observed (inductive) SHAC and school board meetings in local school districts. Representatives from the school health leadership group who were interested in selecting a teen pregnancy prevention program for their districts would ask staff members to give a presentation to their SHAC that outlined the district's teen birth rate and other sexual health data along with possible solutions to this problem. An anthropologist on the research team attended these meetings to observe the deliberations among

[i] SHACs are organizations within the school district that provide advice to the district on issues of health. SHACs are comprised of parents, teachers, school administrators, and other community members. According to the Texas Education Code Section 28.004, each school district is required to have a SHAC.

attendees. Fieldnotes from these observations were analyzed for recurring themes.

A total of 10 in-depth interviews were conducted with 12 participants (one interview was conducted as a group interview with three participants). Participants were classified as follows: 2 school board members, 1 superintendent, 5 health/wellness coordinators, 1 principal, 1 school nurse, 1 counseling administrator, and 1 parent/SHAC co-chair. Nine participants were white and one participant was African-American. Eight participants were female and two were males. Interview data helped identify barriers and facilitators for adoption and implementation of EBPs. Additionally, the observations of 29 SHAC and school board meetings from 12 school districts highlighted salient issues in their decision making processes. Table 1 summarizes major barriers and facilitators identified through these needs assessment activities.

Table 1: Summary of barriers and facilitators for adoption and implementation identified through the needs assessment

	Empirical Support
District Level Barriers	
Fear of negative parent and community reactions	In-depth interviews, observations ([12, 15])
Lack of knowledge about local sexual health curricula and School Health Advisory Council (SHAC) activities	In-depth interviews
Confusion from curricula vendors that market non-evidence based curricula	In-depth interviews, observations
Confusion on how to integrate sexual health education into overall curriculum (e.g., what grade to begin and into what classes)	In-depth interviews, observations
District Level Facilitators	
Use of district level teen birth and sexually transmitted infection data and statistics as advocacy tools	In-depth interviews, observations
“Program champion” to advocate and communicate with administrators	In-depth interviews, observations
Program outcomes as an advocacy tool	In-depth interviews
School Level Barriers	

Confusion of district policy regarding sexual health education	In-depth interviews, observations ([15])
Fear of negative repercussions (e.g., job loss)	In-depth interviews, observations ([14])
Perception that sexual health education is not a priority in district	In-depth interviews ([12, 14-16])
Perception that parents and community are unsupportive	In-depth interviews, observations ([11-14])
Lack of resources (e.g., funding, materials)	In-depth interviews, observations ([12])
School Level Facilitators	
Identification of most appropriate sexual health educator	In-depth interviews
Training to increase comfort to teach sexual health education	In-depth interviews, observations ([14, 15, 17, 34])
Advocacy to prioritize and plan for sexual health education	In-depth interviews, observations ([15])
Perceptions parents and community are supportive	In-depth interviews, observations ([11-14])
Resources available (e.g. funding, materials)	In-depth interviews, observations ([12])

Knowledge Engineering

Knowledge engineering refers to organizing information for effective implementation.[33] We heavily relied on intervention mapping (IM) to facilitate this process. IM recommends that interventions have well defined behavioral objectives, (e.g. teachers will implement EBPs), and well defined performance objectives, detailed steps needed to achieve the behavioral objectives (e.g. review the curriculum).[23,25] In this case, behavioral objectives related to adoption, implementation, and maintenance were defined for all key stakeholders at the district, school and community levels. Stakeholders were characterized as: users of the CHAMPSS Model, also known as sexual health advocates[ii]; school board

[ii] We define sexual health advocates as individuals who desire to implement EBPs in their district/school. Any district level or school level stakeholder can be a sexual health

members; superintendents; principals and school staff; and community members, parents, and students (Figure 2). Behavioral objectives were: 1) sexual health advocates will work with the district health coordinators (or equivalent administrators who oversee school health) to establish an effective SHAC in their district; 2) SHACs, school board members, superintendents, principals, and sexual health teachers will adopt an EBP targeting teen pregnancy and/or HIV/STI prevention; 3) parents, community members, and students will support an EBP targeting teen pregnancy and/or HIV/STI prevention in their school district and ensure continued maintenance; 4) principals and sexual health educators will implement, with fidelity, an EBP targeting teen pregnancy and/or HIV/STI prevention in their school; and 5) SHACs, superintendents, principals, and sexual health teachers will continue to maintain implementation of an EBP targeting teen pregnancy and/or HIV/STI prevention in their schools with fidelity. The associated performance objectives for each behavioral objective are described in Table 2. Performance objectives were based on key barriers and facilitators identified during the needs assessment.

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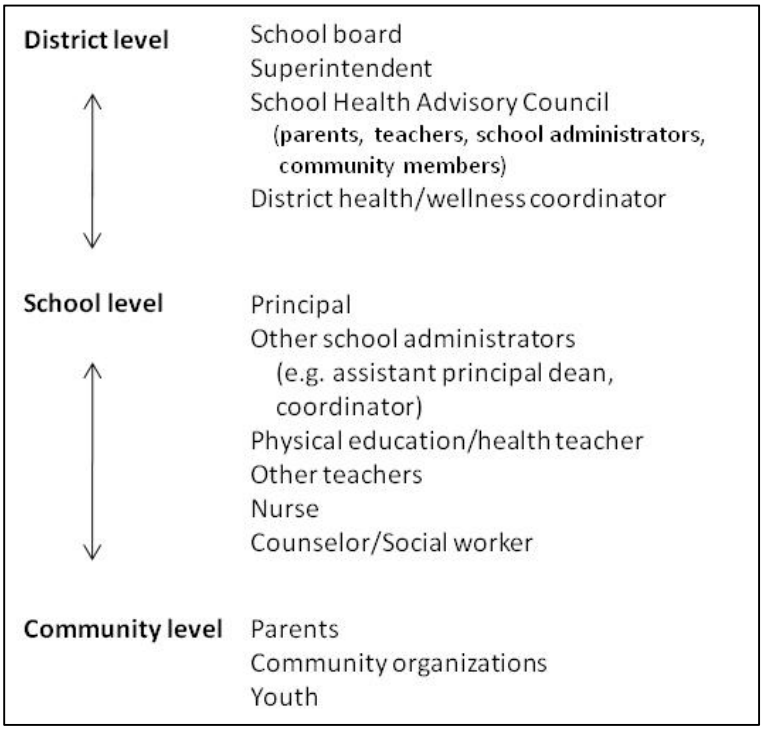
advocate, including staff that are not directly involved in sexual health education in their district/school.

Figure 2: Relationship of stakeholders for the adoption, implementation, and maintenance process



Note: Any stakeholder can become a Sexual Health Advocate and/or Program Champion

Table 2: Behavioral outcomes and performance objectives for the CHAMPSS Model

Behavioral Outcome	Associated Performance Objective
1. Sexual health advocates (SHA) will work with the district health coordinators (DHC) (or equivalent administrators who oversee school health) to establish an effective School Health Advisory Council (SHAC) in their district.	SHA will join the SHAC. SHA and DHC will review current SHAC member composition and identify gaps in membership, practices, requirements, and/or needs. SHA and DHC will identify potential students, parents, community members, health and school board members for the SHAC. SHA and DHC will recruit identified participants to be on SHAC. SHA and DHC will ensure regular meeting of and attendance to the SHAC.
2. SHACs, school board members, superintendents, principals, and sexual health teachers will adopt an EBP targeting teen pregnancy and/or HIV/STI prevention.	District and school level stakeholders will review current data and statistics on teen pregnancy and HIV/STI in their district/school. Stakeholders will review information on parent/school/community support for evidence-based sexual health education in school. Stakeholders will identify their goals and target population regarding sexual health education. Stakeholders will attend a SHAC meeting when discussions on sexual health education are taking place. Stakeholders will assess whether or not their district is using an EBP and if the current curricula, if any, meets their goals and objectives. Stakeholders will review and evaluate EBPs available to their district that meets their goals, target population, and desired outcomes. Stakeholders will review and elicit support of potential EBP with other stakeholders, discussing feasibility, resources required, and target population. SHACs will adopt an EBP and create a position statement with recommendation for school board approval. Stakeholders will review recommendations from SHAC. Stakeholders will adopt an EBP providing notification of such to stakeholders. Stakeholders will acquire the EBP.

3. Parents, community members, and students will support an EBP targeting teen pregnancy and/or HIV/STI prevention in their school district and ensure continued maintenance.	Parent and community stakeholders will review current data and statistics on teen pregnancy and HIV/STI in their district. Stakeholders will join the SHAC and attend meetings regularly to become a voting member. Stakeholders will review current state/district/school policy regarding sexual health education. Stakeholders will identify their goals and desired outcomes regarding sexual health education. Stakeholders will review and assess if the current curricula, if any, meets their goals and objectives and is an EBP. Stakeholders will encourage district and school staff to find and recommend EBPs that fit their school population, have desired outcomes, and are feasible in their district. Stakeholders will attend school board public meetings when discussions on sexual health education are occurring to elicit support. Stakeholders will provide positive feedback to district and school staff and encourage continued implementation of the EBP in the district at SHAC and school board meetings.
4. Principals and sexual health educators will implement, with fidelity, an EBP targeting teen pregnancy and/or HIV/STI prevention in their school.	School staff will identify most appropriate person(s) to implement the adopted EBP. School staff will review adopted curriculum in detail, including content, lessons, activities, and assignments, and modify the EBP to fit their needs, without modifying the core elements, if needed. School staff will assess school resources and capacity for implementing the EBP. School staff will attend trainings on the adopted EBP or on general adolescent sexual health to gain comfort and skills to implement the program. School staff will ensure teacher training/planning time and encourage implementation with fidelity. School staff will designate staff to create an implementation and monitoring/evaluation plan to ensure implementation with fidelity, while also eliciting support of the EBP from other school staff involved with implementation (e.g., nurse or counselor). School staff will obtain parent consent, if needed. School staff will implement the EBP with fidelity.

5. SHACs, superintendents, principals, and sexual health teachers will continue to maintain implementation of an EBP targeting teen pregnancy and/or HIV/STI prevention in their schools with fidelity	District and school staff will assess the planning and implementation of the EBP and ensure continuous quality improvement. District and school staff will evaluate the EBP's success in achieving desired results. District and school staff will provide encouragement and positive feedback to implementers for their achievement. If program was successful, district and school staff will create and implement a maintenance plan for continued implementation in district. If program was successful, staff will advocate for continued implementation of program by presenting program outcomes to stakeholders. If program was unsuccessful in meeting goals, objectives, and/or desired outcomes, district and school staff will create a contingency plan.

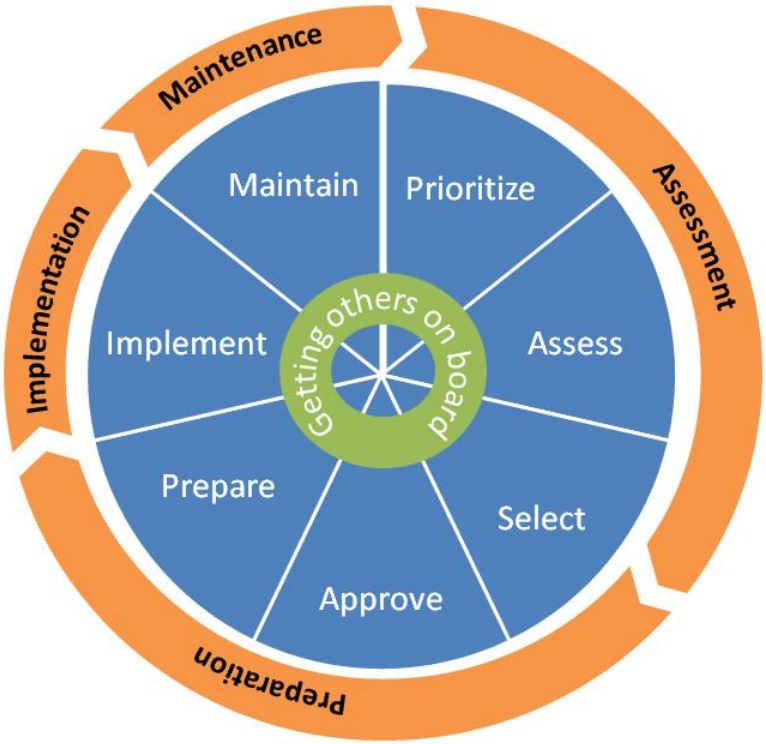
Knowledge Representation

Knowledge representation can occur in various forms, such as conceptual graphs.[33] We used the behavioral and performance objectives to guide the conceptual development of the CHAMPSS Model. Research team members organized the performance objectives into a systematic parsimonious framework. The resulting model guides school districts through the adoption, implementation, and maintenance process of EBPs.

The foundation of the CHAMPSS Model was built from the needs assessment activities (inductive approach) and previous community-based program adaptation models (deductive approach).[18-22] The literature review helped identify five adaptation models related to sexual health in community settings.[18-22] However, none of the identified models targeted school settings and these models heavily emphasized adaption of EBPs. Results from in-depth interviews and observations suggested school districts lack the time and expertise to follow the adaption process correctly. Additionally, schools face unique challenges (e.g., fear of parent and community negative reactions) that community-based models did not address. Thus, the knowledge base for the CHAMPSS Model emphasizes program replication and the action steps that encompass program adoption, implementation, and maintenance in school-based settings.

We identified four phases that schools need to complete/achieve: 1) assessment, 2) preparation, 3) implementation, and 4) maintenance. Within these four phases, there are seven action steps: 1) Prioritize, 2) Assess, 3) Select, 4) Approve, 5) Prepare, 6) Implement, and 7) Maintain (Figure 3).

Figure 3: Summary of the CHAMPSS Model



School districts vary in their level of readiness to adopt and implement EBPs; therefore, they can enter the CHAMPSS Model at any phase. Further, although the model follows a linear path, school districts may need to revisit action steps when they encounter challenges, and some steps may occur simultaneously. For example, school districts may need to revisit "Getting others on Board" often and conduct it concurrently with other steps. A summary of each of the phases and action steps is presented in Figure 4.

Figure 4: Summary of phases and action steps for the CHAMPSS Model

Assessment Phase: Sexual health advocates work closely with stakeholders to raise awareness on teen pregnancy in their district, conduct a needs assessment to identify the magnitude of the problem in their district and target population, and begin to discuss possible EBPs that could be implemented.

Preparation Phase: Sexual health advocates and stakeholders finalize selecting an EBP, work towards gaining appropriate approvals to implement the program, and create detailed plans to carry out the program.

Implementation Phase: "Program Champions" work closely with stakeholders to ensure programs are implemented with fidelity. "Program champions" could be the sexual health advocate or other district/school staff involved in the implementation of the program.

Maintenance Phase: "Program Champions" and stakeholders ensure continued implementation of the EBP.

Getting others on Board: A core element of the model. This component is not included in any other program dissemination models and is critical during each phase of the model.

Step	*Summary of Step*
Step 1: "Prioritize"	Consists of understanding why sexual health education (SHE) is a priority, making SHE a priority for others, and establishing an effective School Health Advisory Council (SHAC).
Step 2: "Assess"	Involves reviewing data and statistics on adolescent sexual health, gauging school and parent support for SHE, identifying the current SHE programs being implemented in the district, and identifying the district's/school's resources.
Step 3: "Select"	Consists of identifying the target population, identifying goals and objectives for SHE in the district, and selecting an EBP if the current program being implemented is not an EBP.
Step 4: "Approve"	Includes obtaining district/school approval for the selected EBP.
Step 5: "Prepare"	Requires that districts plan for the implementation of the selected EBP, including making minor adjustments to the EBP, if needed.
Step 6: "Implement"	Consists of implementing the selected EBP with fidelity.
Step 7: "Maintain"	Involves evaluation and making the necessary modifications for continued program implementation.
"Getting others on board"	Involves gaining support from various key-decision makers for adolescent sexual health and SHE

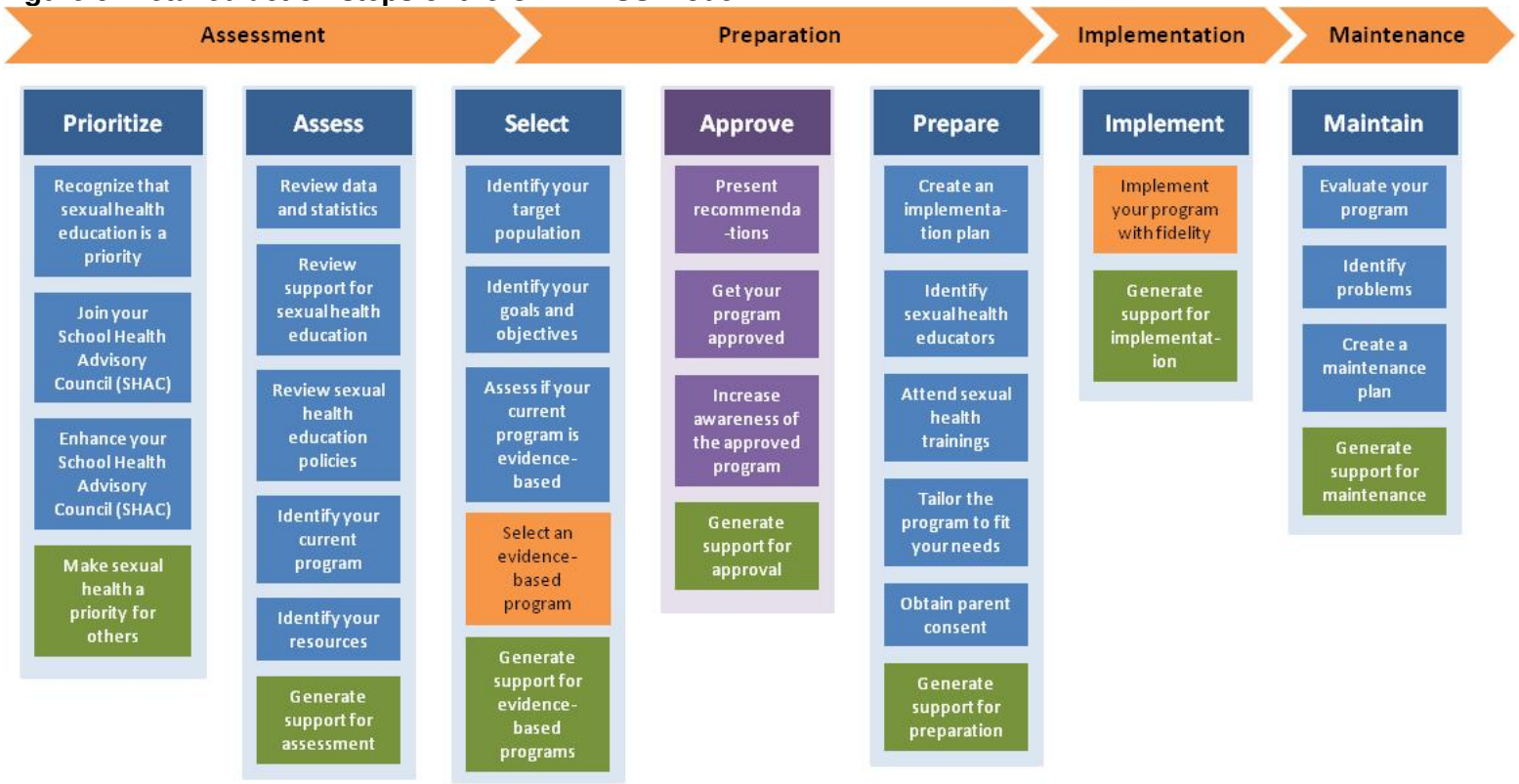
Knowledge Validation

Knowledge validation consisted of presenting the conceptual model to the school health leadership group. Members of the group were asked about the usefulness of the CHAMPSS Model, motivation to use the model, user-friendliness, and general improvements that could be made. Overall, members of the group expressed favorable attitudes towards the model. Participants believed the CHAMPSS Model would be useful in "making the case" for EBPs and would be beneficial to their district. Major changes to the model were not suggested. Members did express desire to have resources readily available, such as district level data on teen births and graduation rates of teen parents, factsheets and presentations for advocacy, and templates for making recommendations and writing position statements to supplement the model.

Description of the CHAMPSS Model

This section provides specific details of the CHAMPSS Model (see Figure 5).

Figure 5: Detailed action steps of the CHAMPSS Model



Assessment Phase

Step 1: Prioritize

Needs assessment activities revealed that many school staff did not perceive sexual health education as a priority in their respective district compared to other subjects. This made implementing a sexual health program challenging. Thus, the first step in the adoption process is for the sexual health advocate to raise awareness of teen pregnancy in the district and solutions to the problem. This is an important action step as many stakeholders may be unaware of the magnitude of the problem or have allowed other school-related tasks to take precedence over teen pregnancy and sexual health, as observed through the needs assessment. Therefore, making others aware of the problem, through distribution of fact sheets or presenting key data on adolescent sexual health, is the first step needed to begin the dialogue.

Prioritize also involves forming a SHAC (Sexual Health Advisory Council), or mobilizing an existing SHAC to address teen pregnancy. According to the Texas Education Code, SHACs are required in each school district and must have a minimum of five members, the majority of whom should be parents with children in the district. State law specifies SHACs are to provide recommendations regarding human sexuality instruction to the school board.[35] Therefore, SHACs are vital to the adoption process for sexual health education programs. Consequently, it is important to have a well-functioning SHAC. SHACs may encounter many challenges such as poor parent participation, disorganization, and infrequent meetings, making them ineffective. When this occurs, important decisions and recommendations regarding student health issues are overlooked. It is important that the sexual health advocate work collaboratively with the SHAC chair and/or district health/wellness coordinator to minimize these potential challenges by actively recruiting members (including health teachers and students), holding meetings at convenient times and locations, being organized, and leading the discussion on sexual health education programs.

Step 2: Assess

During the needs assessment, district administrators expressed a desire to become knowledgeable on the teen birth rate in their district, the negative consequences as a result of teen births (e.g., school dropout, poor academic performance), and current prevention activities in the district. Additionally, school personnel were unsure at which grade level to begin sexual health education. Thus assess involves gaining a specific understanding of the district's teen pregnancy and birth rates and the prevalence of students' risky sexual behaviors, identifying the current sexual health education program being implemented, and identifying the available resources for implementation of EBPs. Gaining a thorough understanding of these factors will facilitate subsequent steps. For example, some EBPs require more resources than others (e.g., computers, DVD players, a school health promotion council). Understanding the district's capacity to implement EBPs early in the process will help decide which EBP to adopt.

This step also involves reviewing the district sexual health education policies and gauging district and parental support for them. These activities might also help overcome many perceived barriers and challenges associated with adopting an EBP, and can ensure that the most appropriate program for the district is adopted. Most Texas schools do not have specific policies on sexual health education,[16] and thus follow Texas policy by default. However, the needs assessment revealed some school staff mistakenly believed that the Texas policy prohibits instruction on condoms and other contraceptives. According to the Texas Education Code, instruction related to human sexuality must:

- "present abstinence from sexual activity as the preferred choice of behavior in relationship to all sexual activity for unmarried persons of school age;
- devote more attention to abstinence from sexual activity than to any other behavior;
- emphasize that abstinence from sexual activity, if used consistently and correctly, is the only method that is 100 percent effective in preventing pregnancy, sexually transmitted diseases, infection with human immunodeficiency virus or acquired immune deficiency

syndrome, and the emotional trauma associated with adolescent sexual activity;

- direct adolescents to a standard of behavior in which abstinence from sexual activity before marriage is the most effective way to prevent pregnancy, sexually transmitted diseases, and infection with human immunodeficiency virus or acquired immune deficiency syndrome; and
- teach contraception and condom use in terms of human use reality rates instead of theoretical laboratory rates, if instruction on contraception and condoms is included in curriculum content." [35]

Therefore, it is important for the sexual health advocate to discuss any misconceptions of Texas laws and any existing district/school policies with stakeholders.

To gauge stakeholder and parent support for EBP, the sexual health advocate could conduct surveys or focus groups with stakeholders and parents. Examples of discussion points include: What is the current district policy on sexual health education? Does the policy prohibit instruction on condoms/contraceptives? Does the policy differ by grade level? Is parent consent needed for implementing any sexual health education program? Do you support curricula that teach about condoms or contraceptives? If so, what grade level do you think students should be taught about condoms/contraceptives?

Few school districts have a policy that requires the use of EBPs when selecting curricula, so the sexual health advocate may want to advocate for a change in district policy so that EBPs are explicitly required To do this, the sexual health advocate may need more time at Step one of the CHAMPSS Model to emphasize the magnitude of problem and the need for sexual health education in the district to policymakers, or to other persons who can influence policy (e.g., parents). The sexual health advocate may also implement strategies described at the core of the model, "Getting others on Board" (see below for details) to promote policy change.

Step 3: Select

Selecting an EBP is a collaborative effort among stakeholders that requires ongoing communication. First, the sexual health advocate and stakeholders must identify the target population based on their thorough understanding of the teen birth rates and prevalence of students' risky behaviors in their district. The needs assessment suggested most school districts targeted specific classes, such as health/physical education, for implementing a sexual health education program rather than a specific group (e.g. females). In some cases this was due to the fact that health education was a required course for all students in middle school. It is recommended that the target population closely match the district/school demographic characteristics such as, age, grade, gender, and race/ethnicity. Otherwise, stakeholders should discuss targeting specific groups.

Next, the sexual health advocate and stakeholders must identify the districts' goals and objectives for sexual health education. The goals and objectives will be useful when deciding between EBPs. Key questions that will help inform district goals and objectives include: Does the district want to delay sexual initiation among students? Increase condoms and/or other contraceptive use? Increase parent-child communication? Decrease repeat pregnancy?

The final task for Select includes choosing an EBP that matches the school district's target population, goals, and objectives. The district must first identify if the current program being implemented in the district, if any, is an EBP. If not, then the district must identify an appropriate EBP. There are many organizations such as The National Campaign to Prevent Teen and Unplanned Pregnancy (http://www.thenationalcampaign.org), The Program Archive on Sexuality, Health and Adolescence (http://www.socio.com/pasha.php), and ETR Associates (http://www.etr.org), that have compiled summaries of evidence-based sexual health education programs for youth. Additionally these organizations provide information on each curriculum's content and activities, the population in which it was tested, evaluation results, resources needed, and where to purchase the curriculum. During the selection process it is important that the sexual health advocate and stakeholders work together so they become familiar with the curriculum's

content, the population in which the program was tested, program evaluation, and necessary resources for program implementation. Observations conducted in the needs assessment indicated that the process of selecting an EBP might be easy for some districts, but more difficult and time consuming (e.g., requiring more frequent discussions) for other districts due to various perceived barriers and facilitators. Regardless of how long the process takes, stakeholders should select a program that has been tested among a population with similar demographics to their target population, requires resources that the district/school can support, and has been shown to change the behaviors that the stakeholders want to alter.

Preparation Phase

Step 4: Approve

In Texas, a district's school board must approve the sexual health education curricula before program implementation can occur. This can be a long and arduous process for some school districts. Thus, it is important that school board members are involved in the discussions from the very beginning of the adoption process so that they are informed of the magnitude of the problem, are aware of support for the selected EBP, and are familiar with the content and activities of the EBP. This involvement helps reduce some of potential challenges associated with the program approval process (e.g., board members unaware of parent/teacher support for the EBP, or unfamiliar with the program content).

To begin the approval process, the SHAC must follow the voting procedures outlined in the SHAC bylaws to approve a recommendation on sexual health to the school board.[36, 37] The SHAC then recommends the EBP to the school board by presenting a recommendation letter. Recommendation letters may include information such as the importance of sexual health education, specific policy recommendations, specific curricula recommendations, and the benefits of these recommendations. The SHAC then designates a person to present the recommendation to the school board along with other supporting documents (e.g., summary sheet of the recommended program or fact sheets on teen pregnancy). It is helpful to have parents who are in support of the selected EBP at the

board meeting when this presentation occurs. The school board then discusses and votes on the program at this or a later meeting. Once approved, the sexual health advocate, superintendent, SHAC chair, principals, and/or health/wellness coordinators should ensure that all school district personnel are aware of the approved curricula and inform them of the school board's support for the program. This can be accomplished through a memo to district and school personnel or by posting of approved curricula on the district/school website. This communication will minimize barriers (e.g., fear to discuss sexual health topics with students, perceived lack of administrative support) that could impede program implementation at the school level.

If the program is not approved, it is important for proponents to understand why it was rejected, and to address concerns with those expressing resistance. The sexual health advocate and stakeholders might have to return to the first step of the CHAMPSS Model, putting greater effort in making sexual health a priority. They may also have to utilize advocacy strategies presented at the core of the model, "Getting others on Board" (see below for details). It is important that the sexual health advocate and stakeholders highlight the magnitude of the problem in their district by presenting teen birth data, and emphasize parent and community support for the EBP to those who have concerns or opposing perspectives.

Step 5: Prepare

Preparation involves creating an implementation plan that will help schools implement the approved sexual health education program. Implementation plans provide an opportunity to think through critical components of the program (e.g., how many students will participate in each school, how many students in each class, in which classes will the program be implemented, timeline for implementation), to ensure that those involved in the implementation of the program understand the program goals, and to ensure that time and resources are used effectively.[38] This may help reduce implementation barriers. It is important that planning for EBPs begin before the school year starts or several months before the EBP is implemented. Planning for the implementation of an EBP should be a collaborative and coordinated effort

among all personnel who may be involved in carrying out the program. These individuals might include the selected sexual health educator(s), school nurse, counselor, and, in some cases, the librarian, computer laboratory instructor, or other teachers. Some EBPs require the use of computers or other audio/visual equipment. Thus, teachers may need to coordinate with other school staff accordingly. Additionally, some classes may have large enrollment, requiring that students be divided into two or more groups. As a result, the sexual health educator(s) may need the support of other school staff to help with implementation and/or monitoring of the class. Implementation plans include components such as: the process for notifying parents about the program or obtaining parent consent (if required by the district), timing of program implementation, necessary program materials (e.g., number of lesson handouts), identification of a sexual health educator, and classroom space needs.

Many school districts automatically assign the health/physical education teacher with the task of teaching sexual health education. However, school staff participating in the needs assessment suggested that this person may or may not be the best person for this task. Some school staff perceived health/physical education teachers as appropriate, but others believed some were uncomfortable discussing sexual health topics and/or lacked training on the subject. Sexual health educators must be knowledgeable about adolescent sexual health and district standards regarding sexual health education, comfortable with sexual language and content, non-moralistic and nonjudgmental, knowledgeable of when to make referrals, have skills to lead sensitive discussions, build rapport with students, accept sexual desires and thoughts as natural, be accepting of self and body image, tolerant of ambiguity, have a sense of humor, and have a desire to teach sexuality.[39] Thus, school districts must select sexual health educator(s) with care. The sexual health educator must attend trainings specifically on the adopted EBP, and would also benefit from training on general topics related to adolescent sexual health. This training will facilitate the implementation process, increase comfort when implementing the curriculum, and ensure the EBP is implemented with fidelity.

Planning for implementation also involves making minor modifications to the program so that the implementation *process* occurs

with little difficulties and the program meets the school's needs. Minor modifications could include changing the timeline in which the program will be implemented, altering classroom management procedures (e.g., dividing classes), and/or using additional resources (e.g., computers, handouts, overhead projectors). These modifications are acceptable and encouraged so that the implementation process runs smoothly. Modifications that should not occur include changes that may compromise the content and integrity of the program, such as deleting whole sections of a program, adding additional activities, changing the order of activities, or omitting the program's core elements.[40] It would be useful for the sexual health educator to consult with the program developers or experts in behavior change theories when considering modifications to the program to ensure that the effectiveness of the program is not compromised.

Implementation Phase

Step 6: Implement

Implementation requires that the adopted EBP program is implemented with fidelity. Fidelity refers to "the degree to which teachers and other program providers implement programs *as intended by the program developers.*"[41] Teachers or administrators cannot make major modifications to the EBP, especially to the core elements. Core elements are those activities program developers have identified as being responsible for the effectiveness of the program. They represent the theory and internal logic of the program.[20] These activities must be kept intact and implemented as intended to produce outcomes similar to those demonstrated in the original evaluation of the program. There are many reasons why a school may not implement a program with fidelity such as: inadequate training, lack of time for implementation, lack of on-going support, competition from another program/curriculum, insufficient resources, poor classroom management, and teachers' low comfort and skill in teaching the curriculum.[16,42,43] Timely, detailed, and coordinated planning can overcome these barriers, and increase a school's ability to implement the program with fidelity.

Maintenance Phase

Step 7: Maintain

The final step of the CHAMPSS Model, Maintain, involves creating a maintenance plan. A maintenance plan may ensure continued implementation of the program, which allows for long-term positive effects of the program, and also helps avoid feelings of an investment loss for those involved with the EBP.[44] Similar to implementation plans, the development of maintenance plans should be a collaborative effort with all those who are involved in the program. Maintenance or institutionalization of the program requires on-going discussions beginning early in the adoption process, such as when composing the implementation plan. Maintenance plans should be detailed and include specific strategies for overcoming program implementation challenges. Examples of strategies include identifying potential quality improvement trainings (e.g., booster trainings for staff), securing resources for program implementation, identifying the sexual health educator for the following semester/year, coordinating with other staff for the following semester/year (e.g., securing classroom space), and identifying any policy changes needed for continued program implementation.

It may also be beneficial to consider a process and outcome evaluation of the program when creating the program maintenance plans. A process evaluation measures how well the program was planned and implemented, and if the program was implemented with fidelity.[23,45] This type of evaluation can explain why a program failed, or identify opportunities for improvements. Questions to consider when conducting a process evaluation include: Were all lessons implemented and if not, why? Were activities deleted and if so, why? Did all students in the target population receive the program? Were any changes to the program made? Did staff attend appropriate training? This information can be captured through record keeping such as documentation in teacher logs and attendance records. An outcome evaluation, on the other hand, measures if the program was successful in achieving the desired results,[45] such as changing attitudes, beliefs, intentions, and, most importantly, behaviors. Many packaged EBPs supply sample surveys and templates

for outcome evaluations. Additionally, educators can contact the program developers for guidance on program evaluation. Evaluations may be difficult for school districts that have limited resources, time, and expertise; therefore, the rigor of the evaluation may vary. If possible, the district health/wellness coordinator and sexual health educator should consult with expert evaluators, or the program developers, in designing and implementing their evaluation plans to ensure the greatest rigor possible. Evaluations are particularly beneficial for school districts that are unsure of whether they should continue to use the adopted program, or for districts that may need to justify the continued use of the program to key stakeholders. For example, the results of the outcome evaluation can be summarized and presented to the school board so that board members are aware of the success of the program and can continue supporting program implementation.

Getting Others on Board

"Getting others on Board" refers to the advocacy activities that are at the core of the CHAMPSS Model. These advocacy activities ensure that district personnel have adequate support to carry-out all action steps during each phase of the program adoption process. They involve frequent and ongoing discussions with key decision-makers during the assessment phase, coordination with school staff during the preparation and implementation phases, and strategizing with all individuals who contribute to the success of the program during the maintenance phase. Nearly all school districts will experience resistance at some point during the adoption, implementation, and maintenance process from school board members, superintendents, principals, SHAC members, teachers, and/or parents; however, careful planning and utilization of several key advocacy strategies may help shift perspectives:

- Know the facts on adolescent sexual health (e.g. teaching about condoms or contraceptives will not cause young people to have sex; most parents support sexual health education that teaches about condoms/contraceptives)
- Distribute fact sheets or other helpful documents to those who may show resistance
- Present solutions to the problem

- Bring allies (e.g., parents, students, administrators, nurses, counselors) when promoting sexual health education[37, 46]

Future Directions of the CHAMPSS Model

The CHAMPSS Model described above is the first phase of a larger study to develop an on-line decision support system to help school districts find, adopt, implement, and maintain EBPs to prevent teen pregnancy. The tool will be an interactive version of the CHAMPSS Model, named *i*CHAMPSS. Tools and resources (e.g., teen birth maps localized by Texas zip codes, factsheets, templates, and demonstration videos) will be provided through *i*CHAMPSS to further support districts in their advocacy efforts, planning, and implementation of EBPs. This will provide one-stop-shopping for school districts and sexual health educators. The CHAMPSS Model will be further tested for its usability and feasibility with school districts once *i*CHAMPSS is developed. Revisions to the model will be made based on the results of these tests. An outcome evaluation is also planned to determine the impact of *i*CHAMPSS on program adoption, implementation, and maintenance by school districts.

Conclusions

Teen pregnancy prevention is a complex and, at times, controversial issue for school districts. Implementing programs that work is just one solution to the problem. However, thus far, school districts have received very little guidance on how to navigate the adoption, implementation, and maintenance process. The CHAMPSS Model simplifies the process and provides practical steps for school districts to follow, while minimizing controversy around the issue. This four-phased model includes seven action steps and requires that districts elicit support at each step of the model. This systematic framework will help school districts increase adoption, implementation, and maintenance of EBPs and to ultimately improve the status of adolescent sexual health in their district.

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