Intervention Theory Structuring Guide (ITSG)

After a problem has been clearly defined, the Intervention Theory Structuring Guide (ITSG) can be used to construct a program and/or activity model illustrating how the various program activities that make up the intervention aim to resolve or mitigate the problem. The ITSG has four phases, shown in Table 3. ITSG Forms A, B and C are provided to organize the information called for in these ITSG phases.

Table 3. Intervention Theory Structuring Guide (ITSG)
Phase 1. List all the determinants you plan to intervene on in column 1 on ITSG Form A.
Phase 2. List the program activities you will apply to each determinant in column 2 of ITSG Form A.
Phase 3. Complete a separate ITSG Form B for each program activity listed in column 2 of ITSG Form A by: a. writing the PAC determinant on line 1. b. listing, in sequential order, all the steps required to develop the activity in column 1. c. writing one or more objectives/standards that operationalize each development step in column 2. These objectives will serve as development standards for the program. Development standards are explicit statements (measurable objectives) that correspond to each important step that must be carried out in the development of the intervention.
Phase 4. Complete a separate ITSG Form C for each program activity listed in column 2 of ITSG Form A by: a: writing the related PAC determinant on line 1. b. listing in sequential order all the steps required to implement the activity. c. writing one or more objectives/standards that operationalize each implementation step. These objectives will serve as implementation standards for the program. Implementation standards are explicit statements (measurable objectives) pertaining to each important step required to implement the programmatic activities.

Phases 1 and 2 of the ITSG require decisions concerning which causal factors in the PAC will be targeted by the intervention and which activities will be developed to mitigate or eliminate these determinants. ITSG Form A (see examples 1a and 2a) can be helpful in organizing this information.

The third phase of the ITSG requires planners to delineate and organize the steps required to develop the intervention. Standards which correspond to these steps are also written in this phase. These standards are referred to here as development standards. By definition, development standards are explicit statements (measurable objectives) for each step that must be carried out to

develop the intervention or one of its component parts. In the process of carrying out the evaluation, these standards are compared against information that is collected on the development of the intervention to determine whether the intervention is developed as planned. ITSG Form B (see examples 1b and 2b) can be used to sequentially list the development steps and corresponding standards.

The fourth phase of the ITSG lays out the steps for implementing the activity and the corresponding theoretical implementation standards that will be used to determine whether the intervention is implemented as planned. In short, implementation standards are explicit statements (measurable objectives) for each important step required to implement the programmatic activities. ITSG Form C (see examples 1c and 2c) can be helpful in organizing this information.

Two hypothetical examples are provided here to demonstrate how to apply the ITSG and how the forms that accompany it can be used to execute the four ITSG phases. The first set of examples (examples 1a, 1b and 1c) are based on the teen smoking problem outlined in Table 1 and Figure 1. This example shows how the ITSG can be used to delineate the causes of teen smoking and the intervention activities that can be brought to bear on these causes (Example 1a), lists developmental steps and standards that may be required in developing an intervention to help students resist peer pressure to smoke cigarettes (Example 1b), and specifies some of the steps that may be required to implement this intervention (Example 1c). The second set of examples (examples 2a, 2b and 2c), which are based on the problem characterized in Table 2 and Figure 2

above, provide a listing of the possible causes of gun violence along with corresponding intervention activities (Example 2a), lists steps required to develop an intervention that teaches conflict resolutions skills (Example 2b), and provides a list of steps and complementary standards which may be required to implement a conflict resolution intervention (Example 2c). It should be noted that although the examples provided here are based somewhat on strategies derived from the Centers for Disease Control and Prevention's (CDC) Office of Smoking and Health and the National Center for Injury Prevention and Control, respectively, they have been modified to fit the ITSG phases and are for illustrative purposes only. Consequently, these examples should not be considered to be the official position of the CDC regarding either the aetiology of these problems or how to best intervene on them.

EXAMPLE 1a: Teen Smoking **ITSG Form A. Guide for Organizing Determinants Addressed by the Program and the Corresponding Program Activities Applied to these Determinants**	
Determinants Targeted by Program	**Program Activities Applied to Determinant**
Teens have ready access to tobacco caused by lack of vigilance on the part of retailers to check IDs.	*Enact laws against selling cigarettes to underage teens.* *Impose substantial fines for selling tobacco products to teens.* *Outlaw cigarette vending machines.*
Belief among teens that tobacco use is normative resulting from promotion of tobacco products, modeling by parents, and smoking by peers.	*Develop a counter-advertizing campaign against tobacco advertizing demonstrated to be effective with teens.* *Develop communication program that stresses the fact that most teens and adults do not smoke.* *Inform smoking parents about the negative effects of their personal example on their children's attitude toward tobacco use.*
Positive attitude toward smoking by teens by promotion of tobacco products, modeling by parents, and smoking by peers.	
Teens susceptible to peer pressure to smoke due to inadequate training or modeling from parents to resist peer pressure.	*Provide peer pressure resistance training.*

EXAMPLE 1b: Teen Smoking

ITSG Form B. Guide for Arranging Development Steps and Corresponding Development Objectives/Standards in a Theory of Action

Determinant: ***Inadequate Peer Pressure Resistance Skills to Resist Pressure to Smoke Cigarettes***

Development Step	***Development Objective/Standard***
Designate a time and place when all junior high students in school district X will participate in a 2 week training on how to resist pressure to engage in risky behaviors including smoking cigarettes.	*By <date>, all 6th, 7th and 8th grade students will participate in a 2 week training during health class which focuses on how to resist pressure to engage in risky behaviors, including smoking cigarettes.*
Organize and convene a curriculum committee responsible for selecting a school-based curriculum that can be used to teach students how to resist pressure to smoke cigarettes.	*By <date>, 5 senior status behavioral and/or social science teachers will be assigned to serve on a curriculum selection committee under the direction of the curriculum coordinator. This committee will, by <date>, develop curriculum selection criteria, identify eligible curriculum, evaluate curriculum using designated criteria, and make a recommendation on which curriculum to use to teach junior high students how to resist pressure to engage in risky behaviors, including smoking cigarettes.*
Develop criteria for selecting a curriculum.	*By <date>, curriculum committee will have developed criteria that will be used to evaluate curriculum used to help teenagers resist pressure to engage in risky behaviors, including smoking cigarettes.*
Conduct search to identify curriculum.	*By <date>, the curriculum committee will have identified at least 5 different curricula that are currently in use in U.S. high schools to teach students how to resist pressure to engage in risky behaviors, including smoking cigarettes.*
Evaluate and select curriculum.	*By <date>, the curriculum committee will have evaluated selected and, if appropriate, recommend modifications to a curriculum that will be used to teach students how to resist pressure to smoke cigarettes.*
Create and test an instrument to evaluate the short- and medium-term effects of the curriculum.	*By <date>, an instrument which will be administered before and after the 2 week peer pressure resistance training to determine whether students experience changes in knowledge about how to resist pressure to smoke, attitudes resisting pressure to smoking and about smoking in general, and the behavioral intention to resist pressure to smoke.*

ITSG EXAMPLE 1c: Teen Smoking

ITSG Form C. Guide for Arranging Implementation Steps and Corresponding Implementation Objectives/Standards in a Theory of Action

Determinant: ***Inadequate Conflict Resolution Skills***

Implementation Step	**Implementation Objective/Standard**
Teach students to resist pressure to smoke cigarettes.	*Use curriculum selected by the curriculum committee to teach all 6th, 7th and 8th grade students attending health class in district X how to resist pressure to smoke cigarettes.*
Evaluate short- and medium-term effects of participating in the peer pressure resistance training.	*On the first and last day of the 2 week peer pressure resistance training students will be asked to complete a questionnaire that asks about their knowledge, attitudes and intended actions around resisting pressure to engage in risky behavior.*

ITSG EXAMPLE 2a: Handgun Violence

ITSG Form A. Guide for Organizing Determinants Addressed by Program and the Corresponding Program Activities Applied to these Determinants

Determinants Targeted by Program	Program Activities Applied to Determinant
Non-involvement in pro-social activities.	*The school will develop a program that provides access and support to ensure that all boys who are identified to be at risk for handgun violence participate in pro-social extracurricular activities that they enjoy and which are designed to teach them how to manage frustrations and resolve conflict peacefully, and to feel a sense of comradery in a pro-social activities with other boys their age.*
Chronic exposure to violent TV and movies.	*All students in the designated high school will receive media literacy training designed to sensitize them to the negative effects of media violence and to cause them to be more discriminating in their TV viewing.*
Inadequate Conflict Resolution Skills.	*All students in the 9th grade will be required to participate in a 5 day course on resolving conflicts peaceably.*
Carrying Weapons to School.	*Students who are apprehended with weapons at school will be suspended for an entire semester.*

ITSG EXAMPLE 2b: Handgun Violence

ITSG Form B. Guide for Arranging Development Steps and Corresponding Development Objectives/Standards in a Theory of Action

Determinant: *Inadequate Conflict Resolution Skills* (See Figure 2)

Development Step	***Development Objective/Standard***
Develop a position description for a person who can design and teach a conflict resolution curriculum.	*By <date>, a job description will be written which outlines the instructional design and teaching knowledge, skills, and abilities (KSAs) required to design and teach a conflict resolution curriculum.*
Advertise position.	*By <date>, the position will be advertised for 1 month in publications A and B. The job announcement will also be posted on our Web Page for 1 month beginning on <date>.*
Hire a person who is qualified to design and teach a conflict resolution curriculum.	*By <date>, screen applications and identify individuals who possess the desired minimum KSAs. Interview each qualified candidate by asking questions that solicit information on each KSA. Hire the best qualified candidate.*
Design and develop a 5-hour conflict resolution curriculum.	*By <date>, design a curriculum that teaches youth to deal with conflict in nonviolent ways: remain calm, avoid blaming, avoid interrupting, affirm others, reserve judgement, avoid threats, etc.*
Integrate course into required health education course.	*By <date<, arrangements will be made for all students to participate in a conflict resolution module included in a required health education course.*

ITSG EXAMPLE 2c: Handgun Violence ***ITSG Form C. Guide for Arranging Implementation Steps and Corresponding Implementation Objectives/Standards in a Theory of Action***	
Determinant: ***Inadequate Conflict Resolution Skills***	
Implementation Step	**Implementation Objective/Standard**
Communicate knowledge concerning how to resolve conflicts in nonviolent ways.	*During the first semester all 9th grade students will be taught in at least five 50 minute health class sessions, using brainstorming, lectures, role-playing, and group discussions, how to resolve conflicts peaceably by learning how to define a conflict, remain calm, set the tone, and take responsibility for personal actions.*
Have students practice (role-play) conflict resolution skills.	*Students will role-play resolving conflicts in nonviolent ways using relevant knowledge gained from previous step.*
Have students recite and demonstrate conflict resolution skills.	*Students will be tested on knowledge and observed role-playing of conflict resolution skills and will be able to recite all 10 steps. Students will be able to demonstrate the 10 steps to conflict resolution after participating in 2 role-rehearsals.*

Taken together, the steps and standards generated by the ITSG phases constitute the theory of action which outlines how each program activity should be developed and delivered. As such, each step and standard (objective) serves as a validity assumption that can be tested as a part of the evaluation. A theory-based evaluation compares these assumptions about how the activity is supposed to be developed and implemented with empirically-based evidence regarding how it was actually developed and implemented as a way of identifying and reporting the extent of any existing discrepancy.

The theories of action created with the ITSG can also be compared to broadly accepted intervention theories that are reported in the scientific literature as a basis for judging whether the program's intervention theory is consistent with conventional wisdom about the best way to intervene on a particular problem. This comparison can help identify discrepancies to be addressed in refining or even fundamentally redesigning either the traditionally recognized theory and/or the theory of action constructed with the ITSG.