



Content, Pedagogy, Implementation, and Context Core Components Study (CPIC Study)

End of Project Report

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- *Love Notes* published by Dibble Institute: Marlene Pearson, MA, Rachel Savasuk-Luxton, PhD, and Aaron Larson

- *Making Proud Choices* published by ETR: Loretta Jemmott, PhD, FAAN, RN and Marcia Penn, MS
- *Promoting Health Among Teens – Abstinence Only* published by ETR: Loretta Jemmott, PhD, FAAN, RN and Marcia Penn, MS
- *Reducing the Risk* published by ETR: Rick Barth, PhD and Karin Coyle, PhD

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CRedit Author Statement

Lori Rolleri (LR) and Cindy Walker (CW) led the study conception. Immaculate Apchemengich (IA), Brandon Osborn (BO), and Angela Turner (AT) contributed to the conception of the study. LR led and oversaw the design, data collection, analysis, and interpretation of the qualitative portion of the study. CW led and oversaw the design, analysis, and interpretation of the quantitative portion of the study. IA, BO, and AT contributed to data collection, analysis, and interpretation of the results. LR led, and IA contributed to the qualitative analysis. LR conducted member checking with interview respondents. LR drafted the overall report, CW drafted the quantitative portion of the report, and all authors commented on the different versions. All authors read and approved the final report. AT provided oversight and leadership for the research activity planning and execution. LR and IA managed and coordinated the research planning activity and execution. AT led the acquisition of grant funding for the project leading to this report.

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Acronyms

ASRH	Adolescent Sexual and Reproductive Health
CCC	Core Content Component
CDC	Centers for Disease Control and Prevention
CIC	Core Implementation Component
CPC	Core Pedagogy Component
CPIC	Core Content, Pedagogy, Implementation, and Context
DHHS	United States Department of Health and Human Services
<i>DTL/RTL</i>	<i>Draw the Line/Respect the Line</i> (curriculum)
EBI	Evidence-based Intervention
EBP	Evidence-based Program
<i>LN</i>	<i>Love Notes</i> (curriculum)
<i>MPC</i>	<i>Making Proud Choices</i> (curriculum)
<i>PHAT-AO</i>	<i>Promoting Health Among Teens – Abstinence Only</i> (curriculum)
OAH	Office of Adolescent Health (now part of OPA)
OPA	Office of Population Affairs
<i>RTR</i>	<i>Reducing the Risk</i> (curriculum)
SRH	Sexual and Reproductive Health

STD	Sexually Transmitted Disease
STI	Sexually Transmitted Infection
TPP	Teen Pregnancy Prevention

Five Evidence-based TPP Curricula Reviewed in the CPIC Study
(hereafter referred to as “CPIC curricula”)

1. *Draw the Line/Respect the Line (DTL/RTL)*
2. *Love Notes (LN)*
3. *Making Proud Choices (MPC)*
4. *Promoting Health Among Teens – Abstinence Only (PHAT-AO)*
5. *Reducing the Risk (RTR)*

Executive Summary

The Content, Pedagogy, Implementation, and Context Components Study (CPIC Study) was conducted by AMTC & Associates (AMTC) and funded by an [Office of Population Affairs \(OPA\) Teenage Pregnancy Prevention \(TPP\) Evaluation and Research Grant](#). The CPIC Study addressed one of OPA's goals with this funding opportunity: *Identifying and/or validating core program components or "active ingredients" essential for teen pregnancy prevention programs and practices to produce the desired outcomes.*

[Core components](#), or the essential elements and activities within the entire intervention that are needed to produce the intended positive outcomes for participants, provide important insights for curriculum designers, implementors, and evaluators. By knowing an intervention's mechanisms of action (i.e., what makes it work), we know what content and activities to prioritize, maintain, enhance, and evaluate. This understanding, in turn, supports effective implementation and the realization of the intervention's intended behavioral outcomes.

We designed and conducted a mixed-methods study to surface the core components of five effective evidence-based teen pregnancy prevention curricula. These curricula are: *Draw the Line/Respect the Line, Love Notes, Making Proud Choices, Promoting Health Among Teens—Abstinence Only, and Reducing the Risk*. The reasoning behind selecting these particular programs is tied to AMTC's work in having evaluated over 50 federally-funded programs for its clients throughout the United States. These five curricula were specifically selected because it was determined, prior to funding, that these programs had enough data to conduct robust quantitative analyses. Our study approach was conducted in two phases: Phase 1 consisted of inductive qualitative data gathering and analysis, and Phase 2 consisted of deductive analysis of existing youth survey data. Since 2010, AMTC amassed nearly 35,000 surveys from youth who completed one of these five programs. The youth surveys collected data on both program satisfaction and intermediate outcomes (e.g., changes in knowledge, perception or risk, and intentions) and maintained these data in a database. In addition, AMTC collected implementation data for each of these program evaluations (e.g., participant demographics, participant attendance, and curriculum fidelity) and maintained these data in a distinct database. This data provided a unique opportunity for us to quantitatively triangulate findings from Phase 1 qualitative analyses. To the best of our knowledge, this study design has not been previously used to surface or identify core components.

In **Phase 1**, we used an inductive dominant qualitative research approach based on grounded theory, content analysis, inductive thematic analysis, and phenomenology. Using an inductive approach allowed us to collect and analyze data in a fresh way and be open to new core component observations, themes, and hypotheses. Grounded theory, a type of inductive theme analysis, allowed us to generate our core component hypotheses by conducting an interactive

line-by-line text analysis of every curriculum’s session activity, as well as with other curriculum ancillary documents and in-depth interview transcripts. In addition, our study operationalizes “core components” by examining four intervention facets—content (subject or topic areas), pedagogy (the science and art of teaching to content), implementation (how the curriculum is delivered overall), and context (circumstances and conditions). After completing Phase 1, we surfaced 22 core components (nine [core content components](#), eight core [pedagogy components](#), and five core [implementation components](#)). The 22 core components are listed below.

CPIC Study 22 Core Components in Brief

Core CONTENT Components (CCC)

CCC Category 1: Behavior Change Pathway

The five curricula in the CPIC Study...

CCC Finding #1: Are anchored by specific and measurable goal(s). These include preventing pregnancy, preventing HIV, and/or preventing other sexually transmitted infections (STIs).

CCC Finding #2: Are anchored by specific and measurable healthy sexual behaviors that are directly linked to their goals (see CCC #1).

CCC Finding #3: Primarily focus on nine categories of psychosocial determinants that are directly linked to changing youth sexual behavior (see CCC #2).

CCC Category 2: Specific Core Content or Subject Matter

The five curricula in the CPIC Study...

CCC Finding #4: Present basic knowledge about sexual and reproductive health as a foundation on which to build learners’ understanding of pregnancy and HIV/STI prevention.

CCC Finding #5: Facilitate processes where learners can envision and plan healthy futures (short- and long-term).

CCC Finding #6: Teach about multiple facets of healthy relationships.

CCC Finding #7: Teach about multiple facets of respectful partner communication, including benefits and skills.

CCC Finding #8: Build learners' skills to set and keep personal limits related to sexual activity.

CCC Finding #9: Strengthen learners' personal agency to make healthy and autonomous decisions.

Core PEDAGOGY Components (CPC)

CPC Category 1: How Learners Are Engaged in the Learning Process

The five curricula in the CPIC Study provide learners with multiple opportunities to:

CPC Finding #1: Practice skills (e.g., communication skills).

CPC Finding #2: Personalize or apply information and skills.

CPC Finding #3: Think critically, analyze, and/or assess.

CPC Finding #4: Write with pen and paper (e.g., worksheets, journals).

CPC Finding #5: Voice their opinions, ideas, experiences, suggestions, and solutions to challenges while their peers listen/observe.

CPC Category 2: How Content Is Presented

The five curricula in the CPIC Study...

CPC Finding #6: Use multiple stories, scenarios, case studies, and/or videos as input for discussion.

CPC Finding #7: Present relatively simple and easy-to-remember frameworks and require youth to apply them.

CPC Finding #8: Regularly summarize, repeat, and reinforce key points (about information learned during the session) and core messages (about the desired behavior and/or curriculum goals).

Core IMPLEMENTATION Components (CIC)

The five curricula in the CPIC Study are implemented...

CIC Finding #1: With support from the school district, principal, teachers, and/or other staff.

CIC Finding #2: By comprehensively trained facilitators.

CIC Finding #3: By facilitators who demonstrate genuine respect and care to learners.

CIC Finding #4: In a supportive learning environment.

CIC Finding #5: With reasonable fidelity and applying “green light” adaptations (when needed).

Our last category of core components is the [context](#) in which a curriculum is delivered. Context can be defined by multiple variables, and it was difficult to discern how core or essential any specific variable, like a learner's age, the delivery setting, or the group size, is.

As such, we created a list of ten [contextual factors](#) that appeared in the documents we reviewed or that were discussed during interviews. We believe this list of contextual factors should be carefully considered during program planning:

1. Funding sources and requirements
2. State and local policies about health education
3. Setting
4. Youth demographics and differences in cultural norms
5. Additional program components
6. Youth access to community services and resources
7. Implementing the organization's (and their partners') capacity
8. Community environment
9. Curriculum facilitators
10. Other contextual factors

Phase 1 also looked at how the curricula address access to services, health equity, and inclusivity. We found that the curricula do little concerning access to services other than providing lists of resources. Health equity must be looked at from an ecological perspective—no one curriculum is going to satisfactorily address health equity without support/reinforcement from other forces and systems in an adolescent’s environment, such as schools, health care providers, social services, etc. Similarly, if a curriculum aims to increase sexually active youths’

use of condoms and contraception, youth must be able to access those services even when there are barriers such as transportation, cost, stigma, etc. Addressing some of these barriers is often outside the realm of what a curriculum-based intervention can achieve. This report provides some possible strategies for strengthening health equity, including conducting formative research, crafting intentional messaging, being inclusive, addressing youth norms, acknowledging identities, and creating comfort.

Phase 2 used a deductive quantitative research approach to test some of the 22 core components that surfaced during Phase 1. In Phase 2, we utilized implementation and survey data (n=27,894) collected from 2010-2023 among youth participants who received the five evidence-based teen pregnancy prevention curricula to statistically test whether specific core content components are predictors of sexual intentions. Phase 2 findings affirm, statistically, that all three core content components tested were robust predictors of **sexual intentions**, even when controlling for curricula differences and other covariates. Among the high school sample, self-efficacy to remain abstinent from sex was consistently the most important predictor, while knowledge of sexual risk was the most important predictor for middle school youth. The data utilized to accomplish this goal were collected through a number of local evaluations conducted over three OPA TPP grant cycles and mainly by four Tier 1 grantees.

These findings are highly relevant to the field of adolescent sexual and reproductive health as they provide an opportunity to build upon and amplify these 22 core components. While these findings are not generalizable to all evidence-based teen pregnancy prevention curricula, they can provide support to curriculum developers, program implementers and facilitators, evaluators, policymakers, and funders.

As part of the CPIC study, the research team developed a tool to help TPP professionals (i.e., curriculum designers, implementors, evaluators, and funders) apply the findings from the CPIC study. The tool provides users with a way to assess core components of EBPs and identify gaps. Through this assessment, staff and agencies will be able to identify areas that can be strengthened and make action plans. *The CPIC Core Component Framework: A Guide for Innovating, Designing, and Adapting TPP Programs with Ease* will soon be available on AMTC's website.

Background

Adolescence, or the years of transition from childhood to adulthood, is marked by many developmental milestones such as physical growth, hormonal changes, an increased ability to reason and problem-solve, a desire for peer connection and acceptance, and an increased interest in sexuality and romantic relationships.^{1,2} During these years, adolescents are learning how to be independent while at the same time learning how to manage impulses, assess risks, and safely experiment with new behaviors and identities. In addition to family and caregivers, an adolescent's health, including their sexual and reproductive health, requires support from their community and the professionals who serve them (e.g., policymakers, community leaders, educators, counselors, health care providers) in navigating the changes, both exciting and stressful, that occur during this period of rapid change.

The good news is that the work of communities and professionals has indeed had a positive impact on adolescent sexual and reproductive health (ASRH). The teen birth rate (TBR) in the United States is at a historic low. In April 2023, the National Center for Health Statistics released provisional birth data reporting a teen birth rate of 13.5 births per 1,000 females aged 15-19. This is a 3% decrease from 2021, when the rate was 13.9,³ and a 78% decrease from 1991, when the rate was 61.8.⁴ However, the U.S. TBR has historically been higher than that of other industrialized countries.^{5,6,7} Moreover, persistent TBR disparities across different youth demographics (e.g., ethnicity, race, state/territory, family income)^{8,9} continue to exist. These disparities can be partially explained by inequitable access to contraceptive education and services, programs that do not adequately address diversity and differences in cultural norms, contextual challenges, and historical discrimination that can affect young people's trust in

¹ Suleiman AB, Harden KP. The importance of sexual and romantic development in understanding the developmental neuroscience of adolescence. *Dev Cogn Neurosci*. 2016 Feb; 17:145-7. Epub 2015 Dec 18.

² Kar, Sujita Kumar; Choudhury, Ananya1; Singh, Abhishek Pratap1. Understanding normal development of adolescent sexuality: A bumpy ride. *Journal of Human Reproductive Sciences* 8(2): p 70-74, Apr–Jun 2015.

³ Hamilton, BE, Martin, JA & Osterman, M. (2024). Births: Provisional Data for 2023. Series VSRR; no 35. National Center for Health Statistics, Centers for Disease Control and Prevention.

⁴ Osterman, M, Hamilton, BE, Martin, JA, Driscoll, AK & Valenzuela, CP. (April 4, 2024). Births: Final Data for 2022. Volume 73, Number 2. National Vital Statistics Reports, Centers for Disease Control and Prevention.

⁵ Centers for Disease Control and Prevention, Reproductive Health. About Teen Pregnancy. Retrieved 8 August 2014 from: https://www.cdc.gov/reproductive-health/teen-pregnancy/?CDC_AAref_Val=https://www.cdc.gov/teenpregnancy/about/index.htm

⁶ World Bank Group. Data. Adolescent Fertility Rates (births per 1,000 women ages 15-19). Retrieved 8 August 2024 from: <https://data.worldbank.org/indicator/SP.ADO.TFRT>

⁷ Sedgh G, Finer LB, Bankole A, Eilers MA, Singh S. Adolescent pregnancy, birth, and abortion rates across countries: levels and recent trends. *J Adolesc Health*. 2015;56(2):223–30.

⁸ Osterman, M., Hamilton, B., Martin, J., Driscoll, A., & Valenzuela, C. (2021). *Births: Final Data for 2020*. National Center for Health Statistics, Centers for Disease Control and Prevention.

⁹ Martin JA, Hamilton BE, Osterman MJ, Driscoll AK. Births: Final Data for 2019. *Natl Vital Stat Rep*. 2021;70(2):1–50.

providers and use of services.^{10, 11, 12} Young people aged 15 to 24 still account for about half of new STI diagnoses, and rates for gonorrhea and syphilis are markedly on the rise.^{13, 14, 15} While there is good news about ASRH, there is still much room for improvement. Communities and professionals must continue to work diligently in discovering and implementing evidence-informed, innovative, and inclusive ASRH policies and interventions to prevent teen pregnancy and STIs and optimize adolescent health overall.

Several behavioral changes explain or at least partially explain why teen pregnancy and teen birth rates in the U.S. have been steadily declining. More teens are abstaining from sex, and for those teens who are having sex, more are using contraception, including long-acting reversible contraceptives (LARCs).^{16, 17, 18} Researchers have posited multiple factors that may be influencing teen sexual behavior, including social norms that support healthy sexual behavior, improvements in contraceptive technology and access, fluctuations in the U.S. economy, isolation during the COVID-19 pandemic, better access to information, and participation in quality, evidence-based sexuality education programs such as those funded by the U.S. Department of Health and Human Services.^{19, 20, 21, 22}

¹⁰ Cox, J. E. (2020). Understanding the Differences in Pregnancy and Birth Rates for Black and White Teens. *Journal of Adolescent Health, 67*(3), 313–314.

¹¹ Fuller TR, White CP, Chu J, Dean D, Clemmons N, Chaparro C, Thames JL, Henderson AB, King P. Social Determinants and Teen Pregnancy Prevention: Exploring the Role of Nontraditional Partnerships. *Health Promot Pract.* 2018 Jan;19(1):23-30. Epub 2016 Dec 1

¹² Basch, C. E. (2011). Teen pregnancy and the achievement gap among urban minority youth. *Journal of School Health, 81*(10), 614-618.

¹³ CDC Fact Sheet: Information for Teens and Young Adults: Staying Healthy and Preventing STDS. Retrieved 8 August 2014 from: https://www.cdc.gov/sti/?CDC_AAref_Val=https://www.cdc.gov/std/life-stages-populations/stdfact-teens.htm

¹⁴ CDC Atlas Plus. Retrieved 8 August 2014 from: <https://www.cdc.gov/nchhstp/atlas/index.htm>

¹⁵ New data suggest STDs continued to increase during first year of the COVID-19 pandemic. CDC Newsroom. Press release: April 12, 2022. Retrieved 8 August 2014 from: <https://www.cdc.gov/media/releases/2022/p0412-STD-Increase.html>

¹⁶ CRS report Heather D. Boonstra, “What is Behind the Declines in Teen Pregnancy Rates?” *Guttmacher Policy Review*, vol. 17, issue 3, September 3, 2014, <https://www.guttmacher.org/gpr/2014/09/what-behind-declines-teen-pregnancy-rates>; and HHS, Office of the Assistant Secretary for Health, Office of Population Affairs, “Trends in Teen Pregnancy and Childbearing,” <https://opa.hhs.gov/adolescent-health/reproductive-health-and-teen-pregnancy/trends-teen-pregnancyand-childbearing>.

¹⁷ CDC About Teen Pregnancy Lindberg LD, Santelli JS, Desai S. Understanding the decline in adolescent fertility in the United States, 2007–2012. *J Adolesc Health.* 2016:1–7.

¹⁸ CDC: Trends in the Prevalence of Sexual Behaviors and HIV Testing National YRBS: 1991—2019.

¹⁹ Hande Inanc & Alicia Meckstroth & Betsy Keating & Katie Adamek & Heather Zaveri & So O’Neil & Kim McDonald & Lindsay Ochoa, “undated”. Factors Influencing Youth Sexual Activity: Conceptual Models for Sexual Risk Avoidance and Cessation, Mathematica Policy Research Reports. Mathematica Policy Research.

²⁰ Stavridou, A., Samiakou, C., Kourti, A., Tsiorou, S., Panagouli, E., Thirios, A., Psaltopoulou, T., Sergeantanis, T. N., & Tsitsika, A. (2021). Sexual Activity in Adolescents and Young Adults through COVID-19 Pandemic. *Children (Basel, Switzerland), 8*(7), 577.

²¹ Pew Research Center: Why is the teen birth rate falling? Retrieved 8 August 2014 from: <https://www.pewresearch.org/short-reads/2019/08/02/why-is-the-teen-birth-rate-falling/>

²² Szucs LE, Pampati S, Li J, et al. Role of the COVID-19 Pandemic on Sexual Behaviors and Receipt of Sexual and Reproductive Health Services Among U.S. High School Students — Youth Risk Behavior Survey, United States, 2019–2021. *MMWR Suppl* 2023;72(Suppl-1):55–65. DOI: <http://dx.doi.org/10.15585/mmwr.su7201a7>.

Group-based sexuality education curricula delivered in schools and out-of-school settings is one proven strategy for reducing adolescent sexual risk-taking behavior. These programs create a forum for youth and trained facilitators to impart developmentally appropriate and medically accurate health information, practice communication and relationship skills, reflect individually and in peer groups about personal values, attitudes, boundaries, and future goals, receive positive peer support for making healthy decisions, and connect youth to community resources and services. As of August 2024, youth.gov, a federally maintained repository of effective evidence-based teen pregnancy prevention (TPP) programs, lists 58 programs that meet a rigorous set of inclusion criteria. For example, each program must have been evaluated using a randomized control or quasi-experimental study design and demonstrated evidence for positive change in sexual behavior (e.g., delayed onset of sexual intercourse, increase in the use of contraception). These interventions were thoughtfully designed by highly skilled multidisciplinary teams using formative assessment data from the youth they intended to serve, evidence-informed program approaches, and established theories of behavior change. The programs were pretested, pilot-tested, continuously refined before formal evaluation, and delivered with fidelity by trained facilitators.

Replicating evidence-based programs is not without challenges. Outcome evaluation findings of some evidence-based program (EBP) replication studies are not always as strong compared to those of the original trial. In some cases, outcome data from replication studies show no significant changes. Implementing organizations sometimes face restrictions that can necessitate making adaptations to the original program. These adaptations may partially explain the differences in evaluation

findings. For example, a statewide or school district policy may limit what can be taught about ASRH (e.g., removing or adapting contraceptive lesson content), and programs may need to be shortened to accommodate time constraints. In other cases, facilitator training may not be as robust as it needs to be, and as a result, delivery of the program's content and mastery of the pedagogical methods used to deliver that content may be compromised. If adaptations to EBPs are inevitable, curriculum designers, implementors, evaluators, and policymakers would benefit from knowing how to make those adaptations in a way that does not compromise the program's core components—or the essential ingredients responsible for the program's effectiveness. In addition, knowing about EBPs' core components and the mechanisms of how they work can guide curriculum designers in developing their theories of change, and evaluators in prioritizing what to measure.

Core components are the essential elements and activities within the entire intervention that are needed to produce the intended positive outcomes for participants.

– Office of Population Affairs

About the CPIC Study

How the CPIC Study Builds on Previous Work

The Content, Pedagogy, Implementation, and Context Core Components Study (CPIC Study) builds on previous core component analyses. The qualitative approach used to examine curriculum activities in Phase 1 of the CPIC Study was informed by the 17 Characteristics of Effective Sex and HIV Programs Study.²³ While other studies have used qualitative approaches to surface core components, our curricula analyses were quite nuanced with the use of qualitative software, and we triangulated our data in multiple ways. The CPIC Study also builds on the CDC-funded Promoting Science-Based Approaches (PSBA) Project, which created a similar typology for core components (i.e., core content, pedagogy, and implementation components).²⁴ Moreover, Phase 2 of the CPIC study used quantitative methods to test core component Phase 1 findings. To our knowledge, no other team has used this combination of inductive (qualitative methods in Phase 1) and deductive (quantitative methods in Phase 2) approaches to identify core components from a sample of evidence-based TPP curricula.

Examples of Previous Approaches Used to Identify Core Components

In reviewing the literature, we identified multiple study approaches for surfacing an evidence-based program's core components. Examples of these approaches are briefly described below (presented in chronological order in which the study was conducted).

Systematic review (2007). Kirby and colleagues conducted a review of 19 rigorously evaluated curriculum-based sex and HIV education youth programs.²⁵ Each of these curricula demonstrated significant improvement in one or more sexual behaviors. The team first generated a list of potentially important program characteristics. Second, they coded most activities for risk and protective factors by hand for characteristics on the initial generated list or

²³ Kirby, D. B., Laris, B. A., & Rolleri, L. A. (2007). Sex and HIV education programs: their impact on sexual behaviors of young people throughout the world. *The Journal of adolescent health: official publication of the Society for Adolescent Medicine*, 40(3), 206–217.

²⁴ Rolleri, L., Fuller, T.R., Firpo-Triplett, R., Moore, C., Leeks, K.D. & Lessene, C.A. (2014). Adaptation guidelines for evidence-based adolescent pregnancy and STI/HIV prevention curricula: From development to practice. *American Journal of Sexuality Education*, 9: 135-154.

²⁵ Kirby, D. B., Laris, B. A., & Rolleri, L. A. (2007). Sex and HIV education programs: their impact on sexual behaviors of young people throughout the world. *The Journal of adolescent health: official publication of the Society for Adolescent Medicine*, 40(3), 206–217.

for characteristics that emerged during the review. Third, evaluation articles were reviewed for information about how the curricula were developed and implemented. From these analyses, 17 common characteristics emerged and were organized into three categories: 1) the curriculum's development process, 2) curriculum content, and 3) curriculum implementation.

Usability testing (2013). Blasé and Fixsen discuss the use of usability testing, in which a small number of participants are recruited to test the intervention, outcomes are assessed immediately, improvements are based on findings, and this cyclical process is repeated until the program is producing short-term outcomes related to the tested core components.²⁶

Controlled evaluation designs (2013). Blasé and Fixsen discuss the use of controlled evaluation designs to test the impact of posited core components in one study arm and compare those findings to another study arm where those posited core components are absent.²⁷ They go on to explain that this type of study is rare in demonstration evaluations, as evaluators make extra efforts to ensure the original program is implemented as written and avoid variations. One exception is a study on the Teen Outreach Program (TOP) where evaluators, in an unintended experiment, were able to compare implementation variations related to the service-learning component of the program and a sexuality education curriculum component of the program.²⁸

Linking curriculum activity with determinants of behavior (2014). A team at ETR identified core content, pedagogical, and implementation components for a sample of five evidence-based TPP curricula based on an analysis of the links between curriculum activities and determinants of behavior change and discussions with curriculum developers. The analyses led to the development of curriculum adaptation kits describing “green” (acceptable and encouraged), “yellow” (proceed with caution), and “red” (avoid) light adaptations.²⁹

²⁶ Blase, K., & Fixsen, D. (2013). Core intervention components: Identifying and operationalizing what makes programs work. Washington, DC: Office of the Assistant Secretary for Planning and Evaluation, Office of Human Services Policy, U.S. Department of Health and Human Services.

²⁷ Ibid.

²⁸ Francis K, Philliber S, Walsh-Buhi ER, Philliber A, Seshadri R, Daley E. Scalability of an Evidence-Based Adolescent Pregnancy Prevention Program: New Evidence From 5 Cluster-Randomized Evaluations of the Teen Outreach Program. *Am J Public Health*. 2016;106(S1): S32-S38. [doi:10.2105/AJPH.2016.303307](https://doi.org/10.2105/AJPH.2016.303307)

²⁹ Rolleri LA, Fuller TR, Firpo-Triplett R, Lesesne CA, Moore C, Leeks KD. Adaptation Guidance for Evidence-Based Teen Pregnancy and STI/HIV Prevention Curricula: From Development to Practice. *Am J Sex Educ*. 2014;9(2):135-154. [doi:10.1080/15546128.2014.900467](https://doi.org/10.1080/15546128.2014.900467)

Fidelity measures (2015). In this study, fidelity to a social-emotional learning program was measured by teacher observations and teacher self-reports. Abry and colleagues then created nuanced fidelity indices related to core components. Variability in implementers' fidelity to intervention core components (captured by fidelity indices) allowed researchers to identify core components.³⁰

Six-step framework (2016, 2023). In a 2016 paper, Cole and colleagues present a six-part framework for defining core program components: 1) identify and describe structural elements of the intervention (e.g., curriculum, service learning, web page, parent education, etc.), 2) identify intervention implementation conditions associated with each structural element (e.g., dosage, quality of delivery), 3) create a matrix of structural elements and implementation conditions, 4) develop a causal pathway diagram that links structural elements to outcomes, 5) measure cells in the matrix and outcomes in the causal pathway diagram, and 6) conduct analyses.³¹ In 2023, Cole and colleagues identified seven types of core components that work together in different combinations. They are: 1) content, 2) delivery mechanisms, 3) formats, 4) staffing, 5) dosages, 6) environments, and 7) intended characteristics.³² The team developed curriculum-developer and implementor checklists on this work.

Meta-regression (2020). A team at Abt Associates conducted a study using meta-regression to empirically identify the components of programs most associated with outcomes. These findings then helped to create actionable guidelines for practitioners.³³

Coding (2020). A team at The University of South Carolina coded youth engagement procedures (or core engagement components) in 50 RCTs of effective interventions and found 11 common practices that are likely to increase youth engagement in diverse settings.^{34, 35}

³⁰ Abry, T., Hulleman, C. S., & Rimm-Kaufman, S. E. (2015). Using indices of fidelity to intervention core components to identify program active ingredients. *American Journal of Evaluation*, 36(3), 320–338.

³¹ Cole, R. & Murphy, L. (October 2016). Structural Elements of an Intervention. Evaluation Technical Assistance Brief for OAH & ACYF Teen Pregnancy Prevention Grantees. Brief 12.

³² Forrester, E. & Cole, R. (2023). Core Components of Teen Pregnancy Prevention Programs. Office of the Assistant Secretary of Health (OASH), Office of Population Affairs.

³³ Holzgart, R., Wagner, H., & Worden, M. (2021). *Exploring Core Components Research in Social Services Settings: Summary of 2020 OPRE Methods Meeting* (OPRE Report 2021-52). Office of Planning, Research, and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

³⁴ Ibid.

³⁵ Becker, K. D., Boustani, M., Gellatly, R., & Chorpita, B. F. (2018). Forty Years of Engagement Research in Children's Mental Health Services: Multidimensional Measurement and Practice Elements. *Journal of Clinical Child and Adolescent Psychology*, 47(1), 1–23. <https://doi.org/10.1080/15374416.2017.1326121>

Iterative research process (2020). A team at Harvard used an iterative research process to develop and test social-emotional learning “kernels” or effective practices. These kernels were easy for educators to understand and flexible for them to adapt and integrate into regular practice.³⁶

Brief Description of the CPIC Study and Guiding Research Questions

The Content, Pedagogy, Implementation, and Context Components Study (CPIC Study) was conducted between September 2022 and September 2024. The overall study aim was to identify the core components of five TPP curricula included in the federal youth.gov repository of effective evidence programs. These curricula include *Draw the Line/Respect the Line*, *Love Notes*, *Making Proud Choices*, *Promoting Health Among Teens – Abstinence Only*, and *Reducing the Risk* (hereafter referred to as “CPIC curricula”). Brief descriptions of each curriculum are found in [Appendix A](#), [Appendix B](#), [Appendix C](#), [Appendix D](#), and [Appendix E](#) respectively. The four research questions that guided our study are listed below.

CPIC Study Questions

1. What are the core content, pedagogy, implementation, and context components of the five evidence-based Teenage Pregnancy Prevention (TPP) programs selected for the study?
2. Which program components appear to matter the most in influencing participant outcomes?
3. Through what mechanisms do core program components influence participant outcomes?
4. How do the curricula address health equity, inclusion, and access to services?

³⁶ Holzwart, R., Wagner, H., & Worden, M. (2021). *Exploring Core Components Research in Social Services Settings: Summary of 2020 OPRE Methods Meeting* (OPRE Report 2021-52). Office of Planning, Research, and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.



The CPIC study was a mixed methods study with two phases. **Phase 1** used an inductive dominant qualitative research approach based on grounded theory, content analysis, inductive thematic analysis, and phenomenology (these approaches are described in more detail below). Based on the Phase 1 study, we surfaced 22 core components (nine core content components, eight core pedagogy components, and five core implementation components). **Phase 2** used a deductive quantitative research approach to test some of the 22 core components that surfaced during Phase 1.

Phase 1 Findings
22 Core Components Breakdown

9 Core Content Components
 Category 1: Change Pathway—3
 Category 2: Content—6

8 Pedagogical Components
 Category 1: Engaging Learners—5
 Category 2: Content Presentation—3

5 Implementation Components

Five of the 58 evidence-based programs (EBP) listed in the youth.gov repository were selected for the study: 1) [Draw the Line/Respect the Line](#) (DTL/RTL), 2) [Love Notes](#) (LN), 3) [Making Proud Choices](#) (MPC), 4) [Promoting Health Among Teens](#) (PHAT-AO), and 5) [Reducing the Risk](#) (RTR) (“CPIC curricula”). The reasoning behind selecting these particular programs is tied to AMTC’s work in evaluating over 50 federally-funded programs for its clients throughout the United States. These five programs were specifically selected because it was determined, prior to funding, that these programs had enough data to conduct robust quantitative analyses. Since 2010, AMTC amassed nearly 35,000 surveys from youth who completed one of these five programs. The youth surveys collected data on both program satisfaction and intermediate outcomes (e.g., changes in knowledge, perception or risk, and intentions) and maintained these data in a database. In addition, AMTC collected implementation data for each of these program evaluations (e.g., participant demographics, participant attendance, and curriculum fidelity) and maintained these data in a distinct database. These data provided a unique opportunity for AMTC to quantitatively triangulate findings from Phase 1 qualitative analyses.

Expanding on the Definition of Core Components

The Office of Population Affairs (OPA) defines core components as “the essential elements and activities within the entire intervention that are needed to produce the intended positive outcomes for participants.”³⁷ Our study expands on this definition and builds on a study funded by the Centers for Disease Control and Prevention³⁸ by examining four facets of a curriculum’s core components—content, pedagogy, implementation, and context (CPIC).

Core Content Components.³⁹ Core content refers to *what* the curriculum teaches. Core content is defined by two facets: 1) the essential program subject matter or topic (e.g., contraceptive methods, healthy relationships, limit setting) and 2) with which psychosocial determinant (e.g., knowledge, attitudes, skills) that topic is being addressed. For example, a curriculum might talk about abstaining from sex (topic) by imparting knowledge, by shifting attitudes about abstinence, or by teaching skills about how to be abstinent—the same topic (abstinence), but addressed with three different determinants (knowledge, attitudes, skills). The determinants associated with the topic are often linked to the behavior change theories (e.g., social cognitive theory) that the curriculum developers use to map their programs.



If we think about creating an oil painting, the oil paints and their colors could be considered a metaphor for a curriculum’s core content. The oil paints (and the canvas) are *what* the art piece is made of.

³⁷ Rolleri, L., Fuller, T.R., Firpo-Triplett, R., Moore, C., Leeks, K.D. & Lessene, C.A. (2014). Adaptation guidelines for evidence-based adolescent pregnancy and STI/HIV prevention curricula: From development to practice. *American Journal of Sexuality Education*, 9: 135-154.

³⁸ Ibid.

³⁹ Photo credit: Image from Microsoft Version 16.88

Core Pedagogy Components.⁴⁰ Core pedagogy components refer to *how* the core content is taught and what teaching methodologies are most apt for transferring content to learners. For example, role-plays are more suited for learning communication skills and building self-efficacy to use those skills compared to the facilitator simply lecturing on skill steps. A true/false quiz is an interactive way to share facts about sexually transmitted infections. Large group critical reflection discussions can work well to shift individual attitudes and perceptions of peer norms.



Going back to our oil painting metaphor, the different brushes (like core pedagogy) are how the artist delivers the paint to the canvas.

Core Implementation Components.⁴¹ Core implementation components refer to how the curriculum overall is delivered. Curriculum implementation includes factors such as facilitator training, a facilitator’s ability to connect to and engage learners, a comfortable learning environment, delivery setting, time dosage, etc. The quality of program implementation plays an important role in reaching program objectives and intended outcomes—if a program’s core content and pedagogical methods are maintained, but the essential implementation protocols are compromised, the program may not replicate well.⁴²



In the case of an oil painting, core implementation components would be metaphorical to the artist’s training, the amount of paint she uses, and the environment (e.g., a well-lit studio, the beach) in which she paints.

⁴⁰ Photo credit: Image from [Pexels.com](https://www.pexels.com)

⁴¹ Photo credit: Image from Microsoft Version 16.88

⁴² Durlak, J. A. (2011). *The importance of implementation for research, practice, and policy*. Child Trends research brief. Washington, DC: Child Trends. Retrieved from <http://www.childtrends.org/wp-content/uploads/2013/05/2011-34DurlakImportanceofImplementation.pdf>

Context.⁴³ The context in which a curriculum is delivered can also have an impact on its effectiveness. Core context components refer to factors such as community values, community demographics, how the TPP curriculum is combined with other program components (or not), and local and state health education standards. For example, state health education standards may place limits on what core content a school can teach. Significant changes to the context in which the program is delivered can impact its effectiveness.



Similarly, the context in which a painting is displayed will affect its beauty. How well the frame complements the painting, the location of where the painting is hung, and the lighting are all contextual factors that can affect the appreciation of the art piece.

About Fidelity and Adaptations

Most implementing organizations want to implement EBPs with fidelity (i.e., the degree to which an EBP is implemented with adherence to the core components).⁴⁴ Implementing EBPs with fidelity increases the likelihood that participants served by the program will experience similar outcomes to those found in the original evaluation study. However, as described earlier, challenges exist during curriculum replication, and adaptations are common.^{45, 46, 47, 48}

Fidelity is the degree to which an EBP is implemented with adherence to the core components.

– Office of Population Affairs

Some adaptations can make an EBP more inclusive of youth demographics, integrate current norms, and make the program more up-to-date (e.g., changing character names or geographic settings in stories, updating information about contraceptive methods, referring to reliable

⁴³ Photo credit: Image from Microsoft Version 16.88

⁴⁴ Adaptation for Evidence-based Teen Pregnancy Prevention Programs. (October 2015). Office of Adolescent Health.

⁴⁵ Arons, A., Decker, M., Yarger, J., Malvin, J., & Brindis, C. D. (2016). Implementation in practice: Adaptations to sexuality education curricula in California. *Journal of school health, 86*(9), 669-676.

⁴⁶ Can we get another citation to back up? Mwarira, M., Chen, C., Coppola, N., Maurice, I., & Phifer, M. (2016). A culturally responsive approach to improving replication of a youth sexual health program. *Health promotion practice, 17*(6), 781-792.

⁴⁷ Korda, H. (2013). Bringing evidence-based interventions to the field: the fidelity challenge. *Journal of Public Health Management and Practice, 19*(1), 1-3.

⁴⁸ Brindis CD, Decker MJ, Gutmann-Gonzalez A, Berglas NF. Perspectives on Adolescent Pregnancy Prevention Strategies in the United States: Looking Back, Looking Forward. *Adolesc Health Med Ther.* 2020 Oct 12;11:135-145. doi: 10.2147/AHMT.S219949. Erratum in: *Adolesc Health Med Ther.* 2022 Dec 28;13:107-108. PMID: 33117030; PMCID: PMC7567553.

online and social media resources, etc.). These types of adaptations are likely to enhance the program and can be considered relatively minor or “green light” adaptations as they do not compromise the program’s core components.^{49, 50} Other adaptations may require more intentional analysis of how they affect core components, if at all. For example, adding a lesson about the basics of reproductive anatomy and physiology as a way to provide better context for understanding how to prevent pregnancy or substituting older videos with more current ones that address the same topics are considered “yellow light” adaptations.⁵¹ These adaptations should be made thoughtfully so as not to alter core content components or add excessive time to the program. Finally, adaptations like removing sessions, shortening skill practice activities, or significantly increasing the student-to-facilitator ratio may be considered “red light” adaptations as they are more likely to compromise the program’s core components.⁵² Red light adaptations should be avoided.

Phase 1 Methods

Theory Behind Our Study Design

The CPIC Study was a two-phased, mixed-methods study aimed at identifying the [core components](#) and mechanisms through which core components influence participant outcomes in a sample of [five](#) evidence-based teen pregnancy prevention curricula. The four research questions that guided the study are listed [above](#). During Phase 1, we used a qualitative inductive approach for identifying core components across the five curricula, and during Phase 2, we used a database of 30,000+ outcome surveys completed by youth participating in one of the CPIC curricula. More information about each phase is provided below.

Phase 1. Phase 1 used an inductive dominant qualitative research approach informed by grounded theory, content analysis, inductive thematic analysis, and phenomenology. Using an inductive approach allowed us to collect and analyze data in a fresh way and be open to new core component observations, themes, and hypotheses. Grounded theory,⁵³ a type of inductive theme analysis, allowed us to generate our core component hypotheses by conducting an

⁴⁹ Adaptation for Evidence-based Teen Pregnancy Prevention Programs. (October 2015). Office of Adolescent Health

⁵⁰ Rolleri, L., Fuller, T.R., Firpo-Triplett, R., Moore, C., Leeks, K.D. & Lessene, C.A. (2014). Adaptation guidelines for evidence-based adolescent pregnancy and STI/HIV prevention curricula: From development to practice. *American Journal of Sexuality Education*, 9: 135-154.

⁵¹ Ibid.

⁵² Ibid.

⁵³ Guest, G., Namey, EE, & Mitchel, ML. (2013). *Collecting Qualitative Data: A Field Manual for Applied Research*. Sage Publications.

interactive line-by-line text analysis of every curriculum's session activity, as well as with other curriculum ancillary documents and in-depth interview transcripts. We also engaged in constant comparing and contrasting of our data. This was a time-consuming process, but it allowed us to capture nuanced details and differences at a granular level. Phenomenology,⁵⁴ the study of individuals' perceptions, feelings, and lived experiences, was used to guide our interviews with curriculum developers, publishers, and facilitators. At the completion of Phase 1, we surfaced 22 core components.

Phase 2. Phase 2 used a deductive quantitative research approach to statistically test and affirm some of the 22 core component hypotheses that surfaced during Phase 1. Specifically, Phase 2 examined whether selected core content components determined in Phase 1 were statistically significant predictors of sexual intentions (our most proximal measure to behavior).

[Phase 1 methods](#) are described first in this section of our report. Phase 2 methods and results are found in [this section](#).

Ethics Review

The CPIC Study was submitted for ethics review to the Biomedical Research Alliance of New York ([BRANY](#)) Institutional Review Board and was declared exempt on December 2, 2022 (Protocol number: 22-188-979). All semi-structured interview participants provided written consent before participating in the interviews (see [Appendix F](#)).

Data Sources

During Phase 1, we collected and analyzed data from six sources:

1. Curricula front matter, lessons, and activities
2. Peer-reviewed journal articles and published government reports about the curricula's evaluation studies
3. Curriculum developers/publishers
4. Curriculum facilitators

⁵⁴ Ibid.

5. Curriculum ancillary documents (e.g., existing core component documents, theory of change logic models, etc.)
6. Published literature on identifying core components

Phase 1 Data Collection Methods and Analysis

The five types of data collection methods we used in our study are listed below, and following the list are described in more detail.

1. Literature review
2. In-depth interviews with curriculum developers, publishers, and facilitators and thematic analysis of transcripts
3. Curriculum content analysis and thematic analysis
4. Thematic analysis of curriculum ancillary materials
5. Thematic analysis review of our team's field notes

Method 1: Systematic Literature Review

Curriculum Profiles. We began the CPIC Study by creating curriculum profiles in Microsoft Excel. The profiles included 66 data extraction questions and were organized into five categories: 1) Study Background, 2) Context, 3) Curriculum Description, 4) Evaluation Findings, and 5) Facilitator Training. The profiles were completed by reviewing 15 peer-reviewed journal articles and/or government reports about the curricula's evaluation studies (see [Appendix G](#) for a bibliography) and the front matter of each curriculum. The inclusion criterion for the 15 articles/government reports selected for our review was their listing on the youth.gov website. The 15 studies were previously reviewed and approved by OPA as part of a TPP program review and received a rating of either "high" or "moderate" quality. A summary of the studies and articles or reports is found in **Table 1**.

Standardizing the background information for each curriculum allowed us to create summary tables of curriculum intermediate and behavioral outcomes and begin our process of developing an initial set of curriculum content analysis codes. We were also able to begin to see similarities and differences between each curriculum and between replication studies.

Table 1: Curriculum Studies and Associated Journal Articles/Government Reports		
Curriculum	Number of Studies	Number of Journal Articles and/or Reports Associated with Studies (found on youth.gov)
1. <i>DTL/RTL</i>	1 study (original trial)	1 article: Coyle, et al (2004)
2. <i>Love Notes</i>	1 study (original trial)	3 articles or reports: Barbee et al., 2016; Cunningham et al., 2016; and Barbee et al., 2022
3. <i>Making Proud Choices</i>	2 studies (original trial and a replication)	2 articles : Jemmott et al., 1998; and Cole et al., 2024
4. <i>Promoting Health Among Teens – Abstinence Only</i>	2 studies (original trial and a replication)	2 articles: Jemmott et al., 2010; and Walker et al., 2016
5. <i>Reducing the Risk</i>	8 studies Original trial Adaption for high sensation seekers and impulsive decision-makers Adaptation with gist messaging 1 replication in comparison with <i>Love Notes</i> 4 replications in 4 different locations	2 articles: Barth et al., 1992 ; and Kirby et al., 1991 1 article: Zimmerman et al., 2008 1 article: Reyna & Mills, 2014 3 articles or reports: Barbee et al., 2016; Cunningham et al., 2016; and Barbee et al., 2022 Kelsey et al., 2016, 2016, and 2018 (4 <i>RTR</i> replication studies discussed in each report/article)

Core Component Literature. We reviewed literature describing core components of teen pregnancy prevention programs, methods for identifying core components, and challenges and successes in replicating evidence-based programs. See [Appendix H](#) for the bibliography of these documents. The core component literature helped us design our study and informed our initial set of curriculum content analysis codes.

Method 2: Curriculum Developer, Publisher, and Facilitator Interviews

We invited the developers and publishers (n=9) of each of the five selected curricula to participate in a 90-minute virtual interview before beginning the curriculum content analyses. (Note that the curriculum developers for *MPC* and *PHAT-AO* were the same).

We recruited a purposeful sample of experienced curriculum facilitators (n=5) recommended by AMTC’s clients. Criteria for facilitator participation included:

- Facilitating the curriculum face-to-face with learners within the last five years
- Facilitating the curriculum at least three full times
- Facilitating the curriculum under an OPA-funded contract
- Receiving formal training on the particular curriculum

We asked each facilitator to complete a pre-interview survey using Google Forms (see [Appendix I](#)). Of the five facilitators who we interviewed, only four responded to the survey. All five facilitators worked for community-based organizations and implemented one or more of the CPIC curricula, mostly in schools. There were four women and one man. Other descriptions of the four facilitators who completed the survey are:

- The average number of years the facilitators had in implementing EBPs was 9.5, and the average number of years working in a field related to youth development was 17.25.
- Three of the four facilitators have a bachelor’s degree or higher, and one declined to say.
- Three of the four identify as African American, and one as white.
- All four described themselves as competent or very competent in facilitating EBPs.
- All four described themselves as enthusiastic or very enthusiastic about teaching EBPs.

The Co-PI conducted remote 90-minute semi-structured interviews using Zoom with each curriculum’s developer and publishing staff and with a facilitator for each curriculum (a total of 10 interviews). An AMTC team Research Associate was also present during the interviews to take notes and gauge time. The Co-PI and Research Associate met immediately after the interview to discuss their impressions as well as themes that emerged from the interviews.

The interview guides for developers/publishers and facilitators were designed using a phenomenological approach. Our aim was to understand the experiences of developers and facilitators and their opinions about the curricula and their core components. The developer/publisher interview guide focused on three areas. The first area was about curriculum design, including the developer’s impetus for developing their curriculum, the formative research they conducted to inform the curricula, guiding behavior change theories, and experiences in drafting, testing, and implementing the curriculum. The second area was about their perceptions of what they believe is core (or the “special sauce”) to the curriculum and the curriculum’s unique features. The third area was about their opinions on how the curriculum addresses inclusion, healthy equity, and access to services. See [Appendix J](#) for a copy of the developer/publisher interview guide.

For curriculum facilitators, interview questions focused on five areas: 1) their training and experiences in facilitating the curriculum, 2) how they engaged youth, 3) what they believed was their “special sauce” as a facilitator, 4) perceived core components of the curriculum (what

they think is most important about the curriculum), and 5) their opinions about how the curriculum addresses inclusion, healthy equity, and access to services. See [Appendix K](#) for a copy of the facilitator interview guide.

The interviews were conducted remotely using Zoom and recorded with permission from each interviewee. The interview recordings were uploaded to [Rev](#) (a web-based transcription application), which created auto-transcripts from the Zoom audio files. The Co-PI entered the transcripts into [Dedoose](#) (a web-based qualitative data analysis application) and led a thematic analysis in collaboration with her team. The themes that emerged are linked closely to the themes that emerged from our thematic analyses of the curricula's core content and pedagogy (see [Appendix L](#)). Information linked to core implementation components was difficult to discern when examining the curriculum activities themselves. However, the data obtained from both developer and facilitator interviews were rich in detail and became the dominant source in identifying core implementation components.

After completing the curriculum analyses, we invited the same developers and publishers to a 60-minute virtual meeting to discuss findings on their curriculum and elicit clarification and feedback as a form of member checking.^{55, 56} We shared summaries of our curriculum content analyses with developers/publishers and invited them to review and comment prior to our meetings. Developers/publishers provided relatively minor feedback on the summaries of our findings. Minor adjustments were made to how a few activities were assigned to codes, as well as how activities were assigned to core content components in the logic model frameworks (described later).

While full member-checking was not conducted (i.e., interviewees did not review transcripts for validity), all quotes used in this paper were shared with developers and publishers for their review and approval.

⁵⁵ Shenton, A.K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Educ. Inf.*, 22, 63-75.

⁵⁶ McKim, C. (2023). Meaningful Member-Checking: A Structured Approach to Member-Checking. *American Journal of Qualitative Research*, 7(2), 41-52.

Method 3: Curriculum Content Analysis

We selected five of the 58 evidence-based programs (EBP) listed in the youth.gov repository for our study. These programs are 1) [Draw the Line/Respect the Line \(DTL/RTL\)](#), 2) [Love Notes \(LN\)](#), 3) [Making Proud Choices \(MPC\)](#), 4) [Promoting Health Among Teens \(PHAT-AO\)](#), and 5) [Reducing the Risk \(RTR\)](#). The learning objectives and activities of every lesson plan of each curriculum were reviewed, as well as the front matter and appendices. See **Table 2** below for a summary of curricula sessions and activities.

In addition to the curricula, we also gathered 15 peer-reviewed journal articles or government reports listed on youth.gov demonstrating a high or moderate evidence rating on the evaluation of the five selected curricula as well as ancillary documents (e.g., developer’s logic models and core component descriptions). See [Appendix G](#) for a bibliography of the 15 curricula evaluation articles/reports.

Learning Objective Analysis. With the exception of *Reducing the Risk*, all session plans in the CPIC curricula were framed by learning objectives. Learning objectives are statements that describe what the learner is expected to be able to do after completing the session (see examples of learning objectives in **Table 2**. There was a total of 48 sessions in the four curricula (*DTL/RTL*, *LN*, *MPC*, and *PHAT-AO*) with a total of 184 learning objectives. The learning objectives were entered into Dedoose. Fifty-four (54) codes were generated to code the learning objectives by topic and by psychosocial determinant (See [Appendix M](#). These codes were later examined for themes and linked to themes emerging from our other data sources and analyses.)

Table 2: CPIC Curricula and Example Learning Objectives	
Curriculum and Lesson	Learning Objectives
<i>DTL/RTL</i> Grade 8, Lesson 3: Difficult Moments	<ul style="list-style-type: none">• Describe situations in which it may be difficult to stick to a limit.• Recognize that sexual feelings can be controlled.• Recognize which situations are most difficult for them personally.
<i>Love Notes</i> , Lesson 3: My Expectations, My Future	<ul style="list-style-type: none">• Identify the qualities that are important to you in a partner or friend.• Gain a better understanding of what an expectation is, and the role expectations play in our relationships.• Begin to identify one’s relationship expectations and reflect more deeply upon them.• Gain practice in communicating about expectations.

Table 2: CPIC Curricula and Example Learning Objectives

Curriculum and Lesson	Learning Objectives
<i>Making Proud Choices</i> , Module #3: Attitudes about Sex, HIV, and Condom Use	<ul style="list-style-type: none"> Identify attitudes toward risky sexual behavior. Problem-solve for risky sexual behavior situations. Recall correct information about HIV/AIDS. Advocate and give advice regarding safer sex strategies.
<i>Promoting Health Among Teens —Abstinence Only</i> , Module 3: Making Abstinence Work for Me	<ul style="list-style-type: none"> Identify some of the elements required for abstinence to work. Discuss attitudes about abstinence. Describe strategies to make abstinence work for them. Apply problem-solving steps to sexual-decision making. Identify ways to respond to partner pressure to become sexually active

Curriculum Session Analysis. Digital copies of each curriculum were obtained from publishers and entered into Dedoose. The curricula were coded at the learning activity level. In total, 65 sessions and 296 activities were identified in over 1,050 curriculum pages (see **Table 3**). We analyzed all activities (including worksheets and handouts) in all curricula sessions for themes related to content, pedagogy, and implementation. In addition, we coded activities that promoted inclusivity, health equity, and access to services were addressed.

Curricula are comprised of **sessions** (also referred to as lessons, classes, and modules). Sessions are framed by a set of learning objectives and are generally about an hour long.

Each session is comprised of several **learning activities** (e.g., a discussion, small group assignment, role-play). Activities work together to meet the session's learning objectives.

Table 3: CPIC Curricula Sessions, Activities, and Total Time

	<i>DTL/RTL</i> (Gr. 6)	<i>DTL/RTL</i> (Gr. 7)	<i>DTL/RTL</i> (Gr. 8)	<i>Love Notes</i>	<i>MPC</i>	<i>PHAT-AO</i>	<i>RTR</i>
# of Sessions	5	7	7	13	8	8	16 or 17
# of Activities	30	39	36	54	33	38	66
Total Time (calculated using highest end of time estimates noted in session plans)	250 min. 4.2 hrs.	325 min. 5.4 hrs.	339 min. 5.6 hrs.	718 min. 12 hrs.	480 min. 8 hrs.	480 8 hrs.	974 min. (w/17 sessions) 16.2 hrs.

Content Codes. The Co-PI created a “starter” list of 175 content codes (organized by eight categories or parent codes) and 25 pedagogy codes based on the curricula’s published theories of change and core components, evaluation reports and journal articles, curricula introduction

sections, curriculum developer and facilitator interviews, and the Co-PI's in-depth familiarity with the curricula from facilitating curriculum training and conducting other systematic reviews. These codes were entered into Dedoose. The Co-PI and Research Associate began coding the curricula over a three-day in-person retreat and then completed coding immediately after on their own. Inter-coder reliability was calculated for a sample of sections for each curriculum and was above 85% for content and above 95% for pedagogy. The Co-PI and Research Associate met periodically to resolve coding discrepancies and were able to do so 100% of the time. Most of the discrepancies had to do with nuances in interpretation of the codes. After the discussion, the two coders were able to reach a consensus on the most logical assignment of codes.

Identifying codes was based on grounded theory and was an iterative process. During the coding process, the team added, edited, and deleted codes. Ultimately, the team identified 362 content codes (See **Table 4** and [Appendix N](#)). The team organized the 362 content codes by the eight categories or parent codes established when developing starter codes. We were able to maintain these eight categories throughout the coding process. Each of these content categories had multiple subcategories or child codes. Given the iterative process of creating codes, the Co-PI reviewed the curricula two additional times to ensure the coding was consistent and inclusive of the final content code list.

After completing curriculum coding, the Co-PI thematically collapsed the 362 content codes (comprehensive codes) to create a list of 31 codes (theme codes). See [Appendix O](#) for a list of the 31 thematic codes and how the comprehensive codes are grouped under each. Simultaneously, two other CPIC team members collapsed the 362 codes to create thematic codes from their perspectives. The three team members met to discuss their thematic coding and resolved minor inconsistencies (e.g., minor wording differences and sub-themes within a larger theme). We then collapsed the codes one more time using the same process to create a final list of 11 umbrella codes. The umbrella codes became the basis for articulating the nine core content components.

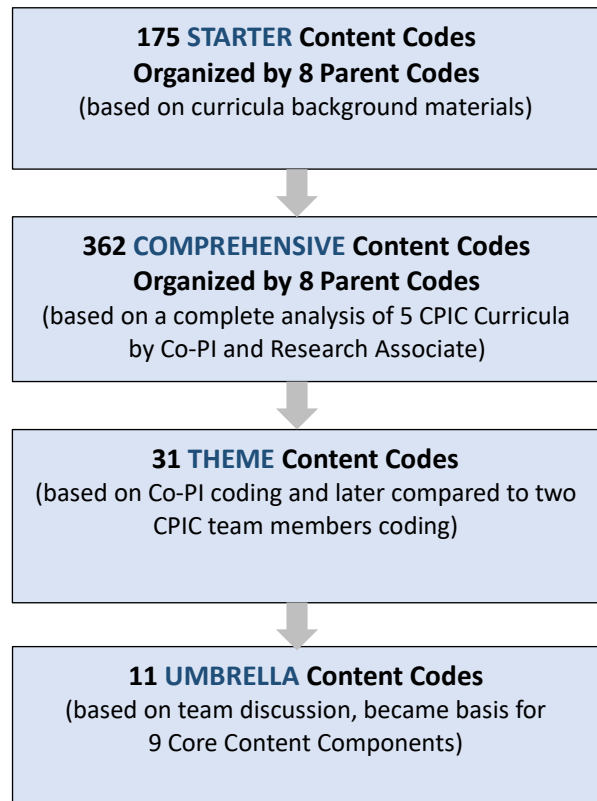
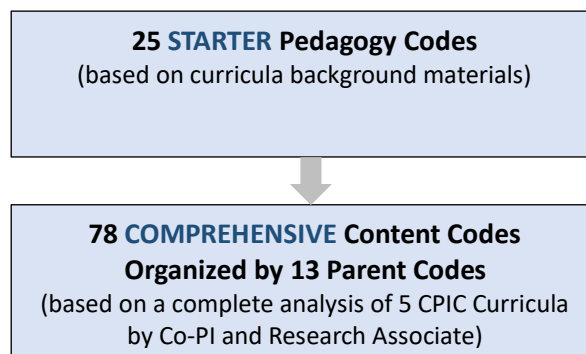


Table 4: Content Codes			
Parent Codes	Child Codes – Level 1	Child Codes – Level 2	Total Codes
Feelings (F)	0	0	2
Knowledge/Awareness (K)	12	13	177
Perception of Risk (PR)	2	0	10
Positive Attitude (A)	10	0	68
Perception of Peer Norms (PN)	4	0	38
Skill (S)	4	0	28
Self-Efficacy (SE)	3	0	26
Intention (I)	3	0	13

Pedagogy Codes. As stated earlier, the Co-PI established 25 starter codes for pedagogy analysis. We ultimately identified 78 pedagogy codes, organized into 13 categories (see **Table 5**) and [Appendix N](#)).



Implementation Codes. Only two codes surfaced for implementation during the content analysis process: 1) office hours and 2) possible adaptations or supplemental activities (see **Table 5**).

Health Equity, Inclusion, and Access to Services Codes. Activities, activities components, and facilitator notes that addressed inclusion (9 codes), health equity (no codes were surfaced), and access to services (7 codes) were also coded (see **Table 6**).

Table 5: Pedagogy Codes	
Parent Codes	Total Codes
Other Methods (PO)	13
Answer/Opinion (PAO)	5
Homework (H)	2
Visuals, Audio, Manipulatives (V)	10
Individual Work (IW)	9
Small Group Work (SG)	3
Community Resources (R)	3
Tools to Help with Memory (M)	6
Creative (C)	2

Table 5: Pedagogy Codes	
Parent Codes	Total Codes
Skill Practice Activities (P)	8
Facilitator Presentation (FP)	6
Large Group Discussion (LG)	5
Learning Climate Setting (LC)	6

Table 6: Other Codes	
Parent Codes	Total Codes
Implementation (IMP)	2
Inclusion (INC)	9
Access to Services (ACC)	7

Code Frequency and Dosage Analyses. Next, the team analyzed the frequency of occurrence of the 362 content codes (comprehensive level) in Dedoose. Later, those frequencies were aggregated for each theme code and later for each umbrella code. The same was done for pedagogical codes.

The Co-PI estimated the time dedicated to each thematic code in each session of the five curricula. This time estimation was done as objectively as possible, but it was impossible to determine the exact minutes. Most activities have multiple codes associated with them, and thus, minutes were sometimes counted more than once. For example, a particular activity may have been coded for “knowledge about abstinence” and also the “perception of risk for pregnancy.” In this case, minutes associated with the activity were “double-assigned” to the codes. The Co-PI used her best judgment (based on her years of practical experience in facilitating TPP curricula) in estimating time. The estimated minutes for each activity were tallied in Excel. (A listing of codes and cumulative minute totals is found in [Appendix P](#)).

The frequency of how often a theme appeared and the amount of time spent on that theme helped us to weigh themes and identify core components. These timing dosages were another facet of the curriculum content but cannot be considered definitive, given the complexity of assigning minutes accurately.

Method 4: Review of Other Curriculum-related Document Analyses

Core Component and Theory of Change Documents. We analyzed published core components and theory of change documents for three of the five CPIC curricula. ETR, publisher of *Draw the Line/Respect the Line*, *Making Proud Choices*, and *Reducing the Risk*, also publishes a core component ancillary document for each curriculum. Core components were extracted from the documents and analyzed for themes in Dedoose.

Logic Model Framework. We created a theory of change logic model for each of the CPIC curricula (see [Appendix Q](#), [Appendix R](#), [Appendix S](#), [Appendix T](#), and [Appendix U](#)). The logic models show the links between four steps in the curricula’s change pathway: 1) the curriculum goal(s), to 2) the teen sexual behaviors directly related to those goals, to 3) the eight (of nine) core content components (described in the Findings section) that we hypothesize are responsible for changing those behaviors, to 4) the curriculum activities that appeared to address each core content component robustly. These logic models (based on Kirby’s Behavioral-Determinant-Intervention Logic Models⁵⁷) are unique because they show how *core content components* (rather than psychosocial determinants) may influence behavior. Similar to the way “proofs” are used in geometry, these logic models serve as a type of “backward proof” to triangulate core content component hypotheses as well as discern similarities and differences between curricula.

Core content component #3, “Primarily focus on nine categories of psychosocial determinants that are directly linked to changing youth sexual behavior,” was not addressed in CPIC logic models because this analysis has been conducted and published elsewhere, although not based on all nine of the psychosocial determinants identified in our study.^{58, 59, 60, 61, 62}

⁵⁷ Kirby, D. (2004). *Logic models: A useful tool for designing, strengthening, and evaluating programs to reduce teen pregnancy*. Scotts Valley, CA: ETR Associates.

⁵⁸ [Draw the Line / Respect the Line Logic Model](#)

⁵⁹ [Love Notes Logic Model](#)

⁶⁰ [Making Proud Choices Logic Model](#)

⁶¹ [Reducing the Risk Logic Model](#)

⁶² [Love Notes Logic Model](#)

Method 5: Review of Field Notes

Researcher Notes. Both the Co-PI and the Research Associate took notes on their reflections during coding and team meetings. These notes were coded in Dedoose, examined for themes, and compared to the themes emerging from other data sources and analyses.

How We Analyzed Our Data to Determine Core Components

Phase 1 of the CPIC Study collected a comprehensive set of data sources and used multiple methods to study that data. Our goal was to triangulate our findings as much as possible. This approach helped us to corroborate our findings and report on them in detail.

We started with a systematic review of curriculum evaluation studies, ancillary materials such as curriculum logic models, and curriculum manual front matter. Reviewing these documents oriented us to the curricula's theories of change, goals, behavioral outcomes, intermediate outcomes, and other curriculum characteristics. We were able to compare and contrast what we found in these documents and look for commonalities and what the curricula were effective at changing. Our interviews with curriculum developers and facilitators, professionals who are intimately connected to the curricula, shed light on what curriculum features are essential for effectiveness. One of our interview questions that helped interviewees hone in on the most important features of the curriculum was: *How would you describe the curriculum's "secret sauce?" That is, what makes [NAME OF CURRICULUM] produce positive outcomes?* Curriculum developers (most of whom were part of the evaluation team) were also able to clarify questions our team had about the original evaluation studies. We conducted a thematic analysis of interview transcripts and made a note of what interviewees stated with greater affect and emphasis.

The document reviews and curriculum developer and facilitator interview not only began the surfacing of core components but also prepared us for curriculum content analysis and informed our initial code book. With the team now primed with these initial analyses, we began a nuanced line-by-line content analysis of each curriculum's session activities and session learning objectives. We assessed how frequently codes were used (see [Appendix V](#), [Appendix W](#), [Appendix X](#), [Appendix Y](#), and [Appendix Z](#)), and for content codes we roughly estimated the amount of time dedicated to codes (see [Appendix P](#)). Themes and patterns began to emerge during the content analysis, and they were aligned with our document and interview analyses. We sought curriculum developer feedback on our summary of findings, and there were only a few requests for minor revisions. We also sought feedback from several advisors, including a TPP curriculum expert, a qualitative research professor, and our advisory panel.

We identified the 22 core components presented in this report from a comprehensive overview of all of our data, expert review, and our team’s ongoing reflections and discussions. No one data source or method determined a core component; rather, the gestalt of our findings was interpreted to narrow in on them. While time-consuming and, at times, tedious, we concluded our study feeling confident about the 22 core components we posit are essential for the CPIC curricula effectiveness.

About the Co-Principal Investigator (Phase 1 Team Lead)

In qualitative research, much of the data interpretation filters through the lenses of the researcher. The CPIC Study’s Co-PI and Phase 1 Team Lead, Lori Rolleri, MSW, MPH, has 30+ years of designing, implementing, and evaluating ASRH curricula in the United States and internationally. She has co-authored several systematic analyses of evidence-based sexuality education curricula, including journal articles titled “Sex and HIV Education Programs: Their Impact on Sexual Behaviors of Young People throughout the World”⁶³ and “Adaptation Guidelines for Evidence-based Adolescent Pregnancy and STI/HIV Prevention Curricula: From Development to Practice,”⁶⁴ a book titled *Reducing Adolescent Sexual Risk: A Theoretical Guide for Developing and Adapting Curriculum-Based Programs*, and other publications. She has trained hundreds of facilitators on the implementation of *Reducing the Risk, Making Proud Choices*, and other evidence-based sexuality education curricula. Prior to the CPIC Study, she had professional relationships with all CPIC curricula developers and publishers and one of the curriculum facilitators.

The Co-PI strived for disciplined objectivity in the collection and analysis of data. To minimize bias, she engaged in a reflectivity process⁶⁵ about how her subjectivities, biases, and worldview about ASRH could affect her lenses during the Phase 1 study. She made a list of those factors and strived to keep an open and questioning mind in her decision-making about data collection and analyses. For example, her experiences from previous sexuality education studies influenced the creation of starter codes for curricula content analysis, but several of these codes were later dropped or reworded to better reflect CPIC curriculum content, and many new codes

⁶³ Rolleri, L., Fuller, T.R., Firpo-Triplett, R., Moore, C., Leeks, K.D. & Lessene, C.A. (2014). Adaptation guidelines for evidence-based adolescent pregnancy and STI/HIV prevention curricula: From development to practice. *American Journal of Sexuality Education*, 9: 135-154.

⁶⁴ Kirby, D., Coyle, K., Alton, F., Rolleri, L., & Robin, L. (2011). *Reducing Adolescent Sexual Risk: A Theoretical Guide for Developing and Adapting Curriculum-Based Programs*. Scotts Valley, CA: ETR Associates.

⁶⁵ Francisco M. Olmos-Vega, Renée E. Stalmeijer, Lara Varpio & Renate Kahlke (2023) A practical guide to reflexivity in qualitative research: AMEE Guide No. 149, *Medical Teacher*, 45:3, 241-251, DOI: 10.1080/0142159X.2022.2057287.

were added. In addition, she engaged in ongoing critical friend (colleague)⁶⁶ discussions, questioning, and reframing with her co-coder, project team, and advisory team members to decrease biases and enrich the meaning of findings.

Her unique set of professional experiences in sexuality education also meant she had an unparalleled understanding of the curricula and their theories of change, the evaluation studies demonstrating their effectiveness, common implementation and fidelity challenges, as well as curriculum developer and facilitator experiences. These understandings were an invaluable asset in developing research questions, identifying themes, and analyzing their meaning.

⁶⁶ Carlson, E., Nygren, F., & Wennick, A. (2018). Critical Friends: Health Professionals' Experiences of Collegial Feedback in a Clinical Setting. *The Journal of continuing education in the health professions*, 38(3), 179–183.
<https://doi.org/10.1097/CEH.0000000000000210>

Phase 1 Findings

In this section of our report, we present the findings from Phase 1 of the CPIC Study. Our findings are organized into five sub-sections:

1. [About Core Content Components](#) (CCC)
2. [About Core Pedagogical Components](#) (CPC)
3. [About Core Implementation Components](#) (CIC)
4. [Important Contextual Factors to Consider](#)
5. [How CPIC Curricula Address Healthy Equity, Inclusion, and Access to Services](#)

We identified nine core content components, eight core pedagogical components, and five core implementation components for a total of 22 core components. We present our findings for each of the three categories of core components (sub-sections 1 to 3 listed above) first in an “at-a-glance” format, and then we go on to describe each core component within each category in more detail, as well as describe differences in how each curriculum addressed core components.

Overall, our findings were consistent with other publications that generalize core components or common characteristics of effective sexuality education programs and with specific core component publications about the CPIC curricula.^{67, 68, 69, 70, 71, 72, 73} However, we believe the findings listed below are unique to our study.

Unique Findings – Core Content Components

- **CCC Finding #5:** Facilitate processes where learners can envision and plan healthy futures (short- and long-term).
- **CCC Finding #6:** Teach about multiple facets of healthy relationships.

⁶⁷ [Draw the Line / Respect the Line Core Components](#)

⁶⁸ [Making Proud Choices Core Components](#)

⁶⁹ [Reducing the Risk Summary of Core Components](#)

⁷⁰ Kelsey, M., Layzer, J., Price, C., Juras, R., and Blocklin, M. [“Reducing the Risk Short-Term Impact Report: Findings from the Teen Pregnancy Prevention Replication Study.”](#) Cambridge, MA: Abt Associates Inc., October 2016

⁷¹ [Health Education Curriculum Analysis Tool \(HeCAT\)](#)

⁷² [Tool to Assess the Characteristics of Effective Sex and STD/HIV Education Programs](#)

⁷³ [CDC Healthy Schools Characteristics of an Effective Health Education Curriculum](#)

Phase 1 Findings: 22 Core Components Breakdown

9 Core Content Components

Category 1: Change Pathway—3

Category 2: Content—6

8 Pedagogical Components

Category 1: Engaging Learners—5

Category 2: Content Presentation—3

5 Implementation Components

- **CCC Finding #9:** Strengthen learners' personal agency to make healthy and autonomous decisions.

Unique Findings – Core Pedagogy Components

- **CPC Finding #2:** Provide learners multiple opportunities to personalize or apply information and skills.
- **CPC Finding #3:** Provide learners multiple opportunities to think critically, analyze, and/or assess.
- **CPC Finding #4:** Provide learners multiple opportunities to write (e.g., worksheets, journals).
- **CPC Finding #5:** Provide learners multiple opportunities to voice their opinions, ideas, experiences, suggestions, and solutions to challenges while their peers listen/observe.
- **CPC Finding #7:** Present relatively simple and easy-to-remember frameworks and require youth to apply them.

Unique Findings – Core Implementation Components

- **CIC Finding #3:** Are delivered by facilitators who demonstrate genuine respect and care to learners.

Other Unique Findings

- Observations about **contextual factors** that may play a role in curriculum replication effectiveness.
- Observations about how CPIC curricula address **health equity, inclusion, and access to services**.

About Core CONTENT Components (CCC)

We begin by reporting our findings about core content components. As stated earlier, core content refers to *what* the curriculum teaches. Core content is defined by two facets: 1) the essential program subject matter or topic (e.g., contraceptive methods, healthy relationships, limit setting) and 2) with which psychosocial determinant (e.g., knowledge, attitudes, skills) that topic is being addressed. For example, a curriculum might talk about abstaining from sex (topic) by imparting knowledge, or by shifting attitudes about abstinence, or by teaching skills about how to be abstinent—the same topic (abstinence), but it is addressed by three different [psychosocial determinants](#) (knowledge, attitudes, skills). The determinants associated with the topic are often linked to the [behavior change theories](#) (e.g., social cognitive theory) that the curriculum developers use to map their programs.



If we think about creating an oil painting, the oil paints and colors could be considered a metaphor for a curriculum's core content. The oil paints⁷⁴ (and the canvas) are *what* the art piece is made of.

In this section, we answer three of our four CPIC Study questions.

1. What are the core program content components of the five evidence-based Teenage Pregnancy Prevention (TPP) programs selected for the study?
2. Which program components (as they relate to content) appear to matter the most in influencing participant outcomes?
3. Through what mechanisms do core program components (as they relate to content) influence participant outcomes?

⁷⁴ Photo credit: Image from Microsoft Version 16.88

At-a-Glance: CPIC Study Phase 1 Findings on Core CONTENT Components (CCC)

CCC Category 1: The Curricula's Change Pathway

The five curricula in the CPIC Study...

CCC Finding #1: Are anchored by specific and measurable health goals. These include preventing pregnancy, preventing HIV, and/or preventing other sexually transmitted infections (STIs).

CCC Finding #2: Are anchored by specific and measurable healthy sexual behaviors that are directly linked to the curriculum's health goals (see CCC #1).

Specific and Measurable Healthy Sexual Behaviors

1. Delaying the onset of sexual intercourse (abstaining from sex)
2. Reducing the frequency of sex
3. Reducing the number of sexual partners (if sexually active)
4. Avoiding having concurrent partners (practicing serial mutual monogamy) (if sexually active)
5. Using condoms (mostly mentioned external condoms) correctly and consistently (if sexually active)
6. Using effective contraception (if sexually active)

CCC Finding #3: Primarily focus on nine categories of psychosocial determinants that are directly linked to changing youth sexual behavior (see CCC #2).

Nine Psychosocial Determinants

1. Knowledge
2. Self-awareness
3. Perception of Risk (susceptibility & severity)
4. Attitudes
5. Emotions or Feelings
6. Peer Norms & Perception of Peer Norms
7. Skill
8. Self-efficacy
9. Intentions

CCC Category 2: Specific Core Content or Subject Matter

The five curricula in the CPIC Study...

CCC Finding #4: Present basic knowledge about sexual and reproductive health (SRH) as a foundation on which to build learners' understanding of pregnancy and HIV/STI prevention.

Sexual and Reproductive Health (SRH) Topics

1. Physical, emotional, and social changes associated with puberty
2. Reproductive anatomy and physiology (e.g., internal and external anatomy, hormones, ovulation, menstruation, ejaculation)
3. Sexual intercourse and how a pregnancy occurs
4. Names, symptoms, transmission, and other facts about HIV and other STIs
5. Sexual response (e.g., attraction, arousal, changes in hormonal and neurotransmitter levels, changes in how the body feels, etc.)
6. Contraceptive methods and how they work
7. SRH resources
8. Prevalence data about adolescent SRH

CCC Finding #5: Facilitate processes where learners can envision and plan healthy futures (short- and long-term).

CCC Finding #6: Teach about multiple facets of healthy relationships.

Facets of a Healthy Relationship

1. Healthy and unhealthy relationship characteristics and behaviors
2. What they want and expect from a relationship
3. Their limits in a romantic relationship, especially related to sexual activity
4. The importance of respecting a partner's decisions and expecting your partner to respect you
5. The importance of mutuality in a relationship
6. Power dynamics in relationships (related to inequitable gender norms)
7. The importance of regular, clear, and respectful communication
8. The management of feelings, desires, attraction, and pressure
9. The importance of planning relationships
10. Ending an unhealthy or unwanted relationship

CCC Finding #7: Teach about multiple facets of respectful partner communication, including benefits and skills.

Communication Skills

1. Assertive communication
2. Non-verbal communication
3. Refusing and negotiating (e.g., refusing to have unprotected sex)
4. Responding to peer and partner pressure
5. Making a respectful complaint (*Love Notes* only)
6. Listening (*Love Notes* only)

CCC Finding #8 Build learners' skills to set and keep personal limits related to sexual activity.

CCC Finding #9: Strengthen learners' personal agency to make healthy and autonomous decisions.

Introduction to CCC Category 1: The Curricula's Change Pathway

Based on our content analysis of each CPIC curriculum (both the curriculum's front matter and sessions), associated evaluation studies, and theory of change logic models, we recognized clear conceptual frameworks with three linked pieces: 1) clearly stated curriculum health *goals*, 2) clearly stated *youth behaviors* directly related to those goals, and 3) *theory-based psychosocial determinants* that curriculum developers posit will change those behaviors. In some cases, curriculum developers also spoke about how these three conceptual elements were linked.

The conceptual frameworks (also referred to as theories of change and/or logic models) may contribute to a curriculum's effectiveness in several ways. These frameworks often support:

1. Curriculum designers to be more precise about what they aim to change and what is feasible to change within the parameters (e.g., time constraints, typical organizational capacity for implementing) of a curriculum-based intervention. The framework can also be considered a traceable map that shows the pathway to change.
2. Curriculum designers write specific, measurable, attainable, realistic, and time-bound (SMART) learning objectives.

3. Curriculum designers design learning activities that are intentional and meet those learning objectives.
4. Curriculum designers craft key messages and reinforce them.
5. Curriculum facilitators in understanding the rationale for curriculum content and motivate them to maintain fidelity.
6. Hosting organizations (i.e., schools or community-based organizations) to understand, buy into, and support the teaching of the curriculum’s content (read more about this under [Core Implementation Component #1](#)).
7. Evaluators determine what to measure and develop evaluation instruments.

It should be noted that an intervention’s change pathway is often influenced by its funder (see **Table 7**.) At the time when the majority of the CPIC curricula were developed (*RTR*, *DTL/RTL*, *MPC*, and its derivative *PHAT-AO*), HIV prevention was at the forefront of many funder agency priorities (1980s, 1990s). As such, HIV prevention is a stated goal in these curricula. Additionally, at the time of writing these four curricula, health-behavior change theories like Bandura’s social cognitive theory and Fishbein and Ajzen’s theory of reasoned action were receiving increased attention from funders (e.g., National Institutes of Health) and health behavior scientists.⁷⁵ In fact, a national workshop titled: “Theorist’s Workshop: Factors Influencing Behavior and Behavior Change” was held in 1991 in Washington DC and was influential on funders and intervention developers alike.⁷⁶ This may partially explain why these particular theories are frequently applied to sexuality education curricula, including CPIC curricula. (Also see [Table 10](#) and [Appendix AA](#)).

Table 7: Curricula Funders	
Curriculum	Funders of Curriculum Development and Replications
<i>DTL / RTL</i>	<ul style="list-style-type: none"> • National Institute of Mental Health (Coyle et al., 2004)
<i>Love Notes</i>	<ul style="list-style-type: none"> • Office of Adolescent Health, U.S. Department of Health and Human Services (Barbee et al., 2022; Cunningham et al., 2016; Kelsey 2016)
<i>MPC</i>	<ul style="list-style-type: none"> • National Institute of Mental Health (Jemmott et al., 1998) • Office of Adolescent Health, U.S. Department of Health and Human Services (Cole et al., 2022)

⁷⁵ K. Coyle, C. Gomez, & R. Barth, personal communication. January – March, 2023).

⁷⁶ Ibid.

Table 7: Curricula Funders	
Curriculum	Funders of Curriculum Development and Replications
PHAT-AO	<ul style="list-style-type: none"> National Institute of Mental Health (Jemmott et al., 2010) Office of Adolescent Health, U.S. Department of Health and Human Services (Walker et al., 2016)
RTR	<ul style="list-style-type: none"> The Stuart Foundation, William and Flora Hewlett Foundation, Division of Research Resources, National Institute of Health (Kirby et al., 1991; Barth et al., 1992) National Institute on Alcoholism and Alcohol Abuse (Zimmerman, 2008) National Institute of Mental Health, National Institute of Nursing Research, National Science Foundation (Reyna, 2014) Office of Adolescent Health, U.S. Department of Health and Human Services (Barbee et al., 2022; Cunningham et al.; 2016, Kelsey 2016)

CCC Finding #1: CPIC curricula are anchored by specific and measurable health goals.

Most evidence-based TPP programs listed in the youth.gov repository target one or more of three overarching sexual and reproductive health goals (impacts): 1) pregnancy prevention, 2) HIV prevention, and/or 3) other STI prevention. This is also the case for the five CPIC curricula.⁷⁷ These goals are clearly stated in the curricula, evaluation studies, and ancillary materials. The goals are also repeated throughout the curricula.

CCC Finding #1 is consistent with the research conducted by Kirby et al.⁷⁸ (Characteristic #1 under Contents of the Curriculum Itself: “Focused on clear health goals – the prevention of STD/HIV and/or pregnancy”) and CDC’s Healthy Schools Characteristics for an Effective Health Education Curriculum (Characteristic #1: “Focused on clear health goals and related behavioral outcomes”).⁷⁹

So that's the number one thing that they need to know out of the class. They need to know how you get pregnant or what the different ways you can be infected with an STI and HIV. They need to know that.

-Curriculum Facilitator

⁷⁷ *Love Notes* was grounded in two additional goals— “increase in healthy relationships” and “greater school completion/ employment.

⁷⁸ Kirby, D., Laris, B.A. & Rolleri, L. (2007). *Sex and HIV education programs: Their impact on sexual behaviors of young people throughout the world*. *Journal of Adolescent Health*: 40, 206-217.

⁷⁹ Centers for Disease Control and Prevention Healthy Schools, Characteristics of an Effective Health Education Curriculum. Retrieved August 1, 2024 from: <https://www.cdc.gov/healthyschools/sher/characteristics/index.htm>

Given the limitations most TPP curriculum evaluation studies face, such as relatively short timelines, budgets, and the challenges in collecting biological samples (e.g., urine, blood) to test for pregnancy and STIs, TPP programs typically evaluate at the behavior level (see [CCC #2](#)). A study’s time limitations, in particular, are a challenge. It may be difficult to detect significant changes in impact outcomes over just 12 months unless the study has large sample sizes and/or a large number of youth who are sexually active at baseline. However, of the five CPIC curricula, three curricula were evaluated for impact—*Love Notes*, *Making Proud Choices*, and *Reducing the Risk* (see [Appendix BB](#)). The findings presented in [Appendix BB](#) were extracted from the curriculum journal articles and evaluation reports. While the majority of the studies did not show shifts in curriculum goals (again, often difficult to show with typical study limitations), they do show that the curricula intended to shift them and served as a type of anchor for curriculum design.

The mean number of learning activities and time associated with CCC #1 was 17 and 4.4 hours, respectively. Examples of curriculum activities and session learning objectives that closely tie to CCC #1 are found in **Table 8**.

Important Note. Note that curriculum activities rarely address just one topic, psychosocial determinant, or core component. This is true of all tables listing curriculum activities supporting the 22 core components.

Table 8: Supporting Examples for CCC #1 – Anchored in Preventing Pregnancy, HIV, and other STIs
RTR, Class 1A: “Abstinence, Sex, and Protection: Pregnancy Prevention Emphasis” (page 13)
Class 1A is designed to increase the perception of susceptibility and severity of having an unplanned pregnancy and the benefits of preventing an unplanned pregnancy (the session also introduces refusal skills).
Examples of Learning Objectives from PHAT-AO Session and MPC Session
<ul style="list-style-type: none"> • Acknowledge that they might be at risk for contracting an STI (<i>PHAT-AO</i>) • Acknowledge their perceived risk for sexually transmitted infections (<i>MPC</i>) • Identify abstinence as the best way to prevent STD infection (<i>DTL/RTL</i>)
Love Notes, Lesson 12: “Let’s Plan for Choices” (page 195)
This lesson reviews information about pregnancy and contraception and HIV/STI transmission and prevention. Some activities address the perception of risk and positive attitudes about avoiding unplanned pregnancy and HIV/STIs . The lesson ends with learners developing a plan about their sexual choices.

CCC Finding #2: CPIC curricula are anchored by specific and measurable healthy sexual behaviors that are directly linked to its health goals (see CCC #1).

The five CPIC curricula addressed a set of teen sexual behaviors *directly* linked to preventing pregnancy, HIV, and/or other STIs (see [Appendix CC](#)), as observed from the curriculum manuals, evaluation reports, and published logic models. In focusing on just a narrow and related number of behaviors, curriculum activities may be more likely to reinforce and complement each other during relatively short interventions. These behaviors include:

1. Delaying the onset of sexual intercourse (abstaining from sex)
2. Reducing the frequency of sex
3. Reducing the number of sexual partners (if sexually active)
4. Avoiding having concurrent partners (practicing serial mutual monogamy) (if sexually active)
5. Using condoms (mostly mentioned external condoms) correctly and consistently (if sexually active)
6. Using effective contraception (if sexually active)

Not all curricula addressed these six behaviors, and none addressed all of them. For example, *Promoting Sexual Health Among Teens – Abstinence Only* emphasized abstinence and returning to abstinence. *Reducing the Risk* was the only curriculum that addressed avoiding concurrent sexual partners. *Love Notes* addressed a behavior outside the list above (“have ended an unhealthy relationship”). This finding is not surprising as all curricula were required to be evaluated on one or more of the behavioral outcomes listed on CCC #2 to be included in the youth.gov repository of EBP. Emphasis on one or more of these behaviors was not only found in the evaluation studies, but also in curriculum learning activities, curriculum front matter, and logic models.

CCC Finding #2 is consistent with the research conducted by Kirby et al.⁸⁰ (Characteristic #2 under Contents of the Curriculum Itself: “Focused narrowly on specific behaviors leading to these health goals (e.g., abstaining from sex or using condoms or other contraceptives), gave clear messages about these behaviors, and addressed situations that might lead to them and

⁸⁰ Kirby, D., Laris, B.A. & Rolleri, L. (2007). Sex and HIV education programs: *Their impact on sexual behaviors of young people throughout the world*. *Journal of Adolescent Health*: 40, 206-217.

how to avoid them”) and CDC’s Healthy Schools Characteristics for an Effective Health Education Curriculum (Characteristic #1: “Focused on clear health goals and related behavioral outcomes”).⁸¹

The five CPIC curricula promote these healthy sexual behaviors with learning activities that largely aim to: 1) shift attitudes and peer norms about engaging in these behaviors (and avoiding the contrary/risky behavior), 2) increase knowledge about the skills needed to practice the behavior, 3) increase self-efficacy to use the skill, and 4) in some cases, increase intentions to practice these skills in “real life.” See **Table 9** for examples of how CCC #2 was observed in the CPIC curricula through session learning objectives and activities. The mean number of learning activities and time associated with CCC #2 was 22 and 6 hours, respectively.

Table 9: Supporting Examples for CCC #2 – Anchored in a Narrow Set of Healthy Sexual Behaviors Directly Linked to Impact Goals
<i>MPC, Module 7: “Developing Condom Use and Negotiation Skills” (page 163)</i>
<p>Learning Objectives from Module 7</p> <ul style="list-style-type: none"> • List the correct steps to using a condom • Identify barriers to using condoms and practicing other safer sex behaviors • Identify strategies for implementing condom use • Identify ways to make condoms a more pleasurable part of the sexual experience • Demonstrate the ability to respond to excuses a partner may give with a statement in support of condom use • Identify strategies for negotiating condom use with partners
<i>PHAT-AO, Module 3: “Making Abstinence Work for Me” (page 87)</i>
<p>Learning Objectives from Module 3</p> <ul style="list-style-type: none"> • Identify some of the elements required for abstinence to work • Discuss attitudes about abstinence • Describe strategies to make abstinence work for them • Apply problem-solving steps to sexual decision-making • Identify ways to respond to partner pressure to become sexually active

⁸¹ Centers for Disease Control and Prevention Healthy Schools, Characteristics of an Effective Health Education Curriculum. Retrieved August 1, 2024 from: <https://www.cdc.gov/healthyschools/sher/characteristics/index.htm>

Table 9: Supporting Examples for CCC #2 – Anchored in a Narrow Set of Healthy Sexual Behaviors Directly Linked to Impact Goals

RTR, Class 7: “Getting and Using Protection” —1 (page 97)

In this class, the facilitator delivers a 30-minute presentation on a full range of contraceptive methods. Students are also given a homework assignment where they are asked to find a location where they can obtain condoms and complete a worksheet about the experience.

CCC Finding #3: CPIC curricula primarily focus on nine categories of psychosocial determinants that are directly linked to changing youth sexual behavior (see CCC #2).

All CPIC curricula attempt to influence sexual behaviors with a common set of psychosocial determinants about a variety of topics, although the emphasis on these determinants varies. We identified these determinants largely from conducting the content analyses of curriculum sessions and making judgments about what determinants the activities were attempting to shift or address. Our findings were backed by our analysis of curriculum front matter, evaluation studies, and discussions with developers. However, not all of the determinants that we identified fit neatly within the behavior change theories on which the curricula were based.

We made determinations about whether or not a psychosocial determinant was core based on the frequency it appeared during our curriculum content analysis, a rough estimate of the amount of time spent on the determinant, explicit mention of the determinant in the established health theories that informed the curriculum, whether or not it was mentioned and/or evaluated by an evaluation study, and mention of the determinant during developer and facilitator interviews.

The nine determinant categories are listed below. Later in this section, they are described in greater detail.

Nine Categories of Psychosocial Determinants Related to Shifting Adolescent Sexual Behavior in CPIC Curricula

1. Knowledge
2. Self-awareness
3. Perception of Risk (susceptibility and severity)
4. Attitudes
5. Emotions or Feelings
6. Peer Norms and Perception of Peer Norms
7. Skill
8. Self-efficacy
9. Intentions

The flow or sequence in which these determinants appeared in the curricula followed a similar pattern. Often, curricula (and individual sessions) would start by presenting knowledge, then present activities that help youth clarify attitudes, followed by skill practice activities.

Health behavior change theory constructs are reflected in these nine determinants. In particular, the CPIC curricula were explicitly based (as described in evaluation studies and curriculum front matter) on one or more of the following theories: 1) Social Cognitive Theory, 2) The Theory of Reasoned Action and Theory of Planned Behavior, 3) Inoculation Theory, 4) Cognitive Behavior Theory, and 5) Social Exchange Theory. During interviews with curriculum developers, we learned about other theories and approaches that also influenced the design of their curricula. (See **Table 10.**) A brief description of these theories is found in [Appendix AA](#) (presented in no particular order). Developers also selected determinants based on what they learned from formative research, such as youth interviews and focus groups, literature review, and/or feedback from previous iterations of the curriculum and/or pilot testing.

What is a “determinant?”

Determinants are factors that influence behavior. These factors may be positive or negative. Determinants are also sometimes referred to as mediating variables, independent variables, risk and protective factors, or antecedents. Determinants are found at the individual (biological and psychological), familial, social, and community levels, and in the greater ecological systems that affect adolescent lives.

Group-based interventions, like a TPP curriculum, in and of themselves are generally limited to addressing determinants at the individual, peer, and familial levels.

Table 10: Established Theories and Approaches Used in CPIC Curricula					
Theory/Approach	DTL/ RTL	LN	MPC	PHAT- AO	RTR
1. Cognitive Behavior Theory					X
2. Social Exchange Theory		X			

Table 10: Established Theories and Approaches Used in CPIC Curricula

Theory/Approach	DTL/ RTL	LN	MPC	PHAT- AO	RTR
3. Social Cognitive Theory	X	X			X
4. Social Inoculation Theory	X				X
5. Theory of Reasoned Action / Planned Behavior		X	X	X	
6. Influenced by John Gottman, Howard Markman, and Scott Stanley, Peter Benson’s 40 Developmental Assets, Positive Youth Development Approach, Johnson’s Intimate Partner Violence Typology, Bruce Perry, Adverse Childhood Events (ACEs), Nancy McLaren (The Art of Loving Well)		X			
7. Influenced by Sheldon Rose and Steven Schinke (cognitive behavior work)					X
8. Emotional Intelligence/Multiple Intelligences	X				
9. Fuzzy Trace Theory (applied to an adapted version of <i>RTR</i> by Reyna et al., 2014)					X
10. Techniques for addressing high sensation-seeking and impulsive youth (e.g., adding audiovisual materials, selectively using peer facilitators to reduce teacher dominance, creating more realistic role-playing activities about high-risk situations, etc.) (applied to an adapted version of <i>RTR</i> by Zimmerman et al., 2008)					X

Each curriculum is based on a theory of change logic model that explains how its unique combination of determinants creates a “recipe” for reaching the curriculum’s behavioral goals. Like the ingredients in a food recipe, determinants are often blended in each session and/or learning activity. In other words, finding a curriculum learning activity that addresses strictly one determinant category is rare.

In addition to qualitatively reviewing curricula and other curriculum-related documents for important content, we also looked at statistically significant changes in determinants of teen sexual behavior reported in curricula evaluation reports. In particular, we were able to extract data for changes in the psychosocial determinants listed below.

- [Knowledge \(Appendix DD\)](#)
- [Attitudes \(Appendix EE\)](#)
- [Beliefs, Perception of Risk, Perception of Norms & Parent-Child Communication](#)^{82,83} ([Appendix FF](#))
- [Self-efficacy, Behavioral Control & Intentions](#)⁸⁴ ([Appendix GG](#))

Not all studies measured change for each of the determinants listed above, and for the ones that did, not all were able to demonstrate change. The determinants summarized in [Appendix DD](#), [Appendix EE](#), [Appendix FF](#), and [Appendix GG](#) are not entirely aligned with the nine determinants we observed in our study. For example, we did not put much emphasis on parent-child communication because we consistently heard from developers and facilitators that not all students complete these homework assignments. We merged attitudes and beliefs where some of the studies separated these constructs. We did not code activities as behavioral control but rather as skills, self-efficacy, and/or agency. Regardless, our review of the evaluation data on the smaller set of determinants listed above did help affirm our identification of some of the determinants we include in CCC #3.

Knowledge. We define *knowledge* as facts, data, information, and explanations/descriptions about curricula topics (e.g., explaining how hormonal birth control methods prevent pregnancy, sharing prevalence data about STIs, and teaching how HIV affects the immune system). Knowledge (177 distinct knowledge codes) was the most frequently used code, with the exception of *Love Notes*. On average, the five curricula were coded 275 times for knowledge and spent an average estimated 310 minutes (5.2 hours) addressing knowledge.

See **Table 11** for examples of how increasing knowledge about curriculum content was observed in the CPIC curricula through their learning activities.

⁸² Note that “Beliefs” (a theory of planned behavior construct) was collapsed under our attitude category.

⁸³ We did not find parent-child communication (communication with a trusted adult) to be a core content component largely because we do not have data about whether or not these take-home assignments were actually completed by learners with a parent/trusted adult.

⁸⁴ We collapsed behavioral control (a construct from the Theory of Planned Behavior) with our “self-efficacy” category.

Important Note: Note that each example presented below for knowledge may have also addressed other psychosocial determinants. It was rare to find one activity that addressed only one determinant. This is true for all the determinant example tables presented under CCC #3.

Table 11: Supporting Examples for CCC #3 – Knowledge
PHAT-AO, Module 2: “Puberty and Adolescent Sexuality” (page 71)
In this module, participants learn about puberty reproductive anatomy. Diagrams pointing out the location and names of reproductive anatomy are one way this knowledge is presented.
Love Notes, Section 11.2: “The Six Parts of Intimacy” (page 176)
This section presents and explains six dimensions of a healthy intimate relationship using a PPT slide (see below). This knowledge lays a foundation for learners to analyze and discuss a hypothetical relationship. <ul style="list-style-type: none"> • Verbal • Emotional • Social • Spiritual • Commitment • Physical
Reducing the Risk, Class 2: “Abstinence: Not Having Sex” (page 46)
The facilitator presents some statistics (from CDC or other reliable sources of data about abstinence as a way to show learners that not “everyone” is having sex. Learners have to first guess the statistic, and then the facilitator reveals the actual statistic. Here is the example provided in the lesson plan: ⁸⁵ <ul style="list-style-type: none"> • <i>In 10th grade, ____% (65.6%) of girls and ____% (62%) of boys have not had sex.</i> • <i>In 12th grade, ____% (44.2) of girls and ____% (41.1%) of boys have not had sex.</i> • <i>Among all high school students, ____% (71.3%) are not currently sexually active. This means about 7 out of 10 students have either never had sex or have had sex before but are choosing to be abstinent now.</i>

⁸⁵ When text is written in italics in core component examples tables it indicates that the text was copied exactly as it is in the curriculum.

Self-awareness. *Self-awareness* is uncovering knowledge about oneself, such as one’s personal characteristics, history, opinions, likes, and dislikes (e.g., discovering what one’s dealbreakers are in a romantic relationship, reflecting on one’s childhood and how it may have affected your approach to relationships, self-assessment about the risk for contracting HIV). On average, the five curricula were coded 102 times for self-awareness.

See **Table 12** for examples of how self-awareness was observed in the CPIC curricula through its learning activities during an interview with a curriculum developer.

Table 12: Supporting Examples for CCC #3 - Self Awareness	
Quote from Interview with <i>Love Notes</i> Curriculum Developer	
<i>In Love Notes, the first part, the first three lessons, are all really about yourself. It's really about who am I? What about my past? How has it shaped me, influenced me? What do I want? What do I not want? What do you know? There's so much there.</i>	
<i>Draw the Line/Respect the Line</i> Grade 6, Activity 1.5: “Where Do You Draw the Line?” (page 23)	
In this activity, learners are asked to think about their personal limits related to typical sixth-grade pressure situations. Learners are given a paper plate and asked to draw a line in the middle—one side represents “I will” and the other “I won’t.” As students hear the pressure statements, they place it on the side of the paper plate that represents their limit.	
<i>Making Proud Choices, Module 1: “Getting to Know You and Steps to Making Your Dreams Come True” (page 47)</i>	
In this activity, learners are asked to draw a timeline reflecting some of the accomplishments they have made in the past and some of the accomplishments they want to make in the future that are meaningful to them.	

Perception of Risk (susceptibility and severity). Perception of *susceptibility* is a person’s beliefs about their chances or likelihood of experiencing a health problem (e.g., HIV infection) or situation (e.g., pregnancy) as a result of engaging or not engaging in a particular behavior. Perception of *severity* is the person’s belief about how serious the consequences would be for them if they experienced the health problem or situation.⁸⁶ Both of these perceptions are combined to create a “perception of risk.”

⁸⁶ Rosenstock, I. M. (1990). The health belief model: Explaining health behavior through expectancies. In K. Glanz, F. M. Lewis, & B. K. Rimer (Eds.), *Health behavior and health education: Theory, research, and practice* (pp. 39–62). Jossey-Bass/Wiley.

Examples of learning activities designed to explore the perception of *susceptibility* are the presentation of data demonstrating the prevalence of STIs among youth and the simulation of how an STI can spread in a population (e.g., Activity 5.D: Don't Pass it Along: The Transmission Game in *PHAT-AO*). Examples of learning activities designed to explore the perception of *severity* are stories about the consequences and challenges in coping with a health problem or situation (e.g., Lesson 13: Through the Eyes of Child in *Love Notes*) and individual reflection where the teen has to think about how their life would change if faced with a particular health problem (e.g., Homework Assignment 12.1: How HIV Would Change My Life in *Reducing the Risk*).

There were 10 distinct codes for the perception of risk. On average, the five curricula were coded 31 times for perception of risk and spent an average estimated 19 minutes (.32 hours) addressing perception of risk.

See **Table 13** for examples of how increasing the perception of risk for pregnancy, HIV, and other STIs among learners was observed in the CPIC curricula through their learning activities.

Table 13: Supporting Examples for CCC #3 - Perception of Risk	
RTR, Class 1A, "Pregnancy Risk Activity" (page 16)	
In this activity, learners engage in a simulation to see the susceptibility of an unintended pregnancy without using contraception. They learn that there is a 1 in 6 chance of pregnancy each month without using protection.	
PHAT-AO, Module 6, Activity B: "Tanisha and Shay" DVD (page 163)	
In this activity, learners watch a video about a high school couple. Both Tanisha and Shay are seniors and have bright futures ahead of them. Tanisha learns that she is pregnant (susceptibility), and as the story unfolds, viewers learn about the many challenges a young couple has when faced with an unintended pregnancy and how an unintended pregnancy can affect their goals and dreams. The video is followed by a large group discussion, which includes questions about how an unintended pregnancy would affect their lives (severity).	
MPC, Module 5, Activity B: "The Transmission Game" (page 111)	
In this activity, learners experience susceptibility to an STI without using protection through a simulation. Learners are given cards with different symbols indicating abstinence, condom use, unprotected sex, and STI. They walk around the room, have short conversations with each other, and obtain signatures from their peers after talking with them. Later, they learn what the symbols represent. They learn about how infections can be transmitted without using contraception (susceptibility), as well as how abstinence and condom use can protect against transmission.	

Attitudes. We define *attitudes* as the positive or negative evaluations a person has about a thing, person, activity, behavior, and or other phenomenon.⁸⁷ Attitudes are formed by *knowledge/beliefs* (cognitive assessments) and feelings (affective assessments). When someone has a positive attitude about a behavior, they are more likely to engage in that behavior. When a person has a negative attitude about a behavior, they are less likely to engage in it. For example, a person might know that condoms are effective at preventing STIs (belief) but at the same time doesn't like how condoms feel or worries that their partner will reject them if asked to wear a condom (feeling). In this case, the person believes that condoms are effective, but the emotional evaluation of practicing the behavior is negative. Beliefs and feelings do not always align. Examples of learning activities designed to shift attitudes are large group discussions that surface the benefits of engaging in safer sex behaviors, skill practice situations that deliberately address ways to overcome obstacles to using the skill, and activities that create cognitive dissonance^{88, 89}

There were 68 distinct codes for attitudes. On average, the five curricula were coded 335 times for attitudes and spent an average estimated 418 minutes (6.9 hours) addressing attitudes.

See **Table 14** for examples of how attitudes were observed in the CPIC curricula through their learning activities.

Table 14: Supporting Examples for CCC #3 – Attitudes
<i>Making Proud Choices: Module 3, Activity B: “Calling Koko” (page 80)</i>
Learners form small groups and pretend to be Koko—a fictional relationship expert who gives advice to teens. Each small group is given a letter from a hypothetical young person who needs advice about their relationship and sexual activity. The young person asks questions about HIV transmission, deciding to have sex, using condoms, STIs, and other topics. Based on the learning from previous activities, students write out advice in response to the letter.

⁸⁷ Definition informed by: Kirby, D., Coyle, K., Alton, F., Roller, L., & Robin, L. (2011). *Reducing Adolescent Sexual Risk: A Theoretical Guide for Developing and Adapting Curriculum-Based Programs*. Scotts Valley, CA: ETR Associates.

⁸⁸ When there is an inconsistency between one's attitudes and behaviors (dissonance), we experience an internal sense of conflict and discomfort. Something must change to bring behaviors and attitudes in sync to eliminate the dissonance. Cognitive dissonance provides an opening to gently point out contradictions between a person's behaviors and attitudes and to sway them toward desirable behaviors or attitudes. It is also a teachable moment to provide new information/skills that can form a foundation for resolving dissonance.

⁸⁹ Harmon-Jones, E., & Mills, J. (1999). An introduction to cognitive dissonance theory and an overview of current perspectives on the theory. In E. Harmon-Jones & J. Mills (Eds.), *Cognitive dissonance: Progress on a pivotal theory in social psychology* (pp. 3–21). American Psychological Association.

Table 14: Supporting Examples for CCC #3 – Attitudes

In this section, learners discuss the high costs associated with “sliding” (vs. deciding) into a relationship and sexual activity. The facilitator uses various slides with images showing the dangers associated with sliding into any activity. Learners discuss a story where they have to turn back the clock to see how sliding into a relationship results in negative consequences. Learners begin to see that sliding is not a good approach to relationships, and they are then led into an activity that about a low-risk approach to relationships called “deciding.”

Draw the Line/Respect the Line, Grade Activity 3.4: “Risky Situations: Small Group Activity” (page 50)

Learners work in small groups to think about warning signs that could indicate difficulty in maintaining personal limits of two characters in a story (Marco and Tina), and why it might be difficult to deal with the situation (e.g., no parents at home, house is dark, alcohol) Then they work individually to write down actual words that Marco and Tina could say to deal with the situation and maintain their limits and then present their response to the whole group.

Emotions or Feelings. Because emotions create a chemical and physical response in the body, they can also affect behavior. The prefrontal cortex, responsible for executive function, is still developing in the adolescent brain and does not mature until the early to mid-20s.^{90, 91, 92} Adolescents are still learning how to manage their emotions, impulses, and desire for immediate rewards. At the same time, adolescents are experiencing an increased interest in romantic relationships, arousal, and social acceptance of their peers. Additionally, emotions and distorted thoughts can affect the perception of reality about acceptance, self-worth, love, and invincibility. These distortions can drive a person to make irrational or unhealthy decisions.⁹³

Acknowledging, labeling, and evoking emotions can also impact learning and memory.^{94, 95} When emotions are engaged during the learning process, they can enhance the encoding and retrieval of information. One way to evoke emotions is by asking learners to share their feelings

⁹⁰ Developmental Neuroscience and Adolescent Sexual Health: Emotion. A Kirby Summit Brief. ETR. Retrieved 26 August 2024 from: <https://www.etr.org/default/assets/File/kirby-summit/Kirby-Summit-Brief-Emotion.pdf>

⁹¹ Developmental Neuroscience and Adolescent Sexual Health: Social Status and Autonomy. A Kirby Summit Brief. ETR. Retrieved 26 August 2024 from: <https://www.etr.org/default/assets/File/kirby-summit/ETR%202018%20Autonomy%20and%20Social%20Status%20Brief.pdf>

⁹² Del Piero, L. B., Saxbe, D. E., & Margolin, G. (2016). Basic emotion processing and the adolescent brain: Task demands, analytic approaches, and trajectories of changes. *Developmental cognitive neuroscience, 19*, 174–189. <https://doi.org/10.1016/j.dcn.2016.03.005>

⁹³ Beck Institute Cognitive Behavior Therapy. Understanding CBT. Retrieved 26 August 2024 from: <https://beckinstitute.org/about/understanding-cbt/>

⁹⁴ Tyng CM, Amin HU, Saad MNM and Malik AS (2017) The Influences of Emotion on Learning and Memory. *Front. Psychol.* 8:1454. doi: 10.3389/fpsyg.2017.01454

⁹⁵ Beck Institute Cognitive Behavior Therapy. Understanding CBT. Retrieved 26 August 2024 from: <https://beckinstitute.org/about/understanding-cbt/>

about a situation or imagine how they might feel. For example, in *Making Proud Choices*, learners practice a negotiation technique called SWAT (Say No, Explain Why, Provide an Alternative, and Talk It Out). During the “Talk It Out” part of the module, learners are asked to discuss their feelings with their partner.

Another way to evoke emotions is to ask learners to empathize with characters in a story, scenario, video, etc. We define *empathy* as the ability to see things from another person’s point of view and to imagine or feel what the other person is feeling.⁹⁶ For example, in *Love Notes*, learners are asked to empathize with a young child of teen parents as a way of understanding the needs of young children and the significant responsibilities that come with being a parent in meeting those needs. The activity is called “Through the Eyes of a Child.”

There were two distinct codes for emotions. On average, the five curricula were coded 22 times for emotions and spent an average estimated 92 minutes (1.5 hours) addressing emotions.

See **Table 15** for examples of how emotions were observed in the CPIC curricula through their learning activities and during a curriculum developer interview.

What is the difference between an “emotion” and a “feeling?”

Emotions come from the body’s physical and chemical response to certain triggers or experiences in its environment. An emotional response can be conscious or unconscious.

A feeling is consciously generated from our thoughts or evaluation of the emotion. Feelings are how we make sense of the emotion. Emotions come first, and feelings follow. Factors like culture, past trauma, and previous life experiences can affect how we experience emotions and feelings.

In the CPIC Study, we used these terms interchangeably.

Definition adapted from [Think Psych](#). Retrieved 12 October 2023.

⁹⁶ Gaspar, A., & Esteves, F. (2022). Empathy development from adolescence to adulthood and its consistency across targets. *Frontiers in psychology, 13*, 936053. <https://doi.org/10.3389/fpsyg.2022.936053>

Table 15: Supporting Examples for CCC #3 - Emotions or Feelings

Making Proud Choices: Module 8: “Enhancing Refusal and Negotiation Skills” (page 200)

NEGOTIATION AND REFUSAL SKILLS – CHART 4

Talk it out
Discuss your feelings.

Examples

- I feel like you don't really care about me when you pressure me like this.
- I'm not ready to have a baby. I would feel better if we use a condom.
- I'm glad you agreed to use condoms. I feel like you really care about me.
- You really turn me on when you touch me, but I won't have sexual intercourse without a condom.
- If you can't respect my feelings, then I'm prepared to end this relationship.
- Our future goals and dreams are more important than a moment of unsafe pleasure, so I'm glad we decided to use condoms.

Love Notes Developer Interview

Get them [learners] away from self and self-interest to think about the perspective of a child. What a child needs and what a child wants. And I just think that's so powerful. And that's why I call it through the eyes of a child because I was trying to find a way to motivate planning around family formation planning... And so, I do think that is really a very important part of the secret sauce. -Love Notes Developer

Love Notes, Section 9.2: “Angry Brains and the Power of Time-Outs” (page 137)

In this activity, learners explore how anger affects the brain, hormonal responses, ability to communicate rationally, and relationships. Learners also discuss ways to manage anger.

Peer Norms and Perception of Peer Norms. Before defining “perception of peer norms,” let’s define social norms more broadly. Social norms are shared beliefs about behavioral rules and expectations.^{97, 98, 99, 100} Social norms influence how we interact with others in relationships, ask for help, plan our futures, access health care, etc.

⁹⁷ Roller, L. From Theory to Practice: (20 May 2020). Shifting the Perception of Peer Norms in Group-based Interventions. LINEA Project, London School of Hygiene and Tropical Medicine.

⁹⁸ Cislighi, B., & Heise, L. (2018). Theory and practice of social norms interventions: eight common pitfalls. *Globalization and health, 14*(1), 83. <https://doi.org/10.1186/s12992-018-0398-x>

⁹⁹ Berkowitz, A.D. (2005). An overview of the social norms approach. In L. Lederman and L. Stewart (Eds.), *Challenging the culture of college drinking: A socially situated health communication campaign*. Cresskill, NJ: Hampton Press.

¹⁰⁰ Cialdini, R. B., & Trost, M. R. (1998). Social influence: Social norms, conformity and compliance. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology* (4th ed., pp. 151–192). McGraw-Hill.

People often conform to a social norm because they believe 1) most other people in their community (e.g., peer group) conform to it (often labeled as the descriptive or normative norm), and 2) most other people in the community believe they *ought* to conform to it (often labeled as the injunctive, subjective, or perceived norm). People generally want to fit in with their community(ies) and be accepted. As such, people conform to a social norm to avoid “sanctions” such as disapproval or punishment from others in their community and/or uncomfortable feelings (e.g., embarrassment, shame).

Leaders, role models, and other revered people in the community influence opinions, beliefs, and behaviors and have the power (explicitly or implicitly) to set and reinforce social norms. These influential people make up a “reference group.” Community members “refer” to this group for cues about how to behave. During adolescence, *peer norms*, in particular, have an important influence on sexual behavior, communication styles, and relationships. Sometimes, an adolescent’s perception of peer norms is not the actual peer norm.¹⁰¹ For example, a teen may think that most of their peers are having sex, but in actuality, only a small percentage are. In addition to peer norms, adolescents are influenced by norms promoted by the media they consume, their parents or other family members, religion and culture, etc.

Examples of learning activities designed to shift peer norms that encourage healthy behaviors are practicing desired skills/behaviors (e.g., practicing the use of refusal skills to refuse unprotected sex using role-plays) in front of other peers and eliciting positive feedback from their peers about the use of the skill, advising characters in a hypothetical story about what positive actions they should take in front of their peers in a small or large group, and large group discussions that reveal the differences between actual normative behavior and perceived normative behavior.

There were 38 distinct codes for the peer norms. On average, the five curricula were coded 121 times for skills and spent an average estimated 213 minutes (3.6 hours) addressing peer norms.

See **Table 16** for examples of how peer norms were observed in the CPIC curricula through learning activities and with a curriculum developer interview.

¹⁰¹ Kirby, D., Coyle, K., Alton, F., Rolleri, L., & Robin, L. (2011). *Reducing Adolescent Sexual Risk: A Theoretical Guide for Developing and Adapting Curriculum-Based Programs*. Scotts Valley, CA: ETR Associates.

Table 16: Supporting Examples for CCC #3 – Peer Norms

DTL/RTL Grade 7, Lesson 6, Activity 6.4: “Student Role-Plays” (page 111)
Learners form pairs to create a role-play using skills they learned about resisting sexual pressure. Not only do learners model positive behavior in front of their partner, they then have a chance to model the same positive behavior in front of their peers. Learners are watching other peers practice the skill in front of them and learning that the skill is possible in a realistic hypothetical situation.
MPC, Module 3, Activity B: “Calling Koko” (page 80)
In this activity, learners divide into a small group and pretend to be “Koko” —a call-in expert on romantic relationships. The small group comes up with responses to hypothetical callers who have questions about relationships and sexual activity. Learners observe their peers give healthy advice as well as receive positive feedback from their peers for the advice they give a hypothetical caller.
DTL/RTL Developer Interview
<i>Peer norms were key. Normative influences or peer influences are elements of social cognitive theory and social inoculation theory. Those two theories affected content as well. Social cognitive theories, certainly with some of the modeling and the learning by observation, practicing in terms of skill. We used stories too, as a form of observation so people could see things in a story context. We used skill practice where they observed each other... So, that theory certainly informed some of those strategies.</i>

Skills. We define a *skill* as the ability to do something.¹⁰² Driving a car, speaking grammatically correct French, making a cappuccino, using a condom, and refusing unwanted sex are all examples of skills. To have the skill to do something well, an individual must see the benefit of the skill, understand the steps that must be followed to perform the skill well, anticipate potential challenges in performing the skill, and identify ways to overcome those obstacles. Learning activities that teach skills are knowledge-based. One may be able to fully list all the steps needed to use a skill, but without practicing the skill, it’s unlikely that the person will master it or feel confident about practicing it in real life (see [Self-Efficacy](#)).

¹⁰² Rolleri, L. (August 2021). *Building Skills, Self-Efficacy, and Intentions in Behavior Change Interventions*. Prevention Collaborative.

Methods such as facilitator presentations and demonstrations, handouts, case studies, and videos are often used to explain and model the use of the skill. Common skills taught in the CPIC curricula are:

- Communication skills such as refusing unwanted or unprotected sex, responding to pressure lines, and assertive communication
- The steps to using a condom correctly
- Decision-making
- Goal setting
- Setting and keeping limits
- Anticipating challenges in practicing a particular skill and discussing ways to overcome those challenges

There were 28 distinct codes for skills. On average, the five curricula were coded 44 times for skills and spent an average estimated time of 178 minutes (~3 hours) addressing skills.

See **Table 17** for examples of how skills were observed in the CPIC curricula through learning activities and a curriculum developer interview.

Table 17: Supporting Examples for CCC #3 – Skills	
DTL/RTL Grade 6, Lesson 2, Activity 2.3: “Introduce Skill” (page 37)	
<p>This is an example of how a curriculum breaks down components of the skill. The facilitator presents the skill, models the skill, and then learners have an opportunity to practice.</p>	<p>Teacher Note: <i>The goal of this lesson is to allow students to identify steps for effectively communicating where they draw the line. The lesson uses both brainstorming and roleplays to help students identify these characteristics. Because there is a range of steps for effective communication (e.g., based on culture, gender), it is possible that the steps will differ among students. There are 4 steps that are important for effective communication:</i></p> <ol style="list-style-type: none"> 1. Say, “No, I don’t...” 2. Use a body that says NO. 3. Change the subject. 4. Walk away if you need to (e.g., if you feel unsafe or uncomfortable).

Table 17: Supporting Examples for CCC #3 – Skills

RTR Lesson 5, Activity 1: “Introduce Delay Tactics” (page 80)

In this activity, the facilitator presents a list of delay tactics. Then learners practice using these tactics in pairs. While the pair practices, a third learner observes the pair in using the tactic with an observer checklist. After the pair finish their practice, the observer gives feedback based on what they record on the observer checklist.

Explain that *delay tactics* are another way to handle difficult situations and avoid unwanted and unprotected sex. For many reasons, it's usually better to simply say no to offers you don't like. But people often feel confused about how to say no. Others may not have the courage to say no to their friends. Without time to think of what to do, they can impulsively make a poor decision. In such cases people might use a delay tactic to gain time to think about what they really want. Remember, sooner or later you have to give a clear “no” message.

Delay Tactics

1. Make a delay statement.
2. Take a delay action.
3. Create space.
4. End the situation quickly.
5. Build the relationship (if appropriate).

DTL/RTL Developer Interview

We have to do some of that [functional knowledge]. But skills were important in [the curriculum]. So, limit setting, respect, and then negotiation skills, and using multiple strategies that would allow young people to think about and reflect on what felt right for them... like here are all these tools that you have to choose from to stick with your limit... Skills would be really core for me.

Self-efficacy. We define *self-efficacy* as a person’s confidence in their ability to perform a particular skill or behavior (e.g., refusal skills, condom use) well in a real-life situation. The more a person practices a skill, the more mastery they develop.¹⁰³ Mastery comes from first practicing the skill in relatively simple situations, experiencing success, and then moving to more complex situations. As the learner does so, they develop mastery and confidence. When a person has high self-efficacy, they are more likely to engage in that behavior.

Examples of learning activities designed to strengthen self-efficacy are skill practice activities (see list of skills above), structured observation and feedback of skill performance, debriefing skill practice to problem-solve challenges, eliciting emotional reactions to successful skill practice to create internal positive reinforcement (e.g., proud, responsible, satisfied, excitement), identifying the benefits in using the skill, and discussion about the application of the skill in real life.

¹⁰³ Bandura, A. (1994). Self-efficacy. In V.S. Ramachandran (Ed.), *Encyclopedia of human behavior* (Vol. 4, pp. 71-81). New York: Academic Press.

There were 26 distinct codes for self-efficacy. On average, the five curricula were coded 33 times for self-efficacy and spent an average estimated 76 minutes (1.3 hours) addressing self-efficacy.

See **Table 18** for examples of how self-efficacy was observed in the CPIC curricula.

Table 18: Supporting Examples for CCC #3 - Self-Efficacy	
RTR Developer Interview	
<i>It's in some ways the gradual approach [building self-efficacy] of just sitting in the conversation and reading about this topic and just going back and forth in a scripted way [role-plays], and then eventually getting to be more unscripted gradually. So, it's incremental knowledge and skill building. And, you know, at first, you know, kids just have to kind of figure out how to breathe deep and read the script. And yeah, that's hard enough. But then getting to the point where they can envision themselves actually carrying their end of the conversation to achieve their aims.</i>	
<i>RTR, it's not just the knowledge or the tactics, it's the incremental practice. So, I think we have to have that skill focus. Repetition of the skill is a critical aspect.</i>	
MPC Developer Interview	
<i>So, you really want everybody to feel valued, respected, and included. And so, you do that by engaging them in the way in which we do. And then we build self-efficacy. As they get up out of their chair and try stuff, we're like, oh yeah, you did it! So, you blow air into them every opportunity you get. And, and that's how you get behavior change.</i>	
DTL/RTL – All 3 Grades	
<i>DTL/RTL is a 19-session curriculum delivered over 6th (5 lessons), 7th (7 lessons), and 8th (7 lessons) grades. The key skill in the curriculum is about setting and keeping limits (draw the line, respect the line). The framework or skill steps are clearly presented over and over again in each grade. Learners gradually build confidence in using the skill in multiple situations (from relatively easy to more difficult) as they move through the three grades.</i>	

Intentions. We define *intention* as a conscious commitment to follow a course of action that is related to a goal.^{104, 105} Several behavior-change theories (e.g., the theory of planned behavior) present intentions as most proximal to engaging in a particular behavior. The stronger the

¹⁰⁴ Fishbein, M., and Ajzen, I. (1975). *Belief, attitude, intention, and behavior: An introduction to theory and research*. Reading, MA: Addison-Wesley.

¹⁰⁵ Kirby, D., Coyle, K., Alton, F., Rolleri, L., & Robin, L. (2011). *Reducing Adolescent Sexual Risk: A Theoretical Guide for Developing and Adapting Curriculum-Based Programs*. Scotts Valley, CA: ETR Associates.

intention, the more likely the person will engage in the behavior. For example, if a person intends to use a condom the next time they have sex, they are more likely to use a condom than those who do not intend to use a condom.

Examples of learning activities designed to strengthen intentions are discussions or individual reflections about how the learner will apply the skill in their lives and commit to using it (e.g., on a worksheet). Not all CPIC curricula had explicit intention-strengthening activities.

There were 13 distinct codes for the intentions. The three curricula that explicitly addressed intentions spent an average estimated 23 minutes (.39 hours) addressing intentions.

Note that while *MPC* and *RTR* had no codes (i.e., we did not observe activities specifically designed to change intentions) associated with activities designed specifically to address intentions, some studies on these two curricula showed a positive shift in intentions as measured by study investigators. This may be because the combination of other activities in the curriculum led to positive intentions even though intention-specific activities were not used.

See **Table 19** for examples of how intentions were observed in the CPIC curricula through a curriculum developer interview and learning activities.

Table 19: Supporting Examples for CCC #3 – Intentions	
<i>PHAT-AO</i> Developer Interview	
<i>The Letter to Myself is a core activity. And that's a powerful piece because you're making a pledge to yourself. Every module talked about goals and dreams and benefits of abstinence, and how to practice abstinence. You learned how to say no, we reviewed everything. And so now we want you to really think about how you're going to do this. Write a note to yourself about how you plan on staying abstinent and what you're going to do. And then, we held the letter and mailed it [back to learners] in six weeks.</i>	
<i>Love Notes</i>, Section 13.6: Planning for Success – Wrap-Up (page 230)	
In this activity, learners complete a worksheet about their future goals, the steps they need to take, possible outcomes and how to overcome them, and how they will monitor their progress. The questions are related to education and job planning, relationships, sexual activity, and avoiding pregnancy and STIs.	
<i>DTL/RTL</i>, Grade 7, Activity 7.4: “How Do You Draw the Line?” (page 136)	
In this activity, learners select one of three risky situations written on a worksheet and then answer questions about how they would avoid the situation and practice writing a script of what they could say to “draw the line” (i.e., maintain their personal limit).	

Introduction to CCC Category 2: Specific Core Content

The next six core content components are specific to topics addressed in the CPIC curricula. These topics are present in all five curricula, are addressed for a significant amount of time, repeated, and/or described as core by curriculum developers and facilitators. They are each addressed by multiple psychosocial determinants (see [CCC #3](#)).

There was typically a temporal pattern to how core content was presented in curricula; that order is reflected in the order in which the six core content components are presented below. In many cases, core content components build upon each other where foundational content is needed before presenting more complex information or practicing skills related to that content. The order in which these six core content components are presented here is intentional but is by no means rigid or mutually exclusive. There was often overlap in the content, cross-referencing, and repetition.

CCC Finding #4: CPIC curricula present basic knowledge about sexual and reproductive health as a foundation on which to build learners' understanding of pregnancy and HIV/STI prevention.

All five CPIC Study curricula provide basic information about sexual and reproductive health (SRH). Topics that were found in the CPIC curricula are listed below. It's important to note that knowledge is generally not sufficient for behavior change but does provide an important foundation for addressing other determinants of behavior change.^{106, 107, 108}

1. Physical, emotional, and social changes associated with puberty
2. Reproductive anatomy and physiology (e.g., internal and external anatomy, hormones, ovulation, menstruation, ejaculation)
3. Sexual intercourse and how a pregnancy occurs
4. Names, symptoms, transmission, and other facts about HIV and other STIs

¹⁰⁶ Arlinghaus, K. R., & Johnston, C. A. (2017). Advocating for Behavior Change With Education. *American journal of lifestyle medicine*, 12(2), 113–116. <https://doi.org/10.1177/1559827617745479>

¹⁰⁷ Kirby, D., Coyle, K., Alton, F., Roller, L., & Robin, L. (2011). *Reducing Adolescent Sexual Risk: A Theoretical Guide for Developing and Adapting Curriculum-Based Programs*. Scotts Valley, CA: ETR Associates.

¹⁰⁸ Szucs, L. E., Barrios, L. C., Young, E., Robin, L., Hunt, P., & Jayne, P. E. (2022). The CDC's Division of Adolescent and School Health Approach to Sexual Health Education in Schools: 3 Decades in Review. *The Journal of school health*, 92(2), 223–234. <https://doi.org/10.1111/josh.13115>

5. Sexual response (e.g., attraction, arousal, changes in hormonal and neurotransmitter levels, changes in how the body feels, etc.)
6. Contraceptive methods and how they work
7. SRH resources
8. Prevalence data about adolescent SRH

Not all curricula address all the topics listed above, and some go into greater detail than others. Some provide supplemental learning activities related to these topics. For example, one can find supplemental activities about STIs and puberty in the Appendices section of the *Making Proud Choices* curriculum manual. Our team did not code supplemental activities as they were not part of the studies.

Basic knowledge was often presented first and served as a foundation and orientation to what was going to come next. For example, before talking about the skills needed to prevent STIs, developers provide a brief overview of what an STI is and how it is transmitted. Basic knowledge was often presented at the beginning of sessions (or class, lesson module) or at the beginning of particular activities.

During our interviews, most curriculum developers and facilitators talked about learners needing a foundation in basic information about how their reproductive system works to understand related topics better, such as preventing pregnancy and using contraception, preventing STIs, and healthy relationships. Basic knowledge about the reproductive system is usually provided just before learning activities that address contraception and condoms. In general, knowledge about SRH topics is presented before activities aimed at shifting attitudes, peer norms, skills, etc. follow. The chronological order or sequence of how basic knowledge is presented relative to other determinants may also be an important facet of this core content component.

The mean number of learning activities and time associated with CCC #4 was 9 and 2.6 hours, respectively. See **Table 20** for examples of how CCC #4 was observed in the CPIC curricula through their learning activities.

Table 20: Supporting Examples for CCC #4 - Basic Knowledge about Sexual and Reproductive Health
PHAT-AO, Module 2: Puberty and Adolescent Development, Activity A: “Understanding Reproductive Anatomy” (DVD and Discussion) (page 61)
<p>Direct excerpt from the first part of the activity’s instructions:</p> <ul style="list-style-type: none"> • <i>In order to understand information about pregnancy, HIV, and other STIs, it is important you know the names and functions of the body parts that we will discuss.</i> • <i>You will work in two separate teams using your workbooks. One worksheet shows the male reproductive anatomy and the other worksheet shows the female reproductive anatomy.</i> • <i>Your team will identify as many parts of the male and female reproductive anatomy as you can in the time allotted.</i>
Love Notes, Lesson 12: “Let’s Plan for Choices,” Section 12.1: “Test Your Sex Smarts” (page 198)
<p>Before the activities in this section begin, the facilitator encourages learners to use an anonymous question box with questions that may come up during the lesson. Learners then participate in a group true/false activity about contraception. Next, the facilitator delivers a short presentation on 12 contraceptive methods, including abstinence. Emergency contraception is also described.</p>
DTL/RTL, Module 5: “STI Facts,” Activity 5.4: “Story about STI” (page 93)
<p>After students read “Shannon’s Story,” the facilitator leads a large group discussion aimed at identifying facts about STIs in the story. Examples of discussion questions are:</p> <ul style="list-style-type: none"> • <i>What problem does Shannon have? (itching and sore on her genitals, genital herpes)</i> • <i>How did she get the STI (by having sex with Armand)</i> • <i>Can the STI Shannon has be cured? (No, it can be treated, but the virus stays in her body.)</i>

CCC Finding #5: CPIC curricula facilitate processes where learners can envision and plan healthy futures (short- and long-term).

Future orientation, especially envisioning a future and setting goals, was often presented in the curriculum's beginning sessions to serve as a type of motivation to engage in healthy sexual behavior, avoid STIs, and postpone pregnancy until later in life. Developers designed activities to help learners see the consequences of early sexual activity and how some of those consequences can affect one's ability to reach future goals. Identifying the consequences of one's actions was a theme throughout the curricula.

So, I just really think that you have to motivate by not only helping to cultivate a positive vision, but also offering a pathway built of skills and knowledge, so that they feel 'yeah, I can do that.'

- Curriculum Developer

All five of the CPIC Study curricula helped learners envision and plan for their futures in four significant ways:

1. **Setting long-term goals** (and identifying steps needed to reach these goals). Goal-setting activities are presented early on in the curriculum. Three out of five CPIC curricula included goal-setting activities while *Reducing the Risk* and *Draw the Line/Respect the Line* did not include formal goal-setting activities.
2. **Identifying potential consequences (immediate, short-term, and long-term)** associated with unwanted/unprotected sex and unhealthy relationships by helping learners see cause and effect, assess personal risk, and reasonably predict behavioral outcomes, as well as how those consequences could affect their future. All five CPIC curricula included activities specific to this objective.
3. **Planning** for relationships and sexual activities rather than just letting things happen to them (*Love Notes'* catchy refrain—"Decide, Don't Slide!") is an illustrative example. All five CPIC curricula included ways to integrate deliberate planning.
4. **Anticipating and preparing for possible challenges** related to their short- and long-term goals (e.g., regulating impulses, peer and partner pressure). Helping learners identify goals for the future may also serve as motivation to avoid unwanted or unprotected sex to avert potential challenges in reaching their goals. All five CPIC curricula included learning to identify future goals.

While not explicitly named in the curricula, theories such as goal-setting theory,¹⁰⁹ life history theory,¹¹⁰ and theory of possible selves¹¹¹ associate the benefits of setting future goals and changing or maintaining healthy behavior. Barbee et al. (2022) state that “simply offering TPP programs to youth at risk of teen pregnancy may be less effective if the programs do not help youth to work on or at least think about the impact of their circumstances on their relationships and how to overcome barriers to a successful future.”¹¹²

I give them time to think about their goals and dreams. Some kids do struggle to put down, you know, what they may look like in 10 years. Because some of the children in the inner city can't think past the end of the day or the week. So, sometimes you're like, okay, you know, if you put one thing on there [on their goals worksheet], you don't have to put three, that's fine.

I never let them forget the goals and dreams that we talked about. So how are we going reach these and how is this behavior going to keep you from doing that or not? I just pour that into them the entire time. They always remember that they have a goal in their dreams and what can get in the way at any given time.

- Curriculum Developer

To our knowledge, no other core component studies have discussed the importance of future orientation and the role it plays in teen pregnancy prevention.

The mean number of learning activities and time associated with CCC #5 was 18 and 4.8. hours, respectively.

See **Table 21** for examples of how CCC #5 was observed in the CPIC curricula and during an interview with a curriculum developer.

¹⁰⁹ Strecher VJ, Seijts GH, Kok GJ, et al. Goal Setting as a Strategy for Health Behavior Change. *Health Education Quarterly*. 1995;22(2):190-200. doi:10.1177/109019819502200207

¹¹⁰ Ellis, B. J. (2019). Developmental adaptation to stress: An evolutionary perspective. *Annual Review of Psychology*, 70, 111–139. <https://doi.org/10.1146/annurev-psych-122216-011732>

¹¹¹ Markus H, Nurius P. Possible selves. *American Psychologist*. 1986;41:954–969. doi: 10.1037/0003-066X.41.9.954.

¹¹² Barbee, A. P., Cunningham, M. R., Antle, B. F., & Langley, C. N. (2022). [Impact of a relationship-based intervention, Love Notes, on teen pregnancy prevention](#). *Family Relations*, 72(5), 2569–2588.

Table 21: Supporting Examples for CCC #5 - Future Orientation

Love Notes, Activity 1.2: “Defining a Vision” (page 9)

Direct excerpt from activity opening:

- *It's important for everyone to have a vision, a North Star of sorts, in their mind about the kind of relationship they want to have.*
- *I'd like you all to close your eyes and imagine yourself maybe 5 or even 10 years from now. Imagine you've graduated from high school—you may be in college or working.*
- *Imagine life is exactly how you want it... you live in a nice place, have the resources you need, spend time the way you want.... Now, imagine your love life.*
- *If you could have your love life exactly how you want it to be, what would it be like? What is your partner like? What are you like together?*

DTL/RTL Grade 7, Lesson 2: “Reasons Not to Have Sex” (page 31)

This lesson uses a story to help make the consequences of having or not having sex more real and immediate to students. Students write their own endings to a story about two teens who have sex. They discuss the possible consequences, then rewrite the ending, assuming the teens did not have sex.

Making Proud Choices Curriculum Developer Interview

And we talk to these kids, they are like dreamless and hopeless, you know, and you might tell them about goals and dreams, and they don't even know what a goal or a dream is. They might not be able to think about next week versus five years from now. And then we talk about what can get in the way of you reaching your goals and your dreams. And that's when we get to the part of safe sex and condoms and abstinence and pregnancy and HIV. And so, we're going to make sure those things don't happen to you. You're going to reach your goal and your dream.

CCC Finding #6: CPIC curricula teach about multiple facets of healthy relationships.

The CPIC curricula ground many discussions and activities within the context of a romantic relationship. Discussions about relationships begin in the first few sessions of the curriculum and are repeated throughout.

Almost all of the content taught in the CPIC curricula is framed under the context of relationships. Adolescence is a developmental period when making friends, being accepted by one's peer group, and experiencing romantic attraction and desire are normal.^{113, 114} However, adolescents may not always have the skills to navigate relationships, especially romantic relationships, in healthy ways. The CPIC curricula activities engage learners in thinking about multiple facets of romantic relationships, including:

- Healthy and unhealthy relationship characteristics and behaviors
- What they want and expect from a relationship
- Their limits in a romantic relationship, especially related to sexual activity
- The importance of respecting a partner's decisions and expecting your partner to respect you
- The importance of mutuality in a relationship
- Power dynamics in relationships (related to inequitable gender norms)
- The importance of regular, clear, and respectful communication
- The management of feelings, desires, attraction, and pressure
- The importance of planning relationships
- Ending an unhealthy or unwanted relationship

To our knowledge, no other core component studies have discussed the importance of healthy relationships as we explain them here, and the role-plays in teen pregnancy prevention.

The mean number of learning activities and time associated with CCC #6 was 16 and 4.1 hours, respectively. See **Table 22** for examples of how CCC #6 was observed in the CPIC curricula through learning activities and a curriculum developer interview.

¹¹³ Suleiman AB, Harden KP. The importance of sexual and romantic development in understanding the developmental neuroscience of adolescence. *Dev Cogn Neurosci*. 2016 Feb; 17:145-7. Epub 2015 Dec 18.

¹¹⁴ Kar, Sujita Kumar; Choudhury, Ananya1; Singh, Abhishek Pratap1. Understanding normal development of adolescent sexuality: A bumpy ride. *Journal of Human Reproductive Sciences* 8(2): p 70-74, Apr–Jun 2015.

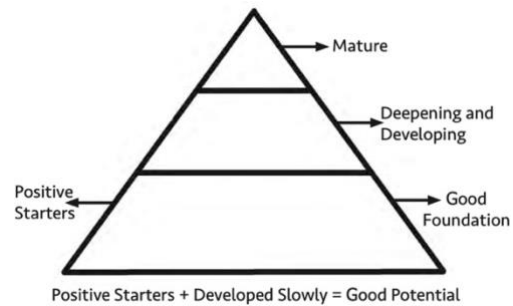
Table 22: Supporting Examples for CCC #6 - Healthy Relationships

Love Notes, Section 4.1: “Relationship Pyramid” (page 50)

Direct excerpt from the activity:

This pyramid represents a good relationship. Notice it has a strong foundation. Good relationships do not just appear out of thin air. Relationships start, and they develop. Some relationships start with a shaky foundation—they lack the basics.

You’ll be working together to plug the descriptive words you just came up with into the layers. Gather as a group(s) around the sheet of words and the pyramid. I need two volunteers—one to write each word inside the layers of the pyramid and the other to cross it off the master list as you debate and decide which layer it goes in.



PHAT-AO, Module 3, Activity E: “Trying to Slow Down: Understanding Partner Peer Pressure” (page 103)

In this activity, learners observe two scripted role-plays (one effective and one ineffective). The second role-play models respectful communication, limit setting, and building a relationship.

DTL/RTL Developer Interview

The curriculum also included your internal influences [on the decision to have sex]. A person can think it feels good, this is a wonderful feeling. So, it’s not just the partner pressure aspect, but also within yourself, how it’s feeling to be in a relationship or connected to another individual. How do you navigate those emotions and feelings as well?

CCC Finding #7: CPIC curricula teach about multiple facets of respectful partner communication, including benefits and skills.

Each of the CPIC curricula includes at least two dedicated sessions, as well as other learning activities in other sessions, on the importance of communicating with one’s romantic partner, the skills to do so respectfully, and/or common topics of communication with one’s romantic partner. Communication could be considered a theme throughout all the CPIC curricula.

While the CPIC curricula emphasize partner communication, they also mention and include activities about communication with parents/trusted adults, service providers, and curriculum facilitators. In doing so, a broader message encouraging learners to communicate, advocate for themselves, express themselves, ask questions, and listen reinforces a norm and expectation that communication is important in all relationships.

The types of communication skills presented in the CPIC curricula are:

- Assertive communication
- Non-verbal communication
- Refusing and negotiating (e.g., refusing to have unprotected sex)
- Responding to peer and partner pressure
- Making a respectful complaint (*Love Notes* only)
- Listening (*Love Notes* only)

The mean number of learning activities and time associated with CCC #7 was 15 and 3.9 hours, respectively. See **Table 23** for examples of how CCC #7 was observed in the CPIC curricula through learning activities and a session’s learning objectives.

Table 23: Supporting Examples for CCC #7 – Communication
<i>Reducing the Risk, Class 5: “Delay Tactics” (page 80)</i>
<p>Students learn about and practice communication skills related to delaying or getting out of difficult situations to avoid unwanted sex or unprotected sex. The skill steps include:</p> <ul style="list-style-type: none"> • Make a delay statement. • Take a delay action. • Create space • End the situation quickly • Build the relationship (if appropriate)
<i>Love Notes, Lesson 9: “What’s Communication Got to Do with It?” Section 9.3: “The Speaker-Listener Technique – When Talking Is Difficult” (page 142)</i>
<p>Activity description:</p> <p><i>Youth will practice the Speaker Listener Technique, a structured framework when talking is difficult. This technique provides a way for two people to come back and address an issue or problem more effectively. It ensures both people are heard and validated and counters all four of the communication danger signs. Youth will have the opportunity to identify communication patterns experienced in their families. They are encouraged to decide what to keep or leave behind and work to change.</i></p>

Table 23: Supporting Examples for CCC #7 – Communication

Examples of learning objectives related to communication (from several CPIC curricula)

- *Distinguish between effective and ineffective communication (DTL/RTL)*
- *Raise awareness of how communication and conflict management skills affect relationship success or failure, regardless of the nature of the relationship. (Love Notes)*
- *Express confidence in their ability to say “NO” to risky situations involving sexual behaviors (PHAT-AO)*
- *Demonstrate body language and strategies for effectively saying no to unprotected sex (MPC)*

CCC Finding #8: CPIC curricula build learners’ skills to set and keep personal limits related to sexual activity.

As stated earlier, adolescence is a time in human development when autonomy expands rapidly. With autonomy comes the responsibility to know your limits or boundaries (e.g., needs, wants, likes, dislikes, dealbreakers), set them, communicate them, and protect them. The CPIC curricula provide tools in the form of frameworks, skill steps, catchy messages, acronyms, and images to prepare learners for setting limits related to their sexual behavior and sexual health.

Core Content Components #7 and #8 are closely related, and their presentation in the curricula occurs around the same time. Although one may not need communication skills to think about and set one’s personal limits, communication skills are essential for sharing limits, guarding them, and maintaining them with others.

The mean number of learning activities and time associated with CCC #8 was 25 and 5.9 hours, respectively. See **Table 24** for examples of how CCC #8 was observed in the CPIC curricula through their learning activities.

Table 24: Supporting Examples for CCC #8 - Knowing, Setting, and Keeping Personal Limits

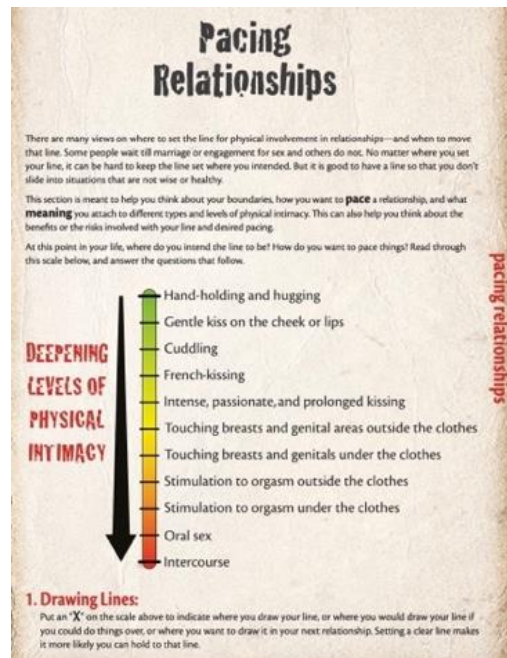
DTL/RTL, Lesson 4: “Drawing the Line in Situations that Could Lead to Sex” (page 63)

In this lesson, learners review the steps for “drawing the line” and practice applying them in role-plays. The steps include:

- Say, “No, I don’t” ...
- Use body language that says NO
- Change the subject
- Walk away if you need to

Love Notes, Section 11.6: “Drawing Intimacy Lines and Pacing Relationships” (page 191)

In this activity, learners answer a series of questions designed to help them “decide” not “slide” into relationships. Learners have to draw a line (boundary/limit) to the activities they would like to do/not do in their next relationship. The activity helps learners pace and plan their romantic relationships as well as take control of their love life and futures.



Making Proud Choices, Module 6, Activity D: “Responding to Peer Pressure” (page 167)

Direct excerpt from the beginning of the activity:

Pressures to have sex often come from a romantic partner. Sometimes, it's hard to know how to handle this pressure. Pressure can make people go further sexually than they want to, have sex when they're not ready, or lie about having sex when they haven't.

Now, you're going to look at some peer pressure situations. I know you'll have some good ideas about how young people can handle peer pressure.

CCC Finding #9: CPIC curricula strengthen learners' personal agency to make healthy and autonomous decisions.

We define **personal agency** as the belief that one has the power, control, and ability to take action.^{115, 116} When a person has agency, they feel like they are sitting in the “driver’s seat.” A person with agency does not feel limited by other people’s expectations or situational circumstances. They believe they can choose their own paths and influence outcomes. To have a sense of agency, a person has to have self-awareness about their likes, dislikes, and wants, the skills and confidence to act, expectations that they will succeed in what they do, goals, self-regulation, and a plan to deal with decisions and challenging situations.

What is the difference between self-efficacy and personal agency?

Self-efficacy and personal agency are related terms but are not synonymous. Self-efficacy describes one’s mastery and confidence to perform a particular skill or behavior (e.g., use a condom correctly).

Personal agency is an overall mental state where a person feels empowered, entitled, and capable to act. Self-efficacy to perform a skill can contribute to personal agency.

CPIC curricula help learners build personal agency by having them participate in activities that elicit and affirm their voices (i.e., opinions, questions, experiences, ideas), reflect on their needs, likes, and dislikes, help them think about their future, set goals, identify choices, identify consequences of certain actions (positive or negative), practice skills, communicate and advocate for themselves, identify resources, take responsibility for their actions, and anticipate challenges and plan for them. In addition, the curricula instruct the facilitator to provide positive feedback and encouragement throughout sessions.

We define **autonomy** as a person’s ability to act independently and in accordance with their values, needs, and interests. Adolescence is a time in human development where autonomy is expanding rapidly. Adolescents move from their parents and trusted adults making important decisions for or with them to making decisions alone/privately. As adolescents grow in their autonomy, they need information, guidance, practice, and support in making healthy decisions.

¹¹⁵ Alper, S. (2020). Personal Agency. In: Zeigler-Hill, V., Shackelford, T.K. (eds) Encyclopedia of Personality and Individual Differences. Springer, Cham. https://doi.org/10.1007/978-3-319-24612-3_1871

¹¹⁶ Batement, T.S. (March 27, 2022). Agency is The Highest Level of Personal competence. Psychology Today. Retrieved 8 August 2024 from: <https://www.psychologytoday.com/us/blog/getting-proactive/202203/agency-is-the-highest-level-personal-competence>

CPIC curricula provide this scaffolding by sharing accurate information, debunking myths/false information, promoting positive attitudes, increasing self-awareness and motivation, teaching skills, and building self-efficacy to use those skills. In doing so, the CPIC curricula help to prepare youth to make independent, smart, and empowered decisions about relationships and sexual activity.

I want to add one thing around empowerment and agency. If you read through the curriculum, you don't see a spot where it's the facilitator's job to tell a young person to don't do this. Or, if you do this, all these bad things are going to happen, or you shouldn't be doing this. It's really engaging youth to get them to think critically about what decisions they make and how that may play a role or how that may affect their lives. So, it's really focused and driven by the conversation.

- Curriculum Developer

So that's that positive youth development component empowerment and agency in their relationships. So not, you know, recognizing what they like, what a healthy relationship looks like, and then giving them the confidence to know now that they have this knowledge that they can achieve that for themselves. You know, you now have communication skills to effectively communicate what you want, what your feelings are, what's going on. And then again, empowering them and building that agency to make decisions in their intimate lives that will help them get to that future self-goal.

- Curriculum Developer

The job is to be a facilitator who demonstrates that I care about you. I believe in you and you can do this...The facilitator has to know that their job is to build confidence, self-efficacy [in learners]. In order to get people to change their behavior, you have to build up their confidence and control beliefs about things that they really think they can do. Somebody has to say, 'try it one more time.' 'We know you can do that.' 'Try one more time.' 'Say that.' 'Say it like you mean it.' 'Say it like you mean it because I know, you know, you mean it.' It's the stuff that the facilitator has to do to connect with the young person and help them move from point A to point B.

—Curriculum Developer

We do not provide specific examples of curriculum activities designed to build personal agency and autonomy because interviews with developers indicated that personal agency and autonomy result from the combination or gestalt of the curriculum's learning activities. Personal agency and autonomy may have a bidirectional relationship with the other five specific core content components. Personal agency may be considered foundational to achieving the other five specific core content components and/or ... may result from achieving them. The mean number of learning activities and time associated with CCC #9 was 20 and 4.8 hours, respectively.

To our knowledge, no other core component studies have discussed the importance of agency, as we describe it here, and the role it plays in teen pregnancy prevention.

Theory of Change Logic Models Based on Core Content Components

As explained in the Methods section of this report, we created a [theory of change logic model](#) for each of the CPIC curricula (see [Appendix Q](#), [Appendix R](#), [Appendix S](#), [Appendix T](#), and [Appendix U](#)). The logic models are based on the BDI Logic Model framework with one difference. Rather than listing the psychosocial determinants, we list eight (of nine) core content components and show the link between these core content components and the curriculum’s activities. A summary table of the findings from the five individual curriculum logic models is found in [Appendix HH](#). Similar to the way proofs are used in geometry, these logic models serve as a type of “backward proof” to triangulate core content component hypotheses as well as discern similarities and differences between curricula.

About Core PEDAGOGY Components (CPC)

Core pedagogy components¹¹⁷ refer to *how* the core content is taught and what teaching methodologies are most apt for transferring content to learners. For example, role-plays are more suited for learning communication skills and building self-efficacy to use those skills compared to the facilitator simply lecturing on skill steps. A true/false quiz is an interactive way to share facts about sexually transmitted infections. Large group critical reflection discussions can work well to shift individual attitudes and perceptions of peer norms.



Going back to our oil painting metaphor, the different brushes (like core pedagogy) are how the artist delivers the paint to the canvas.

Core pedagogical components can be compromised for multiple reasons. During our interviews with facilitators, we heard challenges like school class periods being shorter than curriculum lesson time, facilitators not feeling confident in implementing some of the skill practice activities, facilitators sometimes running overtime on a lesson and cutting time from activities at the end of the lesson (often activities where information is applied or practiced), host agencies not allowing condom demonstrations or condom practice, and adding or replacing activities that may not have the same impact compared to the pedagogical methods used in the curriculum. Understanding the rationale and learning theory behind why certain pedagogical methods were selected to teach certain content may help host organizations and facilitators maintain greater fidelity to core pedagogical components.

What is “pedagogy?”

We define “pedagogy” as the teaching strategies and methods (what facilitators do) and the learning activities (what facilitators ask learners to do) intentionally designed to meet a curriculum’s learning objectives. Pedagogy is also shaped by the quality of facilitator-learner interactions, peer-to-peer interactions, and the learning environment.

Definition informed by the [Center for Education Innovation](#) at the University of Minnesota.
Retrieved 30 October, 2023.

¹¹⁷ Photo credit: Image from [Pexels.com](#)

In our review of the five CPIC curricula, we observed 78 pedagogical methods (see [Appendix N](#)). The 78 methods were organized into 13 themes or categories. We reviewed each curriculum to identify core pedagogical methods, including reviewing our pedagogical coding for frequencies, associations with content, previously published core component documents (*DTL/RTL*, *MPC*, and *RTR*), and curriculum developer and facilitator interview transcripts. While we had planned to do a time analysis on the use of the pedagogical methods, we found it difficult to accurately estimate the timing used for each method. Ultimately, we identified eight core pedagogical components, which are presented below.

They give you the goals, they give you the objectives. Everything is like right there. I really like the way it's [curriculum manual] set up. There's just really no way you can fail unless you haven't studied your curriculum.

—Curriculum Facilitator

In this section, we answer three of our four CPIC Study questions.

1. What are the core program pedagogy components of the five evidence-based Teenage Pregnancy Prevention (TPP) programs selected for the study?
2. Which program components (as they relate to pedagogy) appear to matter the most in influencing participant outcomes?
3. Through what mechanisms do core program components (as they relate to pedagogy) influence participant outcomes?

At-a-Glance: CPIC Study Phase 1 Findings on Core PEDAGOGY Components (CPC)

CPC Category 1: How Learners Are Engaged in the Learning Process

The five curricula in the CPIC Study provide learners with multiple opportunities to:

CPC Finding #1: Practice skills and build self-efficacy (e.g., communication skills).

CPC Finding #2: Personalize information and skills.

CPC Finding #3: Think critically.

CPC Finding #4: Write with pen and paper (e.g., worksheets, journals).

CPC Finding #5: Voice their opinions, ideas, experiences, suggestions, and solutions to challenges while their peers listen/observe.

CPC Category 2: How Content Is Presented

The five curricula in the CPIC Study:

CPC Finding #6: Use multiple stories, scenarios, case studies, and/or videos as input for discussion.

CPC Finding #7: Present relatively simple and easy-to-remember frameworks and require youth to apply them.

CPC Finding #8: Regularly summarize, repeat, and reinforce key points (about information learned during the session) and core messages (about the desired behavior and/or curriculum goals).

CPC Category 1: How Learners Are Engaged in the Learning Process

CPC Finding #1: CPIC curricula provide learners with multiple opportunities to practice skills and build self-efficacy.

Each of the five CPIC curricula provides learners with multiple opportunities to practice key skills and build self-efficacy in using them. (See **Table 17** in the Core Content Components section as well). As stated earlier, we define [skills](#) as the ability to do something and [self-efficacy](#) as a person's confidence in their ability to perform a particular skill or behavior well in a real-life situation. Examples of skill and self-efficacy-building activities are found in **Table 25**.

We observed a two-phased pattern of how skills are taught in the CPIC curricula. In the **first phase**, we discern two steps. In the first step, the skill steps are presented on a flipchart, worksheet, or PowerPoint slide. In the second step, the skill steps are often modeled by the facilitator or illustrated through a story/role-play.

The **second phase** was about practice. Learners then have a chance to practice the skill, oftentimes through the use of a scripted role-play and later with semi-scripted or non-scripted role-play. The first practice opportunities are relatively easy, and subsequent practices become a little more complex or challenging because learners have to apply the skill steps using their own words. In most cases, communication skill practice opportunities take place in pairs, with learners switching roles—one learner feeding lines and the other practicing the skill steps. In some cases, a third learner in the group observes their peers and takes notes using an observation checklist. The observer checklist is a form that lists the skill steps. The observer puts a check next to each step as they observe it being practiced. After, the observer gives feedback to their peers based on what they observed. In some cases, a few volunteers are asked to come to the front of the room to model their use of the skill after practicing in pairs.

Developer and Facilitator Quotes about Skills and Self-Efficacy

Students cannot do the behavior if they don't practice the skill. You cannot have an intervention where they don't learn the skill and practice the skill. We demonstrate it, we demonstrate it over and over again, then they have to do it. Because if it doesn't come from their mouth, they're never going to say it. They have to see how pressures can lead to unsafe sex and be able to handle some of those pressures.

—Curriculum Developer

[Name of curriculum], it's not just the knowledge or the tactics, it's the incremental practice. So, I think we have to have that skill focus, and repetition is such a critical aspect.

—Curriculum Developer

Practice makes perfect. They have to continue to do it and continue to practice.

—Curriculum Developer

Having students be observers and rate the role-plays is a way to have more people get more practice because you're basically deepening your connection to the skills while you're observing what's going on... Social learning theory suggests that people don't just learn from doing, they learn from watching....The observer checklist, it provides the scaffolding to guide the watching so that you're not just watching negative examples... you can really reflect on what you're seeing and think about it with the scaffolding of the checklist.

—Curriculum Developer

Many of them [students] have never even seen the condom in person. They've never opened it up. I tell them, you're going to open the pack, you're going pull a condom out, and I'm going show them how it works. Because that's the number one thing that they need to know.

—Curriculum Facilitator

Two other patterns we observed were: 1) skill practice activities tended to come toward the middle or end of the curriculum and 2) continuous discussion about why the skill is needed and the benefits it can provide. These discussions appear to motivate students to want to learn the skill and cultivate positive attitudes and peer norms about it.

These findings are consistent with some of the theories used to design the CPIC curricula. For example, Bandura’s cognitive learning theory¹¹⁸ presents the importance of behavioral capability (a person knows the purpose and steps to use a skill) and self-efficacy (a person has confidence and belief that they can practice the skill effectively) to learn new behavior. Behavioral control is a core construct in Ajzen and Fishbein’s Theory of Planned Behavior.¹¹⁹ Behavioral control is an individual’s perception of the ease (or difficulty) in performing a behavior. One way to strengthen behavioral control is to provide multiple skill practice opportunities, identify possible barriers to performing the behavior, and find ways to overcome those behaviors.

In addition to consistency with underpinning health behavior change theories, CPC #1 aligns with several national health education standards. In Module SH (Sexual Health Curriculum) of the Health Education Curriculum Analysis Tool (HECAT) published by the Centers for Disease Control and Prevention, several standards highlight the recommendation for developmentally appropriate skill building and practice across K-12 grade levels.¹²⁰ One of the guiding principles of The National Sex Education Standards Core Content and Skills, K-12, is providing children/adolescents with “functional knowledge and skills.”¹²¹

Table 25: Examples of Skill and Self-Efficacy Building Activities	
<i>Love Notes, Lesson 9, Section 9.3: “The Speaker-Listening Technique – When Talking Is Difficult” (page 142)</i>	This activity focuses predominantly on skill building and less on self-efficacy. In this activity, the facilitator describes what it means to paraphrase. The facilitator teaches how to use the skill and what to do and not do. The facilitator then calls for a volunteer to practice the skill with them in front of the group.
<i>MPC, Module 5, Activity D: “Condom Use Skills” (page 129)</i>	In this activity, the facilitator presents the steps to using a condom while also demonstrating each step on a condom demonstrator (plastic or wooden model of a penis). Learners then have an opportunity to practice using a condom while the facilitator circulates the room and provides feedback.

¹¹⁸ Glanz, K., Rimer, B.K., & Viswanath, K. (2024). *Health Behavior: Theory, Research, and Practice 6th Edition*. Jossey-Bass Public Health, Wiley.

¹¹⁹ Ibid.

¹²⁰ Centers for Disease Control and Prevention. Health Education Curriculum Assessment Tool, 2021, Atlanta, GA: CDC; 2021.

¹²¹ Future of Sex Education Initiative. (2020). National Sex Education Standards: Core Content and Skills, K-12 (Second Edition).

Table 25: Examples of Skill and Self-Efficacy Building Activities

RTR, Class 16, Activity 3: “Role-play in Small Groups” (page 184)

In this activity, learners practice using two skills (Refusal Skills and Delay Tactics) in an unscripted role-play with one person feeding lines, another practicing the skills, and another providing feedback with an observer checklist.

CPC Finding #2: CPIC curricula provide learners with multiple opportunities to personalize information and skills.

In addition to learning about skills and building self-efficacy in using them, the five CPIC curricula incorporate activities to help learners personalize and apply information and skills to their lives. In other words, information was rarely presented abstractly or just within the context of a hypothetical scenario. Learners were also given the opportunity to reflect on what they learned and how the learning applies or how it can be customized to their lives, decisions, relationships, etc. In doing so, the relevance and benefits associated with the subject matter may be enhanced, as well as strengthened positive attitudes and motivation to apply learning. Personalization activities were almost always placed after information or skills were presented but, on some occasions, presented as an anticipatory set.¹²²

I think this [scenarios] is a huge part that drives that inner kind of compass, reflection, and discussion. And then I think along with that is the journal. Because at the end of every lesson, they're now taking and applying it [content] to my life, or somebody they know really well. And, it's like, whoa. It's really real.

—Curriculum Developer

To our knowledge, no other core component studies have discussed the importance of pedagogical methods that support learners in personalizing information and the role personalization plays in behavior change. **Table 26** provides examples of personalization activities.

¹²² An anticipatory set is a very brief activity like a question or quote to engage youth or hook them into a lesson. In some cases, the anticipatory set activity can also provide students with an opportunity to think about how the upcoming learning will apply to them personally. For more information, see [Madeline Hunter’s Model of Mastery Learning: Increasing Instructional Effectiveness in Elementary and Secondary Schools, 2004](#).

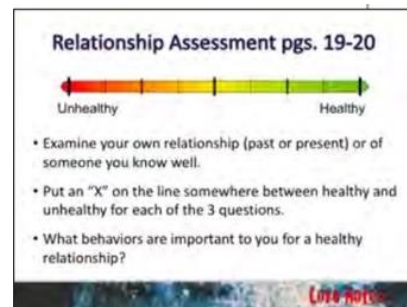
Table 26: Examples of Personalization Activities

RTR, Class 1B, “Personalizing Risks Activity” (page 33)

Learners complete a worksheet that requires them to reflect on how receiving a positive HIV test would change their lives.

Love Notes, Lesson 6, “Assessing Relationships” (page 85)

The facilitator reviews three dimensions of a healthy relationship (physical safety, emotional safety, trust, and commitment safety). Learners are asked to think of a personal relationship. The facilitator reads a series of statements, and learners have to assess their relationship using a worksheet (see diagram).



DTL/RTL – Sentence Stems that End Each Lesson

At the end of each DTL/RTL lesson, learners are asked to complete personalization sentence stems on a worksheet titled “I Learned.” Examples of these questions are:

- Grade 6: “It’s important for me to learn how to Draw the Line because _____.”
- Grade 7: “A warning sign that helps me is _____.”
- Grade 8: “One way I can stick to my limit is _____.”

Our findings are consistent with other literature on personalizing learning. In their design of a learning framework to “increase personal meaningfulness,” Priniski et al. describe the importance of “personal association” (perception that learning has value), “personal usefulness” (perception that learning can be used to fulfill an important goal), and “identification” (incorporating learning into one’s identity, as a way to affirm or exercise one’s desired identity).¹²³ CDC Healthy Schools describes 15 characteristics of effective health characteristics with one being “uses strategies designed to personalize and engage students.” Techniques associated with this characteristic are sharing personal thoughts, feelings, and

¹²³ Priniski, S. J., Hecht, C. A., & Harackiewicz, J. M. (2018). Making Learning Personally Meaningful: A New Framework for Relevance Research. *Journal of experimental education*, 86(1), 11–29. <https://doi.org/10.1080/00220973.2017.1380589>

opinions and encouraging creative expression.¹²⁴ Increasing a learner's integration and memory through application to real-life and personal situations, problems, and needs is also consistent with several learning theories, such as Constructivism¹²⁵ and Experiential Learning.¹²⁶

CPC Finding #3: CPIC curricula provide learners with multiple opportunities to think critically.

Throughout the five CPIC curricula, learners are given multiple opportunities to think critically about situations, relationships, problems, decisions, and other common aspects of an adolescent's life. We define critical thinking as a method to rationally analyze, interpret, and evaluate sexual health experiences using newly presented information and personal experiences. Critical thinking does not tell learners what to do or provide an answer; rather, it provides a method that can be applied to assess situations. Critical thinking encourages learners to avoid jumping to conclusions as they weigh options, assess consequences, and intentionally make more informed decisions.

It's because it [eliciting opinions] stimulates the brain. It makes them think, I'm [facilitator] not thinking for you; you're thinking for yourself, and then you are expressing to me what you think.

-Curriculum Facilitator

To our knowledge, no other core component studies have discussed the importance of pedagogical methods that encourage learners to think critically and the role critical thinking plays in behavior change.

Table 27 provides examples of critical thinking activities.

¹²⁴ Retrieved on 26 July 2024 from: <https://www.cdc.gov/healthyschools/sher/characteristics/index.htm>

¹²⁵ McLeod, S. (February 1, 2024). Constructivism Learning Theory & Philosophy of Education. Simply Psychology. Retrieved 8 August 2024 from: <https://www.simplypsychology.org/constructivism.html>

¹²⁶ Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development* (Vol. 1). Englewood Cliffs, NJ: Prentice-Hall.

Table 27: Examples of Critical Thinking Activities

MPC, Module 3, Activity A: “The Hard Way” Video and Discussion (page 77)

Learners view an 18-minute video titled “The Hard Way.” The video is about safer sex practices and vulnerability to HIV. The story features two friends, Kenrick and Miguel. Miguel is faithful to his girlfriend. Kenrick has sex with multiple partners and later learns he has tested positive for HIV. After watching the video, learners engage in large group discussion with questions aimed at analyzing himself from HIV.

Love Notes, Lesson 5, Section 5.2: “Seven Principle of Smart Relationships” (page 67)

The facilitator reads a series of seven scenarios about couples. After hearing the scenario, the learner has to decide whether or not the couple in the scenario is behaving in smart or unsmart ways. After learners vote (based on their opinion of the relationship), the facilitator presents one of seven principles of smart relationship. An example of one of the scenarios (before principle 7) is:

“My partner told me to shut up and then shoved me hard. I was mad, but later in private he said he was sorry. He’s had a rough background that causes him to act that way. I know he really loves me.”



DTL/RTL Grade 6, Lesson 3, Activity 3.3: “Warning Signs” (page 47)

In this activity, learners read a story about Tina and Marco and have to identify (by underlining) warning signs described in the story that could lead to crossing the characters lines (limits). Afterward, the facilitator leads a large group discussion about the story and the warning signs that learners discerned.

Previous research shows a link between critical thinking and positive youth outcomes. A University of Minnesota research team reviewed the evidence on the link between critical thinking skills, positive outcomes (increase in life skills), and decreased risks (e.g., decrease in sexual activity, substance use) for adolescents and youth in positive youth development (PYD) programs.¹²⁷ The review concluded that critical thinking promotes positive outcomes and reduces risky behaviors. In other research, Benson’s Developmental Assets Framework identifies 40 key assets (internal and external) that are necessary for youth development.¹²⁸ Critical

¹²⁷ Clearinghouse for Military Family Readiness. (2019). Critical thinking and decision making in positive youth development: Rapid literature review. University Park, PA: Clearinghouse for Military Family Readiness.

¹²⁸ Benson, P. L. (2007). Developmental Assets: An overview of theory, research, and practice. In R.K. Silbereisen & R. M. Lerner, Approaches to positive youth development (pp. 33–58). Thousand Oaks, CA: Sage Publications.

thinking is a major component of the internal assets.¹²⁹ When applied in youth programming, the 40 skills prevent high-risk youth behaviors such as sexual risk behaviors associated with unplanned pregnancies. Benson’s Developmental Assets theory states that developing critical thinking skills to acquire knowledge and learn from experience are important characteristics of successful adolescents.² In a study conducted by Wolff and Crockett, youth who demonstrated critical thinking skills, including the ability to think deliberately about their actions, possible consequences of their actions, and solutions to problems, are less likely to engage in unhealthy behaviors such as engaging in risky sex.¹³⁰ Lastly, Sun and Hui conducted a literature review about cognitive competence and found several health education research studies demonstrating that critical thinking skills were one of the skills that enabled students’ autonomy in identifying their health needs and making healthy choices.¹³¹

CPC Finding #4: CPIC curricula provide learners with multiple opportunities to write (e.g., worksheets, journals).

Throughout all five CPIC curricula, learners are given the opportunity to write with paper and pencil. The types of writing fall generally into three categories: 1) practice writing of a script for role-plays, writing in journals or personal reflection worksheets or assessments, and recording notes. The act of writing may help learners focus, slow down, and more intentionally integrate and describe thoughts, and encode memory.

To our knowledge, no other core component studies have discussed the importance of writing and the role writing plays in remembering and personalizing information.

Table 28 provides examples of writing activities.

¹²⁹ From *Developmental Assets: A Profile of Your Youth* (2012). Search Institute, Minneapolis, MN. Data collected with the survey *Search Institute Profiles of Student Life: Attitudes and Behaviors*, copyright © 1996.

¹³⁰ Wolff, J. M., & Crockett, L. J. (2011). The role of deliberative decision making, parenting, and friends in adolescent risk behaviors. *Journal of youth and adolescence*, 40(12), 1607–1622. <https://doi.org/10.1007/s10964-011-9644-8>

¹³¹ Sun, R. C., & Hui, E. K. (2012). Cognitive competence as a positive youth development construct: a conceptual review. *TheScientificWorldJournal*, 2012, 210953. <https://doi.org/10.1100/2012/210953>

Table 28: Examples of Writing Activities

Love Notes – Journal Workbook
In addition to group-based sessions, <i>Love Notes</i> also includes a learner journal. Learners are encouraged to write in their journals after most of the sessions. The journal is composed of colorful worksheets, assessments, and space to answer reflection questions.
RTR, Class 4, Role-play in Small Groups (page 71)
<i>Reducing the Risk</i> has many role-plays designed for students to practice skills. When there is an unscripted role-play, learners first have to write what they would say before performing the role-play aloud. An example is practicing refusal skills in Class 4.
PHAT-AO, Module 1, Activity F: “Goals and Dreams Timeline” (page 55)
In this activity, learners have to think about and write their goals and dreams on a timeline. There are three sections to the timeline: things you have already accomplished, goals you have in 5 years, and goals you have in 10 years. Later, learners share their goals and the steps they must take to achieve them with the larger group.

Previous studies have assessed how writing helps learners in their capacity to learn. A recent study concluded that information obtained through the process of handwriting using a pen or pencil greatly contributes to the brain’s connectivity patterns, which then promotes learning, memory, and recall.¹³² In three other studies, researchers found that the benefits of writing were more salient for those who handwrite compared to those who type notes on electronic devices.¹³³ Electronic devices may negatively impact the capacity to process and reframe information. This has implications for implementing curricula in the current era as we keep up with advancing technologies. Researchers at Arizona State University’s Teachers College analyzed 56 studies on the benefits of writing in science, social studies, and math, and found that writing about content significantly improved learning across different subjects and all grade levels.¹³⁴ Writing did not only enhance learning but also information recall and interpretation. In essence, writing is not just a tool to assess learning; it also promotes learning, interpretation, and memory.

¹³² Van der Weel FR and Van der Meer ALH (2024) Handwriting but not typewriting leads to widespread brain connectivity: a high-density EEG study with implications for the classroom. *Front. Psychol.* 14:1219945. doi: 10.3389/fpsyg.2023.1219945

¹³³ Mueller, P. A., & Oppenheimer, D. M. (2014). The pen is mightier than the keyboard: Advantages of longhand over laptop note taking. *Psychological Science*, 25(6), 1159–1168.

¹³⁴ Graham, S., Kiuahara, S. A., & MacKay, M. (2020). The Effects of Writing on Learning in Science, Social Studies, and Mathematics: A Meta-Analysis. *Review of Educational Research*, 90(2), 179-226. <https://doi.org/10.3102/0034654320914744>

CPC Finding #5: CPIC curricula provide learners with multiple opportunities to voice their opinions, ideas, experiences, suggestions, and solutions to challenges while their peers listen/observe.

Youth voice was a common theme that surfaced during our qualitative data analysis. All five curriculum development teams use formative research to elicit youth opinions, experiences, attitudes, and norms about sexual and reproductive health, and those voices were deliberately incorporated into curriculum activities. Additionally, the five CPIC curricula were intentionally designed to be interactive and elicit youth ideas. Examples of learning activities that elicit youth voice are large-group discussions (used multiple times in most sessions), small group work, time dedicated to learner questions and answers, and reflection activities, usually through writing (e.g., journal). As described in curriculum manual introduction sections and during developer and facilitator interviews, the major purpose of eliciting youth is to keep them engaged. Learner engagement may be achieved by eliciting their voice for several reasons.

- When the facilitator demonstrates that they are listening to what the learners are saying and emphasizing and validating what they say, learners are more likely to feel cared about and trust the facilitators.
- As a consequence of feeling safe to share in the classroom, the learner may feel encouraged to participate more.
- Learner's confidence and sense of empowerment to share opinions may increase when they know their voice is welcomed.
- When speaking, learners may process and integrate information more effectively.
- When one learner shares their ideas, other learners are listening. This may help to validate their experiences as well as influence peer norms.

Social constructivism theory describes the importance of a learner's voice in discussions with someone who is more knowledgeable and with peers.¹³⁵ The exchange between parties allows for learning, affirmation, and the creation of new ideas. The theory posits that learning is a social process and that learners need to build awareness of their thoughts to make sense of new learning. In addition, when learners share what they know or how they feel, facilitators are, in a way, constantly assessing learners' uptake of information, misinformation, or other issues that may need to be addressed.

¹³⁵ Pritchard, A. (2009). *Ways of Learning: Learning theories and learning styles in the classroom*. London and New York: Routledge.

To our knowledge, no other core component studies have discussed the importance of pedagogical methods that encourage and engage learners to express their opinions, ideas, and solutions during curriculum sessions and the role learners’ voices play in shifting key determinants of behavior such as attitudes and peer norms and agency overall.

Table 29 provides examples of activities designed to elicit learner voices.

Table 29: Examples of Activities Designed to Elicit Learner Voice
<i>Love Notes</i>, Lesson 1, Section 1.1: “Relationships Today” (page 5)
<p>In this introductory lesson, learners have multiple opportunities to share their voice using different pedagogical methods. Learners are asked to reflect upon a series of questions and then draw a picture to represent their experiences, thoughts, or feelings about relationships. Then, learners share their drawing with the others in the group and provide an interpretation. The activity provides an opportunity for learners to share their voice both orally and creatively (drawing).</p>
<i>MPC</i>, Module 2: “Puberty and Adolescent Sexuality” (page 51)
<p>Brainstorming is used seven times in this module (and used many other times throughout the curriculum). On page 17 of the <i>MPC</i> Manual, the developers describe brainstorming as “... a technique used to rapidly generate as many ideas as possible ...” The technique allows many learners to state aloud their ideas without judgment. Below, find two examples of brainstorming questions used in Module 2.</p> <ul style="list-style-type: none"> • <i>With all the messages about sex teens are receiving, what are some of the ways people express their sexual feelings to themselves or other people?</i> • <i>We have just discussed messages about sex and how people can express their sexual feelings. What I want to know is, what do teens gain by having sex?</i>
<i>DTL/RTL</i> Grade 7, Lesson 7, Activity 7.5: “Question Box” (page 138)
<p>Not all learners may feel comfortable asking sensitive questions related to relationships and sex. <i>DTL/RTL</i> (as well as <i>RTR</i> and <i>Love Notes</i>) use an Anonymous Question Box for learners to submit questions. Instructions on how to implement the anonymous question box are found on page 4 of the Grade 7 manual.</p>

Developer and Facilitator Quotes about Learner Voice

The Goals and Dreams activity is core. You can't get a young person to do a role-play right off the bat. You have to give them steps to get there. So, we had an activity where you would have to say something to respond to [character in role-play] in a certain kind of way. Well now they [learners] are saying stuff in pairs or a group. It's building their confidence to say some words. And then by the time we did some other activities that got them ready, like what would you say if your partner said this? ... That would get them ready for the role-plays. We always put the role-plays at the end because we knew we gave them everything they needed to say that stuff out their mouths with confidence.

—Curriculum Developer

I'll ask, 'Does anyone want to share?' And they love sharing. They want to tell you what they know. And then we may have a little conversation. 'Well, can you make this happen [goals]?' Yeah, sure, I can. And then we talk about it. 'What are the obstacles that could be in your way?' I make them tell me what those obstacles are and they really like it. I'm just not up for preaching.

—Curriculum Facilitator

Because most of the time, especially when they're in classes or they're at home, they're always being told. And they don't have a chance to open up and express themselves. So, I try not to do that. Like say for instance, if we are doing a scenario, I need to know what you think about that. I'm not going to tell you what I think about it. They like that. They like when you give them a chance to speak. This curriculum is set up like that, that you're just not up lecturing.

—Curriculum Facilitator

These findings are consistent with other studies that show the importance of elicitation of learners' ideas. In their qualitative study to understand the different aspects of teaching pedagogies, Lampert and colleagues found that teacher elicitation and response to learners' ideas and performance was the most common practice that surfaced.¹³⁶ A 2020 study made a recommendation for ensuring youth voices in programming.¹³⁷ They urged that to foster youth voices, TPP programs need to leverage the quality and capacity of program facilitators who

¹³⁶ Lampert, M., Franke, M. L., Kazemi, E., Ghouseini, H., Turrou, A. C., Beasley, H., ... & Crowe, K. (2013). Keeping it complex: Using rehearsals to support novice teacher learning of ambitious teaching. *Journal of teacher education*, 64(3), 226-243.

¹³⁷ Brindis CD, Decker MJ, Gutmann-Gonzalez A, Berglas NF. Perspectives on Adolescent Pregnancy Prevention Strategies in the United States: Looking Back, Looking Forward. *Adolesc Health Med Ther*. 2020 Oct 12;11:135-145. doi: 10.2147/AHMT.S219949. Erratum in: *Adolesc Health Med Ther*. 2022 Dec 28;13:107-108. doi: 10.2147/AHMT.S402218. PMID: 33117030; PMCID: PMC7567553

interact directly with the program youth. This is important because the facilitator’s knowledge of content and ability to treat youth respectfully and inclusively maximizes the opportunity for youth to learn and apply skills.

CPC Category 2: How Content Is Presented

CPC Finding #6: CPIC curricula use multiple stories, scenarios, case studies, and/or videos as input for discussion.

Each CPIC curriculum used situational stories/scenarios/case studies (hereafter referred to as “scenarios”) to serve as input or a launching pad for discussion and skill practice. Three curricula also used videos for the same purpose (*MPC*, *PHAT-AO*, and *Love Notes*).

Based on interviews with curriculum developers, these scenarios were crafted on information provided by youth participating in formative research activities with the goal of creating scenarios that were realistic and that youth could relate to. The wording in the scenarios appears to be very deliberate in creating a frame to provoke thinking about a particular subject or model skills, tips, etc. They ranged from one sentence to a full page. In some cases, the facilitator read the scenario to the group, and in other cases, learners read the scenario to themselves. The scenarios were relatively simple and easy to read.

Some curriculum facilitators talked about adapting scenarios to be more reflective of the youth they serve by changing names, locations, or current behaviors, such as someone vaping instead of smoking, but these adaptations cannot be done with videos.

Rather than presenting information abstractly, the curriculum used scenarios to bring information, problems, decisions, challenges, skill practice, and frameworks (see CPC #7) to life. The scenarios provide a context, examples, or images from which to elicit learner participation.

You have to use real life scenarios for the activities. And that's why I draw so much from the young people around me and they help me write these scenarios. The activities are to drive that kind of inner reflection. They're seeing it applied to things they can relate to.

—Curriculum Developer

The video clips were based on the focus groups [formative research] that we did with the young people and the attitudes that they said... Because then you can see yourself in the video and hear some of the things that you might have said.

—Curriculum Developer

Scenarios may have helped learners grasp information more readily, encode information with greater ease by remembering the story in the scenarios, and be more convinced that the topic of discussion had relevance to their lives.

Table 30 provides examples of activities using stories, scenarios, etc.

Table 30: Examples of Activities with Stories, Scenarios, etc.
DTL/RTL, Module 3, Activity 3.3: “Trina and Kashid” (page 73)
In this activity, the facilitator reads a story about a couple, Trina and Kashid. Learners are asked to be “detectives” in listening for things in the story that make it hard for someone to stick to a limit. After the story, the facilitator engages the learners in a group discussion about sexual feelings, setting and keeping limits, and difficult moments. The story is the input and launch pad for the discussion.
PHAT-AO, Module 6, Activity D: “Responding to Peer Pressure” (page 166)
In this activity, learners work in small groups to practice responding to peer pressure described in brief scenarios on a handout. There is also a list of questions that guides learners in coming up with responses in their scenario. Below, find an example of one of these scenarios.
<i>Scenario 2: Alicia has gone to the movies for the first time with J.D., someone she likes from her class. While they are watching the movie, J.D. tries to hug and kiss Alicia. Alicia does not feel ready to do that and pushes J.D. away. Later, J.D. says, “What’s the matter with you? All those other couples are doing it.” Alicia replies, “I just don’t want to do that.”</i>
Love Notes, Lesson 11, Section 11.5: “Am I Ready?” (page 189)
In this activity, learners watch a 12-minute video titled “All Falls Down” about two girls, their relationships, and sexual decision-making. After, the facilitator leads a large group discussion about the girls in the video. The video provides input for raising key points about health relationships and limit setting.

As teaching and learning strategies, the use of stories, scenarios, etc., allows the learner to develop their knowledge, skills, and attitudes in response to a simulated experience. Case studies have been found to improve learning, learning benefits, learning objectives, as well as learner engagement.^{138, 139} Findings from the research reveal that case studies should be

¹³⁸ Bonney, K. M. (2015). Case Study Teaching Method Improves Student Performance and Perceptions of Learning Gains†. *Journal of Microbiology & Biology Education*, 16(1), 21–28. <https://doi.org/10.1128/jmbe.v16i1.846>

¹³⁹ Thistlethwaite, JE; Davies, D.; Ekeocha, S.; Kidd, J.M.; MacDougall, C.; Matthews, P.; Purkis, J.; Clay D. (2012). [The effectiveness of case-based learning in health professional education: A BEME systematic review](#). *Medical Teacher*. 2012; 34(6): e421-44

considered effective for teaching a variety of concepts to promote deeper understanding and critical thinking, synthesizing, and incorporating multiple perspectives when drawing conclusions. Other researchers confirm that case studies allow learners to recall, learn, and gain better concepts of the content, which is consistent with previous research.¹⁴⁰ By replicating most of the essential aspects of a situation, the learner has the opportunity to understand the skills as described in the setting of the program, better manage the situation when it occurs in real life, more deeply understand concepts, develop critical thinking skills, and make connections across content areas and view an issue from multiple perspectives.

CPC Finding #7: CPIC curricula present relatively simple and easy-to-remember frameworks and require youth to apply them.

Each CPIC curriculum presented information using relatively easy-to-remember frameworks. By “framework,” we mean an image, list, acronym, heuristic, or metaphor that embeds information, skills, tips, etc. Not only are the frameworks relatively simple and easy to remember, but they are also reinforced by applying them to hypothetical scenarios or through skill practice.

Schema theory, a type of constructivist theory, offers an explanation as to why frameworks help individuals learn.^{141, 142}

I would say definitely keep the four steps [DTL/RTL limit setting framework]. Definitely keep those role-plays in sixth and seventh grade [apply the four steps] because that's what's helping them implant those permanently in their brain.

—Curriculum Facilitator

- The schema or framework provides a structure for cognition and presents deliberate links between different pieces of information.
- The framework provides a set of “rules” about what should be done and what should not be done.
- A framework can be more easily encoded in working memory rather than learning a multitude of random information, thus reducing cognitive load.¹⁴³

¹⁴⁰ Krain, M. (2016). Putting the Learning in Case Learning? The Effects of Case-Based Approaches on Student Knowledge, Attitudes, and Engagement. *Journal on Excellence in College Teaching*. 27(2), 131-153.

¹⁴¹ Pritchard, A. (2009). *Ways of Learning: Learning theories and learning styles in the classroom*. London and New York: Routledge.

¹⁴² Mayer, R. E. (1983) *Thinking: Problem Solving and Cognition*. New York: W. H. Freeman & Co.

¹⁴³ An introduction to cognitive load theory. The Education Hub. Retrieved 26 August 2024 from: <https://theeducationhub.org.nz/an-introduction-to-cognitive-load-theory/>

- Frameworks can be applied to a wide variety of situations to help with understanding by filling in “slots” with incoming information.
- The framework allows for the continuous and active construction of knowledge.

For example, in a training conducted for pilots, frameworks were used to outline best practices and structured guidelines for problem-solving. One of these frameworks is based on image theory, which posits that the decision-maker should possess three decision-related images to help in real-time decision-making.¹⁴⁴ Frameworks are also commonly used in teaching clinical reasoning.^{145, 146} These frameworks are a combination of texts and imagery and have been found to lead to enhanced long-term retention of medical information.¹⁴⁷

To our knowledge, no other core component studies have discussed the importance of frameworks or schemas that support learners in remembering and applying information.

Table 31 provides examples of activities embedded in frameworks.

Table 31: Examples of Activities with Frameworks	
Love Notes	
Of the five CPIC curricula, <i>Love Notes</i> integrated the greatest number of activities with frameworks.	
1.	<i>Love Notes</i> “What Color Are You?” Personality Style Assessment/Personality Color Wheel (Lesson 2, page 21)
2.	Relationship Pyramid (Lesson 4, page 52)
3.	The 3-6-9 Rule (Lesson 4, page 61)
4.	7 Principles of Smart Relationships (Lesson 5, page 66)
5.	Three Sides of Love (Lesson 5, page 75)
6.	How Does It Feel? Ask 3 Questions (Lesson 6, page 82)
7.	Healthy Relationships Are Safe, (Lesson 6, page 85)
8.	Decide, Don’t Slide (Lesson 8, page 113)
9.	Success Sequence (Lesson 8, page 125) (see image below)
10.	4 Communication Danger Signs (Lesson 9, page 135)
11.	VIEW (Lesson 9, page 141)
12.	WWA (Lesson 10, page 154)
13.	6 Dimensions of Intimacy (Lesson 11, page 177)

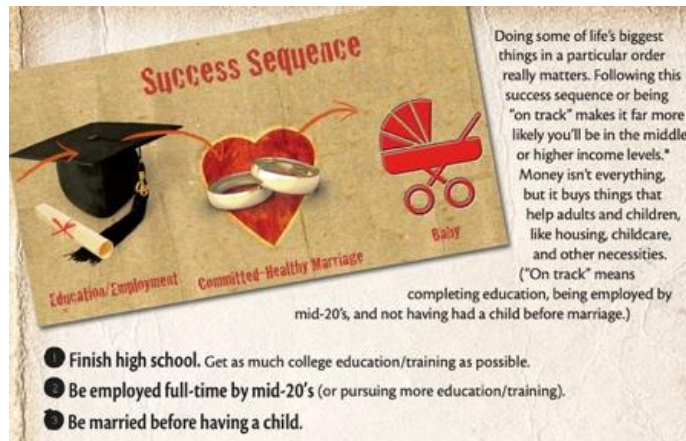
¹⁴⁴ Elliott, T., & Boey, S. (2005). *Expert decision-making in naturalistic environments: A summary of research* (p. 70). South Australia: DSTO Systems Sciences Laboratory.

¹⁴⁵ Diagnostic schema. Retrieved 9 September 2024. <https://clinicalproblemsolving.com/reasoning-content/>.

¹⁴⁶ Stern, S. D. (2010). *Symptom To Diagnosis An Evidence-Based Guide*.

¹⁴⁷ Novak, K., Mandin, H., Wilcox, E., & McLaughlin, K. (2006). Using a conceptual framework during learning attenuates the loss of expert-type knowledge structure. *BMC medical education*, 6, 1-8.

Table 31: Examples of Activities with Frameworks



DTL/RTL

The key framework in *DTL/RTL* is the steps for drawing the line (see below). These steps are repeated throughout the curriculum.

- Say, "No, I don't ..."
- Use body language that says NO.
- Change the subject
- Walk away if you need to (e.g., if you feel unsafe or uncomfortable)



In addition, the logo for the curriculum reinforces the importance of drawing the line. The circle represents all the things life has to offer, and the dot represents the learner. On one side of the circle are the things the learner wants to do and are consistent with their values. On the other side of the line are things that are uncomfortable or unsafe for the learner.

PHAT-AO, Module 3, Activity C: "STOP, THINK and ACT – Introduction to Problem Solving" (page 97)

The three steps of the STOP, THINK, and ACT framework provide a way for learners to think about problem-solving and refusing unwanted sexual activity. After explaining and discussing the framework, learners apply the three steps to a case study about fictional characters Jess and Dylan.

CPC Finding #8: CPIC curricula regularly summarize, repeat, and reinforce key points (about information learned during the session) and core messages (about the desired behavior and/or curriculum goals).

Most of the CPIC curricula included clear core messages linked to the behavioral outcomes they intended to affect. In some cases, these core messages or versions of them were repeated over 20 times. For example, *Making Proud Choices* and its derivative, *Promoting Health Among Teens – Abstinence Only* repeat versions of the same message—Be Proud! Be Responsible! The message was developed from formative research findings and incorporates values that resonated well with urban African American youth. For example:

The RTR curriculum explicitly emphasizes that students should avoid unprotected intercourse either by not having sex or by using contraceptives. Nearly every activity supports or reinforces this norm.

-Kirby et al., 1991

PHAT-AO (page 96) Good decisions are based on respecting and protecting yourself, understanding possible consequences, and being *proud and responsible*."

MPC (page 256) The *proud and responsible* thing to do is know your body and take care of it. Respect and protect it.

As reflected in its title, *Draw the Line / Respect the Line*, the curriculum continuously reinforces a message about how important it is to know and communicate your limits: "draw the line." For example, "*Draw the Line Steps*" (Say no, use body language that says no, change the subject, walk away) are repeated and practiced throughout all three years of the curriculum. The curriculum also incorporates a logo to reinforce messages.

*Draw the Line /
Respect the Line Logo*



Love Notes incorporates several core messages, one of which is "Decide, Don't Slide" (into relationships or sex). The message encourages learners to stop and think about decisions, plan relationships and the decision to have sex, and pace the level of intimacy in a relationship. In other words, don't make decisions impulsively, don't allow yourself to be persuaded to do something you don't want to do, and educate yourself before making a decision.

In addition to core messages, each curriculum regularly repeats, summarizes, or reinforces key points in the activity or session. *Reducing the Risk* provides a scripted lesson summary at the end of each class; *DTL/RTL* often ends the session with youth completing a sentence stem designed to extract something they learned during the session. *Love Notes* encourages youth to

write in a journal to apply or reflect on key learning. Many of *MPC*'s and *PHAT-AO*'s activities end with a script for the facilitator that summarizes the key point(s) from the activity. Four distinct codes were used for this core pedagogical component, etc. **Table 32** provides examples of how key points are summarized and/or core messages are reinforced.

Table 32: Examples of Activities Designed to Summarize Key Points and Repeat Core Messages
<i>DTL/RTL</i> – “I Learned” Question Sheet
All <i>DTL/RTL</i> lessons end with learners summarizing a key point about what they learned during the lesson in their own words with a sentence stem prompt. For example, in Grade 7, at the end of Lesson 7 (page 139), learners are asked to complete this sentence stem: “One thing I want to remember about the <i>Draw the Line/Respect the Line</i> lessons is _____.
<i>MPC</i> – “Be Proud, Be Responsible”
An important theme woven throughout <i>Making Proud Choices</i> is to be proud of themselves, their families, and their community, and to behave responsibly. The importance of protecting one’s family and community is used as a motive to engage in healthy behaviors (as opposed to just thinking of themselves individually). The curriculum also emphasizes being sexually responsible and accountable for their decisions, respecting themselves and others, and developing a positive self-image. Acting proudly and responsibly can contribute to them reaching their goals and dreams. This message (and variations on the wording) is repeated multiple times in each module. Learners are first introduced to the message in Module 1, Activity D: <i>Making Proud Choices?</i> Be Proud: Be Responsible Brainstorm (page 41).
<i>Love Notes</i> – “Decide, Don’t Slide”
In Lesson 8 (page 109), learners are introduced to the “Decide, Don’t Slide” approach to relationships. In essence this message is about taking your time to assess a relationship and plan for intimacy. In other words, to avoid rushing into a relationship, not letting your hormones and associated feelings take over. The message, in one form or another, is repeated over 10 times in the curriculum.

Reinforcing key messages and summarizing key points has also been described as literature on pedagogy. We learn new things when our brains create new neuro-pathways in how we think about and do new things. These pathways are strengthened through repetition and reinforcement of consistent messages.¹⁴⁸ In their book on research-based strategies to increase student achievement, Dean and Hubbell discuss the importance of reinforcing concepts for

¹⁴⁸ Oberholzer, W. (February 19, 2021). The power of message consistency and repetition. Red Crane Consulting. Retrieved on 12 September, 2024 from: <https://www.linkedin.com/pulse/power-message-consistency-repetition-werna-oberholzer/>

students as a way of retaining previous and newly presented concepts and performing better.¹⁴⁹ In a review of the literature on strategies to improve upon problematic instructional designs, the researchers concluded that summaries of main ideas helped students retain those main ideas. In addition, when students are asked to write summaries of the main ideas themselves, they are more likely to retain the most important pieces of information.¹⁵⁰ CPC Finding #8 is also consistent with the research conducted by Kirby et al. on effective sex education programs.¹⁵¹ (Characteristic #2 under Contents of the Curriculum Itself: “Focused narrowly on specific behaviors leading to these health goals (e.g., abstaining from sex or using condoms or other contraceptives), gave clear messages about these behaviors, and addressed situations that might lead to them and how to avoid them”). Similar evidence of the effectiveness of message repetition is also found in business marketing, advertising, and adult learning.

About Core IMPLEMENTATION Components (CIC)

Core implementation components¹⁵² refer to how the curriculum overall is delivered. Good curriculum implementation involves multiple tasks and conditions such as facilitator training, a facilitator’s ability to connect to and engage learners, a comfortable learning environment, delivery setting, time dosage, etc. The quality of program implementation plays an important role in reaching program objectives and intended outcomes. If a program’s core content and pedagogical methods are maintained, but the essential implementation protocols are compromised, the program may not replicate well.¹⁵³

In the case of an oil painting, core implementation components would be metaphorical to the artist’s training, the amount of paint she uses, and the environment in which she paints (e.g., in a studio, on the beach, etc.).



¹⁴⁹ Dean, C. B., & Hubbell, E. R. (2012). *Classroom instruction that works: Research-based strategies for increasing student achievement*. Ascd.

¹⁵⁰ Castro-Alonso, J. C., de Koning, B. B., Fiorella, L., & Paas, F. (2021). Five strategies for optimizing instructional materials: Instructor-and learner-managed cognitive load. *Educational Psychology Review*, 33(4), 1379-1407.

¹⁵¹ Kirby, D., Laris, B.A. & Roller, L. (2007). Sex and HIV education programs: Their impact on sexual behaviors of young people throughout the world. *Journal of Adolescent Health*: 40, 206-217.

¹⁵² Photo credit: Image from Microsoft Version 16.88

¹⁵³ Durlak, J. A. (2011). *The importance of implementation for research, practice, and policy*. Child Trends research brief. Washington, DC: Child Trends. Retrieved from <http://www.childtrends.org/wp-content/uploads/2013/05/2011-34DurlakImportanceofImplementation.pdf>.

The richest data we gathered related to curriculum implementation came from the interviews we conducted with curriculum developers and facilitators. The front matter of the curriculum manuals and the evaluation reports also provide some information about curriculum implementation. Less information about implementation was found in the session plans. We did not find publicly available facilitator training designs or implementation protocols to review. These documents may have had information about implementation.

General Tips for Preparing to Implement the Curriculum

- ▶ Review the curriculum manual ahead of time.
- ▶ Review the format of the manual, which consists of goals, objectives, preparation, materials and a detailed outline of what the facilitator should say and do for each activity.
- ▶ Become familiar with all activities, DVDs and curriculum materials.
- ▶ Make sure you have all the necessary equipment and materials.
- ▶ Review the supplemental background information provided in Appendix B about HIV, other STDs, contraceptive methods and effects of alcohol and other drugs.
- ▶ Learn about local resources such as health departments and family planning clinics.
- ▶ Know the policies of school districts and community agencies in regard to implementing new programs, discussing issues of sexuality and gaining parental support and permission.

General implementation tips from MPC and PHAT-AO curriculum manuals

It is important to note that curriculum implementation during the original evaluation studies and published replication studies was carefully planned and highly controlled, as expected when conducting a well-funded randomized trial. This level of attention to implementation may not have been as robust in typical replication for various reasons (e.g., funding, time limitations, staffing, less rigorous requirements, etc.).

All curricula manuals include an introduction section and/or appendices with information relevant to implementation. Examples of the information found in these curriculum sections are listed below.

- A curriculum overview that may include information about the curriculum’s goals, learning objectives, underlying theory of change, and unique features
- Session plan structure and format, such as learning objectives, materials needed, timing, and activity procedures
- A summary of evaluation findings
- Descriptions of pedagogical methods
- Background reading
- Parent permission forms (*RTR* and *DTL/RTL* also included these forms in Spanish)
- Acceptable adaptations

In this section, we answer three of our four CPIC Study questions.

1. What are the core program implementation components of the five evidence-based Teenage Pregnancy Prevention (TPP) programs selected for the study?
2. Which program components (as they relate to content) appear to matter the most in influencing participant outcomes?
3. Through what mechanisms do core program components (as they relate to content) influence participant outcomes?

At-a-Glance: CPIC Study Phase 1 Findings on Core IMPLEMENTATION Components (CIC)

The five CPIC curricula are implemented...

CIC Finding #1: With support from the school district, principal, teachers, and/or other staff.

CIC Finding #2: By comprehensively trained facilitators.

CIC Finding #3: By facilitators who demonstrate genuine respect and care to learners.

CIC Finding #4: In a supportive and inclusive learning environment.

CIC Finding #5: With reasonable fidelity and apply “green light” adaptations (when needed).

CIC Finding #1: CPIC curricula are implemented with support from the school district, principal, teachers, and/or other staff.

During our interviews with curriculum developers and facilitators, we learned about some of the things they did to secure support from the schools and community organizations with which they implemented their curricula. This support was paramount in curriculum implementation. In many cases, school or organizational support took substantial time. Study investigators,

program managers, and facilitators often scheduled visits with key personnel and/or presentations at school board meetings to gain buy-in for the program and partnership in implementation. These interactions involved explanations about:

- The curriculum’s goals and activities
- Why the organization or school needed the program and who they will benefit (e.g., presenting statistics, discussing consequences of teen pregnancy)
- Time needed
- Space needed
- The type of support needed from school personnel
- How the curriculum could integrate with other school classes
- How the curriculum aligns with local or state standards and/or scope and sequence
- Memoranda of Understanding (MoUs) or site agreements.

Relationship building and visits were not a one-time event. Developers and facilitators talked about nurturing these relationships with regular communication.

In some cases, developers and facilitators were unable to secure support, mostly because of objections to some of the content covered in the curricula. The organizations implementing the curriculum need to determine if the requested numbers of adaptations fall into a red-light category where the core components of the program are clearly compromised and/or would conflict with their organization’s and funder’s requirements.

CIC Finding #1 is consistent with a Healthy Teen Network study funded by CDC-DASH published in 2018.¹⁵⁴ [Healthy Teen Network](#) aimed to answer the question: *What does it take to implement high-quality sexual health education?* After interviewing school district representatives in three large school districts in the United States (Oakland, CA, Broward County, FL, and New York City Department of Education), several themes emerged, including *school* policies that list the sexual health topics that should be covered *and* a point person whose job includes responsibility for coordinating sexual health education. This champion needs to take an active role in developing key relationships within the school and community as well as help these stakeholders see the value of sexual health education and know how to build awareness of supportive policies. Another initiative (national) spearheaded by the Grove Foundation is called [Working to Institutionalize Sex Ed \(WISE\)](#). Along with grantees, Grove developed a toolkit to support school districts in the effective implementation of sex education. The toolkit is organized into four phases: 1) scan, 2) engage, 3) design, and 4) implement.

¹⁵⁴ Healthy Teen Network. (May 2018). *What does it take to implement high-quality sexual health education? Case Studies of three Local Education Agencies.*

Throughout the four phases, partnering with school district stakeholders is a critical task for successful implementation and sustainability. The “engage” phase, in particular, involves assessing school readiness and enduring ownership and active participation among key school district stakeholders.

Curriculum Facilitator Quotes about School Support

You got to have the buy-in from the school. You have to have conversations with them, and explain the program. First of all, we get the MOU, then we have a relationship with the principal. We have to have a relationship with the teachers. Yes. You have to have a relationship with the counselor of the school. Because if we are talking about something and somebody has been through something, we need to have the counselor ready and then the buy-in of the teacher that's in the classroom.

—Curriculum Facilitator

The good thing with us is that in every school we've been in, they know us, they know who [name of organization] is. They know what we're about. We can go into the schools and we can teach the same class, the same teacher, but it's different, cause it's a different school year, it may be a new principal. It may be a new counselor that we need to reach out to. But once you get that buy-in with your teacher, she's going want you to come back. He's going want you to come back. And so now I don't have to go through the principal. I call the teacher.

—Curriculum Facilitator

I tell the [school administrators] that they need us. I give them the statistics on teen STDs and HIV and AIDS. Here's where, here where we live. Here's a pie chart of those infected with HIV or those with AIDS who are black. And here's the, here's the percentage of this pie of African Americans, and here's the rest of the pie. And for 14% of the population, we were making up more than 50% of HIV infections. If they truly care about what's happening, then as you give these heart-wrenching statistics about the number of people that are dying in your community because of a behavior that they did not, they didn't have to die. They didn't have to get pregnant...

Here's what we can do. Here's how long we will be in the classroom. Here are the other things that we can offer you [youth rally, youth summer camp]. And so that is a reason to let us into the district. Then the meetings come with the principals, and we're straightforward about what we need. Our goal is 300 students out of this building. I tell them what we need in terms of classroom space to facilitate. I need a video player and a blackboard. And then I tell them where their students will be at the end of this process. And, so we have a relationship. The better your relationships with the people who are in charge, the more success you will have in the classroom.

—Curriculum Facilitator

Develop your relationship with your principal, and the secretary, and your point person. When you do that, everything is going to go smoothly.

—Curriculum Facilitator

CIC Finding #2: CPIC curricula are implemented by comprehensively trained facilitators.

Based on our Phase 1 data sources, CPIC curricula are implemented by facilitators with varying professional backgrounds, such as school teachers, health educators, and social workers. Others were peers (in their early 20s or the same age as learners).^{155, 156} Some had previous formal training in adolescent development, teaching, and/or sexuality education, and some did not. A description of curriculum facilitators and facilitator training, as gleaned from published evaluation reports, is found in **Table 33**. We did not find information about training for other staff or partners who may have been involved in the overall implementation of the program.

A brief description of the four curriculum facilitators we interviewed for the CPIC study is found below. One curriculum facilitator declined to complete the survey.

- Three were women; one was a man.
- The average number of years the facilitators had in implementing EBPs was 9.5, and the average number of years working in a field related to youth development was 17.25.
- Three of the four facilitators have a bachelor's degree or higher, and one declined to say.
- Three of the four identify as Black/African American, and one as white.
- All four described themselves as competent or very competent in facilitating EBPs
- All four described themselves as enthusiastic or very enthusiastic about teaching EBPs

Most of the CPIC curricula manuals mention the importance of facilitator training. However, great emphasis was placed on the importance of facilitator training during curriculum developer and facilitator interviews. Our team learned that facilitator training occurs using variable modalities in addition to formal facilitator training (2 to 3 days in length) often provided by curriculum publishers. Facilitator training included other activities, most of which were provided by the organizations implementing the curricula. These activities include:

- Booster training (one or more ranging from a full day to a couple of hours)
- Phone calls or emails with developers for advice on curriculum implementation
- Shadowing and co-facilitating with more experienced facilitators
- Dedicated study time

¹⁵⁵ Jemmott, J. B., 3rd, Jemmott, L. S., & Fong, G. T. (1998). Abstinence and safer sex HIV risk-reduction interventions for African American adolescents: a randomized controlled trial. *JAMA*, 279(19), 1529–1536.

¹⁵⁶ Zimmerman, R. S., Cupp, P. K., Donohew, L., Sionéan, C. K., Feist-Price, S., & Helme, D. (2008). Effects of a school-based, theory-driven HIV and pregnancy prevention curriculum. *Perspectives on sexual and reproductive health*, 40(1), 42–51.

- Dedicated practice time
- Support from their supervisor and team through regular meetings
- Searching for and using reliable resources for background information
- Observation and feedback (sometimes videotaped or audio recorded)
- Fidelity monitoring logs, implementation monitoring logs (and analysis of those logs)

This finding is also consistent with the Healthy Teen Network study described [above](#). According to that study, one of the eight keys to success in implementing sexuality education effectively is: “Districts need to make sure they have the right people teaching this topic, and that the teachers feel ready to teach it. In addition to providing skills-based professional development, this involves checking in with teachers and following up as needed with coaching and co-teaching or modeling of challenging activities/lessons.” In another study, Rose et al. (2018)¹⁵⁷ found that middle school teachers reported having greater comfort in teaching sexuality education when they had received professional development training. The Office of Population Affairs also describes training and professional development as key strategies for retaining adolescent sexual health curriculum facilitators.¹⁵⁸

Table 33: Curriculum Study and Descriptions of Facilitator and/or Facilitator Training	
Study	Descriptions of Facilitator and/or Facilitator Training as Gleaned from Evaluation Reports
Draw the Line / Respect the Line	
Coyle et al., 2004	<ul style="list-style-type: none"> • Experienced health educators were hired. • Health educators were trained by project [research team] staff before implementation. In addition, health educators practiced implementing the curriculum by teaching it at a school not involved in the study.
Love Notes	
Barbee et al, 2022	<ul style="list-style-type: none"> • Most facilitators were in the early-adult phase of life (ages 22–40 years), so they would be relatable to the youth and had an approximate demographic match to learners. The research team recruited a diverse set of professionals with experience in serving youth. All facilitators had experience in race equity, cultural humility, and/or LGBTQIA+ inclusion. • Training was not described.

¹⁵⁷ Rose, I. D., Boyce, L., Murray, C. C., Lesesne, C. A., Szucs, L. E., Rasberry, C. N., Parker, J. T., & Roberts, G. (2018). Key factors influencing comfort in delivering and receiving sexual health education: Middle school student and teacher perspectives. *American journal of sexuality education, 14*(4), 466–489. <https://doi.org/10.1080/15546128.2019.1626311>

¹⁵⁸ OPA Brief. Employing and Retaining the Best Facilitation Staff for Adolescent Sexual Health Programs. Retrieved 6 August 2024 from: https://rhntc.org/sites/default/files/resources/opa_facil_staff_2020-6-12.pdf

Table 33: Curriculum Study and Descriptions of Facilitator and/or Facilitator Training

Cunningham, 2016	<ul style="list-style-type: none">• All facilitators were certified facilitators in <i>Love Notes</i> and <i>Reducing the Risk</i> and had experience in facilitating relationship and pregnancy prevention programs. All facilitators had worked with youth before the study.• Facilitators were given training in the curricula, attended booster sessions about how to best facilitate the curricula, and received feedback on their performance.
<i>Making Proud Choices</i>	
Jemmott et al., 1998	<ul style="list-style-type: none">• The adult facilitators were African American, with a mean age of 39.4 years. Their median level of education was a master’s degree and median of 8 years of experience working with African American adolescents. The peer facilitators were high school students with a mean age of 15.6 years. They were selected based on letters of recommendation and interviews. A little more than half were female.• Adult facilitators received two and a half days of curriculum training. Peer educators participated in a three-day intensive leadership training retreat on the basic skills of small-group facilitation and later a four-day curriculum training. Each training stressed the importance of implementing the curriculum with fidelity. Facilitator trainers monitored how each facilitator delivered the intervention.
Cole et al., 2022	<ul style="list-style-type: none">• Facilitators were experienced health educators provided by local health organizations.• The article advised that trained health educators from an organization partnering with the school or classroom teachers can deliver the program. A benefit of using external health educators is that they are often knowledgeable in adolescent sexual and reproductive health, have experience in implementing EBPs, and may better understand the importance of implementing with fidelity. Youth may also be more comfortable discussing sensitive information with an outside health educator rather than the classroom teacher who they see on a daily basis. On the other hand, a benefit of training teachers to deliver <i>MPC</i> is the potential sustainability of the programming in schools.• Healthy Teen Network (HTN) provided training and technical assistance for educators. Educators first completed individual online activities on the theory and background of <i>MPC</i> and then attended a two-day in-person curriculum training. HTN provided support to health educators over the phone throughout implementation to help educators feel prepared, troubleshoot issues, and discuss best practices for implementing the program with youth while adhering to the scripted curriculum. For example, health educators brainstormed solutions to challenges they experienced during implementation, including scheduling and classroom management issues and potential deviations from the curriculum (implementing in larger classes).

Table 33: Curriculum Study and Descriptions of Facilitator and/or Facilitator Training

PHAT-AO	
Jemmott et al., 2010	<ul style="list-style-type: none"> The facilitators were 16 men and 51 women. Their mean age was 43.1 years. About 40% had a master’s degree, and about 40% had a bachelor’s degree. All were African American except for one who was Puerto Rican. Facilitators were randomly assigned to receive 2.5 days of training to implement 1 of the 5 interventions in the study.
Walker et al., 2016	<ul style="list-style-type: none"> Facilitators were recruited from New York Medical College and went through a screening process that included a demonstration of their teaching abilities. Facilitators received a 2.5-day training prior to implementation. They also received two-hour booster training sessions over the course of the implementation. The training provided a comprehensive overview of the curriculum and time to practice facilitation skills with their peers. Some facilitators required additional assistance to address specific areas of concern; this additional training ranged from 3 to 8 hours. During the first year of implementation, it became evident that the facilitators needed to increase their understanding of the sociocultural background and context of Yonkers and strengthen their classroom management skills. Facilitators received additional professional development training, weekly one-on-one coaching, and weekly debriefing on the prior weeks’ class with the goal of improving performance in the next delivery. Facilitator coaches observed and supported facilitators in the classroom as needed. The <i>PHAT-AO</i> study experienced facilitator turnover (slightly less than 50%).
Reducing the Risk	
Barth, et al., 1992 Kirby et al., 1991	<ul style="list-style-type: none"> 19 school teachers taught the program. Teachers in the treatment group received a 3-day training session prior to implementation. The training primarily focused on giving teachers the opportunity to practice learning activities. Three hours focused on obtaining parent and student consent and assessment procedures. The study’s implementation evaluation revealed the following: <ul style="list-style-type: none"> Almost all strongly agreed that the curriculum was clearly written and that the organization and format were easy to follow. Almost 90% agreed that the role-play situations were realistic, and 75% disagreed or strongly disagreed that they had difficulty getting students to role-play.

Table 33: Curriculum Study and Descriptions of Facilitator and/or Facilitator Training

	<ul style="list-style-type: none">• Two of the 18 teachers were uncomfortable presenting the curriculum. The remaining 16 strongly disagreed that they had been uncomfortable.• Teachers were almost unanimous in their agreement that most students participated in class discussions.• Teachers were almost unanimous in their agreement that abstinence was appropriate.• All agreed that the birth control content was relevant to students.
Zimmerman et al., 2008	<ul style="list-style-type: none">• The intervention was delivered by adult teachers and peer leaders.• Teachers received a 2.5-day training before implementation that included discussions about sensitive topics relating to HIV prevention, tips about how to facilitate pedagogical methods, demonstration of the lessons, and tutoring for teachers on how to present individual lessons. Teachers received cash incentives, materials, refreshments, and the services of a substitute teacher.• The role of peer leaders was to lead small-group discussions, videotape role-playing activities, and assist teachers in class-wide games and other activities. Peer leaders were required to attend a two-day, out-of-school training on the curriculum. They received modest cash incentives and refreshments for participating. The training included an explanation of the role of peer leaders, a description of the lessons, opportunities to practice tasks, instruction on how to use media equipment, and discussions about attitudes toward HIV and talking about sex.
Reyna and Mills, 2014	<ul style="list-style-type: none">• Undergraduate or graduate research assistants (RAs) served as curriculum facilitators and were only a few years older than the participants. Closeness in age was believed to be supportive of establishing rapport and class discussions of sensitive topics.• Each facilitator received over 16 hours of training. Each trainee was given a complete copy of the curriculum, timelines for discussion, protocols for managing their interaction with participants, access to audio recordings of lessons delivered by trained health educators to actual classes, and literature on topics covered in the classes. Facilitators used these materials to prepare.• Educators were also trained on ways to relate discussions of sexual risks in any session to values that were important to adolescents and to encourage interactive discussions of those values (gist messaging).

Table 33: Curriculum Study and Descriptions of Facilitator and/or Facilitator Training

	<ul style="list-style-type: none"> • After becoming familiar with the curriculum, trainees sat in on lessons with other peer health educators, allowing them to see how more advanced educators were handling common questions, managing time, and directing class discussions. Trainees were then required to deliver each session to mock participants while being observed with a criterion-based monitoring checklist. Trainees received feedback on their performance and repeated the session at other times until criterion performance was achieved. The study team did not observe substantial variation across educators probably due to strict fidelity requirements in their performance.
<p>Kelsey et al., 2016, Kelsey et al., 2016 (AJPH) Kelsey et al., 2018</p>	<ul style="list-style-type: none"> • Facilitators (across three grantees) had experience in sexual health and were comfortable in addressing adolescent sexual health issues. In all 3 replications, external health educators, employed by grantees and their partners, delivered the program in public school classrooms as part of the regular school day. • All of the staff received the official training provided by the curriculum distributor and approved by the developer. Grantees offered additional training for staff and encouraged them to attend training sessions offered by the DHHS Office of Adolescent Health (OAH), as well as state or local agencies and institutions. • Staff retention was high.

Curriculum Facilitator Quotes about Training

To understand the curriculum, we read through it. And I want to say maybe a couple of weeks after, we actually had someone come and train us. Annually, we would have trainings. [Senior trainer on staff] would train us. I wouldn't consider it a training, but more like teach back. I would say we were perfecting our craft. We would do teach backs, and then we would go into the schools and observe veteran educators, so that way, we kind of get an understanding of how you interact, using your personality to make it more relatable to the students. And then [name of trainer from curriculum publisher] came, and she worked through some of the areas that were updated and worked through some of the challenges in the lessons.

—Curriculum Facilitator

I always try to prepare because I want students to know that I know what I'm talking about. I can answer their questions. You just have to prepare yourself. If you're going to teach lesson one tomorrow, I would say prepare lesson one tonight. That way, you know what you're doing, and if you have questions, you can get quick clarification [from coworkers]. I would say that's honestly my secret sauce is just preparation and always asking questions.

—Curriculum Facilitator

Supervisors always checked in. A lot of times they would come and observe to see how you're doing. They're always available for questions.

—Curriculum Facilitator

CIC Finding #3: CPIC curricula are implemented by facilitators who demonstrate genuine respect and care to learners.

A strong theme that emerged from our interviews with curriculum developers and facilitators was how essential it is for facilitators to demonstrate that they genuinely “care” about the youth with whom they work. Caring was described as being approachable, authentic, attentive, empathetic, and responsive. Examples of things that facilitators do to demonstrate care are:

- Showing respect to youth
- Showing youth that they (the facilitator) really believe in the program
- Greeting learners when they enter the classroom
- Remembering learners’ names and using them

- Bringing up things learners said in one session in the following session (showing that the facilitator was listening)
- Providing opportunities for learners to voice their opinions and listening to and empathizing with them
- “Having fun” with them
- Using anonymous question boxes and answering questions honestly
- Staying after the session to answer questions
- Holding “office hours” in the school building
- Simply walking around the school campus
- Attending school functions like a sports game or assembly
- Making referrals for resources/services inside the school or community

Several studies have documented that the quality of the relationship between the person delivering the instruction and the learners affects student learning and motivation.^{159, 160, 161, 162, 163} Factors like facilitator credibility, affinity, and trust play a big role in developing a positive relationship. When learners perceive that facilitators truly care, “beneficial outcomes often accrue.”¹⁶⁴ Factors that may support a facilitator in demonstrating care and respect are a facilitator’s belief that sexuality education is important, experience with and genuine like of young people, sufficient time to implement the curriculum, supportive policies/protocols, professional development to increase understanding about and responding to youth background, history, culture, beliefs and attitudes and other contextual factors, and employing a trauma-informed approach.

To our knowledge, no other core component study has reported on the construct of “caring” and how important it is for curriculum facilitators to demonstrate this quality.

¹⁵⁹ Anderman, E. M., Lane, D. R., Zimmerman, R., Cupp, P. K., & Phebus, V. (2009). Comparing the efficacy of permanent classroom teachers to temporary health educators for pregnancy and HIV prevention instruction. *Health Promotion Practice, 10*(4), 597–605. <https://doi.org/10.1177/1524839907309375>

¹⁶⁰ Frymier, A. B., & Thompson, C. A. (1992). Perceived teacher affinity- seeking in relation to perceived teacher credibility. *Communication Education, 41*, 388-399.

¹⁶¹ Wentzel, K. R. (1997). Student motivation in middle school: The role of perceived pedagogical caring. *Journal of Educational Psychology, 89*, 411-419.

¹⁶² Frymier, A. B., & Wanzer, M. B. (2006). Teacher and student affinity-seeking in the classroom. In T. P. Mottet, V. P. Richmond, & J. C. McCroskey (Eds.), *Handbook of instructional communication: Rhetorical and relational perspectives* (pp. 195-211). Boston: Allyn & Bacon.

¹⁶³ Office of Population Affairs. Employing and Retaining the Best Facilitation Staff for Adolescent Sexual Health Programs. Retrieved 9 August 2024 from: https://rhntc.org/sites/default/files/resources/opa_facil_staff_2020-6-12.pdf

¹⁶⁴ Wentzel, K. R. (1997). Student motivation in middle school: The role of perceived pedagogical caring. *Journal of Educational Psychology, 89*, 411-419.

Curriculum FACILITATOR Quotes about Caring for Learners

I'm just genuine. This [learners] is literally the future of adults. I want to make sure they are supported because life is already hard. I always want to give them that little piece of hope that, you know, other people don't listen to them. Just listening to the students. Sometimes they just want to be heard. Because I remember when I was a kid, I just wanted to be heard. Just having an adult to just listen to you, that just matters. I'm able to relate to the students. I'm just genuine and just actually care about the future adults.

—Curriculum Facilitator

If they participate in sports, something as small as going to the game [a way to show facilitators care]. I asked them about their position or what sport they interested in. And I'm like, okay, I'll come to the game. And they're like, really? You'll come to my game? And they would see that I'm a woman of my word. Or I'll say, I saw you, you know, playing the game. I saw you scored that touchdown or made that tackle. I see you cheering and you know, just something as small as that going to their school events, if they're actors or actresses in a play, just being in their support system. So that way these students can say like, oh these adults actually care about us.

—Curriculum Facilitator

I know the importance of getting the buy-in from the students. So, um, you just can't walk up in the classroom and start teaching. They need to know who you are and why you're there. So that's why we always have an intro day, or we may have two intro days. We go up and we play, we do like little games and conversations and Q and A, you know, what do you want to know?

—Curriculum Facilitator

So this [teaching] has always been my passion. I tell our newcomers [new facilitators], you got to have a passion for this. You got to know that you're helping. If you just doing this for a paycheck, I'm going tell you now, it ain't gonna work. You got to love and fall in love with this curriculum. Make it a part of you. So when you give it, they [learners] know that they can feel what you feel as you give out your information. I think all educators should have that. And I always say, I'm just here to save a life.

—Curriculum Facilitator

Oh, and like I said, just have fun. have fun and care and have empathy. Care about the people that you're dealing with. And it has to be genuine.

—Curriculum Facilitator

Curriculum DEVELOPER Quotes about Caring for Learners

Facilitator quality is just so important. What I've learned as a teacher of 37 years is that every young person sniffs you out. Are you real? Do you care? And you have to care to hear from them, not just preach to them because it's all designed to bring out some of their thoughts. When I think about a facilitator, I want somebody who really will work hard, who will really, really study this curriculum, really prepare well so that they can really think through it. Training is really essential. And I'm such a believer in experiential training. You know, there's nothing like you [the trainee] going through that curriculum by engaging in the activities.

—Curriculum Developer

We had a cadre of educators. They each had assigned schools. So, part of that was building relationships with the school and the young people. They worked with their schools to set the implementation schedule. On the days they were teaching, they then would try to have time where they were available [to the students]. If a student didn't want to use anonymous questions, they could ask questions that way. But what ended up happening was the game stuff young people brought and played with them [facilitators]. Young people would hang out with them because they were cool outside people, and they were really amazing with young people. All the educators, they were incredible. In some cases, they just kind of made themselves present at [school] breaks.

—Curriculum Developer

Don't make it a one-time activity [goals and dreams activity] and you never thread through again. You could say, 'Hey James, I heard you said you wanna be an engineer.' So, you try to remember because kids value you remembering something about them. People heard me and you listened to me. I try to get my facilitators to remember their names [learners]. Please call them by their names. And if you call them by their name, they sit up.

—Curriculum Developer

CIC Finding #4: CPIC curricula are implemented in a supportive and inclusive learning environment.

The whole curriculum makes young people feel included, valued, and respected. It's threaded throughout. I was just saying in terms of self-efficacy, making them feel good about themselves, making them believe in themselves... If you are in the group, you are equal.

—Curriculum Developer

In addition to facilitators demonstrating care and respect (as described under CIC Finding #3), the CPIC curricula include activities and strategies for creating supportive and inclusive environments for learners. **Table 34** explains examples of these strategies.

Table 34: Inclusion Strategies and CPIC Curriculum Examples	
Strategy	CPIC Curriculum Examples
Create a safe and welcoming learning environment by establishing group agreements and inviting learners to introduce themselves.	<p>Excerpt from Lesson 1: Getting to Know You and Steps to Making Your Dreams Come True in MPC:</p> <p><i>Model the Welcome Activity by beginning with yourself.</i></p> <p><i>My name is _____, and I am _____ (age). I attend _____ (high school, college, or university). When referring to me, please use the pronouns _____ or _____. I like to _____ (share something you enjoy doing.)</i></p> <p>Excerpt from Prior to Class 1 section in RTR:</p> <p><i>To accomplish the goals [RTR's goals] of this program, students need to feel free to talk about sexuality, birth control, and protection from STIs. It is not always easy for students to do so. To create an atmosphere of trust and comfort in which sufficiently detailed discussions can take place, group agreements for classroom discussion should be established. One option for establishing agreements is to use the Guiding Principles or Group Agreements suggested in this section. These can be posted on the board and/or copied for each student.</i></p>
Pace instruction so that learners have a chance to “warm up” to the facilitator, the group process, and the curriculum. One curriculum developer told us that the curriculum is designed to gradually engage youth in discussion from	<p><i>You can't get a young person to do a role-play right off the bat. You have to be step-wise with them to get there. Some comforting activities. So, we had an activity [describes activity]... Well, now they are saying stuff ... it's building their confidence to say some words. And then, by the time we did some other activities that got them ready... that gave them skills and words to put into what they said. And ... that got them ready for the role-plays. So, we didn't, we always put the role-plays at the end</i></p>

Table 34: Inclusion Strategies and CPIC Curriculum Examples

Strategy	CPIC Curriculum Examples
relatively safe topics to more sensitive ones. In doing so, learners build confidence.	<p><i>because we knew we gave them everything they needed to do to spit that stuff out of their mouth with confidence.</i></p> <p>-Curriculum Developer</p>
Use facilitator notes to advise facilitators on how to address sensitive topics. For example, three curricula talked about being mindful that learners in the class may be teen parents or may have parents who were teen parents. Four curricula advise on the importance of recognizing that some learners may have experienced or witnessed violence or other trauma, reminding learners that they don't have to share or participate in any activity that doesn't feel comfortable, and reminding learners that a victim of violence is never to blame.	<p><i>MPC and PHAT-AO both include an appendix titled "Supporting a Trauma-Informed Approach to Sexuality Education." The appendix explains trauma, a trauma-informed approach, and specific strategies facilitators can use during instruction.</i></p> <p>Excerpt from Lesson 1: Getting to Know You and Steps to Making Your Dreams Come True in <i>MPC</i>: <i>As you facilitate this activity and the entire program, keep in mind that for some youth, pregnancy and parenting are intentional. The reasons are complex. There may be family, cultural and community influence—in some families, cultures and communities, young parenthood is prized and has been modeled. Some youth place high values on parenthood because they see it as a realistic life option when they don't see options such as post-secondary education and/or career as viable. Others see a baby as someone who will always love them. While it is impossible to fully address these complex motivations for pregnancy and parenting in this module, the program approaches pregnancy prevention by offering concrete information, positive attitudes and beliefs, and many opportunities for skill practice.</i></p>
Be inclusive of diverse gender identities and sexual orientations. All five curricula included activities and facilitator instruction about the inclusivity of different gender identities and sexual orientations. Use inclusive language.	<p>Excerpt from Lesson 5: STD Facts in <i>Love Notes</i>: <i>Note to Instructor: These cards have been written by diverse youth in everyday language. Most are gender-neutral. Some are clearly heterosexual, and some are LGBTQ. Consider soliciting more scenarios as extra credit from your youth to add to your stack.</i></p> <p>Excerpt from Lesson 6: STDs and Relationships in <i>DTL/RTL Grade 7</i>: <i>Teacher Note: Be sensitive to any students who may be transgender or gender nonconforming. You can allow these students to choose which role-play they want to work with.</i></p>
Include materials in English and Spanish.	<p><i>Draw the Line / Respect the Line</i> and Reyna and Mills adaptation of <i>Reducing the Risk</i> both included student worksheets in English and Spanish.</p>
Use formative research to inform curriculum activities and make them relatable. During our interviews with curriculum developers, we learned	<p><i>I think the grounding is in cultural principles of respect and family. Those two stand out to me. And again, we felt like those [principles] would walk across other cultures too. Leaning into family traditions that were really important in the Latina culture ... like sayings [Spanish proverbs]</i></p>

Table 34: Inclusion Strategies and CPIC Curriculum Examples

Strategy	CPIC Curriculum Examples
<p>that all curriculum development teams did some type of formative research to better understand the needs, beliefs, attitudes, cultural norms, and other contextual factors related to the young people they intended to include in their studies. The findings from formative research helped to inform the curricula's theories of change and activities to be inclusive and supportive of youth needs.</p>	<p><i>and reflecting on sayings and what they might mean. Then, having young people think about and attach some of their learning to those cultural traditions was really important.</i></p> <p>-Curriculum Developer</p>
<p>Welcome and encourage learners' diverse perspectives, values, and life experiences.</p>	<p>Excerpt from Module 6: A Possible Outcome of Unprotected Sex: Pregnancy in MPC:</p> <p><i>The purpose of this activity is to present factual information about birth control. I don't assume that you're having sex. There may be many different experiences in this group. Some of you may never have engaged in sexual intercourse and won't any time soon. Others may have had sex, but not always by choice. Some might be parents already.</i></p> <p><i>Regardless of your background and experience, it's important for all teens to receive factual information about birth control. Being informed about birth control puts you in the driver's seat so you can be in control when you have children in the future and how close together you have them.</i></p> <p><i>I also understand that personal values about birth control vary. For some people, using condoms may go against their religious beliefs. For others this may not be a consideration.</i></p> <p><i>The bottom line is that most people who have sex need a way to prevent pregnancy and STIs, including HIV. I want you to be able to make informed decisions about protecting yourselves, so we're going to learn about all of the options.</i></p> <p>Excerpt from Section 1: Relationships Today in Love Notes:</p> <p>[Background for the Facilitator] <i>This section begins with an icebreaker activity. Participants will be asked to reflect upon a prompt and then draw a picture to represent their experiences, thoughts, or feelings about relationships. The instructor will use the participants' drawings and</i></p>

Table 34: Inclusion Strategies and CPIC Curriculum Examples

Strategy	CPIC Curriculum Examples
	<p><i>commentaries to introduce the program and engage in a discussion of how and why healthy relationships matter to our lives.</i></p> <p><i>[Facilitator Script] We are starting a program about relationships. And a good place to start is with your experiences and your thoughts about relationships. But rather than ask you to write or talk, I am going to ask you to draw. I want you to reflect on this prompt: Relationships today are like...</i></p> <p><i>Reflect upon your own experiences and those of friends and family around you. What is your first reaction—negative or positive—to what romantic relationships are like today?</i></p> <p><i>What has been your experience? Or, simply, what have you observed?</i></p> <p><i>What is your personal take on the state of relationships today? There is no right or wrong response here. It’s your opinion that counts!</i></p>

CIC Finding #5: CPIC curricula are implemented with reasonable fidelity and apply “green light” adaptations (when needed).

A CDC-funded project developed a framework for making adaptations to evidence-based programs.^{165, 166} The framework uses the traffic light metaphor to categorize adaptations to EBPs. *Green light* adaptations are acceptable, do not compromise core components, and are encouraged (e.g., changing names in a role-play, updating medical information, and facilitators putting scripts into their own words without changing the essence of the instruction). *Yellow light* adaptations can be green light adaptations if made thoughtfully. For example, replacing a video with a newer video that addresses that same content and psychosocial determinants. *Red light* adaptations should be avoided as they are believed to compromise core components (e.g., removing skill practice).

¹⁶⁵ Rolleri, L., Fuller, T.R., Firpo-Triplett, R., Moore, C., Leeks, K.D. & Lessene, C.A. (2014). Adaptation guidelines for evidence-based adolescent pregnancy and STI/HIV prevention curricula: From development to practice. *American Journal of Sexuality Education*, 9: 135-154.

¹⁶⁶ Firpo-Triplett, R., and T. Fuller. “General Adaptation Guidance: A Guide to Adapting Evidence-Based Sexual Health Curricula.” Scotts Valley, CA: ETR, and Atlanta, GA: CDC Division of Reproductive Health, 2012.

We learned from interviews and in reading replication evaluation studies that implementing an evidence-based program like the ones included in the CPIC study with [fidelity](#) can be challenging for several reasons, and adaptations, especially green light adaptations, are common. Curriculum facilitators and developers discussed several types of adaptations they have made. Adaptations were also made to some of the CPIC curricula during some of the replication studies. Some of these adaptations and the reasoning for making them are listed below. (The reasons for making adaptations are also reported in other published documents.^{167, 168, 169, 170, 171}) Our team believes the adaptations in the list below fall into the [green light](#) category if done in an informed way that does not compromise the curricula’s theory of change and core content and pedagogy components. We should note that we heard about other adaptations either from interviews or in reading evaluation studies that we believe fall into the [yellow light](#) or possibly [red light](#) category. We list those as well.

Likely Green Light Adaptations

Contextual Adaptations

- Changing some of the character names in scenarios, stories, and role-plays to more common ones found in the community youth they were serving.
- Changing some contextual information in the scenarios, stories, and role-play to make them more consistent with the norms of the youth they serve (e.g., changing “smoking” to “vaping.”)
- Changing some of the language used in the sessions to make them more developmentally appropriate/more easily understood.

¹⁶⁷ Hill, L. G., Maucione, K., & Hood, B. K. (2007). A focused approach to assessing program fidelity. *Prevention science: the official journal of the Society for Prevention Research*, 8(1), 25–34. <https://doi.org/10.1007/s11121-006-0051-4>

¹⁶⁸ Rolleri, L., Fuller, T.R., Firpo-Triplett, R., Moore, C., Leeks, K.D. & Lessene, C.A. (2014). Adaptation guidelines for evidence-based adolescent pregnancy and STI/HIV prevention curricula: From development to practice. *American Journal of Sexuality Education*, 9: 135-154.

¹⁶⁹ Rose, I. D., Boyce, L., Murray, C. C., Lesesne, C. A., Szucs, L. E., Rasberry, C. N., Parker, J. T., & Roberts, G. (2018). Key factors influencing comfort in delivering and receiving sexual health education: Middle school student and teacher perspectives. *American journal of sexuality education*, 14(4), 466–489. <https://doi.org/10.1080/15546128.2019.1626311>

¹⁷⁰ Hill, L. G., Maucione, K., & Hood, B. K. (2007). A focused approach to assessing program fidelity. *Prevention science : the official journal of the Society for Prevention Research*, 8(1), 25–34. <https://doi.org/10.1007/s11121-006-0051-4>

¹⁷¹ Substance Abuse and Mental Health Services Administration. (SAMHSA): Adapting Evidence-based Practices for Under-Resourced Populations. SAMSHA Publication No. PEP22-06-02-004. Rockville, MD: National Mental Health and Substance Use Policy Laboratory. Substance Abuse and Mental Health Services Administration, 2022.

Time Adaptations

- Changing the implementation timeline (teaching the sessions over weeks as opposed to over two Saturdays).
- Restructuring lessons so that they can be facilitated during a class period, which may be 45 minutes or 90 minutes (as opposed to 60 minutes).
- Adding time to sessions, especially when learner engagement was high (e.g., lively large group discussion).

Facilitator or Learning Group Adaptations

- Using two facilitators instead of one in one case when there were larger class sizes.
- Not using peer facilitators.

Likely Yellow Light or Possibly Red Light Adaptations

- Leaving out a video or replacing it with another that was more “current.”
- Leaving out an activity because learners did not engage with it or did not like it.
- End sessions early and invite learners to do the homework (associated with the EBP) in class.
- Separating boy and girl learners with same-gender facilitators for one or two of the activities (not the whole curriculum).
- Substituting activities with other activities based on the implementor’s impressions on what learners would be better engaged with or to align with school policies.
- Removing or adding activities to comply with local (school district) or state standards/requirements.
- Each CPIC curriculum provides notes on how the facilitator could adapt some of the activities. Examples of these notes are found in **Table 35**. In addition, adaptation guidelines for [DTL/RTL](#), [MPC](#), and [RTR](#) are available from their publisher, ETR (published after the original evaluation studies). These guidelines are helpful for curriculum implementors in making “green light” adaptations. In addition, ETR publishes theory of change logic models, curriculum core components, and fidelity monitoring logs for each of these three curricula. The *DTL/RTL* manual also includes guidance on adapting the curriculum for learners with special needs and classrooms with bilingual learners.
- *Love Notes*, *MPC*, and *PHAT-AO* also provide supplemental, optional, or additional activities. The *MPC* curriculum manual contains eight additional activities ranging from 15 to 30 minutes, and the *PHAT-AO* curriculum contains five additional activities ranging from 15 to 40 minutes. *Love Notes* provides five optional media opportunities that could be used to complement lessons. Its manual also contains nine pages of guidance about adapting the curriculum for middle-school learners.

PHAT-AO Additional Activities

Appendix A: Additional Activities

- Additional Roleplay Situations/Abstinence
- HIV/STD Jeopardy
- HIV/STD Survivor
- Healthy Relationships
- Birth Control Methods Demonstration

Love Notes – Media Opportunities

Lesson 1	Film about Antwone Fisher and discussion.
Lesson 7	Video about respect in relationships
Lesson 8	Video about consent and a handout
Lesson 8	Video about making decisions under the influence and discussion
Lesson 12	TED video about contraception

MPC Additional Activities

Appendix A: Additional Activities

- Additional Roleplay Situations/Safer Sex
- HIV/STI Jeopardy
- HIV/STI Survivor
- Puberty and Adolescent Sexual Development Discussion
- Healthy Relationships
- Is Sexting OK?
- Understanding Sexual Identity
- Understanding Messages About Sex

Most of the CPIC curriculum evaluation articles, as well as the facilitators we interviewed, mentioned fidelity monitoring as part of their evaluation plans. Monitoring fidelity may involve facilitators completing fidelity monitoring logs after completing a session. These logs typically provide space for the facilitator to report on whether or not they completed each of the activities in the session and to what degree, and difficulties or unusual circumstances they may have encountered. Others talked about observations from another team member with a fidelity checklist, digital recording after review, and regular team meetings.

In two *Reducing the Risk* studies, a significant adaptation was made to the curriculum's content and pedagogy to test whether or not these changes enhance the curriculum's impact or better address the needs of a particular population of youth. Reyna and Mills¹⁷² adapted *RTR* by applying fuzzy trace theory and including gist messages about key concepts throughout the curriculum ("*RTR+*"). Gist messages capture the essential bottom line about what matters to an individual. Gist messages help learners better encode and retrieve important information when faced with decisions. *RTR+* findings were significantly greater than those of *RTR* for nine mediating and behavioral outcomes, and the effects of *RTR* were significantly greater than *RTR+* for three mediating variables.

Zimmerman et al.¹⁷³ adapted *RTR* to target high sensation-seeking and impulsive youth. The adaptations included adding audiovisual materials (e.g., short "trigger" videos with music), selectively using peer facilitators to reduce teacher dominance (because high sensation seekers and impulsive decision makers presumably rely more on peers than on adults when making decisions about their behavior), including young people living with HIV as presenters for two lessons, creating more realistic role-playing activities about high-risk situations, incorporating teenagers' suggestions, including more classroom games and prizes, eliminating the parent discussion activity (as high sensation-seeking and impulsive students have less close relationships with their parents), and providing students with video cameras to record role-playing activities. In this study, the results of the impact of the modified *RTR* were not significant compared to the original *RTR*.

¹⁷² Reyna, V. F., & Mills, B. A. (2014). Theoretically motivated interventions for reducing sexual risk-taking in adolescence: a randomized controlled experiment applying fuzzy-trace theory. *Journal of experimental psychology. General*, 143(4), 1627–1648

¹⁷³ Zimmerman, R. S., Cupp, P. K., Donohew, L., Sionéan, C. K., Feist-Price, S., & Helme, D. (2008). [Effects of a school-based, theory-driven HIV and pregnancy prevention curriculum](#). *Perspectives on sexual and reproductive health*, 40(1), 42–51.

Table 35: CPIC Curricula and Green Light Adaptations

Making Proud Choices: Introduction Section (page 6)

Excerpt: Program facilitators are encouraged to make minor adaptations (also referred to as “green light” adaptations) to optimize the program for the young people receiving it. Such adaptations are intended to help tailor the curriculum to the needs of participating youth. Examples of minor adaptations include:

- *Updating statistics*
- *Changing the names*
- *Editing the language or scenarios in role-plays to better reflect your youth population.*
- *Teaching reproductive health lessons before starting the program*
- *Adding lessons before or after the curriculum lessons to address additional sexual health issues, such as dating violence or electronic dating aggression.*
- *Add time to the modules when needed to ensure that all the relevant content can be covered. Lengthening sessions can allow more time for reviewing previous lessons, discussion, questions, role-play practice, personalization, video viewing, and other activities.*

Reducing the Risk: Publisher Note (page x)

Excerpt: We also encourage teachers to adapt the dialogue of the role-plays when necessary to make them more relevant to their students’ region or cultures.

Love Notes: Middle School Adaptation Guidance (page 233)

Excerpt: This adaptation was created to accommodate organizations who want to use Love Notes with middle-school-age youth. The concepts will all be the same as standard Love Notes EBP, but some language, framing, and scenarios on the activity cards will be worded in developmentally appropriate ways for middle-school-age youth. A number of younger images are used in the PowerPoint slides, and quotes from younger teens will replace some of the quotes from older teens in Love Notes EBP: Middle School Adaptation. In some lessons, you may find a section omitted. A couple of workbook applications will be omitted.

Curriculum FACILITATOR Quotes about Adaptation

Learning how to be flexible, learning how to be adaptable. So that way you can make it relatable to the students. Something as simple as changing a name ... oh yeah, this name sounds familiar. I can relate to this person.

—Curriculum Facilitator

She [name of trainer from publisher] gave us a blueprint. This is the background story of why the curriculum was created. She would say that this is a blueprint; this is how you would teach it. But of course, make it your own, make it relatable to the students. If you guys think anything is not relatable to students or if there are certain things that need adaptations, talk to [publisher contacts].

—Curriculum Facilitator

You got to make sure you hit A, B, C, D. And that's how we train facilitators. They have a time limit, like five minutes, 10 minutes, but that's not written in stone. Depending on the class, you may need more time for a B than you did A, so you have to work that out as far as making sure you hit the right points, but then keep moving.

—Curriculum Facilitator

You may have to do a little research when you talk about STDs and HIV because they change, and you have to be up on the new changes. And so that's just one of the things that we always constantly like looking for, going out to see the stats and going out to see if there's any changes going on.

—Curriculum Facilitator

You kind of have to keep adjusting with what's trending right now in the kids' world. Like I said, the vaping [instead of smoking cigarettes]. I think you have to stay current on drug trends. What they are seeing on TikTok. So maybe more, definitely more about the social media aspects, because that's where kids get a lot of stuff.

—Curriculum Facilitator

Curriculum DEVELOPER Quotes about Adaptation

One question I know we've gotten is whether we can use [this program] in high school. Can we use this in 9th, 10th, 11th grades? Maybe in some communities, it could go 7, 8, 9, but that's as far as we'd really want to go. Like the Simon Says game. We piloted it with 7th and 8th graders but it doesn't work the same. They're just developmentally in a different place, especially by eighth grade. But in the sixth grade, it worked really differently.

—Curriculum Developer

There's some [implementors] that want to cut the storytelling. But that's part of the emotional connection [to the characters in the story], like observing what's happening and skill practice the way those stories were written. All of that is really important. So, we wouldn't allow them to drop big chunks of that content either.

—Curriculum Developer

I would hate to even know what proportion of deliveries of [curriculum], carve out the role-plays entirely. I know that we tried to deliver [curriculum] in juvenile halls. That was one of our follow-up projects. And people weren't allowed to move their chairs into smaller groups. It all just became a lecture and then there was really no point.

—Curriculum Developer

Role-plays [response to unacceptable adaptations question]. Do the role-plays. Sometimes people say, 'but we get to the end and we never have time for the role-plays.' And then I say, 'you blew it.' So, you got to integrate it, you got to do the role-plays. The intervention without the role-plays will never work.

—Curriculum Developer

Context Considerations

We define context as the circumstances and conditions in which an EBP is implemented. In addition to curriculum content, pedagogy, and implementation, the context in which a curriculum is delivered may also have an impact on its effectiveness.

Again, going back to our painting metaphor¹⁷⁴, the context in which a painting is displayed will affect its beauty. How well the frame complements the painting, the location of where the painting is hung, and the lighting are all contextual factors that can affect the appreciation of the art piece.



When our team conceptualized the CPIC study, we planned to identify core context components along with content, pedagogy, and implementation. As we dove into our data collection and analysis, we realized it would be difficult to identify core context components with Phase 1 data. While each curriculum study describes context variables such as learner demographics, setting, and geographic location, they were not all reported on consistently. We did not see repeating commonalities or themes for each curriculum. Keep in mind that *DTL/RTL* has only one study, *Love Notes* has one study (with three reports about that one study) *MPC* has two studies, *PHAT-AO* has two studies, and *RTR* has five studies (with 9 reports). All the studies had some minor adaptations, and others had significant adaptations.

See Table 36 for a summary and comparison of some contextual factors across CPIC curricula studies. Note that not all entries on this table contain parallel information. We report on what we were able to glean from each evaluation report. Evaluation reports differed on the implementation aspects they presented.

Contextual Factors to Consider

1. Funding sources and requirements
2. State and local policies about health education
3. Setting
4. Youth demographics and differences in cultural norms
5. Additional program components
6. Youth access to community services and resources
7. Implementing organization (and their partners) capacity
8. Community environment
9. Curriculum facilitators
10. Other contextual factors

¹⁷⁴ Photo credit: Image from Microsoft Version 16.88

Based on what we observed from our data sources (evaluation reports, curriculum manuals, and curriculum developer and facilitator interviews), we found several contextual factor themes that might affect participant outcomes. Below, find a list of 10 contextual factors (presented in no particular order) that curriculum implementors and evaluators may want to take into consideration before selecting, adapting, planning for implementation, and evaluating program effects. Again, we cannot say that these factors are core based on our analysis, but they are definitely worthy of consideration in making decisions about curriculum selection, adaptation, implementation, and evaluation.

1. **Funding sources and requirements.** Four of the five CPIC curricula were developed with funding from the National Institutes of Mental Health (NIMH). At the time that curriculum developers were awarded funding, HIV prevention was a priority for the NIMH (and other funders and government agencies). As such, these curricula focused on HIV prevention (although not exclusively on it). As HIV incidence waned and prevention and treatment approaches changed, the focus on adolescent HIV prevention funding also changed.

In 2010, the Obama Administration established the Office of Adolescent Health (OAH), which was later absorbed into the Office of Population Affairs (OPA). In 2010, OAH awarded a total of \$100 million annually for five years to 75 organizations to replicate existing adolescent sexual and reproductive health EBPs (Tier I) and to 27 organizations to develop and evaluate new innovative programs (Tier II).¹⁷⁵ Another five-year funding award was made available again in 2015. In 2020, a three-year award was made available. OAH and OPA encouraged applicants to be innovative in their approaches, use a positive youth development approach, be inclusive of diverse youth, be trauma-informed, and address outcomes in addition to teen pregnancy, HIV, and other STI prevention. As our field evolves and as the public health situation in our country changes, funders and policymakers often alter their strategies to accommodate needs better. Funder priorities and requirements and the current state of public health conditions are important contextual factors to consider when implementing EBPs.

2. **State and local policies about health education.** Each state publishes a set of standards or policies about health education, including sexuality education. School districts are required to follow these standards and policies. Some states publish standards that are aligned, consistent, or at least not contrary to EBP content and federal government recommendations from entities like OPA and the CDC, and others do not. For example, in South Carolina, information about “birth control is prohibited unless in the context of discussing the complications it may cause,” and in Florida and Illinois, schools are not

¹⁷⁵ Feldman Farb, A., & Margolis, A. L. (2016). The Teen Pregnancy Prevention Program (2010-2015): Synthesis of Impact Findings. *American journal of public health, 106*(S1), S9–S15. <https://doi.org/10.2105/AJPH.2016.303367>

required to teach sex education.¹⁷⁶ Several states do not require sex education curricula to discuss sexual orientation, gender identity, or sexual consent or assure medical accuracy. Local policies at the school district or school levels also play a factor. For example, we heard from interviewees that School Boards or School Principals might decide that certain EBP topics, like condom demonstrations, are not allowed. These decisions may be based on personal or community values, misinformation, or concern about parent reactions. State and local policies and how an EBP aligns with them are especially important contextual factors to consider when implementing EBPs in public schools. Documenting and interpreting the state and local policies that were in place during the original or replication studies was outside of the scope of the CPIC study.

3. **Setting.** In its original study, *MPC* was implemented over two Saturdays in a community-based venue by trained health educators. Replications of that curriculum may occur once a week in a school-based setting and be delivered by school teachers who may not have health education training or comfort in teaching the material. In a Missouri study of *MPC*, researchers found that community (conservative) resistance to what was considered a “comprehensive sex education curriculum” (*MPC*) and lack of “pre-existing recruitment networks” negatively affected class size, which in turn posed a challenge to implementing the program with fidelity.¹⁷⁷ Spacing between sessions may also impact curriculum effects, and learners may feel less comfortable participating with a school teacher who knows them as opposed to an outside facilitator.

We do not have sufficient data, however, to say if a particular setting or session spacing plan is core. During the COVID-19 pandemic, instruction on all subjects, including health education, took place virtually as opposed to in person. Adapting curriculum with virtual pedagogy may also have an impact on effects.^{178, 179} Most of the studies took place in school-based settings. One could deduce that “school-based settings” is a core context component; however, we are not comfortable making this claim without also seeing data describing outcomes for the same curricula implemented in out-of-school settings.

¹⁷⁶ SIECUS. Detailed Insights on U.S. Sex Education Policies. Retrieved on 12 August 2024 from: <https://siecus.org/siecus-state-profiles/>

¹⁷⁷ Cronin, J., Heflin, C., and Price, A., Teaching Teens about Sex: A fidelity assessment model for *Making Proud Choices, Evaluation and Program Planning* (2014), <http://dx.doi.org/10.1016/j.evalprogplan.2014.05.010>

¹⁷⁸ Cornwell, A. M., Williams-Farrelly, M., Cope-Barnes, D., Meagher, C. G., Hunt, A., & Ott, M. A. (2023). 142. The reach, implementation, and effectiveness of virtual sex education for youth in foster care. *The Journal of Adolescent Health: Official Publication of the Society for Adolescent Medicine*, 72(3), S81. doi:10.1016/j.jadohealth.2022.11.164

¹⁷⁹ Faccio, B., McClay, A., McConnell, K. *et al.* Comparing Virtual and In-Person Implementation of a School-Based Sexual Health Promotion Program in High Schools with Large Latino Populations. *Prev Sci* 24 (Suppl 2), 251–261 (2023). <https://doi.org/10.1007/s11121-023-01526-0>

4. **Youth demographics and differences in cultural norms.** Learners' sociodemographic characteristics such as age,¹⁸⁰ family income and education,¹⁸¹ reading level,¹⁸² race,¹⁸³ ethnicity,¹⁸⁴ religion, sex,^{185, 186} geographic location, relationship status, age of partner,¹⁸⁷ sexual experience,^{188, 189, 190} homelessness,¹⁹¹ and youth psychological makeup (e.g., high sensation seekers)¹⁹² may also affect curriculum implementation and effects. For example, in the original *PHAT-AO* study, learners were described as being 6th and 7th graders, African American, and living in an urban setting.¹⁹³ In a subsequent replication study conducted by Walker, *PHAT-AO* was also implemented with 6th and 7th graders in an urban setting, but 63% of participating youth reported being of Hispanic origin.¹⁹⁴ In the original study, 23% of youth reported having had sex at baseline compared to 9% in the Walker study. The Walker study did not have a significant impact on sexual initiation, but the original study did. It is not clear if the differences in the two context factors mentioned above made a difference in outcomes. In addition, other variables, such as curriculum adaptations, facilitator characteristics, etc., may have had an impact. In the original study of *RTR*, researchers did

¹⁸⁰ Kelsey, M., Layzer, J., Price, C., Juras, R., and Blocklin, M. "Reducing the Risk Short-Term Impact Report: Findings from the Teen Pregnancy Prevention Replication Study." Cambridge, MA: Abt Associates Inc., October 2016.

¹⁸¹ Barth, R. P., Fetro, J. V., Leland, N., & Volkan, K. (1992). Preventing adolescent pregnancy with social and cognitive skills. *Journal of adolescent research*, 7(2), 208–232.

¹⁸² Walker, E.M., Inoa, R., & Coppola, N. (2016). Evaluation of Promoting Health Among Teens Abstinence-Only Intervention in Yonkers, NY. Sametric Research. Princeton, N.J. 08540

¹⁸³ Ibid.

¹⁸⁴ Ibid.

¹⁸⁵ Coyle, K. K., Kirby, D. B., Marín, B. V., Gómez, C. A., & Gregorich, S. E. (2004). *Draw the line/respect the line*: a randomized trial of a middle school intervention to reduce sexual risk behaviors. *American journal of public health*, 94(5), 843–851.

¹⁸⁶ Kelsey, M., Layzer, J., Price, C., Juras, R., and Blocklin, M. "Reducing the Risk Short-Term Impact Report: Findings from the Teen Pregnancy Prevention Replication Study." Cambridge, MA: Abt Associates Inc., October 2016.

¹⁸⁷ Coyle, K. K., Kirby, D. B., Marín, B. V., Gómez, C. A., & Gregorich, S. E. (2004). *Draw the line/respect the line*: a randomized trial of a middle school intervention to reduce sexual risk behaviors. *American journal of public health*, 94(5), 843–851

¹⁸⁸ Cole, R., Neelan, T. S., Langan, A., Keating, B., Walzer, J., Asheer, S., & Zief, S. (2024). The Impact of *Making Proud Choices!* on Youth's Sexual Health Attitudes, Knowledge, and Behaviors. *The Journal of adolescent health: Official publication of the Society for Adolescent Medicine*, 74(4), 787–793.

¹⁸⁹ Kirby, D., Barth, R. P., Leland, N., & Fetro, J. V. (1991). Reducing the risk: impact of a new curriculum on sexual risk taking. *Family planning perspectives*, 23(6), 253–263

¹⁹⁰ Walker, E.M., Inoa, R., & Coppola, N. (2016). Evaluation of Promoting Health Among Teens Abstinence-Only Intervention in Yonkers, NY. Sametric Research. Princeton, N.J. 08540

¹⁹¹ Dymnicki, A., Trivits, L, Hoffman, C., & Osher, D. (August 2020). Advancing the use of Core Components of Effective Programs: Suggestions for Researchers Publishing Evaluation Results. U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation.

¹⁹² Zimmerman, R. S., Cupp, P. K., Donohew, L., Sionéan, C. K., Feist-Price, S., & Helme, D. (2008). Effects of a school-based, theory-driven HIV and pregnancy prevention curriculum. *Perspectives on sexual and reproductive health*, 40(1), 42–51.

¹⁹³ Jemmott, J. B., 3rd, Jemmott, L. S., & Fong, G. T. (1998). Abstinence and safer sex HIV risk-reduction interventions for African American adolescents: a randomized controlled trial. *JAMA*, 279(19), 1529–1536.

¹⁹⁴ Walker, E.M., Inoa, R., & Coppola, N. (2016). Evaluation of Promoting Health Among Teens Abstinence-Only Intervention in Yonkers, NY. Sametric Research. Princeton, N.J. 08540

not find a statistical difference in outcomes among youth of different races/ethnicities or grade levels.¹⁹⁵ When *RTR* was adapted for high sensation-seeking youth, it was not found to have significant changes in behavioral outcomes.¹⁹⁶

5. **Additional program components.** Another contextual variable that can impact an EBP's effects is if it is combined with additional program components. For example, the implementing organization may deliver an EBP curriculum along with other activities that complement it. During our interviews with facilitators, we heard about additional activities like school-wide health campaigns, referrals/links to service providers, parent education, additional curricula or programs, leadership retreats, contests, etc. In 2020, OPA's Funding Opportunity Announcement for EBP replication (Tier I) required grantees to not only select an EBP for implementation but also organize community mobilization events (e.g., community advisory group, youth leadership council, community mobilization events), youth-friendly linkages to health care providers, and engaging youth and families. Intuitively, these additional components could have an enhancing effect on outcomes, but we don't have the data to qualitatively demonstrate the additive effects, if any. Prior exposure to sexuality education programs and consumption of social media (with accurate or inaccurate information) related to sexuality may also affect outcomes.
6. **Youth access to community services and resources.** Youth living in areas where access to sexual and reproductive services is limited may have difficulty getting contraception, condoms, and STI testing and treatment if sexually active. While an EBP may be effective in reaching its learning objectives, behavior change like "increasing use of an effective contraceptive method if sexually active" may not be easy to achieve without access to youth-friendly services.

¹⁹⁵ Kirby, D., Barth, R. P., Leland, N., & Fetro, J. V. (1991). Reducing the risk: impact of a new curriculum on sexual risk taking. *Family planning perspectives*, 23(6), 253–263

¹⁹⁶ Zimmerman, R. S., Cupp, P. K., Donohew, L., Sionéan, C. K., Feist-Price, S., & Helme, D. (2008). Effects of a school-based, theory-driven HIV and pregnancy prevention curriculum. *Perspectives on sexual and reproductive health*, 40(1), 42–51.

7. **Implementing organizations' (and their partners') capacity.** Implementing organizations (and their partners) may differ with regard to capacity. For example, budgets, time, competing priorities, community networks, and an adequate number of trained personnel may affect program implementation (positively or negatively) and subsequent outcomes.¹⁹⁷ As described in [CIC#1](#) (and elsewhere),¹⁹⁸ working in an effective partnership with the school is a core implementation component.
8. **Community environment.** Community characteristics such as neighborhood poverty, violence, crime rates, employment opportunities, and a recent adverse community event (e.g., COVID-19, community unrest) may also affect curriculum implementation and outcomes.¹⁹⁹
9. **Curriculum facilitators.** As described in [CIC #2](#) and [CIC #3](#), facilitator characteristics and training impact curriculum delivery. The consistency of how implementing organizations select, onboard, train, and supervise facilitators varied across the five curricula in the written evaluation reports we reviewed and in interviews with curriculum developers and facilitators. It is unclear how variables like educator type (outside health educator, teachers, peer educator) and training robustness are associated, if at all, with outcomes.
10. **Other contextual factors.** Other contextual factors to consider in planning for implementation and interpreting research studies are implementation fidelity quality, green-, yellow-, and red-light adaptations, youth attendance, multi-year interventions, facilitator-to-teacher ratio, group size, youth engagement/satisfaction, use of incentives, and study design/limitations.

¹⁹⁷ Dymnicki, A., Trivits, L, Hoffman, C., & Osher, D. (August 2020). Advancing the use of Core Components of Effective Programs: Suggestions for Researchers Publishing Evaluation Results. U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation.

¹⁹⁸ Cole, R., Neelan, T. S., Langan, A., Keating, B., Walzer, J., Asheer, S., & Zief, S. (2024). The Impact of *Making Proud Choices!* on Youth's Sexual Health Attitudes, Knowledge, and Behaviors. *The Journal of adolescent health: Official publication of the Society for Adolescent Medicine*, 74(4), 787–793

¹⁹⁹ Dymnicki, A., Trivits, L, Hoffman, C., & Osher, D. (August 2020). Advancing the use of Core Components of Effective Programs: Suggestions for Researchers Publishing Evaluation Results. U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation.

Table 36: Comparison of Some Contextual Differences as Reported (or not) in CPIC Evaluation Reports

Learner Description	Setting	Geographic Location	Curriculum Delivery (See Table 56 for more information about Facilitator characteristics and training.)
DTL / RTL (Coyle, 2004)			
<ul style="list-style-type: none"> • 6th, 7th, and 8th grade • Mean age: 11.5 years • White: 16.5% • Black: 5.2% • Asian: 15.9% • Hispanic: 59.3 • Other: 3.1 	<ul style="list-style-type: none"> • Middle Schools 	<ul style="list-style-type: none"> • Small to midsized school districts in urban Northern California 	<p>Over three years</p> <ul style="list-style-type: none"> • 6th grade – 5 lessons • 7th grade – 7 lessons • 8th grade – 7 lessons
Love Notes Studies (Barbee et al., 2022; Barbie et al., 2016; Cunningham et al., 2016)			
<ul style="list-style-type: none"> • Mean age: 15.7 years • White: 7.2% • African American: 88% • Asian: .23% • Hispanic: 3.5% • Female: 63% • Ever had sex: 41.35 (RTR), 42.8 (LN) • Were “at high risk for teen pregnancy” • Youth affiliated with community-based organizations (faith-based agencies, community centers, child welfare serving agencies, refugee and immigrant serving agencies, and resource centers located in low- 	<ul style="list-style-type: none"> • Youth camps 	<ul style="list-style-type: none"> • Louisville, Kentucky (ranked 8th highest state for teen birth rates at the time of the study) 	<ul style="list-style-type: none"> • Two 10-hour sessions were held on two consecutive Saturdays at a camp • Adaptations made to both <i>Love Notes</i> and <i>RTR</i>. • 93% of youth assigned to <i>RTR</i> participated both in Day 1 and Day 2, and 94% of youth assigned to <i>LN</i> participated in all of Day 1 and Day 2. • In <i>LN</i>, 91% of activities in the curriculum were fully covered, and 4% were shortened or lengthened. In <i>RTR</i>, 93% of planned program activities were fully covered, and 4.5% were partially covered.

Table 36: Comparison of Some Contextual Differences as Reported (or not) in CPIC Evaluation Reports			
Learner Description	Setting	Geographic Location	Curriculum Delivery (See Table 56 for more information about Facilitator characteristics and training.)
<ul style="list-style-type: none"> performing schools in the parts of the city with the highest poverty rates) Some were foster or former foster youth 			
<i>Making Proud Choices (Jemmott, 1998)</i>			
<ul style="list-style-type: none"> Mean age: 11.8 years recruited from 6th and 7th grades from 3 middle schools Low-income (al) African American (nearly all) 	<ul style="list-style-type: none"> Unclear 	<ul style="list-style-type: none"> Philadelphia, PA 	<ul style="list-style-type: none"> Groups of 6-8 students Delivered over two consecutive Saturdays
<i>Making Proud Choices (Cole et al., 2022)</i>			
<ul style="list-style-type: none"> Mean age: 15.6 years Most 9th and 10th graders Female: 53% Black: 80% White: 9% Hispanic: 4% 	<ul style="list-style-type: none"> 15 high schools across 4 cities where the teen birth rate and/or STI rate was markedly higher than the national average 	<ul style="list-style-type: none"> Mobile, AL Detroit, MI Cincinnati, OH St. Louis, MO 	<ul style="list-style-type: none"> Implementation data suggest that health educators delivered the program as intended with high quality, and the majority of youth received a large dose of the program.

Table 36: Comparison of Some Contextual Differences as Reported (or not) in CPIC Evaluation Reports			
Learner Description	Setting	Geographic Location	Curriculum Delivery (See Table 56 for more information about Facilitator characteristics and training.)
<i>Promoting Health Among Teens – Abstinence Only – (Jemmott et al., 2010)</i>			
<ul style="list-style-type: none"> • Mean age was 12.2 years • African American students in grades 6 and 7 from 4 public middle schools that serve low-income African American communities • About 33.7% lived with both of their parents. • About 23.4% reported having experienced coitus at least once 	<ul style="list-style-type: none"> • Public middle school classrooms 	<ul style="list-style-type: none"> • Philadelphia, PA 	<ul style="list-style-type: none"> • Delivered on Saturdays • In addition to the curriculum, participants were also randomly assigned to receive or not receive an intervention-maintenance program tailored to their intervention consisting of two 3-hour booster intervention sessions (6 weeks and 3 months after initial intervention sessions), 6 issues of a newsletter, and six 20-minute 1-on-1 counseling sessions during a 21-month period with their original facilitator.
<i>Promoting Health Among Teens – Abstinence Only (Walker et al., 2016)</i>			
<ul style="list-style-type: none"> • Mean age: 11.5 • 6th and 7th graders • Female: 53% • Non-Hispanic Black: 19.7% • Hispanic: 66.2% • White: 7.2% • At baseline, 1,246 youth out of 1,319 reported being sexually inexperienced. • Proportion of youth that received 75% or greater of all modules was 82.3% 	<ul style="list-style-type: none"> • Public middle school classrooms 	<ul style="list-style-type: none"> • Yonkers, NY • Delivered in sections of the city with the highest incidence of births to teens. 	<ul style="list-style-type: none"> • The program was intended to be delivered on 2 consecutive Saturdays at one of the 11 participating school or community sites. • Students received a t-shirt and a \$40 Barnes and Noble gift card.

Table 36: Comparison of Some Contextual Differences as Reported (or not) in CPIC Evaluation Reports

Learner Description	Setting	Geographic Location	Curriculum Delivery (See Table 56 for more information about Facilitator characteristics and training.)
Reducing the Risk (Kirby et al., 1991 and Barth et al., 1992)			
<ul style="list-style-type: none"> • 9th graders: 24% • 10th graders: 55% • 11th graders: 11% • 12th graders: 9% • White: 61% • Latinos: 21% • Asians: 9% • Blacks: 2% • Other: 6% • Not highly religious (23% went to religious services once a week) • Live with both parents: 66% • Ever had sex: 38% 	<ul style="list-style-type: none"> • 13 high schools in 10 school districts 	<ul style="list-style-type: none"> • Urban, suburban, rural communities 	<ul style="list-style-type: none"> • <i>RTR</i> was part of a more comprehensive required 10th-grade health education class. • Most teachers scored well on the measures: 95% followed the lesson plan, completed the activities, and gave accurate answers to students' questions "most of the time" or "all of the time"; over 85 percent seemed comfortable teaching the curriculum and appeared adequately prepared.
Reducing the Risk (Zimmerman, 2008)			
<ul style="list-style-type: none"> • Most students were between 14 and 15 years old. • Almost 40% of the sample reported being sexually experienced • High sensation-seeking and impulsive youth. • White: 44.6% • Black: 41.4% • Other: 14.0% 	<ul style="list-style-type: none"> • High schools 	<ul style="list-style-type: none"> • Cleveland, OH • Louisville, KY 	<ul style="list-style-type: none"> • Learners were paid an incentive (\$75 total) • The curriculum was modified to make it more successful at changing the behavior of high sensation-seeking and impulsive youth. • Main classroom interventions occurred during ninth grade, and a booster classroom intervention occurred during 10th grade.

Table 36: Comparison of Some Contextual Differences as Reported (or not) in CPIC Evaluation Reports

Learner Description	Setting	Geographic Location	Curriculum Delivery (See Table 56 for more information about Facilitator characteristics and training.)
Reducing the Risk (Reyna and Mills, 2014)			
<ul style="list-style-type: none"> • Mean age: 15.9 • Female: 62% • Hispanic: 19.2% • African American: 26.1% • Caucasian: 42.3% • Receives free lunch: 30% • % ever had sex: 35.1% • Youth were recruited from high schools and local youth organizations 	<ul style="list-style-type: none"> • School 	<ul style="list-style-type: none"> • Southern Arizona • Northern Texas • Central New York 	<ul style="list-style-type: none"> • The curriculum was adapted to include gist messages about core information throughout sessions (based on Fuzzy Trace Theory). • Spanish versions of the curriculum were made available. • Students received a total of \$165 for completing all evaluation surveys. • Typical short schedule: meeting for 2 hours eight weekdays, after school hours, within two weeks. Typical long schedule: meeting for 2 hours each on three weekdays, after school hours, for three weeks. The average duration during which the 16-hour interventions were delivered was 15.2 days; • 83.7% of participants received their full 16-hour intervention in 21 (or fewer) days.
Reducing the Risk (Kelsey et a, 2016; Kelsey et al., 2018)			
<p>Overall sample:</p> <ul style="list-style-type: none"> • Mean: 14.5 years • Black: 35.9 • Hispanic: 43.8 • White: 10.7 • Other: 9.6 • Female: 49.6 	<ul style="list-style-type: none"> • Public schools: high schools, junior high schools, middle schools 	<ul style="list-style-type: none"> • St. Louis, MO • Austin, TX • San Diego, CA 	<ul style="list-style-type: none"> • Some delivered during 90-minute class periods, others in 45-minute class periods

Table 36: Comparison of Some Contextual Differences as Reported (or not) in CPIC Evaluation Reports			
Learner Description	Setting	Geographic Location	Curriculum Delivery (See Table 56 for more information about Facilitator characteristics and training.)
<ul style="list-style-type: none"> • One sample was almost entirely Black, whereas Black students comprised less than 10 % of the sample in the two other sites. • By contrast, Hispanic students comprised about two-thirds of the sample in two sites compared with fewer than 3% at another site. • Ever sexually active: 32%. 			
<i>Reducing the Risk (Barbee et al., 2022; Barbie et al., 2016; and Cunningham et al., 2016)</i>			
<ul style="list-style-type: none"> • See entry for <i>Love Notes</i> (Barbee et al., 2022; Barbie et al., 2016; Cunningham et al., 2016) above. 			

Health Equity, Inclusion, and Access to Services

As the field of ASRH evolves and improves over the decades, we have learned more and more about adolescent needs, challenges, and individual, social, environmental, and structural factors that affect their decision-making, health, and well-being. Three such factors that have gained increasing attention are how interventions address health equity, the inclusion of diverse youth, and access to and use of services. In fact, these factors were a theme throughout the [OPA funding opportunity announcement](#) (released in 2022) for the TPP research grant that made the CPIC study possible. These factors were not necessarily at the forefront of policymakers, funders, and developers at the time when the CPIC curricula were being developed. Nevertheless, we examined the curriculum with a lens to learn about how they addressed the factors, if at all. Because of limited data, these factors cannot be determined to be “core” to the curriculum. We can only describe the observations made about each of them.

In this section, we answer our fourth CPIC Study question.

4. How do the curricula address health equity, inclusion, and access to services?

Health Equity

We define health equity as having personal agency and fair access to resources and opportunities that are needed to achieve the best possible health and well-being. To achieve health equity, society must remove economic, social, environmental, institutional, and other barriers, as well as build individual, family, and community agency.²⁰⁰

The words “health equity” were not used in the CPIC curricula manuals, evaluation reports, or other documents about the curricula. Although we read our definition of health equity to interviewees, it was our impression that not all developers and facilitators were versed in health equity or knew what it meant in practice (as opposed to an abstract definition) and struggled a bit to answer our questions about health equity. It is also true that at least two of the developers shared that they were national experts on health equity. Some interviewees told us that in and of itself, implementing a sexuality education program in areas that need it most is a form of health equity. Some also told us that broad health equity has to take into account the whole community and social determinants of health. A curriculum alone cannot achieve health equity for everyone in the community (e.g., schools) and for all services and resources they may need to achieve good health.

²⁰⁰ Our definition of health equity is adapted from [ETR, Healthy People 2030, Centers for Disease Control and Prevention](#), and the [World Health Organization](#) definitions.

In our analysis of the curricula, interview transcripts, and evaluation reports, we identified several strategies (sometimes involving adaptations) that curriculum developers used to create equity and inclusion, especially with regard to participating youths' cultural norms, gender, and sexual orientation. While the terminology of "health equity" and "inclusion" may not have been used as prevalently as they are now, we believe these strategies work towards these goals.

Possible Strategies for Strengthening Health Equity

1. Conducting Formative Research
2. Crafting Intentional Messaging
3. Being Inclusive
4. Addressing Youth Norms and Acknowledging Identities
 - Addressing Inequitable Gender Norms
 - Being Inclusive of Sexual Diversity
 - Learning about Youth Culture
 - Designing Materials that Reflect Youth Culture
 - Including Content that Reflects Youth Culture
 - Making Adaptations
5. Creating Comfort

1. **Formative Research.** All the CPIC curriculum teams conducted formative research (e.g., focus groups with youth, interviews with adults who care for youth, review of data sets and literature available at the time, hanging out with youth in places they frequent, etc.) about the youth they intended to serve with their curriculum. Some also conducted pretesting of activities to get youth feedback on them. Developers intentionally designed curricula to address attitudes, beliefs, norms, and experiences they heard from youth. (See below for more information about how formative research was applied in [Strategy 4](#).)
2. **Crafting Intentional Messaging.** Both *MPC* and *PHAT-AO* were originally designed for African American youth. The developers crafted a message that would appeal to African American youth and threaded it throughout the curriculum. On page 5 in the *MPC* curriculum manual, it states: The entire curriculum incorporates the *Making Proud Choices! Be Proud! Be Responsible!* theme designed to encourage the participants *to be proud of themselves, their families, and their community and to behave responsibly for everyone's sake*. Variations of the message were used depending on the topic addressed being addressed in a lesson or activity. For example, in Module 1, Activity F of *MPC*, the facilitator summarizes the activity by saying:

You can achieve your goals with a little planning and organizing and by making proud and responsible decisions. Reaching your goals will make you and the people you care about proud. Remember that you are capable of doing whatever you put your mind to.

3. **Being Inclusive. [Core Implementation Component # 3](#):** "Create a Supportive and Inclusive Environment." Much of the discussion about this core implementation component, as well as examples, can also apply to health equity. Our data sources show that all CPIC curricula encourage adaptations that make the curriculum more inclusive to all youth and provide facilitators with guidance on how to be inclusive/supportive of youth who identify as LGBTQ+, youth who may have witnessed or experienced violence, special needs youth,

youth with low literacy, and youth who are not English speakers. With the exception of *PHAT-AO*, which emphasizes abstinence only, all CPIC curricula address the needs of both sexually active and nonactive youth. None were found to have judgmental or shaming language about youth who are having sex. None “tell” youth about whether or not they should have sex, but rather explain possible consequences and give them the knowledge and skills to make healthy and informed decisions.

Having a curriculum with norms that there are safe ways to achieve your goals other than with abstinence. Whether you've had sex before or not, there are still ways to manage these challenging environments to avoid unwanted sexual intercourse in the future. The flexibility then that you have by having these different options is one that would work across different kinds of schools with different age kids with different levels of sexual activity... The dual focus definitely enhances access to avoiding pregnancy or infections.

—Curriculum Developer

4. **Addressing Youth Norms and Acknowledging Identities.** All the curriculum developers discussed using formative research and their years of professional experience in working with the youth to address common cultural norms (both protective and risk) and intentionally addressing those norms in the curriculum.
 - **Addressing Inequitable Gender Norms.** Addressing gender inequitable attitudes and norms and how they can affect power dynamics in a relationship and sexual behavior was explicitly found in three curricula – *DTL/RTL*, *Love Notes*, and *PHAT-AO*. For example, *Loves Notes* includes several activities about the important role fatherhood has, men’s engagement and responsibility in preventing pregnancy and STIs, as well as the role power plays in relationship dynamics, in particular as it relates to abuse in relationships. In *DTL/RTL* Grade 7, Lesson 1, learners are asked about the different pressures and expectations girls and boys experience when it comes to sex. In *PHAT-AO*, Module 3, learners are asked to agree or disagree with a set of attitude statements about sex and then discuss their opinions. One of these statements is, “Guys who don’t have or have never had sex are ‘wimpy’ or strange.”

Gender roles were the other piece we had learned a lot about through our work [previous research]. We had learned a lot about how women really just had very little information or very little sense that it was okay to learn about their own sexuality. And of course, the machismo, you know, how men were making decisions that were putting women at risk. I think also the machismo affects how to respect [personal boundaries] and how to show that respect and back off without trying to make someone feel guilty and try to pressure them.

—Curriculum Developer

Young men are navigating the influence of what it means for them to be a man and what they need to be doing, and how do you navigate that and help them navigate that? So that was another piece in terms of thinking about that [respecting personal boundaries].

—Curriculum Developer

- **Being Inclusive of Sexual Diversity.** All the curricula use gender-neutral language about romantic relationships or gender-neutral names in some of their activities.²⁰¹ For example, In *Love Notes*, Lesson 11, learners are asked several discussion questions after watching a video, with one being: *Now let's think about all these questions from the angle of an LGBTQ couple. How can the same dynamics play out?* There is also instruction in some of the curricula about being aware of LGBTQ+ youth in the classroom. In *RTR*, a teacher's note in Class 4 about conducting refusal skill role-plays states: *Throughout the role-play activities, students will be in a position where they must role-play sexual pressure situations with classmates of both a different and the same gender. This may be awkward for teens who are sensitive to the suggestion of same-sex romance, for teens who identify as gay or lesbian, or for teens who are transgender or gender nonconforming. It's important to address this situation directly and proactively.* The teacher's note goes on to describe three tips.
- **Learning about Youth Culture.** Several curriculum facilitators talked about learning about the youth they serve and doing their best to understand how cultural norms may affect their attitudes and behaviors. Curriculum developers certainly learned about the youth they intended to serve from formative research activities.

²⁰¹ This statement applies to the curriculum versions we studied, which were the latest at the time. We are not sure if it applies to earlier editions of the curricula.

I would watch facial expressions. I would watch way they do things and their personality and how they hang with their friends, how they talk. So, at some point I would take their slang language, you know, code switch and go into saying it in their terms... And I have a lot of cultural background so, I know certain cultures and how they do things, so that helps a lot as well. The Hispanic culture, I have a background of that. And I have a background of the Haitian culture.

—Curriculum Facilitator

We [the curriculum development team] talked a lot about Latino cultural influences on behavior, particularly looking at respect and family, and how they interacted with skill development... We wondered how could we develop an intervention that would incorporate those Latino-based concepts that we had learned through Latino nationwide studies... That cultural thread, that was really core as well thinking about how does that play out in these very mixed demographically based schools. It was a gap at that time.

—Curriculum Developer

In the Barbee et al. study of *Love Notes*,²⁰² the authors remark: “Both hopelessness and higher levels of experience with discrimination have been associated with higher rates of teen pregnancy. While growing up in poverty, unsafe environments, and feeling unable to advance in the larger society should be addressed through policy and economic opportunities, we believe it is useful for TPP facilitators to be aware of these variables and to inform participants of the contextual variables influencing their feelings, behavior, and decisions.”

- **Designing Materials that Reflect Youth Culture.** Several curricula intentionally chose materials in which youth could see themselves reflected. For example, *DTL/RTL* used common Spanish proverbs to engage youth at the beginning of some sessions, used common Spanish names in role-plays and stories, and made worksheets and handouts available in both English and Spanish. *Love Notes* chose videos, song lyrics, and social media that they believed would appeal to the youth they served. The developers of *MPC* and *PHAT-AO* did the same with the videos they chose for both curricula.
- **Including Content that Reflects Youth Culture.** Based on formative research, *RTR* developers found that instruction and role-play about assertive communication did not resonate with some Hispanic girls. “Whatever cultural norm there was, their [Hispanic girls] ability to be assertive with their partner was not as robust as it would be for Black or White girls.” In response to this, the team developed instruction and role-plays on the use of delay tactics as a way to help youth get out of sexual risk situations.

²⁰² Barbee, A. P., Cunningham, M. R., Antle, B. F., & Langley, C. N. (2022). Impact of a relationship-based intervention, *Love Notes*, on teen pregnancy prevention. *Family Relations*, 72(5), 2569–2588.

- **Making Adaptations.** [Core Implementation Component #5](#): “Are implemented with reasonable fidelity and apply “green light” adaptations (when needed).” As described under CIC #5, there are many reasons why curriculum implementors may need to make adaptations. One of these reasons may be to make the curriculum resonate better with the learners being served to make it more inclusive and to address health equity.

Creating Comfort. Creating a learning environment that feels safe, where learners feel seen and heard, and where facilitators are flexible was another theme linked to creating health equity. More about this theme is also found in [Core Implementation Component #4](#): “Support a Supportive and Inclusive Learning Environment.”

So, we are talking about equity. Everybody comes into the same room and everybody gets the same kind of treatment. If you have difficulty reading, then the game can be done another kind of way. That's why we do the activity in so many kinds of ways because students have different ways of learning. So, to be equitable, you make sure that you create stuff that the young people can do.

—Curriculum Developer

Inclusion

[Core Implementation Component #3](#): “Create a Supportive and Inclusive Environment.” How Inclusion is addressed is described under CIC #3. At the time of conceptualizing our study, we did not know that inclusivity would surface as a core implementation component.

Access to Services

The CPIC curricula are limited in what they do to address access to services. In *RTR*, Class 8, learners are given a homework assignment to visit or call a reproductive health care clinic and find out information about the services it provides with a list of guiding questions. Alternatives to this homework assignment are provided, including a guest speaker from a family planning clinic or a field trip. In Class 7, learners are given a homework assignment to visit a store or search online to learn about condoms. They are given a “Shopping Information Form” with a set of questions to answer about condoms. Student assessment data collected by the original *RTR* research team indicated that 52% had visited a store to gather information about condoms, and

only 25% visited a clinic.²⁰³ Other *RTR* evaluation reports did not report on the number of youth completing these activities. It's unclear whether or not these two homework activities can be considered a core component.

Other curricula provide lists of community services/resources, websites, and hotlines and encourage youth to talk to facilitators if they have questions about services. Some curriculum facilitators spoke about having a formally prepared referral list (for in-school and community services), but these activities were part of the greater package of interventions the implementing organizations were offering – not part of the curriculum instruction.

I know for TPP [OPA-funded project] we have a referral guide. So, we have different referral programs, throughout [name of county] and we look for services that offer. But I know for me personally, I try to get to know the counselor that is there at the school. You just never know when you may need a trusted counselor...Just try to get very familiar with them so I can text them, Hey, can you come into the classroom 101 and they can come into the classroom, because some of them [learners] don't even know that they have a trust counselor and who the trust counselor is.

—Curriculum Facilitator

²⁰³ Kirby, D., Barth, R. P., Leland, N., & Fetro, J. V. (1991). Reducing the risk: impact of a new curriculum on sexual risk-taking. *Family planning perspectives*, 23(6), 253–263.

Phase 2 Methods and Results

Introduction

Phase 2 used a deductive quantitative research approach to test some of the 22 core components that surfaced during Phase 1. In Phase 2, we utilized implementation and survey data collected from 2010-2023 from youth participants who received one of the five evidence-based teen pregnancy prevention curricula to statistically test whether specific core content components are predictors of sexual intentions after programming. The data was divided into three grant cycles:

- Grant Cycle #1 (2010-2015)
- Grant Cycle #2 (2015-2020)
- Grant Cycle #3 (2020-2023)

To determine which Phase 1 core components to test in Phase 2, we created a core component-survey construct alignment matrix (see **Table 38**). The survey constructs were derived from the scales included in AMTC youth surveys. These constructs served as proxy measures for six core content components, which were strongly aligned with the constructs. In addition to the core content components, Phase 2 also assessed the role of geographical location and curriculum differences (two contextual variables) and how these variables influence sexual intentions after programming. Our data did not have constructs to assess the role of pedagogical and implementation core components identified in Phase 1 and how they influence outcomes.

Prior to finalizing the alignment, a correlation matrix among all available variables was used to determine the associations among these variables. These results are presented in **Table 37**. The correlation coefficients in the table indicate that there was moderate correlation between most of the variables. For this reason, no variables were eliminated. The variables in the table highlighted in orange were **not** available for Grant Cycle #3, while those in yellow were **only** available for Grant Cycle #3. This is important to note because it has implications for which variables we analyzed.

Table 37: Correlation Matrix for Independent and Dependent Variables

	1	2	3	4	5	6	7	8	9	10
1. Sexual Intentions after programming (Dependent Variable)	1									
2. Knowledge of Sexual Risks	.35	1								
3. Communication with Partner	.61	.46	1							
4. Self-Efficacy	.43	.41	NA	1						
5. Healthy Relationships	NA	.21	NA	.39	1					
6. Unhealthy Relationships	NA	.24	NA	.55	.38	1				
7. Goal Attainment	NA	.22	NA	.50	.45	.27	1			
8. Negative Peer Influence	NA	.11	NA	.39	.23	.42	.29	1		
9. Conflict Resolution	NA	.27	NA	.56	.56	.40	.42	.28	1	
10. Perceptions of How to Build an Intimate Relationship	NA	.11	NA	.45	.01	.19	.06	.28	NA	1

Then, four research team members, including the Co-PI, independently matched each of the constructs available in the data set to the core content components found in Phase 1 of the study. The group met to discuss discrepancies and reach a consensus on the identified construct. The final associations are illustrated in **Table 38**. Although the initial alignment table showed alignment across all six core components, we were able to conduct regression analysis on only three core components due to data availability—these are the three core components shaded in dark green. Only descriptive analyses were conducted for those shaded with light green.

The first three core content components, which describe program change pathways, were not included in the table because they describe change pathways, as opposed to constructs. Core content components 1-3 were, therefore, not included in the analysis.

Table 38: Alignment Between Phase I Core Content Components and Constructs

Table 38: Alignment Between Phase I Core Content Components and Constructs						
	Core Content Components					
Constructs Derived from Youth Pre- and Post-Surveys	CCC Finding #4: Present basic knowledge about sexual and reproductive health as a foundation on which to build learners' understanding of pregnancy and HIV/STI prevention	CCC Finding #5: Facilitate processes where learners can envision and plan healthy futures (short- and long-term)	CCC Finding #6: Teach about multiple facets of healthy relationships	CCC Finding #7: Teach about multiple facets of respectful partner communication , including benefits and skills	CCC Finding #8: Build learners' skills to set and keep personal limits related to sexual activity	CCC Finding #9: Strengthen learners' personal agency to make healthy and autonomous decisions
1. Knowledge of the risks of engaging in sexual activity	Regression Analysis					
2. Partner Communication defined as the confidence in the ability to communicate with a partner or other adult about engaging in sexual activity				Regression Analysis		
3. Self-efficacy defined as confidence in the ability to remain abstinent until ready to engage in sexual activity and to use birth control if youth decide to engage in sexual activity						Regression Analysis
4. Knowledge about healthy relationships and confidence in applying that knowledge			Descriptive Analyses only			
5. Perceptions of what constitutes an unhealthy or abusive relationship			Descriptive Analyses only			

Table 38: Alignment Between Phase I Core Content Components and Constructs

Table 38: Alignment Between Phase I Core Content Components and Constructs						
	Core Content Components					
Constructs Derived from Youth Pre- and Post-Surveys	CCC Finding #4: Present basic knowledge about sexual and reproductive health as a foundation on which to build learners' understanding of pregnancy and HIV/STI prevention	CCC Finding #5: Facilitate processes where learners can envision and plan healthy futures (short- and long-term)	CCC Finding #6: Teach about multiple facets of healthy relationships	CCC Finding #7: Teach about multiple facets of respectful partner communication , including benefits and skills	CCC Finding #8: Build learners' skills to set and keep personal limits related to sexual activity	CCC Finding #9: Strengthen learners' personal agency to make healthy and autonomous decisions
6. Goal attainment defined as the determination to set and achieve goals and recognize that sex or pregnancy can interfere with those goals		Descriptive Analyses only				
7. Negative peer influence defined as the willingness to resist negative peer pressure					Descriptive Analyses only	
8. Conflict Resolution defined as the ability to resolve conflicts with a partner in a healthy manner				Descriptive Analyses only		
9. Perceptions of how to build an intimate relationship			Descriptive Analyses only			

Data Sources

Phase 2 of this study utilized data from two sources compiled by AMTC: 1) Survey data, which is individual participant responses to pre- and post-surveys grouped by its clients (program providers) collected in Alchemer, and 2) OPTS data, which is individual participant enrollment data from the Online Participant Tracking System (OPTS). The enrollment data included information about student demographics, curriculum received, attendance, and name of classroom instructor. Survey data and enrollment data were merged, creating a master database organized conceptually by 15 blocks, each reflecting the variable collected for a particular grant cycle from a particular program partner. The grant cycles available included 2010-2015 (Grant Cycle #1), 2015-2020 (Grant Cycle #2), and 2020-2023 (Grant Cycle #3).

Table 39 presents the match rates for the 15 unique datasets of pre- and post-survey responses merged with enrollment data. As the table illustrates, there were four major program providers, with a total of 34,075 participants in the survey data, which consisted of participant responses to pre- and post-surveys. Survey participants from Grant Cycle #1 could be matched to their enrollment data using a pre-assigned identification number available in both data sources. Over 99% percent of these data were matched. Those that could not be matched came from a small number (less than 1%) of surveys collected from participants who could not be identified in the enrollment database. In the following two grant cycles, when data collection moved to an online format, a combination of demographic variables was used to create a pseudo-ID. The variables used included:

1. Participant initials
2. Birth month
3. Birth dates
4. Sex at birth
5. Client site
6. Partner site
7. Survey administration date

These datasets had lower match rates, ranging from 48.48% to 89.78%, as shown in **Table 39**. Because of multiple duplicate IDs, it was challenging to find a unique match. Across the three grant cycles, 31,222 participants of the 34,075 participants in the original survey database were matched to enrollment and implementation records. This reflects a 91.6% overall match rate.

Table 39: Overall Sample Available for Analyses						
Grant Cycle	Client	Curriculum	Number of Survey Items per Record	Number of Participant Surveys (Pre and Post)	Number Matched to Enrollment Data	Match Rate
2010 - 2015	1	RTR	130	1,007	1,003	99.6%
	1	PHAT AO	164	1,814	1,798	99.1%
	2	DTL, RTR	152	6,649	6,546	98.5%
	3	RTR	166	1,383	1,381	99.9%
	3	RTR	180	3,545	3,539	99.8%
	4	RTR	190	3,293	3,289	99.9%
2015 - 2020	1	MPC	225	997	580	58.2%
	2	DTL, LN	225	4,786	4,086	85.4%
	3	RTR, LN	234	756	407	53.8%
	4	MPC, RTR, LN	220	1,890	1,599	84.6%
2020 - 2023	2	LN	173	623	539	86.5%
	2	DTL, LN	205	4,368	3,882	88.9%
	3	LN	170	33	16	48.5%
	3	LN	205	1,297	1,090	84.0%
	4	LN, RTR	205	1,634	1,467	89.8%
OVERALL			2,844	34,075	31,222	91.6%

Once the two data sources were merged, 3,212 participants were eliminated from this final sample because they participated in a program that did not use one of the five curricula explored in this study. This reduced the sample further to 28,010. Finally, 110 participants who were missing attendance records and 6 who used a non-TPP program were excluded, reducing the final sample available for analysis to 27,894.

Measurement

The data available for analysis for each client was based on what each client wanted to learn through their evaluation—This is why the data can be thought of conceptually as being in 15 blocks, reflecting 15 different but related databases. AMTC clients chose the survey items they wished to use for their evaluation, selecting them from a bank of scales developed and curated by AMTC. Some clients decided to measure multiple constructs of interest, while others chose only a few. Based on the data that was available for analysis in Grant Cycles #1 and #2, only three of the constructs that reflected core components were selected by all clients:

1. Knowledge of Sexual Risk
2. Communication with a Partner
3. Self-efficacy to Remain Abstinent

For Grant Cycle #3, two of these variables were available: 1) Knowledge of Sexual Risk and 2) Self-Efficacy to Remain Abstinent. Communication with a Partner and the dependent variable, Sexual Intentions, were not available. However, data was collected on other variables (e.g., Goal-setting, Knowledge of Healthy Relationships, etc.) in Grant Cycle #3.

Dependent Variable

As the primary goal of these programs was to reduce risky sexual behaviors, **sexual intentions** after programming was used as the sole dependent variable. The reliability of this scale was approximately 0.83. **Higher scores implied less risky sexual behavior and a lower likelihood of having sex.** However, this item was only used in the Grant Cycles #1 and #2. Therefore, only data from Grant Cycles #1 and #2 were used in the regression analyses, and we only provide descriptives on the data from Grant Cycle #3. Please note that the response categories differed for Grant Cycle #1 and Grant Cycle #2.

The sexual intentions scale was comprised of five items:

1. I will only have sex if a condom is used.
2. I will only have sex if contraception (birth control) is used.
3. I will only have sex if I am in a committed relationship.
4. I will only have sex if I am in love with my partner.
5. I will only have sex if I feel ready to have sex.

These responses were coded for analysis so that the highest score would reflect the most desirable outcome. For example, the coding used in the analysis for that dependent variable in Grant Cycle #1 is:

- 1 = Strongly Disagree
- 2 = Disagree
- 3 = Agree
- 4 = Strongly Agree

For Grant Cycle #2, the question stem was the same, but the response categories were on a 5-point Likert scale to include a neutral category. For this reason, combining data from the two grant cycles was not possible. Analysis was conducted separately for Grant Cycle #1 and Grant Cycle #2.

For Grant Cycle #3, the five-item intentions scale was replaced with the item “If I have sexual intercourse tomorrow, I would do the following.”

- 1 = Have unprotected sex.
- 2 = Use only birth control.
- 3 = Use only a condom.
- 4 = Use a condom and birth control.

This item was not analyzed as a dependent variable because it was only added as a validity item to the survey.

Independent Variables

The three independent variables measured across program partners using a common set of items selected by AMTC and additional items from the item pool selected by the program partners are listed below. Since AMTC clients selected different items from the pool of scales, the list of individual items for each variable is lengthy. Therefore, it is only possible to provide an example item from each variable.

1. **Knowledge of Sexual Risk.** An example item from this scale is: *If someone has sex, just one time, they could get a sexually transmitted infection/disease.*
2. **Communication with a Partner.** An example item from this scale is: *How confident are you that you could talk with your partner about obtaining birth control?*
3. **Self-efficacy to Remain Abstinent.** An example item from this scale is: *How confident are you that you could stick to your decision to remain abstinent from having sex?*

For all variables, response options that were negative were recoded so that higher scores on these variables all reflect more positive outcomes.

In looking back at **Table 38**, we can see how data from the available independent variables aligned as proxies with core content components found in Phase 1.

1. The Phase 2 variable **“Knowledge of Sexual Risk”** was used as a proxy measure for Phase 1 **“CCC Finding #4: Present basic knowledge about sexual and reproductive health as a foundation on which to build learners’ understanding of pregnancy and HIV/STI prevention.”**
2. The Phase 2 variable **“Communication with a Partner”** was used as a proxy measure for Phase 1 **“CCC Finding #7: Teach about multiple facets of respectful partner communication, including benefits and skills.”**
3. The Phase 2 variable **“Self-efficacy to Remain Abstinent”** was used as a proxy measure for Phase 1 CCC Finding #9: Strengthen learners’ **personal agency** to make healthy and autonomous decisions.

For consistency and brevity, Phase 2 findings are reported using variable names as opposed to their corresponding core content components.

Please note that the variables “knowledge about healthy relationships,” “perceptions of unhealthy relationships,” “goal attainment,” “negative peer influence,” “conflict resolution,” and “perceptions of how to build an intimate relationship” were not analyzed as independent variables because the grant cycle in which these variables were collected did not collect data on intentions or behavioral outcomes.

Covariates

Several variables were used as covariates, as they were hypothesized to impact sexual intentions. **Curriculum Title**, which is collinear with client (i.e., implementation site) and participant race (since most clients serve a relatively racially homogeneous group of students). Variability in this categorical covariate would reflect programmatic differences that may impact outcomes. In addition, to control age differences, the analyses were conducted separately for high school and middle school youth, and **grade** was used as a covariate. Finally, **gender** was used as a covariate as this variable has been shown to interact with outcomes in previous local evaluation reports for program evaluations conducted by AMTC.

Table 40 depicts the final data sets available for analyses for the first two grant cycles. The **green font** indicates the only high school youth available in the data obtained in Grant Cycle #1. Redundant analyses with small sample sizes were not considered and are illustrated in **Table 40** in **red font**.

Analyses

Descriptive analyses for all dependent and independent variables were computed and reviewed. Then, a series of multiple linear regression models were fitted to the data sets corresponding to Grant Cycles #1 and #2. All models predicted a participant's score on the survey item that measured sexual intentions. In Model 1, the curriculum title (which is colinear with client and race) was used as a dummy-coded predictor variable. This model tests whether different curricula/clients/races resulted in a statistically significant difference in participants' sexual intentions after completing the program. It also provides an effect size metric, R^2 , which estimates how much variability in the dependent variable, sexual intentions, can be explained (or predicted) by the different curricula/clients/races.

Model 2, nested within Model 1, added baseline sexual intentions (before participating in the program), sex at birth, and grade. Since this model is nested within the first, the change in R^2 indicates how much additional variability can be explained (or predicted) by the additional variables added to the model.

Finally, Model 3, nested within Model 2, included the three variables reflecting core components: "knowledge of sexual risk," "communication with a partner," and "self-efficacy to remain abstinent." Since this model is nested within the second, the change in R^2 indicates how much additional variability can be explained (or predicted) by the additional variables added to the model, which reflect three of the core content components identified in Phase 1 of this study.

Given the large sample sizes, only participants with complete data at the variable level were included in the analyses. If participants were only randomly missing an item or two on a particular scale, then their average score on the remaining items they responded to was used as their score, which is equivalent to mean imputation. This allowed us to include them in the analyses. These sample sizes are presented in **Table 40**. Since high school students in Grant Cycle #1 only utilized *Reducing the Risk*, only Models 2 and 3 were fit to this data.

Table 40: Data Available for Statistical Modeling

Data Available from Grant Cycle #1 (2010 – 2015)				
PHAT-AO Grade (n)	RTR Grade (n)	DTL Grade (n)	LN Grade (n)	MPC Grade (n)
7th (125) 8th (1,436)	7th (97) 8th (96) 9th (4,492) 10th (2,282) 11th (755) 12th (419)	7th (1,798) 8th (1,987)	N/A	N/A
Data Available from Grant Cycle #2 (2015 – 2020)				
PHAT-AO Grade (n)	RTR Grade (n)	DTL Grade (n)	LN Grade (n)	MPC Grade (n)
7th (10) 8th (114)	9th (338) 10th (477) 11th (181) 12th (87)	7th (1,125) 8th (874)	9th (851) 10th (803) 11th (216) 12th (310)	7th (66) 8th (155) 9th (213) 10th (95) 11th (38) 12th (29)

Results

The findings from Phase 2 affirm, statistically, that all three core content components tested were robust predictors of **sexual intentions**, even when controlling for curricula differences and other covariates. These results are grouped by the three grant cycles and broken down by middle school and high school. Descriptive statistics, including pre- and post-means, are provided, followed by demographics and, finally, the statistical regression analysis results.

The findings from Phase 2 affirm, statistically, that all core content components tested were robust predictors of sexual intentions.

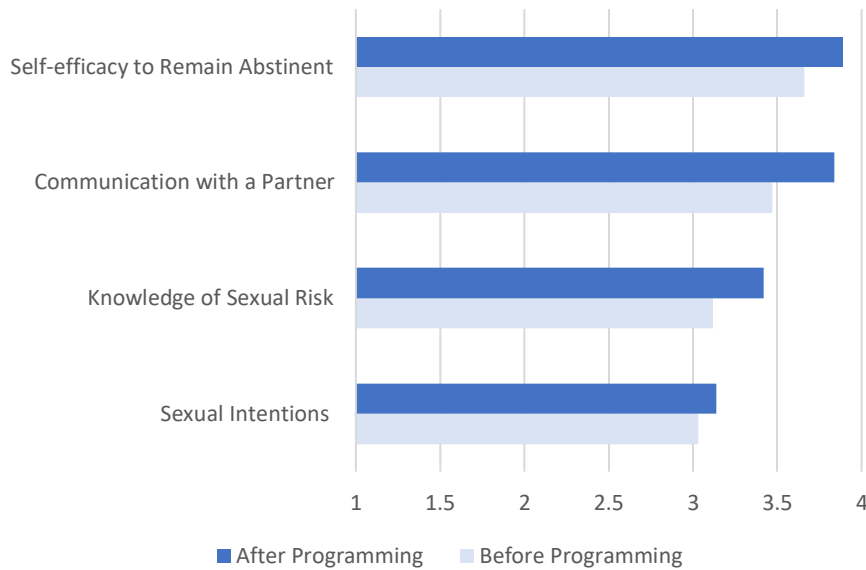
Grant Cycle #1 (2010 – 2015)

Descriptive Statistics

Table 41 depicts the descriptive statistics for all variables for all students with available data from Grant Cycle #1. To better illustrate the impact of programming, the mean scores for all variables before and after programming are presented in **Figure 1**. As the figure shows, there was an increase in all variables upon program completion. Given the large sample size and, hence, strong statistical power, analyses comparing pre- and post-scores were assumed to be statistically significant.

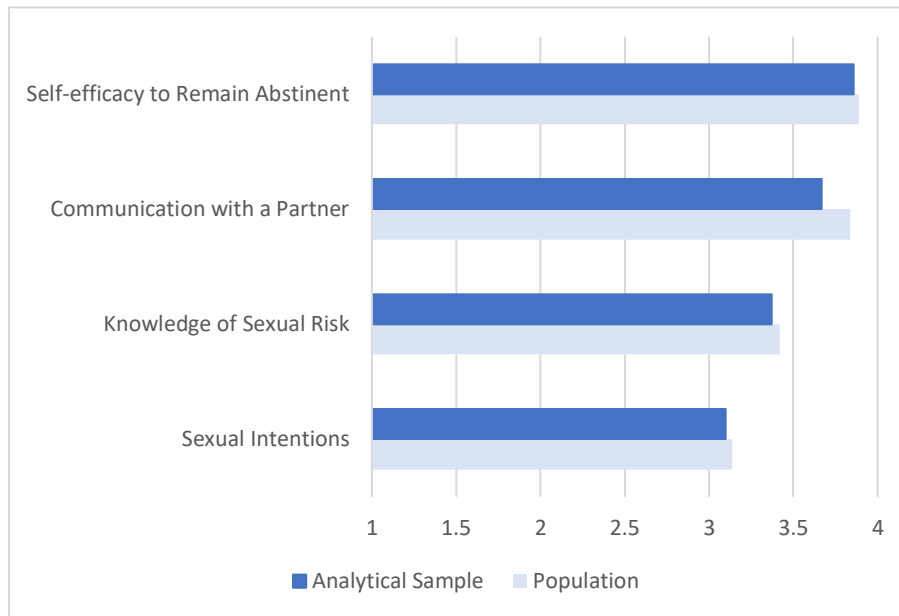
Table 41: Descriptive Statistics for All Participants in Grant Cycle #1						
Core Component/Variable	N	min	max	median	mean	SD
1. Sexual Intentions – PRE	13,618	1	4	3.00	3.03	0.70
2. Sexual Intentions – POST	13,618	1	4	3.20	3.14	0.70
3. Knowledge of Sexual Risk – PRE	13,734	1	4	3.17	3.12	0.63
4. Knowledge of Sexual Risk – POST	13,734	1	4	3.50	3.42	0.61
5. Communication with a Partner – PRE	14,153	1	5	3.58	3.47	1.00
6. Communication with a Partner – POST	14,153	1	5	4.00	3.84	0.95
7. Self-efficacy to Remain Abstinent – PRE	14,129	1	5	3.83	3.66	0.98
8. Self-efficacy to Remain Abstinent – POST	14,129	1	5	4.00	3.89	0.92

Figure 1: Mean Pre- and Post Scores for ALL Participants in Grant Cycle #1



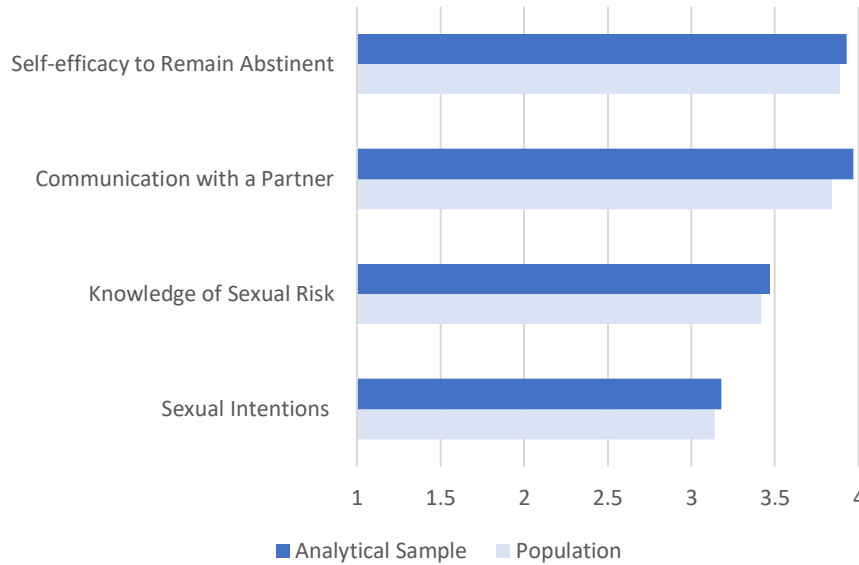
Recall that the first set of nested regression models fit to the data was cross-curricular and only included middle school students. To determine if there were differences between this analytical sample and the larger population, the average scores for all variables **after** programming are presented in **Figure 2** for those in the population versus those in the middle school analytical sample. As the figure shows, only slight discrepancies were found between the population and the analytical sample, with the largest observed difference found between the two groups in communication with a partner.

Figure 2: Mean Post-Test Scores for Middle School Participants (N=5,363) in Grant Cycle #1



Recall that the second set of nested regression models fit to the data only included high school students who utilized *Reducing the Risk*, because no other curricula were used in high schools for the clients AMTC evaluated in the first grant cycle. To determine if there were differences between this analytical sample and the larger population, the average scores for all variables after programming are presented in **Figure 3** for those in the population versus those in the high school analytical sample. As the figure shows, only slight discrepancies were found between the population and the analytical sample, with the largest observed difference found between the two groups in communication with a partner.

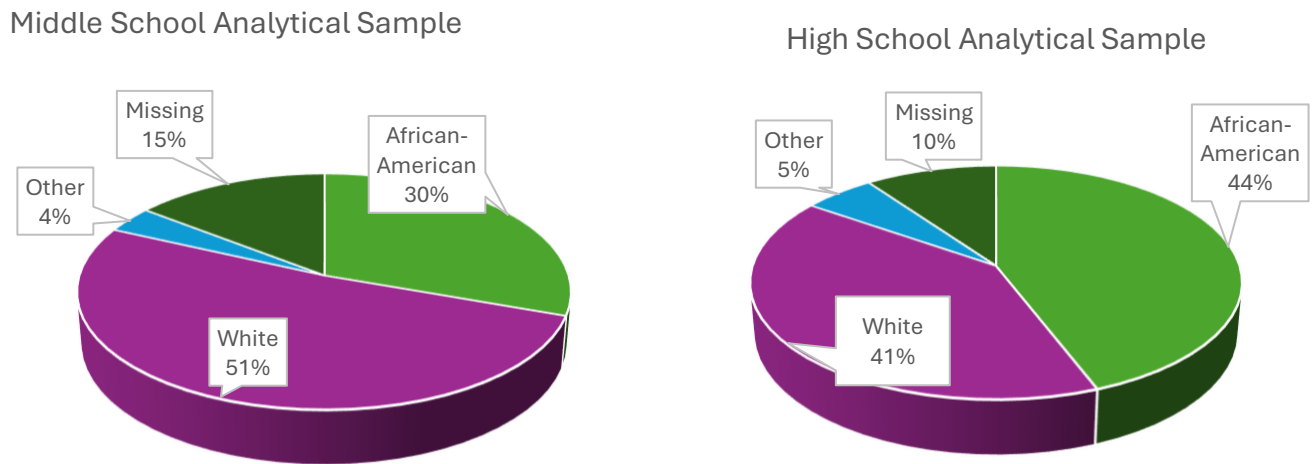
Figure 3: Mean Post-Test Scores for High School Participants (N=7,649) in Grant Cycle #1



Demographics

Figure 4 illustrates the race reported by middle and high school participants in the analytical samples used from Grant Cycle #1. The middle school sample had about 5% more missing data for this variable and a slightly higher percentage of White youth than the high school analytic sample, which had a slightly higher percentage of African American youth. For Grant Cycle #1, a slight majority of middle school participants were female (54.3%), compared to male (45.7%). The high school participants in this grant cycle were almost evenly split between females (49.4%) and males (50.6%). A significant majority of the middle school participants were in 8th (63.8%) compared to 7th grade (36.2%). Most high school participants were 9th (56.4%) and 10th graders (28.8%), with a small number in 11th (9.5%) and 12th grades (5.3%). Please note that race was not used as either a predictor or a covariate. Race was colinear with curriculum. Missing data on race did not impact the analysis.

Figure 4: Race of Middle and High School Participants in Grant Cycle #1



Statistical Modeling

Middle School. Table 42 presents the results from fitting the three nested multiple linear regression models to middle school youth who participated in programming during Grant Cycle #1 (2010 – 2015). Recall that this cross-curricular model only included middle school students. As Table 39 illustrates, *Draw the Line (DTL)* was coded as zero. This means it was used as the reference category, and this choice has implications for interpreting the results.

Model 1, which only used curriculum/client as a categorical explanatory variable, explained 8% of the variability, or differences, in participants' responses to sexual intentions after program completion. It is important to remember that since only one client used each curriculum, these differences could reflect site differences. The youth who received *PHAT-AO* had statistically significantly lower scores on the variable measuring sexual intentions than the youth who received *DTL* ($t = -11.97, p < .001$). The negative standardized regression coefficient ($\beta = -.32$) associated with this test statistic indicated that, on average, middle school students who participated in programming using *PHAT-AO* had lower sexual intentions than those who participated in programming that used *DTL*. This difference may be attributed to *PHAT-AO* being an abstinence-only curriculum. No differences were found between participants who used *RTR* and those who used *PHAT-AO* ($t = .57, p = .57$).

After controlling for curricula/client differences, Model 2 added sexual intentions before participating in the program (baseline score), sex at birth (with males coded as the reference group), and grade (7th or 8th) to Model 1. This model explained an additional 28% of the variability in participants’ sexual intentions upon program completion. However, only sexual intentions before participating in the program was a statistically significant predictor ($t = 42.6$, $p < .001$). Neither grade nor sex at birth had an impact on sexual intentions upon program completion.

After controlling for all covariates, Model 3 added the three core component variables to Model 1, representing knowledge of sexual risk, communication with partner, and self-efficacy to remain abstinent. These variables were all found to be statistically significant predictors of sexual intentions after completing the program. However, taken as a whole, they only explained an additional 6% of the variability in participants’ sexual intentions after completing the program. Knowledge was the most important predictor, as indicated by the highest standardized regression coefficient ($\beta = .12$). This was followed closely by communication with a partner ($\beta = .11$). Self-efficacy to remain abstinent was the least important predictor for this middle school sample ($\beta = .08$).

Table 42: Regression Results for Middle School Data Obtained in Grant Cycle #1 (N = 5,362)				
Variability Explained by Model	Variable	Standardized Regression Coefficient (β)	Standard Error	T-Statistic
MODEL 1				
$R^2 = .08$	Intercept	.08	.02	4.95 $p < .001$
	<i>PHAT-AO = 1, DTL = 0</i>	-.32	.03	-11.97 $p < .001$
	<i>RTR = 1, DTL = 0</i>	.03	.06	0.57 $p = .57$
MODEL 2				
$R^2 = .36$	Intentions - pre	.48	.01	42.60 $p < .001$
	Sex at Birth (Male = 1)	.02	.02	0.69 $p = .49$
	Grade	.01	.01	0.58 $p = .56$
MODEL 3				
$R^2 = .42$	Knowledge	.12	.02	10.48 $p < .001$

Table 42: Regression Results for Middle School Data Obtained in Grant Cycle #1 (N = 5,362)

Variability Explained by Model	Variable	Standardized Regression Coefficient (β)	Standard Error	T-Statistic
	Communication	.11	.01	7.38 $p < .001$
	Self-Efficacy	.08	.02	5.08 $p < .001$

High School. Table 43 depicts the results from fitting the two nested multiple linear regression models to high school youth who participated in programming during Grant Cycle #1 (2010 – 2015). Recall that these youth only utilized the curriculum *RTR*. Therefore, there was no need to control for curriculum/site variability. Although only two models fit this data, they will be referred to as Model 2 and Model 3 (as opposed to Model 1 and Model 2) to remain consistent with the comparable models fit to other data sets.

Model 2 included sexual intentions before participating in the program (baseline score), sex at birth (with males coded as the reference group), and grade. This model explained 29% of the variability in participants’ sexual intentions upon program completion. Both sexual intentions before participating in the program ($t = 48.4, p < .001$) and sex at birth ($t = -12.4, p < .001$) were statistically significant ($t = 42.6, p < .001$). The negative standardized regression coefficient associated with sex at birth indicates that males, on average, had lower sexual intentions upon program completion than females. Although grade level was statistically significant, the small, standardized regression coefficient associated with this variable ($\beta = .03$) indicates only a very small difference based on grade from a practical perspective.

After controlling for the covariates, Model 3 added the three core component variables to Model 2, representing knowledge of sexual risk, communication with partner, and self-efficacy to remain abstinent. These variables were all found to be statistically significant predictors of sexual intentions after completing the program. Taken as a whole, they explained an additional 11% of the variability in participants’ sexual intentions after completing the program. Self-efficacy to remain abstinent was the most important predictor, as indicated by the highest standardized regression coefficient ($\beta = .20$). This was followed closely by knowledge of sexual risk ($\beta = .16$). Communication with a partner was the least important predictor for this high school sample ($\beta = .06$).

Table 43: Regression Results for High School Data Obtained in Grant Cycle #1 (N = 7,649)				
Variability Explained by Model	Variable	Standardized Regression Coefficient (β)	Standard Error	T-Statistic
MODEL 2				
$R^2 = .29$	Intercept	.13	.01	9.37 $p < .001$
	Intentions – pre	.49	.01	48.40 $p < .001$
	Sex at Birth (Male = 1)	-.24	.02	-12.44 $p < .001$
	Grade	.03	.01	2.80 $p = .005$
MODEL 3				
$R^2 = .40$	Knowledge	.16	.01	16.19 $p < .001$
	Communication	.06	.01	4.53 $p < .001$
	Self-Efficacy	.20	.01	14.78 $p < .001$

Grant Cycle #2 (2015 – 2020)

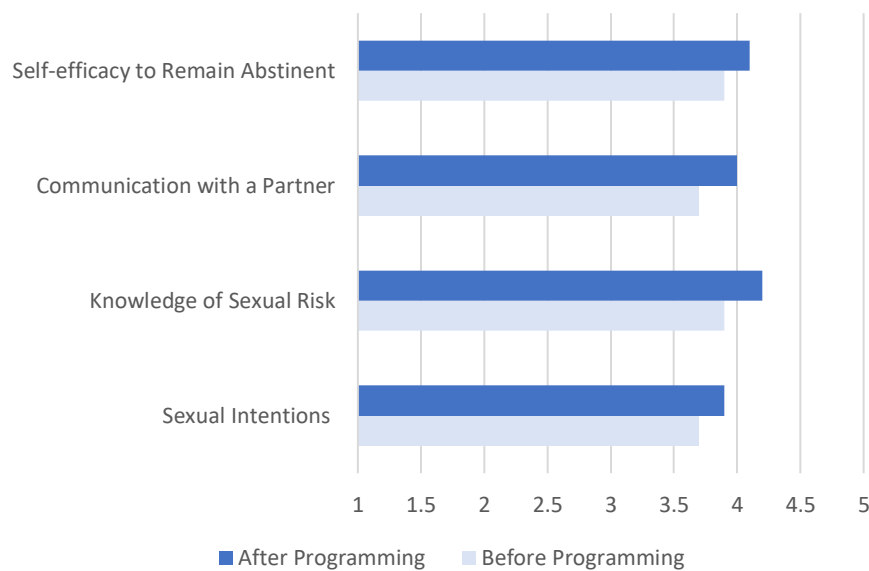
Descriptive Statistics

Table 44 depicts the descriptive statistics for all variables for all students with available data from Grant Cycle #2. To better illustrate the impact of programming, the average scores for all variables before and after programming are presented in **Figure 5**. As the figure shows, gains were made in all areas upon program completion. Once again, given the large sample size, and hence strong statistical power, analyses comparing pre- and post-scores were not conducted, as it is known that they would be statistically significant.

Table 44: Descriptive Statistics for All Participants in Grant Cycle #2

Core Component/Variable	N	min	max	median	mean	SD
1. Sexual Intentions – PRE	6,362	1	5	3.00	3.03	0.70
2. Sexual Intentions – POST	6,362	1	5	3.20	3.14	0.70
3. Knowledge of Sexual Risk – PRE	6,597	1	5	3.17	3.12	0.63
4. Knowledge of Sexual Risk – POST	6,597	1	5	3.50	3.42	0.61
5. Communication with a Partner – PRE	6,424	1	5	3.58	3.47	1.00
6. Communication with a Partner – POST	6,424	1	5	4.00	3.84	0.95
7. Self-efficacy to Remain Abstinent – PRE	6,544	1	5	3.83	3.66	0.98
8. Self-efficacy to Remain Abstinent – POST	6,544	1	5	4.00	3.89	0.92

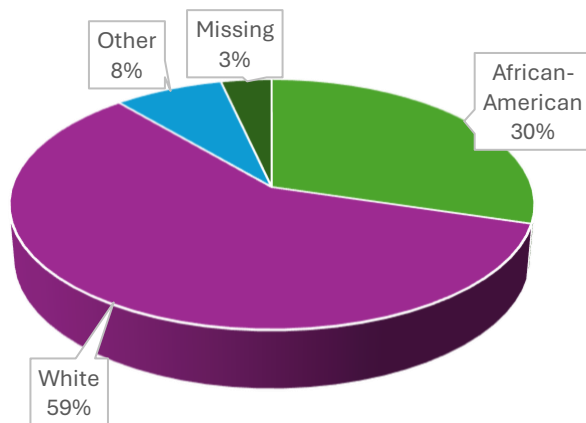
Figure 5: Mean Pre- and Post-Scores for ALL Participants in Grant Cycle #2



Demographics

Figure 6 illustrates the race reported by high school participants used for the analytic sample for Grant Cycle #2. For this grant cycle, a slight majority of participants were female (51.5%), as opposed to male (48.5%). Most high school participants served in this grant cycle came from 9th (38.1%) or 10th grade (38.1%), although a small number of 11th (12.0%) and 12th grade (11.9%) were also served.

Figure 6: Race of High School Participants in Grant Cycle #2



Please note that race was not used as either a predictor or a covariate. Race was colinear with curriculum. Missing data on race did not impact the analysis.

Statistical Modeling

Table 45 depicts the results from fitting the three nested multiple linear regression models to high school youth who participated in programming during Grant Cycle #2. As **Table 44** illustrates, *Love Notes (LN)* was coded as zero. This means it was used as the reference category, and this choice has implications for interpreting the results.

Model 1, which only used curriculum as a categorical explanatory variable, explained a negligible amount of variability, or differences, in participants' sexual intentions after program completion. This means that these differences did not depend on the curriculum used. Therefore, even though curriculum is a statistically significant predictor of sexual intentions, it may not be relevant in explaining the outcome, and other variables not included in the model may be influencing the outcome.

After controlling for the minimal curricula differences, Model 2 added sexual intentions before participating in the program (baseline score), sex at birth (with males coded as the reference group), and grade 9th, 10th, 11th or 12th) to Model 1. This model explained 33% of the variability in participants’ sexual intentions upon program completion. However, only sexual intentions before participating in the program was a statistically significant predictor ($t = 30.7, p < .001$). Neither grade nor sex at birth had an impact on sexual intentions after program participation.

After controlling for all covariates, Model 3 added the three core component variables to Model 1, representing knowledge of sexual risk (CC4: Basic knowledge about sexual and reproductive health as a foundation on which to build learners’ understanding of pregnancy and HIV/STI prevention), communication with partner (CC7: Multiple facets of respectful partner communication, including benefits and skills), and self-efficacy to remain abstinent (CC9: Learners’ personal agency to make healthy and autonomous decisions). These variables were all found to be statistically significant predictors of sexual intentions after completing the program. Taken as a whole, they explained an additional 14% of the variability in participants’ sexual intentions after completing the program. Self-efficacy to remain abstinent was the most important predictor, as indicated by the highest standardized regression coefficient ($\beta = .23$). This was followed by communication with a partner ($\beta = .16$). Knowledge of sexual risk was the least important predictor for this middle school sample ($\beta = .09$).

Table 45: Multiple Regression Results for High School Data Obtained in Grant Cycle #2				
Variability Explained by Model	Variable	Standardized Regression Coefficient (β)	Standard Error	T-Statistic
MODEL 1				
	Intercept	.04	.02	4.95 $p < .001$
$R^2 \approx 0$	<i>MPC = 1, LN = 0</i>	-.09	.04	-2.18 $p = .03$
	<i>RTR = 1, LN = 0</i>	-.08	.03	-2.67 $p = .01$
MODEL 2				
$R^2 = .33$	Intentions - pre	.41	.01	30.67 $p < .001$
	Sex at Birth (Male = 1)	<.01	.03	0.07 $p = .94$
	Grade	-.02	.01	-1.77 $p = .07$
MODEL 3				

Table 45: Multiple Regression Results for High School Data Obtained in Grant Cycle #2				
Variability Explained by Model	Variable	Standardized Regression Coefficient (β)	Standard Error	T-Statistic
$R^2 = .47$	Knowledge	.09	.01	6.57 $p < .001$
	Communication	.16	.02	10.14 $p < .001$
	Self-Efficacy	.23	.02	13.10 $p < .001$

Table 45 depicts the results from fitting the multiple linear regression model series to data obtained in Grant Cycle #2. Recall that only high school students were utilized in the analyses for Grant Cycle #2. As **Table 45** illustrates, *Love Notes* (LN was coded as zero, which has implications for interpretation. This model explained almost no variability or differences in participants' responses to the sexual intentions variable administered at program completion. Adding in sexual intentions before programming, sex at birth, and grade (9th, 10th, 11th or 12th) explained 33% of the variability in participants' sexual intentions upon program completion. However, once again, only sexual intentions before programming was a statistically significant predictor ($t = 30.67, p < .001$). Finally, when adding in the three variables representing core content components 4, 7, and 9, all were statistically significant predictors. Taken as a whole, they explained an additional 14% of the variability in participants' sexual intentions after completing the program. Interestingly, for this group of high school participants, knowledge was the least important predictor, as indicated by the lowest standardized regression coefficient of 0.09. For these data, self-efficacy was the most important predictor, with a standardized regression coefficient of 0.23. Communication with partner fell in the middle, with a standardized regression coefficient of 0.16.

Grant Cycle #3 (2020 – 2023)

Although statistical modeling using data collected from Grant Cycle #3 was impossible, the descriptive statistics are presented to give the reader insights into what might be done in the future.

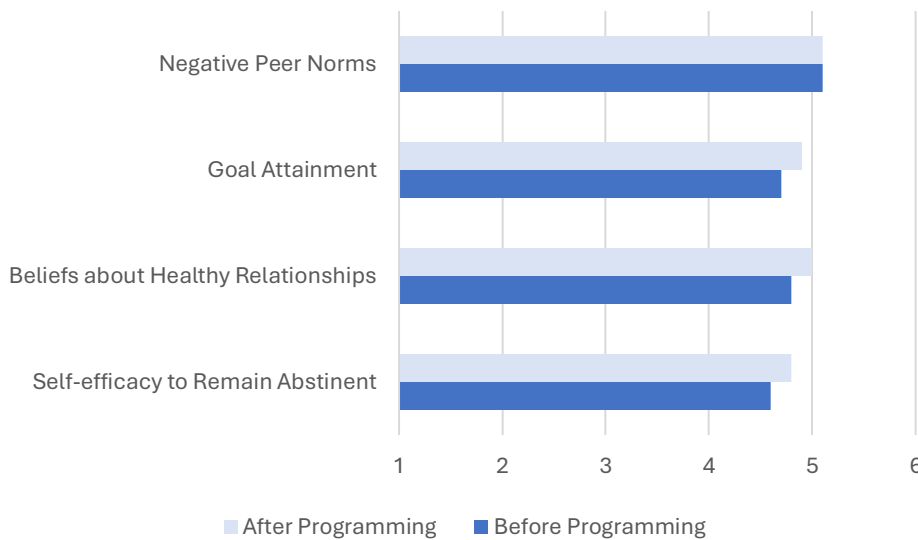
Descriptive Statistics

Table 46 depicts the descriptive statistics for all variables for all students with available data from Grant Cycle #3. To better illustrate the impact of programming, the average scores for all variables collected except knowledge of sexual risk before and after programming are presented in **Figure 8**. As the figure shows, gains were made in all areas, except Negative Peer Norms, upon program completion. The response scale for Knowledge of Sexual Risk was changed to a true/false response scale. Therefore, this variable is not included in Figure 8.

Before programming, the average percent correct score on this scale was 75%. After program completion, it was 84%. Once again, given the large sample size, and hence strong statistical power, analyses comparing pre- and post-scores were not done, as it is known that they would be statistically significant.

Table 46: Descriptive Statistics for All Participants in Grant Cycle #3						
Core Content Component/Variable	N	min	max	median	mean	SD
1. Knowledge of Sexual Risk – PRE	3,231	0	1	0.75	0.72	0.262
2. Knowledge of Sexual Risk – POST	3,231	0	1	0.88	0.84	0.207
3. Self-efficacy to Remain Abstinent – PRE	3,137	1	6	4.67	4.55	1.034
4. Self-efficacy to Remain Abstinent – POST	3,137	1	6	5.00	4.80	1.012
5. Knowledge about Healthy Relationships - PRE	3,191	1	6	4.83	4.76	0.881
6. Knowledge about Healthy Relationships - POST	3,191	1	6	5.00	5.00	0.892
7. Goal Attainment – PRE	3,109	1	6	4.83	4.74	0.867
8. Goal Attainment – POST	3,109	1	6	5.00	4.94	0.841
9. Negative Peer Norms – PRE	3,157	1	6	5.22	5.12	0.752
10. Negative Peer Norms – POST	3,157	1	6	5.22	5.13	0.807

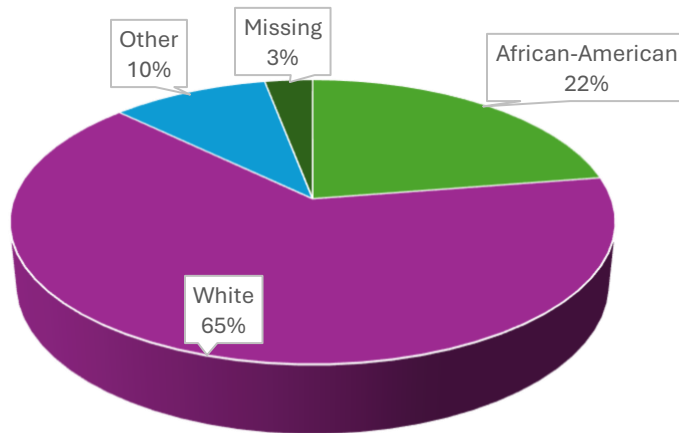
Figure 7: Mean Pre- and Post-Scores for ALL Participants in Grant Cycle #3



Demographics

Figure 8 illustrates the race reported by high school participants with available data in Grant Cycle #3. For this grant cycle, a slight majority of participants were male (51.3%), as opposed to female (48.7%). Most high school participants served in this grant cycle came from 9th (59.1%) or 10th grade (25.8%), although a small number of 11th (9.2%) and 12th grade (5.9%) were also served.

Figure 8. Race of High School Participants in Grant Cycle #3



Discussion

Novel Approach

Core components, or the essential elements and activities within the entire intervention that are needed to produce the intended positive outcomes for participants, provide important insights for curriculum designers, implementors, and evaluators. By knowing an intervention’s mechanisms of action (i.e., what makes it work), we know what content and activities to prioritize, maintain, enhance, and evaluate. This understanding, in turn, supports effective implementation and the realization of the intervention’s intended behavioral outcomes.

We designed and conducted a mixed-methods study—The Content, Pedagogical, Implementation, and Context Study—to surface the core components of five evidence-based teen pregnancy prevention curricula. Our approach in this study included inductive qualitative data gathering and analysis and deductive analysis of existing youth survey data. To the best of our knowledge, this study design has not been previously used to surface or identify core components.

This novel study approach consisted of two phases. In **Phase 1**, we used an inductive dominant qualitative research approach based on grounded theory, content analysis, inductive thematic analysis, and phenomenology. Using an inductive approach allowed us to collect and analyze data in a fresh way and be open to new core component observations, themes, and hypotheses. Grounded theory,²⁰⁴ a type of inductive theme analysis, allowed us to generate our core component hypotheses by conducting an interactive line-by-line text analysis of every curriculum’s session activity, as well as with other curriculum ancillary documents and in-depth interview transcripts. In addition, our study operationalizes “core components” by examining four intervention facets—content (subject or topic areas), pedagogy (the science and art of teaching to content), implementation (how the curriculum is delivered overall), and context (circumstances and conditions). After completing Phase 1, we surfaced 22 core components (9 core content components, 8 core pedagogy components, and 5 core implementation components). We will explain why we did not surface core context components later in this section.

²⁰⁴ Guest, G., Namey, EE, & Mitchel, ML. (2013). *Collecting Qualitative Data: A Field Manual for Applied Research*. Sage Publications.

Phase 1 builds on the work of other researchers and practitioners who have used similar and different study designs to identify an intervention’s core components. In particular, the CPIC Study was influenced by the approaches used in the 17 Characteristics of Effective Sex and HIV Programs Study²⁰⁵ and the Promoting Science-Based Approaches (PSBA) Project.²⁰⁶

Phase 2 used a deductive quantitative research approach to test some of the 22 core components that surfaced during Phase 1. In Phase 2, we utilized implementation and survey data collected from 2010-2023 among youth participants who received the five evidence-based teen pregnancy prevention curricula to statistically test whether specific core content components are predictors of sexual intentions. Phase 2 findings affirm, statistically, that all core content components tested were robust predictors of **sexual intentions**, even when controlling for curricula differences and other covariates. The data utilized to accomplish this goal were collected through a number of local evaluations conducted over three OPA TPP grant cycles and primarily by four Tier 1 grantees. There were two commonalities among the datasets collected over this time frame. One was that each data set was obtained from participants of a federally funded program designed to help youth avoid sexual risk-taking behavior. The second is that each Tier 1 grantee selected the same firm, AMTC, to conduct their local evaluation. This, in turn, implied that there were commonalities among the variables collected as part of the evaluation. It also implied that these variables reflected what those in the field, both those who are funded to implement evidence-based programs and those who are funded to conduct evaluations, felt were important outcomes associated with their programs. Therefore, we hypothesized that these variables might also reflect the core content components associated with EBPs, and our results demonstrated that this was true. This is not surprising because the goal of any local evaluation is to help clients with continuous quality improvement (CQI).

However, there is always a tension between collecting additional information from program participants that might be helpful for CQI and survey fatigue. This topic is often brought up in local evaluation technical assistance meetings because of the number of survey questions that must be administered to program participants. Therefore, only three variables (Knowledge of Sexual Risk, Partner Communication, and Self-Efficacy to remain abstinent) that measured core content components, CCC #4, CCC#7, and CCC#9, respectively, were captured consistently across all clients. Moreover, the variability in sexual intentions explained by these three core content components for which proxy measures existed only ranged from 6% to 14%. This might be considered low, especially when one considers that sexual intentions at baseline explained as much as 33% of the variability in sexual intentions.

²⁰⁵ Kirby, D. B., Laris, B. A., & Roller, L. A. (2007). Sex and HIV education programs: their impact on sexual behaviors of young people throughout the world. *The Journal of adolescent health: official publication of the Society for Adolescent Medicine*, 40(3), 206–217.

²⁰⁶ Roller, L., Fuller, T.R., Firpo-Triplett, R., Moore, C., Leeks, K.D. & Lessene, C.A. (2014). Adaptation guidelines for evidence-based adolescent pregnancy and STI/HIV prevention curricula: From development to practice. *American Journal of Sexuality Education*, 9: 135-154.

In addition, at the onset of this study, other possible variables were hypothesized to predict the sexual intentions of participants after completing the program, including attendance, program facilitator, and fidelity. However, most of the Tier 1 grantees who selected AMTC as their local evaluator serve students in schools, so there was little variability in attendance. Over 90% of program participants attended at least 90% of the program.

Finally, while it is challenging to assess pedagogical differences due to a lack of data on pedagogy, one might hypothesize that such differences exist, either because of differences in the curricula, differences in facilitator delivery, or fidelity. However, this was not found to be the case. A hierarchical linear model was fit to the data, using a participant's instructor as the second-level predictor. This model found only a negligible amount of variability in sexual intentions that could be explained by level 2. Moreover, as our results indicated, very few differences were found in participants' sexual intentions upon program completion based on the different curricula used. This also implies very few differences were found between the different geographical sites since most clients only used one curriculum at their site, which might be considered a context component.

In retrospect, these findings make sense if the local evaluation goal is considered. Most local evaluators aim to help their clients collect performance measures and provide technical assistance to help their clients meet the federal reporting requirements. Therefore, program facilitators are well-trained by the curriculum developers, curriculum publishers, or certified Master Trainers. In addition, most local program evaluators help ensure that instructional programming is implemented with fidelity, even conducting site visits to observe instructional practice. Therefore, little variability exists in pedagogy in practical applications other than those that might be difficult to measure, such as how well an instructor relates to youth and/or personality.

Identifying core components is challenging. Unless we conduct controlled trials where we add and remove hypothesized core components and look for statistically significant variations in outcomes, it is difficult to say that our core component findings are truly essential for the program's effectiveness. Our colleagues have used methods such as meta-analyses, iterative usability testing, the development of frameworks on which to design core component studies, and systematic content analyses (see Introduction Section of this report) to identify core components—alternative study methods that do provide scientific evidence, albeit not as rigorous as the hypothetical three-armed study described above.

Study Strengths

A major strength of this study is its mixed-methods design, which utilizes both inductive and deductive approaches. The mixed-methods approach allowed us to link the two phases of the study. AMTC's existing data sets that it used in Phase 2 were quite large, so it was important to focus solely on analyses that tested hypotheses about core components when predicting sexual

intentions to control for Type I errors.²⁰⁷ Using effect size measures was another attempt to provide substantive meaning to statistically significant results obtained from an existing data set collected for a different purpose.

Phase 1 used robust triangulation.²⁰⁸ Although only five curricula were studied, these curricula are diverse in terms of their behavior goals (i.e., abstinence, and/or condom use, and/or contraceptive use, etc.), length of the programs, target age groups/grades, and locations where AMTC's clients implemented them. Curriculum developers and a diverse sample of facilitators were interviewed. To ensure the accuracy of our findings, we conducted member checking with interviewees to verify and align our findings with their perspectives during the interviews. Finally, our research processes and analyses were guided by an external advisory panel of nationwide experts in adolescent pregnancy prevention and evaluation methodology.

Limitations

While this study had many strengths, it was not without limitations. The limitations below span across both Phase 1 and Phase 2 of the study.

Small sample size. Due to funding and time parameters, we were able to study only five TPP curricula. The detailed coding of over 1,000 pages of curriculum session plans took months to complete. If we had more time and staff to study more of the 58 programs in the youth.gov repository, our findings may have been more generalizable. Additionally, the number of curricula studied was also a convenience sample, pre-determined by the curricula on which we had both implementation and survey data. On a positive note, the groundwork completed by the CPIC Study lays a foundation for the process of studying core components that future studies can replicate in a less tedious and less time-consuming manner.

Confounding with other community program components. Many TPP curricula are often implemented in combination with other program components such as school-wide or community-wide education events, parent education, and referral to health and social services. When examining the core components of a TPP curriculum replication, it is important to note how other parts of a comprehensive intervention package may fortify (or not) those core components.²⁰⁹

²⁰⁷ A type 1 error is a statistical term that refers to a false positive, or when a researcher incorrectly concludes that a study found significant differences when there were none.

²⁰⁸ Triangulation is the use multiple data sources to crosscheck and validate findings.

²⁰⁹ Cole, R. & Choi, J. (March 2020). Understanding How Core Components of an Intervention Can Influence Outcomes. Office of Population Affairs Brief.

Limited access to curriculum facilitators. We were able to talk to just one facilitator for each curriculum due to funding and time parameters. Additionally, it was challenging to find facilitators who met our inclusion criteria (see Methods section of this report) largely due to the COVID-19 pandemic affecting recent face-to-face delivery of the curricula. The insights shared by facilitators were invaluable with regard to identifying core implementation components; more interviews may have helped us affirm findings and add more richness to their descriptions. It is unlikely that we reached data saturation.

Quantitative data limitations. Through the merging and linkage of AMTC's two databases, we created large databases for both implementation and survey data in Phase 2. However, the final dataset was not without limitations. There were inconsistencies in how different clients selected items to measure outcomes, as well as inconsistencies in response scales across different grant cycles. The CPIC research team utilized different strategies, like standardization, to mitigate these inconsistencies and minimize data loss. However, not all data was available to analyze due to these factors.

Using secondary data. The data used in the quantitative analysis was secondary data that had been collected mostly for program monitoring, improvement, and evaluation purposes related to teen pregnancy prevention implementation and replication grants. Implementation and outcome variables were collected to align with funder reporting requirements. These projects were not allowed to measure or test whether interventions had an effect on measures related to youth behaviors. Thus, variables like sexual behaviors were not available for analysis. Similarly, the data did not have all the measures necessary to assess all of the core components identified in Phase 1. Thus, only sexual intentions could be used as a dependent variable.

Future research might consider using primary data collected for the sole purpose of testing core components, including all core components identified in Phase 1 of this study. This might even include collecting data at the governmental level in a systematic way to address the research questions addressed in this project across different grantees and different programs.

Core Components of CPIC Curricula

The [core content](#) components that surfaced in our study were common across the five curricula that we examined. However, some core content components had a heavier emphasis than others. For example, *Love Notes* is comprised of more activities and spends more time (as a percentage of total curriculum hours) on activities related to healthy relationships ([CCC #6](#)) than the other four evidence-based programs we examined. *Draw the Line / Respect the Line* places a heavier emphasis on setting and keeping limits ([CCC #8](#)) in comparison to the other four curricula. We also found varying emphases on core pedagogical components. *Draw the Line / Respect the Line* and *Love Notes* are comprised of more activities that help learners personalize what they are learning ([CPC #2](#)) as compared to others. *Making Proud Choices* had notably

fewer activities that required writing ([CPC #4](#)) compared to the other curricula. While the core components surfaced in this study were certainly common and, in some cases, about the same in frequency and estimated time, there are cases where the curricula varied.

Core pedagogy is the second of the core component facets. The CPIC study examined [pedagogical methods](#) used to address key psychosocial determinants of sexual behavior, such as the transfer of basic knowledge/information, shifting attitudes, and building skills and self-efficacy. To our knowledge, no other study has surfaced such a list. In our study, we found several common patterns between methods and content. For example, a facilitator presentation where the skill is broken down into steps and students are guided in practicing was commonly associated with building skills and self-efficacy ([CCC #3](#)). Self-reflection activities such as journaling or completing a worksheet were commonly used to create greater self-awareness ([CCC #3](#)). Personalization activities and skill practice were often associated with building a sense of personal agency ([CCC #9](#)).

How curricula were [implemented](#) overall is a third category of core components. None of the curricula we examined in this study had a dedicated manual for curriculum implementation. All curricula mentioned some aspects of curriculum implementation in the curriculum manual's front matter. Much more information about implementation was elicited during interviews with curriculum developers and facilitators. Two key themes were related to facilitator training ([CIC #2](#)) and facilitator characteristics, in particular, demonstrating "care" for learners ([CIC #3](#)). The reports on the evaluation studies mentioned that facilitators attended formal training, but little detail about what was discussed in that training was described. Little information was described about other training activities, such as mock practice, shadowing more experienced facilitators, and booster training. We did not find Training of Facilitator manuals/designs to review. Moreover, given the numerous repetitions of the importance of "caring" facilitators by all interviewees, we are curious how that quality is addressed in training activities, as well as how one can evaluate it.

Adaptation of the original curriculum's content, pedagogy, implementation, and context appears to be inevitable for multiple reasons and is reflected in [CIC #5](#). Some adaptations ("green light") likely strengthen the curriculum, such as changing names and context in stories or role-plays to reflect the learners being served, updating data or other information presented in the curriculum, adding inclusive language, and others. These adaptations are encouraged. While listening to facilitators during our interviews, we also heard about adaptations that may have compromised the curriculum's core components—some of which were out of their control (aligning with state or school health education policies—some of which could be considered red light) and others that were in the control of facilitators such as substituting activities that may not have addressed the core content and going significantly "off script" from the curriculum with examples, additional activities, changing activity instructions, and others.

In practice, curriculum replications often involve adaptations and are also often part of a larger package of intervention activities. For example, in addition to the curriculum, implementing organizations may also conduct complementary parent engagement activities, health fairs, school assemblies, a young advisory council, etc. These additional interventions are likely to enhance outcomes. Still, because they differ from one replication site to another, it's difficult to discern how they may affect core components and how to measure their impact on outcomes.

Our last category of core components is the [context](#) in which a curriculum is delivered. Context proved to be defined by multiple variables, and it was difficult to discern how essential any particular contextual variable was exclusive of the others, partially due to the limited number of studies. For example, in its original study (1998), *Making Proud Choices* was found to be effective with a sample of African American (nearly all) learners with a mean age of 11.8 years and delivered over two Saturdays with groups of 6-8 learners. In a replication study of *Making Proud Choices* (2022), the sample was 80% African American with a mean age of 15.6 years and delivered in high schools. In the 2022 study, researchers did not find changes in sexual behavior. Is the explanation in outcomes due to contextual differences? Is the four-year difference between learners an explanation? Or the delivery setting? Or group size (not reported in the Cole study)? With only two published studies, it's difficult to conclude that contextual variables like learner age, delivery setting, or group size are core. As such, we created a list of [contextual factors](#) that appeared in the documents we reviewed or that were discussed during interviews. We believe this list of contextual factors should be carefully considered during program planning.

When analyzing the CPIC curriculum, we kept lenses on how the curricula address [health equity](#), [inclusion](#), and [access to services](#)—three priority areas of our funder. We saw little about how the curricula explicitly addressed health equity other than implementing these curricula in and of themselves as being a health equity strategy. Tips about inclusion are embedded in all the curricula, but it's not clear if these tips were in the original editions that were studied or added to later editions by curriculum publishers. The curricula do little concerning access to services other than some providing lists of resources. Health equity must be looked at from an ecological perspective—no one curriculum is going to satisfactorily address health equity without support/reinforcement from other forces and systems in an adolescent's environment, such as schools, health care providers, social services, etc. Similarly, if a curriculum aims to increase sexually active youth's use of condoms and contraception, youth must be able to access those services even when there are barriers such as transportation, cost, stigma, etc. Addressing some of these barriers is often outside the realm of what a curriculum-based intervention can achieve.

Recommendations

Research/Evaluation

Inform future evaluation designs. Core content components, as well as the curriculum’s theory of change, can help evaluators craft evaluation questions related to outcomes. If the core content components are essential for program effectiveness, then it is helpful to know if the curriculum positively shifted these core content components. If not, these findings may provide a clue as to why a replication did not produce similar results to the original study and provide direction for continuous quality improvement. Evaluators can also design core component monitoring tools that can help facilitators maintain discipline to the curriculum’s session plans. Core pedagogy and implementation components can help inform process and implementation evaluation questions.

Replicate Phase 1 methods. The CPIC Study’s Phase 1 research methods were novel. Replicating the methods described in this paper to other EBP TPP curricula would have two benefits. First, it would help answer the question: Do other evidence-based teen pregnancy programs reflect the same (or similar) core components as the ones identified in this study? And if not, how do they differ? Second, if the findings are similar, the generalizability of the CPIC study’s findings becomes more generalizable.

Create scales and instruments. Scales and instruments to measure each of the core components, especially core content components, would be helpful, as studies don’t always use the same measures and theoretical constructs, and curricula have unique features and different emphases. Scales that directly reflect and measure core components can build upon the CPIC study and lead to further validation.

Conduct a factor analysis. Conducting a factor analysis²¹⁰ of these specific measures may also facilitate the process of determining how the different components relate to each other and can help identify latent structures or groupings among the core components. Identifying which components overlap and how they can be consolidated could reduce the total core components.

²¹⁰ Principal Components Analysis or Exploratory Factor Analysis. Columbia University Mailman School of Public Health. Retrieved September 10, 2024 from: <https://www.publichealth.columbia.edu/research/population-health-methods/principal-components-analysis-or-exploratory-factor-analysis>

Conduct a path analysis. Future studies may conduct path analysis²¹¹ to discern the effects of a set of core components and how they influence a specific outcome via multiple causal pathways. With path analysis, the pattern of the relationships among the core components is described using a path diagram with straight arrows indicating the direction of the causal relationships among the core components.

Weigh the impact of each core component. While Phase 2 of our study examined the variability of specific determinants and core content components in their association with sexual intentions, we were not able to conduct a weighted analysis of the impact of each core component. We also did not have sexual behavior items to look at whether these specific determinants led to behavior change. Future prospective studies with more measures to capture all determinants identified as core content components could examine which determinants are more relevant to behavior change comparatively and whether these differ by curricula.

Programs and Practice

A framework for innovation and design. When curriculum designers understand core components, they have guideposts to help them design the different facets of their curriculum, including what content to include, what pedagogical methods to use, and what implementation protocols to require. Innovation is needed as our society changes and new factors that affect adolescent sexual decision-making emerge. For example, consumption of social media,^{212, 213} consumption of online pornography,²¹⁴ rising rates of mental health disorders like depression and anxiety,²¹⁵ effects from social isolation during the COVID-19 pandemic,²¹⁶ etc., are factors that we as a field are just learning how to address in curriculum-based interventions. What we learn about core components from older programs can guide us in designing programs that address these emerging determinants of behavior. For example, CCC #5 states: “CPIC curricula facilitate processes where learners can envision and plan healthy futures (short- and long-term).” CCC #5 may still prove to be an anchor to a curriculum in which new determinants are embedded. The same may be true for pedagogy and implementation as well. Rather than a curriculum, an intervention might be delivered as a social media campaign, a clinical protocol, or something else. CCC #5 can still be embedded, even if the intervention type in which it is facilitated

²¹¹ Path Analysis. Columbia University Mailman School of Public Health. Retrieved September 10, 2024 from: <https://www.publichealth.columbia.edu/research/population-health-methods/path-analysis>

²¹² Landry M, Turner M, Vyas A, Wood S. Social Media and Sexual Behavior Among Adolescents: Is there a link? *JMIR Public Health Surveill.* 2017 May 19;3(2):e28. doi: 10.2196/publichealth.7149.

²¹³ Suyanto, B. (2021). Effects of social media exposure on adolescent sexual attitudes and behavior: A systematic review. *International Journal of Public Health Science, 10(2), 272-280.*

²¹⁴ Pathmendra P, Raggatt M, Lim MS, Marino JL, Skinner SR. Exposure to Pornography and Adolescent Sexual Behavior: Systematic Review. *J Med Internet Res.* 2023 Feb 28;25:e43116. doi: 10.2196/43116.

²¹⁵ Ueda P, Mercer CH, Ghaznavi C, Herbenick D. Trends in Frequency of Sexual Activity and Number of Sexual Partners Among Adults Aged 18 to 44 Years in the US, 2000-2018. *JAMA Netw Open.* 2020;3(6):e203833. doi:10.1001/jamanetworkopen.2020.3833

²¹⁶ Szucs LE, Pampati S, Li J, et al. Role of the COVID-19 Pandemic on Sexual Behaviors and Receipt of Sexual and Reproductive Health Services Among U.S. High School Students — Youth Risk Behavior Survey, United States, 2019–2021. *MMWR Suppl* 2023;72(Suppl-1):55–65.

changes. These types of experiments with new determinants and delivery strategies open themselves to testing. [OPA's innovation hubs](#) may be a mechanism for funding and robust technical assistance for these types of experiments

A framework for adaptation, fidelity, and community buy-in. When implementing organizations better understand the core components of the TPP program they select, they are better poised to make adaptations that enhance the core components rather than compromise them, and make adaptations that improve fit and community acceptance and streamline the program to make it easier to implement.^{217, 218} Implementing organizations are also better poised to advocate for implementing the program with reasonable fidelity, train facilitators on why the program is designed the way it is, and monitor core components during implementation. By surfacing core components along multiple facets of a curriculum, the CPIC study findings help program providers with these important tasks.

A framework for designing training for facilitators and the implementing organization. The findings from the CPIC study can help inform the package of facilitator training as well as prioritize content. Given the emphasis put on “caring” facilitators, facilitator training should include tips and practice on how to demonstrate care to learners.

The CPIC Core Component Framework: A Guide for Innovating, Designing, and Adapting TPP Programs with Ease

Our team developed a tool to help TPP professionals (i.e., curriculum designers, implementors, evaluators, and funders) apply the findings from the CPIC Study. First, our team conducted a review of the currently existing health/sexuality education curriculum assessment tools to avoid duplication of efforts.^{219, 220, 221, 222} Next, we met with a team of advisors on how to develop a tool that would be responsive to practitioner needs, practical, and easy to use. The tool provides users with a way to assess core components of EBPs and identify gaps. Through this

²¹⁷ Bauman, L. J., Stein, R. E., & Ireys, H. T. (1991). Reinventing fidelity: the transfer of social technology among settings. *American journal of community psychology*, 19(4), 619–639.

²¹⁸ Holzwart, R., Wagner, H., & Worden, M. (2021). *Exploring Core Components Research in Social Services Settings: Summary of 2020 OPRE Methods Meeting* (OPRE Report 2021-52). Office of Planning, Research, and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

²¹⁹ Future of Sex Education Initiative. (2020). *National Sex Education Standards: Core Content and Skills, K-12 (Second Edition)*. Available [here](#).

²²⁰ Centers for Disease Control and Prevention. *Health Education Curriculum Analysis Tool*, 2021, Atlanta, GA: CDC; 2021. Available [here](#).

²²¹ Kirby, D., Roller, L., & Wilson, M.M. (2007). *Tool to Assess the Characteristics of Effective Sex and STD/HIV Education Programs*. ETR and Healthy Teen Network. Available [here](#).

²²² The Office of Population Affairs. *The Teen Pregnancy Prevention Program Components Checklist Version 1.0*. To access this tool, copy and paste the citation above and search in your browser. Click on the link from the Reproductive Health National Training Center, and the tool (in an Excel Worksheet) will automatically download to your computer. https://www.google.com/url?sa=t&source=web&rct=j&opi=89978449&url=https://rhntc.org/sites/default/files/resources/supplemental/opa_tpp_components_checklist_5-9-2024.xlsx&ved=2ahUKewi1h7Xj7MylAxVqD1kFHWXHEo8QFnoECBIQAQ&usq=AOvVaw0l1hFy2pt_ifxy_GsFQKn

assessment, staff and agencies will be able to identify areas that can be strengthened and make action plans. The data collected from using this tool will be used primarily for quality improvement. *The CPIC Core Component Framework: A Guide for Innovating, Designing, and Adapting TPP Programs with Ease* will soon be available on AMTC's website. A concise brief on the CPIC study can be found in [Appendix II](#).

Policy and Funding

Knowing about the essential characteristics of effective programs can help policymakers write and enact policies that support programs with those characteristics. Similarly, funders can make more strategic investments when requiring their grantees to incorporate essential characteristics of effective programs. In doing so, policymakers and funders can optimize scarce resources and increase the likelihood of better program outcomes.²²³

Be Nimble

Be aware of evolving changes in our society, culture, and technology and how these changes affect curriculum effectiveness and core components.

Conclusion

The Content, Pedagogical, Implementation, and Context Study identified core components of five effective evidence-based teen pregnancy prevention curricula through a two-phased approach. In Phase 1, we used an inductive qualitative approach to determine core components centered on content (subject or topic areas), pedagogy (the science and art of teaching to content), implementation (how the curriculum is delivered overall), and context (circumstances and conditions). After completing Phase 1, we surfaced 22 core components (9 core content components, 8 core pedagogy components, and 5 core implementation components). Core components for context were not identified; however, we identified ten factors to consider regarding context. In Phase 2, we used a deductive quantitative research approach to test three specific Core Content Components (CCCs) that were identified from Phase 1. These included: CCC Finding #4 (Present basic knowledge about sexual and reproductive health as a foundation on which to build learners' understanding of pregnancy and HIV/STI prevention), CCC Finding #7 (Teach about multiple facets of respectful partner communication, including benefits and skills), and CCC Finding #9 (Strengthen learners' personal agency to make healthy and autonomous decisions). All three CCCs were significant predictors of sexual intentions for both middle school and high school-aged youth. Among the high school sample, self-efficacy was consistently the most important predictor, while knowledge was the most important predictor for middle school

²²³ Blase, K., & Fixsen, D. (2013). Core intervention components: Identifying and operationalizing what makes programs work. Washington, DC: Office of the Assistant Secretary for Planning and Evaluation, Office of Human Services Policy, U.S. Department of Health and Human Services.

youth. These findings are highly relevant to the field of adolescent sexual and reproductive health as they provide an opportunity to build upon and amplify these 22 core components. While these findings are not generalizable to all evidence-based teen pregnancy prevention curricula, they can provide support to curriculum developers, program implementers and facilitators, evaluators, policymakers, and funders.